

Concentrated Ownership and Cost of Debt: The role of Financial Interlocks

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Abstract

We investigate the effect of board interlocks with financial institutions on the relationship between their ownership structure and the cost of debt. In Italy, companies' ownership is largely concentrated and the system is strongly debt-oriented with financial institutions being the primary source of funding for companies. This makes the Italian context suitable to examine debt-equity agency conflicts and, more specifically, to question whether having direct internal monitoring channels (i.e. presence on the board of directors) is valuable for financial institutions when determining loan conditions. Using a panel of 250 Italian non-financial listed companies over the period 2000-2012, we show that while concentrated ownership has an increasing effect on the cost of debt, financial directors moderate this relationship. Further, the presence of a family block holder exacerbates the agency conflict with debt holders. We find that financial interlocking directorates act as an even more important tool in mitigating the agency cost of debt in such cases. Our results are robust to a set of firm-specific characteristics and support the idea that board interlocks with financial institutions provide firms with an effective monitoring device in solving debt-equity agency conflicts.

Key words: Board composition; Interlocking directorates; Block holders; Family ownership; Agency costs; Information asymmetry

JEL codes: G32; M40; L14; G20; D80

1. Introduction

Ownership structure is an important component of corporate governance (Shleifer and Vishny, 1997). While a substantial amount of literature addresses the relation between dispersed ownership and manager-shareholder agency problems, scant is the investigation of the relation between concentrated ownership and shareholder-debtholder agency conflicts. Controlling shareholders may have incentives to expropriate debtholders' wealth by investing in risky projects or tunnelling so potential agency conflicts arise (Jensen and Meckling, 1976). In response to this, debtholders will demand higher interest rates. Several monitoring explicit contractual arrangements (e.g. debt covenants on firms' financials, firms' assets used as collaterals) are conceived to resolve this type of agency conflict even if just partially and indirectly. Creditors could, instead, directly monitor the activities of the firms by sitting on their boards.

A quite developed literature explains interlocking directorates of non-financial firms with financial institutions under both the perspectives of co-optation and monitoring (Mizruchi, 1996). On the one hand, firms can appoint financial directors on their boards because they need to access critical resources such as capital and financial expertise (Stearns and Mizruchi, 1993, Mizruchi and Stearns, 1994; Booth and Deli, 1999). On the other hand, financial institutions may sit on the board of the firms to prevent managers from taking on activities that are detrimental to their own interests (Mizruchi and Stearns, 1988; Byrd and Mizruchi, 2005).

However, we are not aware of any existing evidence of the impact of financial institutions sitting on corporate boards on the cost of debt, especially when agency conflicts are exacerbated by the presence of controlling shareholders. This is an uninvestigated issue of much importance to understand and complete the framework of the mechanisms that debtholders value and use to protect their interests against the risks of wealth expropriation by shareholders. Even more crucial is to answer the question whether this more direct monitoring mechanism is effective to the extent that firms obtain debt financing at a lower cost.

Our objective is to empirically investigate the effect of board interlocks with financial institutions on the relationship between concentrated ownership and the firm's cost of debt. Extant evidence in the literature suggests that different types of block holders can have varying incentive structures and different impact on the debt-equity agency conflicts. Some studies describe families as typically more risk adverse, because of the socio-emotional wealth they have invested in the firm and their fear of losing control of the firm (Gomez-Mejia et al., 2011; Gorriz and Fumas, 1996; Mishra and McConaughy, 1999; Schulze et al., 2003). However, it is also shown that in presence of controlling families, debt holders perceive higher risk of wealth expropriation because of the excess in private benefits consumption (Boubakri and Ghouma, 2010; Lin et al., 2011; Aslan and Kumar, 2012). According to these conflicting views, it is not clear whether the debt financing of family owned firms is priced differently from that of non-family owned firms. It is interesting, then, to make a distinction and examine whether the effectiveness of financial interlocks as a monitoring mechanism is associated with the type of block holder (family or not).

Italian companies offer one of the most suitable environments for the investigation of debt-equity agency conflicts. "Weak managers, strong block holders", large family control, an under-developed public debt market and firms' financing provided mostly by relationships with financial institutions, make the business environment in Italy a rich setting to investigate (D'Auria et al. 1999; Melis, 2000; Croci and Caprio, 2008). We examine 250 non-financial companies listed on the Italian Stock Exchange over the period 1998-2012 and trace down the composition of their boards in order to capture the presence of representatives of financial institutions. Further, we obtain data on ownership structure that enable us to define whether each firm in the sample over the period of analysis is controlled by a block holder and if it is a family or not.

Adopting a multivariate panel regression analysis, we provide evidence supporting the agency prediction that firms owned by a block holder are perceived by creditors as riskier in terms of wealth expropriation and are penalized with higher cost of debt. We also find that the presence of financial institutions on the board of non-financial firms per se weakly represents an effective

monitoring mechanism as our results show that there is a slightly significant and decreasing effect on the cost of debt. However, when examining the effect of financial interlocking directorates in the context of firms controlled by block holders, our analysis shows that they represent an effective solution in mitigating the debt-equity agency costs, as their presence leads to a significant reduction in the cost of debt. In addition, when we separate firms controlled by families from firms controlled by other types of block holders, we provide evidence that families exacerbate agency conflicts to the extent that the significantly higher price paid for debt financing is also significantly reduced by the moderation of financial directors sitting on the board. Hence, we do not provide evidence supporting the hypothesis of families as unique type of investors with an incentives structure that makes them more reliable and trustworthy than others. On the contrary, our results suggest that family-owned firms are perceived by lenders as riskier in terms of private benefits consumption.

Our study contributes to the literature in the following ways. First, we show that interlocks with financial institutions provide industrial firms with an effective monitoring device in solving debt-equity agency conflicts and in positively influencing the mechanisms through which lenders price the financing provided.

Second, recent literature focuses on the negative effect of ownership concentration on the cost of debt (Boubakri and Ghouma, 2010; Lin et al., 2011; Aslan and Kumar, 2012). We document that the firm-bank relationship, in the form of interlocking directorates and in a context where it is predominant as a source of financing, mitigates this negative effect. Finally, we show that the presence of financial institutions on the board has an even more significant effect in mitigating the risk of wealth expropriation perceived by creditors if it is combined with a unique category of owners such as families.

To conclude, our research is among the few that analyse the effectiveness of alternative governance mechanisms in a context, like Italy, where corporate governance systems are commonly-known for their weakness and the private benefits of control are among the largest in the world (Dyck and Zingales, 2004).

The rest of the paper is structured as follows. Section 2 reviews prior literature and presents our hypotheses related to the relationship between concentrated ownership, financial interlocking directorates and the cost of debt. Section 3 describes the Italian institutional setting. Section 4 reports the sample selection process, the estimation methodology and the definition of the variables used in our tests. Section 5 discusses the results of the descriptive and multivariate analysis, while Section 6 concludes with some open avenues for future research.

2. Literature review and hypotheses development

2.1 Debt-equity agency conflicts: the controlling shareholder perspective

The literature on agency conflicts, started with Jensen and Meckling (1976), has its roots in the widespread phenomenon of the modern large corporation: the separation of ownership from control. The fundamental problem of corporate governance in the U.S. and in those economies with efficient shareholder protection (La Porta et al., 1999) is indeed to alleviate the conflict of interest between dispersed ownership and powerful controlling managers. The interests of the agents (managers), who control the major decisions in the company, are not aligned with those of the principals (shareholders). Under this perspective, conflicts known as “agency problems” arise since managers pursue their own interests at the expense of the shareholders.

However, the corporate governance debate in continental Europe and in most of the world is focused on a different phenomenon. While in the U.S. there are relatively few companies controlled by large block holders, most listed companies around the world have a concentrated ownership structure in the form of single block holder, families or the State who control the majority of the votes. Often, the ultimate controlling owners achieve controlling rights without even owning large fractions of cash flow rights by using means such as dual classes shares, pyramids and cross-holdings (La Porta et al., 1999; Faccio and Lang, 2002).

Differences in ownership structure lead to different perspectives in the framework of agency conflicts and as a consequence in corporate governance. Indeed, controlling shareholders are

typically assumed to have fewer agency conflicts with managers. When ownership is more concentrated, owners have both the incentives and the power to directly select, monitor and reward the managers (Shleifer and Vishny, 1997). As a natural consequence, managerial incentives are more likely to be aligned with those of the shareholders.

Even though manager-shareholder conflicts may constitute less a problem in firms with controlling shareholders, the presence of a dominant shareholder can cause a new agency problem to rise from differing and conflicting objectives between those who provide capital to the firm: shareholders and debtholders. Under an agency perspective where there is no separation between ownership and control, shareholders are the owners who directly control the decisions in the firm and whose interests are perfectly aligned with those of the management. As a result, when the firm raises debt capital, owners-managers have incentives to engage in actions ex-post (after the contract is signed and funds are provided) favouring their own self-interests but often detrimental for debt holders (Jensen and Meckling, 1976). Indeed, share capital can be thought of as a “call option” granting the right to the holder to buy the assets of the firm at an exercise price equal to the debt issued (Merton, 1974). Because the option value increases with the volatility of the underlying asset, shareholders have incentives to shift firm’s investments into high risk projects. When lending to the firm, creditors have a claim not only on the on-going cash flows for interest payment and capital reimbursement, but also on the firm’s assets in case of bankruptcy. Even under the best conditions, no matter how high the firm’s cash flows are due to successful investments, the creditors receive only their fixed pay-off, whereas, the shareholders capture all the gains above the debt repayment. On the contrary, unsuccessful investments will reduce the value of firm’s assets collateralized to debtholders, with the resulting decline in the value of outstanding debt. Eventually, if the firm goes bankrupt, limited liability allows shareholders simply to shift the residual risk to the creditors. The decision of creditors to provide capital to the firm and under what conditions is, then, based on the firm’s riskiness, current and future capital structure, variables that affect future cash flows. However, the decisions on investment opportunities and future cash flows ultimately rest

upon those who directly manage the firm (the owners-managers). Anticipating that conflictual incentives of shareholders to invest into riskier projects reduce their probability of being repaid creditors price protect their claims and demand higher costs for the funds provided.

Two recent cross countries studies have shown how the closer link between managers and owners under the dominant shareholder scenario exacerbates debt-equity agency conflicts leading to higher costs of debt capital (Lin et al., 2011; Aslan and Kumar, 2012). This empirical evidence indicates that the cost of debt capital increases as the ownership concentration increases while this relationship is mitigated by institutional factors such as the level of creditors' rights protection and the quality of corporate governance rules at the country level. Bhojraj and Sengupta (2003) also show that more concentrated ownership is associated with higher bond yields and lower bond ratings, while Boubakri and Ghouma (2010) add evidence that bondholders feel more protected against the risk of expropriation by ultimate owners when the enforcement of debt laws is higher and debt covenants are included in the contract. The perspective of the owner-manager as theorized by Jensen and Meckling (1976) is consistent with a scenario where managers, working on behalf of owners, have incentives to take investing and financing decisions which prove to be suboptimal for creditors. Due to these agency conflicts, creditors are expected to protect their interests against the increased risks for them of wealth transfer to controlling shareholders and require higher returns on their capital. This leads to the first hypothesis:

HP1: The presence of a block holder increases the cost of debt.

The relationship between ownership and cost of debt could vary according to the type of dominant shareholder. There are conflicting views on the effects of family ownership on controlling shareholder moral hazard (Anderson et al., 2003; Boubakri and Ghouma, 2010; Lin et al., 2011; Aslan and Kumar, 2012). On the one hand, some scholars (Gorriz and Fumas, 1996; Mishra and McConaughy, 1999; Schulze et al., 2003a) claim that family-owned firms tend to pursue more risk adverse strategies than other companies. For example, family firms are reluctant to issue debt since

they fear more the risk of bankruptcy or to lose control over the firm as sizeable debt falls under the control of third parties. This suggests that agency conflicts between debtholders and controlling shareholders may represent less a problem when a family is the owner of the firm. Families constitute a special class of investors with unique incentives structures that would better protect the interests of debt holders. Anderson and colleagues (2003) find that family ownership in U.S. listed firms is associated with a lower cost of public debt.

On the other hand, family ownership can be actually associated with weaker structures of firm governance. La Porta et al. (1999) recognize that in countries where investor rights are weakly protected, the risk of expropriation from controlling families is higher. In these countries, family owners control the whole decision making process of the firm (participating in the management) and they are not challenged by the monitoring of other large shareholders. These intuitions find support in more recent research where it is found that family ownership amplifies the negative effects associated with controlling shareholder moral hazard (Boubakri and Ghouma, 2010; Lin et al., 2011; Aslan and Kumar, 2012). As family owned firms across different countries pay higher prices for both public and private debt, it seems that debtholders fear the potential risk of expropriation from family control. Under these conflicting views, we cannot make a clear prediction on which of the two effects prevails and hypothesize in the null form that:

HP1a: The presence of a family block holder does not affect the cost of debt.

2.2 Financial institutions on the board: interlocking directorates as co-optation/monitoring mechanisms.

When a firm chooses to raise debt capital, it is involved in a set of explicit and implicit arrangements with creditors. Explicit arrangements are those related to the formal settlement of the details of the financing. Lenders may indirectly control firms by imposing contractual agreements that limit managerial decisions over the strategic activities of the firm. However, it is difficult to design contractual mechanisms to make firms keep a given risk profile or avoid excessive

consumption of private benefits from shareholders/managers. As a result, formal mechanisms only indirectly and partially mitigate agency problems (Armstrong et al, 2010).

Other implicit arrangements, not specifically related to the debt contract, also matter for creditors to evaluate the degree of alignment of their interests with the interests of those who control the firm. Among these implicit arrangements, the board of directors is a primary means to monitor firms' strategies and activities. In corporate governance, the board has among its main objectives to ensure integrity and accuracy to the information provided by managers and used not only by shareholders but also by debtholders to evaluate the firm's default risk. As a result, the literature that investigates the benefits of strong corporate governance for debtholders provides evidence that higher board quality, measured by attributes such as board stock ownership, size, independence and advisory ability, leads to a lower cost of debt financing (Bhojraj and Sengupta, 2003; Anderson et al., 2004; Ashbaugh-Skaife et al., 2006; Ertugrul and Hegde, 2008; Fields et al., 2012).

As the role of directors on the board is to provide both expertise and monitoring to the management in leading the firm (Johnson et al. 1996; Hillman and Dalziel, 2003), the way firms structure their board is ultimately related to the net benefits of the monitoring and advising roles (Linck et al., 2008). In a scenario of debt-equity agency conflict such as the one described above, debt is provided under the risk of expropriation and excess of private consumption by controlling shareholders. Hence, an optimally designed board should represent a balance between the interests of the different conflicting stakeholders. On the one hand, debt holders may find useful to have direct representation on the firm's board, more than just relying on an independent, more experienced and larger board consisting for its majority of representatives of dominant shareholders. On the other hand, as the ones who ultimately bear the aggregate agency costs, controlling shareholders may have incentives in bonding against the price protection claims of debtholders by inviting them to provide a direct and internal monitoring on the board's activities.

According to the resource dependence perspective, the board is one of the instruments that firms use to co-opt sources of environmental uncertainty and access resources critical to their

success (Pfeffer, 1972a; Pfeffer and Salancik, 1978). Interlocking directorates are typical mechanisms that accomplish this objective and occur when representatives of specific institutions, such as financial institutions, sit on the board of another firm. The functions of board interlocks appear to be multiple (Mizruchi, 1996). Interlocks facilitate the exchange of information and expertise, but as co-optation mechanisms, they also provide stable relationships among firms that are to some extent dependent on each other. For example, directors of financial institutions may serve in the board of non-financial firms because they can both provide financial expertise and facilitate important financial transactions (Allen, 1974). Indeed, considerable attention has been given on board interlocks with financial institutions on the theory that such linkages allow firms access to funding. It has been shown that financial institutions' representation on the board of a non-financial firm is associated with the amount of aggregate financial debt obtained by the firm and that different types of financial institutions on the board are associated with different levels and types of debt financing obtained (Stearns and Mizruchi, 1993; Mizruchi and Stearns, 1994; Booth and Deli, 1999).

However, under the same inter-firm dependence perspective, financial directors may also want to join the board of a non-financial firm to monitor managers' activities with the aim of protecting their institutions' interests. In particular, findings indicating that the firms' appointment of financial institutions' representatives on their boards follows periods of declining performance are consistent with a monitoring function played by financial institutions on the board (Mizruchi and Stearns, 1988). It has also been shown that following the appointment on the board of a director of a financial institution lending to the firm, the firm's debt to total capital ratio is lower (Byrd and Mizruchi, 2005). This result suggests that such a director plays a monitoring role by discouraging managers from taking out new debt financing that could increase the risk for the director's affiliated institution. Further, Güner et al. (2008) find that the presence of financial experts on the board does not necessarily translate into corporate strategic decisions that improve shareholders' wealth. The

benefits related to the decrease in the sensitivity of investment policies to the availability of internal funds need to be weighted with the costs linked to misaligned incentives and conflicting interests.

In conclusion, the resource dependence perspective on interlocking directorates indicates that financial institutions may sit on the board of industrial firms for two different reasons. Financial directors can both ease access to capital and monitor firms' activities with the aim of protecting their own interests. Board interlocks facilitate the transmission of information and provide financial institutions with a closer supervision on the activities of the firm. The resulting lower information asymmetries lead creditors to perceive a lower risk of expropriation from the shareholders-managers. In a scenario with such reduced agency costs, creditors will be less willing to price protect themselves and more prone to demand lower returns. Some recent literature, indeed, provides evidence supporting this idea that non-financial firms with closer ties to financial institutions obtain lower borrowing costs (Chuulun et al., 2010; Engelberg et al., 2012). These considerations lead to our second hypothesis:

HP2: The presence of financial directors on the board decreases the cost of debt

2.3 The moderating role of financial interlocks on the cost of debt for firms owned by controlling shareholders

Less separation between ownership and control in firms owned by controlling shareholders has implications also for the governance of the firm. The composition of the board of a firm with a concentrated ownership structure is more likely to represent the expression of the controlling shareholders, who usually appoint managers and directors among their relatives or professionals they can trust (La Porta et al., 1999; Faccio and Lang, 2002). This results in an unbalanced representation of the interests of the different capital suppliers on the governing body of the firm (Shleifer and Vishny, 1997). As a consequence, the functioning of the board as a monitoring mechanism which ensures protection for debtholders' interests is more compromised in firms with controlling shareholders compared to firms with dispersed ownership. Under these circumstances,

closer ties among firms and financial institutions, such as board interlocks, should act as more effective mechanisms of control on firms' operations. Indeed, sitting on the board means for debtholders on the one hand the reduction of information asymmetries related to the activities of the firms, on the other hand a direct means to decide on the same activities that would otherwise be decided by the controlling owner-manager. This leads us to hypothesize that the relationship between the ownership structure of the firm and the cost of debt financing is moderated by the presence of financial representatives on the board, as follows:

HP3: The presence of financial directors on the board moderates the positive relationship between concentrated ownership and the cost of debt.

The implications of the presence of financial directors on the board for the cost of debt financing could be different in the case of family owned firms. Considering the conflicting views above mentioned, debtholders may see families as more or less trustworthy block holders and the governance of family owned firms as more or less effective in protecting their claims. Prencipe and Bar-Yosef (2011), for example, show that board independence in family owned firms is not as much effective in limiting earnings management as it is in widely held companies. In addition, Villalonga and Amit (2007) find that family ownership is usually associated with boards composed in great majority of family members. This entrenchment of the controlling family might suggest weaker governance and higher expropriation risk for debtholders. In other theoretical literature, hypothesis are also developed on how families among different types of owners are more likely to use board interlocks and closer social ties in order to build up community social capital that can be used to overcome agency related issues (Lester and Cannella, 2006; Chua et al., 2006).

Hence, on the one hand, financial representatives on the board of family owned firms could significantly moderate the positive effect of family-ownership on the cost of debt. Due to the exacerbation of the controlling shareholder moral hazard and the weaker corporate governance, family owners might find in board interlocks with financial institutions an effective mechanism to

solve their agency issues. On the other hand, the presence of financial directors on the board of family controlled firms may not make the difference in the relationship between ownership structure and cost of debt financing. Due to the peculiar nature of families as more risk adverse investors, more emotionally attached to the business (Gomez-Mejia et al., 2011) financial institutions may not find additional benefits in having a closer supervision on their activities. Thus, it can be hypothesized in the null form that:

HP3a: The presence of financial directors on the board does not significantly moderate the relationship between family concentrated ownership and the cost of debt.

3. Institutional context: The Italian case

The Italian context is one of the most suitable environments to investigate debt-equity agency conflicts. In Italy, firms' ownership is largely concentrated: the presence of dominant shareholders characterizes the majority of listed firms (Faccio and Lang, 2002; Enriques and Volpin, 2007). Although in the last two decades the legal environment experienced some important reforms aimed at improving shareholders' protection and corporate governance (Enriques, 2009), participation of investors in the stock market in Italy is still under-developed, investor protection still weak and the risk of expropriation by dominant shareholders still an important issue at stake (Bianchi and Bianco, 2006; Dyck and Zingales, 2004). Notwithstanding the regulatory efforts, the Italian economic context remains one with "weak managers, strong block holders, and unprotected minority shareholders" (Melis, 2000). Even though the mechanisms through which enhanced control is obtained changed over time from pyramidal groups to large coalitions, dominant shareholders keep to exert a stable power over companies by controlling voting rights superior to the cash-flow rights actually owned (Aganin and Volpin, 2005; Bianchi and Bianco, 2006). Families represent the most common type of dominant shareholder in Italian companies (Enriques and Volpin, 2007). In addition, evidence indicates that families are the controlling shareholders who make the most use of

non-voting shares, are more entrenched and more likely to expropriate wealth from other non-voting shareholders (Crocchi and Caprio, 2008).

Examining the composition of the board of Italian companies, the majority of directors is represented by non-executive. Nevertheless, both executive and non-executive directors are proposed and ultimately appointed by the controlling owners. One of the most respected rules of governance is the separation between the Chairperson of the board and the Chief Executive Officer. However, this separation cannot be considered as an effective device to ensure the independence in the functioning of the board, due to the important influence that the controlling owners have on the decisions taken by the board. Family owned firms have typically smaller boards dominated by family members, who take both executive and non-executive roles. In particular, the entrenchment in the board of a family is higher when the investment made in ownership is higher (Belcredi and Rigamonti, 2008).

The largely diffused ownership concentrated structure and the weakness of the governance system, make Italian firms more exposed to agency conflicts of both types majority/minority shareholders and debt/equity holders. The rising of information asymmetries among different suppliers of capital increase the need for monitoring in Italian companies.

However, the main reason why Italy is one of the best settings to investigate the relationship between firms and financial institutions is linked to the peculiarity of the financial system. Given the under-development of the stock market, companies are strongly debt-oriented with financial institutions being the primary source of external funding (Melis, 2000).

Contrary to the Anglo-Saxon countries, the use of debt covenants and securitized debt is marginal. A limited number of companies finances its activities with bonds issued privately on the so-called “Eurobond” market, while bonds issued in the domestic market belong only to a few state-controlled companies (Bazzana and Palmieri, 2012; Branzoli and Guazzarotti, 2015). Relationships with banks represent the main characteristic of the Italian debt market. Rarely, the typical bank-firm relationship is identified as a unique bank relationship. More often, multiple loans from multilateral

relationships cover financing needs of Italian companies as tools more efficient in lowering the risk of locked-in effects and in discouraging active monitoring from lending institutions (Volpin, 2001). An international comparison shows that in Italy borrowing from credit intermediaries accounts for 42% of the stock of external finance of the production sector (D'Auria et al. 1999). This percentage is not as high as in Germany and Japan, which are well-known to be banking economies, but it is higher than in market economies, where equity financing can be safely considered a substitute for bank debt.

Finally, interlocking directorates have represented and still represent another typical feature of Italian capitalism. Board interlocks are shown to be valid mechanisms for the consolidation of controlling positions in the largest pyramidal groups and over time they have become more relevant than ownership interconnections among firms (Rinaldi and Vasta, 2005; Bertoni and Randone, 2006). In addition, evidence in the literature also indicates that in the dense network of Italian interlocking directorates, financial institutions have come to occupy a central position (Bertoni and Randone, 2006).

Putting together all of the above pieces, analysing the role of board interlocks with financial institutions can turn out to be crucial. In a country where debt-equity agency conflicts are exacerbated by large private benefits of control and the monitoring role of the board is compromised by weak governance structures, financial institutions need other ways to ensure that their investments are safe and controlling shareholders need other mechanisms to bond against excessive private consumptions. Board interlocks seem to provide an interesting solution to both these needs.

4. Data and research design

4.1 Sample selection and characteristics

Our sample includes all domestic companies listed on the Italian Stock Exchange (*Borsa Italiana*) over the period 1998 to 2012 with stock market and accounting data available in *Worldscope*. Data

on boards' composition and ownership structure are drawn from *Consob official website*. *Consob* is the Italian public authority for the supervision and regulation of financial markets.¹ Table 1, Panel A describes our sample selection process.

From the initial sample of 520 firms, we delete 126 firms (1248 firm-years) belonging to the financial industry sector. We require that all the firms retrieved from *Worldscope* have data on their governance structure available in the *Consob* database throughout our analysis period. As a result of this matching, we arrive at a sample of 320 companies over 15 years (1998-2012). Then, we adopt the following sample selection criteria. First, we exclude observations that have missing values for our main explanatory variable (*CostDebt*) and control variables. Next, we truncate extreme observations in the accounting data related to the calculation of the cost of debt variable (procedure which we explain in the following section) and further reduce our sample. Finally, we require each observation to have a non-negative market capitalization. Firm-years reporting a negative book value of common equity are so removed to ensure that results are not driven by firms experiencing extreme conditions of financial distress. After all these filters are applied, our final sample comprises 1,880 firm-year observations for 250 unique firms across 13 years.

[Table 1 here]

Table 1, Panels B and C provide the distribution of observations by year and industry. In Panel B, the distribution of total observations follows an increasing pattern across years except for the last two years that have fewer observations. To provide an initial understanding of the extent of the phenomena of our interest in the sample, we also provide separately the distribution of observations with block holders (generic and families) and with financial interlocking directorates. As expected for the Italian institutional context, block holders own the large majority of firms in the sample (almost 89% of total observations) and the category of family block holders is the most prevalent (about 71% of total observations). The distribution across years of firms with block holders (generic

¹We also cross-checked these data with *Calepino dell'azionista*, a database provided by the research center of *Mediobanca*, which contains annual descriptive reports for all the companies listed on the Italian Stock Exchange.

and families) is rather close to the distribution of total observations, i.e., the number of observations increases over time and slightly decreases for the last two years. This suggests that the ownership structure of firms in the sample tend to remain stable over time. Also the phenomenon of financial interlocking directorates seems stable across the years. Financial directors are on the boards of about 45% of the firms in the sample. Their number increases in the initial years up to 4.1% in 2005 and then it shows a gradually decreasing trend down to 2.7% in 2012.

We use the ICB codes for Supersectors to identify the firm's industry. As shown in Panel C, our sample firms are concentrated primarily in “Industrial Goods and Services” and “Personal and Household Goods” Supersectors, which together account for 40% of the observations in the sample. Across Supersectors, both the presence of block holders (generic and families) and the representativeness of financial institutions on the board resemble the entire distribution of observations in the sample. Indeed, block holders and financial directors are mostly prevalent in “Industrial Goods and Services” and “Personal and Household Goods” Supersectors. However, we also note that the distribution is not perfectly balanced. There are some Supersectors in which financial directors are on the boards of almost all the firms (e.g. Telecommunications) and other in which they are present in a small minority of firms (e.g. Technology).

4.2 Methodology

We start this section by modelling the estimation procedures for the investigation of our hypotheses HP1 and HP2, which predict that having a block holder leads to an increase in the cost of debt while having financial directors on the board has the opposite effect. To test these predictions we use a multivariate regression analysis and estimate our first model as follows:

$$CostDebt_{i,t} = \alpha_0 + \alpha_1 Block_{i,t} + \alpha_2 FinInterlock_{i,t} + \sum Controls_{i,t} + e_{i,t} \quad (1)$$

Where *CostDebt* is the interest expense on debt incurred by firm *i* at time *t*; *Block* and *FinInterlock* are the main explanatory variables, which capture respectively the presence of a block holder at

time t in firm i and the percentage of financial directors on the board of firm i at time t ; *Controls* is a vector of variables shown in the literature to be related to the cost of debt.

In the estimated model (1) the coefficient α_1 is expected to be positive and significant to provide evidence consistent with HP1, while the coefficient α_2 should result significant and negative to support what we predict with HP2.

To test whether a family block holder has a differential impact on the firm's cost of debt, we slightly modify the model estimated in Eq.(1). In particular, we replace the variable capturing the presence of a generic block holder ($Block_{i,t}$) with two indicator variables ($Family_{i,t}$ and $NonFamily_{i,t}$) that identify the firm i at time t as a family or non-family owned firm. The resulting estimation equation is as follows:

$$CostDebt_{i,t} = \beta_0 + \beta_1 Family_{i,t} + \beta_2 NonFamily_{i,t} + \beta_3 FinInterlock_{i,t} + \sum Controls_{i,t} + e_{i,t} \quad (2)$$

For HP1a to be supported, we expect the coefficient β_1 estimated in equation (2) to be significant and either positive or negative, according to which of the two conflicting views highlighted in prior studies on family ownership holds.

Finally, to examine hypotheses HP3 and HP3a predicting that financial directors on the board have a moderating role on the firm's cost of debt when a block holder (generic or family) owns the firm, we estimate the following two models:

$$CostDebt_{i,t} = \gamma_0 + \gamma_1 Block_{i,t} + \gamma_2 FinInterlock_{i,t} + \gamma_3 Block_{i,t} * FinInterlock_{i,t} + \sum Controls_{i,t} + e_{i,t} \quad (3)$$

$$CostDebt_{i,t} = \delta_0 + \delta_1 Family_{i,t} + \delta_2 NonFamily_{i,t} + \delta_3 FinInterlock_{i,t} + \delta_4 Family_{i,t} * FinInterlock_{i,t} + \delta_5 NonFamily_{i,t} * FinInterlock_{i,t} + \sum Controls_{i,t} + e_{i,t} \quad (4)$$

We expect γ_3 in equation (3) to be negative and significant to show that financial directors on the board mitigate the positive effect of concentrated ownership on the firm's cost of debt (Hp3). While, to provide support to Hp3a, the coefficient δ_4 in equation (4) should result either negative

and significant or non-significant, again according to which of the two effects, shown in prior studies to be related to family ownership, holds.

Our main identification strategy uses panel data tests that control for unobserved industry and year specific fixed-effects to avoid omitted variable bias. Together with industry and year fixed effects, we also estimate Eq.1-4 using industry-year clustered Rogers (1993) standard errors corrected for both heteroscedasticity and autocorrelation. Indeed, as financial interlocking directorates seem to occur at the industry level in our sample, we draw statistical inferences based on clustered standard errors by industry and year (as our panel data cover relatively few industries, clustering by industry only appears to be problematic and lead to biased standard errors (Petersen, 2009, p.460)).

4.3 Variables definition

In this paragraph we describe the process followed to codify and measure all the variables used in the models illustrated in the above paragraph. We give a particular emphasis in defining the three main variables for the test of our hypotheses: cost of debt, concentrated ownership structure and financial interlocking directorates. Further, we specify the control variables that we draw from prior literature as related to the firms' cost of debt and explain the reasons why some of them may matter in determining contemporaneously board interlocks with financial institutions and firms' debt pricing. The Appendix recapitulates all the variables used in the analysis and provides more details about their calculation.

4.3.1 Cost of debt

The dependent variable estimating the cost of debt (*CostDebt*) is a continuous variable measuring the firm's average interest rate on financial debt. Since we do not have access to such data as the actual interest rates paid by firms, we replace them by dividing the interest expense on financial debt by the average total (short- and long- term) debt for the year of each firm. As also pointed out in prior studies that adopt our same method to measure the cost of debt (see Pittman and Fortin,

2004; Francis et al., 2005; Minnis, 2011), preliminary descriptive statistics for this variable show that we deal with a noisy proxy for the cost of debt. Specifically, we observe that extremely high values of this variable are driven by very small values for its denominator. Dropping observations is the procedure most often used when dealing with the issue of extreme values for accounting ratios with very small denominators (Dechow, 1994). Hence, we decide to truncate the variable at the 95th percentile and we remove from the sample those firms with observations outside the 95th percentile of the variable distribution.

4.3.2 Concentrated ownership

We predict that the higher the concentration in the ownership structure of a firm, the higher the cost of debt. Concentrated ownership is measured as a binary variable (*Block*) that takes the value of 1 if the largest shareholder of the firm owns a percentage share of equity capital higher than 20% in the year.² Otherwise, if no single block holder has an ownership stake above the threshold level for the year, we consider the firm to have diffused ownership and the variable takes the value of 0.

In order to codify the type of block holder, we use a different dummy variable. *Family* is a dummy variable that takes the value of 1 if a family shareholder (or also a single individual, we consider both indifferently) owns a share of equity capital above the defined threshold of 20%, 0 otherwise. On the contrary, the dummy variable (*NonFamily*) takes the value of 1 if another type of block holder (i.e., a financial institution, a public company, a government entity) owns a share of equity capital above the defined threshold of 20%, 0 otherwise.

4.3.3 Financial interlocking directorates

Our main independent variable *FinInterlock* captures the presence of financial directors on the boards of non-financial firms, what we refer to also as “financial interlocking directorates”. We draw from prior literature and identify financial interlocking directorates as occurring when a director affiliated with a financial institution sits on the board of directors of a non-financial firm

² The 20% threshold for concentrated ownership is drawn by the literature investigating corporate ownership around the world (La Porta et al. 1999). More specifically, we refer to studies examining Italian listed companies⁷ and note that they use this threshold to measure the concentration of ownership structure (Enriques and Volpin, 2007; Croci and Caprio, 2008).

(Mizruchi, 1996). By affiliation we mean that the interlock occurs for each person sitting on the board of a non-financial firm who holds at the same time a directorship in the board of a financial institution, which we consider to be a bank, an insurance company or a firm providing financial services to other firms.

To code financial interlocking directorates we obtain annual data on boards' composition of financial and non-financial firms from the *Consob* database and we match them at the individual level. After tracing down individual connections between non-financial firms and financial institutions, we collapse the individuals' database at the firm level and we develop a metric that measures the extent of financial interlocking directorates. *FinInterlock* computes the percentage of financial directors appointed to the board over the total number of directors of the firm for the year.

4.3.4 Control variables

The multivariate models include several control variables shown in the literature to be related to the cost of debt. Among these variables we consider some related to the quality of corporate governance and other related to the firm's financials.

The former variables aim at controlling for general characteristics of the firm governance that may affect debt pricing. We introduce a measure for audit quality (*Big*) assessing whether the firm's financial statements are given more credibility by the auditing from a Big company (Pittman and Fortin, 2004), which should lower the firm's cost of debt. Prior evidence also suggests that the size of the board (*BoardSize*) and the separation of the roles of CEO and Chairman (*CEODual*) are important proxies for the quality of the firm governance and should have a positive impact in the process of debt pricing (Fields et al. 2012; Bhojraj and Sengupta, 2003).

The control variables related to the firm financial characteristics capture the underlying credit risk. In particular, we include firm size (*Size*) since we expect that larger companies are perceived to be less risky and leverage (*Lev*) as the cost of debt should increase with the amount of debt held by the company. We also use a measure for internal funding capability (*InternalFund*), which is expected to reduce the cost of debt as firms with higher retained earnings are better able to service

their debt. On the contrary, we predict that cash flow volatility (*CFOvolatility*) increases the cost of debt, as firms with less stable cash flows are perceived to be more risky. Unfortunately, we do not have access to such data as the presence of collaterals, loans' conditions and other characteristics of lending relationships. However, we try to control for financial statement variables that are typically used by financial institutions when assessing firms' creditworthiness and determining the conditions for granting the loan: asset structure for collaterals provision and sensitivity of firm performance to interest payments. To gauge the first characteristic we use a measure for tangible assets intensity (*Tangib*), to the extent that these assets can be liquidated to repay outstanding debt in case of default. We then compute interest coverage (*IntCov*) to capture the ability of the firm to cover its interest expense for the year with its net profits. For the reasons above argued, both of these measures are expected to decrease the cost of debt. Finally, some of the accounting and financial variables we introduce in the models have also the important aim of controlling for the reasons why financial directors are appointed on the board, which ultimately affect also the firm's cost of debt. Specifically, we attempt to account for both interlocks as mechanisms of co-optation (firms need to access capital and financial expertise because of bad performance/solvency conditions) and interlocks as mechanisms of monitoring (financial institutions need to monitor firms with greater investment opportunities, i.e. free cash flows available to invest in risky projects (Jensen, 1986)). For the first set of mechanisms we use the already mentioned variable capturing the internal funding capability of the company (*InternalFund*) but we also include the quick ratio (*Quick*), which is a variable that measures solvency, i.e. the ability of the company to use its most liquid assets to meet its obligations. For the second set of interlocks, on the one hand we introduce two variables gauging the extent of firm's growth opportunities, i.e. the net increase in sales from one year to the following (*SalesGrowth*) and the market to book value of the company (*M/B*); on the other hand, we include a variable capturing the extent of free cash flow available for investments (*CFO*). We provide details for how we calculated these variables in the Appendix.

5. Results

5.1 Descriptive statistics and univariate analysis

Table 2 reports descriptive statistics on financial interlocks, ownership concentration and the control variables introduced in our analysis. The average cost of debt is 4.7% and the truncation procedure that we adopt in the sample selection stage restricts its range to a maximum of 16%. The sample also contains firms with 0% expense for debt as they do not have outstanding debt bearing interest during the year. Our financial interlocking variable *FinInterlock* shows that financial directors constitute on average 9% of the board composition. However, we also note that in our sample firms with 0 financial directors coexist with firms in which up to 70% of the members of the board hold at the same time a directorship on the board of a financial institution.

[Table 2 here]

Concerning the variables measuring the extent of concentrated ownership, the greatest majority of firms' observations in our sample (89%) have what we define a block holder, i.e. a shareholder who owns a stake in the equity capital that is higher than 20%. This percentage is then represented by families/individuals for 71% of the sample and for 17% by other types of block holders (government entities, financial institutions, public companies, etc).

We also report statistics for the control variables used in the analysis. Consistent with extant research on Italian companies, the average number of board members in the sample is around 9. In 29% of the cases firms do not comply with the rule of separation between the roles of CEO and chairman of the board, while in 85% of the cases their financial statements are audited by a Big auditor.

Regarding the control variables we use as proxies for credit risk, the average firm in the sample has a coverage ratio of 8.5 times and is able to retain 5% of its total assets as profits available for future investments. Financial debt accounts for 31% of total assets, which is not as high to conclude that the majority of our sample firms depend entirely on debt as source of financing. When assessing asset structure for collaterals, we note that firms have almost the same

mean value (almost 30%) in terms of proportion of tangible assets over total assets. Further, on average our sample firms do not show particularly high levels of liquidity. Operating cash flow represents just 5% of total assets and the quick ratio is slightly below the unity, meaning that the average firm is not fully able to cover its current portion of obligations with the most liquid assets available.

Next, we split firm-year observations in two different sub-samples according to the presence of a block holder and compare them with tests of equality of the means. The third column of Table 3 reports results of T-tests used to assess these differences. The same statistical tests are also used to compare firm-year observations with a family owner to the rest of firm-year observations in the sample and to compare firm-year observations with financial directors on the board to those without such representatives. Results for these tests are presented respectively in the sixth and ninth columns of Table 3.

[Table 3 here]

The univariate tests conducted provide evidence that firms controlled by a block holder are larger and better financially equipped to service their debt financing (e.g. higher tangibility, interest coverage and internal funding capability). Further, firms owned by a block holder have no differential debt pricing. In contrast to this evidence, results presented in column 6 for the univariate tests on the sub-sample of firms with a family owner indicate that these firms have a significantly higher cost of debt.

In column 9 of Table 3, we also report results of the comparison between the two groups of firms with and without representatives of financial institutions on the board. Firms with financial interlocking directorates are significantly larger, have higher levels of debt but also better internal funding capability. These results are consistent with prior literature that has pointed at financial interlocking directorates as channels to ensure firms with access to funding and financial institutions with effective monitoring mechanisms. Further, it is more likely to find financial directors on the board of firms with overall better financial conditions in terms of creditworthiness

and debt repayment. Firms with financial directors show indeed significantly less volatile and higher levels of operating cash flows, higher ratios of tangibility and interest coverage. Even in terms of corporate governance, financial directors are more likely to sit on the board of firms whose financial statements are audited by a Big4 company, but also on the board of firms that have larger boards and are more likely to comply with the rule of separation of CEO and chairman. Further, results show that the two groups with and without financial interlocking directorates differ slightly and not significantly in terms of cost of debt financing.

However, these univariate comparisons do not control for correlated factors that might simultaneously influence the relationship between concentrated ownership, financial interlocking directorates and the cost of debt. As a consequence, these results only provide preliminary evidence and should be interpreted with caution.

Table 4 shows the Pearson pairwise correlations. Consistently with the findings of univariate tests, the cost of debt is significantly increasing with the presence of a family block holder. However, the correlation between the variable capturing the extent of the presence of financial directors on the board and the cost of debt shows no significant trend. As expected, the cost of debt is significantly and positively correlated with the level of indebtedness, growth opportunities and cash flow volatility. Also, as hypothesized, the cost of debt is decreasing when internal funding and profitability (operating cash flows) increase, interest coverage and tangibility ratios are high, and financial statements are audited by a Big 4 company.

[Table 4 here]

5.2 Multivariate analysis

We now turn to discuss the results of the regression models that examine the relation between concentrated ownership, financial interlocking directorates and the cost of debt. We run four separate models to test Eqs. 1-4 illustrated above and include all the control variables known to

affect the cost of debt. As above mentioned, we report and discuss results for our main identification strategy (i.e. the one with industry and year fixed effects).

[Table 5 here]

Results of Model 1 indicate that having a block holder in the ownership structure leads to a significant increase in the cost of debt of about 0.4%. This evidence is consistent with our first hypothesis, as we predict that debt-equity agency conflicts are exacerbated when there is a single block holder owning the company. Findings of Model 1 also indicate that the coefficient of the variable measuring financial interlocks is negatively associated with the level of the cost of debt, supporting our monitoring hypothesis HP2 even if results are significant at 10% level. Hence, per se the presence of financial directors on the board of a non-financial firm has a weak impact in decreasing the price it pays for debt financing.

Results of Model 2 provide further evidence on the relationship between concentrated ownership and the cost of debt. Indeed, we find that the significant and positive association shown in Model 1 is driven almost entirely by families as block holders. This means that when a family owns the largest share of a non-financial firm, debt financing is provided at a higher price. Specifically, having a family as owner leads to an increase of almost 0.5% in the cost of debt, which is also statistically significant at 1% level. However, we also note that the monitoring role played by financial institutions' representatives on the board is more effective in lowering the cost of debt of firms controlled by a family block holder. The coefficient of the *FinInterlock* variable is indeed negative, higher in absolute terms and more significant (5% level).

Most of the control variables we introduce in the models significantly explain the cost of debt. Consistently with our predictions, higher interest coverage, tangibility and internal funding ratios make the credit risk perceived lower and consequently the cost of debt decreases. On the contrary, the debt of firms with high growth opportunities is priced at an increasing level because of the higher expropriation risk perceived by lenders. For similar reasons, bigger firms bear significantly higher cost of debt because larger loan sizes increase the agency conflicts as they

provide more opportunities to engage in asset substitution (Minnis, 2011). Turning to the control variables that proxy for the quality of governance, results do not provide significant evidence of an impact of board size, but they also indicate that the non-compliance to the rule of separation between the roles of CEO and chairman of the board increases the firm's cost of debt significantly (1% level). Likewise, financial statements verification conducted by a Big auditor plays an important role in reducing creditors' monitoring costs and enabling companies to pay a lower price for debt financing.

In Models 3 and 4 of Table 5 we test the moderating effect of financial interlocking directorates on the relationship between concentrated ownership and the cost of debt. Findings of Model 3 provide support to our third hypothesis (HP3) that the stronger the presence of financial directors on the board of a firm, the lower the negative impact of concentrated ownership on its cost of debt.

In particular, the monitoring role played by financial interlocks is perceived by creditors as smoothing the higher risk of expropriation which is linked to the presence of a single block holder. The coefficient on the interaction variable is significant at 5% level and indicates that the presence of financial directors on the board has such a decreasing effect on the cost of debt that it fully compensates (-1.8% the effect of the *FinInterlock* variable) the opposite increasing effect of the presence of a block holder in the ownership structure (which is about 0.6%). On the contrary, the moderating role of financial interlocks totally offsets the effect that per se they appear to have on the cost of debt (i.e. results in Model 1 and 2). The coefficient on the variable *FinInterlock* turns now to be positive but not significant, leading to the intuition that the effectiveness of financial interlocking directorates as monitoring mechanism depends mainly on how concentrated is the ownership structure of the firm.

In addition, results of Model 4 indicate that the moderating role played by financial directors on the board is even stronger when the firm is owned by a family. The stronger the presence of financial directors on the board, the lower the perception of expropriation risk caused by the

presence of a family owner, the lower the price asked by creditors for the funding provided. Together with the results of Model 2 for the main effects, these results suggest not only that family ownership is not associated with a lower cost of debt, but also that compared to other types of owners, families are perceived by lenders as more risky in terms of wealth expropriation. Under this perspective we find the monitoring role played by financial institutions representatives on the firms' board to be even more important.

6. Conclusion

Our study examines the effect of interlocking directorates between non-financial companies and financial institutions on the cost of debt financing. We are interested in investigating this relationship when the agency conflicts between equity and debt holders are exacerbated by the presence of a block holder. Italy offers us an interesting setting to examine this research question and we analyze data on a sample of companies listed on the Italian stock exchange over the period 1998-2012. While prior research has investigated quite thoroughly the role of firms' board interlocks with financial institutions under a resource dependence perspective, scant is past examination of the role of these interlocks in mitigating agency costs raising from misaligned incentives between equity and debt holders. Indeed, concentrated ownership is expected to exacerbate the risk of wealth expropriation perceived by debt holders to the extent that they would price protect their claims and ask higher interest rates for the financing provided to the company. Consistently with this prediction, our results show that having a block holder in the ownership structure leads to a significant increase in the cost of debt paid by the firm. However, we also add to prior research as our findings imply an important role for representatives of financial institutions on the board of non-financial companies controlled by a block holder. We show that the presence of these board interlocks act as an important mechanism in moderating the costs of agency conflicts and help firms with a controlling shareholder to obtain debt financing at a lower price. Our evidence also suggests that the mitigating role of financial interlocking directorates is more pronounced when

firms are owned by families, confirming the hypothesis that creditors fear more the excess of private benefits consumption when a family has the control of the company.

Overall our results support the relevance of ownership structure in affecting the conditions of debt financing and point at board interlocks with financial institutions as an important channel through which the divergence of interests between controlling shareholders and creditors is effectively reduced.

We are aware that our results may not be generalized to other contexts. Italy is a peculiar setting where board interlocks are largely diffused and companies are for a large majority owned by block holders. However, our research may be extended by testing the predictions we make to other settings and showing whether our findings are tightly linked to the specific institutional context or may be found also under different conditions. Furthermore, we acknowledge that we investigate our research question without data on specific loans conditions (e.g. amounts, interest rates, maturities, creditors' identity and exposure, covenants). Future research could extend our results by examining whether using these additional data sheds further light on how differently the pricing process of debt financing actually works when financial directors join the board of the borrowing firm or they do not. To conclude, we are aware of the difficulty of inferring causation from the relationships that we find in this study. In the next future, we plan to extend our results with further robust checks and the intent of taking care of possible threats of endogeneity in our variables of interest.

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Table 1: Sample selection and characteristics**Panel A: Sample selection**

	Firms	Observations
Initial Sample (1998-2012)	520	4,929
less:		
<i>Financial Industry</i>	-126	-1,248
<i>Missing corporate governance data</i>	-74	-774
<i>Missing values of Cost Debt and control variables</i>	-34	-680
<i>Extreme observations</i>	-34	-299
<i>Observations with negative book value of Equity</i>	-2	-48
Final Sample	250	1,880

Panel B: Sample distribution by year

Year	Freq.	%	Block holder	%	Family	%	FinInterlock	%
2000	109	5.8%	95	5.1%	79	4.2%	55	2.9%
2001	111	5.9%	96	5.1%	81	4.3%	58	3.1%
2002	142	7.6%	122	6.5%	101	5.4%	65	3.5%
2003	140	7.4%	119	6.3%	97	5.2%	63	3.4%
2004	142	7.6%	122	6.5%	98	5.2%	63	3.4%
2005	144	7.7%	126	6.7%	100	5.3%	78	4.1%
2006	151	8.0%	133	7.1%	107	5.7%	74	3.9%
2007	156	8.3%	141	7.5%	109	5.8%	71	3.8%
2008	158	8.4%	146	7.8%	116	6.2%	74	3.9%
2009	168	8.9%	151	8.0%	120	6.4%	69	3.7%
2010	172	9.1%	156	8.3%	125	6.6%	69	3.7%
2011	158	8.4%	142	7.6%	116	6.2%	64	3.4%
2012	129	6.9%	117	6.2%	92	4.9%	51	2.7%
Tot.	1,880	100%	1,666	88.6%	1,341	71.3%	854	45.4%

Panel C: Sample distribution by industry

ICB Supersector:	Freq.	%	Block holder	%	Family	%	Fin Interlock	%
Automobiles & Parts	85	4.5%	82	4.4%	77	4.1%	58	3.1%
Basic Resources	9	0.5%	4	0.2%	3	0.2%	8	0.4%
Chemicals	43	2.3%	43	2.3%	42	2.2%	20	1.1%
Construction & Materials	145	7.7%	137	7.3%	137	7.3%	95	5.1%
Food & Beverage	57	3.0%	45	2.4%	39	2.1%	27	1.4%
Health Care	35	1.9%	31	1.6%	31	1.6%	21	1.1%
Industrial Goods & Services	470	25.0%	415	22.1%	359	19.1%	186	9.9%
Media	125	6.6%	113	6.0%	91	4.8%	73	3.9%
Oil & Gas	63	3.4%	62	3.3%	37	2.0%	20	1.1%
Personal & Household Goods	289	15.4%	252	13.4%	240	12.8%	108	5.7%
Real Estate	83	4.4%	81	4.3%	64	3.4%	40	2.1%
Retail	39	2.1%	22	1.2%	18	1.0%	8	0.4%
Technology	152	8.1%	121	6.4%	93	4.9%	35	1.9%
Telecommunications	29	1.5%	26	1.4%	14	0.7%	27	1.4%
Travel and Leisure	79	4.2%	79	4.2%	58	3.1%	33	1.8%
Utilities	177	9.4%	153	8.1%	38	2.0%	95	5.1%
Total	1,880	100%	1,666	88.6%	1,341	71.3%	854	45.4%

Table 2: Descriptive statistics

Variable	Obs	Mean	25th	Median	75th	Std. Dev.
<i>CostDebt</i>	1880	0.047	0.034	0.045	0.057	0.019
<i>FinInterlock</i>	1880	0.088	0.000	0.000	0.143	0.122
<i>Block</i>	1880	0.886	1.000	1.000	1.000	0.318
<i>Family</i>	1880	0.713	0.000	1.000	1.000	0.452
<i>Nonfamily</i>	1880	0.173	0.000	0.000	0.000	0.378
<i>Size</i>	1880	13.258	11.984	12.917	14.438	1.777
<i>Lev</i>	1880	0.312	0.205	0.312	0.406	0.150
<i>Tangib</i>	1880	0.281	0.118	0.241	0.397	0.206
<i>SalesGrowth</i>	1880	0.106	-0.038	0.053	0.159	0.381
<i>IntCov</i>	1880	8.511	0.692	3.207	7.882	25.529
<i>M/B</i>	1880	1.837	0.850	1.370	2.215	1.671
<i>CFOvolatility</i>	1880	0.402	0.060	0.125	0.276	2.373
<i>InternalFund</i>	1880	0.050	-0.004	0.045	0.117	0.165
<i>Quick</i>	1880	0.928	0.610	0.850	1.130	0.555
<i>CFO</i>	1880	0.051	0.006	0.050	0.093	0.070
<i>Big</i>	1880	0.848	1.000	1.000	1.000	0.359
<i>BoardSize</i>	1880	9.443	7.000	9.000	11.000	3.227
<i>CEODual</i>	1880	0.290	0.000	0.000	1.000	0.454

This table reports descriptive statistics for the variables employed in the regression analysis. The dataset consists of 1,880 firm-year observations of Italian listed companies for the period 2000-2012. All the variables are computed using balance sheet figures averaged over current and prior year, in order to avoid that events occurred during the year might affect results of the analysis. All the financial variables are winsorized at 1st and 99th percentile. The Appendix defines the variables used in the analysis and provides details about their calculation.

Table 3: Univariate tests

	Block holder			Family			Financial Interlocks		
	Yes	No	t-value	Yes	No	t-value	Yes	No	t-value
<i>CostDebt</i>	0.047	0.046	-0.63	0.048	0.045	-2.99***	0.048	0.047	-1.20
<i>Size</i>	13.304	12.898	-3.34***	13.104	13.641	5.45***	14.155	12.512	-22.01***
<i>Lev</i>	0.311	0.317	0.52	0.314	0.306	-1.05	0.326	0.300	-3.86***
<i>Tangib</i>	0.291	0.204	-7.51***	0.263	0.326	5.62***	0.293	0.271	-2.38**
<i>SalesGrowth</i>	0.108	0.091	-0.61	0.106	0.106	-0.02	0.106	0.106	0.03
<i>IntCov</i>	9.145	3.572	-5.28***	9.233	6.715	-2.20**	8.662	8.385	-0.24
<i>M/B</i>	1.861	1.656	-2.16**	1.895	1.694	-2.70***	1.893	1.791	-1.31
<i>CFOvolatility</i>	0.347	0.831	1.10	0.334	0.572	1.32	0.330	0.461	1.21
<i>InternalFund</i>	0.056	0.000	-4.95***	0.054	0.041	-1.66*	0.076	0.028	-6.44***
<i>Quick</i>	0.932	0.896	-1.05	0.959	0.850	-4.19***	0.953	0.907	-1.77*
<i>CFO</i>	0.051	0.046	-1.23	0.049	0.055	1.78*	0.060	0.044	-5.03***
<i>Big</i>	0.849	0.836	-0.48	0.839	0.870	1.77*	0.910	0.796	-7.12***
<i>BoardSize</i>	9.352	10.145	2.79***	9.319	9.750	2.53**	10.872	8.252	-18.62***
<i>CEODual</i>	0.291	0.285	-0.19	0.327	0.199	-6.01***	0.238	0.334	4.66***
Unique Firms	232	18		190	60		154	96	
Observations	1,666	214		1,341	539		854	1,026	

This table reports univariate statistics for the tests of the differences in the variables employed in the analysis across the distributions of the sub-samples of firms with and without generic block holder, family block holder and financial interlocking directors. All the variables are computed using balance sheet figures averaged over current and prior year, in order to avoid that events occurred during the year might affect results of the analysis. All the financial variables are winsorized at 1st and 99th percentile. ***, **, * indicate statistical significance at 1%, 5%, and 10% levels (two-tailed). The Appendix defines the variables used in the analysis and provides details about their calculation.

Table 4: Pairwise correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 <i>CostDebt</i>	1																
2 <i>FinInterlock</i>	0.05	1															
3 <i>Block</i>	0.01	0.04	1														
4 <i>Family</i>	0.07	0.05	0.57	1													
5 <i>NonFamily</i>	-0.07	-0.03	0.16	-0.72	1												
6 <i>Size</i>	0.05	0.48	0.07	-0.14	0.23	1											
7 <i>Lev</i>	0.08	0.07	-0.01	0.03	-0.04	0.16	1										
8 <i>Tangib</i>	-0.10	-0.01	0.13	-0.14	0.28	0.18	0.17	1									
9 <i>SalesGrowth</i>	0.13	0.00	0.02	0.00	0.01	-0.01	0.015	0.05	1								
10 <i>IntCov</i>	-0.22	-0.03	0.07	0.05	0.01	-0.05	-0.39	-0.02	0.06	1							
11 <i>M/B</i>	0.07	0.00	0.04	0.06	-0.03	-0.09	0.13	-0.08	0.03	0.07	1						
12 <i>CFOvolatility</i>	0.00	-0.03	-0.07	-0.05	0.00	-0.05	-0.10	-0.07	0.15	0.19	0.00	1					
13 <i>InternalFund</i>	-0.19	0.10	0.11	0.04	0.05	0.31	-0.22	0.11	0.02	0.38	-0.10	0.01	1				
14 <i>Quick</i>	-0.05	0.04	0.02	0.09	-0.09	-0.04	-0.38	-0.17	-0.07	0.26	-0.11	0.03	0.17	1			
15 <i>CFO</i>	-0.15	0.09	0.03	-0.04	0.07	0.20	-0.18	0.09	-0.02	0.33	0.07	0.03	0.41	0.15	1		
16 <i>Big</i>	-0.05	0.15	0.01	-0.04	0.06	0.31	0.02	0.07	0.02	0.06	-0.09	-0.00	0.16	0.05	0.15	1	
17 <i>BoardSize</i>	-0.03	0.36	-0.08	-0.06	0.01	0.50	0.03	0.03	-0.01	0.00	0.03	-0.05	0.22	0.04	0.19	0.24	1
18 <i>CEODual</i>	0.03	-0.10	0.00	0.13	-0.15	-0.17	-0.06	-0.13	-0.02	0.08	-0.04	-0.01	0.00	0.03	0.00	-0.11	-0.22

This table reports Pearsons pairwise correlations for the variables used in the regression analysis. All the variables are computed using balance sheet figures averaged over current and prior year, in order to avoid that events occurred during the year might affect results of the analysis. All the financial variables are winsorized at 1st and 99th percentile. Correlation in bold indicate statistical significance at 10% level (two-tailed) or below. The Appendix defines the variables used in the analysis and provides more details about their calculation.

Table 5: Regression Results

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
<i>Block</i>	0.0042*** 3.34	-	0.0055*** 3.96	-
<i>Family</i>	-	0.0048*** 3.54	-	0.0062*** 4.16
<i>NonFamily</i>	-	0.0016 1.01	-	0.0023 1.25
<i>FinInterlock</i>	-0.0078* -1.94	-0.0086** -2.14	0.0083 1.33	0.0074 1.18
<i>FinInterlock*Block</i>	-	-	-0.0181** -2.40	-
<i>FinInterlock*Family</i>	-	-	-	-0.0193** -2.48
<i>FinInterlock*NonFamily</i>	-	-	-	-0.0106 -0.901
<i>Size</i>	0.0020*** 5.86	0.0022*** 6.34	0.0021*** 5.89	0.0022*** 6.34
<i>Lev</i>	0.0019 0.50	0.0007 0.169	0.0016 0.42	0.0002 0.0612
<i>Tangib</i>	-0.0087*** -3.25	-0.0079*** -3.08	-0.0085*** -3.21	-0.0076*** -2.93
<i>SalesGrowth</i>	0.0053*** 3.29	0.0052*** 3.19	0.0053*** 3.30	0.0051*** 3.18
<i>IntCov</i>	-0.0001*** -5.2	-0.0001*** -5.24	-0.0001*** -5.27	-0.0001*** -5.3
<i>M/B</i>	0.0003 1.11	0.0003 0.996	0.0003 1.20	0.0003 1.11
<i>CFOvolatility</i>	-0.0001 -0.30	0.0000 -0.231	-0.0001 -0.30	0.0000 -0.209
<i>InternalFund</i>	-0.0149*** -4.44	-0.015*** -4.45	-0.0150*** -4.46	-0.0152*** -4.47
<i>Quick</i>	-0.0005 -0.66	-0.0008 -0.939	-0.0005 -0.54	-0.0007 -0.809
<i>CFO</i>	-0.0098 -1.53	-0.0091 -1.4	-0.0098 -1.52	-0.0089 -1.37
<i>Big</i>	-0.0021* -1.69	-0.0021* -1.68	-0.0021* -1.68	-0.0022* -1.7
<i>BoardSize</i>	0.0000 -0.28	-0.0001 -0.45	-0.0001 -0.47	-0.0001 -0.582
<i>CEODual</i>	0.0017* 1.96	0.0016* 1.8	0.0018** 2.02	0.0016* 1.83
<i>Constant</i>	0.0349*** 7.03	0.0331*** 6.59	0.0336*** 6.58	0.0320*** 6.21
Observations	1880	1880	1880	1880
Adj. R-squared	0.32	0.32	0.32	0.33

This table reports results for the regression analysis of concentrated ownership (generic and by type of owner) on cost of debt and the moderation of financial interlocking directorates on this relationship. Industry and year fixed effects are included. In *italics* we report t-statistics based on firm industry-year clusters and heteroskedasticity-corrected standard errors. All the variables are computed using balance sheet figures averaged over current and prior year, in order to avoid that events occurred during the year might affect results of the analysis. All the financial variables are winsorized at 1st and 99th percentile. ***, ** and * indicate statistical significance at 1%, 5%, and 10% levels. The Appendix defines the variables used in the analysis and provides more details about their calculation.

Appendix:**Variables definitions**

Variable measured	Variable name	Definition
Cost of debt	<i>CostDebt</i>	Ratio of Interest Expense on Debt (WC01251) over the Average of Short term debt¤t portion of long-term debt (WC03051)+ Long term debt (WC03251) in years t and t-1
Financial Interlocks	<i>FinInterlock</i>	Percentage of members on the board who are financial interlocks
Block Holder presence	<i>Block</i>	Dummy for the presence of a first shareholder who owns more than 20% of the share capital
Block Holder category	<i>Family</i> <i>NonFamily</i>	Dummy variables that classify the type of block holder (20% threshold) : individuals/families or other types (financial institutions, government entities, public companies, etc)
Size	<i>Size</i>	Natural log of average total assets (WC02999)
Leverage	<i>Lev</i>	Ratio of total debt (short term debt & current portion of long term debt (WC03051) + Long term debt (WC03251)) to average total assets (WC02999)
Assets structure for collaterals	<i>Tangib</i>	Ratio of Property, plant and equipment (WC02501) / average Total assets (WC02999)
Growth opportunities	<i>SalesGrowth</i>	Percentage change in net sales (WC01001) from year t-1 to t
Sensitivity of interest payments to performance	<i>IntCov</i>	Ratio of EBIT over Interest Expense on Debt (WC08291)
Market to Book value	<i>M/B</i>	Ratio of Market capitalization over Common equity (WC09704)
Cash-Flow volatility	<i>CFOvolatility</i>	Standard deviation of cash flow from operations (WC01551) over the prior three-year period
Internal funding capability	<i>InternalFund</i>	Ratio of Retained earnings (WC03495) over average Total assets (WC02999)
Solvency	<i>Quick</i>	Quick ratio (WC08101) = (Cash and Cash equivalents + Receivables)/ Total Current Liabilities
Free cash flow availability/firm performance	<i>CFO</i>	Ratio of Cash flow from operations (WC01551) over average total assets (WC02999) (as in Pittman and Fortin, 2004)
Audit quality	<i>Big</i>	Dummy indicator for the presence of a Big4 as auditing firm of the company
Size of the board	<i>BoardSize</i>	Raw number of directors on the firm board
CEO/chairman duality	<i>CEODual</i>	Dummy variable taking value of 1 if the CEO of the company is also the chairman of the board of directors, 0 if the two roles are attributed to different members

