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Family firms' access to bank lending: Evidence from Italy

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Abstract

In this study I empirically investigate whether family businesses are more likely to face financing constraints in the access to bank lending. By employing detailed qualitative and quantitative information about companies' ownership structure, rationing condition and bank-firm relationship characteristics, I find that family ownership adversely and significantly affect the probability of experiencing credit restrictions in the bank lending market. When accounting for ownership concentration, however, estimation results show that this finding remains statistically significant only for highly concentrated family firms. By looking at family business groups, moreover, I find that internal capital markets contribute to alleviate the existence of financing constraints. Overall, these results confirm the idea that the agency conflicts associated with highly concentrated family companies simultaneously increase risk shifting problems and wealth-expropriation phenomena with adverse consequences on the access to credit.

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1 Introduction

All around the world, among both small businesses and large publicly traded companies, the prevalent type of business organization is the one of family firms. In Continental Europe, they account for 85 percent of listed companies, but also in the United States and the UK, some of the largest publicly traded firms are controlled by families (Anderson and Reeb 2003, La Porta et al. 2009). Due to their increasing diffusion and economic relevance, a growing body of literature has recently focused on family businesses, looking at their performances, heritance decisions, governance mechanisms and investment policies (Anderson et al. 2003, Bertrand and Schoar 2006, Bukart et al. 2003, Cucculelli and Micucci 2008, Ellul et al. 2010). Some empirical works have also analyzed family firms' financing issues, looking at family businesses' cost of debt, investment-cash flow sensitivity, and internal capital markets functioning. Anderson et al. (2003), by analyzing a large sample of US listed companies, find evidence that family ownership significantly reduces the cost of external financing. Andres (2011) and Pindado et al. (2011) show that European family businesses are less likely to face financing constraints, displaying lower investment-cash flow dependence. Ang et al. (2015), Buchuk et al. (2014) and Masulis et al. (2011), by focusing on family firms' internal capital markets, indicate that particular group structures have been able to alleviate companies' financing constraints, especially during the recent global financial crisis.

Despite the relevance of bank credit as source of external financing for the largest part of family companies, scarce empirical evidence has been provided about family businesses' access to bank lending. Bopaiah (1998) uses firm's propensity to take discounts as measure for credit supply to show that family firms increase the availability of bank funds. D'Aurizio et al. (2015), by analyzing a large sample of Italian family businesses, find that family ownership significantly mitigated the reduction in loans granted during the 2007-2009 financial crisis. Stejvers et al. (2010) indicate that US small family firms are associated with an increasing use of collateral requirements in the relationships with their banks.

In order to produce further empirical evidence on this argument, in this paper I investigate whether the probability of being rationed in the bank lending market is significantly different for family and non-family owned companies. The impact of family ownership on companies' access to credit is a priori controversial. On the one hand, due to their longer investment horizon, their survival and reputation concerns, and the higher amount of wealth invested in the company, family owners are usually highly risk averse in their financing and investment policies. This limited risk propensity may consequently reduce both families' moral hazard incentives and financing costs with beneficial effects on the access to external capital. On the other hand, by holding a large share of cash flow rights, family blockholders may have the incentive and the power to take actions that benefit themselves at the detriment of other investors, such as their lenders. Therefore, firms' ability to access the bank lending market may be compromised.

To tackle this issue I analyze a large sample of Italian companies for the period 1995-2003. By estimating the probability of experiencing credit restrictions in the bank lending market, I find that family businesses are significantly more likely to be rationed by banks during the period under consideration. When accounting for ownership concentration, however, estimation results show that

this finding remains statistically significant (and even larger in magnitude) only for highly concentrated family firms. Dispersed family ownership, on the contrary, does not significantly impact on the access to credit. By looking at family companies' membership to business groups, moreover, consistently with previous results, I find that internal capital markets contribute to alleviate the existence of financing constraints: family businesses belonging to corporate groups are not associated with a significant probability of being credit restricted, while individual family companies are. Finally, and surprisingly, by accounting for family management, I find that the presence of (doubtfully talented) family CEOs does not significantly impact on the access to the bank lending market.

Overall, these findings seem to confirm the idea that the agency conflicts associated with highly concentrated family ownership simultaneously increase risk shifting problems and wealth-expropriation phenomena with adverse consequences on the access to credit. This result, however, is partially mitigated by the presence of efficient internal capital markets, that may keep financing those companies not able to access the bank lending market.

The remainder of the work is organized as follows. Section 2 describes the dataset employed in the empirical investigation and the definition of both family firms and credit rationing status. Section 3 presents the econometric approach adopted to analyze whether family ownership structure affect the probability of being credit restricted in the bank lending market. Section 4 reports estimation results. Section 5 provides some concluding remarks.

2 Data and Variable Definitions

In order to perform my empirical investigation, I draw data on firms' balance sheet figures, ownership structure and credit rationing condition from two main sources: (i) the Survey on Manufacturing Firms (SMF); (ii) the BvD-AIDA database.

The Survey on Manufacturing Firms (SMF), conducted every three years by Unicredit on a representative sample of Italian manufacturing companies[1], covers all the principal areas of interest: ownership structure and firm governance, workforce characteristics, investment, technological innovation and R&D, export and internationalization processes, market structure and competition, financial structure and bank-firm relationships. The information employed in this study, in particular, are drawn from the 7th, 8th and 9th waves of the survey, carried out in 1998, 2001 and 2004 on, respectively, 4497, 4680 and 4289 firms.

For all the surveyed companies, balance sheet figures are recovered from the BvD-AIDA database, the most comprehensive source of financial information for Italian corporations. Accounting for missing data about ownership structure and credit rationing condition, I end up with a cross section of 12667 observations (summary statistics for the full sample of companies are reported in Panel A of Table I).

[1] The survey includes all Italian manufacturing companies with more than 500 employees and a rotating sample of small businesses with more than 10 workers.

Table I: Summary Statistics

Panel A: Summary statistics for the full sample

Variable	Mean	Median	Standard Deviation	Observations
Debt Ratio	74.77	77.16	16.27	10723
Liquidity Ratio	1.34	1.23	.65	10723
ROI	6.75	5.47	.06	10723
Size (Num. Employees)	104.22	34	206.67	11014
Age	24.79	21	17.19	12395
Export (%)	71.53	-	.45	12312
R&D (%)	31.26	-	.46	12561
Family Firms (%)	68.03	-	.47	12667
Credit Rationed (%)	4.35	-	.20	12340

Panel B: Summary statistics for family and non-family firms

Variable	Non-family firms		Family firms		t-statistic
	Mean	Obs.	Mean	Obs.	
Debt Ratio	74.45	3575	74.94	7148	-.48
Liquidity Ratio	1.34	3575	1.34	7148	.00
ROI	6.40	3575	6.93	7148	-.52***
Size (Num. Employees)	179.46	3662	66.76	7352	112.69***
Age	24.49	3890	24.93	8505	-.44
Export (%)	75.97	3903	69.47	8409	6.49***
R&D (%)	39.30	3982	27.53	8579	11.77***
Credit Rationed (%)	4.12	3858	4.43	8482	-.31

Panel C: Summary statistics for rationed and non-rationed firms

Variable	Non-rationed firms		Rationed firms		t-statistic
	Mean	Obs.	Mean	Obs.	
Debt Ratio	74.34	9993	85.21	437	-10.87***
Liquidity Ratio	1.35	9993	1.07	437	.28***
ROI	6.91	9993	3.82	437	3.09***
Size (Num. Employees)	95.21	10267	76.69	449	18.52**
Age	24.78	11699	23.15	524	1.63**
Export (%)	71.29	11501	69.42	520	1.87
R&D (%)	30.81	11770	34.08	534	-3.28

Notes: The table reports summary statistics. Variable definitions are provided in the Appendix. Extreme values are recoded at the 1st and 99th percentiles because of outliers. Three, two and one star (*) means, respectively, a 99, 95 and 90 percent level of significance.

2.1 Family Owned Businesses

Despite the widespread literature on family businesses, there is not a clear consensus on how family firms should be defined. Several theoretical and empirical works ground on definitions based on ownership share thresholds, family involvement in the business, and some combinations of the two

criteria (Anderson and Reeb 2003, Barontini and Caprio 2006, La Porta et al. 1999, Villalonga and Amit 2006).

In this study, however, in order to avoid the adoption of a subjective definition of family companies, I use firm self-reported information to classify family and non-family owned businesses. In particular, by relying on the qualitative information provided by the SMF about the first shareholder's characteristics, I define as family companies those firms owned by an individual or a family entity (see the Appendix for a detailed definition of all the variables included in the analysis).

Panel B of Table I provides a summary description of the characteristics of family and non-family firms included in the sample. It is worth to notice that family businesses, which represent more than 60 percent of the whole sample, are on average significantly smaller, better performers and less likely to enjoy both export and innovation activities.

2.2 Credit Rationing Status

For the purpose of investigating whether family ownership affects companies' access to bank lending market, I need to correctly define the credit rationing condition. To this end, also in this case, I employ the qualitative information included in the SMF.

In particular, by relying on the following question:

"*In 1997/2000/2003 did the company demand more credit without obtaining it? (i) Yes; (ii) No*"

I define as credit rationed those companies answering (i).

Descriptive evidence presented in Table I, Panel C, gives some preliminary information about the magnitude of self-declared credit rationing and the characteristics of companies falling under this category. Starting with some balance sheet indicators, rationed companies appear to be, on average, more indebted, less liquid and less profitable than non-rationed businesses. Moreover, consistently with the existing literature on small and medium-sized enterprises access to finance and asymmetric information theory, credit constrained firms are on average significantly smaller and younger.

3 Empirical Model

In order to evaluate the impact of family ownership on the probability of being rationed in the bank lending market, I estimate the following baseline model:

$$\Pr(\text{Credit\_Rationed}_{ij}) = f(\text{FAMILY}_i, \text{FIRM}_i, \text{BANK\_FIRM}_i, \text{MACRO}_j) \qquad (1)$$

where subscripts i and j refer, respectively to the i-th company and the j-th province; Credit_Rationed_i is a dummy variable equal to one if company i has been rationed in the bank lending market, and zero otherwise; FAMILY_i is my family ownership variable (a dummy equal to one if company i is owned by an individual or a family entity, and zero otherwise); FIRM_i are firm-specific control variables; BANK_FIRM_i includes a set of relationship lending characteristics; MACRO_j is a set of local macroeconomic indicators.

In order to account for the possible endogeneity of the regressors, I include in FIRM_i a broad set of firm-specific controls. First of all, I consider a set of balance-sheet indicators measuring both

companies' financial (Debt Ratio and Liquidity Ratio) and economic conditions (ROI)[2]. Then, I include some firms' qualitative characteristics. In particular, because of the on average smaller size of family owned businesses and the existing evidence on bank lending (Berger and Udell 1995), I control both for firm size (Size, expressed as the logarithm of the number of employees) and firm age (Age). Moreover, as proxies for companies' riskiness, I include two dummies accounting for internationalization (Export) and innovation (R&D) activities. Clearly, I expect that more indebted, less liquid and more profitable companies experience an easier access to the bank lending market. On the other hand, consistently with financial intermediation theories, I expect that those companies facing higher asymmetric information problems, such as small and young businesses have greater difficulties in obtaining bank financing. In the same vein, I imagine that firms enjoying internationalization and innovation activities, because of the intangibility and higher volatility of their asset side, are more likely to experience credit restrictions.

Since the SMF provides detailed information about bank-firm relationships, in $BANK\_FIRM_i$ I include the following three relationship lending controls[3]: the number of bank relations firm i enjoys (Number Banks), the share of the main bank financing (Financing Share) and the duration of the bank-firm relationship (Duration). The first two dummies, which measure the strength of lending relationships, may ambiguously affect the credit rationing status: a higher number of bank relations and a lower financing share of the principal bank should limit the existence of financing constraints, by increasing bank competition and reducing the likelihood of being informationally captured by local banks; on the other hand, highly competitive banking systems may decrease banks' incentives to create long lasting and stable lending relationships with adverse consequences for highly distressed companies. The duration variable, instead, should negatively affect the probability of experiencing credit restrictions in the bank lending market: relying on longer bank relationships should help to overcome information asymmetries, especially those ones of younger and smaller businesses.

Finally, in $MACRO_j$ I include the growth rate of added value (Added Value, at provincial level) and the Herfindahl Hirschman index (HHI, at provincial level) in order to account for both business cycle fluctuations and banking system concentration.

Since I have, at most, three observations in time for the variable Credit_Rationed and its variability within the firm is very limited, following Alessandrini et al. (2009), I look at the determinants of credit rationing exclusively by using a pooled sample of the three waves of the SMF. Therefore, I first estimate a probit model, and then, for robustness I also present linear regression results.

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[2] Balance sheet indices are pre-dated to the starting year of the survey.

[3] Other empirical works adopting the same relationship lending indicators are Alessandrini et al. (2009), Berger and Udell (1995), D'Aurizio et al. (2015), Petersen and Rajan (1994, 1995).

4 Results

Estimation results are reported in Table II. The first two columns report marginal effects for the probit model specification, while the following ones present ols estimated coefficients. All the models are estimated including geographical, industry and survey dummies. Moreover, to address possible endogeneity problems, firm balance sheet data are pre-dated to the starting year of the survey: whereas Credit_Rationed refers to year t, Debt Ratio, Liquidity Ratio, ROI and Size refer to t-2. Overall, the results displayed in Table II are substantially robust across model specifications.

Table II: Results (1)

Pr(Credit_Rationed)	Probit Model		Linear Regression	
	(1)	(2)	(3)	(4)
Debt Ratio	.0016***	.0015***	.0016***	.0015***
	[.0003]	[.0003]	[.0002]	[.0002]
Liquidity Ratio	-.0239**	-.0251**	.0024	.0020
	[.0110]	[.0118]	[.0031]	[.0032]
ROI	-.3301***	-.3000***	-.1708***	-.1565***
	[.0577]	[.0594]	[.0287]	[.0289]
Size	-.0030	-.0048*	-.0042*	-.0060**
	[.0024]	[.0028]	[.0023]	[.0028]
Age	.0000	.0002	.0000	.0002
	[.0001]	[.0001]	[.0001]	[.0002]
Export	.0017	.0032	-.0009	.0009
	[.0059]	[.0062]	[.0061]	[.0064]
R&D	.0110*	.0134**	.0121**	.0144**
	[.0058]	[.0061]	[.0058]	[.0060]
Family Firm	.0135***	.0144***	.0102**	.0115**
	[.0052]	[.0054]	[.0050]	[.0053]
Added Value	-.0000***	-.0000***	-.0000***	-.0000**
	[.0000]	[.0000]	[.0000]	[.0000]
HHI	.0000	.0000	.0000	.0000
	[.0000]	[.0000]	[.0000]	[.0000]
Number Banks		.0005		.0005
		[.0004]		[.0006]
Financing Share		.0002*		.0001*
		[.0001]		[.0001]
Duration		-.0046		-.0059*
		[.0030]		[.0034]
Geographical Dummies	yes	yes	yes	yes
Sectorial Dummies	yes	yes	yes	yes
Survey Dummies	yes	yes	yes	yes
R^2	.11	.11	.03	.03
Observations	6958	6409	6990	6438

Notes: The table reports average marginal effects in columns (1)-(2) and regression coefficients in columns (3)-(4). Three, two and one star (*) means, respectively, a 99, 95 and 90 percent level of significance. Robust standard errors are in brackets. The dependent variable Pr(Credit_Rationed) is a dummy variable equal to one if the company has been rationed in the bank lending market, and zero otherwise. All regressions include geographical, industry and survey dummies and a constant (not reported for reasons of space).

With respect to firm-specific characteristics, as expected, I find that larger, more profitable and more liquid firms are less likely to be constrained (the estimated coefficients of Size, ROI and Liquidity Ratio are negative and statistically significant), while more innovative and indebted ones encounter more difficulties in accessing bank credit.

The results concerning bank-firm relationship variables, which are included in columns (2) and (4), deserve some comments. Whereas the number of bank relationships company I enjoys appears to not affect credit rationing, as the financing share of the first main bank becomes higher, the probability of being rationed in the bank lending market increases. This result, consistently with the existing banking literature, seems to suggest that relationship loans may be harmful to firms when the lender may informationally capture its customers.

With regard to provincial indicators, I find that the Herfindahl Hirschman index does not affect bank lending, while added value reduces the likelihood to be credit constrained (even though both the marginal effects and the estimated coefficients are equal to zero).

Coming to my key family ownership control, estimation results show that family businesses are associated with a higher probability of encountering difficulties in the access to the bank lending market. Both marginal effects and estimated coefficients are statistically significant at, respectively, 99 and 95 percent level. This interesting finding complements the evidence provided by D'Aurizio et al. (2015): if during the recent financial crisis, family owned companies experienced an easier access to bank lending, in "normal" times they are at a disadvantage with respect to non-family firms.

In order to test whether the presented results are exacerbated or mitigated by other relevant firm-specific characteristics, I perform some additional investigations accounting for family ownership concentration, family management and business groups membership. While highly concentrated ownership structure and the presence of (doubtfully talented) family CEOs, by enlarging agency problems may adversely affect credit rationing condition, family firms belonging to corporate groups may facilitate their access to finance by directly relying on internal capital markets.

The corresponding estimation results are reported in Table III.

Columns (1)-(3) include two different proxies for ownership concentration: (i) Ownership Share, a continuous variable measuring the first shareholder's ownership share; (ii) 2nd Block, a dummy variable equal to one if company i is characterized by the presence of a second large blockholder[4], and zero otherwise. Both variables, which are statistically significant, provide evidence confirming the idea that increasing ownership concentration is associated with a higher probability of being credit rationed. These findings are additionally confirmed when the interaction term between the family ownership and the second blockholder dummies is included in the econometric specification. Interestingly, I find that while highly concentrated family companies are more likely to experience credit restrictions, family businesses with second large blockholders are associated with a lower (but non-significant) probability of facing financing constraints.

[4] Second large blockholders are defined as blockholders holding at least 25 percent of ownership share.

Table III: Results (2)

Pr(Credit_Rationed)	(1)	(2)	(3)	(4)	(5)	(6)
Debt Ratio	.0014***	.0014***	.0014***	.0015***	.0015**	.0015***
	[.0003]	[.0003]	[.0003]	[.0003]	[.0003]	[.0003]
Liquidity Ratio	-.0241**	-.0240**	-.0239**	-.0223*	-.0253**	-.0253**
	[.0121]	[.0120]	[.0120]	[.0134]	[.0118]	[.0118]
ROI	-.3046***	-.2981***	-.2994***	-.2948***	-.3049***	-.3063***
	[.0613]	[.0607]	[.0608]	[.0670]	[.0596]	[.0596]
Size	-.0058**	-.0058**	-.0057**	-.0049*	-.0039	-.0037
	[.0028]	[.0028]	[.0028]	[.0030]	[.0031]	[.0031]
Age	.0001	.0001	.0001	.0003*	.0001	.0001
	[.0002]	[.0002]	[.0002]	[.0002]	[.0001]	[.0001]
Export	.0049	.0050	.0050	.0036	.0031	.0031
	[.0062]	[.0062]	[.0062]	[.0069]	[.0062]	[.0062]
R&D	.0117*	.0116*	.0116*	.0150**	.0136**	.0135**
	[.0061]	[.0061]	[.0061]	[.0065]	[.0061]	[.0061]
Family Firm	.0161***	.0160***	.0192**	.0229	.0137**	.0100*
	[.0056]	[.0056]	[.0079]	[.0270]	[.0055]	[.0060]
Added Value	-.0000***	-.0000***	-.0000***	-.0000***	-.0000***	-.0000***
	[.0000]	[.0000]	[.0000]	[.0000]	[.0000]	[.0000]
Number Banks	.0005	.0005	.0005	.0007	.0005	.0005
	[.0004]	[.0004]	[.0004]	[.0005]	[.0004]	[.0005]
Financing Share	.0001	.0001	.0001	.0001	.0002*	.0002*
	[.0001]	[.0001]	[.0001]	[.0001]	[.0001]	[.0001]
Duration	-.0046	-.0046	-.0045	-.0058*	-.0048	-.0049
	[.0031]	[.0031]	[.0031]	[.0033]	[.0030]	[.0030]
HHI	.0000	.0000	.0000	.0000	.0000	.0000
	[.0000]	[.0000]	[.0000]	[.0000]	[.0000]	[.0000]
Ownership Share	.0002*					
	[.0001]					
2nd Block		-.0126**	-.0101			
		[.0051]	[.0065]			
Family Firm*2nd Block			-.0059			
			[.0095]			
Family CEO				-.0156		
				[.0174]		
Group					-.0055	-.0104
					[.0063]	[.0069]
Family Firm*Group						.0186
						[.0156]
Geo. Dummies	yes	yes	yes	yes	yes	yes
Sectorial Dummies	yes	yes	yes	yes	yes	yes
Survey Dummies	yes	yes	yes	yes	yes	yes
R^2	.11	.11	.11	.12	.11	.11
Observations	6140	6141	6141	5089	6404	6404

Notes: The table reports marginal effects. Three, two and one star (*) means, respectively, a 99, 95 and 90 percent level of significance. Robust standard errors are in brackets. The dependent variable Pr(Credit_Rationed) is a dummy variable equal to one if the company has been rationed in the bank lending market, and zero otherwise. All regressions include geographical, industry and survey dummies, and a constant (not reported for reasons of space).

Similar investigations are performed in relation to the presence of family managers. Since family CEOs, are usually selected from a small pool of doubtfully qualified family members, they should be on average less talented than external professional managers, with adverse consequences on firm's profitability and loan repayment likelihood. Therefore, family businesses run by family CEOs should experience greater difficulties in accessing the bank lending market. Column (4) of Table III reports estimation results including the Family CEO dummy, a dummy variable equal to one if company i is run by the individual who owns the firm or a member of the controlling family. Contrary to my predictions, I find that family management does not affect the credit rationing condition. Both the family firm and the family CEO controls are not statistically significant: therefore, family run businesses are not significantly associated with a different probability of experiencing credit restrictions.

Estimation results on the role of family firms' internal capital markets are finally presented in columns (5) and (6), where a dummy variable accounting for business group membership is included. Even though the Group dummy appears to be always statistically non-significant, it results that while family businesses belonging to corporate groups are not associated with a significant probability of being rationed by banks, individual family companies are.

5 Conclusions

This study has empirically investigated the impact of family ownership on the existence of financing constraints. By employing highly detailed qualitative and quantitative information about companies' ownership structure, credit rationing conditions and bank-firm relationship characteristics, I have estimated the probability of being rationed in the bank lending market for a large sample of Italian companies.

Estimation results show that family businesses were significantly more likely to be rationed by banks during the period 1995-2003. When accounting for ownership concentration, however, estimation results show that this finding remains statistically significant (and even larger in magnitude) only for highly concentrated family firms. Dispersed family ownership, on the contrary, does not significantly impact on the access to credit. By looking at family companies' membership to business groups, moreover, consistently with previous results, I find that internal capital markets contribute to alleviate the existence of financing constraints: family businesses belonging to corporate groups are not associated with a significant probability of being credit restricted, while individual family companies are. Finally, and surprisingly, by accounting for family management, I find that the presence of (doubtfully talented) family CEOs does not significantly impact on the access to the bank lending market.

Overall, these findings seem to confirm the idea that, at least in "normal" times, the agency conflicts associated with highly concentrated family ownership simultaneously increase risk shifting problems and wealth-expropriation phenomena with adverse consequences on the access to credit. As highlighted by D'Aurizio et al. (2015), things are different in "crisis times", when the increasing risk aversion of family owners promote their access to external source of financing.

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Appendix: Variable Definitions

Variables	Definitions
Family Firm	is a dummy variable equal to one if company i is owned by an individual or a family entity, and zero otherwise.
Credit Rationed	is a dummy variable equal to one if company i demanded more credit without obtaining it, and zero otherwise.
R&D	is a dummy variable equal to one if company i undertook some R&D activities, and zero otherwise.
Export	is a dummy variable equal to one if company i sold abroad some products/services, and zero otherwise.
Size	is a continuous variable defined as the logarithm of the total number of employees.
Age	is a continuous variable measuring the years of business activity.
Ownership Share	is a continuous variable defined as the share of the first controlling shareholder of company i.
2nd Block	is a dummy variable equal to one if company i has a second large blockholder with an ownership share greater than 25 percent, and zero otherwise.
Family CEO	is a dummy variable equal to one if company i is run by the individual who owns the firm or by a member of the controlling family.
Group	is a dummy variable equal to one if company i belongs to a corporate group, and zero otherwise.
Number Banks	is a continuous variable represented by the number of bank relationships company i enjoys.
Financing Share	is a continuous variable defined as the share of the main bank financing.
Duration	is a continuous variable measuring the duration (in years) of the main bank-firm relationship.
Debt Ratio	is computed as total debt over total assets.
Liquidity ratio	is defined as the ratio between current assets and current liabilities.
ROI	is the return on investment and it is computed as operating income over total assets.