

Control Motivations and Capital Structure Decisions

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Abstract

This paper investigates the impact of corporate control motives on the firm's capital structure decision. We investigate the impact of family blockholders because they are the best example of a shareholder that values corporate control most. We also look at the impact of institutional blockholders on the capital structure decision. Blockholders with high control motivations face a trade-off between getting external finance and losing or diluting their control over the firm's decisions. Debt offers a solution to this dilemma while external equity does not. Hence, we hypothesize that firms with blockholders that value control should have higher debt-equity ratios. Furthermore, we also hypothesize that debt is more used where control is valued most: in countries where minority shareholders rights are not well-protected and where losing control would cost the most. The competing hypothesis is provided by risk reduction motivations. In this case, undiversified blockholders – such as families – may want to decrease leverage to reduce firm specific risk in their undiversified portfolios. We use 3,608 firms from 36 different countries to investigate this issue and we find that, after controlling for variables that have been found to influence capital structure, control motives do influence capital structure decisions. Family firms have higher leverage relative to non-family firms and they have even higher leverage in countries where minority shareholders are least protected. Families are found to use leverage in a strategic way: they use it less when they possess control-enhancing mechanisms, such as pyramids, that can allow them to have control anyway.

Keywords: Ownership Structure; Corporate Control; Capital Structure; Family Firms

JEL Classifications: G30, G32, F30

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Introduction

Can a large shareholder's control motives influence the mix of debt and equity used in a firm's capital structure so that control is maintained or defended? Besides the rights over the stream of cash flows, large blockholding can also give rights over the firm's resources, and insulation from both internal and external discipline.¹ Shareholders that value control over their firm face a clear trade-off: getting external funds to finance the firm's investment and *possibly losing (or diluting) their control*, or keeping control and, in case of insufficient internal funds, passing on valuable investments. How can this trade-off be solved? From the blockholders' point of view, new equity financing will not solve optimally this trade-off because they will see their control diluted. On the other hand, debt can solve this trade-off because external funds are obtained to finance investments without putting control in danger.

A recent example of such control motivations was provided by Bertelsmann, the German media company, a family-owned company since 1835. In 2001 the Bertelsmann family sold 25.1% of its company to Groupe Bruxelles Lambert (GBL) in exchange for 29.9% share (and complete control) of RTL, a media company. The deal gave the right to GBL to list its stake in Bertelsmann publicly after five years. In 2006, to avoid such a public listing (which would have diluted the control of the family), the Bertelsmann family bought back the stake of GBL for some \$5.75 billion. How did they do it? Issuing debt, and "for this luxury, Bertelsmann has more than doubled its existing debt...the media company is probably overpaying by around Euro 500 million. However, it avoids the scrutiny of stock analysts, and the activism of hedge funds." (The Economist, 2006).

This paper investigates the question of control and its impact on the capital structure using 3,608 publicly listed firms from 36 different countries of which we know the ownership structure, capital structure and other financial and accounting information. In particular, we know whether a family or an institutional blockholder owns shares, its cash flow and voting rights, and its presence in the firm's management. Our choice of international firms is dictated by two important issues. First, the variability of the type of ownership and its magnitude is unlikely to be high in any single country and, hence, a significant test of the blockholders' impact on capital structure calls for using firms from different countries. Second, different legal frameworks can provide us with useful insights in

¹ See Morck, Shleifer and Vishny (1988), Prendergast (1988), Stulz (1988), Israel (1991), and Cheng, Nagar and Rajan (2004).

how control issues differ across different environments and its impact. we hypothesize that if control really matters, then it should matter most where losing it will cause the biggest costs to the blockholder. This should be the case of environments where minority shareholder rights are least protected where if a blockholder loses control then its rights are mostly eroded. Using firms incorporated in different legal environments will allow us to investigate this important link and draw various conclusions.

Obviously, not all shareholders attach the same importance to control motives. It is clear, for example, that atomistic shareholders in a widely held firm are not likely to have any control motives. The clearest example of a shareholder with control motives is a family blockholder. Existing literature provides ample evidence about the family's control motives that makes investigating family firms particularly suitable to address our research question. Families have a long-term commitment to the firm, often spanning different generations, thus creating a situation where the family's reputation (and, in many cases, its national and international prestige) is very much related to the firm's performance. This means that a family blockholder will be very much interested in exerting control over the firm's decisions. Family firms are also very pervasive in many countries, even in the US, and hence understanding the way blockholders behave in these firms is very important. According to La Porta *et al.* (1999) 30% of the large public firms around the world are owned by families and this figure rises to 45% when medium-sized firms are considered and family firms' presence in the US is also significant with almost one third of S&P500 firms and 37% of Fortune 500 being family-owned (Anderson and Reeb, 2003, and Villalonga and Amit, 2006). Similar figures were found by Ellul *et al.* (2006) for Fortune 500 firms and international companies that list on the New York Stock Exchange (NYSE) through Level II and III American Depositary Receipts.

Existing theoretical literature has already indicated that control motives can influence the mix of equity and debt the firm chooses. The three most relevant theoretical papers are by Harris and Raviv (1988), Israel (1991) and Stulz (1988). These papers investigate the actions of an *entrenched manager* in a widely held firm, rather than the actions of a blockholder as we do in this paper. The relevant issue, however, is the same: control motivations. In Harris and Raviv (1988), and Stulz (1988) management can use the capital structure to gain voting power and this will, in turn, influence the outcome of takeover contests. Using debt to repurchase equity from outsiders has the impact that management's votes count for more. A similar insight is the one made by Israel (1991) who shows that using debt influences the

distribution of cash flows between voting and nonvoting shares and this will influence the outcome of takeover contests. Stulz (1988) concludes that “whether management controls too few or too many votes, the firm’s *capital structure decision is relevant because of its effect on the distribution of voting rights*” (page 27).

A similar intuition emerges from a survey of 891 Italian firms sampled from the Mediocredito database. Anecdotal evidence, and the popular press in the country, have repeatedly pointed out that one major problem facing Italian firms is the lack of proper financing and thin capitalization. Bagella *et al.* (2001) report that to the question on their availability for any equity dilution, almost 81% of CEOs answered that they are ready for “No Equity Dilution”. When the same CEOs are asked on whether they see any advantage from higher financial stability resulting from equity dilution, almost 52% answered that they see no advantages.

Having established that control motives should influence capital structure decisions, we have then to address three further issues that are important for this debate. First, are family blockholders the only candidates as examples of shareholders with high control motivations? There are two other likely candidates, besides family blockholders: (a) institutional blockholding, and (b) entrenched managers. We have identified these two because of either the size of their holdings or because of the control they exert over corporate policies, and hence cannot be considered like atomistic shareholders.

Second, we have to address the issue of how important are control motivations for these likely candidates. We can do so by looking at whether, and how, these stakeholders exert any influence over the firm’s decisions and resources, which is the heart of the control question. This issue is in turn related to their presence in the firm’s active management or their level of monitoring of management. In this regard, one can reasonably conclude that family blockholders have more control motives relative to institutional blockholders. Family blockholders are often involved in active management and the same cannot be said of institutional blockholders. For example, in the US and many countries, mutual funds, the typical institutional blockholders, are legally barred from sitting on the firm’s board of directors. Tufano (1996), for example, shows that institutional investors are not active in monitoring management and are more likely to have incentive structures similar to atomistic shareholders. Hence, one can reasonably conclude that institutional blockholders’ control motivations may not be high enough to exert any influence on capital structure decisions.

What about entrenched managers? These can have clear control motives and the theoretical findings of Harris and Raviv (1988), Israel (1991) and Stulz (1988) make this point clear. The empirical work of Berger, Ofek and Yermack (1997) can be considered as the only one that has tried to investigate the behavior of entrenched managers and found that, contrary to the theoretical predictions, these managers *decrease* firm's leverage. The explanation provided by Berger *et al.* (1997) is that the risk reduction motive – where a manager's objective is the reduction of firm specific risk in her undiversified portfolio - is higher than control motives for entrenched managers. In this case, leverage increases in the aftermath of entrenchment-reducing shocks and the addition of major shareholders to the board of directors. Combining the consideration made above about the incentives of family and institutional blockholders and the results by Berger *et al.* (1997), we can rank family blockholders as the one with the highest control motivations and entrenched managers with the lowest.

Third, we have to consider whether there are different motivations, other than control motivations, that may influence the blockholders' decisions on the mix between debt and equity. The area that we need to look at to find an alternative explanation is the risk induced by leverage and its impact on shareholders' portfolios. Fama (1980) shows that managers, who have an under-diversified human capital, may want to have lower leverage than optimal so that they reduce firm risk. In such a way, they balance the higher risk they face from their having their entire human capital invested in one company. One can extend such an argument to the managers' financial portfolio which should be heavily skewed in favor of stockholding of one company: the one they manage. As mentioned before, this is the explanation provided by Berger *et al.* (1997) for their result.

A similar argument can also be applied to family shareholders. Existing literature argues that families normally have a highly undiversified portfolio of companies in which they invest. Very often, the family's interests are limited to few industries, resulting in higher firm-specific risk. Hence, in such a case, family shareholders may also want to reduce leverage in order to reduce firm's risk that counteracts the high (firm-specific) risk of their undiversified portfolio. The blockholders' level of diversification is another area that distinguishes family blockholders from institutional ones. The latter are normally more diversified than families and as such it is unclear whether risk-reducing motives should apply

to institutional blockholders as well. We will be using the risk-reduction motivation as the alternative hypothesis on how large shareholders can influence the capital structure decision.

If control matters then it should matter mostly in environments where losing it will produce the biggest costs to the large shareholder. Following La Porta *et al.* (1998) we know that minority shareholders' rights differ across countries, with some countries protecting adequately minority shareholders while others do not. It is precisely in the latter countries where control motives and the impact on the mix of debt and equity should manifest themselves most clearly.

Using a panel data comprising 3,608 firms from 36 different countries, over the period 1994 – 2004, we find that, after controlling for all other variables that have been found to influence capital structure², (a) family firms, defined in different ways, have higher leverage ratios than non-family firms, (b) institutional blockholders do not have any statistically significant impact on capital structure, (c) leverage in family firms is mostly used strategically as a substitute for other control-enhancing mechanisms, such as pyramid structures and cross-holdings, and (d) family firms incorporated in countries with low shareholders' rights tend to have higher leverage than family firms incorporated in countries with high shareholders' rights. These results are found in both a *cross-sectional specification* and a *panel data* specification. The results are significant because we find that although non-family firms have more tangible assets, lower Tobin Q and are generally bigger – all factors that should lead to higher leverage ratios – they have lower debt in their capital structures when compared to family firms. This result is robust to various econometric specifications.

We find that institutional blockholders do not have any impact on capital structure decisions and we argue that this difference in impact relative to family blockholdings should be driven by the different economic objectives and behavior of these two blockholders as argued before.

We investigate the family's impact further to see whether it is family ownership or family management that matters. Whatever the family may desire to do with the leverage decision, it must be easier to reach such goals if it has a presence in the firm's management.

² See, amongst many others, Barclay, Smith, and Watts (1995), Barclay, Morellec, and Smith (2004), Bradley, Jarell and Kim (1984), Harris and Raviv (1991), Hovakimian et al. (2001), Leland and Pyle (1977), Lemmon and Zender (2004), Rajan and Zingales (1995), Shyam-Sunder and Myers (1999), Fama and French (2002) and Huang and Ritter (2005), Lemmon, Roberts and Zender (2006), Welch (2004), Liu (2005).

We find that while family ownership remains significant when we introduce family management, it becomes less so relative to when it is considered on its own and, in this case, family management has the largest impact. This result on family management is very important when we compare it to the results obtained by Berger *et al.* (1997). Family managers can be considered as the quintessential type of entrenched managers. However, while Berger *et al.* (1997) found that entrenched managers reduce leverage, we find that a particular type of entrenched manager – a family manager – increases leverage ratios.

Capital structure is one of different instruments that a family can use to maintain control and this suggest that we have to control for other control-enhancing instruments that may be used. In particular, a blockholder can use cross-shareholding or pyramids to achieve basically the same objective – keeping control – using new equity rather than debt. Hence, this consideration suggests that we look at the cash flow rights and voting rights patterns and see whether the wedge between these two rights matters for capital structure decisions. We find evidence that leverage is used less in cases where families use control-enhancing mechanisms, implying that leverage is like a substitute to the use of other mechanisms that can assure control on their own.

When we investigate capital structures of family firms in environments characterized with different minority shareholders' rights we find that, as hypothesized, family firms in countries with lower minority shareholders rights tend to have higher leverage relative to those in countries that provide high protection to minority shareholders.

These results, however, can also be consistent with other explanations besides control motivations. For example, Zwiebel (1996) provides a model where debt is used as a credible signal by the management to restrict empire building. Existing evidence shows that family firms are prime candidates for such behavior. However, we find no evidence that can support this hypothesis. On the contrary, we find that family firms with high free cash flows tend to have lower leverage ratios.

We contribute to the literature in various ways. First, we contribute to the literature on how blockholders use different instruments to achieve or maintain corporate control. Second, we also contribute to the vast literature on the driving forces that influence capital structure decisions, adding the owners' control motivations as another important factor that matters for such a decision. Up to now, the literature on capital structure has largely ignored the impact

that owners' control motivations may have on the financing choice. Thirdly, we also contribute to the law and finance literature, showing that an important influence on control motivations comes from the legal protection offered to different types of shareholders.

The rest of the paper is organized as follows. Section 2 reviews the data and the methodology we use. Section 3 presents and reviews the results. Section 4 concludes.

Section 2. Data

Our dataset is composed of a total of 3,608 international and US firms over the period 1994-2004, for a total of 32,735³ firm-year observations. The firms come from 36 different countries as shown in Panel A of Table 2. We obtain the data from three different sources. First, we start by using the dataset of Faccio and Lang (2002)⁴ that includes European companies from 17 different countries. This dataset contains large, medium and small sized publicly-listed companies. Some of the large companies in this dataset are also listed in the U.S. through an American Depositary Receipt. Second, we include data on non-European ADRs with a Level II or III program and listed on the NYSE as of 1988. Third, we augment this dataset by including US firms in the Fortune 500 list as of 1988. Hence, we end up with a dataset that has large, medium and small listed firms from 36 different countries.

In detail, our data is composed of the following firms: 450 firms in the Fortune 500 firms as of 1988, 2,974 firms from the Faccio and Lang dataset, and 184 non-European firms with an ADR program as Level I or Level II as of 1989. It should be noted that while the Faccio and Lang dataset contains a total of 5,232 firms, we end up with a lower number of firms. First, consistent with the literature, we delete financial firms (SIC code between 6000 and 6900, and classified as "Financial" by Faccio and Lang (2002)). There are 1,114 of such firms, leaving us with a total pool of 4,118 companies. Second, we require financial and accounting data for at least 5 years for each firm. As we explain below, the source of the financial and accounting data for the Faccio and Lang dataset is Worldscope. We can find at least 5 years of data for only 2,974 of such firms.

³ There are instances of missing data for some years for the international firms in our sample, leaving us with a total of 32,735 firm-year observations out of a possible total of 39,688 firm-year observations.

⁴ The dataset can be found in the following website: <http://jfe.rochester.edu/data.htm>

For the firms contained in the Faccio and Lang dataset we can only collect financial and accounting data for the period 1994 – 2004. The major reason for this limited time period is the lack of any data in Worldscope – our source for accounting and financial data - before 1994. For the sake of time consistency, we also collect data over the period 1994 – 2004 for the US and non-European ADR firms. In total, we end up with 32,735 firm-year observations.

We next explain the sources of the ownership data and then the sources of the financial and accounting data. The ownership data for the firms in the Faccio and Lang (2002) dataset is obtained through different sources. The major source of ownership data are the various national Stock Exchange ownership files over the period 1996-1999.⁵ Faccio and Lang collect the information on the ownership stake of blockholders using two cut-off points for control purposes: (a) a cut-off point at 10%, and (b) a cut-off at 20%. In the case of pyramids or cross-shareholding, however, the cash flow rights will be smaller than the voting rights.

We augment the ownership data of the firms we use from the Faccio and Lang dataset by using Amadeus, a new dataset that provides financial and ownership data for more than 5 million European firms. Amadeus can only provide ownership data for its firms starting from 2002 and we collect the data available from this year until 2004. Hence, at the end the ownership data for the 2,974 firms from the Faccio and Lang dataset comes from two sources: over the period 1994-2001 we use the data provided by Faccio and Lang, and over the period 2002-2004 we use the data from Amadeus.

At this point, we need to provide information about the stability of the ownership data for these 2,974 firms since we use two different sources. Existing literature has argued that ownership structures are very sticky and do not change significantly across time. This is especially true for family blockholdings and any disposition of shares on the side of a family is a rare event. Less rare, though, is the change of the institutional blockholders because from their very nature, these blockholders do not have as long-term of a presence as that of a family. Hence we investigate whether the ownership data for each firm differs across the two

⁵ To quote the authors: “To ensure accuracy, we include only countries for which we can obtain alternative sources (especially primary or official) to permit cross-checking. We do not rely on Worldscope if we have an official data source (i.e., the Stock Exchange ownership files). When official data sources are not available, we collect data from alternative sources. We use Worldscope for ownership data only when information for a specific firm can not otherwise be identified.” (page 367)

sources and whether the data provided by Faccio and Lang carries over to the years past 1999. We find that there is a striking similarity between the two sources, confirming the stickiness of the ownership structure. For example, the family blockholding from the Faccio and Lang dataset has a mean of 40.67% and a standard deviation of 25.97%, while that from Amadeus has a mean of 40.21% and a standard deviation of 25.08%. The same picture emerges for the institutional blockholdings. These statistics provide enough comfort for us to use the ownership data from Amadeus to extend that provided by Faccio and Land and in this way covering a longer time period.

We hand collect data on the ownership structure of the 450 US and 184 non-European ADRs in our sample by using 20-F forms and proxy statements. We supplement these sources by looking at firms' websites and finding other sources that can provide information about its history and founders. From these documents we collect two different sets of information in a way that makes our ownership information consistent with that provided by Faccio and Lang. First, we get information about the presence of a founding family, either directly or indirectly through a separate entity (such as a trust) owned by the founding family. Second, in the case of a family presence, we collect data on the family's ultimate ownership stake. In this regard, we collect two separate measures of ownership: first, the family's cash flow rights, and, second, the family's voting rights. We also obtain data on whether a family is present in the firm's management in a similar way, i.e. from 20-F forms and proxy statements we determine whether members of a family are present on the firm's Board of Directors.

From the same sources we also obtain information about the presence and ownership stake of non-family blockholders and whether they are inside blockholders (where they have a presence on the firm's Board of Directors) or outside blockholders (where they have no presence on the firm's Board of Directors). We collect the same ownership information for institutions as we do for families: first, the institution's cash flow rights, and, second, the institution's voting rights.

The control cut-off point of 10% adopted by Faccio and Lang is one major difference between the data that we have for the Fortune 500 and non-European ADR firms on one hand and the data from Faccio and Lang on the other, since we collect ownership data independently of any arbitrary cut-off control stake. Hence, the ownership data for US and non-European ADR firms is richer in the ownership dimension compared to that of Faccio

and Lang. We discuss this difference, possible impacts on the results and the way we attempt to resolve the issue, later on in the paper.

In terms of the type of ultimate ownership, the Faccio and Lang dataset distinguishes between six categories: (a) family firm, (b) widely-held financial institution, (c) State, (d) widely held corporation, (e) cross-holdings, and (f) miscellaneous. The data provides information about the largest blockholder's cash flow rights, and, its voting rights. The dataset also contains information on whether the family is in active management or not.

[Insert Table 1]

The sources for the financial and accounting data also differ across our final dataset. COMPUSTAT is the source of financial and accounting data for the FORTUNE 500 and Level II and III non-European ADRs while Worldscope is the source for the firms in the Faccio and Lang dataset.

Given the international nature of our research, especially the centrality of minority shareholders rights across different countries, we also describe the sources of country-specific variables. We obtain country-level governance indices from different sources: (a) the Shareholders' Rights proposed by La Porta et al. (1998), (b) the Legality Index (henceforth Legality) proposed by Berkowitz, Pistor, and Richard (1999), and (c) the Creditors' Rights Index proposed by La Porta et al. (1998). We also collect other country level variables that measure the country's financial market development, namely GDP per Head and the Ratio of Stock Market Capitalization to GDP. These variables are collected from the International Monetary Fund's *International Financial Statistics* and the International Finance Corporation's *Emerging Market Database*.

Finally, one important variable that should influence capital structure is the corporate tax rate which changes across countries. We obtain data on country-specific corporate tax rates (the Top Corporate Tax Rate) from the Economist Intelligence Unit dataset.

2.1 Definition of Ownership

Before proceeding forward, we need to describe how firms are classified between (a) widely-held firms, (b) family firms, and (c) firms held by institutions.

Let us start by describing how family firms are defined. For US and non-European ADR firms, we define a family firm as one where the founder, or descendants of his/her family (either by blood or through marriage), is a blockholder, either individually or as a group. The same definition is essentially used by Faccio and Lang. However their definition (“a family (including an individual) or a firm that is unlisted on any stock exchange”, page 373) may lead to a possible wrong classification of some firms due to lack of information about the final owners of the unlisted firms that are owners of other firms. Faccio and Lang state that “however, we were still not able to find ownership data for all unlisted firms. If we failed to identify the owners of an unlisted firm, then we classified them as a family” (page 373). There are a number of justifications of using such an approach. The same methodology has also been used by Claessens *et al.* (2000). Hence the approach used by Faccio and Lang may not be a significant issue. We decide to use a conservative approach and we only use the Faccio and Lang definitions at the 10% control cut-off point, rather than the 20% cut-off, in order to minimize any impact from this definition.

We next describe how we define firms controlled by an institution. For the Fortune 500 and non-European ADR firms we look for the ownership held by a widely-held financial firm that owns at least 5% of the outstanding shares and is not part of the firm’s founding family. This definition is very close to the one used by Faccio and Lang with the only difference that they collect information separately for ownership held by (a) a widely held financial institution, and (b) a widely held corporation. In order to standardize the definition across the entire dataset we define a firm as having an institutional blockholder as the ultimate owner when it is a widely-held financial firm and not when it is a widely-held corporation.

We next discuss the major issues related to the way we define different ownership structures, their limitations and possible impacts on our results, the way we deal with these issues and the robustness checks we carry out.

Let us first discuss the potential problems with the definition of family firms. Existing literature shows that the definition of a family firm has to be qualified and clarified in certain cases. One potential problem with our definition is that it lumps together family firms that have been in the hands of a family for at least two generations – and hence can be seen as truly family firms – and founder-run firms that, by virtue of these being still in the first

generation, are not yet clear whether they can be placed in the family firm category.⁶ For example, a founder may cash out his/her ownership stake rather than passing it over to the family and in such case one cannot identify this as a family firm. Given the nature of our sample, formed by established US firms and international firms that have at least a listing in their home market, such a problem is less likely to occur. We investigate the family's ownership in the Fortune 500 and ADR firms, for which we have more detailed information compared to the firms in the Faccio and Lang dataset. We find that almost all family firms are in the hands of second, or later, generations and this fact diminishes the potential problems caused by this particular issue.

Consistent with existing literature, we also apply various rules to determine the meaningful presence of a founding family in some instances, especially in the case of Fortune 500 and ADR firms. First, we define a family firm as one that was either founded by a family or where this family was responsible for its early growth (even though, in the latter case, the firm may have been incorporated by a different individual).⁷ Second, consistent with this view of the “founding family”, we do not define as family firms those where a person – either individually or through a group or trust - became the largest blockholder through stock-based compensation packages, a management or a leveraged buy-out, or through a spin-off. Third, a family may have founded either the firm in our sample or a predecessor firm that may have made a takeover or a merger in the past and which resulted in the incorporation of the firm in our sample.

Having established the presence of a founding family in the ownership structure is only the first step in our exercise. There is an on-going debate about what really drives the incentives and behavior of a family blockholder. Is it the family's ownership that matters or is it its control of voting rights in excess of its cash flow rights? Or, perhaps, should we look at whether the family has a role in the active management of the firm?

It is not yet clear whether the sheer presence of a family blockholding – independently of its size – is enough to let us identify a firm as a “family firm”. This issue is particularly important for this paper since our argument of how a family may influence the capital structure depends on its control motives which, in turn, depend on its decisions on

⁶ One essential feature of a family firm is the presence of a family across various generations. A firm that is still in the hands of the first generation presents a potential problem because it may be difficult to ascertain whether the founder wants to pass it on to the second generation or liquidate his/her shareholding.

⁷ We have found that this rule is especially important for US firms but not so much for ADRs.

how corporate resources are utilized. It is reasonable to assume that it is easier for a blockholder to influence such decisions if it also carries managerial duties. In this case, the channel through which a family can determine the capital structure decision is very clear.

In the empirical tests we proceed as follows. First, we define a firm as being a family firm based on an ownership consideration: hence, irrespective of the size of the family's ownership, we define a firm as such as long as the founding family (or descendants) is present in the ownership structure. There are three possible measures that capture this definition. The most straightforward way is to use a dummy variable that takes the value of 1 if a member of the founding family (by blood or marriage) is present and 0 otherwise. This definition is consistent with both Anderson et al. (2003) and Villalonga and Amit (2006).

Although this definition has its own advantages, it suffers from one significant disadvantage: the family's control motives may be a function of its power inside the firm and this, in turn, is a function of its ownership or voting stake. A dummy variable approach that does not discriminate between a large and small ownership and control stake of the founding family may introduce important biases.

Given these potential problems, we use the family's ownership stake and voting rights (in percentage) as our second and third ways of defining a family's presence. This definition should allow for a more precise test of the impact of a blockholder's behavior on bondholders because, presumably, the bigger is the family's stake the clearer is its incentive structure (one way or another).

We also apply a related, but more conservative, approach in our definition: we use cut-off points for the family ownership stakes and define a family firm only if the ownership stake is larger than a certain cut-off point. Using this approach, we define a family firm if the family's ownership stake is at least 10%. This approach, besides being more conservative, has also the advantage that it standardizes the way a family firm is defined over the entire dataset we use.

Finally, one different way through which a family can exercise its power position is through its presence in the firm's management, irrespective of the actual stake of its ownership. To implement this approach, we use a dummy variable that will take the value of 1 if a family member is in active management and 0 otherwise.

We next discuss the potential problems with the way we define institutionally-held firms. The main issues related to the way we measure the presence of an institution – specifically whether we should capture this through a dummy variable or through ownership or control stakes – are the same as we discussed above for family firms. We follow the same approach, where we use both the cash flow rights and the voting rights (in percentage) and a dummy variable.

2.2 Discussions of the Different Ownership Definitions

We next discuss the potential problems that may exist from using two different datasets – one collected by us on Fortune 500 and ADRs and another collected by Faccio and Lang (2002) – on the results. These problems may exist because of different definitions used to discover the firm's ultimate owner.

The first such difference is the control cut-off used by Faccio and Lang to define ultimate blockholding. There is a control cut-off of 10% and another of 20% while no such cut-off point is used to collect data for the Fortune 500 and ADR firms. Although we use the 10% cut-off when we use the Faccio and Lang dataset, we still have to explore how this cut-off may influence the results. Essentially what this cut-off produces are cases where the ultimate owner is a family that, although it has less than 10% of voting rights, it may have sufficient power over the corporate decisions and resources. Existing literature (Shleifer and Vishny, 1997) has already shown that in the presence of atomistic shareholders, a blockholder that is sufficiently large can have a disproportionate impact. In such a case, we may be defining a firm as a widely-held firm even though it is really a family-held firm. This may, in turn, have an impact on our results because it will incorrectly classify certain firms.

What is the likely magnitude of such cases? We argue that the number of such cases should be very low because any family presence in small and medium sized firms – which are precisely the type of firms with the biggest presence in the Faccio and Lang dataset – is normally large and should be higher than 10% of the votes. The findings of existing literature point out to a clear result where family ownership is typically decreasing in firm size.

Having said this, we should explore further any impact of this cut-off on the results. There are two possible alternatives. First, let us consider the case where a family controls the firm's decisions even when it has less than 10% of the cash flow rights and assume that

control motives do influence the firm’s capital structure. In this case we will be erroneously measuring the leverage of the group of firms that are classified as widely-held. In this case the leverage measure of widely-held firms will be “artificially” higher than it is in reality because of the erroneous classification of some firms that should be considered as family firms but instead are classified as widely-held.. In this case, however, we will bias the results *against* the control motive hypothesis. The second alternative to consider is the case where risk motives, and not control motives, matter. In this case a family blockholder may be decreasing, not increasing, leverage. In turn that means that the leverage measure of widely-held firms that we use may be “artificially” lower than it is because of the erroneous ownership classification of some firms. In this case, we will bias the results in favor of the control motive hypothesis. It is the latter issue that calls for appropriate checks.

We check the robustness of our results by applying a common definition of a family presence over the entire dataset where we define a family firm only when the family’s voting rights is at least 10%. In such a case, we will be classifying some Fortune 500 and ADR firms as widely held when a family presence is substantial but less than 10%.

2.3 Definition of Leverage

Given the different definitions of leverage that has been used by existing literature, it would be appropriate to define what we mean by leverage in the context of the incentives of a blockholder.

We use two basic definitions of leverage, widely used by existing literature, to carry out our regression models. First we use Book Leverage, defined as:

$$\frac{\text{Long Term Debt} + \text{Debt in Current Liabilities}}{\text{Total Assets}}$$

and we also use Market Leverage (referred to as Market Leverage 1), defined as:

$$\frac{\text{Long Term Debt} + \text{Debt in Current Liabilities}}{(\text{Long Term Debt} + \text{Debt in Current Liabilities}) + \text{Market Equity}}$$

We use these two basic definitions of leverage mostly to be consistent with the measures employed by the vast literature on capital structure. These measures will provide us with a useful benchmark. In this way, we can better assess whether control motives, besides all other variables that have been proposed by the literature, matter for capital structure decisions.

Furthermore, following Flannery and Rangan (2004) we also use two additional variations of Market Leverage. We define Market Leverage 2 as:

$$\frac{\text{Long Term Debt} + \text{Debt in Current Liabilities}}{\text{Total Assets} - \text{Book Equity} + \text{Market Equity}}$$

and Market Leverage 3 as:

$$\frac{\text{Total Liabilities}}{\text{Total Liabilities} + \text{Market Equity}}$$

The coverage ratio - the ratio of earnings before interest and taxes (EBIT) to interest expense - is one relevant measure of the risk faced by shareholders in the case they cannot service debt commitments and hence losing control over the firm. This measure, however, assumes that the investments have to perfectly compensate depreciation for the firm to continue as a going concern. If this condition is not required, then a more valid measurement no such investments are needed, a better measure of the firm's ability to service debt commitments is the ratio of EBITDA (earnings before interest, taxes, and depreciation) to interest expense. The main problem with using these two measures is that they both suffer from the underlying assumption that short term liabilities and short term debt can be rolled over automatically.

We proceed as follows: Book Leverage and Market Leverage will be our basic measures of leverage and we report all the results using these two measures. However, given the international nature of our research, as we discuss in Section 3.4, and given that different measures of leverage can capture different dimensions of leverage, we also use the other measures of leverage described above. This can be seen as a robustness check for our basic regressions.

2.4 Issues with International Comparisons

International data offers important benefits for our knowledge of capital structure decisions but also costs. This paper, like others that use international comparisons, labors under significant problems emanating from different disclosure regimes and different accounting standards that may influence our measures of leverage. We have to investigate these differences and assess the potential impact on the results of our paper.

First, the accounting items that get included and excluded from a balance sheet differ across different countries. Lease reporting is one example. The other example is given by the funded and unfunded parts of the pension liabilities. For example, Rajan and Zingales (1995) report that in Germany, accounting practices allow firms to have higher provisions for future potential liabilities and this item can be used to smooth accounting items. Alford et al. (1993) report that German earnings may be less representative of the true earnings. Suffice to mention that Rajan and Zingales (1995) report that 29% of the German firms' liabilities are included in the category of "Other Liability" when in no other country does this item represent more than 8%.

Second, firms in different countries may value assets – whether at historical cost or current value – differently. Nobes and Parker (1991) report that German firms use a more conservative approach to value assets and this may mean that such firms will understate asset value compared to similar firms in other countries.

Third, we have to consider the impact of reporting consolidated against unconsolidated balance sheets. When unconsolidated balance sheets are used, a firm will report a subsidiary's net assets as long term investments on their balance sheet, hence giving the impression of lower leverage than a comparable firm that uses consolidated accounting. Related to the consolidated accounting issue, we also know that in the case of unconsolidation firms can act strategically and place debt in obscure subsidiaries and then use intra-firm trade credit to borrow it back. In this case, such firms will show lower leverage than they effectively have.

Rajan and Zingales (1995) found that the majority of firms in the Group of 7 countries carry out consolidated accounts, with Germany and Japan being the countries with the least number of firms reporting consolidated accounts (about 76% of firms). The trend has been for more firms reporting consolidated balance sheets and since in our dataset we

have US firms, ADR firms and firms from Continental Europe this problem may not be severe.

What are the possible impacts of such inter-country differences on our research agenda that tries to understand whether closely-held firms have different capital structures compared to widely-held firms? For sure, these accounting differences may influence the measures of leverage across countries. How do we control for this? We take care of such differences by using country dummies and country-fixed effects. These measures should provide comfort that any results we find are not driven by differences in accounting techniques across countries. These accounting differences should only influence our results only if, within a particular country, widely-held firms use different techniques than closely-held firms. There is nothing in the existing literature that shows that this happens and hence it is reasonable to expect that our results, obtained after controlling for inter-country differences, should not suffer from different accounting measures.

2.5 Investor Protection Environment

One major component of our research project is the hypotheses on how capital structures differ across different minority shareholders' rights. Hence, we have to use a measure that captures the different shareholders' rights across different countries. Consistent with existing literature, we capture the investor protection environment through various well-established indices, namely (a) Shareholders' Rights Index, (b) Legal Environment, and (c) Rule of Law.

We use the Shareholders' Rights Index as the basic measure of minority shareholders' rights. This index was proposed by La Porta *et al.* (1998) and measures the amount of legal protection given to minority shareholders against the power of managers or blockholders in the corporate decision making process.

Legal Environment (henceforth "Legality") is derived from a principal components analysis of the covariance matrix from the efficiency of the judiciary system, rule of law, corruption, risk of expropriation, and the risk of contract repudiation. This measure is obtained from Berkowitz, Pistor, and Richard (1999). The Judicial Efficiency variable is measured as the assessment of the efficiency and the level of integrity of the legal environment and the way such characteristics influence business. This index is produced by

the country risk rating agency International Country Risk (ICR) and obtained from La Porta et al. (1998). High scores represent higher efficiency levels. Rule of Law is the law and order tradition in the country and is obtained from La Porta et al. (1998).

As expected, the correlation between the various indices is very high and this provides some comfort that results are not being driven by the use of a specific index. For example, the correlation between the Legality Index and the Shareholders' Rights Index is 0.71 at the firm level (all 32,735 observations), 0.74 at the firm level (3,608 firms), and 0.83 at the country level (36 countries).

Given this correlation structure, we proceed as follows. We use the Shareholders' Rights Index as our base case measure, since it captures better the rights of minority shareholders. We check the robustness of our results using the Legality Index which provides a very important advantage since it includes both protection laws (including the risk of expropriation and of contract repudiation) and their enforcement.

2.6 Sample Characteristics

Table 2 provides descriptive statistics for firm-level characteristics of the 3,608 firms used in this paper.

[Insert Table 2]

Panel B shows descriptive statistics for financial and ownership data. The mean Book Leverage is 25.06% with a median of 22.06% while Market Leverage 1 has a mean value of 27.53% and a median value of 22.73%. These figures are very close to what existing literature has found for US firms. For example, Lemmon, Roberts and Zender (2006) investigate non-financial US firms in CRSP over the period 1971 and 2003 and find a mean value for Book Leverage of 27% (median is 24%) and for Market Leverage of 29% (median of 23%).

One characteristic of the leverage ratios that should be highlighted at this point is the high skewness of these measures. For example, the skewness of the Book Leverage is 10.30, that of the Market Leverage 1 is 0.79, that of Market Leverage 2 is 1.02 and that of Market Leverage 3 is 0.15. Standard tests show that, at least for the first three measures, we have significant skewness.

Using our definition of family firm (based on family ownership, irrespective of the ownership size), we find that 32% of the final sample firms have a founding family in their ownership structure while 21% have an institutional blockholder as an ultimate owner.

Turning to Panels C and D, we find a number of very interesting differences between family-owned and non-family owned firms. The average family-owned firm has a larger mean Book Leverage (25.4%) compared to the average non-family firm (24.09%). The same picture emerges when we use the other measures of Market Leverage. This provides some preliminary indication that, since families would want to keep control of their firm, they prefer to finance investments through debt rather than diluting their part through the issue of new equity.

Using various measures of firm size, such as market capitalization, total assets or total sales, we find that family firms are smaller than non-family firms (\$1.3 billion of market capitalization for family firms, versus \$4.9 billion for non-family firms). Equally important, the average Tobin's Q (and also the Market to Book Ratio) of family firms is greater than that of non-family firms (2.14 for family firms, versus 1.88 for non-family firms). This shows that family firms are perceived to have higher growth potential than non-family firms and is consistent with recent empirical evidence for US firms. In terms of firm performance, measured as Return on Assets (henceforth "ROA") we do not find any statistical difference between family firms (with an ROA of 4.4%) and non-family firms (with an ROA of 4.3%). When we look at the median ROA, we find that non-family firms have higher ROA than family firms. This conflicting evidence is very much in line with existing international literature which finds very ambiguous results on the accounting performance of family firms in different countries. Family firms also seem to have a lower tangibility ratio, since the mean (median) value of the Plant, Property and Equipment Ratio is 0.38 (0.34) for non-family firms and 0.33 (0.29) for family firms.

Panel C and D show the cash flow rights and voting rights of family blockholders and institutional blockholders. In non-family firms, institutional blockholders have about 9.5% voting rights and 7.6% cash flow rights, which means that certain control enhancing mechanisms – like cross-holdings or pyramids – are being used, at least in certain countries, by these blockholders. Turning to the magnitude of the family presence in family-owned firms (Panel D), we find that the mean family cash flow rights are 35% and the mean voting rights are 40%, again confirming the (limited) use of pyramids and other control enhancing

mechanisms. We also find that the family is in active management in about 57% of the firms that we define as family-owned. There is a small presence of institutional blockholders in family-firms: on average, these blockholders have 2% of the cash flow rights and 3% of the voting rights in family firms. This implies that any monitoring role that such blockholders could have – assuming that they carry out such a task – is very much limited in family firms. Having said this, it needs to be seen whether a non-family blockholder inside a family firm influences the behavior and incentives of the family.

2.7 Variables Used

We next discuss the variables that have been found by existing literature to influence capital structure (beside ownership) and for which we need to control. We follow existing literature and classify control variables as follows:

(a) Firm Characteristics

Various firm characteristics have been found to influence the choice of capital structures (see Barclay, Smith, and Watts (1995), Barclay , Morellec, and Smith (2004), Bradley, Jarell and Kim (1984), Harris and Raviv (1991), Hovakimian et al. (2001), Leland and Pyle (1977), Lemmon and Zender (2004), Rajan and Zingales (1995)). In particular, the following variables have been found as contributing to the determination of capital structure and we control for them: (i) Asset Tangibility, (ii) Growth Opportunities, (iii) Firm Size, and (iv) Profitability.

We measure the asset tangibility through the ratio of Net Property, Plant and Equipment to Total Assets. To check the robustness of our results we also run the models using the ratio of the firm's Intangible Assets to Total Assets. We measure the firm's growth opportunities using the Tobin's Q and checking the robustness of the results using also the Book-to-Market Ratio. We also use the expenditure on Research and Development (Research and Development Expenditure to Total Assets). Firm size is measured as (log) Total Assets and we check the robustness using (log) Sales. The firm's profitability is measured as the Return on Assets (ROA).

(b) Stock Returns

Welch (2004) shows that if we construct an Implied Debt Ratio, which assumes no new issuance of debt and/or equity, we should find that this variable explains almost completely the firm's actual capital structure. This result shows that firms do not have any target capital structure but rather allow leverage to drift automatically with stock returns. Liu (2005) argues that any optimal leverage that may exist should also change with stock returns and shows that the past returns variable used by Welch (2004) can be almost entirely explained by the returns in the most recent years.

While not wanting to enter into the debate about the existence of an optimal capital structure, one can see value in adding the most recent stock returns to control for any effect that either comes from management leaving leverage to drift with stock returns or the effect of a change in the optimal leverage caused by returns. To capture the effect of stock price changes on the capital structure decision, we use the firms' stock returns measured as the cumulative stock returns over the previous two years.

(c) Persistence of Capital Structure

Recent literature has debated the issue of persistence of capital structures and any adjustments towards the target leverage ratio. Persistence is important because if it exists then history – at least, lagged capital structure - matters for our understanding of today's leverage. On one hand, Flannery and Rangan (2005), Altı (2005), and Hovakimian (2005) conclude that firms respond fairly quickly following shocks that may change the capital structure. On the other hand, Shyam-Sunder and Myers (1999), Fama and French (2002) and Huang and Ritter (2005) show that firms have a very slow response in adjusting their capital structure. In the case of a fast response, we can conclude that historical leverage does not matter to explain today's leverage and this implies that any model trying to explain capital structure has to look, exclusively, to the present costs and benefits along the lines of the static trade-off theory. If, on the other hand, persistence exists then we have to control for historical capital structures.

Lemmon, Roberts and Zender (2006) use all non-financial firms in CRSP over the period 1971 and 2003 and find persistence in capital structure in the sense that “on average, firms that have high (low) leverage today tend to remain relatively high (low) levered for

over twenty years.” This result is very important for our purpose and it suggests that, whether persistence is present or not, we should control for the history of capital structure.

We capture the persistence and adjustment of capital structure using the lagged capital structure at year $t-1$. In some specification we will also use the same approach used by Lemmon, Roberts and Zender (2006), i.e. we use the first observation of the capital structure for each firm in each regression analysis we undertake.

(d) Corporate Tax Rates

Corporate tax rates create a debt tax shield that should, at least in theory, influence the debt and equity mix. Different corporate tax rates across countries should influence the amount of debt that can be optimally used by firms. Having said this, existing empirical literature, in particular Mayer (1990) on international capital structure differences finds no role for taxes in the determination of capital structure.

Rajan and Zingales (1995) claim that such a conclusion may not necessarily be true because, as Myers (1977) shows, one has to consider not just corporate tax rates but also personal taxes and it is the product of these two taxes that should matter. It is highly difficult to reach some kind of conclusion on this point because any result will be highly sensitive to the personal marginal tax used in the analysis. Obviously, personal marginal taxes are notoriously difficult to obtain and to work with. We use, however, corporate tax rate to control for any debt tax shields that may make debt more favorable to equity, at least across countries. We use the country-specific Top Corporate Tax Rate obtained from the Economist Intelligence Unit dataset.

(e) Credit Ratings

So far, the control variables listed in (a) to (d) above have looked to control for variables emanating from the demand side (i.e. from the firm), on the determination of capital structure. The implicit assumptions of this view is the infinite elasticity of the supply of capital at the correct price and that the only factors influencing the cost of capital are the firm’s characteristics. There is an emerging literature that looks at the supply side, i.e. on the behavior of finance providers, specifically on market frictions, and the impact on capital structure. Let us consider, as an example, information asymmetries, which have been found to matter for capital structure. This factor should not only influence the behavior of firms but also whether or not they are rationed by finance providers. Faulkender and Petersen (2006)

make this point and argue that “...when estimating a firm’s leverage, it is important to include not only the determinants of its preferred leverage (the demand side) but also the variables that measure the constraints on a firm’s ability to increase its leverage (the supply side)” (page 46).

Faulkender and Petersen (2006) show that firms with access to the public bond markets, have higher leverage ratios than those that only have access to bank lending. They measure the accessibility factor using two different variables: (a) actual credit ratings obtained by the firm, and (b) the probability that a firm will get a credit rating (the latter implies that certain firms who can get access to public bond markets could decide not to go through this route).

Consistent with Faulkender and Petersen (2006) we use the Securities Data Company database to get information on actual credit ratings of firms.⁸

(f) Creditors’ Rights

Another supply-side factor that may influence the leverage decision is given by the creditors’ rights in a country. Harris and Raviv (1992) suggest that bankruptcy legislation has fundamental effects on any debt contract and as such should be considered as an integral aspect of the debt contract. One way to capture bankruptcy legislation and its enforcement is through creditors’ rights. For example, the strict enforcement of creditor rights should help the *ex ante* contractibility between debt providers and the firm, while committing creditors to take action against management, and in our context blockholders, in the case of financial distress. In such a case, managers would want to work hard to avoid the possibility of financial distress. The bottom line is that creditor rights should have an impact on the amount of debt issued, and the type of debt issued (senior versus junior, bank debt or bonds, etc.) Rajan and Zingales (1995) find that countries with the best enforcement mechanisms for the *ex-ante* contract are the ones where firms have the lowest leverage ratios and they ask: “...do firms efficiently maintain low leverage because the bankruptcy code results in too much liquidation of viable firms? Or do firms inefficiently maintain low leverage because managers fear losing their firm-specific human capital investment if the firm is liquidated?”

Creditor rights differ significantly across countries and hence it is reasonable to assume that the interaction and dynamics between debt providers and firms, and any

⁸ We plan to calculate the probability of a firm getting a credit rating in the spirit of Faulkender and Petersen (2006) in the future.

influence on capital structure, is likely to change across different countries. We use the Creditor's Rights Index, proposed by La Porta *et al.* (1998).

(g) Industry, Time and Country Dummy Variables

We also use Industry Dummies, to control for industry-specific factors that may influence capital structure, and Year Dummies, to control for any time-series movements that may have occurred in the equity and debt mix.

2.8 Econometric Methodology

To test our hypotheses, we carry out two types of regression methodologies. First, we use a *cross-sectional regression* where we use only one observation for each firm. This is the most natural way to test our hypotheses since our argument is essentially a cross-sectional one. In such a model, we use the ultimate ownership/voting stake (blockholder dummy) variable – henceforth denoted as BH - to measure the impact of the blockholder type on leverage as follows:

$$\text{Capital Structure}_{i,c,t} = \alpha \text{BH}_{i,t-1} + \lambda X_{i,c,t-1} + \delta Y_{c,t-1} + \varepsilon_{i,c,t} \quad (1)$$

where for the Capital Structure we use the different leverage measures for firm i , from country c and in year t ; BH is a measure of the ultimate owner's presence (ownership, voting or dummy variable) in each firm i in year $t-1$; X is a set of firm-specific control variables in year $t-1$; and Y is a measure of country-specific control variables in year $t-1$. The impact of the ultimate owner on leverage will be measured from the coefficient estimate α .

We pick up the single firm observations in different ways. Our base case scenario is the one where we use the first observation of each firm in the dataset that we can use given the constraints imposed by the structure of the independent variables. Recall that, consistent with existing literature, all independent variables, with the exception of stock returns, are measured over year $t-1$. Stock returns require two years and are measured over years $t-2$ and $t-1$. This means that for most stocks the first observation of the debt ratio that we can use falls in 1996. We check the robustness of these results in two different ways. First, we use the last observation of each firm, which for most firms occur in 2000. Second, we use a random observation for each firm over the period 1996–2004. In each regression we include industry

and country dummy variables. In each case, the total number of observations in each regression is 3,608.

Second, we use the panel dimension of our dataset and in this way we can get closer to the typical methodology used by the capital structure literature. Given the same constraints imposed by the nature of the independent variables on the regression methodology mentioned above, we can only use the capital structure observations over the period 1996-2000. Hence, we will use 25,519 out of the potential 32,735 firm-year observations. Such a regression, while providing us with various benefits, presents some problems that need to be addressed as we discuss below.

We investigate for any within-economy correlations that can potentially bias our results using the Breusch and Pagan (1980) Lagrange multiplier test. The test does not reject the null hypothesis of independent errors within single countries. This means that we can technically use the 25,519 firm-year observations in a panel regression using a country fixed effects specification. This approach has also the advantage that it can also control for various country-specific factors, such as capital market development and ease with which firms can issue debt and equity instruments.

Although a country fixed effect specification is technically possible, we decide to be more restrictive and use a firm fixed effect specification. The main advantage provided by this specification is that it takes into consideration any unobserved heterogeneity that may exist at the firm level and that may influence the capital structure decision. We check the robustness of the results using four further specifications: (a) a firm and country fixed effect approach in order to take into consideration any unobserved heterogeneity at the firm and country level⁹, (b) a country fixed effect specification, (c) an industry fixed effect specification, and (d) an industry and country fixed effect specification.

An integral part of our analysis is how different shareholders' rights may influence the control motivations of blockholders. To investigate this issue we use a specification with two variables of interest: (a) the ultimate ownership/voting stake (blockholder dummy) variable, and (b) an *interactive variable* between the ultimate ownership/voting stake (blockholder dummy) variable and the Investor Protection Index as follows:

⁹ It can be argued that the level of development of capital markets of each country may influence the ease with which debt or equity can be issued and the related costs.

$$\text{Capital Structure}_{i,c,t} = \alpha \text{BH}_{i,t} + \beta [\text{BH}_{i,t-1} \times \text{Rights}_c] + \lambda X_{i,c,t-s} + \delta Y_{c,t-1} + \varepsilon_{i,c,t} \quad (2)$$

where the variables have the same meaning as in (1) above and Rights is the Shareholders' Rights Index measuring minority shareholders rights for each country c . In this type of regression, the impact of the ultimate owner on capital structure will vary across the different investor protection regimes and will be the total effect of the two coefficient estimates, α and β .

We have two different specifications for the model in (2) above. First, a cross-sectional specification, where we repeat the same procedures as we did to test the model in (1) above and using 3,608 observations. Second, a panel regression with 25,519 firm-year observations over the period 1996-2004.

One potential problem in the panel regressions in (1) and (2) is the relative time-invariance of the variables that measure the presence of a family, and the country-level control variables. Consistent with existing literature, we find that the family and institutional ownership do not change significantly across time. We do see changes in the family ownership across time, since we consider a very long period of time, but we never see any significantly large change in the ownership structure. The only variable that is truly time-invariant is the measure of minority shareholder rights.¹⁰ The relative time-invariance of these two variables could possibly bias results obtained from a panel regression, because this type of regression can measure with precision only the impact of variables that change through time. In our case, given that there are small changes in the family's ownership, both this ownership variable and the interaction term will experience (minimal) changes through time. However, we have to address this problem and check the robustness of our results.

We also have to consider the potential problems that could be encountered in the type of estimation (1) above as mentioned by Bertrand, Duflo, and Mullainthan (2004), possibly resulting in inconsistent standard errors. In our case, the problem may potentially originate from the interaction variable that changes very little within one country over time. We solve such problems using two solutions mentioned above. First, the clustering correction at the firm level should produce consistent standard errors. Second, as suggested by Bertrand *et al.* (2004) we collapse the data to a single observation for each firm, using the mean and the

¹⁰ It is precisely because of its time-invariance that we drop the variable measuring external governance (Shareholders' Rights Index) from the set of independent variables when estimating equation (2). The absence of this variable is not likely to cause any biases because all specifications contain the variable Log GDP per Head, which is highly correlated with measures of external governance.

median values of all the variables for each firm over the period under consideration, and run a cross-sectional regression.

3.0 Results

We next discuss the main results found from using various econometric specifications. Table 3 shows the results using the cross-sectional dimension of the dataset, using the first observation for each firm. The results obtained from using the last observation, and a random observation, for each firm are similar to those in Table 3 and are not reported to the sake of brevity. The Table shows the impact of family presence – measured with a dummy variable (first column), cash flow rights (second column) and voting rights (third column) - on Book Leverage and Market Leverage. Recall that the control hypothesis predicts a negative sign for the coefficient estimate of the family presence. On the other hand, the risk hypothesis predicts a positive sign for the coefficient estimate for the presence of family blockholders.

[Insert Table 3]

All coefficient estimates for the family presence, whether the presence is measured through a dummy variable or cash flow or voting rights, are positive and have statistical significance. This is consistent with the control motivation hypothesis and rejects the risk hypothesis. The impact has also economic significance. In fact, if we use the dummy variable to capture the family's presence we find that family blockholding increases Book Leverage (Market Leverage) by 2.29% (3.61%). Since we know that the average Book Leverage (Market Leverage) is 24.25% (26.53%) the presence of a family increases leverage by nine (thirteen) percentage points. This result is significant on its own, but becomes more so when considering that we have controlled for all the variables (both on the demand and supply side) used so far by the literature on capital structure.

The signs of the control variables are as expected, with most of them being statistically significant. The results we obtain for the control variables are consistent with those obtained by the existing literature. Firms with higher profitability – measured by the Return on Assets – have lower debt ratios, whether measured by book or market values. This is in line with the pecking order theory that suggests that more profitable firms will use retained earnings to finance new investments, rather than using equity or debt issues.

Explained differently, in the case of a zero financial deficit, profitable firms are in a better position, relative to less profitable ones, to use retained earnings to reduce their leverage.

Leverage is also found to be positively correlated with size, measured by the Log of Total Assets. This result is consistent with the results obtained by Graham, Lemmon and Schallheim (1998), and Hovakimian, Opler and Titman (2001). Larger firms are generally less risky and have presence in different sectors, making them more diversified, making them less prone to bankruptcy risk. In this way they can issue more debt relative to smaller firms that may face larger financial distress costs.

The firm's asset tangibility, as measured by the Net Property, Plant and Equipment to Total Assets, is also a factor influencing the capital structure in the same way as found by existing literature. Firms with more tangible assets can support higher debts in their balance sheet and they are found to do so. In the same way, firms with higher intangible assets, in the form of the Research & Development Ratio, have lower debt ratios. Hence, these two factors are giving us results consistent with the tradeoff theory. Furthermore, firms with high growth opportunities, as measured by Tobin's Q, have lower debt ratios.

The impact of the two-year cumulative stock returns are found to have a negative impact on both book leverage and market leverage. Using Welch (2004) interpretation, the negative impact on the market leverage means that firms in our sample tend not to rebalance leverage after periods of either increasing or decreasing prices. On the other hand, the negative impact on book leverage means that firms tend to make equity issues at a time when they experience high market valuations.

Looking at the supply side of the capital structure decision, namely the Shareholders' Rights Index and the Credit Constraint, we find that these mostly influence the book leverage. Both variables have positive, and statistically significant impacts on book leverage, but the impact for Credit Constraints loses its significance when we consider market leverage. The lack of significance for the Credit Constraint variable in some of these specifications may be due to two different factors. First, as stated by Faulkender and Petersen (2006) looking at just actual credit ratings may be underestimating the actual financial situation of a firm. If a firm does not decide to issue bonds, perhaps because it has enough internally generated funds or because of lack of investment opportunities, then it will not have any credit rating. But this does not mean that its financial status is bad. Second, actual

credit ratings may be collinear with the Shareholders' Rights Index. Countries with high minority shareholders' rights also tend to have high creditors' rights and these two factors should make it easier for firms in such an environment to issue debt (and equity). This, in turn, means that firms in countries with higher level of shareholder and creditor rights are more likely to have a credit rating, leading to a possible collinearity between the Shareholders' Rights Index and Credit Constraints.

It is also important to note that our results are obtained after controlling for the Shareholders' Rights Index and country-level dummy variables. These two set of control variables together will control for (a) the level of protection of minority shareholders, and (b) any country-specific factor that may influence the different level of financial development, issuing methods, etc. at a country level.¹¹ For example, firms incorporated in highly developed capital markets should have access to cheaper finance. The impact of the Shareholders' Rights Index is not clear. While it has a positive and statistically significant impact on book leverage, its impact, while positive, is not statistically significant when we consider market leverage.

[Insert Table 4]

Table 4 shows the results using the 25,519 firm-year observations in a panel regression. In this type of specification we use various other control variables that were not used in the cross-sectional specification. We use (a) lagged capital structure (leverage ratio at t-1), (b) year dummy variables, and (c) the corporate tax rate. We employ a firm fixed effect specification. The results are very similar to those obtained with a cross-sectional specification. Family firms, whether the family presence is captured through a dummy variable, cash flow rights or voting rights, increase the firm's leverage after controlling for all the other variables that have been used by the literature.

Table 4 allows us to look at the impact of the two variables that were not included in the cross-sectional regression. First, the coefficient estimate on lagged debt ratios, whether book or market values, have positive signs consistent with existing literature. Second, the corporate tax rate does not have any impact on the capital structure.

¹¹ We also run the same specification as shown in Table 3 but, rather than using country dummy variables, we use either the Log GDP Per Head, or the Ratio of Stock Market Capitalization to GDP. The main results do not change.

We should also mention that we run the same panel specification using the first capital structure observations for each firm as one of the independent variables as proposed by Lemmon, Roberts and Zender (2006). For most firms, the first available observation falls in 1994. This observation remains constant for a single firm over the period 1996-2000 and, hence, it takes the meaning of a firm fixed effect. This means that we cannot use the first observation of the debt ratio in the firm fixed effect specification and that we can only use it when we have the other fixed effect specifications mentioned above. The results obtained from these specifications are in line with those obtained by Lemmon, Roberts and Zender (2006). This variable is found to have a positive impact and high statistical significance, indicating clearly that history does matter for today's capital structure.

To check the robustness of these results, we run the same model using (a) first, a country fixed effect specification, (b) second, a firm and country fixed effect, (c) third, an industry fixed effect, and (c) an industry and country fixed effect. The results from these specifications are similar to those obtained with a firm fixed effect.¹²

Table 5 shows the impact of different minority shareholders rights on the behavior and incentives of a family to choose debt over equity. Recall that we argued that if control motives matter for the choice of the capital structure, then it should matter most in those countries where losing control will be the most costly for the family.

[Insert Table 5]

In Table 5 we show the results from equation (2) above where we have (a) family presence, and (b) an interaction term between family presence and the Shareholders' Rights Index. If our argument on control motivation holds, then we should expect the coefficient estimate of the family variable to be positive while the coefficient estimate for the interaction variable should be negative because as minority shareholder rights become stronger (higher Shareholders' Rights Index) the lower is the incentive to have higher leverage.

We look at the impact generated by the two sets of variables together: (a) Family Presence, and (b) Family Presence x Shareholders' Rights Index. In this way we can analyze how, if at all, the family's impact on leverage changes through different minority shareholder rights environments. When we analyze the two variables individually, we find that the

¹² We also run all specifications using the leverage measures of Market Leverage 2 and Market Leverage 3. The results do not change when we use these dependent variables.

presence of a family in itself increases leverage, consistent with what we have found earlier. However, the interaction term between the family presence and Shareholders' Rights Index is negative, meaning that the better the investors' protection regime the less will the family's presence increase leverage. In order to find the exact impact of the family blockholding across the different investor protection environments we need to get the *net effect* of these two individual variables. Doing so, we find strong evidence that the presence of a founding family in low protection environment is associated with higher cost of debt while in higher protection environments having a family in the ownership structure leads to lower debt costs.

Analyzing the second column (using cash flow rights) in Table 5 we can notice that a family firm incorporated in a country with the lowest Shareholders' Rights Index measure (with a value of 1) increases book leverage by 2.1% against the 0.7% increase in leverage for a family firm incorporated in a country with the highest Shareholders' Rights Index measure (with a value of 5).¹³ The result is the same when we consider market leverage. This result, however, is obtained assuming the same level of family ownership (cash flow rights and voting rights) in low and high legality countries. The same results are obtained when we substitute the Shareholders' Rights Index with the other available indices, i.e. (a) Legality Index, (b) Rule of Law, and (c) Judicial Efficiency.

We also analyze the impact of minority shareholders' rights in a different way to check the robustness of our results. To do so, we estimate the following equation for each country that has enough observations to generate unbiased estimates:

$$\text{Capital Structure}_{i,c,t} = \alpha \text{Family Presence}_{i,c,t-1} + \lambda X_{i,c,t-1} + \varepsilon_{i,c,t} \quad (3)$$

where the variables have the same meaning as in (1) and (2) above. From this regression, we obtain an estimate for α for each country. Following this, we regress each country's α on country-level characteristics, such as the Shareholders' Rights Index and the Legality Index in the following regression:

$$\alpha_c = \lambda X_c + \varepsilon_c \quad (4)$$

¹³ The calculation is done in the following way. The impact on leverage in a family-owned firm, where the family's ownership stake is 34.78%, operating in a country with the lowest Shareholders' Rights Index measure (a value of 1) is $[(0.0007 \times 34.78) + (-0.0001 \times 34.78 \times 1)] = 0.021$. Leverage for the same type of family-owned firm operating in a country with the highest Shareholders' Rights Index measure (a value of 5) is $[(0.0007 \times 34.78) + (-0.0001 \times 34.78 \times 5)] = 0.007$.

Figure 1 is a graphical representation of the estimated model in (4) above, using the Legality Index. The same results are obtained when we use the Shareholders' Rights Index.

[Insert Figure 1]

Figure 1 contains the actual coefficient estimates for 27 countries in our sample (not all 36 countries can be captured because some countries have too few observations in the panel dataset to produce unbiased coefficient estimates) and the predicted relationship from the model (4) above. The picture that emerges from Figure 1 shows that the coefficient estimating the family's impact on leverage decreases monotonically as minority shareholders rights become stronger.

We now turn our focus on the impact of institutional blockholders on the capital structure decision. We argue that institutional blockholders should not have the same level of control motivations as family blockholders. Institutional blockholders have, usually, a shorter horizon for their investments relative to that of family blockholders. Likewise they are more likely to be interested in the stream of cash flows generated by their investments than any control benefits that come out of their shareholding. These arguments indicate that leverage is not increased because of control motivations in firms that have an institutional blockholder as their ultimate owner. On the other hand, since institutional blockholders tend to hold well diversified portfolios (this being another difference relative to family blockholders), we can also reasonably assume that the risk reducing motivations discussed above should not apply. The results, using a cross-sectional specification with 3,608 observations, are shown in Table 6.

[Insert Table 6]

The evidence shown in Table 6 indicates clearly that there is no impact of institutional blockholders on capital structure decisions. For most of the specifications using model (1) above, the coefficient of the institutional blockholder, whether this is measured with a dummy variable, or cash flow or voting rights, is negative but has no statistical significance. The same results emerge from using a panel regression, with the entire 25,519 firm-year observations.

These results show that institutional blockholders produce a different impact on capital structure relative to family blockholding. This difference should be driven by the different economic objectives and behavior of these two blockholders.

In summary, aggregating together the results found in Tables 3-6 above and the results obtained by Berger, Ofek and Yermack (1997), we end up with a clear ranking on the impact of blockholders on capital structure. Family blockholders, consistent with control motivations, tend to increase leverage, institutional blockholders have no impact, and entrenched managers, consistent with the risk reduction motives, tend to decrease leverage.

3.1 Further Results

There are different channels through which family blockholding can influence the capital structure decision because there are different roles that a family can occupy within a firm. Hence, we should ask whether the family's positive impact on debt materializes through its ownership stake or through its managerial role, if any. The clearest impact can occur in the latter because it is management that should have the biggest impact on the corporate decision making process. Ownership without a direct representation in the firm's active management can only have an impact through close monitoring of management. These considerations call for an investigation on what really matters: family ownership or family management? Table 7 shows the impact of family ownership and family management using a panel regression and 25,519 firm-year observations using both a firm and country fixed effect specification (results shown in columns 1, 2 and 3) and a firm fixed effect specification (results shown in columns 4, 5 and 6).

[Insert Table 7]

The results show that family ownership still has a significant impact, but even family management has a positive impact (statistically and economically significant) on debt ratios. Comparing the coefficients of family ownership in Table 7 with those in Table 4 above, we conclude that the inclusion of family management reduces significantly the economic and statistical significance of family ownership. For example, family's cash flow rights and voting rights are only significant at the 10% confidence level, while the statistical significance of the family management is at the 5% confidence level. This result implies that both ownership and management produce an impact on the capital structure decision, but the biggest impact emerges from the management rather than ownership.

The coefficient estimate on Family in Management is important when we compare it to the results obtained by Berger *et al.* (1997). Family managers are the quintessential type of

entrenched managers. While Berger *et al.* (1997) found that entrenched managers reduce leverage, we find that a particular type of entrenched manager – a family manager – increases leverage ratios.

The results found in Table 7 call for a deeper investigation on how family ownership and management interact together to generate the impacts we are finding. One area that requires investigation is the use of control-enhancing mechanisms, such as pyramids and cross-shareholdings, by the family and the influence of such mechanisms on the family's propensity to use capital structure to maintain control. There are various ways in which a control-motivated blockholder can reach its control goals, and capital structure is just one such mechanism. The other approach is precisely using the control-enhancing mechanisms. Then, the question that needs to be addressed is whether capital structure is a complimentary or a substitute to these mechanisms that can be used by a family blockholder to maintain or enhance its control.

It is reasonable to expect that a family that can maintain control through the use of, say, pyramids, may not have a high incentive to also use capital structure as an (additional) way to maintain control. In that case, one can expect that a family blockholder, having an undiversified portfolio, may want to reduce leverage once control is in the bag in some other way. Likewise, a family that has a very large stake in a firm and can exercise control through its stake may have less incentives to leverage up the firm because control can be assured in other ways.

We address these issues in different ways. First we look at the contribution of wedge, over and above the effect generated exclusively by the cash flow and voting rights. We run the model in (1) above using cash flow rights (voting rights) and the wedge together. If leverage is really a substitute for control enhancing mechanisms then we would expect a negative sign for the wedge coefficient. The results are shown in columns 1 - 3 in Table 8.

[Insert Table 8]

While the coefficient of the ownership (dummy variable, cash flow rights, and voting rights) is positive as found before, the coefficient estimate for wedge (Family Wedge) is negative and statistically significant, implying that a family that can keep control through control enhancing mechanisms has a lower propensity to use leverage.

Obviously, control enhancing mechanisms are not the only channels that can be used by a family. There are different dimensions that should be considered. For example, we have to consider whether the family is the only blockholder in the firm or whether there are other blockholders – albeit of smaller size – inside the ownership structure. Recall that some family firms have institutional blockholders in their ownership structure. It is important to know whether a family blockholder behaves differently in the presence of an institutional blockholder. In other words, we need to address the issue of whether the institutional blockholder can discipline family blockholders.

There are two competing forces in this scenario. Control motivations, and with it leverage, become more important when a family is not on its own. In this case, a family blockholder may increase its voting power by increasing leverage. On the other hand, we have to consider the response of the institutional blockholder to this challenge. It is possible that an institutional blockholder may use its power to block such moves.

There are two different measures that we can use to capture this effect. First, we can use a dummy variable that takes the value of 1 when the family is not the only blockholder – albeit it is the ultimate owner - in the ownership structure and 0 otherwise. Second, we can use the difference between the cash flow rights of the family blockholding to that of the next biggest blockholder inside the ownership structure. We do not have any a priori expectations about the sign of the coefficient estimates because the outcome of the conflict between the large family blockholder and the (smaller) institutional blockholder is not clear.

The results are shown in columns 4 and 5 in Table 8. We use the dummy variable (Institutional Blkh. Presence) with both the family's cash flow rights and its voting rights. The coefficient estimate is positive but lacks statistical significance.¹⁴ One way to interpret this result is that family blockholders do not necessarily behave differently when they face an institutional blockholder in the ownership structure.

We also look at the actual size of the family ownership and the impact on capital structure as the family's size increases. From the results shown in Tables 3 and 4, we know that the ownership size has a positive impact on leverage. This, however, leaves open the issue of whether there are any non-linearities in the impact of size on leverage. If the family's ownership is large enough that, by itself, gives the family all the control it needs then we

¹⁴ The same result is found when we use the difference between the cash flow rights of the family blockholding to that of the next biggest blockholder inside the ownership structure.

should not expect that leverage will be used for control purposes. In that case, it is possible that the risk-reducing motives become more important. Hence, there should be a size range over which the family's impact may be either inexistent or even negative. In this way, the impact of ownership size on leverage may be increasing at a decreasing rate.

We introduce non-linearities in model (1) above by using the cash flow rights (voting rights) squared together with the cash flow rights (voting rights). We denote this variable as Family Presence Squared and the results are shown in columns 6 and 7 in Table 8. We find that the sign of the coefficient estimates of the squared term is negative and statistically significant. This result implies that the family's incentives to increase leverage to maintain control increases with size, but it does so at a decreasing rate. Hence, a family owner seems to be using more leverage when its control over the firm is at most risk: that is, when it has a small stake and it cannot achieve control in some other way. As the family's stake become larger, and control over the firm is not as much at risk, the family's propensity to issue debt to maintain control is diminished. Simulations using the results from both the Family Presence and the Family Presence Squared show that the propensity to use leverage for control purposes is biggest when the family's rights range between 25% and 40%.

We also look at two different factors: (a) the family in management, and (b) the family's wedge, which is defined as the difference between cash flow rights and voting rights. The wedge will be positive in the case a family uses control enhancing mechanisms. Having a family in active management, and not just in the ownership structure, makes it significantly easier for the family to increase leverage to maintain or enhance control since the family will have direct access to the firm's decision making process. On the other hand, a positive wedge in the family blockholding may decrease the family's propensity to leverage up for control purposes because control can be assured any way through a pyramidal structure, etc. This will be true if the capital structure decision is a substitute for the control enhancing mechanisms.

Looking at the interaction of these two factors we can classify family firms in four different categories. First, family firms where the family is in active management and makes use of control enhancing mechanisms. Second, family firms where the family is in not active management while it makes use of control enhancing mechanisms. Third, family firms where the family is in active management but it does not make use of control enhancing

mechanisms. Fourth, family firms where the family is neither in active management and nor does it make use of control enhancing mechanisms.

We should expect that the propensity to leverage up is biggest in the third type of family firm, if the capital structure decision is a substitute for the control enhancing mechanisms and family management makes it easier to issue debt. With the same argument, we should expect the family's propensity to increase leverage to be lowest in the second type of family firms. Such argument would leave us with no a priori regarding family firms in the first category (where wedge can temper the ease with which a family may increase leverage) and the fourth category (where the difficulty in influencing firm's decision because of lack of presence in the firm's management can temper the incentive to increase leverage in the presence of no control enhancing mechanisms).

We run the model in (1) above using these four categories of family firms, using both a cross-sectional regression and a panel regression (with firm fixed effects). Columns 1 and 2 use the dummy variable "Family Management and Wedge" that takes the value of 1 if the family is in the firm's management and has positive wedge and 0 otherwise. Columns 3 and 4 use the dummy variable "No Family Management and Wedge" that takes the value of 1 if the family is not in the firm's management but has positive wedge and 0 otherwise. Columns 5 and 6 use the dummy variable "Family Management and No Wedge" that takes the value of 1 if the family is in the firm's management but has no wedge and 0 otherwise. Columns 7 and 8 use the dummy variable "No Family Management and No Wedge" that takes the value of 1 if the family is not in the firm's management and has no wedge and 0 otherwise. The results are shown in Table 9.

[Insert Table 9]

As we hypothesized, the coefficient estimate is biggest (most positive with statistical and economic significance) for the "Family Management and No Wedge" and is smallest (negative and not statistically significant) in the case of "No Family Management and Wedge". The first result implies that a family that does not make use of control enhancing mechanisms but finds itself in the firm's management will use its decision making power to increase leverage for control enhancing purposes. The two results obtained so far would indicate that capital structure is a substitute for control enhancing mechanisms. The result obtained in the case of "Family Management and Wedge" is interesting since the coefficient

estimate is positive (and statistically significant) in the case of family blockholders that have positive wedge. This would indicate that for these firms, capital structure is rather a compliment rather than a substitute to control enhancing mechanisms. This result, however, may be due not so much to the presence of such mechanism but rather to the fact that family's presence in the firm's management may make it easier for a family to increase leverage.

Even though control motives appear to be the best explanation for the results that we find, there may still be other explanations for why family firms increase leverage, different than the control. Zwiebel (1996) provides one possible explanations. In his model, the capital structure is an optimal response used by the managers when faced with the concerns of investment and control. These are precisely the two concerns that are important for the purpose of this paper. In Zwiebel's model debt is used as a credible action management can take to restrict empire building. Applying this result to our context, one can argue that family blockholder, who is always tempted by private benefits extracted from the firm, will use debt not for control reasons but rather to restrict empire building.

One way to test this hypothesis is to look at those family firms that have higher possibilities of undertaking empire building and compare their leverage ratios to family firms with low possibilities. The firm's free cash flows (FCFs) can be easily raided by the family blockholder to either extract private benefits or for empire-building purposes. We divide our family firms in two groups: those with high FCFs (firms with FCFs higher than the median FCFs in the entire sample) and those with low FCFs (firms with below-median FCFs). The results are shown in Table 10.

[Insert Table 10]

The results are shown in columns 1 and 3 (for all firms) and column 5 (for family firms only). Contrary to the main hypothesis in Zwiebel (1996), we find that family firms with high free cash flows have lower leverage ratios. This result is important in itself, because it implies that family firms that generate high free cash flows tend to resort less on outside finance. Hence, we can conclude that the credible signal to restrict empire building is not the reason why we obtain our basic results.

Another possible explanation for the higher leverage of family firms is their possibly higher financial deficit. Frank and Goyal (2003) define financial deficit as follows:

Dividend Payments + Investments – Change in Working Capital + Internal Cashflow (5)

Using this definition we can see that family firms may be among the best candidates to have financial deficits. Families may decide to pay themselves high dividends which will increase the firm's financial deficit. Conversely, families may divert the firm's internal cash flows for their private benefits, which should diminish the amount of internal funds available for investments and hence ends up increasing financial deficits. In such a case, family firms will have higher leverage because they are forced to issue debt due to their financial deficit situation rather than because of control motivations.

We compute the financial deficits as in equation (5) above for all firms and test whether the inclusion of this variable alters our results from the model shown in (1) above. We then focus exclusively on family firms and divide family firms in two groups: those with high financial deficits (firms with deficits higher than the median deficit in the entire sample of family firms) and those with low deficits (firms with below-median deficits). The results are shown in Table 10 in columns 2 and 4 (for all firms) and column 6 (for family firms).

The results show that the coefficient estimate for high financial deficit is positive but lacks statistical significance. First, the inclusion of the financial deficit variable does not change the impact (and significance) of the family presence. Second, it does not appear that family firms with high financial deficits do not have higher leverage relative to those with low financial deficits. Hence, we can conclude that this explanation cannot be used to explain our results.

Section 4. Conclusion

In this paper we investigate whether control motivations of large owners influence the type of capital structure chosen by firms. We identify three stakeholders that should have high control motivations: family owners, institutional blockholders, and entrenched managers. Shareholders that value control over their firm face a clear trade-off: getting external finance to finance the firm's investment and *possibly losing (or diluting) their control*, or keeping control and, in case of insufficient internal funds, passing on valuable investments. We argued that debt can solve this problem because debt allows the entrance of external financiers without diluting control of existing owners.

Using a panel data comprising 3,608 firms from 36 different countries, over the period 1994 – 2004, we find that, after controlling for all other variables that have been found to influence capital structure, (a) family firms have higher leverage ratios than non-family firms, (b) institutional blockholders do not have any impact on capital structure, (c) leverage in family firms is mostly used as a substitute for other control-enhancing mechanisms, such as pyramid structures and cross-holdings, and (d) family firms incorporated in countries with low shareholders' rights tend to have higher leverage than family firms incorporated in countries with high shareholders' rights.

The results for family firms are both statistically and economically significant. We find that although non-family firms have more tangible assets, lower Tobin Q and are generally bigger – all factors that should lead to higher leverage ratios – they have lower debt in their capital structures when compared to family firms.

When we investigate capital structures of family firms in environments characterized with different minority shareholders' rights we find that, as hypothesized, family firms in countries with lower minority shareholders rights tend to have higher leverage relative to those in countries that provide high protection to minority shareholders.

These results clearly reject the risk reduction hypothesis where an undiversified blockholder lowers leverage as a way to reduce the firm specific risk of her undiversified portfolio. On the other hand, the results we obtain are consistent with the control hypothesis where a blockholder increases leverage to maintain or enhance control over the firm's decision making process.

References

- Alford, A., Jones, J., Leftwich, R., and Zmijewski, M., 1993, Relative informativeness of accounting disclosure in different countries, *Journal of Accounting Research* 31, 183-223.
- Anderson, R.C., S.A. Mansi, and D.M. Reeb, 2003, Founding family ownership and the agency cost of debt, *Journal of Financial Economics* 68, 263-285.
- Bagella, A., Becchetti, L., and Caggese, A., 2001, Financial Constraints on Investments: A Three-pillar Approach, *Research in Economics* (2001) 55, 219–254
- Barclay, M.J., Morellec, E., and Smith, C.W., 2001, On the debt capacity of growth options, *Journal of Business*, forthcoming.
- Barclay, M.J., Smith, C.W., and Watts, R., 1995, The determinants of corporate leverage and dividend policies, *Journal of Applied Corporate Finance*, 7, 4-19.
- Berger, P.G., Ofek, E., and Yermack, D.L., 1997, Managerial Entrenchment and Capital Structure Decisions, *Journal of Finance*, 52, 1411-1438.
- Berkowitz, Daniel, K. Pistor, and J. Richard, 2003, Economic development, legality and the transplant effect, *European Economic Review* 47, 165-195.
- Bertrand, M., Duflo, E., and Mullainathan, S., 2004, How much should we trust differences-in-differences estimates?, *The Quarterly Journal of Economics*, 119, 249-275.
- Bradley, M., Jarell, G., and Kim, E.H., 1984, On the existence of an optimal capital structure: Theory and evidence, *Journal of Finance*, 39, 857-878.
- Breusch, T., and Pagan, A., 1980, The Lagrange multiplier test and its applications to model specifications in econometrics, *Review of Economic Studies* 47, 239-253.
- Cheng S., Nagar, V., and Rajan, M.V., 2004, Identifying control motives in managerial ownership: Evidence from antitakeover legislation, *Review of Financial Studies*, 18, 638-672.
- Economist, 2006, All in the Family, May 27 2006 Issue, 62.
- Ellul, A., Guntay, L., and Lel, U., 2006, External governance and debt agency costs of family firms, Indiana University Working Paper.
- Faccio, M., and Lang, L.H.P., 200, The ultimate ownership of Western European corporations, *Journal of Financial Economics*, 65 (3), 365-395
- Faulkender, M., and Petersen M.A., 2006, Does the source of capital affect capital structure?, *Review of Financial Studies*, 19 (1), 45-79.
- Fama, E., 1980, Agency problems and the theory of the firm, *Journal of Political Economy*, 88, 288-307.

Graham, J., Lemmon, M., and Schallheim, J, 1998, Debt, leases, taxes and the endogeneity of corporate tax status, *Journal of Finance*, 53, 131-162.

Harris, M. and Raviv, A., 1988, Corporate control contests and capital structure, *Journal of Financial Economics*, 20, 55-86.

Harris, M. and Raviv, A., 1992, The design of bankruptcy procedures, C.R.S.P. Working Paper, University of Chicago.

Hovakimian, A., T. Opler, and S. Titman, 2001, The debt-equity choice, *Journal of Financial and Quantitative Analysis*, 36, 1–24.

Israel, R., 1991, Capital structure and the market for corporate control: The defensive role of debt financing, *Journal of Finance*, 46, 1391-1409.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny, 1997, Legal determinants of external finance, *Journal of Finance*, 52: 1131-1150.
26.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny, 1998, Law and finance, *Journal of Political Economy*, 106: 1113-1155.

La Porta, Rafael, Florencio Lopez-de-Silanes, and Andrei Shleifer, 1999, Corporate ownership around the world, *Journal of Finance*, 54: 471-518.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny, 2000, Agency problems and dividend policies around the world, *Journal of Finance*, 55(1), 1-33.

Leland, H., and D. Pyle, 1977, Information asymmetries, financial structure, and financial intermediaries, *Journal of Finance*, 32, 371–387.

Liu, X.L., 2005, Do firms have target leverage ratios? Evidence from historical market-to-book and past returns, University of Rochester, Working Paper.

Lemmon, M., Roberts, M., and Zender, J., 2006, Back to the beginning: Persistence and the cross-section of corporate capital structure, Working Paper, University of Utah.

Lemmon, M., and Zender, J., 2004, Debt capacity and tests of capital structure theories, Working paper, University of Colorado

Lemmon, M., and Zender, J., 2004, Looking Under the Lamppost. An Empirical Examination of the Determinants of Capital Structure, Working Paper, University of Utah.

Mayer, C., and Alexander, I., 1993, Banks and securities markets: corporate financing in Germany and the United Kingdom, CEPR Discussion Paper.

Miller, M., 1977, Debt and taxes, *Journal of Finance* 32, 261-275.

Morck, R., A., Shleifer, and R. Vishny, 1988, “Management Ownership and Market Valuation: An Empirical Analysis”, *Journal of Financial Economics*, 20, 293–315.

Nobes, C., and Parker, R., 1991, *Comparative International Accounting* (Prentice Hall, New York, NY).

Prendergast, C., 2002, “The Tenuous Tradeoff between Risk and Incentives”, *Journal of Political Economy*, 110, 1071–1102.

Rajan, R.G., and Zingales, L., 1995, What Do We Know about Capital Structure? Some Evidence from International Data, *Journal of Finance* 50, 1421-1467.

Shleifer, Andrei, and Robert W. Vishny, 1997, A survey of corporate governance, *Journal of Finance*, 52(2), 737-783.

Stulz, R., 1988, Managerial Control of Voting Rights: Financing Policies and the Market for Managerial Control, *Journal of Financial Economics*, 20, 25–54.

Titman, S., and Wessels, R., 1988, The determinants of capital structure choice, *Journal of Finance*, 43, 1-19.

Tufano, P., 1996, Who manages risk? An empirical examination of risk management practices in the gold mining industry, *Journal of Finance* 51, 1097-1137.

Villalonga, Belen and Amit Raphael, 2006, How do family ownership, control, and management affect firm value?, *Journal of Financial Economics* 80, 385-418.

Welch, I., (2004), Capital Structure and Stock Return, *Journal of Political Economy*, 112(1), 106-131.

Zwiebel, J., 1996, Dynamic capital structure under managerial entrenchment, *The American Economic Review*, 86, 1197-1215.

Table 1. Variable Definitions

This table defines the variables we use in our analysis. We obtain financial and accounting data for the 450 US and 184 non-European ADR firms from Compustat, and for 2,974 firms from Faccio and Lang dataset from Worldscope. Firm-level ownership and governance measures for the US and non-European ADR firms are collected from 20-F forms, proxy statements, and firms' web sites, while the Faccio and Lang dataset provides the information for the remaining firms. For the latter, we always apply the 10% control rights cut-off point.

Name of the Variable	Definition
Capital Structure	
Book Leverage	$[\text{Long Term Debt} + \text{Debt in Current Liabilities}] / [\text{Total Assets}]$
Market Leverage 1	$[\text{Long Term Debt} + \text{Debt in Current Liabilities}] / [(\text{Long Term Debt} + \text{Debt in Current Liabilities}) + (\text{Market Equity})]$
Market Leverage 2	$[\text{Long Term Debt} + \text{Debt in Current Liabilities}] / [\text{Total Assets} - \text{Book Equity} + \text{Market Equity}]$
Market Leverage 3	$[\text{Total Liabilities}] / [\text{Total Liabilities} + \text{Market Equity}]$
Firm-Level Characteristics	
First Book (Market) Leverage	The first Book Leverage (Market Leverage) observed for every firm in our dataset.
Lag Book (Market) Leverage	Book Leverage (Market Leverage) in t-1.
Tobin's Q	Book value of assets plus market capitalization less common equity divided by the book value of assets.
Research and Development Ratio (R&D)	Research and development expenditure divided by total assets.
Market-to-Book Ratio	Market value of equity divided by common equity.
Tangibility (Property, Plant and Equipment Ratio)	Net property, plant and equipment divided by total assets.
Log Total Assets	Natural logarithm of total assets.
Return on Assets	Net income divided by total assets.
Credit Ratings	A dummy variable that equals 1 if a firm has a credit rating and 0 otherwise. Data obtained from the Securities Data Company
Stock Returns	The cumulative stock returns over the previous two years.
Firm Ownership Measures	
Family Ownership (cash flow rights, and voting rights)	Percentage ownership (measured in cash flow rights and voting rights) of the founding family in the firm. For the 450 US and 184 non-European ADR firms, the data is collected from 20-F forms, proxy statements, and firms' web sites. Faccio and Lang dataset is used for 2,974 firms, using the 10% control cut-off point.

Family Dummy	Equals one if the founding family owns shares in the firm, zero otherwise.
Family in Management	Equals one if family is in the active management of the firm, zero otherwise.
Blockholder's Wedge	The difference between the family's (or institutional blockholder) cash flow rights and its voting rights. It is calculated as the difference between the percentage of the votes held by the founding family members (institutional blockholder) and the percentage of outstanding shares held by the family members (institutional blockholder).
Institutional Blockholder	Percentage ownership of a firm or person that owns at least 10% of the outstanding shares and is not part of the founding family. We also use a dummy variable that takes the value of one if such a blockholder exists and zero otherwise.
Country-Level Governance Measures	
Shareholders' Rights Index	Shareholders' Rights Index is an aggregate measure of how well a country's legal system protects minority shareholders against large shareholders in the decision-making process. This Index is obtained from LLSV (1998) and it takes a value between 1 and 5. Higher values indicate stronger minority shareholders' protection.
Legal Environment (Legality)	Legal Environment is derived from a principal components analysis of the covariance matrix from the efficiency of the judiciary system, rule of law, corruption, risk of expropriation, and the risk of contract repudiation. Obtained from Berkowitz, Pistor, and Richard (1999).
Creditor Rights Index	Creditor Rights Index is an aggregate measure of creditor rights. It measures how well creditor rights are protected under bankruptcy and reorganization laws. This Index is obtained from LLSV (1998) and it takes a value between 1 and 4. Higher values indicate stronger creditor protection.
Judicial Efficiency	The assessment of the "efficiency and integrity of the legal environment as it affects business, particularly foreign firms" produced by the country risk rating agency International Country Risk (ICR) and obtained from LLSV (1998). High scores indicate higher efficiency levels.
Country-Level Variables	
Corporate Tax Rate	The Top Corporate Tax Rate obtained from the <i>Economist Intelligence Unit</i> dataset.
GNP per Head	Obtained from the International Monetary Fund's <i>International Financial Statistics</i> and the International Finance Corporation's <i>Emerging Market Database</i> .
Ratio of Stock Market Capitalization to GDP	Obtained from the International Monetary Fund's <i>International Financial Statistics</i> and the International Finance Corporation's <i>Emerging Market Database</i> .

Table 2. Descriptive Statistics

The Table shows descriptive statistics for the 3,608 firms in our final dataset. Panel A shows the decomposition of the number of firms in the dataset by the country of incorporation. Panel B shows the descriptive statistics for firm-level financial and ownership characteristics and country-level governance. Panel C shows descriptive statistics for the non-family firms in our sample, and Panel D shows statistics for the family owned firms. The variables shown in each panel are described in Table 1. We obtain financial and accounting data for the US and non-European ADR firms from Compustat, and for 2,794 firms from Faccio and Lang dataset from Worldscope. Firm-level ownership and governance measures for the US and ADR firms are collected from 20-F forms, proxy statements, and firms' web sites, while the Faccio and Lang dataset provides the information for the remaining firms. For the latter, we always apply the 10% control rights cut-off point.

Panel A: Country of Origin

Country of Origin	Number of Firms	Country of Origin	Number of Firms
Argentina	11	Mexico	29
Australia	20	Netherlands	72
Austria	32	New Zealand	3
Belgium	60	Norway	82
Brazil	18	Peru	2
Chile	24	Philippines	1
Colombia	1	Portugal	23
Denmark	54	Singapore	2
Finland	163	South Africa	8
France	356	South Korea	11
Germany	556	Spain	121
Greece	14	Sweden	194
Hong Kong	7	Switzerland	66
India	2	Taiwan	2
Indonesia	4	United Kingdom	926
Ireland	51	United States	450
Israel	10	Venezuela	3
Italy	194		
Japan	26	Total	3,608

Panel B: Descriptive Statistics for Entire Dataset

	Mean	Median	Std. Dev	Minimum	Maximum
Book Leverage	0.2415	0.2106	0.2705	0	0.9587
Market Leverage 1	0.2653	0.2173	0.2324	0	0.9882
Market Leverage 2	0.1801	0.1485	0.1647	0	0.8313
Market Leverage 3	0.4225	0.4274	0.2289	0.0015	0.9755
Assets	2,947	325	20,684	0.4293	575,244
Sales	2,876	319	12,155	0.01	170,064
Tobin's Q	1.9599	1.2911	6.1437	0.3751	12.68
R&D Ratio	0.0113	0	0.0414	0	0.2138
Return on Assets	0.0442	0.0548	0.1672	-0.1209	0.339
PPE Ratio	0.3640	0.3194	0.2301	0.0051	0.9284
Market Capitalization	3,928	415	14,908	2.70	280,115
Family Dummy	0.3152	0	0.4647	0	1
Family in Management	0.1722	0	0.3776	0	1
Institutional BH Dummy	0.21488	0	0.4107	0	1
Legality	20.08	20.41	1.76	8.51	21.91
GDP Per Head	23,882	24,371	7,561	738	54,705

Panel C: Descriptive Statistics for Non-Family Firms

	Mean	Median	Std. Dev	Minimum	Maximum
Book Leverage	0.2409	0.2024	0.2575	0	0.9587
Market Leverage 1	0.2571	0.2101	0.2101	0	0.9048
Market Leverage 2	0.1739	0.1397	0.1543	0	0.6571
Market Leverage 3	0.4184	0.4071	0.2079	0	0.9211
Assets	6,020	469	22,846	2.92	575,244
Sales	4,707	492	12,744	0.23	160,883
Tobin's Q	1.8829	1.2998	4.2032	0.3751	9.2504
R&D Ratio	0.0113	0	0.0422	0	0.1873
Return on Assets	0.0436	0.0569	0.1757	-0.0493	0.3207
PPE Ratio	0.3757	0.3365	0.2329	0.0072	0.9284
Market Capitalization	4,960	626	17,070	3.97	280,115
Institutional Blockholder cashflow rights	7.6039	0.52	13.8389	0	62.00
Institutional Blockholder voting rights	9.4154	0.86	15.5786	0	70.12
Legality	20.17	20.41	1.64	9.16	21.91
GDP Per Head	24,033	24,371	7,367	738	54,705

Panel D: Descriptive Statistics for Family Firms

	Mean	Median	Std. Dev	Minimum	Maximum
Book Leverage	0.2541	0.2172	0.1939	0	0.9456
Market Leverage 1	0.2711	0.2198	0.2370	0	0.9882
Market Leverage 2	0.1861	0.1557	0.1664	0	0.8313
Market Leverage 3	0.4498	0.4469	0.2323	0.0274	0.9755
Assets	2,216	152	14,853	5.78	45,027
Sales	1,775	153	9,751	3.98	38,151
Tobin's Q	2.14	1.46	9.06	0.66	12.68
R&D Ratio	0.0111	0	0.0396	0	0.2138
Return on Assets	0.044	0.049	0.146	-0.151	0.339
PPE Ratio	0.3349	0.2945	0.2201	0.0116	0.9222
Market Capitalization	1,342	308	5,758	2.70	131,297
Family cashflow rights	34.7728	29.8115	23.0748	0.9804	100
Family voting rights	39.5678	34.75	22.8477	10	100
Family in Management	0.5685	1	0.4977	0	1
Institutional Blockholder cashflow rights	2.1801	0	7.6709	0	35.88
Institutional Blockholder voting rights	3.0002	0	8.7109	0	43.08
Legality	19.90	20.41	1.99	10.1	21.91
GDP Per Head	23,566	24,371	7,967	443	54,705

Table 3. Family Ownership and Capital Structure

This table provides the estimates of a cross-sectional regression model for 3,608 US and international firms. We use each firm's first available observation conditional on the structure of independent variables. This means that for most firms we use the leverage observation in 1996. The dependent variables are Book Leverage and Market Leverage as defined in Table 1. We define independent variables in Table 1. The results shown in column (1) use a Dummy Variable to indicate the presence of a family blockholding. The results shown in column (2) use the cash flow rights of a family while those in column (3) use the voting rights of a family to capture the family presence. Standard errors are corrected for serial correlation and heteroscedasticity. The t-statistics appear in parentheses below parameter estimates. ***, **, and * indicate significance at 1%, 5%, and 10% level respectively.

	Book Leverage			Market Leverage		
	Dummy	Cash Rights	Voting Rights	Dummy	Cash Rights	Voting Rights
Family Presence	0.0229** (2.52)	0.0006*** (3.02)	0.0005*** (2.78)	0.0362*** (3.95)	0.0009*** (4.09)	0.0007*** (3.78)
Log of Q	-0.0079 (-0.89)	-0.0080 (-0.89)	-0.0079 (-0.88)	-0.1023*** (-11.40)	-0.1023*** (-11.29)	-0.1022*** (-11.36)
Log of Total Assets	0.0132*** (5.29)	0.0131*** (5.45)	0.0130*** (5.41)	0.0212*** (8.37)	0.0210*** (8.33)	0.0208*** (8.28)
R&D Ratio	-0.6907** (-6.52)	-0.6839** (-6.47)	-0.6852** (-6.49)	-0.5796*** (-5.57)	-0.5701*** (-5.47)	-0.5720*** (-5.49)
Return on Assets	-0.1452** (-2.29)	-0.1472** (-2.34)	-0.1464** (-2.33)	-0.2239*** (-4.09)	-0.2264*** (-4.19)	-0.2253*** (-4.20)
Tangibility Ratio	0.1475*** (6.26)	0.1467*** (6.21)	0.1467*** (6.20)	0.1347*** (5.75)	0.1334*** (5.68)	0.1335*** (5.68)
Stock Returns	-0.0002*** (-3.56)	-0.0002*** (-3.52)	-0.0002*** (-3.55)	-0.0003*** (-5.89)	-0.0003*** (-5.85)	-0.0004*** (-5.90)
Credit Constraints	0.0648** (2.65)	0.0649** (2.67)	0.0653** (2.68)	0.0105 (1.38)	0.0108 (1.35)	0.0115 (1.46)
Shareholders' Rights	0.0951** (2.12)	0.0871* (1.92)	-0.0887* (1.95)	0.0869* (1.78)	0.0896* (1.86)	0.0905* (1.89)
Intercept	0.1552 (1.14)	0.1663 (1.21)	0.1644 (1.19)	0.2832 (1.57)	0.2993* (1.65)	0.2965 (1.62)
Industry Dummies	YES	YES	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES	YES	YES
Country Dummies	YES	YES	YES	YES	YES	YES
Number of Observations	3,608	3,608	3,608	3,608	3,608	3,608
Adjusted R ²	0.2065	0.2072	0.2067	0.3553	0.3557	0.3549

Table 4. Family Ownership and Capital Structure

This table provides the estimates of a panel regression model with country fixed effects for 3,608 US and international firms over the period 1996-2004. The dependent variables are Book Leverage and Market Leverage as defined in Table 1. We define independent variables in Table 1. The results shown in column (1) use a Dummy Variable to indicate the presence of a family blockholding. The results shown in column (2) use the cash flow rights of a family while those in column (3) use the voting rights of a family to capture the family presence. Standard errors are corrected for serial correlation and heteroscedasticity. The t-statistics appear in parentheses below parameter estimates. ***, **, and * indicate significance at 1%, 5%, and 10% level respectively.

	Book Leverage			Market Leverage		
	Dummy	Cash Rights	Voting Rights	Dummy	Cash Rights	Voting Rights
Family Presence	0.0624*** (4.16)	0.0014*** (3.19)	0.0012** (2.83)	0.0634*** (4.24)	0.0016*** (3.65)	0.0014*** (3.19)
Lag Market Leverage				0.3315*** (40.18)	0.3316*** (40.04)	0.3316*** (40.89)
Log of Q	-0.0568*** (4.06)	-0.0667*** (-16.31)	-0.0668*** (-16.30)	-0.0157*** (-3.86)	-0.0160*** (-3.91)	-0.0159*** (-3.64)
Log of Total Assets	0.0288*** (10.01)	0.0480*** (20.99)	0.0479*** (22.37)	0.0505*** (18.10)	0.0499*** (17.49)	0.0499*** (17.47)
R&D Ratio	-0.0728*** (-2.80)	-0.0677** (-2.31)	-0.0684* (-2.15)	-0.0508 (-1.37)	-0.0545 (-1.31)	-0.0550 (-1.58)
Return on Assets	-0.0764*** (-16.22)	-0.0639*** (-11.03)	-0.0639*** (-11.04)	-0.0452*** (-8.24)	-0.0451*** (-8.15)	-0.0471*** (-9.08)
Corporate Tax Rate	0.0012 (0.20)	-0.0028 (-0.21)	-0.0030 (-0.25)	0.0014 (0.46)	-0.0031 (0.30)	-0.0042 (0.45)
Tangibility Ratio	0.1307*** (10.72)	0.1537*** (12.89)	0.1541*** (12.93)	0.0952*** (8.29)	0.0957*** (8.54)	0.0963*** (8.65)
Stock Returns	-0.0002*** (-8.66)	-0.0003*** (-10.60)	-0.0004*** (-11.18)	-0.0005*** (10.67)	-0.0005*** (10.50)	-0.0005*** (10.28)
Credit Constraints	0.0782* (1.91)	0.0856** (1.97)	0.0928** (2.05)	0.0816* (1.90)	0.0982** (2.01)	0.0952** (1.99)
Shareholders' Rights	0.1080** (2.01)	0.1074** (2.02)	0.1098** (2.05)	0.1007* (1.81)	0.1002* (1.85)	0.1005* (1.86)
Intercept	0.0058 (0.02)	-0.6432** (-1.97)	-0.7119*** (-2.20)	-1.3545*** (-5.50)	-1.1758*** (-4.79)	-1.1945*** (-4.87)
Industry Dummies	YES	YES	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES	YES	YES
Country Dummies	YES	YES	YES	YES	YES	YES
Firm Fixed Effects	YES	YES	YES	YES	YES	YES
Number of Observations	25,519	25,519	25,519	25,519	25,519	25,519
Adjusted R ²	0.1812	0.1813	0.1798	0.2176	0.2315	0.2255

Table 5. Family Ownership, Investor Protection and Capital Structure

This table provides the estimates of a panel regression model with country fixed effects for 3,608 US and international firms. The dependent variables are Book Leverage and Market Leverage as defined in Table 1. We define independent variables in Table 1. The results shown in column (1) use a Dummy Variable to indicate the presence of a family blockholding. The results shown in column (2) use the cash flow rights of a family while those in column (3) use the voting rights of a family to capture the family presence. Standard errors are corrected for serial correlation and heteroscedasticity. The t-statistics appear in parentheses below parameter estimates. ***, **, and * indicate significance at 1%, 5%, and 10% level respectively.

	Book Leverage			Market Leverage		
	Dummy	Cash Rights	Voting Rights	Dummy	Cash Rights	Voting Rights
Family Presence	0.0336*** (5.91)	0.0007*** (6.09)	0.0006*** (6.08)	0.0348*** (6.35)	0.0007*** (6.74)	0.0006*** (6.37)
Family Presence x Shareholders Rights	-0.0045*** (-3.80)	-0.0001*** (-5.81)	-0.0001*** (-5.76)	-0.0065*** (-4.86)	-0.0001*** (-7.22)	-0.0001*** (-4.57)
Lag Book (Market) Leverage	0.2911*** (42.49)	0.2900*** (42.32)	0.2869*** (41.43)	0.3384*** (45.90)	0.3384*** (45.86)	0.3345*** (44.63)
Log of Q	-0.0034 (-1.07)	-0.0031 (-1.00)	-0.0052 (-1.59)	-0.0261*** (-9.64)	-0.0262*** (-9.63)	-0.0252*** (-9.75)
Log of Total Assets	0.0134*** (16.69)	0.0132*** (16.52)	0.0130*** (16.07)	0.0083*** (13.97)	0.0081*** (14.13)	0.0081*** (14.91)
R&D Ratio	-0.1837*** (-5.33)	-0.1796*** (-5.19)	-0.1848*** (-5.07)	-0.1472*** (-8.26)	-0.1451*** (-8.18)	-0.1848*** (-9.50)
Return on Assets	-0.0419*** (-9.82)	-0.0434*** (-9.75)	-0.0399*** (-9.38)	-0.0470*** (-8.23)	-0.0467*** (-8.06)	-0.0454*** (-8.89)
Corporate Tax Rate	0.0012 (0.20)	-0.0028 (-0.21)	-0.0030 (-0.25)	0.0021 (0.40)	-0.0045 (0.61)	-0.0051 (0.72)
Tangibility Ratio	0.0917*** (8.05)	0.0903*** (8.13)	0.1039*** (9.32)	0.0443*** (8.36)	0.0445*** (8.39)	0.0449*** (8.50)
Stock Returns	-0.0004*** (-12.96)	-0.0004*** (-13.78)	-0.0004*** (-14.76)	-0.0006*** (-15.09)	-0.0006*** (-15.19)	-0.0006*** (-15.10)
Credit Constraints	0.0180* (1.94)	0.0188** (1.98)	0.0194** (2.07)	0.0195** (2.61)	0.0211** (2.82)	0.0214** (2.58)
Intercept	0.0898 (1.38)	0.0904 (1.39)	0.0924 (1.41)	0.2151 (4.57)	0.2152 (4.56)	0.2156 (4.56)
Industry Dummies	YES	YES	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES	YES	YES
Country Dummies	YES	YES	YES	YES	YES	YES
Firm Fixed Effects	YES	YES	YES	YES	YES	YES
Number of Observations	25,519	25,519	25,519	25,519	25,519	25,519
Adjusted R ²	0.1842	0.1844	0.1829	0.3149	0.3067	0.3090

Table 6. Institutional Blockholding and Capital Structure

This table provides the estimates of a cross-sectional regression model with country fixed effects for 3,608 US and international firms. We use each firm's first available observation conditional on the structure of independent variables. This means that for most firms we use the leverage observation in 1996. The dependent variables are Book Leverage and Market Leverage as defined in Table 1. We define independent variables in Table 1. The results shown in column (1) use a Dummy Variable to indicate the presence of an institutional blockholder. The results shown in column (2) use the cash flow rights of an institutional blockholder while those in column (3) use the voting rights of an institutional blockholder to capture the institutional presence. Standard errors are corrected for serial correlation and heteroscedasticity. The t-statistics appear in parentheses below parameter estimates. ***, **, and * indicate significance at 1%, 5%, and 10% level respectively.

	Book Leverage			Market Leverage		
	Dummy	Cash Rights	Voting Rights	Dummy	Cash Rights	Voting Rights
Institutional Blockholding	0.0003 (0.25)	0.0004 (0.92)	-0.0002 (-0.74)	0.0196 (1.51)	0.0008* (1.78)	0.0006 (1.49)
Log of Q	-0.0072 (-0.92)	-0.0071 (-0.94)	-0.0081 (-0.95)	-0.1060*** (-12.13)	-0.1047*** (-11.61)	-0.1069*** (-11.94)
Log of Total Assets	0.0118*** (4.96)	0.0119*** (5.09)	0.0116*** (5.27)	0.0107*** (4.35)	0.0099*** (4.17)	0.0112*** (4.57)
R&D Ratio	-0.6415** (-6.72)	-0.6941*** (-6.72)	-0.6776** (-6.51)	-0.1325 (-1.55)	-0.1560* (-1.75)	-0.1283 (-1.50)
Return on Assets	-0.1416** (-2.10)	-0.1418** (-2.10)	-0.1429 (-2.29)	-0.0659* (-1.73)	-0.0665 (-1.59)	-0.0638* (-1.73)
Tangibility Ratio	0.1478*** (6.83)	0.1481*** (6.85)	0.1497*** (6.97)	0.0994*** (4.64)	0.0812*** (3.87)	0.1017*** (4.70)
Stock Returns	-0.0003*** (-3.60)	-0.0003*** (-3.61)	-0.0003*** (-3.71)			
Credit Constraints	0.0641** (2.64)	0.0647** (2.68)	0.0651** (2.71)	0.0228 (1.44)	0.0211* (1.65)	0.0234 (1.42)
Shareholders' Rights	0.1007** (2.01)	0.1005** (2.10)	0.1006** (2.05)	0.0082 (0.44)	-0.0111** (-2.85)	0.0149 (0.80)
Intercept	0.1510 (1.05)	0.1424 (1.00)	0.1605 (1.09)	0.060 (0.20)	0.046 (0.034)	-0.0972 (-0.33)
Industry Dummies	YES	YES	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES	YES	YES
Country Dummies	YES	YES	YES	YES	YES	YES
Number of Observations	3,608	3,608	3,608	3,608	3,608	3,608
Adjusted R ²	0.2032	0.2041	0.2010	0.4043	0.3847	0.4058

Table 7. Family Ownership, Family Management and Capital Structure

This table provides the estimates of a panel regression model with country fixed effects for 3,608 US and international firms. The dependent variables are Book Leverage and Market Leverage as defined in Table 1. We define independent variables in Table 1. The results shown in column (1) use a Dummy Variable to indicate the presence of a family blockholding. The results shown in column (2) use the cash flow rights of a family while those in column (3) use the voting rights of a family to capture the family presence. Standard errors are corrected for serial correlation and heteroscedasticity. The t-statistics appear in parentheses below parameter estimates. ***, **, and * indicate significance at 1%, 5%, and 10% level respectively.

	Market Leverage			Market Leverage		
	Dummy	Cash Rights	Voting Rights	Dummy	Cash Rights	Voting Rights
Family Ownership	0.0438** (2.25)	0.0011* (1.90)	0.0008* (1.84)	0.0434** (2.08)	0.0010* (1.93)	0.0008* (1.86)
Family in Management	0.0408** (2.04)	0.0572*** (2.89)	0.0605*** (2.91)	0.0398** (1.98)	0.0537** (2.45)	0.0595*** (2.77)
Control Variables	YES	YES	YES	YES	YES	YES
Industry Dummies	YES	YES	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES	YES	YES
Country Dummies	NO	NO	NO	YES	YES	YES
Firm and Country Fixed Effects	YES	YES	YES	NO	NO	NO
Firm Fixed Effects	NO	NO	NO	YES	YES	YES
Number of Observations	25,519	25,519	25,519	25,519	25,519	25,519
Adjusted R ²	0.2312	0.2313	0.2399	0.2224	0.2211	0.2287

Table 8. Family Management, Wedge and Capital Structure

This table provides the estimates of a panel regression model with country fixed effects for 3,608 US and international firms. The dependent variable is Market Leverage as defined in Table 1. We define independent variables in Table 1. Standard errors are corrected for serial correlation and heteroscedasticity. The t-statistics appear in parentheses below parameter estimates. ***, **, and * indicate significance at 1%, 5%, and 10% level respectively.

	(Dummy) (1)	(Cash Rights) (2)	(Voting Rights) (3)	(Cash Rights) (4)	(Voting Rights) (5)	(Cash Rights) (6)	(Voting Rights) (7)
Family Presence	0.0891*** (4.88)	0.0023*** (4.33)	0.0023*** (4.33)	0.0015*** (3.08)	0.0012*** (2.62)	0.0040*** (3.62)	0.0043*** (3.47)
Family Wedge	-0.0045** (-2.21)	-0.0041** (-2.00)	-0.0064*** (-2.83)				
Institutional Blkh. Presence				0.0145 (1.22)	0.0125 (1.44)		
Family Presence Squared (x100)						-0.0070** (-2.53)	-0.0069** (-2.48)
Control Variables	YES	YES	YES	YES	YES	YES	YES
Industry Dummies	YES	YES	YES	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES	YES	YES	YES
Country Dummies	YES	YES	YES	YES	YES	YES	YES
Firm Fixed Effects	YES	YES	YES	YES	YES	YES	YES
Number of Observations	25,519	25,519	25,519	25,519	25,519	25,519	25,519
Adjusted R ²	0.2281	0.2346	0.2295	0.2226	0.2221	0.2086	0.2094

Table 9. Family Ownership, Wedge and Capital Structure

This table provides the estimates of a panel regression model with country fixed effects for 3,608 US and international firms. The dependent variable is Market Leverage as defined in Table 1. We define independent variables in Table 1. Standard errors are corrected for serial correlation and heteroscedasticity. The t-statistics appear in parentheses below parameter estimates. ***, **, and * indicate significance at 1%, 5%, and 10% level respectively.

	(1)	(2)	(3)	(4)
Family Management and Wedge	0.0561** (2.03)			
No Family Management and Wedge		-0.0031 (-0.10)		
Family Management and No Wedge			0.0722*** (3.07)	
No Family Management and No Wedge				0.0388 (1.26)
Control Variables	YES	YES	YES	YES
Industry Dummies	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES
Country Dummies	YES	YES	YES	YES
Firm Fixed Effects	YES	YES	YES	YES
Number of Observations	25,519	25,519	25,519	25,519
Adjusted R ²	0.1226	0.1211	0.1205	0.1109

Table 10. Free Cash Flows, Financial Deficits, and Capital Structure

This table provides the estimates of a panel regression model with country fixed effects for 3,608 US and international firms. The dependent variables are Book Leverage and Market Leverage as defined in Table 1. We define independent variables in Table 1. Standard errors are corrected for serial correlation and heteroscedasticity. The t-statistics appear in parentheses below parameter estimates. ***, **, and * indicate significance at 1%, 5%, and 10% level respectively.

	ALL FIRMS				FAMILY FIRMS	
	Book Leverage		Market Leverage		Market Leverage	
	(Cash Rights)	(Cash Rights)	(Cash Rights)	(Cash Rights)	(5)	(6)
	(1)	(2)	(3)	(4)		
Family Presence	0.0018*** (3.97)	0.0010** (2.31)	0.0019*** (4.01)	0.0011** (2.43)		
High Free Cash Flows	-0.0141*** (-3.42)		-0.0148*** (-3.55)		-0.0182** (-4.34)	
High Financial Deficits		0.0108 (1.48)		0.0110 (1.52)		0.0102 (1.46)
Control Variables	YES	YES	YES	YES	YES	YES
Industry Dummies	YES	YES	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES	YES	YES
Country Dummies	YES	YES	YES	YES	YES	YES
Firm Fixed Effects	YES	YES	YES	YES	YES	YES
Number of Observations	25,519	25,519	25,519	25,519	25,519	25,519
Adjusted R ²	0.2492	0.2447	0.25126	0.2490	0.1232	0.2094

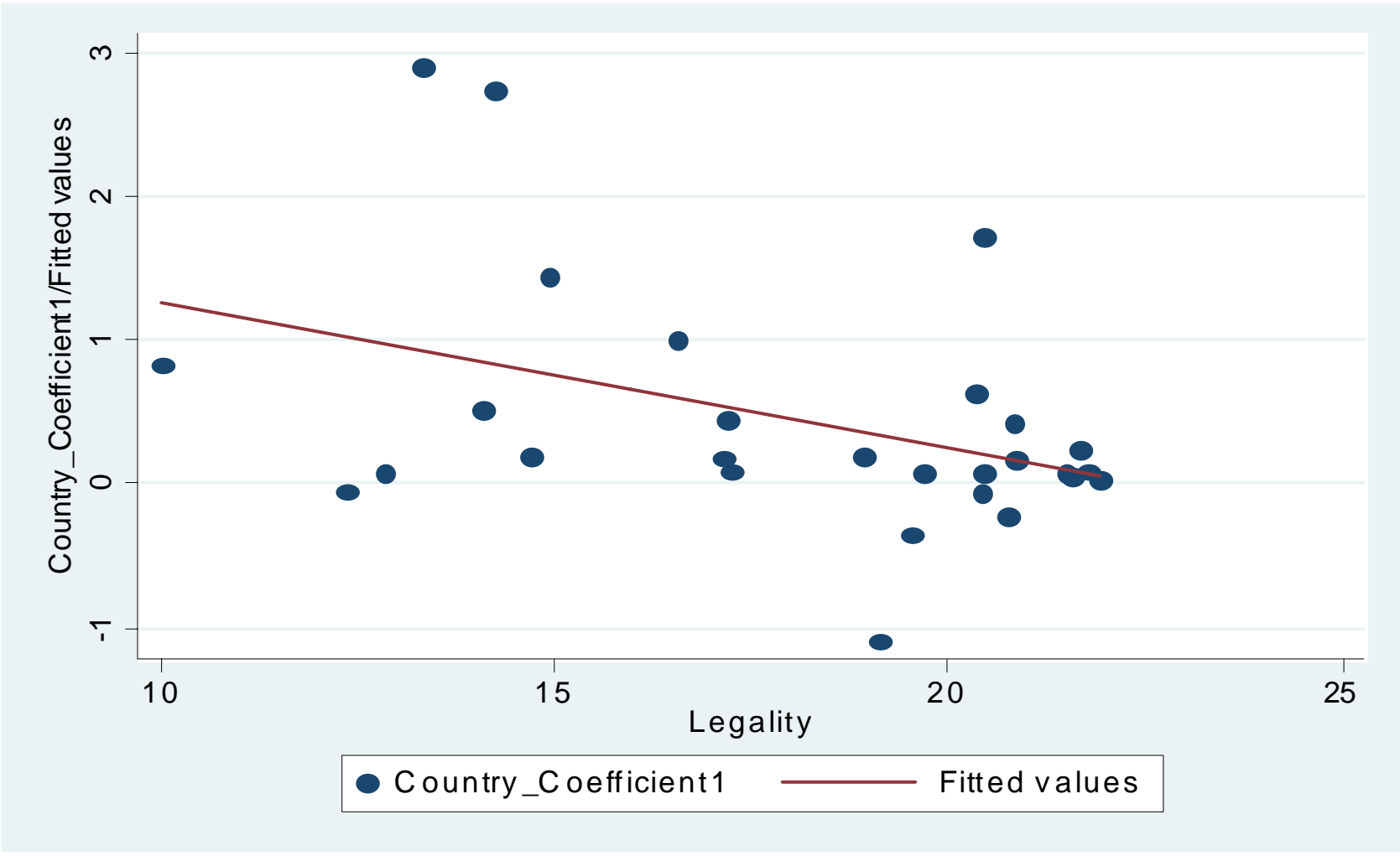


Figure 1. Relationship Between Leverage and the Legality Index