

# Multiple bank lending relationships in Italy: their determinants and the role of firms' governance features

Giuseppe Vulpes  
([giuseppe.vulpes@unicredit.it](mailto:giuseppe.vulpes@unicredit.it))  
Research Department  
UniCredit Banca d'Impresa

Preliminary Draft

This version May 2005

## Abstract

The aim of this paper is to analyze the determinants of multiple-bank lending - one of the main features of the bank-firm relationships in Italy. The analysis suggests that multiple bank lending is significantly and importantly linked with firms' governance characteristics. In particular, it emerges that firms adopting a less formalised model of governance - which could denote lower informational transparency or, more in general, lesser degree of protection of third creditors - are characterised by a greater level of multiple-bank lending. In this respect multiple-bank lending may be the consequence of a risk averse attitude of banks and thus constitutes a sort of insurance mechanisms whereby banks overcome difficulties in assessing their customer firms.

JEL Classification: G21, G34

Key words: bank firm relationships, multiple-bank lending, corporate governance

## 1 Introduction

Bank credit represents the main source of funding for Italian firms: according to the Italian Central Balance Sheet Office (Centrale dei Bilanci, hereinafter Ce.Bi.) data around 70% of firms' total financial debts is constituted by bank debt. In addition, the share of bank debts to total debts of manufacturing companies is almost double the average recorded in France, Spain and Germany (29% vs. 15%: source EU Commission Bach Database).

Given the key role that banks play in financing Italian firms an analysis of the characteristics of the bank-firm relationships in Italy is relevant, since these features may impact the screening and monitoring activities conducted by banks. Indeed, as known, the lender-borrower relationship is typically characterized by asymmetric information problems which may result in some investment projects not being financed despite having positive expected returns. In this context, it is generally recognised that banks have a role in reducing information asymmetries. It is also acknowledged that the ability of banks to reduce such information asymmetries is strictly connected with the ways they relate to their borrowers, namely the bank-firm relationship.

Against this backdrop, the aim of this paper is to analyse one of the main characteristics of bank-firm relationships in Italy: multiple-bank lending, namely the fact that firms tend to have credit relationships with several banks. There is extensive theoretical and empirical literature on this topic,<sup>1</sup> which highlights that multiple-bank lending may reflect banks' behaviour aimed at reducing the concentration of exposures towards a single counterpart, or it may stem from the fact that firms use multiple banking relationships in order to reduce the risk of being rationed or alternatively in order to pay lower interest rates (as in Detragiache et al 2000). Another explanation, recently suggested by Carletti et al. (2004), is that the degree of multiple-bank lending is positively associated with the costs incurred by banks in monitoring their customers.

---

<sup>1</sup> See the survey by Boot, A. W. A. (2000).

This paper attempts to provide an empirical contribution to the literature on the determinants of multiple bank lending relationships. This is done by using the Italian Credit Register and UniCredit Banca d'Impresa's (UBI) internal data for a sample of more than 20,000 Italian enterprises. In order to examine the relationship between the degree of multiple bank lending and firms' governance features, these data are then combined with the results of a survey on corporate governance recently conducted by UBI on a sample of 834 customer firms. Indeed, the main argument of this paper is that multiple-bank-lending may reflect the degree of firms' informational opaqueness and/or weaknesses in their governance structure. This is in line with Carletti et al. (2004) about the role of monitoring costs in explaining the degree of firms' multiple-bank lending. It is intuitive, in fact, that monitoring costs might be related to firms' informational opaqueness or, more in general, to governance structures providing a lesser degree of protection to the so-called outsiders (minority shareholders, third creditors, etc.). This would lead to argue that multiple-bank lending might constitute an insurance mechanism whereby banks try to overcome difficulties in assessing their customer firms.

The remainder of the paper is structured as follows. Section 2 provides some descriptive evidence on the degree of multiple-bank lending in Italy, whose basic results are exploited in section 3, where the determinants of multiple lending relationships are analysed by means of regression models. The link between firms' governance and bank-firm relationships' features is then analysed in section 4. Finally, section 5 summarises the main results of the paper and outlines the conclusions.

## **2 The degree of multiple-bank lending in Italy: some descriptive evidence**

As noted one distinguished features of bank-firm relationships in Italy is multiple-bank lending. According to the Italian Credit Register data, referred to a sample of 20,000 firms at the end of 2003, Italian companies had a median of 7 banks each.<sup>2</sup>

---

<sup>2</sup> Another feature is the widespread presence of guarantees, both real and personal: indeed 82% of the firms recorded in Credit Register had loans supported by personal or real guarantees

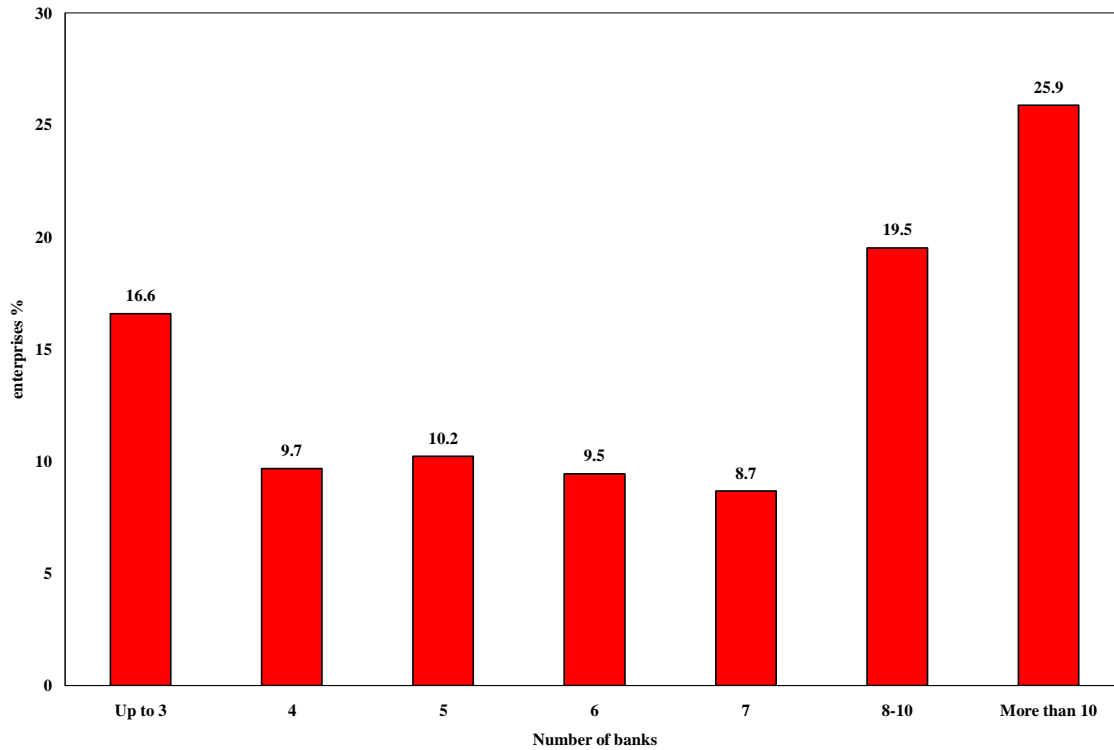
Multiple-bank lending is widely diffused even in other countries, both in Europe and outside Europe, but in Italy it seems to have a greater weight than elsewhere. Indeed, Ongena and Smith (2000) look at the number of bank relationships for a sample of 1,079 large European enterprises and find that Italian firms are characterised by the highest degree of multiple-bank lending relationships (15.2 banks per firm vs. an average of 5.6 for the whole sample). This has in Italy historical roots which can be traced back to the ways the banking system developed at the end of the Second World War, but especially in the administrative measures of credit control adopted during the seventies (e.g. portfolio constraints and lending limits – see Cotula et al. 1999).

However, besides the international comparison and the elements of historical nature, an analysis of the distribution of firms according to the number of banking relationships highlights a certain degree of heterogeneity, namely the fact that a significant share of enterprises maintain relationships with a relatively low number of banks, while other firms have an higher degree of multiple bank lending. Chart 1, for example, highlights that 16.6% of the firms have relationships with up to three banks.<sup>3</sup>

---

<sup>3</sup> The number of banking relationships is in Italy a truncated variable, i.e. for confidentiality reasons Bank of Italy groups in one class all the firms with less than 4 banking relationships.

**Chart 1: multiple bank lending in Italy**



*Source: Italian Credit Register and UBI Datawarehouse Corporate*

These initial results call for a closer look at those elements which might be associated with the different degree of multiple-bank lending of Italian companies.

In this context, a relevant variable might certainly be the size of the firm. It is likely, in fact, that the number of banking relationships could increase as firms grow. In the first instance, this could be owing to the fact that banks, in order to diversify their risks, are less willing to have sizeable exposures towards large firms. The positive relationship between degree of multiple-bank lending and size may also reflect the greater opaqueness of smaller firms. Indeed, most small firms do not publish balance sheets and when these are available they are less informative and less reliable respect to larger firms. Moreover, small firms are typically young, and have thus a lower track-record than companies of a larger size. This renders the credit worthiness of small firms more difficult to be assessed by external financiers, making it optimal that few or a single bank developed a knowledge of the firm aimed at evaluating its degree of risk. However, as will emerge

later on in this paper, the inverse relationship between informational opaqueness and the degree of multiple-bank lending seems to hold only for very small firms, while for medium enterprises the informational opaqueness appears to be positively associated with the degree of multiple bank lending.

The distribution of the number of banking relationships according to size highlights that, in fact, the size variable matters: larger firms tend to have an higher number of banking relationships (Table 1). However, even a material percentage of smaller firms is characterized by multiple-bank lending relationships. For example, about 22% of the enterprises with revenues up to 5 mln euros have lending relationships with more than 6 banks, the percentage increases to 55% for those firms with revenues between 5 and 10 mln euros. This evidence would then suggest that the size might not be the sole variable relevant in explaining the number of bank-firm relationships.

**Table. 1: multiple-bank lending and firm size**

		Number of banks							
enterprises %		Median	Up to 3	4	5	6	7	Over 7	Total
Size classes (revenues EUR mln)	up to 5	4	35.6	16.6	14.6	10.8	8.4	14.1	100
	from 5 to 10	7	10.8	9.4	11.8	12.8	11.0	44.2	100
	from 10 to 15	9	6.4	6.3	8.5	9.0	10.4	59.4	100
	from 15 to 25	9	4.4	4.8	6.9	7.3	9.2	67.4	100
	from 25 to 50	11	3.2	3.2	4.1	5.6	6.4	77.4	100
	from 50 to 100	13	2.7	3.0	2.3	4.1	4.3	83.5	100
	Over 100	16	1.9	1.2	3.4	2.5	2.7	88.3	100
	Total	7	16.6	9.7	10.2	9.4	8.7	45.4	100

*Source: Credit Register and UBI Datawarehouse Corporate*

The age of the firm also appears to be positively associated with the degree of multiple bank lending: the number of banking relationships increases as the firm becomes older (Table 2). However, the correlation seems, in this case, less robust. Indeed, even relatively young firms are characterized by a fairly high degree of multiple-bank lending.

For instance 34% of the firms who's age is up to two years old have relationships with more than 7 banks. This could perhaps be due to the degree of risk of the firm, in the sense that banks may perceive some firms as being too risky and therefore limit their exposures towards them.

**Table 2: multiple-bank lending and age of the firm**

		Number of banks							Total
		Median	Up to 3	4	5	6	7	Over 7	
Age of the firm (years)	Up to 2	5	32.7	8.9	11.0	8.9	4.2	34.3	100
	from 3 to 5	7	20.9	9.4	8.0	8.6	9.5	43.6	100
	from 6 to 10	7	15.3	9.2	9.4	9.7	8.7	47.8	100
	from 11 to 20	8	11.1	7.9	9.3	9.8	9.4	52.5	100
	from 21 to 30	8	8.4	7.7	9.5	8.8	8.4	57.1	100
	from 31 to 50	9	7.0	7.4	8.8	8.3	9.5	59.0	100
	Over 50	10	7.7	4.8	6.3	8.3	7.8	65.0	100
	Total	8	11.4	7.9	9.1	9.1	8.8	53.6	100

Source: Credit Register and UBI Datawarehouse Corporate

This interpretation finds some empirical support when looking at Table 3 which shows that high-risk firms (as measured by the Ce.Bi rating)<sup>4</sup> are characterized by an higher degree of multiple-bank lending.

<sup>4</sup> The Ce.Bi. rating is a risk indicator ranging from 1 to 9, where 1 denotes low-risk firms and 9 the riskiest enterprises. In Table 3 the 9 rating classes have been grouped into 3 categories: low (ratings 1 and 2), medium (ratings 3 and 4) and high risk (ratings from 5 to 9).

**Tab. 3: multiple-bank lending and firm risk**

		Level of risk			
		Low	Medium	High	Total
	No. of banks (median)	5	7	8	7
Number of banks	Up to 3	26.4	16.8	14.7	16.5
	4	13.9	10.5	8.5	9.7
	5	12.9	10.8	9.4	10.2
	6	11.1	10.2	8.8	9.5
	7	8.3	9.1	8.5	8.7
	Over 7	27.4	42.6	50.0	45.4
	Total	100	100	100	100

Source: Credit Register and UBI Datawarehouse Corporate

### 3 The determinants of the degree of multiple-bank lending

In the previous section a set of variables associated to the degree of multiple-bank lending has been highlighted, showing, inter alia, the need to consider multivariate analyses in order to take into account the joint effects of all these variables on the degree of multiple bank lending.

Thus, in order to analyse the determinants of the degree of multiple-bank lending an ordered logit model has been estimated. The dependent variable – the degree of multiple-bank lending – has been divided into 4 classes defined as follows:

- 1) up to 3 banks;
- 2) from 4 to 7 banks;
- 3) from 8 a 10 banks;
- 4) over 10 banks

The variables taken into consideration as explanatory variables are: the size of the firm (measured as the natural logarithm of revenues - SIZE), the dependence of the firm from

bank debt (proxied by the share of bank debt on total debt - BANKDEBT), the firm's degree of risk given by four dummy variables indicating the fact that the firm falls into one of four rating classes (as provided by the Ce.Bi. rating – d\_RATING\_i for i from 1 to 4),<sup>5</sup> and a set of regional and industry dummies which serve as control variables. In order to differentiate the effect of the firm's risk factor according to size, the dummy d\_RATING\_i has been interacted with three size dummies representing small (up to 10 mln euro of revenues), medium (revenues from 10 to 50 mln euro), and large (revenues over 50 mln euro) enterprises respectively.<sup>6</sup>

The model, therefore, estimates the likelihood that a certain firm belongs to one of the four multiple lending classes as a function of a set of covariates, i.e.:

$$(1) \quad \Pr[MULT = i] = \psi \left( \begin{array}{l} \alpha_0 + \alpha_1 SIZE + \alpha_2 BANKDEBT + [\beta_2 \quad \beta_3 \quad \beta_4] \cdot \begin{bmatrix} d\_RATING_2 \\ d\_RATING_3 \\ d\_RATING_4 \end{bmatrix} \cdot d\_Small + \\ + [\gamma_1 \quad \gamma_2 \quad \gamma_3 \quad \gamma_4] \cdot \begin{bmatrix} d\_RATING_1 \\ d\_RATING_2 \\ d\_RATING_3 \\ d\_RATING_4 \end{bmatrix} \cdot d\_Medium + [\theta_1 \quad \theta_2 \quad \theta_3 \quad \theta_4] \cdot \begin{bmatrix} d\_RATING_1 \\ d\_RATING_2 \\ d\_RATING_3 \\ d\_RATING_4 \end{bmatrix} \cdot d\_Large + \\ + [\eta_1 \quad \eta_2 \quad \eta_3] \cdot \begin{bmatrix} d\_IIND \\ d\_SER \\ d\_CON \end{bmatrix} + [\lambda_1 \quad \lambda_2 \quad \lambda_3] \cdot \begin{bmatrix} d\_NW \\ d\_NE \\ d\_SOUTH \end{bmatrix} \end{array} \right)$$

where MULT is the multiple-bank lending class which can assume values from 1 to 4 (as specified above). The model is estimated using Credit Register data (containing bank-firm relationships information) referred to the end of 2003, while balance sheet data taken from Ce.Bi. are referred to end 2002.<sup>7</sup>

<sup>5</sup> It is an increasing measure of risk which varies from 1 to 9, where 1 indicates a low risk firm and 9 an high risk firm.

<sup>6</sup> A model has been estimated considering, besides the mentioned variables, also the age of the firm among the explanatory variables. The variable is positively and significantly associated with the degree of multiple bank lending. Since this result does not substantially differ from the results described in what follows, it is not reported (to save space).

<sup>7</sup> The model has been estimated also using bank-firm relationship information referred to end-2002. The results are basically unchanged.

The results of the model highlight that the probability of engaging in a multiple-bank lending relationship increases in firm size, the dependence from bank debt and firm risk (Table 4).

**Table 4: ordered logit model results**

Dependent variable = degree of multiple bank lending (measured in 4 classes)				
Number of observations = 21,946				
Pseudo R2 = 0.1519				
	Coefficient	std. Err	z	P > z
SIZE	0.83	0.03	30.92	0.00
BANKDEBT	0.01	0.00	17.16	0.00
d_RATING 2*d_Small	0.52	0.06	8.64	0.00
d_RATING 3*d_Small	1.07	0.06	18.61	0.00
d_RATING 4*d_Small	1.15	0.09	12.25	0.00
d_RATING 1*d_Medium	0.16	0.09	1.73	0.08
d_RATING 2*d_Medium	0.86	0.07	11.66	0.00
d_RATING 3*d_Medium	1.54	0.07	21.71	0.00
d_RATING 4*d_Medium	1.30	0.15	8.49	0.00
d_RATING 1*d_Large	0.07	0.16	0.41	0.69
d_RATING 2*d_Large	0.63	0.13	4.97	0.00
d_RATING 3*d_Large	1.31	0.13	10.34	0.00
d_RATING 4*d_Large	0.83	0.33	2.56	0.01
d_IND	0.68	0.15	4.44	0.00
d_SER	0.10	0.15	0.67	0.51
d_CON	0.56	0.16	3.55	0.00
d_NW	-0.17	0.03	-5.17	0.00
d_NE	-0.65	0.03	-19.12	0.00
d_SOUTH	-0.19	0.05	-4.29	0.00

*Source: Credit Register and UBI Datawarehouse Corporate*

In particular, the association between the degree of risk and the likelihood of being a firm which recurs to multiple-bank lending highlights two interesting findings. First, the coefficients measuring the sensitiveness of the degree of multiple-bank lending to the balance sheet rating appear significantly higher for medium sized firms than for small and large enterprises. This may reflect a tendency of banks which are not willing to grant

credit over a certain amount to riskier firms, forcing them to use multiple-bank lending relationships to get the quantity of credit they need. In turn, such behaviour could reflect a certain degree or risk aversion on the part of banks, which may derive from a difficulty in assessing the real risk posed to them by some firms, in this case medium size firms. Indeed, as shown in Section 4, the results of a recent survey on corporate governance, conducted by UniCredit Banca d'Impresa on a sample of over 800 Italian firms, highlight the fact that medium enterprises are characterised by a corporate governance structure and degree informational opaqueness very similar to those of small firms. However, while the effect on a bank balance sheet of the difficulty in assessing the real risk of exposures towards small firms (stemming from informational opaqueness) is overall limited, such effect could be of a much larger magnitude in the case of medium firms, thus generating the mentioned risk aversion and therefore multiple-bank lending.

The second interesting finding of the model is the fact that the degree of multiple-bank lending for medium size and, especially, large size firms does not monotonously increase as does the firm's risk profile. For example, the estimated coefficient for the rating category 3 (for medium and large firms) is larger than the one for the rating category 4. This would suggest that those firms falling into the rating class 3 (comprising the Ce.Bi. ratings from 5 to 7), and therefore with a medium-to-high risk, make use of multiple-bank lending in order to reduce the risk of being credit rationed and/or to obtain lower interest rates on their loans. By contrast, recurring to multiple-bank lending would appear difficult for the riskiest firms, namely those falling into the rating class 4 (Ce.Bi. ratings 8 and 9).

Once the coefficients of the model have been estimated, it might be interesting to assess the economic meaningfulness of the variables employed as determinants of the degree of multiple bank lending (beyond their statistical significance). This can be done by calculating the marginal probabilities that a firm belongs to a certain multiple-bank lending class according to different values of the explanatory variables. The marginal probabilities are obtained by simply substituting the estimated coefficients in the logistic function, varying the values of the explanatory variable of interest and keeping constant

(for example at their average) those of the other variables. Table 5 reports the marginal probabilities of having more than 10 lending relationships associated with different values of the independent variables. In particular, the exercise considers the marginal probabilities at the average, at the 75-th and 95-th percentile of the explanatory variable. Of course, in the case of the dummy variables indicating the firm's degree of risk the marginal probabilities are referred to the change of the variable from 0 to 1.

As the table illustrates the size variable is highly significant from an economic viewpoint: the probability of engaging in lending relationships with more than 10 banks, moves in fact from 30.43%, in the case the log of revenues is equal to the average, to 46.08% and 76.54% when the size variable equals the 75-th and 95-th percentiles respectively.

By contrast, the variable representing the dependence from bank debt (share of bank debt on total debt) does not appear economically significant. The probability of having a high degree of multiple-bank lending increases of less than 4 percentage points (from 30.48% to 34.13%) when the variable changes from the average value to the 75-th percentile. This is probably due to the fact that this variable has a very low variability within the sample: indeed a percentage over 70% of the sampled firms has a share of bank debt above 80%.

The effect of the rating variable is instead quite high. Taking for example the economic significance of the dummy variable rating 3 for the medium sized firms, one yields that the marginal probability to have more than 10 lending relationships increases from 25.1% to 61% when the dummy changes from the value 0 to 1.

**Table 5: Economic significance of the variables**

---

Marginal Probabilities to have more than 10 bank lending relationships

---

Explanatory variable	Mean value	75th percentile	95th percentile
SIZE	30.43%	46.08%	76.54%
BANKDEBT	30.48%	34.13%	34.13%

---

Effect of the risk dummy variables

---

	0	1
d_RATING 2*d_Small	28.69%	40.40%
d_RATING 3*d_Small	23.59%	47.33%
d_RATING 4*d_Small	29.67%	57.13%
d_RATING 1*d_Medium	30.38%	33.83%
d_RATING 2*d_Medium	28.65%	48.67%
d_RATING 3*d_Medium	25.11%	61.03%
d_RATING 4*d_Medium	22.37%	61.32%
d_RATING 1*d_Large	30.48%	31.90%
d_RATING 2*d_Large	30.04%	44.53%
d_RATING 3*d_Large	29.25%	60.43%
d_RATING 4*d_Large	30.43%	50.20%

---

Source: Credit Register and UBI Datawarehouse Corporate

#### **4 Multiple-bank lending relationships and firms' governance features**

In the previous section it has been suggested that the degree of multiple-bank lending is an increasing function of firms' degree of risk and that this could be somehow interpreted as the effect of banks' risk aversion towards those firms whose risk is more difficult to be assessed because of weaknesses in their governance structure and/or because of the opaqueness of the information provided. Indeed, a recent paper by Carletti et al. (2004) maintains that the degree of multiple-bank lending is directly associated with the monitoring costs of the different exposures. The greater is the difficulty (the cost) of banks to evaluate and monitor their customers' risk profile, the higher would be the degree of multiple-bank lending. It is also likely that such costs could be somehow correlated with the firms' governance features. It is intuitive in fact that governance structures characterised by lower informational transparency or, more in general, a lesser

degree of protection of the so-called outsiders (minority shareholders, external financiers, etc.) tend to raise monitoring costs.

As an extension of the analyses conducted in the previous section, the information coming from a recent survey on the corporate governance of Italian firms, recently conducted by UniCredit Banca d'Impresa (UBI) on a sample of over 800 customer firms, has been used in order to verify whether the degree of multiple bank-lending can be somehow associated with characteristics of firms' corporate governance.<sup>8</sup>

The results of this survey confirm some well-known features of the governance of Italian firms, as the high degree of ownership concentration, the widespread presence of groups even informal, the prevalence of informal governance structures, characterised by the lack of explicit and codified rules and binding external control mechanisms aimed at protecting creditors and minority shareholders. Besides these features, the survey also highlights a certain degree of heterogeneity in some governance elements, with regard in particular to the size of the firms. More specifically, the survey shows that medium size enterprises are characterised by governance features similar to those of small firms as regards in particular the informational opaqueness or, more in general, the degree of protection of external financiers.

With these findings in mind, the ordered-logit model employed in Section 3 has been estimated again using the data of the firms sampled in the survey, and adding to the explanatory variables previously considered an indicator summarising firms' governance features. In particular, the indicator is a dummy variable specifying the fact that the firm has (=1) or not (=0) a formal or codified governance structure. Specifically, a governance structure is defined as formal or codified when the following three conditions are met:

- a) the firm CEO or managing director is not relative of the firm owner;
- b) the firm has independent members within its board of directors;

---

<sup>8</sup> Please note that when combining the information from the survey with the Credit Register and the balance sheet data, the sample size reduced quite significantly.

- c) the firm has a planning and control system.

The results of the model (Table 6) confirms the findings obtained in the previous section with the larger sample of firms: the degree of multiple-bank lending is positively associated with firm's size, its dependence from bank debt (not statistically significant, though) and its degree of risk. The variable summarising the firm's governance features is statistically significant and enters with the expected sign: relying on a formalised governance system reduces the probability of engaging in multiple-bank lending relationships since this may likely imply lower monitoring costs for banks. In other words, this result would suggest that, other things being equal, firms adopting a governance model with the potential to provide an higher degree of protection to *outsiders* are also those with fewer multiple-bank lending relationships, since banks are presumably less risk averse towards them. This negative relationship might be also interpreted as the tendency by the management of more opaque firms to use multiple bank lending as a device to reduce the intrusion of external financiers (banks) in the administration of the firm (as argued among other by Carletti (2004)). This is especially true when multiple-bank lending is associated with lower screening and monitoring activities by banks, and when the so called private benefits of control accruing to firm's managers/owners are higher than the costs of maintaining lending relationships with several banks.

**Table 6: ordered logit model results**

---

Dependent variable = degree of multiple bank lending (measured in 4 classes)  
Number of observations = 605  
Pseudo R2 = 0,1839

---

	Coefficient	std. Err	z	P > z
SIZE	0.81	0.13	6.30	0.00
BANKDEBT	0.01	0.00	1.54	0.12
d_Rating high risk*d_Small	0.35	0.28	1.22	0.22
d_Rating low risk*d_Medium	0.37	0.38	0.98	0.33
d_Rating high risk*d_Medium	1.45	0.32	4.56	0.00
d_Rating low risk*d_Large	0.33	0.49	0.67	0.51
d_Rating high risk*d_Large	1.43	0.49	2.91	0.00
d_governance	-0.95	0.39	-2.42	0.02
d_IND	0.09	0.61	0.16	0.88
d_SER	0.07	0.65	0.11	0.91
d_CON	-0.57	0.62	-0.93	0.35
d_NW	0.71	0.26	2.72	0.01
d_NE	0.33	0.24	1.40	0.16
d_SOUTH	-0.14	0.28	-0.49	0.62

---

*Source: Credit Register and UBI Datawarehouse Corporate*

At this point, it might be useful to assess the economic meaningfulness of the different explanatory variables employed in the model. Once more, this is done by yielding the marginal probabilities to have more than 10 bank-lending relationships associated with different values of the independent variables.

The results of this exercise confirms those previously obtained using the larger sample (this constitutes, to some extent, an indirect robustness check for the model). In particular the test confirms the high economic significance for the size variable as well as for the risk indicator especially for medium and large firms. Indeed, in the case of medium size high-risk firms the probability of having more than 10 lending relationships increases from 48.5% to 79.8% when the risk dummy variable changes from 0 to 1.

More importantly, the variable summarising the firm’s governance features also exhibits a relatively high economic meaningfulness: the marginal probability of multiple bank lending decreases in fact from 55.7 to 32.7% as the firm moves from an informal to a more codified corporate governance structure. Although alternative explanations could not be ruled out, these findings would thus provide some empirical support to the thesis that multiple-bank lending might constitute a rational response of banks to overcome a difficulty in assessing the real degree of risk of some borrowers.

**Table 7: Economic significance of the variables**

Marginal Probabilities to have more than 10 bank lending relationships			
Explanatory variable	Mean value	75th percentile	95th percentile
SIZE	53.60%	70.47%	91.05%
BANKDEBT	53.10%	56.05%	56.05%
Effect of the risk and governance dummy variables			
	0	1	
d_Rating high risk*d_Small	51.50%	60.05%	
d_Rating low risk*d_Medium	51.87%	61.01%	
d_Rating high risk*d_Medium	42.87%	76.28%	
d_Rating low risk*d_Large	52.36%	60.42%	
d_Rating high risk*d_Large	48.49%	79.79%	
d_governance	55.73%	32.67%	

*Source: Credit Register and UBI Datawarehouse Corporate*

## 5 Summary and conclusions

This analysis on one of the main features of the bank-firm relationship in Italy, multiple-bank lending, underlines that this feature is significantly and importantly related to characteristics of firms’ corporate governance. Enterprises having a more informal and not codified governance system, which might be characterized by lower informational transparency or, more in general, lesser protection for third creditors, are also those with an higher degree of multiple-bank lending. While different interpretations could not be excluded, this would suggest that multiple-bank lending might be the consequence of a risk averse attitude of banks, thus constituting a sort of insurance mechanisms whereby

banks overcome difficulties in assessing their customer firms. This issue seems particularly relevant especially for medium size firms which, on the one hand, exhibit corporate governance features similar to those of small firms and, on the other, show a degree of multiple bank lending comparable to that of large enterprises.

This may have important policy implications. Indeed, a large body of literature on the bank-firm relationship highlights that the degree of multiple-bank lending is typically associated with lower credit availability especially in adverse cyclical conditions (the well known credit rationing issue). This is important also at the light of the new accord on banks' capital requirements (Basel II). Indeed, if it is true that Basel II could bring about a generalized improvement in the ability of the banking sector to measure and manage risks, thus reducing the need to recourse to multiple bank-lending in order to overcome the uncertainty over the real degree of risk of the borrowers, it is also true that significant progresses in firms' informational transparency as well as in their corporate governance structures are needed to achieve such results. The straight implication of this is that those firms not capable of making progress in their governance model might run the risk, in the near future, of suffering from a significant tightening of their credit conditions.

## References

- Agarwal R. and Elston (2000), "Bank-firm Relationships, Financing and Firm Performance in Germany, mimeo
- Angelini P., R. Di Salvo and G. Ferri (1998) "Availability and cost of credit for small businesses: Customer relationships and credit cooperatives", **Journal of Banking and Finance** **22**, pp. 925-954
- Barca F. (1994) "Imprese in cerca di padrone. Proprietà e controllo nel capitalismo italiano", Bari, Laterza.
- Barca F., Bianchi M., Brioschi F., Buzzacchi L., Casavola P., Filippa L., Pagnini M. (1994) "Assetti proprietari e mercato delle imprese. Vol. II. Gruppo, proprietà e controllo nelle imprese italiane medio-grandi", Bologna, Il Mulino.
- Barca F., M. Bianco, L. Cannari, R. Cesari, C. Gola, G. Manitta, G. Salvo, L. F. Signorini (1994) "Assetti proprietari e mercato delle imprese. Vol. I. Proprietà, modelli di controllo e riallocazione delle imprese industriali italiane", Bologna, Il Mulino.
- Belli E., F. Giordano (2005) "Governance, mercati e struttura finanziaria delle imprese: l'indagine di UniCredit Banca d'Impresa sulla corporate governance", mimeo.
- Berger A. N., W. S. Frame and N. H. Miller (2002), "Credit Scoring and the Availability, Price, and Risk of Small Business Credit", **Federal Reserve Board of Governors Working Paper num. 26**, April, Washington
- Boot, A. W. A. (2000) "Relationship Banking: What Do We Know ?", **Journal of Financial Intermediation** **9**, pp. 7-25
- Carletti E., V. Cerasi and S. Daltung (2004) "Multiple-bank lending: diversification and free-riding in monitoring", mimeo
- Carletti E. (2004) "The Structure of Bank Relationships, Endogenous Monitoring and Loan Rates", **Journal of Financial Intermediation** **13**, pp. 58-86
- Cotula F. (1999) edited by "Stabilità e sviluppo negli anni cinquanta" vol. 3, "Politica bancaria e struttura del sistema finanziario", Bari, Laterza.
- Degryse H. and P. Van Cayseele (2000) "Relationship Lending within a Bank-Based System: Evidence from European Small Business Data", **Journal of Financial Intermediation** **9**, pp. 90-109

- Degryse H., N. Masschelein and J. Mitchell (2004) “Belgian SMEs and lending relationships”, **National Bank of Belgium Financial Stability Review 2004**, pp. 121-134
- Finaldi Russo P. and P. Rossi (1999) “Costo e disponibilità del credito per le imprese nei distretti industriali”, **Temi di Discussione del Servizio Studi della Banca d’Italia num. 360**, December, Rome
- Foglia A., S. Laviola and P. Marullo-Reedtz (1998) “Multiple banking relationships and the fragility of corporate borrowers”, **Journal of Banking and Finance 22**, pp. 1441-1456
- Forestieri, G. and V. Tirri (2002) “Rapporto banca-impresa: struttura di mercato e politiche di prezzo”, **Ente per gli Studi Bancari e Finanziari Luigi Einaudi Quaderno di ricerca num. 31**, Rome
- Giacomelli S. e S. Trento (2004), “Proprietà, controllo e trasferimenti nelle imprese italiane. Cosa è cambiato nel decennio 1993-2003 ?”, mimeo Banca d’Italia.
- Guelpa F. and V. Tirri (2004) “Market Structure and relationship lending: effects on the likelihood of credit tightening in the Italian banking industry”, **Banca Intesa Collana Ricerche 04-02**, September, Milan
- Harhoff D. and T. Korting (1998) “Lending relationships in Germany: Empirical evidence from survey data”, **Journal of Banking and Finance 22**, pp. 1317-1353
- Manove M., A. J. Padilla and M. Pagano (2001) “Collateral versus project screening: a model of lazy banks”, **Rand Journal of Economics vol. 32 num. 4**, pp. 726-744
- Ongena S. and D. C. Smith (2000) “What Determines the Number of Bank Relationships ? Cross-Country Evidence” **Journal of Financial Intermediation 9**, pp. 26-56
- Petersen M. (1999) “Banks and the Role of Lending Relationships: Evidence from the U.S. Experience”, mimeo, Northwestern University
- Pozzolo A. F. (2004) “The Role of Guarantees in Bank Lending”, **Economics & Statistics Discussion Papers 04-21**, University of Molise
- UniCredit Banca d’Impresa (2004) “L’indagine di Unicredit Banca d’Impresa sulla corporate governance: i principali risultati”, **Scenari Economici II/04**, pp. 18-25
- Von Thadden, E. L. (1995) “Long-Term Contracts, Short-Term Investment and Monitoring”, **Review of Economic Studies 62**, pp. 557-575