

CROSS OWNERSHIP AND INTERLOCKING DIRECTORATES BETWEEN BANKS AND LISTED FIRMS: AN EMPIRICAL ANALYSIS OF THE EFFECTS ON DEBT LEVERAGE AND COST OF DEBT IN THE ITALIAN CASE*

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Abstract

Cross-ownership and interlocking directorates are two typical features of Italian capitalism involving both banks and non-financial companies. It is possible to refer to this phenomenon as “bank-firm connection”. The paper investigates the effects of “bank-firm connection” on the conditions of credit relationship. In particular, we find that the “bank-firm connection” lowers the leverage ratio of non financial companies, while it increases their cost of debt.

Keywords: Bank-firm connection, interlocking directorates, cross ownership, leverage, cost of debt

**Although this paper is the result of the joint work of the authors, every paragraph can be attributed to a specific author. In particular, par. 1, 5 (5.1, 5.2, 5.3, 5.3.1, 5.3.2, 5.4, 5.4.1, 5.4.2) 7 (7.1, 7.2) and 8 can be attributed to Riccardo Tiscini and par. 2 (2.1, 2.2, 2.3), 3, 4 and 6 to Francesca di Donato*

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1. Introduction

Like most other continental European countries, the Italian corporate governance system features a high concentration of direct ownership, for both unlisted and listed companies. The analysis of direct ownership and of the identity of owners reveals that a major role is played by families, coalitions, the State, and above all by other companies. The largest stake in listed and unlisted companies is held by other non-financial or holding companies. Contrary to other European countries, the amount held by financial institutions is limited. This leads to a web of somewhat unreadable relationships between companies, achieved through an extensive use of cross-holdings, voting agreements and also simply personal relationships. In particular, in Italy, pyramidal groups headed by families, coalitions, or the State have supplanted other forms of separation, whereas financial institutions have played a very limited role in fostering separation. This structure, reinforced by cross-ownership, circular ownership, and interlocking directorates, has allowed stable control over both small and large companies, with few control changes, especially hostile takeovers.

In fact, cross-ownership and interlocking directorates are two typical features of Italian capitalism, that have been recently referred to as “The Chamber of Lords” (Santella-Drago-Polo, 2007), to express the small number of ‘notables’ influencing the business system in the country.

The banking system doesn’t make any exception to this use, being inextricably inserted in the web,

with banks having important shareholding interests in many companies and big groups having important participations in the banks.

About 62% of non financial companies listed on the stock exchange have either cross-ownership or interlocking directorates with banks. This phenomenon is hereafter referred to as the “bank-firm connection”.

This raises doubts on the real competitiveness of the banking market and on the efficiency of the bank-firm relationship.

In the last decade, the Italian banking system has experienced, after the privatizations, a period of intense concentration (not differently from other European countries), that has now led to few relatively big players dominating the market.

On the one hand, the ownership of the biggest banks is neither totally fragmented nor privately controlled.

There are many significant shareholding interests held by the “banking foundations” (foundations whose most important assets are bank shares and to which an important part of banks shareholdings have been transferred during the privatization process) and also many non negligible equity interests held by important entrepreneurial groups. These interests are very often linked by voting agreements.

On the other hand, the ownership structure of non financial companies is characterized by family controlled companies and by companies controlled through the ‘coalition model’ (that is to say through shareholders agreements between significant non controlling shareholders).

Banks have relevant equity interests (more than 2%) in about the 40% of listed non financial companies. They rather often play an important role in shareholders' agreements.

As a consequence, both Italian banks and firms are not truly contestable. Furthermore, we can expect the "bank-firm connection" to bias the independence of decision-making processes in banks and, or in firms.

Our paper aims at contributing to the empirical demonstration of this decisional bias, investigating the effects of "bank-firm connection" on the conditions of credit relationship.

In particular, our main research questions are the following:

does "bank-firm connection" significantly affect (positively or negatively) the leverage ratio of non financial companies?;

does "bank-firm connection" significantly affect (positively or negatively) the cost of debt of non financial companies?

The possible explanation of "bank-firm connection" lowering cost of capital and allowing a higher level of indebtedness is consistent with agency theory, because it allows a reduction of information asymmetries and agency costs, thus enabling more favourable credit conditions.

On the other hand, the possible explanation of "bank-firm connection" increasing the cost of debt and reducing the level of indebtedness is consistent with the higher bargaining power of banks when holding equity interests in firms' capital and having a 'fiduciary' director in the board. This generates a sort of 'hold up' situation in which the bank manages to align credit condition to its own interests.

The structure of the paper includes a short literature review (par. 2), the explanation of the focus on Italian context (par. 3), the research question (par. 4), the illustration of the methodology of the analysis (par. 5), some descriptive statistics (par. 6) and results presentation (par. 7).

Some concluding remarks and future research directions will close the paper.

2. Literature Review

2.1 Banks-firms relationship

Banks-firms relationship is an important area of research. Many studies investigate the effects of this relation on firms performance and bank loans (Boot, 2000 and Ongena and Smith, 1999).

Even if banks could provide many different services to firms, the most important firms-banks transaction is borrowing and lending.

In the perspective of firms the decisions regarding bank debts belong to capital structure choices and are an important part of the policies concerning leverage and debt maturity.

Problems about firms' financial choices are related to information availability.

In a context without asymmetric information, the capital structure is irrelevant and the choice of different financial instruments has a non significant impact on firms value (Modigliani, Miller, 1958, Fohlin, 1998).

Since the market is actually characterized by asymmetric information and agency costs, the investors show some preferences for the various types of financing. In this perspective, the external finances generate different financing costs and benefits, to be taken into consideration in the decision-making process.

According to information asymmetries, banks, having access only to firm's external information, know less about the quality of debtors than they should do to make perfectly informed decisions. This means they will try to reduce information asymmetry or, otherwise, the asymmetry will increase the price of lending.

Interlocking directorate is one of the ways that can help to reduce information asymmetry (Mariolis, 1975). Its function is to monitor debtors by offering access to internal information. Through membership in directorates banks can keep the company management under their influence.

Another way that could be used in order to reduce information asymmetry is the cross ownership, that is the banks ownership of firms' equity.

But the connections between banks and firms imply a sort of general trade off that the economic and financial theory has not resolved yet.

On the one hand, there are many benefits stemming from a strict link between banks and firms: first of all, a better information flow between borrowers and lenders (with a positive impact on information costs), and moreover, bankers' capability in gathering timely information for credit evaluation and monitoring over time (Kroszner and Strahan, 2001). But, on the other hand, if there is an interlocking directorate between banks and firms, the director can face a potential conflict of interest, because in his role as director of the firm, he should try to get the best financing terms for the firm. On the contrary, as member of the bank's board, he should try to get the best terms for the bank and to avoid its risk. Many studies suggest that conflicts related to connected lending are one of the main reasons of the fragility of many financial systems (Rajan and Zingales, 1995, Hoshi, Kashyap and Sharfstein, 1991, Lamoreaux, 1994).

2.2 The role of interlocking directorates

In economic history, analysis of interlocking directorates (ID) has been used in studies about the role of banks in the industrialization of some European countries. ID would be used to establish long-run relations between industrial enterprises and banks, which would retain hegemony. There are several theories on the function of interlocking directorates (ID).

Mizruchi (1997), for example, shows three main reasons of interlocks creation: the first one is collusion, cooptation and monitoring, the second one is career advancement, and the last one is social cohesion.

Regarding the cooptation and monitoring (Dooley, 1969, Mizruchi and Stearns, 1994, Burt, 1983), it is possible to define cooptation as “the absorption of potentially disruptive elements into an organization’s decision-making structure” (Selznick, 1949). In this perspective, firms invite on their board representatives of the various resources in order to reduce environmental uncertainty and maintaining their position in the market. For this reason companies have on their boards bankers, suppliers, clients (Pfeffer e Salancik, 1978).

In the last twenty years this approach has been completed with a transaction-cost view (Williamson, 1985). According to this theories, interlocking are seen as one of many different ways a company can choose between market solutions and internalized activities within the boundaries of the firm.

The studies about the impact of ID don’t come to unique results. A system based on them may thus potentially produce economic inefficiencies (Carbonai, Di Bartolomeo 2006). Pennings (1980) found a positive association between industry concentration and horizontal ties (interlocking directors between firms operating in the same sector), while Burt (1983) found an inverted U-shaped function: in the case of very high market concentration, the few producers have little need to interlock to set prices.

Moving from a firm perspective to an individual director perspective, Zajac (1988) states that one reason for interlocks is the fact that individuals join boards for financial remuneration, prestige, and contacts that may prove useful in securing subsequent employment opportunities. Furthermore, according to Useem (1984), interlocks are a tool to promote upper-class cohesion creating a business elite. Such incentives for directors to assume multiple directorships might have negative consequences. According to Ferris et al. (2003) and Fich and Shivdasani (2006), multiple directorships place an excessive burden on directors with a negative impact on their ability to monitor and influence managers.

At any rate, all the empirical studies, although starting from different theoretic point of view, agree that ID create a special communication channel between linked firms which can lead to similar behavior (Davis, 1991).

In particular, some empirical studies examine the hypothesis of collusion finding that interlocking directorates can have a negative impact on the economic system since they endanger the independence of interlocked firms, decrease competition in the market for corporate control (Fich and White, 2005), and improve the ability of the controlling shareholders to expropriate the minority shareholders, extracting private benefits from control

(Barucci 2006).

In the perspective of market for corporate control, Cotter et al. (1997) study ID between bidder and target firms. Their findings suggest that the presence of directors interlocks reduces the gains to target shareholders and decreases the likelihood that a target firm receives multiple bids.

Moreover, Fich and White (2003) notice a negative association between the number of interlocking directorships and the probability of CEO turnover.

Finally, as concern the topic of expropriation of minority shareholders, according to Bertoni and Randone (2006), this risk is higher for companies linked by board interlocks, because these firms are more likely to act in concert in order to get an advantage for the controlling shareholders who appoint the majority of directors, thus generating a higher risk of expropriation for non controlling shareholders.

Many empirical researches have been carried out on the effect of interlocks on firm performance and the results of these studies are mixed, according to the different functions of ID (Bunting, 1976, Pennings, 1980, Burt, 1983, Fligstein and Brantley, 1992, and Phan et al. 2003).

Dooley (1969) finds that less solvent firms are likely to be interlocked with banks. Other studies also report that firms with high debt-to-equity ratios (Pfeffer, 1972) or organizations with an increased demand for capital (Mizruchi and Stearns, 1994) have a higher tendency to interlock their boards.

2.3 The cross-ownership

As concerns the issue of cross-ownership, that is the banks owning equity of non-financial firms, the debate related to the role played by banks doesn’t come to unique results.

Many researches suggest that such relationships may play a key role in resolving information problems and mitigating financial market imperfections.

A bank's equity participation can help overcome an important agency problem: without the equity participation, the bank would use its informational advantage over other sources of finance (e.g. competing banks) to extract profits from the client firm whenever the firm needs additional investment funds. This, in turn, reduces the incentives of the borrowing firm to generate profits. It is shown that even a small, minority equity stake held by the bank significantly reduces the propensity of the bank to extract profits, which then improves the incentives of the firm (Mahart-Smith, 2000).

The benefit of bank equity participation is related to firm characteristics (e.g. size, growth, capital needs, etc.), characteristics of the banking sector (e.g. competition), as well as information issues (e.g. the quality of the prevailing accounting practices).

Furthermore, the benefits of a bank's equity participation arise when it is difficult or costly for a

firm to access multiple or non-bank sources of funds. This constraint applies mostly to young or small firms (Petersen and Rajan, 1994) to firms in economies where public financial markets are not as well developed or information about firms is opaque, and to firms and industries which cannot easily access venture capital.

Many economists have worried about the effect that equity ownership would have on the riskiness of a bank's portfolio. While most authors do not look explicitly at the corporate finance side of the story, John, John, and Saunders (1994) and Santos (1999) do examine the effect of equity ownership by the bank on the risk choice of the firm. In this sense, the firm will choose less risky projects when the bank holds some of the firm's equity. In fact, contrary to the concerns of deposit insurers, a bank's overall portfolio risk may be lower when it holds some equity claims, as its borrowers now follow safer strategies.

Many authors (Sharpe 1990, Rajan 1992, and von Thadden 1995) consider situations where banks have private information about their borrowers and may potentially use this information to extract profits in the future.

Bank ownership stakes may provide a more direct form of monitoring and potentially aligns the incentives of firms with those of their bankers - depending on how large a stake the bank owns, and the importance of that stake relative to the bank's possibly simultaneous position as debt-holder. Bank equity ownership means a dual role for banks since they are simultaneously creditors and shareholders. This situation affects their incentives to defend the shareholders' interests (Morck and Nakamura, 1999) and, consequently, it impacts the firm's value. In fact, Morck et al. (2000) have shown that bank ownership is negatively related to firm's value.

Bank ownership is usually related to greater liquidity and looser financial constraints, which allows firms to undertake marginally acceptable investments and diminish their Debt/Equity ratios. The information content of bank equity stakes has been documented in Spain as well (Zoido, 1998; González, 2001). This evidence shows that bank equity stakes alleviate conflicts of interests and usually have a positive influence on firm performance.

3. The Italian context

Italy has always been characterized by a limited protection of minority shareholders and creditors and this explains the high degree of ownership concentration. The Italian institutional framework underlying this structure of corporate governance has been characterized by quite limited safeguards for minority shareholders: proxy fights have been discouraged by a very strict regime for proxies that was in force until July 1998; the takeover rules in force from 1992 until July 1998 were deemed inefficient and quite ineffective in terms of minority

shareholder protection. Interestingly, however, ownership disclosure rules are relatively satisfactory: the law sets a 2 percent threshold for the disclosure of holdings in listed companies, the lowest in Europe; for unlisted companies the identity of each shareholder must be disclosed, by notification to the company register.

Having said that, in last ten years, some important reforms are being strongly changed the features of corporate and financial markets law, which can be nowadays considered as characterized, at least formally, by a reasonable degree of investors protection.

The separation between ownership and control allows the growth and diversification of portfolios, but it requires monitoring to guarantee that the interests of those in control are not too distant from those of the owners. Depending on institutional structure and legally usable instruments, separation will differ in form, in extent and in impact on efficiency and performance. The method of separation typical of such countries as Britain and the United States is widely dispersed ownership with powerful directors or managers, counterbalanced by takeovers, independent directors, fiduciary duties, and supervision by financial institutions. This form of separation is uncommon in Italy, mainly because of the lack of instruments to safeguard minority shareholders' interests. Also uncommon is separation via financial supervision by banks or other intermediaries, partly owing to institutional limitations on their shareholdings in non-financial companies and their voting proxies at shareholders' meetings.

In the Italian context cross ownership and interlocking directorates are one of the most important sources of the separation between ownership and control.

As concern the cross ownership, for unlisted limited companies, there are no limits to reciprocal holdings, when the two companies are not in a control relationship with one another. If they are, the controlled company may not hold more than 10 percent of the other's shares. The rules for listed companies are more restrictive. The ordinary limit on cross-holdings (including shares held indirectly, as by controlled companies) is 2 percent if both companies are listed. This means that if one listed company holds more than 2 percent of another's voting shares, the latter may not exercise the voting rights attaching to shares exceeding two percent of the voting shares in the former and must sell such shares within twelve months. If a listed company holds more than 10 percent of an unlisted company's shares, the latter may not hold more than 2 percent of the former's shares; conversely, if an unlisted company holds more than 2 percent of a listed company's shares, the latter may not hold more than 10 percent of the former's shares.

The separation between ownership and control may also stem from the interlocking directorates, very

common in Italy, especially between banks and non-financial firms. There is no legal restriction on interlocking directorates, this is why they are so used. Very often bank directors serve on non financial board and their role is controversial. On the one hand, in fact in this way, they should monitor the creditors over time and get better information about the borrowers (with a positive impact on information costs), but, on the other hand, the director of the bank can face a potential conflict of interest because in his role as director of the firm, he should try to get the best financing terms for the firm, while, as member of the bank's board, he should try to get the best terms for the bank and to avoid its risk.

Since this phenomenon is very common in Italy, it is interesting to analyze the effect of this instruments on companies' leverage and their cost of debt.

4. Research question and hypothesis development

This research aims at contributing to the recently increasing stream of literature on the impact of banks-non financial firms relations on firms leverage and their cost of debt. The relation between cross ownership and interlocking directorates between banks and non financial firms is thus investigated, with particular reference to the impact on firms financial leverage and their cost of debt.

As the existing literature show, the impact depends on the prevalence of non financial firms' interests, meaning that the bankers have a higher monitoring role over the borrowers thanks to a better information flow related to credit evaluation allowing the company to get the best financing conditions, or, on the contrary, of the banks' purpose, meaning that the bankers will try to get the best terms for the bank and to avoid its risk.

We argue that the "bank-firm connection" highlights the prevailing of interests and higher bargaining power of banks when they have one of their directors acting as a director in the board of the borrower company, controlling the firms level of debt and the degree of financial risk of its investments in lending, and, moreover not reducing the cost of debt.

This is not consistent with the rationale about interlocking directorates reducing information asymmetries and thus creating the condition for a reduction of the cost of debt,

Having said that, we expect a negative correlation between the "bank-firm connection" and both firms' leverage and their cost of debt.

Accordingly, we formulate the following hypotheses:

Hypothesis 1: "bank-firm connection" has a negative effect on cost of capital of non financial companies, meaning that a higher involvement of bankers in non financial firms' boards increases their cost of capital.

The following paragraph will explain the methodology used for the study.

Hypothesis 2: "bank-firm connection" has a negative effect on the leverage ratio of non financial companies, meaning that a higher involvement of bankers in non financial firms' boards state limitations to their leverage (debt/equity ratio).

5. Methodology

5.1. The Sample and the methodology of the analysis

In order to test out research questions, we considered a sample of 159 Italian companies, listed on the Italian Stock Exchange Market. We considered in the sample all the sectors with the only exception of banks, insurance companies and other financial intermediaries.

In this sample, we analyzed the presence of Interlocking Directorates (ID) and Cross Ownership (CO) with banks and their effect on credit relation features.

Our definition of banks includes universal banks, retail banks, corporate investment banks (CIB) and other financial intermediaries.

In particular, in our model the presence of at least one between ID and CO reveals a situation of relevant "bank-firm connection" (BFC). At our knowledge this is an original approach, aimed at detecting the joint effects of both formal and informal 'bank-firm connections'.

We then analyzed, through two different linear regression models, the relation between the existence of "bank-firm connection" and two different depending variables:

the cost of debt, expressing the price of lending;
the debt/equity ratio, expressing the financial leverage.

The analysis covers a six years period and includes the years 2002-2006.

For each one of the regression models, next paragraphs will:

define the dependent, independent and control variables;

illustrate the regression method used for the analysis.

5.2. The Independent variables

Interlocking Directorates definition

For the purpose of this paper we considered the presence of Interlocking Directorates (ID) if a director sits in at least one board of a non financial company and at least in one board of a bank.

Directors standing in more banks' board but in no company's board or vice-versa in more companies' boards but in no banks' boards are not considered Interlocking Directorates in our analysis.

Data on board membership are taken by the Consob website (the Italian Authority for the Stock Market).

Cross Ownership Definition

In the analysis, firms present cross-ownership with banks when a bank has more than 2% of ordinary share capital or share capital with voting rights in the firm.

The 2% voting rights threshold is considered by the Italian law as the minimum relevant amount of stock to be publicly declared to the market.

Cross-ownership of more than 2% of voting rights among the bank themselves, among the non financial companies themselves and regarding relevant participations of non financial companies in banks are not considered CO in our analysis.

Data on relevant shareholding interests are taken by the Consob website.

5.3. Cost of debt analysis

5.3.1. The dependent and control variables of the Cost of Debt model

The dependent variable Cost of Debt (K_d) is expressed by the ratio between Interest expenses on debt and Total Debt.

Interest expenses on debt include all the service charges for the use of capital before the reduction for interest capitalized.

Total debt includes all interests bearing debts, including loans, bonds, convertible bonds, short-term financial debt.

The control variables are selected to express the influence on cost of debt of the following features of the firm:

operating risk, assumed to positively affect the cost of capital;
financial risk, assumed to positively affect the cost of capital;
profitability, assumed to negatively affect the cost of capital;
size, assumed to negatively affect the cost of capital;
growth, assumed to positively affect the cost of capital.

Operating risk is expressed by the unlevered Beta, that is to say the Beta of the Capm model ungeared with the Hamada formula (β_u).
Financial risk is expressed by the Total Debt/Equity ratio (D/E).

Profitability is expressed by the ROI (ROI).

Size is expressed by the market capitalization of the company (Mktcap).

Growth is expressed by the annual growth of sales (g).

All data are taken by Datastream database.

5.3.2. The regression method

On the above explained data, we performed the following linear regression model:

$$K_d = \text{constant} + C1*BFC + C2*\beta_u + C3*D/E + C4*ROI + C5*Mktcap + C6*g$$

5.4. Debt/Equity ratio analysis

5.4.1. The dependent and control variables of the Debt/Equity ratio model

The dependent variable Debt/Equity ratio (D/E) is expressed by the ratio between Total Debt and Shareholders' Equity.

Total debt include all interest bearing debts, including loans, bonds, convertible bonds, short-term financial debt.

Shareholders' equity include all shareholders' contributions and retained earnings (losses).

The control variables are selected to express the influence on cost of debt of the following features of the firm:

operating risk, assumed to negatively affect the debt/equity ratio;
profitability, assumed to positively affect the debt/equity ratio;
size, assumed to positively affect the debt/equity ratio;
growth, assumed to positively affect the debt/equity ratio;
financial needs, assumed to positively affect the debt/equity ratio.

Operating risk is expressed by the unlevered Beta, that is to say the Beta of the Capm model ungeared with the Hamada formula (β_u).

Profitability is expressed by the ROI (ROI).

Size is expressed by the number of employees (Empl).
Growth is expressed by the annual growth of investment (g).

Financial needs are expressed by the working capital length (WCL) and by the Fixed Asset/Total Asset ratio (FA/Tot Asset). This last ratio also represents the collateral of debt, in order to guarantee the fulfillment of the obligation.

All data are taken by Datastream database.

5.4.2. The regression method

On the above explained data, we performed the following linear regression model:

$$K_d = \text{constant} + C1*BFC + C2*\beta_u + C3*WCL + C4*ROI + C5*FA/TotAsset + C6*Empl + C7*g$$

6. Descriptive Analysis

Before studying the effects of Interlocking Directorates (ID) and Cross Ownership (CO) on credit conditions, we present some descriptive statistic about the sample.

The following tables present the average cost of debt and the average leverage of the firms included in the sample, distinguishing between those having at least one ID or one CO and the others.

First of all, considering the sample of 159 firms on the whole, almost 100 firms on 159 (about 62%)

have at least one ID or one CO for every year of the analysis, as shown in the following chart:

	WITH ID and/or CO	WITHOUT ID and/or CO	Total
2002	96	63	159
2003	97	62	159
2004	96	63	159
2005	96	63	159
2006	96	63	159

This shows how in Italy 'bank-firm connections' are both common and stable.

Considering the Debt/equity ratio, the analysis shows that, for every year of the analysis, the level of indebtedness is lower for firms with ID and/or CO than for firms without ID and/or CO. The mean value of D/E ratio for the five years is around 1,42 for the total sample, and particularly it is around 1,27 for firms with ID and/or CO and around 1,42 for firms without ID and/or CO.

	WHOLE SAMPLE	WITH ID and/or CO	WITHOUT ID and/or CO
2002	2,12	2,13	2,12
2003	1,91	1,17	1,91
2004	1,17	1,17	1,17
2005	0,98	0,98	0,98
2006	0,91	0,91	0,91
Mean Value	1,42	1,27	1,42

Another relevant aspect related to the indebtedness is that it significantly decreases over time.

In fact it is 2,12 for all the sample in 2002 and it gets 0,91 in 2006 always keeping lower for firms with an ID and/or CO.

This shows how Italian firms are now controlling excessive indebtedness better than before.

As concerns the cost of debt, the average cost of debt over the five years period is around 6,98% for the sample on the whole.

For each year firms with ID and/or CO have a higher cost of debt than firms without ID and/or CO.

The mean value of the five years is 7,03% for firms with ID and/or CO and 6,64% for firms without ID and/or CO, as shown in the following chart:

	WHOLE SAMPLE	WITH ID and/or CO	WITHOUT ID and/or CO
2002	6,73%	6,76%	6,73%
2003	7,15%	7,19%	7,15%
2004	9,17%	9,24%	7,47%
2005	5,76%	5,83%	5,76%
2006	6,11%	6,13%	6,11%
Mean Value	6,98%	7,03%	6,64%

7. Results presentation

7.1. The cost of debt model

The results of the regression model are presented in the following table:

Model Summary

Model	R Square	Adjusted R Square
Cost of Debt	0,522	0,518

Coefficients

Model	Unstandardized Coefficients	Standardized Coefficients	T
	B	Beta	
Constant	0,028		2,752
BFC	0,014		1,701
G	0	-0,002	-0,082
D/E	0	0,009	0,308
Bu	5,209	0,731	25,811
ROI	-0,002	-0,091	-3,162
Mktcap	7,27E-10	0,027	0,94

The model presents a good level of fit (Adjusted R Square: 0,52).

The "bank-firm connection" has a positive quite significant correlation with the cost of debt.

This could be explained by the prevailing interests and higher bargaining power of banks when they have one of their directors acting as a director in the board of the borrower company.

This is instead not consistent with the rationale about interlocking directorates reducing information asymmetries and thus creating the condition for a reduction of the cost of debt.

This is also contrary to the findings of some previous studies (Mahart-Smith, 2000) but is consistent with a negative relation between bank ownership and firm performance (Morck et al, 2000).

Our results show a significant positive correlation between operating risk (expressed by the unlevered Beta) and cost of debt. This is entirely consistent with the traditional risk/return approach of corporate finance.

Furthermore, our findings show a significant negative correlation between profitability (expressed by ROI) and cost of debt. Also in this case, this is intuitive and consistent with rational lenders' decision-making processes.

One expected result was the positive correlation between the level of indebtedness (debt/equity ratio) and the cost of debt. As the average debt/equity ratio for the sample in all the observed period is quite high (1,4), the expected result was consistent with the traditional corporate finance theory. Our findings show a non significant (positive) correlation.

Our results show a non significant correlation between the size (expressed by the market capitalization) and the cost of debt. Based on previous studies about the 'size-effect', we would have expected a lower cost of debt for bigger companies.

7.2. The debt/equity ratio model

The result of the regression model are presented in the following table:

Model Summary

Model	R Square	Adjusted R Square
Total Debt/Equity	0,278	0,269

Coefficients

Model	Unstandardized Coefficients	Standardized coefficients	T
	B	Beta	
(Constant)	1,002		7,936
Bu	-0,995	-0,096	-2,718
BFC	-0,238	-0,08	-2,198
WCL	-0,001	-0,07	-1,903
FA/TotAsset	0,422	0,06	1,667
Empl	2,73E-05	0,505	14,033
g	0,016	0,008	0,215
ROI	0	-0,004	-0,119

The model presents a rather good level of fit (Adjusted R Square: 0,27).

The “bank-firm connection” has a negative significant correlation with the debt/equity ratio.

This result could be also explained by the prevailing interests and higher bargaining power of banks when they have one of their directors acting as a director in the board of the borrower company. The effect is a more rigorous control on firm indebtedness by the bank. In other words, the bank doesn't allow an excessive indebtedness level for the company thus controlling the degree of financial risk of its investments in lending.

This is contrary to some findings of previous studies (Pfeffer, 1972).

This is not consistent with the explanation of firms calling bankers in their boards to have an easier and more convenient access to bank credit.

One significant expected result is the negative correlation between the operating risk (unlevered Beta) and the debt/equity ratio. Obviously, with a lower degree of operating risk, the bank can allow a higher level of indebtedness for the firm.

A counterintuitive result is the negative correlation between the working capital length and the debt/equity ratio, as a longer working capital cycle should bring to higher short-term capital needs and to higher short-term debts.

Finally, there is also a significant positive correlation between size and indebtedness. We would explain this result with the shortage of entrepreneurial and institutional investors' equity capital in the Italian stock market. Big companies experienced higher resort to external capital (i.e. borrowings) to finance their growth. This is also a possible explanation to our finding about a positive relation between size and cost of debt.

8. Future research directions and concluding remarks

The main limitations and future directions of our analysis regard:

a refining of data about the cost of debt, to distinguish the cost of bank borrowings from the cost of corporate bonds issued on the market;

further studies about the effect of relevant shareholding interests in banks held by non financial companies, that could lead to interlocking directorates having a different set of behavioral incentives (i.e. more from the side of firms' interests).

The reasons of our study were mainly to demonstrate the effects, in the Italian context, of “bank-firm connection”.

These effects could be consistent with two different kind of explanations.

The first, more consistent with information theory, agency theory and a “market approach” to bank-firm relationship, considers “bank-firm connection” as a way to reduce information asymmetry and transfer financial competences into the firm, thus enabling conditions for a lower cost of capital and allowing the sustainability of a higher indebtedness level (all other things being equal).

The second explanation is instead more consistent with behavioral and incomplete contracts theories, and refers to the incentives the bank have when it participates in firm's equity. Given a higher level of information and a higher bargaining power towards the firm, the bank influences the firm's decision-making profit, rising, all other things being equal, the price of lending (and thus its return on capital employed) and controlling the indebtedness level (and thus the insolvency risk of its lending assets).

Our findings contribute to confirm the second explanation and show how the bank-firm connections web play more in the interests of banks than in the interests of firms.

This is consistent with the well-known matter of bargaining power and centrality of big banks in the Italian capitalism, which is still suffering from an endemic shortage of entrepreneurial equity capital and a low presence of institutional investors.

These features are some of the causes of the difficulties Italian companies experience in establishing sustainable growth paths.

References

1. BARUCCI, E. (2006). Mercato dei capitali e corporate governance in Italia. Carocci editore.
2. BERTONI, F. and P.A. RANDONE (2006). The Small-World of Italian Finance: Ownership Interconnections and Board Interlocks Amongst Italian Listed Companies.
3. BOOT, A. and A. THAKOR (2000), “Can Relationship Banking Survive Competition?” Forthcoming, Journal of Finance.
4. BUNTING, D. (1976), Corporate interlocking, part III - interlocks and return on investment, *Directors & Boards*, 1, 4–11.
5. BURT, R. S. (1983), Corporate Profits and Cooptation, Academic Press, New York.
6. CARONAI D. and G. DI BARTOLOMEO (2006). Interlocking Directorates as a Thrust Substitute: The Case of the Italian Non-Life Insurance Industry. Department of Communication, Working Paper No. 1
7. COLLI A. (1999), ‘Network d'imprese: il caso dell'interlocking directorship’, in *Annali di Storia dell'impresa*, Vol. 10 pp. 447-469.

- 8.COTTER, J., A. SHIVDASANI, M. ZENNER (1997). Do Independent Directors Enhance Target Shareholder Wealth During Tender Offers?, *Journal of Financial Economics*, vol. 43, p. 195–218.
- 9.DAVIS, G. F. (1991), Agents without principles? The spread of the poison pill through the intercorporate network, *Administrative Science Quarterly*, 36, 583–613.
- 10.DOOLEY, P. C. (1969), The interlocking directorate, *American Economic Review*, 59, 314–323.
- 11.FERRIS, S. P., M. JAGANNATHAN, and A. PRITCHARD (2003), Too busy to mind the business? Monitoring by directors with multiple board appointments, *Journal of Finance*, 58, 1087–1111.
- 12.FICH E. M. and A. SHIVDASANI (2006), Are busy boards effective monitors?, *Journal of Finance*, 61, 689–724.
- 13.FICH E. M. and L. J. WHITE (2005). Why Do CEOs Reciprocally Sit on Each Other's Boards?, *Journal of Corporate Finance*, vol. 11, p. 175–195.
- 14.FICH, E.M. and L.J. WHITE (2003). CEO Compensation and Turnover: the Effects of Mutually Interlocked Boards. *Wake Forest Law Review*, vol. 38, p. 935–959.
- 15.FLIGSTEIN N. and P. BRANTLEY (1992), Bank control, owner control, or organizational dynamics: who controls the large modern corporation?, *American Journal of Sociology*, 98, 280–307.
- 16.FOHLIN, C., Iturriaga F.J.L., (2006). 'Bank relationship, ownership concentration and investment patterns of Spanish corporate firms', Working paper series.
- 17.FOHLIN, C. (1998). 'Relationship banking, liquidity, and investment in the German industrialization', *Journal of Finance*. vol. 53, no. 5, pp. 1737-1758.
- 18.FOHLIN, C. (1998). 'Bank Oversight and the Capital Structure of German Firms'.
- 19.GONZALES, F. (2001): "El contenido informativo de las participaciones industriales de la banca". *Economía Industrial*. NO. 341, pp. 25-33.
- 20.HOSHI, T., KASHYAP, A., SCHARFSTEIN, D., (1993). The choice between public and private debt: an analysis of post-deregulation corporate financing in Japan. NBER Working Paper No. 4421, Cambridge, MA.
- 21.KROSZNER, and P. E. STRAHAN (2001) Throwing Good Money after Bad? Board Connections and Conflicts in Bank Lending. *Journal of Financial Economics*.
- 22.KROSZNER, RANDALL S., and P. E. STRAHAN (2001), "Bankers on Boards: Monitoring, 28 Conflicts of Interest and Lender Liability," *Journal of Financial Economics*.
- 23.LAMOREAUX, Naomi, 1994, Insider lending: Banks, personal connections, and economic development in industrial New England, New York: Cambridge University Press.
- 24.MAHRT-SMITH, J. (2000), "The Interaction of Capital Structure and Ownership Structure," Working Paper, London Business School.
- 25.MARIOLIS P. (1975). Interlocking directorates and control of corporations: the theory of bank control. *Soc. Sci. Q.* 56:425–39.
- 26.MIZRUCHI, Mark S., 1996, "What Do Interlocks Do? An Analysis, Critique, and Assessment of Research on Interlocking Directorates," *Annual Review of Sociology*, 22, 271-98.
- 27.MIZRUCHI, M. S. and L. B. STEARNS (1994), A longitudinal study of borrowing by large American corporations, *Administrative Science Quarterly*, 39, 118–140.
- 28.MODIGLIANI, F., and MILLER, M. H. (1958). 'The cost of capital, corporation finance, and the theory of investment', *Amer. Econ. Rev.* 48, 261-297.
- 29.MORCK, R. M. NAKAMURA and A. SHIVDASANI (1999), "Banks, Ownership Structure, and Firm Value in Japan," Working Paper, University of North Carolina.
- 30.NON M.C., FRANCES P.H., (2007), 'Interlocking boards and firm performance: evidence from a new panel database', Tinbergen Institute Discussion Paper.
- 31.ONGENA, S. and D. SMITH (1999a), "What Determines the Number of Bank Relationships? Cross-Country Evidence," Mimeo, Norwegian School of Management (BI).
- 32.ONGENA, S. and D. SMITH (1999b), "Bank Relationships: A Review," Forthcoming in *The Performance*.
- 33.PENNINGS, J. M. (1980), *Interlocking Directorates*, Jossey-Bass, San Francisco.
- 34.PETERSEN, M. and R. RAJAN (1994), "The Benefits of Lending Relationships: Evidence from Small Business Data," *Journal of Finance*, 49, pp. 3-37.
- 35.PFEFFER J. (1972), 'Size and composition of corporate boards of directors: the organization and its environment'. *Admin. Sci. Q.* 17:218–28
- 36.PFEFFER J, SALANCIK GR. 1978. The External Control of Organizations: A Resource Dependence.
- 37.PHAN P. H., S. H. LEE, and S. C. LAU (2003), The performance impact of interlocking directorates: the case of Singapore, *Journal of Managerial Issues*, 15, 338–352.
- 38.PUEYO F.J., (2007), 'Interlocking directorates in Spanish banking in the twentieth century', Working paper series
- 39.RAJAN, R. (1992), "Insiders and Outsiders: the Choices Between Informed and Arm's-Length Debt," *Journal of Finance*, 47, pp. 1367-1400.
- 40.RAJAN, R.G., and ZINGALES, L. (1995). 'What do we know about capital structure? Some evidence from international data', *J. Finance* 50, 1421-1460.
- 41.SANTELLA P., DRAGO C., POLO A. (2007), 'The Italian Chamber of Lords Sits on Listed Company Boards. An Empirical Analysis of Italian Listed Company Boards From 1998 to 2006'.
- 42.SANTOS, J. (1999), "Bank Capital and Equity Investment Regulations," *Journal of Banking and Finance*, 23, pp. 1095-1120.
- 43.SELZNICK P. 1949. *TVA and the Grass Roots*. New York: Harper & Row.
- 44.SHARPE, S. (1990), "Asymmetric Information, Bank Lending, and Implicit Contracts: A Stylized Model of Customer Relationships," *Journal of Finance*, 45.
- 45.VON THADDEN, E.-L. (1995), "Long-Term Contracts, Short-Term Investment and Monitoring," *Review of Economic Studies*, 62, pp. 557-575.
- 46.WILLIAMSON, Oliver E: *The Economic Institutions of Capitalism*, Free Press 1985.
- 47.ZAJAC EJ. 1988. Interlocking directorates as an interorganizational strategy. *Acad. Management. Journal.* 31:428–38.
- 48.ZOIDO, M.E. (1998): "Un estudio de las participaciones accionarias de los bancos en las empresas españolas". *Investigaciones Económicas*. vol. 22, no. 3, pp. 427-467.