SMEs Choice of Main Bank and Organizational Structure:

THE ROLE OF SOFT INFORMATION AND OF CREDIT RATIONING

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Introduction

Do small- and medium-sized enterprises (SMEs) and small- and medium-sized industries (SMIs) choose their main bank[1] according to the specific characteristics of their financial needs? Because the uncertainties related to their activities are extremely difficult for external financial partners to understand, this choice is essential if the company wishes to avoid a crippling credit rationing. In fact, the information publicly available on these SMEs is generally insufficient to the decision-making process regarding the granting of credit. Further, the investment that would be needed to improve this information often appears too costly compared to the returns that could be made by a potential lender, taking into account the amounts of loans involved. For this reason, this informational investment is rarely taken up (Besanko and Kanatas, 1993). Thus, it is the opacity of these structures that renders them particularly subject to problems of credit rationing (Ang, 1991 and Ang, 1992). The establishment of a privileged relationship with a bank proves to be crucial for the SME, since this partner will be capable of following its development and may even help to ensure its survival in case of difficulties. We propose in this article to examine the factors determining this choice.

Financial theory has shown the existence of two methods of client risk management among banks (Boot, 2000). The first, the transactional method, consists of the bank diversifying its portfolio of engagements as fully as possible and investing minimally in the production of information on its clients. In this case, the bank limits itself to standard information that is freely available and mostly drawn from financial statements. The second way, the relational method, relies on a heavy investment in information on a smaller number of clients. This allows the bank to generate some private and, to some extent, nonstandard information on the subject, giving it a comparative advantage over its competitors. The extra unit cost of this second method of management is paid off over time through the multitude of interactions between the bank and its client. Studies carried out in different countries show that the relational method allows the most opaque companies, where standard-type information is insufficiently available or of poor quality, to improve their credit access (Degryse and Ongena, 2008).

Stein (2002) shows that the relational method of management is most often used by banks with a decentralized organizational structure. In fact, the nonstandard information accompanying financing in this context is transmitted and verified with difficulty within the hierarchy of the credit providers. So in hierarchical banks, the loan officers – who work in close contact with clients – will have little incentive to produce this type of information since they will not get any acknowledgement or recompense for their credit decisions. We propose then to test two hypotheses in this paper: (1) the existence of a link between the degree of opacity of the company and the degree of decentralization of the main bank they choose, and (2) the existence of a greater credit rationing with those companies, which despite their strong opacity, work with a bank with a centralized structure.

Answering these questions is even more important in the context of the large-scale restructuring within the banking industry, which could reduce the offers of relationship lending and thus increase the phenomenon of credit rationing for opaque firms. Numerous mergers and acquisitions in the banking sector increase the complexity of these organizations, and the reforms related to the Basel II accord lead to an ever-increasing standardization of the financial information within the credit institutions.[2]

There are few empirical elements likely to guide us on these questions. To our knowledge, no other study has been specifically carried out on this subject either in France or in any other European country.[3] The main studies to date were made in other markets, mainly the American one. They reveal that the size of a bank, which can be interpreted as an indicator of organizational structure, has an effect on its capacity to give loans to the smallest companies (Berger *and al.*, 2001; Berger *and al.*, 2007). Moreover, Berger *and al.* (2005) note that the SMEs that borrow from large banks often have credit rationing problems.

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In this study, we look at the choice of main bank made by a sample of 6,258 French SMEs that are five years old or less. The financing of these companies seems dependent on the adoption by the bank of a relational style of management as far as they present characteristics of a high informational opacity and risk because of the fact that they are young companies. We propose a series of explanatory models of the degree of decentralization of the bank with which each one of these enterprises mainly works. We believe that the explanatory factors of this choice are the measures of opacity of the companies and of their apparent risk, as well as a series of control variables related to the industry sector of the firm and the market scope of the bank. We find, on one hand, that the SMEs with the largest problems of information asymmetries, the most opaque, turn mainly toward decentralized banks. On the other hand, we find more credit rationing for opaque firms dealing with centralized banks. These results tend to confirm the hypothesis of the existence of a link between the organizational structure of the bank and its capacity to provide relationship financing.

The article is organized as follows. In the next section, we present a summary of the literature on the topic and we thereby extract our hypotheses. Section II describes the set of data used and the variables included. Section III deals with the results obtained. The final section summarizes our main conclusions.

I. Literature review and hypotheses

Recent empirical literature demonstrates better access to credit for those SMEs that benefit from relationship banking. After Petersen and Rajan (1994), the main studies show the existence of a link between the indicators of credit rationing and the indicators of the presence of this type of financing: the duration of relationship between the bank and the client, the exclusivity, and the intensity of their interactions. These results agree regardless of the market where the test is carried out. Cole (1998) confirms this on the American market, D'auria *and al.* (1999) on the Italian market, Elsas and Krahnen (1998) and Harhoff and Korting (1998) on the German market, and Ziane (2004) on the French market.[4]

The relational method of financing, which implies a long-term relationship, allows a better exchange of information that permits a reduction in the costs of the renegotiation of contracts between the parties. This creates a certain financial flexibility for the borrower and reduces the lender's interest in credit rationing (Greenbaum *and al.*, 1989). During the relationship, the bank accumulates information on its client, which allows it to enjoy an advantage over its competitors by moving the asymmetries of information outside the established link. The bank can therefore extract from this privileged situation an income allowing them to neutralize their investment and so obtain benefit from it (Sharpe, 1990). The information collected here can be distinguished from that obtained in a classic transactional framework to the extent that it includes numerous qualitative or *Soft* indicators (Petersen, 2004). It comes from the repeated contact between the representative of the bank and the borrower, his clients, his suppliers, and his environment in general, and also from the track record of the loans granted (Stein, 2002; Berger, Klapper, and Udell, 2001). This soft information is hard to transmit to a third party, who cannot give it much credibility, unless he or she invests in it heavily to assess its veracity. In contrast to this is standard quantitative information, *Hard*, which is in the form of numerical data such as the financial statements, the *Scoring* methods, or any of the other similar techniques used in the transactional framework and which benefit from a lower cost of reproduction.

On the basis of this logic, Stein (2002)[5] shows that the capacity of the bank to produce and to deal with one or the other type of information, *Soft* or *Hard*, depends on its organizational structure. For this, he distinguishes between two types of structures: the first, decentralized, includes a small number of decision-makers who can only evaluate a limited number of investment projects. The second, centralized, includes several decision-making levels permitting economies of scale in the evaluation process for projects that can, therefore, be more numerous. Stein then shows which of these two structures is the more efficient in terms of taking the decision of credit-awarding, given the informational characteristics of the projects being handled. The decentralized structure appears stronger when the information is less transmissible, as is the case with *Soft* information. The decision-making levels to be crossed are fewer and the losses are more limited. Centralized structures are more efficient in dealing with *Hard* information because they benefit maximally from economies of scale associated with the size of the organization without being subject to these losses.

Stein's (2002) model remains a general one. Nevertheless, he proposes a concrete application aimed at examining and understanding the consequences of the consolidation of the banking system on the financing of SMEs. Mergers and acquisitions produce large-scale agglomerates with a complex and centralized organizational structure. These new entities are thus limited in their capacity to manage relationship financing, which is based on *Soft* information. There is a resultant decline in their capacity to provide credit for certain clients. Small companies will tend to see their finances limited because they do not have reliable quantitative information to offer and their projects are too small to compensate the investment taken by the bank to produce this information. In practice, within centralized banks, the necessary information for credit granting, which is produced by the loan officer, must cross numerous management layers to reach the final decision-taker: the credit committee or another specialized group of directors. More than this, considering the high cost that the hierarchy might have to pay to evaluate the work of the loan officer in this context, the latter would be discouraged from having any *Soft* input into the data pool collected since he or she would not be certain of getting a reward for the quality of his or her work.

Our first hypothesis arises directly from these results. We assume that "*the probability for a company to work with a decentralized main bank increases with its dependence on soft information to get credit, and so, a priori, with its informational opacity (H1).*" The non-refutation of this hypothesis may be interpreted as the fact that SMEs generally tend toward financial intermediaries having an organizational structure adapted to providing relational financing to avoid credit rationing. We thus formulate the second hypothesis: "*Opaque companies working with a hierarchical main bank are more often rationed than their homologues working with a decentralized one (H2).*" These companies are often refused credit and consequently are more likely to face greater financial difficulty because their financial partners are not able to deal with the type of information they can offer: *soft* information.

Previous empirical studies can already bring light to bear on these hypotheses.

A first series of studies has shown that small banks, which may be considered as decentralized, invest more of their assets in loans to SMEs (Nakamura, 1994; Berger and Udell, 1996; Strahan and Weston, 1996). The large banks, having a centralized structure, concentrate their deals on their larger clients. Brickley *and al.* (2003) show that they hold the most important market share in urban areas, where borrowers are relatively of a larger size and thus less opaque. Small banks are generally more active in rural areas. Berger *and al.* (2007) examine the way that the size and structure of local credit markets affects the offers of financing to SMEs in the context of the consolidation of the banking system. They confirm the disadvantage of the large banks in terms of providing relational financing and they also highlight the fact that these banks propose alternative transactional sources of financing adapted to the risk of SMEs.[6] This is not, however, able to reduce the problems of credit rationing.

These first results show a relationship between the size of the bank and the size of the client, this being associated with organizational contingencies. Nevertheless, prudential constraints can also lead to the same observations. The banks, whether they are of small or large size, have the obligation to diversify their portfolio. Thus, small banks appear limited in their capability to finance larger clients (Berger *and al.*, 2007).

A second series of studies looked directly at the technologies of credit used by the banks, which Berger and Udell (2006) define as a combination of three elements: a mechanism for the screening of the firms or projects, a method for the creation of contracts, and a strategy of monitoring. In the relational context, decisions are based on *Soft* information, the main agreements are implicit, and the role of the loan officer who is in direct relation with the company is very important. Cole *and al.* (2004) analysed the differences that may exist in the process of examining the demand for financing between large and small banks. They note that the former tend to use methods relying on data obtained from financial statements such as *Scoring*, whereas the latter, not being able to use such instruments, relies on more subjective criteria based on the characteristics of the borrowers and on their relationship with the loan officer. This study supports theories based on the nature of the information required and used by the banks in their decision-making process. Other studies that focused on the relationship between the manager of the firm and bank employees give similar conclusions, showing a negative correlation between the turnover of the loan officers within the organization and the access to credit for the most opaque clients (Scott and Dunkelberg, 2005; Scott, 2006; Uchida *and al.*, 2006).

A third series of studies analysed in a more direct way the determinants of the couple "bank/SME" using a methodology based on choice models. Berger *and al.* (2001) find two elements in the Argentinean market. First, the large banks find it harder to deal with *Soft* information and so to benefit from relational financing. Second, foreign banks are less likely to lend to opaque companies than to their local peers. Geographical distance amplifies the effects of the hierarchical distance associated with centralization and limits the supply of relationship lending. On the American market, Berger *and al.* (2005) note that the large banks work mainly with large companies that can show a good track record of solvency, whereas small banks tend to finance more risky projects. They also show that SMEs working with large banks are more likely to pay trade credit late to their suppliers, which can be interpreted as a sign of classical bank credit rationing. Their choice of bank is thus not optimal.

II. Data and methodology

II.1. THE SAMPLE

From the field "Main Bank" of the DIANE database[7] edited by the Van Dijk bureau, we have identified a series of couples "bank/SME." These data fields give the name of the bank that holds the company capital. We deliberately limited our selection to companies having fewer than 500 employees, being less than five years old, and operational in December 2005. This choice allows us to reduce the potential gap between registered partners and actual partners, with changes in the main bank being less likely during the first years of activity. It also allows us to focus on the more opaque projects where the risks are greater. Studies by INSEE have regularly shown the existence of a negative correlation between the age of an enterprise and its probable failure. We also exclude from our sample, as is the standard practice (Petersen and Rajan, 1994), companies operating in the agricultural, real estate, and financial sectors, because of their specific characteristics. This allows us finally to identify 6,258 SMEs[8] working with 182 different banks out of the 371 operating in France.[9] Table 1 gives a summary of the principal characteristics of these companies as well as their industry sector and type of bank.

It may be noticed that two of the large banks, BNP Paribas and Société Générale, are involved in 27% of the main bank/client relationships identified in the sample. This reflects the dominance of these national giants in the French credit market. We complete the individual data for each company by combining them with the characteristics of the banks with which they work using the Bankscope database edited by the Van Dijk bureau, which presents accounting information released by banks all over the world.

Table 1. Distribution of sample firms by industry

	Manufacturing	Services	Trade	Construction	Transport
Number of firms (total: 6258)	1382 22%	1952 31%	1704 27%	678 11%	542 9%
Total assets of the firm (in Euros) Mean and SD	9 331 173 24 902 887	693 161 74 526 010	7 928 850 94 951 140	4 387 830 11 637 370	4 400 890 13 943 870
Corporations (SA)	916 66,28%[10]	929 47,59%	894 52,46%	266 39,23%	265 48,89%
Firms working in local or regional market	642 46,45%	1199 61,42%	1227 72,01%	543 80,09%	284 52,40%
Firms with main bank identified (total: 4552)	1273 28%	1026 22,5%	1193 26,2%	623 13,7%	437 9,6%
BNP Paribas and Société Générale	333 26%	284 28%	307 26%	160 26%	129 30%
National banks	99 8%	98 10%	79 7%	44 7%	33 8%
Foreign banks	101 8%	111 11%	81 7%	33 5%	28 6%
Regional banks	292 23%	153 15%	240 20%	149 24%	108 25%
Mutual banks	419 33%	360 35%	457 38%	224 36%	134 31%
Saving banks (caisses d'épargne)	29 2%	20 2%	29 2%	13 2%	5 1%

II.2. EMPIRICAL MODELS

a. Dependant variables

Following Berger *and al.* (2001), we estimate the degree of centralization of the main bank by its size, which we measure by the logarithm of the total of its assets, *SizeB*. Centralized financial intermediaries, basing their risk-management strategy on the principle of diversification, are more likely to deal with larger portfolios. We expect to see on the one hand a negative correlation between *SizeB* and the opacity of client information *(H1)* and on the other hand a positive correlation with rationing *(H2)*. More opaque companies, seeking relational financing, should choose smaller banks that are usually the first to offer credit to them. On the other hand, those that are involved with a large bank should experience greater financial constraints. The proposed econometric model, whose specification is presented in equation (1), is estimated by ordinary least squares.

$$SizeB = \ln(total\ assets) = \alpha + \beta_1 opacity + \beta_2 rationing + \beta_3 control + \epsilon \quad (1)$$

The relationship between the size of the bank and its organizational structure and, *a fortiori*, its ability to provide relational financing, is not always obvious. If we look for instance at the German economy, we note that the main providers of relational financing, the "Hausbanks", are mostly large financial institutions as found by Elsas and Krahnen (1998). For this reason, we propose two additional variables:

- *Decent*: a dummy variable set at 1 when the bank adopts a decentralized structure.
- PERS/TA: the ratio of personnel expenses over total assets.

Decent is built up from the legal form of the banks. We consider the AFB[11] banks of regional scale, mutual banks, and the Saving Banks to be decentralized. We compare these to national AFB banks and to foreign banks. The descriptive statistics show that our bank sample is composed in the following way: 29% have centralized structures and 71% decentralized ones. Mutual banks are the most numerous, representing 40% of the total. Table 2 gives a brief summary of their characteristics.

We notice that centralized banks are significantly larger than their decentralized peers. The largest are the couple BNP Paribas-Société Générale, as well as foreign banks including most particularly, Deutsche bank. Mutual banks are the smallest. This can certainly be explained by their division into local branches. They also have the highest risk. They have a larger ratio of provision to total assets. They have, despite this, lower debts, but they do have a larger return on assets (ROA).

Table 2. Characteristics of the sample banks

We show the average, standard deviation (in brackets), and Student's t value corresponding to tests on means difference. These tests differ with the type of subdivision. For centralized/decentralized, we compare the means of the subsamples with each other. For those including six classes, each of these is compared individually to the mean of the whole sample.

	Centralized banks			Decentralized banks			Total
	BNP and SG	*National banks*	*Foreign banks*	*Regional Banks*	*Mutual banks*	*Saving Bankss*	
Proportion	1%	10%	18%	20%	40%	11%	
		29%			71%		
Total assets	611 488 000 (141 021 133) 7,819***	32 214 638 (72 735 468) 0,070	88 818 158 (178 884 154) 2,576***	3 753 321 (8 196 836) 1,553	7 722 687 (9 480 840) 1,856*	9 698 600 (5 704 990) 0,887	30 448 470 (104 281 126)
		89 327 318,40 (182 887 281)			6 896 931 (8 840 265)		
					3,248***		
Provision on total loans	0,00022 (0,00073) 0,411	0,00929 (0,01338) 1,165	0,00233 (0,00686) 1,366	0,00461 (0,00749) 1,748*	0,00817 (0,04163) 2,491**	0,00220 (0,00202) 1,302	0,00587 (0,02799)
		0,0046 (0,0101)			0,0063 (0,0316)		
					0,507		
Leverage[12]	0,9685 (0,0024) 0,411	0,8802 (0,1542) 1,235	0,8850 (0,2069) 1,648*	0,9399 (0,0255) 1,772*	0,9070 (0,0292) 2,491**	0,9346 (0,0120) 1,302	0,9109 (0,1027)
		0,9031 (0,1134)			0,9141 (0,0984)		
					0,005		
ROA[13]	0,00447 (0,00004) 0,411	– 0,01031 (0,05951) 1,165	0,00477 (0,01182) 1,366	0,00827 (0,00731) 1,772*	0,00763 (0,00296) 2,491**	0,00516 (0,00136) 1,302	0,00545 (0,01942)
		– 0,00128 (0,03864)			0,00754 (0,00464)		
					1,440		

We propose a logistic regression model estimated by the maximum likelihood. The specification is presented in equation (2).

$$\text{Prob}(\text{Decentralized} = 1 | x_1) = \frac{e^{\beta' x_i}}{1 + e^{\beta' x_i}} \qquad (2)$$

$$\beta' x_i = \alpha + \beta_1 \, opacity + \beta_2 \, rationing + \beta_3 \, control + \epsilon$$

Concerning PERS/TA, the basis for determining this variable is as follows: Decentralized banks, providers of relationship lending, need more employees to offer the same quantity of loans as transactional hierarchical banks. The suggested regression model, estimated by the ordinary least squares, is specified in equation (3):

$$\frac{\text{Personnel expenses}}{\text{Total assets}} = \alpha + \beta_1 \text{opacity} + \beta_2 \text{rationing} + \beta_3 \text{control} \qquad (3)$$

Our hypotheses assume a positive relationship between client opacity and the probability of having a decentralized bank as the main bank (H1) and a negative relationship with rationing (H2). In the same way, we expect to see a positive link between client opacity and the ratio PERS/TA (H1), and a negative link with rationing (H2).

b. Explanatory variables

The first element in our tests, the firm's informational opacity, is estimated using two proxies. The opacity factors aim to highlight the relative advantage of setting up relationship lending in order to reduce the informational asymmetry problems. We propose the size of the company and its legal structure. Unlike many comparable studies, we do not use the age of the company, as our method of sample selection does not permit the use of this variable.[14]

The size of the company, *Size*, is measured by the logarithm of the total of its assets. The larger this variable is, the more widespread is the reach of the company and so the easier it is to observe. Further, the credit quantity mobilized is significant and allows economies of scale in the information producing and monitoring costs. The size of the company is therefore negatively related to its opacity. We expect to see a positive relationship between *Size* and *SizeB*, and a negative one with *Decent* and with *PERS/TA*.

Regarding the legal structure of the company, we use a dummy variable, *SA*, set at 1 when the company is a "société anonyme" (the French term for a business corporation), and 0 when it is not. Publicity obligations are much greater in this case than in any other, particularly concerning the certification of their financial statements. This SA variable is thus negatively linked to client opacity. We expect to see the same relationships between our dependent variables and *SA* as that expected with *Size*.

For the second component of our tests, the credit rationing experienced by the client, we choose to use, among the set of measures available in the literature, the ratio "Fiscal and social debt over total debt" as used by Bodt *and al.* (1999). The principle of this variable, *Rationing*, relies on the indirect observation of the consequences of the phenomenon: A company that is denied banking credit turns to more costly substitution credit, in this case credit from the government. If this seems very symptomatic of financial tensions, this indicator remains linked to the regulatory environment. To counter this difficulty, we control for the industry sector that influences the VAT rate, and the size, which alters the level of corporate income tax. The rationing intensity increases with the ratio. We expect therefore to see a positive link between *Rationing* and *SizeB*, and a negative one with the probability of contracting with a decentralized bank, *Decent* and the ratio *PERS/TA*.

The last part of our modelling brings together these control factors.

The first is the apparent financial risk, *Score*, which is measured by the Conan-Holder's (1979)[15] score, calculated from the company's financial statements. Centralized banks, being of larger size and focusing their risk management strategy on diversification, should be more able to manage a greater apparent risk. In the case of difficulty with one client, losses will be easily compensated for by the success of other clients. We expect therefore to see a positive relationship between *SizeB* and *Score* and a negative one with *Decent* and *PERS/TA*.

The company's industry sector is also an important element in determining their choice of main bank. The bank's specialization in a given industry sector will lead it to develop a comparative advantage in dealing with the demands of certain clients in this sector. These clients will primarily orient toward these intermediaries (Boot and Thakor, 2000). In this study, we use a series of dummy variables linked to the different sample firm's activities (manufacturing, services, trade, construction, and transport).

The last control variable considered in our regressions is the market where the company operates. Ongena and Smith (2001) and Farinha and Santos (2001), in their studies on companies changing banks, have found that the market scope constitutes an important factor in the choice of a main bank. We have therefore coded a dummy variable, *Market*, taking the value 1 when the company operates in a local or regional market and 0 when it operates at the national or international level. We expect to see a negative link between this variable and *SizeB* and a positive one with *Decent* and *PERS/TA*.

III. Results

III.1. DETERMINANTS OF THE SIZE OF THE MAIN BANK

Table 3 shows the results of the first regressions run on the size of the main bank chosen by the company. We can observe relationships in accord with those proposed by our hypotheses. As predicted by *H1*, *Size* and *SA* are positively and significantly related to *SizeB*. Larger companies and those that are an *SA* ("société anonyme" or business corporation) work with larger main banks, which can be considered to be centralized. This result agrees with previous studies examining the proportion of financing dedicated to SMEs in the bank's financial statements and shows that large banks offer a smaller share of their assets as loans to small businesses (Nakamura, 1994; Berger and Udell, 1996; Strahan and Weston, 1996). Nevertheless, there is a drawback regarding the link between the bank's organizational structure and the demand for relationship lending: the effect of prudential regulation on the decision of a large or small bank to grant credit to a particular type of client has not been controlled. In addition, like Berger *and al.* (2007), we consider the limits of *SizeB*. However, rather than breaking down the sample firms into size classes, we complete our analysis by proposing alternative indicators of organizational structure: *Decent* and *PERS/TA*. Further, as predicted by *H2*, the coefficient of *Rationing* is positive and statistically significant. Companies that have chosen to work with a large main bank tend to pay their taxes to the government later than the others. This delay in payment can be interpreted as a signal of the financial tension associated with the difficulties of access to classic bank financing (De Bodt *and al.*, 1999). This result is consistent with the conclusions of Berger *and al.* (2005), who show that companies who work with a large bank are more likely to pay their trade credit late, a further indicator of credit rationing.

We check the robustness of these results by proposing different specifications for the correlation between the variables of informational opacity. We run the regressions on two sub-samples: the first one including the SA firms (SA = 1) and the second one the rest of the firms (SA = 0), and find that there is no significant difference from the results obtained in the basic regression model. In column (4), the exclusion of the *Size* variable strengthens the explanatory power of SA with respect to *SizeB*. The associated regression coefficient increases significantly and the *p-value* goes

Table 3. Size of the main bank

	Regression 1 SizeB	*Regression 2 SizeB SA = 1*	*Regression 3 SizeB SA = 0*	*Regression 4 SizeB Size excluded*
Intercept	13,409*** (50,530)	13,363*** (36,370)	13,804*** (32,946)	17,095*** (125,970)
Size	0,463*** (16,010)	0,498*** (13,534)	0,399*** (8,345)	
SA	0,129* (1,760)			0,578*** (8,318)
Rationing	0,647*** (3,381)	0,641** (2,357)	0,647** (2,400)	– 0,368** (– 1,985)
Score	– 0,499 exp $^{-3}$ (– 0,715)	– 0,358 exp $^{-3}$ (– 0,487)	– 0,002 (– 0,823)	– 0,592 exp $^{-3}$ (– 0,826)
Manufacturing	– 0,372*** (– 3,098)	– 0,574*** (– 3,505)	– 0,0659 (– 0,373)	– 0,287** (– 2,329)
Services	– 0,064 (– 0,526)	– 0,161 (– 0,950)	0,03768 (0,215)	0,007658 (0,061)
Trade	– 0,335*** (– 2,700)	– 0,520*** (– 3,060)	– 0,0958 (– 0,530)	– 0,277** (– 2,172)
Construction	– 0,161 (– 1,191)	– 0,236 (– 1,179)	– 0,0181 (– 0,099)	– 0,121 (– 0,869)
Market	– 0,001 (– 0,029)	0,064 (0,740)	– 0,124 (– 1,132)	– 0,163** (– 2,359)
Fisher	40,643***	25,630***	9,789***	12,954***
R^2 adjusted	0,073	0,067	0,038	0,021
Condition number	24,070	23,137	24,429	10,149
Number of observations	4548	2766	1782	4548

The asterisks correspond to the significance levels for statistical test ***99%, **95% and *90%

from 8% to less than 1%. This can be explained by the fact that informational opacity is taken into account by this variable only. On the other hand, the sign on the *Rationing* variable becomes negative. This change is the consequence of a triple relationship between company size, the size of the main bank, and the credit rationing that the company experiences: The financing of smaller companies is more constrained because they are more often subject to problems of informational asymmetry. The exclusion of *Size* from the regression neutralizes the relationship between this variable and *Rationing* and leads to a misleading correlation.

Regarding the alternative explanations for the choice of main bank, our estimates confirm the importance of sector specialization by the bank. The results obtained for the risk of the company and the size of the market in which it operates are confusing. *Score* does not seem to be a relevant explanatory factor for *SizeB*, as well as *Market* when *Size* is included in the regression. This means that these two variables are correlated. In fact, the largest companies most frequently operate on national and international markets and they usually choose large banks. These results are consistent with those of Ongena and Smith (2001), who show why companies choose large banks when they are expanding their markets to a national or an international level.

To test the robustness of these conclusions and to respond to potential criticisms about using the size of the bank as a measure of its decentralization, we repeat the tests with the variables *Decent* and *PERS/TA*.

III.2. DETERMINANTS OF THE PROBABILITY OF CHOOSING A DECENTRALIZED MAIN BANK

To examine the probability of choosing a decentralized main bank, we first carried out a bivariate analysis on the relationship between this variable and the set of explanatory variables. The results are shown in Table 4.

Table 4. Bivariate analysis on centralized/decentralized banks

We present here a breakdown of the sample firms' characteristics according to whether their main banks are centralized or decentralized. The table is divided into two parts. The first part includes analysis of the quantitative elements: the size, apparent financial risk, and the rationing. For each variable, we calculate the mean and the median (in brackets) in each subset and carry out a mean's difference test. The second part shows relative frequencies in each subset for the different qualitative variables used in the study.

Variables	Centralized bank	Decentralized bank	t Student	p-value
Total assets	16 017 552 (3 777 543)	3 358 415 (1 282 528)	4,708	0,000***
Score	9,68 (12,04)	12,385 (12,061)	1,707	0,087*
Rationing	0,26 (0,21)	0,32 (0,26)	10,302	0,000***
SA	69,9%	44,4%		
Market	54,2%	65,8%		

The asterisks correspond to the significance levels for statistical test ***99%, **95% and *90%

We notice that companies working with decentralized banks are, on average, smaller than those that work with centralized banks (3 million Euros in assets against 16 million). They are less likely to be "sociétés anonymes" or business corporations (44% against 70%). This result, once again, is consistent with *H1*. On the other hand, they are more often rationed, which disagrees with *H2*. Nevertheless, the bivariate analysis does not allow us to control the joint link between *Rationing* and *Size*, already shown in the analysis of *SizeB*, as the smallest companies experience the greatest financial limitations. Finally, the clients of decentralized banks are apparently less risky than those of centralized banks and work more often in local or regional markets.

The results of the multivariate analysis shown in Table 5 confirm these relationships shown previously in the regressions. We observe that *Size* and *SA* are negatively related to *Decent*, the probability of working with a decentralized bank, which is consistent with H1. So, as predicted by Stein (2002), companies are likely to deal with main banks with organizational characteristics allowing them to deal with the type of information that they are able to provide: *Soft* for the smallest and *Hard* for the largest. The variable *Rationing* shows a negative correlation coefficient. Working with a decentralized bank, once opacity factors are controlled for, permits the company to enjoy fewer financial constraints, in contrast to what the bivariate study shows. *H2* is thus supported.

These results are consistent when we run the regressions on each subset, SA = 1 or SA = 0, including or excluding *Size*. We can here highlight a very interesting point. Regarding SA, the rationing has no impact on the choice of a decentralized bank, in contrast to what is observed with companies having adopted a different judicial status. Only the most opaque companies (SA = 0) seem to be able to try to improve their financial situation by dealing with a decentralized bank, which once again strengthens H2. For the rest, as found previously, the exclusion of *Size* in the regression increases the explanatory power of *SA*. Its coefficient is tripled. Moreover, the sign of *Rationing* now becomes positive, making it clear, in contrast to what was observed in the bivariate analysis, that the more rationed companies are those that work with decentralized banks. This observation reminds us of the importance of controlling for the size of the firm.

The control variable *Score*, apparent financial risk, is significant and positive. Decentralized banks work with clients who appear more risky, as shown in the bivariate analysis. We observe that the hypothesis of the bank's sector specialization is pertinent with significant coefficients for manufacturing, services, and trade. *Market*, however, has no effect at all except when we exclude *Size* from the regression, which is a reminder of the link between these two variables.

III.3. DETERMINANTS OF THE RATIO *PERS/TA*

Tests carried out from our third measure of the degree of centralization of the main bank, *PERS/TA*, are shown in Table 6. They indicate conclusions that are identical to our previous ones. We can see a negative relationship between this variable and *Size*. The largest companies tend to work with banks that use fewer employees to grant credit: in other words, centralized banks. Because of their organizational structure, these latter benefit from considerable economies of scale in dealing with and following up credit demands for those clients who are able to produce sufficient *Hard* information. On the other hand, small companies, which are the most opaque, work with banks that use relatively more human capital; these decentralized banks can offer relationship lending to their clients. These banks do not benefit from the economies of scale associated with *Hard* information because they do not support the costs associated with the transmission of *Soft* information within their organization where there are fewer hierarchical levels. This result is consistent with *H1* and, in the same way, with the

Table 5. Logit analysis of the choice of main bank

	Regression 1 Decent	*Regression 2 Decent SA = 1*	*Regression 3 Decent SA = 0*	*Regression 4 Decent Size excluded*
Intercept	5,721*** (448,652)	4,789*** (183,222)	6,646*** (199,844)	0,685*** (32,466)
Size	– 0,644*** (447,853)	– 0,582*** (246,900)	– 0,749*** (196,157)	
SA	– 0,320*** (21,168)			– 0,951*** (238,961)
Rationing	– 0,583*** (11,309)	– 0,185 (0,627)	– 1,084*** (17,260)	0,845*** (30,600)
Score	0,007*** (10,323)	0,001 (0,292)	0,014*** (19,316)	0,002 (1,162)
Manufacturing	0,252** (4,784)	0,416*** (7,851)	– 0,088 (0,219)	0,118 (1,129)
Services	0,495*** (19,476)	0,462*** (9,644)	0,507*** (8,151)	0,400*** (13,649)
Trade	0,549*** (22,149)	0,688*** (20,399)	0,305 (2,677)	0,505*** (20,205)
Construction	– 0,010 (0,006)	0,249 (1,847)	– 0,335* (2,980)	– 0,075 (0,350)
Market	0,034 (0,285)	– 0,043 (0,311)	0,146 (1,701)	0,236*** (15,231)
% de correct predictions	73,8	66,4	82,5	69,6
Khi 2	993,176***	345,610***	323,214***	472,875***
– 2L	6719,221	4080,207	2609,180	7239,522
Number of observations	6258	3270	2988	6258

The asterisks correspond to the significance levels for statistical test ***99%, **95% and *90%

predictions of the model proposed by Stein (2002). SA does not show, in this context, any link that significantly differs from zero. *Rationing* appears, as with *Decent*, to be negatively linked to *PERS/TA*. *H2* is once again supported. The clients of decentralized banks, which use more employees to grant credit, show fewer signs of financial fragility, allowing them to benefit from a reduced level of credit rationing.

Once again, these results are robust when we use alternative specifications. The analysis made on subsets SA = 1 and SA = 0 does not show any difference from the general model regarding the principal variables. *Size* and *Rationing* therefore give identical coefficients. When we exclude *Size* from the regression, SA becomes significant, as this variable becomes the only measure of opacity. As before, the sign of the *Rationing coefficient* is reversed. This change reminds us, in this context, of the link between the measure of informational opacity, *Size*, the importance of credit rationing, *Rationing*, and the degree of decentralization of the bank, measured here by *PERS/TA*.

Finally, the control variables do not show any significant differences from the previous analysis. The coefficient *Score*, the apparent risk, is once again not significant. The hypothesis of sector specialization of the banks is clearly verified. Further, as in previous models, *Market* does not come out as significant except when *Size* is excluded from the regression.

To summarize, the results of this study are consistent with the two hypotheses formulated whatever the measure adopted to estimate the decentralization of the bank: the size, the organizational classification, or the ratio of employees dealing directly with clients to the total assets.

■ IV. Conclusion

This study examines the choice of main bank by SMEs. The question is to know if this choice is influenced by the organizational structure of the bank. We use, for this, a

Table 6. Personnel used for credit granting

	Regression 1 PERS/TA	*Regression 2 PERS/TA SA = 1*	*Regression 3 PERS/TA SA = 0*	*Regression 4 PERS/TA Size excluded*
Intercept	0,022*** (24,746)	0,022*** (18,228)	0,022*** (14,800)	0,012*** (26,680)
Size	– 0,001*** (– 12,896)	– 0,001*** (– 10,811)	– 0,001*** (– 6,978)	
SA	– 0,643 exp^{-4} (– 0,258)			– 0,001*** (– 5,535)
Rationing	– 0,001*** (– 2,455)	– 0,001* (– 1,624)	– 0,001* (– 1,928)	0,001* (1,845)
Score	0,528 exp^{-6} (0,238)	0,035 exp^{-5} (0,153)	0,606 exp^{-5} (0,521)	0,958 exp^{-6} (0,423)
manufacturing	0,936 exp^{-3}** (2,302)	0,001*** (3,000)	– 0,714 exp^{-5} (– 0,011)	0,702 exp^{-3}* (1,692)
Services	0,775 exp^{-3}* (1,862)	0,001** (2,407)	0,244 exp^{-4} (0,039)	0,602 exp^{-3} (1,417)
trading	0,689 exp^{-3} (1,634)	0,001*** (2,682)	– 0,404 exp^{-3} (– 0,629)	0,542 exp^{-3} (1,259)
Construction	0,525 exp^{-3} (1,149)	0,994 exp^{-3} (1,524)	– 0,232 exp^{-3} (– 0,357)	0,442 exp^{-3} (0,947)
Market	0,146 exp^{-3} (0,631)	– 0,207 exp^{-3} (– 0,717)	0,814 exp^{-3}** (2,072)	0,581 exp^{-3}** (2,486)
Fisher	24,767***	15,872***	7,836***	6,789***
R^2 ajusted	0,051	0,047	0,035	0,012
Condition number	24,108	23,183	24,427	10,156
Number of observations	3947	2418	1529	3947

The asterisks correspond to the significance levels for statistical tests ***99%, **95%, and *90%.

sample of relationships (bank/SME) operating in the French market. These data permit us to combine company characteristics with those of the banks with which they work in a very privileged way. We note that companies with greater opacity, smaller companies, and those with a legal structure imposing few disclosure obligations work most often with banks that are more likely to have a decentralized process of decision making regarding credit granting. Our results agree with the predictions made in Stein's (2002) model and reinforce the empirical results previously obtained mainly in the American market (Nakamura, 1994; Berger and Udell, 1996; Strahan and Weston, 1996; Berger *and al.*, 2007). We also notice that companies dealing with centralized banks show greater signs of credit rationing. They turn more to the government for credit. This last result strengthens the conclusions of Berger *and al.* (2005). SMEs that have contracted with a bank that is unable to handle the type of information (*Soft* or *Hard*) that they can provide due to its organizational structure, experience greater financial constraints.

Our results show, in the French context, the importance of decentralized banks, which are principally the regional ones and the mutual banks. These latter seem to be more effective in providing relational financing to companies suffering from asymmetries of information. These results may be interesting for the managers of SMEs as they can help them to refine their choice of a financial partner according to the characteristics of their firm and the type of information that they are able to produce. Our results also highlight the question of the presence of centralized large banks on the market to ensure the financing of small- and medium-sized companies, particularly in the current framework of restructuring within the banking system. Our conclusions should be thus taken with caution. Besides, our analysis remains static and it would be interesting to examine, in addition to all the above, the impact of the evolution over time of the type of information produced by the company on its choice of main bank. It could be particularly interesting to look at situations where the partnership does not work out satisfactorily, and the firm

decides to change its banking partner, considering the degree of competition prevalent on the credit market. Nevertheless, the difficulty with this kind of investigation remains in obtaining access to the data.

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1 The main bank is the one the company principally works with and that therefore gives it the larger part of its financing (Elsas, 2005).

2 For more information on these questions, see Berger and Udell (2002).

3 Elsas (2005) studied, on a sample in Germany, the question of the "self-assessment" by the bank of its status as main bank (hausbank). However, his analysis focused on interactional variables and excluded organizational dimension of the bank. He compared the result of this self-assessment with indicators of the presence of relationship lending usually used in empirical studies: the priority (duration) of the relationship between the bank and its client and the exclusiveness of this relationship.

4 For a more complete review of these studies, see Degryse and Ongena (2008).

5 The theoretical framework being referred to is that of "The theory of the firm" (Williamson, 1988).

6 These alternatives may be leasing, mortgaging, or finance based on a system of *Scoring*, etc.

7 DIANE includes accounting information and other elements related to the governance of companies operating on the French market.

8 After elimination of those companies for whom not all data were available, the number of observations used in the regressions is different according to each model proposed.

9 Source, "Evolution de la population des établissements de credit et des enterprises d'investissement (Code monétaire et financier)" Bank of France, Banking Commission 2008.

10 This is the proportion of SA firms in the manufacturing industry (916/1382). We calculate the other percentages in the table using the same principle.

11 AFB (Association Française des banques) is the French Banking Association. The AFB banks are those that have adopted the judicial form of a limited company. They are also known as "commercial banks."

12 The leverage is measured by the ratio total debt on total assets.

13 ROA is measured by the ratio net benefit on total assets.

14 We do not use the firm's age as a proxy for opacity because we have limited our sample to firms that are less than 5 years old. Moreover, the choice of the main bank occurs at the firm's creation, thus, we think that the use of this proxy is not adapted to our sample.

15 Conan-Holder's score is measured by the following formula:

$$\mathrm{N} = 24\frac{EBITDA}{Total\ debt} + 22\frac{Permanent\ financing}{Total\ assets} + 16\frac{Current\ assets\ less\ inventories}{Total\ assets} - 87\frac{Financial\ expenses}{net\ turnover} - 10\frac{Personnel\ expenses}{Value\ added}$$

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