

Working Paper 98-27
Business Economics Series 02
February 1998

Departamento de Economía de la Empresa
Universidad Carlos III de Madrid
C/ Madrid, 126
28903 Getafe (Spain)
Fax (341) 624-9608

CAPITAL MARKET INEFFICIENCIES, CREDIT RATIONING AND
LENDING RELATIONSHIP IN SME's

Clara Cardone* ; Iñaki R. Longarela* and David Camino*

Abstract

The financing of small-medium enterprises (SME's) shows a great dependence on short term borrowing from banking institutions and savings banks. The causes of this situation are basically due to low credit availability at the stage of the firm's life cycle when it requires the greatest access. A seminal paper by Fazzari, Hubbard and Petersen (1988) has served as the basis for important subsequent research. In Spain conclusions drawn by studies in this area mostly agree that the basic reason for the above mentioned low credit availability is high borrowing costs due to market imperfections which inevitably lead to credit rationing.

The aim of this paper is twofold. First, to study the roles of firm-creditor relationships (Berger and Udell, 1992,1995; Petersen and Rajan, 1994, 1995) and Loan Guarantee Associations [LGA] in reducing information asymmetries in loan contracts and, second, to attempt to ascertain whether these factors are among the determining factors of loan rates for SME's.

The authors are indebted to Juan Manuel Calle, Gloria Camino, Pilar Ventas and Vanessa Welsh for their help in the collection and ordering of data and to Antonio García-Romero for his invaluable aid in the data processing portion. The authors would also like to thank Salvador Carmona for his valuable comments. This study was partially financed by CICYT Project PB94 0372 and Fundación CAJA DE MADRID.

*Universidad Carlos III de Madrid, Departamento de Economía de la Empresa, C/ Madrid, 126, 28903 Getafe (Madrid). Email: ccardone@emp.uc3m.es, inaki@emp.uc3m.es y dcamino@emp.uc3m.es.



"CAPITAL MARKET INEFFICIENCIES, CREDIT RATIONING AND LENDING RELATIONSHIP IN SME's"

The financial structure of small and medium sized enterprises (SME's) is highly dependent on short term financing from banking institutions and savings banks. This situation is mainly due to the difficulty they have in gaining access to the credit market during the period in which they need it most. The credit market plays an important role during the first months of a business' existence, but the information asymmetries which are an inherent defect of the credit markets, makes it difficult for SME's to gain competitive access. Unbalanced and biased information inevitably leads to credit rationing, the effect of which is to keep even those businesses willing to pay higher interest rates from receiving financing (Freixas, 1991). The problems arising in the contractual relationship between financial institutions and borrowers are due mainly to problems of agency, which are more marked in the case of SME's. According to the agency theory (Jensen y Meckling, 1976) in lending relationships, the agent is the owner-director of the business, while the provider of resources is the principal.

The existence of information asymmetries in all types of contractual relationships leads to *ex-ante* or adverse selection, and to *ex-post* or moral hazard effects (Stiglitz and Weiss, 1981). The adverse selection effect refers to the increased risk assumed by borrowers whenever they are willing to accept -or promise to pay - higher interest rates in order to take on high-risk projects. This is when the lender tends to only issue credit to those businesses falling within acceptable risk levels. At the same time, moral hazard risk lies with the borrower, and depends on their opportunistic behaviour since the borrower takes actions which the lender is unaware of, or only slightly aware of, which can affect the investments financed.

This paper is structured as follows: after the introduction and an overview of the relevant literature, section two presents the main findings of an empirical study among SME's conducted between September 1996 and May 1997. In section three the borrower-lender relationship is analyzed, and section four examines the determining factors of businesses' cost of debt, in accordance with their business, experience, size, sector, financial structure and the existence of cross-collateral guarantees. Section five contains a summary of the main findings and possible areas of study for future research.

1.- Previous Research

Price or quantity credit rationing¹ can be said to exist when the expected profitability of the investment projects presented by borrowers cannot be appreciated by lenders, due to which these leads to interest rates with different risk premium levels. These interest rates may have double implications (Jaffee and Russell, 1976; Jaffee and Modigliani, 1979; Freixas, 1991). (i) Through these we can observe the *ex-ante* or adverse selection effects, as businesses willing to assume greater risks also perceive a low probability of loan repayment and will also be those most willing to accept higher interest rates. (ii) The *ex-post* or moral hazard effects can be equally observed here inasmuch as the market, by raising interest rates, induces businesses to take on projects with little or no probability of success, but which, if they are successful, will bring major benefits for companies which in no case will be shared with the lender (Caminal, 1995)². What, then, do lenders do? Once the optimum interest rate is reached -this being the price above which lenders might see a drop in profitability, despite excess demand- and, having rationed prices, they will begin to reduce available credit and channel resources toward the better qualified borrowers. Also, in the case of investment projects offering different profitability levels from those expected, lenders will prefer to channel their resources to financing for those projects which offer lower risk levels, larger in scale and that take place over a longer period of time (Milgrom and Roberts, 1982). In the case of projects offering the same profitability levels, the availability of outside funding will depend on the borrower's economic and financial situation (self financing) and equity (the possibility of the borrower supplying collateral guarantees) (Calomiris and Hubbard, 1988). Finally, although investment project financing is partially conditioned by the size of the lending institution itself (Peek and Rosengren, 1995a, 1995b)³, we feel that there is no banking institution which would be unable to assume SME financing due to problems of size. Therefore, rather than the size of the lending institution, here it would be make more sense to speak of regulating solvency and limiting risk by sectors.

From a business standpoint, the size, the financial structure (Fazzari and Athey, 1987 and Fazzari, Hubbard and Petersen, 1988) and experience of the borrowers are important factors when entering the credit market. If the characteristics of the debt holders are also taken into account, the following stand out among the ways to reduce the information imbalance which leads to credit rationing: (i) participation in capital by the financial entity providing funding, and, also, (ii) the improvement and consolidation of the lender-borrower relationship, since credit institutions

¹. This rationing is discriminatory, since only some applicants obtain financing. However, when financial institutions give financing to all applicants in amounts lower than that requested, it is known as homogeneous rationing.

². In the case of Spain, there might also be some opportunistic *ex-ante* behaviour, since projects financed are guaranteed investments, but provide low profitability.

³. Thus, large credit institutions make no great efforts to analyze, supervise or monitor projects which mean only marginal or low profitability.

can themselves generate information on the borrower (Fama, 1985 and Chan, Greenbaum and Thakor, 1986). Thus, both interest rates and the collateral guarantees required are expected to decline as the relationship is consolidated and matures. Recurrent literature has been published on the subject, most notably the work of Berger and Udell (1992 and 1995) and that of Petersen and Rajan (1994 and 1995) which underscore that the "value"⁴ of the borrower-lender relationship consolidates over time since the information possessed by both parties reduces the information asymmetries, while its "strength" reduces the effects of credit rationing⁵. It is to be expected that the longer the relationship is between the parties, the following situations will arise: (i) greater credit availability, not always accompanied by a drop in interest rates. The effects of the credit relationship depend on market characteristics. According to Petersen and Rajan (1995) competition and long term credit relationships are not always compatible⁶. If the credit market is concentrated, the financial intermediaries will be more willing to compensate interest rates throughout a business' lifetime by, initially applying lower rates than those offered in competitive markets. Whereas, in a more competitive market scenario, lending institutions charge high interest rates at the beginning due to the low probability that the credit relationship will be extended and consolidated, and benefits expected in the future shared. This partially explains why younger businesses prefer self-financing over institutional financing, since in highly competitive, low concentrated credit markets, the former is cheaper than the latter (Rajan and Petersen, 1995). ii) A drop in the collateral guarantees required by lenders (Boot and Thakor, 1994; Diamond, 1991).

In Spain, academic interest in the effect of the businesses size on capital structures and firms's financing costs has generated a great deal of research (Cardone, 1997). In some cases, the validity of these studies has been questioned due to a lack of statistical information and representativity of the sample⁷. The studies conducted by Mato (1988, 1989 and 1990) deal mainly with the relationships between the level of equity, cost of capital, financial structure of SME's and employment levels. Between 1983 and 1988 Hernando and Vallés (1992) analyzed the financial structures and the differentiated financial performance of 1,070 industrial manufacturing companies of the CBBE (excluding the

⁴. With respect to credit renewal, evidence has been found in the American market that it generates greater non-recurring profits than the announcement of a new credit authorization. González Méndez (1997) has recently confirmed that in the Spanish market as well there is evidence of the existence of major increases in share prices on dates close to that upon which bank financing is approved and that of the issue of shares subscribed by financial institutions. A greater reaction on the stock market prior to bank loan renewal over that of new loan concession has also been confirmed in this same market.

⁵. The data base used by these authors is made of the 3,404 companies in the National Survey of Small Business Finance (NSSBF), a member of the U.S. Small Business Administration. These are companies with less than 500 employees and an average of 10 years in the marketplace.

⁶. Comments on the credit market are equally applicable to the job market, where greater competition means greater incentive for the employer to inform and train personnel, given the increased possibility that they be lured away by the competition. (Rajan and Petersen, 1995).

⁷. Among the main data bases being used, we find the "Central de Balances del Banco España (CBBE), the Industrial Survey of Business Strategies and, the data base of the Institute of Financial Studies.

energy sector). The influence of size and financial structure in the investment decisions confirms that businesses' investment levels do not depend solely on the profits expected from their projects, but rather on internal resources and on the level of debt -which also affect the access of SME to bank loans-. Self financing is important since smaller businesses are subject to credit rationing, both in price and quantity. This was an inter-temporal study.

Ocaña, Salas y Vallés (1994) analyze the variables upon which financing depends as well as the significant differences among these based on size. For these authors, the average cost of debt for small businesses is lower than or equal to the average cost for their larger counterparts, without taking into account the resources employed for debt guarantees. When effective costs are taken into account the relationship observed is the following: the smaller the business, the higher the cost of borrowing. The sample used for this case came from 670 CBBE businesses' responses between 1983-1988. Maroto (1996) conducted a financial study of SME's for the 1990 - 1995 period, in which it was once again shown that certain structural patterns are still used in financing these businesses, to wit: (i) limited capacity to assume medium and long-term debt; (ii) high risk premiums paid and, (iii) the extreme dependency on short term bank financing, on commercial credit and on own resources. The data base used in this case was also that of CBBE. Finally, Caminal (1995) analyzed the potential role of public policy in SME financing from the standpoint of economic efficiency.

The "age" of business, as well as the "experience" of the borrower-lender relationships and the mediation of the Loan and Guarantee Associations [LGA]⁸, might, in some cases, improve and expand upon the information available to the lender, and thus reduce the asymmetries of information which are to be found in any lending contract. For this reason, this paper has a double purpose., (I) to study the importance of the lender-borrower relationships and that of the LGAs role, as factors contributing to the reduction of the information asymmetries present in any loan contract, and, (ii) to analyze whether these factors are among the main determinants of SME interest rates.

2.- Data

In Spain, close to 40,200 SME's make use of the mutual guarantee system to gain access to the credit market (Cardone, 1995), due to which the businesses considered in this study are among those which meet two conditions: (i)

⁸. According to Royal Decree 1885/78, Loan Guarantee Associations are financial intermediaries whose main purpose is to offer collateral signature on loans to eligible members.

that of being a micro (between 1-10 employees), to medium sized business (from 50 to 250 employees)⁹ and (ii) are either currently making use of the guarantee of an LGA or have done so in the past¹⁰,

a.- Population: The original population studied was the 40,171 participating members of the 18 LGA's active in Spain by October 1996. Since only 9 LGAS from 8 Autonomous Communities¹¹, participated in the study, the original figure was reduced to a "theoretical" population of 18,940 companies. Of this number, 4,636 companies were selected and surveyed between January and May of 1997. If 100% of the companies in the sample had responded, the guaranteed margin of error would have been 1.4%.¹² However, given that the response level was only 4.1% - 83.8% did not respond and the Post Office returned the remaining 12.1% of questionnaires sent out- the margin of error was 26%¹³.

⁹. According to EUROSTAT, companies with fewer than 249 employees are considered to be SMEs, while micro companies are those with 0 to 9 employees; small companies have between 10 and 49 employees and medium size companies between 50 and 249. Spanish Law 1/94 defines SMEs as those companies with fewer than 250 employees.

¹⁰. Not all eligible LGA member companies have requested loan guarantees.

¹¹. Andalusia, Asturias, Balearic Islands, Castilla-Leon, Region of Valencia, Galicia, Madrid and Murcia.

¹². Which can be calculated using the following formula:

$$n = \frac{z^2(p)(1-p)}{D^2}$$

With:

- n = Sample size. (4,636).
- z = Value of 1.96 for a level of significance of 95%.
- D = Level of accuracy or error.
- p = Percentage of population to be estimated.

¹³. This error is determined based on the following formula:

$$n = \frac{N K^2 p(1-p)}{(N-1) e^2 + kp}$$

Where:

- N = Population:
- n = Sample.
- k = 1.96 for a level of significance of 95%.
- p = Percentage of the population to be estimated.

A 35 question questionnaire divided in three sections was devised. The first of these dealt with basic business profile aspects of SME's; the second referred to aspects relating to the lender-borrower relationship, and the third block dealt with subjects relating to the guarantees¹⁴.

In December, a pretest was conducted for which a questionnaire was sent to 39 businesses located throughout Spain. After some corrections, the questionnaire was mailed out to the remaining firms in January of 1997, with an attached letter explaining the purpose of the study and a self-addressed stamped envelope to facilitate participant response. Of those, 190 businesses which responded to the questionnaire, one was excluded from the study when it was learned the company had over 250 employees.

The information supplied by the LGA's was organized in a variety of forms, despite the request that data on companies with current and non-current financial guarantees be kept separate. Thus, some firms only supplied information for one group of participating members; other LGA's provided one sole file with information on all their participating members; while still others presented the information separately as requested, that is organized by companies with both current and non-current loans guaranteed by LGA's. Of the 189¹⁵ valid responses received, 12 companies had no collateral guarantees; 55 companies had a valid guarantee at the time of response; 2 had never requested a guarantee, while the remaining 120 companies could not be identified.

b. Demographic analysis of the sample. The variables used to define the business profile are: the business' main activity sector (SAP)¹⁶; the legal form under which the business is organized (FOJ); capital ownership (PRO) of the business; whether the business is managed by the owners themselves or by third parties (DIR) and finally, by size, measured by two different parameters: number of employees (TAM1) and sales turnover [TAM2]¹⁷.

The profile of the companies responding to the questionnaire is as follows: The SME's of up to 30 years old belong mainly to the service sector and are organized as Limited Companies; they are the property of one private individual ..

¹⁴. The questionnaire was evaluated by colleagues specialized in Accounting and Finance within the Business Economics Department at Carlos III University in Madrid, as well as colleagues in the area of Human Resources at the same university. It further benefited from the comments of Manuel Ortega at the Bank of Spain's Commercial Performance Information Bureau.

¹⁵. Which does not imply that all analyses have 189 observations (i.e. in Chart 1, in some cases there are only 183 observations).

¹⁶. The sectors used in the questionnaire are: Primary, Industry, Retail Sales, Wholesale Sales, Construction, Services, Misc.

¹⁷. Sales turnover for SME's were divided into the following percentiles: 0-30,000; 30,001-106,000; 106,001-313,389 and over 313,389 thousand pesetas.

meaning that there are no investors from other businesses or groups of businesses-, and are managed mainly by their owners, The majority are micro-enterprises.

The companies over 30 years old belong mainly to the secondary or industrial sector; they are organized as Joint Stock Companies and are the property of private individuals. They are managed by their owners and are mainly small enterprises.

Table 0

C. Main activity sector: size and age of businesses. The questionnaire included four parameters for measuring business size. The first -on which most of the studies on SME financing were based is the number of employees [TAM1]. When referring companies in the service sector, the piece of data which best measures size is sales volume [TAM2]. If the study is also dealing with the guarantees offered upon applying for loans, variables such as the total net assets after allowing for depreciation [TAM4] are included to measure the size of businesses. These two variables were also included since they were considered relevant by the businessmen to whom the questionnaire was administered personally.

With respect to age, businesses were asked to indicate how many years had passed since the initiation of their main activity [EDAD1] and the number of years since the business was acquired by the current owner [EDAD2]. The interest in this last piece of data is due to the fact that managers of SME's are usually the persons who deal with the credit entities with whom they negotiate commercial transactions. Aside from the number of years since the business started their main activity, when analyzing the importance of the lender-borrower relationship, the time the current management has been with the business can be much more relevant.

Using ANOVA and taking the main activity sector into account as a factor, it was compared with the variables defined in the two paragraphs (above), so as to determine which would be used for future analyses. After the corresponding analyses were conducted, it was seen that the average size as measured by sales volume was the variable offering greater differences among the different sectors dealt with in the survey. The remaining variables mentioned above were fairly constant, as can be seen by the F values in Table 1.

Table 1

d.- Sources of Financing: The behavior of the sources of short term financing used by the SME's surveyed are as follows: as the number of employees increased [TAM1] and the time transurred since the SME began working in the main activity, [EDAD1], financing by suppliers [F1] and bank financing (from both domestic and foreign banks) increase significantly [F2 y F4]. Financing from Savings Banks [F6] is more prevalent in smaller and younger companies It is domestic banks which provide most long term financing [F3] when businesses are smaller and younger, while long term financing from Savings Banks [F7] as the number of employees drops and time since main activity was initiated considerably increases.

Table 2

Given the F values, we should point out that among the different groups by size and age in general, the differences between the average values for each type of financing do not vary significantly.

This study suggests the comparison of the following hypotheses concerning the contractual relationship and guarantees in SME financing processes:

(i) Length of the firm-creditor relationship

H1: If the length of the lending relationship with the main credit institution is greater than the length with the second most important credit institution, concentration of the credit market may follow and hence, the greater "fidelity" the greater credit availability.

H2: If the length of the lending relationship with the main credit institution is lesser than the length with the second most important credit institution, one may guess that the credit market is competitive, and therefore, access to credit from new lenders is easier.

(ii) Number of financial institutions from which the firm borrows and biggest percentage coming from a single financial institution.

H3: The greater the firm's size and its age, the greater the number of financial institutions and hence, credit availability.

H4: The greater the firm's size and its age, the lesser the percentage coming from a single financial institution.

(iii) Concentration/diversification of nonborrowing financial operations.

H5.1: Non-borrowing relationships with the main credit institutions are better valued the greater the firm's size.

H5.2: The greater the firm's size the lesser concentrated are financial operations in one single institution.

(iv) Demanded guarantees by the creditor.

H6: The guarantee-loan ratio, the quantity and quality of demanded guarantees depend on the firm's size and its age.

(v) Cost of borrowing.

H7: The length of the firm-creditor relationship improves credit availability, but does not reduce its cost.

H8: Making use of LGA guarantees improves credit availability, but it does not reduce cost.

3.- Measurement of the borrower -lender relationship

Petersen and Rajan (1994) use the following observable dimensions to facilitate evaluation of the borrower-lender relationship: (i) the length of the borrower-lender relationship; (ii) the number of financial institutions the business works with, along with the concentration of loans with one sole lender and, (iii) the services received from one sole financial entity. Since one of the purposes of this study is to better understand the effect of the mediation of LGA 's in the credit negotiation process, -mainly as relates to the cost of borrowing and credit availability- a fourth dimension has been added (iv) guarantees required by lenders for loan authorization.

(i) Length of relationship with prime or main credit institutions. By prime we mean those entities lending the largest percentage of all third party funds. If the length of the lending relationship -measured in years- of the borrower with his prime credit institution [AR1] is *greater* than the length of his relationship with its second most important credit institution [AR2], this would reflect a characteristic of the concentrated credit market -a characteristic which is necessary but insufficient-. When the main credit institution is also that with which the borrower has had the longest relationship, this would confirm the fact that firms do not change borrowing financial institutions easily -they are more loyal- and the longer standing the relationship is between borrower and lender, the more logical it is to assume that credit availability, in exchange for this loyalty, is also greater.

If, on the contrary, the longevity of the relationship with the main credit institution [AR1] is *less* than the longevity of the relationship with the second most important credit institution [AR2], it can be deduced that the market is more competitive and less concentrated, and therefore that more financing from other financial institutions is available to businesses, even in the case of newer relationships, meaning that the financial institution with which the longest relationship has been maintained is not the one from which the most credit is available.

The results obtained based on the number of employees [TAM1] show that medium sized companies have longer relationships with the first credit institution than small ones, which in turn have longer relationships than the micro businesses. Due to the above, it can be said that the older the business, the larger it tends to be and the more stable the relationship, although it should also be said that this could well be due to the fact that larger businesses tend also to be the older ones and therefore are in a position to maintain a longer-lasting relationship. When the longevity of the business in its main activity [EDAD1] is crossed with the length of its relationship with the financial institution, it can be seen that for SME's over five years of age, and those between 6 and 15 years of age, their relationship with the bank is older than the business itself, which can be understood to mean that the relationship began prior to the business' initiation in the main activity.

This relationship can be clearly seen when the age from which the main activity [EDAD1] began is crossed with the variable [AR1] which represents the longevity of the relationship with the prime credit entity, whose chi *square* has a value of 56.099, which denotes a strong relationship between both variables. Something similar occurs when we cross the (EDAD) variable, meaning the time under current ownership, where the chi square is 54.694, as is to be expected, given the similarity between EDAD1 and EDAD.

If the longevity of the relationship with the second most important entity [AR2], is considered, we see that for older, medium size businesses, the relationship maintained with the primary and secondary financial entities tend to even out. Thus, the relationship maintained by 50% of the businesses of over 30 years of age and 62% of the medium size businesses with their top two financial entities tend to have the same durations.

Table 3

The findings in Table 3 show that at first, Spanish businesses tend to maintain loyal relationships with their credit entities, since the age of the business tends to coincide with the longevity of the relationship.

(ii) The number of financial entities [EF] that the SME's work with and the maximum percentage of debt [DMX] requested from one sole entity reveal an important aspect of the borrower-lender relationship, inasmuch as it tells us how much businesses diversify when applying for credit. Here it can be seen that as the number of employees [TAM1], sales volume [TAM2] and number of years since the business initiated its main activity increase, [EDAD1], so do the number of financial entities with which the SME's do business. At the same time, the maximum percentage of debt obtained from one sole financial entity [DMX] starts to drop off. This does not necessarily mean that business relations are not maintained with the first financial entities.

Companies reported working with a minimum of one financial entity, regardless of the number of employees [TAM1], their sales volume [TAM2], or the number of years they have operated in the main activity [EDAD1], and a maximum of ten financial entities were reported for the smallest and youngest companies and up to fourteen financial entities for medium size businesses and those with over 30 years of operations in the main activity. At the same time, the highest average percentages of maximum debt maintained with a financial entity [DMX] are those corresponding to the smallest companies (62.3% with an average deviation of 32.7) and the youngest companies (54.8%, with an average deviation of 30.9).

In this case the values of the *F*-statistic leave no room for doubt. For the case of medium size SME's measured by the number of employees [TAM1], the values for both the number of financial entities [EF] and the percentage of maximum debt held with one sole entity [DMX] differ greatly. However, when businesses are considered by sales volume [TAM2] and by the years since initiating the main activity [EDAD1], clear differences can be seen for the financial entities, although not for the maximum debt maintained with one sole financial entity.

Table 4

Therefore, as the size increases and as SME's get older, the market has more information, which leads them to diversify their operations, and thus to decrease the percentage of debt maintained with one sole credit entity.

(iii) Services from one sole financial entity. In addition to the quantitative data on the length of the borrower-lender relationship, it is also important to consider the value the companies place on their business relationships with credit entities, including other financial services entities, all of which serve to expand upon the information which the lender has on the borrower. This is the case of current accounts, savings accounts, deposits for employees, payroll, etc. In order to discern the concentration of financial activities, it is also important to consider whether businesses "always" work with the same financial entity for a given type of transaction, -discount of documents, credit lines, credits with a mortgage security, etc.- to find out how concentrated financial activities are.

As shown in table 5.1 on a scale of 0 to 5 (with zero being the lowest value and 5 the highest), the figures barely reach 3, with 3.11 being the highest score. This can be interpreted to mean that in the mid-term, businesses consider commercial relationships maintained with the main financial entity to be of no, little or some importance. The level of importance assigned rises as the size of the business increases. At the same time, they place more value on the relationship maintained with entity 1 (the most important financial entity) than those maintained with entity 2 (the second most important financial entity).

With respect to the concentration of certain transactions with one sole financial entity, the results are more or less uniform. The percentages of concentration drop along with size. One noteworthy tendency observed is that medium size businesses have a higher percentage of concentration --well above that of the micro and small companies-- in mortgage transactions.

When the analysis is done considering the years since the business initiated in the main activity (EDAD1), the results obtained are less clear. The majority of younger businesses along with the older businesses, assign a greater value to the importance of the relationship, and once again the most important relationship is with the prime financial entity. With respect to the concentration of operations with one sole financial entity, the lowest percentages once again correspond to the two ends of the scope: businesses of less than 5 and more than 30 years of age.

Table 5.1.

Table 5.2.

(iv) Guarantees required by the lender. Finally, another measurement of the importance assigned to the relationship lender-borrower is that of the guarantees required by financial entities. In this case, we attempted to measure the borrowers' perception of the reasons for the guarantees required by the lenders, the type of guarantees required and their relationship with the loan applied for.

It is to be expected that the reasons collateral guarantees are required [CA and CAU]; the type of guarantee requested [TI and TIP] and the relationship between the guarantee/loan requested [GP] differ by size, age of the business, the length of the lender-borrower relationship and whether or not an LGA is involved. The analysis is done based on the number of employees [TAM1]; sales volume [TAM2], and years since the SME initiated in the main activity [EDAD1] and whether or not there is an LGA collateral guarantee.

With respect to the *reasons* behind the lender's request for a guarantee [chart 6.1], the micro businesses (3.48), and small (3.67) and medium size businesses (3,29) feel that "the amount of the loan" is important and almost very important. For micro businesses (1.57) and small businesses, (1.67) "the length of the relationship between the lender and borrower" is considered of little or some importance. For medium size businesses, the "project feasibility" (1.76) is considered more important than the "the length of the lender -borrower relationship" (1.00). Micro and small businesses feel that project feasibility (1.51) is considered less important than the amount of the loan applied for or the lender-borrower relationship. When analyzed by the companies' sales volume [TAM2], for the first three business groups, "the length of the relationship between the lender and borrower" was considered of little and some importance (1.26; 1.94 and 1.94), but in any case, of lesser importance than "the amount of the loan" and "project feasibility". When considering the years the business has been in the main activity [EDAD1], it was confirmed that firms under 30 years of age considered the "the length of the relationship between the lender and borrower" to be of little or some importance (1.64; 1.72 and 1.08), but in any case, always less important than "the amount of the loan" and "project viability".

As for the *type of guarantees* required by the lender, all businesses responding in the sample -regardless of size and age- agreed that the most frequently requested guarantees are "personal and not related to the business activity" followed by an LGA guarantee (except in the case of older firms between 16 and 30 years of age).

With respect to the guarantee-loan requested, the results are somewhat contradictory, since it was to be expected that for younger and smaller businesses, this proportion would be higher than for older and larger companies.

Table 6.1.

The same analysis was done but this time taking into account whether or not an LGA guarantee had been issued at the time of response to the survey [chart 6.2.] All firms, with or without financial guarantee, agreed that banking entities systematically do not approve a credit if no guarantees are supplied. When the firm has a guarantee, this depends mainly on "the amount of the loan", followed by the "project viability" for which financing is sought, and finally on the "the length of the relationship between the lender and borrower". While in cases where the business does not have a collateral guarantee, "the length of the relationship between the lender and borrower" moves down to fourth place in importance. With respect to the type of guarantees requested, both groups agree that the type most frequently requested is personal, and unrelated with the business activity for which it is sought. Both groups assigned a medium value (0.3 and 0.4) to the importance of LGA mediation.

Finally, for a third of those surveyed, the non-supply of guarantees implied an average increase of 5.91 percentage points in the cost of the collateral guarantee. For the remainder this increase did not exist. Can this response be interpreted as meaning that what does exist is merely the non-availability of credit? This option was not openly offered in the survey, but was added on by the respondents in 8.9% of the cases of groups with a guarantee and by 4.5% of the group not identified by the LGA.

Table 6.2.

4.- Analysis of the firm's cost of debt

In this section we focus on our second goal which is to determine the variables that affect the small-medium enterprises' cost of debt by implementing a regression analysis. Our data set includes 78 observations and as a proxy for the dependent variable we have chosen the nominal interest rate that the SME's state to endure in their short term operations [NCP].¹⁸ The sample mean of this variable is 8.96% with a standard deviation of 2.11. This figure exceeds 3.4% the average value of the three-month MIBOR during the first semester of 1997 -all surveys were received in this period-. Our model has been estimated by OLS and obeys the following linear specification:

¹⁸ Firms were asked to indicate nominal and real interest loan rates in their most recent credit operation together with charged commissions. Few answers to these questions were collected and this fact forced us to use the nominal cost as representative of the cost of debt with a small sample of 78 observations.

$$NCP = \beta_0 + \beta_1 D3 + \beta_2 D4 + \beta_3 D5 + \beta_4 D6 + \beta_5 DFELL + \beta_6 DSGR + \\ + \beta_7 DDP + \beta_8 LVT + \beta_9 LED + \beta_{10} RA + \varepsilon$$

where D3, D4, D5 and D6 are dummy variables corresponding to those firms whose main activity falls into the sectors: retail business, wholesale business, construction and services, respectively -the industrial sector works as a basis and the small number of observations corresponding to the primary sector and others has been removed-. The survey's arrival date [DFELL] takes value one when dealing with a poll received before 03/31/97 and zero otherwise. DSGR is also a dummy variable and it takes value one if the loan is guaranteed by a LGA and zero otherwise and similarly, DDP has unit value when the firm pays late its trade credits and zero otherwise. The log value of sales volume [LVT] proxies the firm's size, while LED represents the number of years since the beginning of the firm's main activity, also in log terms. Finally, the firm's financial structure enters the model through the variable RA which stands for the percentage value of the firm's debt with respect to its total liabilities. The low response level in certain Autonomous Communities did not allow us to include any reference to the geographical location of the firm.

Before analyzing our results, a few aspects deserve some comments. The aim of the variable DFELL is twofold. On one hand, it is required in order to achieve a correct model specification -the survey was implemented during a period of serious reductions of the interest rates and on the other hand, it allows for measurement, always with caution, of the effect of this reduction on the firm's loan cost. The absence of variables representing the role of relationships with the banking institutions has also some explanation. Preliminary analysis of the effect of the length of the relationship with its current lender and the number of banks from which the firm borrows has led us to conclude that both variables seem irrelevant in order to determine the loan cost. In both cases, their significance was tested after the corresponding multicollinearity analysis. In this sense, our results are similar to Petersen and Rajan (1994). We have excluded these variable from the model because of our small sample which forces us to include a limited number of regressors.

Our regression results are given in Table 7. A fair part of the variation of NCP is explained by the firm characteristics. The coefficient estimates for the firm characteristics are consistent with these variables being proxies for the risk. Larger firms pay lower interest rates, younger firms bear higher costs and a higher leverage leads to lower interest rates.¹⁹

From a statistical point of view, the existence of collateral guarantees offered by LGA's does not have a significant impact on the dependent variable. Even though, the corresponding coefficient estimate is negative, we find no evidence

¹⁹ . We have sacrificed a direct interpretation of the coefficient estimates for the firm's size and age that the absence of a log transformation would permit, in order to avoid problems with the subsequent heteroskedasticity. Furthermore, it is consistent with the empirical evidence (Petersen and Rajan, 1994) a declining marginal impact of both variables.

to reject the hypothesis of their effect being null. It should be noted that these collaterals could be important in terms of credit availability, having no explanatory power over the cost of debt.

With respect to the impact of the declining interest rates, the coefficient estimate for DFELL let us assert that during the period under study a significant reduction on the short term cost of debt took place. Our point estimate sets this decrement to 1%. On the other hand, those firms paying their credits late have to put up with higher loan rates.²⁰ Finally, according to our results, firms grouped into the retail and wholesale business bear larger costs than those into the services sector.

Table 7

5.- Summary and concluding remarks

The main conclusions which may be drawn from the study are as follows:

(i) The importance of the lender-borrower relationship was measured based on four observable dimensions designed to reflect the covariance of the relationship. The following results were obtained:

· With respect to “the length of the relationship with the main credit entities” the results obtained based on SME size, measured by the number of employees (TAM1), it was seen that medium sized businesses have a longer relationship with the first financial entity than the smaller ones, which in turn have longer standing relationships than the micro businesses. Therefore, it can be said that the larger the firms, the more stable the relationship, although we should point out that this may be due to the fact that larger firms are also the oldest and therefore are those which are in a position to have a more long-standing relationship. This relationship is evidenced when the age of the firm by the number of years since its initiation in the main activity [EDAD1] is validated with the variable with the number of years of the SME’s relationship

²⁰ . This finding may question the traditional specification of the cost of debt by means of univariate regression models, as DDP could be an endogenous variable, especially if we consider it a proxy for credit availability.

with the main or prime financial entity [AR1] whose chi square represents a value of 56.099, thus denoting a strong relationship between the two variables.

If we consider the variable length of relationship with the second most important financial entity [AR2], we see that 80% of the companies show a relationship with the first entity which is either greater than or equal to the relationship with the second most important entity. For medium size and older firm, the relationship with the prime and secondary entity tend to even out. Thus, 50% of the companies over 30 years of age and 62% of the medium size firm have a relationship of equal duration with their top two financial entities.

- With respect to the *number of financial entities* with which a firm operates, [EF] and the *highest percentage of debt* requested from only one of these entities [DMX], it can be seen that as the average size by number of employees [TAM1] and the size by sales volume [TAM2] and age, measured in years since the initial activity increase [EDAD1], the number of financial entities with which they do business also increases, in parallel with a decrease in the maximum percentage of debt held with one sole entity. As for the number of financial entities with which businesses do business, all responded with a minimum of 1, regardless of the size -number of employees [TAM1], sales volume [TAM2], and age, measured in years since the beginning of the main activity [EDAD1], and a maximum of 10 financial entities for the smallest and youngest and of 14 financial entities for medium sized firm and those over 30 years of age. The smallest and youngest businesses showed the largest average percentages of maximum debt with one financial entity [DMX] (62.3% with an average deviation of 32.7% and 54.8% with a deviation of 30.9%), respectively.

- Under the heading of *services received from one sole financial entity*, the companies rated the business relationships maintained with the main financial entity as unimportant, of little importance or of some importance. The ratings rose in accordance with the size of the businesses responding. They also valued business relationships maintained with entity number 1 (the prime financial institution) more than those maintained with entity 2 (the second most important financial

entity). With respect to the concentration of certain operations with one sole financial entity, the results were more or less uniform: the percentages of concentration are gradually reduced as size decreases. One exception is the particularly high percentage of concentration reported by medium size firm -well above that of micro and small businesses- in mortgage operations. When the analysis is done based on how long it has been since the business initiated in the main activity, [EDAD1], results are less clear. Nearly all the youngest and oldest businesses place more value on the importance of the relationship with the prime financial entity. Under the concentration of operations with one sole financial entity, the lowest percentages are once again found on either end of the scale: businesses under 5 or over 30 years of age.

- Under the category of *guarantees required by the lender*, the companies analyzed by size -measured by the number of employees and volume of operations [TAM1, TAM2] - and depending on how long the firm has been working in the main activity [EDAD1] and whether or not they have an LGA guarantee- feel that these depend more on the amount of the loan applied for and on project feasibility than on the length of the lender-borrower relationship. As for the guarantees requested, the majority are personal, and unrelated to the business activity, followed by LGA guarantees. A third of the respondents thought that if no guarantee were supplied, it meant an increase of an average of 5.91 points in the cost of the collateral guarantee. For the remaining two thirds, this increase did not exist. This can be interpreted simply to mean that what does exist is a non-availability of credit, although this question was not asked explicitly.

In keeping with the main aspects of the primary goal of this study, here it should be said that while firm valued the lender-borrower relationship, inasmuch as they maintain strong ties with those credit entities with which they had their first contact -even though they may work with several financial entities-, they feel that for financial entities the length of the lender-borrower relationship is not a prime factor when authorizing a loan. Similarly, as suspected, the mediation of an LGA is being used as a means to credit availability.

(ii) With regard to the cost of debt, we can conclude that a sizeable part of variations in short term nominal interest rates [NCP] is explained by factors related to the characteristics of the firms in question. The estimated rates are consistent with the fact that these variables are proxies of risk. Thus, the largest firm pay the lowest cost of debt; the youngest businesses are confronted with the highest interest rates, and the firm with lower debt levels pay lower financial charges. One relatively surprising fact is the negligible influence the LGA guarantees had on our sample from a statistical standpoint. Despite the fact that the estimation coefficient associated with this is negative, based on the evidence gathered from our data, we cannot reject the hypothesis that the effect is nil. The reason may be that the guarantee is relevant only in terms of credit availability, but has a negligible effect on the cost of debt.

As for the effect of the drop in interest rates, the estimated coefficient of the variable as of the date the survey was received leads us to conclude that in the period analyzed, there was a statistically significant reduction [DFELL] made in the cost of short term debt for smaller businesses; our specific estimator quantifies this decrease at the 1% level. Otherwise, the companies which are late in paying their suppliers are charged a clearly higher interest rate. Finally, judging from the results of our estimation, the smallest retail and wholesale businesses participating in the study are those which pay the highest interest rates, higher than those paid by companies in the service sector.

Finally, in order to complete this study of the credit market, some other points to which this study could be extended are introduced *(i)* an analysis of the credit market from a supply standpoint. It is to be expected that the perception of credit entities will differ regarding the importance of the lender-borrower relationship and the mediation of LGA as factors for generating information and for reducing risk, respectively. *(ii)* Since we already know that credit is obtained mainly from savings banks, it would be of interest to find out how SME investments are channeled. In their dealings with financial entities, there may be a certain imbalance depending on whether operations are deposits or loan. Depending upon this, it is to be expected that the investments made would be made with commercial banks (whose

credit investment would go to large businesses), and that credits would be taken out with savings banks (financed by the deposits of private individuals-families).

References

- Berger, A. and Udell, G. (1992) Some Evidence on the Empirical Significance of Credit Rationing. *Journal of Political Economy* **100** (5). 1047-77.
- Berger, A. and Udell, G. (1995) Relationship Lending and Lines of Credit in Small Firm Finance. *Journal of Business*. **68** (3). 351-81.
- Boot, A.W. and Thakor, A. V. (1994) Moral hazard and secured lending in an infinitely repeated credit market game. *International Economic Review* (**35**). November. 899-920.
- Calomiris, C. and Hubbard, R. (1988) Firm Heterogeneity, Internal Finance and Credit Rationing. *National Bureau of Economic Research*. Working Paper 2497.
- Cardone, C. (1995) Financiación empresarial y racionamiento del crédito: El Sistema de Garantías Recíprocas. *Boletín de Estudios Económicos* **3** (156). 449-67.
- Cardone, C. (1997) El mercado del crédito y las empresas de menor tamaño; *Información Comercial Española*; Nº 764. pp.55-64.
- Cardone, C.; R. Longarela, I. and Estavillo, J (1997) "Financiación de las Pequeñas y Medianas Empresas: Relación contractual y garantías". *X Simposio de Moneda y Crédito*; Madrid.
- Caminal, R. (1995) El Papel de las Restricciones de Crédito y las Políticas Públicas en la Financiación de la Pequeña y Mediana Empresa. *Papeles de Economía Española* **65**. 224-34.
- Chan, Y. S; Greenbaum, S. and Thakor, A. (1986): Information reusability, competition and bank asset quality; *Journal of Banking and Finance* **10**. 243-53.
- Diamond, D. W. (1991) Monitoring and reputation. The choice between bank loans and directly placed debt. *Journal of Political Economy* **99**. 688-721.
- EUROSTAT (1996) *Enterprises in Europe*, Fourth Report. Luxemburgo. Office for Official Publications of the European Communities, número 26.
- Fama, E. (1985) What's different about banks?, *Journal of Monetary Economics* **15**. 29-39.
- Fazzari, S. and Athey, M. (1987) Asymmetric Information Constrains and Investment. *The Review of Economics and Statistics* **69**. 481-487.
- Fazzari, S.; Hubbard, R. and Petersen, B. (1988) Financing Constraints and Corporate Investment. *Brooking Papers on Economic Activity* **1**. 141-206.
- Freixas, J. (1991) Equilibrio y racionamiento en el mercado de crédito. *Cuadernos Económicos del ICE*. **49** (3). 223-235.
- González Méndez, V.M. (1997) La valoración por el mercado de capitales español de la financiación bancaria y de las emisiones de obligaciones. *Investigaciones Económicas*. Vol XXI (1). 111-128.
- Hernando, I. and Vallés, J. (1992) Inversión y restricciones financieras: Evidencia en las empresas manufactureras españolas. *Moneda y Crédito* **195**. 185-222.

- Holmes, S., Dunstan, K. and Dwyer, D. (1994) The Cost of Debt for Small Firms: Evidence from Australia. *Journal of Small Business Management (January)*. 27-34.
- Jaffee, D. and Russell, T. (1976) Imperfect Information, Uncertainty and Credit Rationing. *Quarterly Journal of Economic Review* **90**. 651-66.
- Jaffee, D y Modigliani, F. (1979) A Theory and test of Credit Rationing. *American Economic Review* **59**. 850-72.
- Jensen, M. and Meckling, W. (1976) Theory of the firm: Managerial behavior, agency costs and ownership structure; *Journal of Financial Economics* (3). 305-360.
- Maroto Acín, J.A. (1996) Estructura Financiera y Crecimiento de las PYMES; *Economía Industrial*; Nº 310; pp.29-40.
- Mato, G. (1988) "La industria española en la crisis" (Segura, J. et.al) 1988. Alianza Economía y Finanzas, I.
- _____ (1989) Inversión, coste de capital y estructura financiera: Un estudio empírico. *Moneda y Crédito* **188**. 177-201.
- _____ (1990) Estructura Financiera y actividad real de las empresas industriales. *Economía Industrial* (Marzo-Abril). 107-114.
- Milgrom, P. and Roberts, J. (1982) Limit Pricing and Entry Under Incomplete Information: An Equilibrium Analysis. *Econometrica* **50**. 443-59.
- Ocaña, C; Salas, V. and Vallés, J. (1994) Un análisis empírico de la financiación de la pequeña y mediana empresa manufacturera española, 1983-1989. *Moneda y Crédito* **199**. 57-96.
- Peek, J. and Rosengren, E. (1995a) Banks and the Availability of Small Business Loans. Federal Reserve Bank of Boston; Working Paper **95-1** (January).
- Peek, J. and Rosengren, E. (1995b) Small Business Credit Availability: How Important is the size of Lender?. Federal Reserve Bank of Boston. Working Paper **95-5** (April).
- Petersen, M. and Rajan, R. (1994) The Benefits of Lending Relationships: Evidence from Small Business Data. *The Journal of Finance* (49). 3-37.
- Petersen, M. and Rajan, R. (1995) The effect of the credit market competition on lending relationships. *Quarterly Journal of Economics*. 407-443.
- Rajan, R. and Petersen, M. (1995) El efecto de la competencia en el mercado de créditos sobre las relaciones empresa-acreedor. *Economía Industrial y Finanzas*; Fundación BBV; pp. 71-76.
- Salas, V. (1996) Factores estructurales en la financiación de las PYME: valoración y recomendaciones. *Revista Asturiana de Economía* **6** (Julio). 29-40.
- Stiglitz, J. and Weiss, A. (1981) Credit Rationing in Markets with Imperfect Information. *American Economic Review* **71**. 393-410.

Sector Main Activity	No. Employees	Size by number of employees TA[M1]				Number of Years in the main activity [EDAD1]			
		Average	Minimum	Maximum	D.T	Average	Minimum	Maximum	D.T
Primary	4	16	2	53	25	18	5	40	15
Secondary	54	34	1	250	46	28	1	168	32
Retail Bus.	22	7	1	30	8	19	2	46	14
Wholesale Bus.	18	29	3	211	51	25	4	77	22
Construction	25	42	3	174	39	21	7	45	11
Services	58	25	1	240	47	16	2	70	14
Other	4	21	4	34	13	19	2	35	16
<i>F</i> -statistic: 1,6457						<i>F</i> -statistic: 1,6164			
<i>p</i> -value: 0,1372						<i>p</i> -value: 0,1450			

Table 0: Distribution by activity sector of firms participating in the sample

No. of employees [TAM1] and main activity sector [SAP]	<i>F</i> -statistic: 1,8457;	<i>p</i> -value: 0,1372
Annual sales volume [TAM2] and [SAP]	<i>F</i> -statistic: 2,8255;	<i>p</i> -value: 0,0119
Total net assets after depreciation [TAM3] and [SAP]	<i>F</i> -statistic: 1,3552;	<i>p</i> -value: 0,2352
Total fixed assets after depreciation [TAM4] and [SAP]	<i>F</i> -statistic: 1,0269;	<i>p</i> -value: 0,4093
Years since main activity initiated [EDAD1] and [SAP]	<i>F</i> -statistic: 1,8164;	<i>p</i> -value: 0,1450
Years current owner [EDAD2] and [SAP]	<i>F</i> -statistic: 1,1896;	<i>p</i> -value: 0,3139

Analysis Table1 : ANOVA

No. of employees [TAM1]											
Variable	Net Worth		Short Term Debt				Long Term Debt				
N° of employees	F10	F9	F1	F2	F4	F6	F3	F5	F7	F8	F11
1- 10	27.51	4.70	17.49	12.28	0.00	6.19	12.29	0.0	10.48	7.14	1.92
11- 49	33.83	2.30	22.79	12.24	0.13	6.49	6.93	0.0	8.01	5.49	1.80
50-250	31.85	1.30	20.14	14.78	1.80	6.19	11.93	0.0	4.90	4.29	2.83
F-statistic	0.95	2.36	1.08	0.25	2.82	0.01	1.78	0.0	1.32	0.40	0.23
p-value	0.39	0.09	0.34	0.78	0.06	0.99	0.17	1.0	0.27	0.67	0.79
Years in main activity [EDAD1]											
1 - 5	31.56	4.28	20.06	6.03	0.00	5.89	14.82	0.0	10.07	3.48	3.81
6 - 15	29.32	4.06	16.80	12.92	0.08	7.93	11.98	0.0	7.12	7.48	2.30
16 - 30	29.83	1.40	22.78	14.49	0.17	4.75	7.02	0.0	11.68	7.09	1.30
+ 30	35.62	5.22	22.10	14.06	1.31	5.46	6.44	0.0	5.40	3.41	0.99
F-statistic	0.42	1.10	0.75	1.60	1.11	0.79	1.82	0.0	1.35	0.84	1.07
p-value	0.74	0.35	0.52	0.19	0.35	0.49	0.15	1.0	0.26	0.47	0.37
Short Term Debt:	F1: Suppliers F2: Domestic Banks S/T F4: Foreign Banks S/T F6: Savings Banks S/T										
Long Term Debt:	F3: Domestic Banks L/T F5: Foreign Banks L/T F7: Savings Banks L/P F8: Leasing arrangements										
Net Worth:	F9: Family Loans F10: Own resources F11: Others										
Table 2: Sources of Financing											

No. of employees [TAM1]	Length of relationship with main credit entity [AR1]				
	Less than 1 year	Between 1 and 2 years	Between 3 and 5 years	Between 6 and 10 years	Over 10 years
1 - 10	3	12	21	22	18
11 - 49	3	7	13	20	29
50 - 250	0	0	5	6	16
Years in main activity [EDAD1]					
1 - 5	2	10	12	3	2
6 - 15	2	3	16	26	16
16 - 30	0	4	10	10	23
+ 30	2	2	2	9	22

Table 3: Length of relationship with primary credit entity

No. of Employees [TAM1]									
Variable	No. of Financial Entities with which the firm works [EF]				Maximum debt maintained with a financial entity [DMX]				
	Aver	Min.	Max.	D.T	Ave.	Min.	Max	D.T	
1 - 10	29	1	10	1.48	62.3	0.0	100	32.7	
11 - 49	4.5	1	13	2.26	43.8	0.0	100	27.2	
50 - 250	6.2	1	14	3.37	45.5	5.0	100	28.8	
<i>F</i> -statistic:	28.371	6.3156							
<i>p</i> -value:	0.000	0.0024							
Sales Volume [TAM2]									
0 - 30.000	0- 25	3.1	1	10	2.1	54.4	0.0	100	7.0
30.001-106.000	25- 50	3.2	1	13	1.8	56.7	0.0	100	5.4
106.001-313.389	50- 75	4.4	1	10	1.9	49.0	0.0	100	4.4
	75-100	5.5	1	14	3.1	44.8	0.0	100	4.6
<i>F</i> -statistic:	11.4574	1.0934							
<i>p</i> -value:	0.0000	0.3542							
N° of years in the main activity [EDAD1]									
1 - 5	2.9	1	7	1.4	54.8	0.0	100	30.9	
6 - 15	3.9	1	10	2.1	53.0	0.0	100	29.67	
16 - 30	4.3	1	13	2.8	52.6	0.0	100	31.66	
+ 30	4.5	1	14	3.0	42.4	0.0	100	33.29	
<i>F</i> -statistic:	2.6902	0.9934							
<i>p</i> -value:	0.0477	0.3980							
Table 4: Financial Entities and maximum percentage of debt.									

Values between 0-5	Diversification of Financial Operations by number of employees [TAM1]													
	1.1.	2.1.	1.2.	2.2.	1.3.	2.3.	1.4.	2.4.	1.5.	2.5.	1.6.	2.6.	1.7.	2.7.
1 - 10	1.62	1.69	0.66	0.30	0.21	0.07	0.31	0.07	1.59	0.61	0.00	0.00	0.22	0.11
11 - 49	2.48	2.21	2.15	1.76	0.44	0.41	1.07	0.55	1.97	1.23	0.03	0.03	0.17	0.07
50 - 250	3.11	2.42	2.60	1.73	0.56	0.54	2.19	0.73	2.15	1.65	0.04	0.00	0.15	0.27
<i>F</i> -statistic	7.53	2.09	15.60.	17.8	1.83	4.47	17.5	5.47	1.00	6.45	1.19	1.32	0.1	0.95
<i>p</i> -value	0.00	0.12	00	0.00	0.16	0.01	0.00	0.00	0.37	0.00	0.30	0.28	0.089	0.38
Concentration of financial operations by number of employees [TAM1]														
Binomial variable : YES (%)					OP1	OP2	OP3	OP4	OP5					
1 - 10					24.4	35.8	62.2	35.6	4.6					
11 - 49					17.2	41.4	62.1	27.6	6.9					
50 - 250					0.00	16.7	33.3	50.0	0.0					
1.1. Current Account with Entity 1					OP1: Cash advances Current Account									
1.2. Discounting of bills Entity 1					OP2: Descuento de Documentosçç									
1.3. Savings account with Entity 1					OP3: Line of credit									
1.4. Direct payroll deposit with Entity 1					OP4: Mortgage Operations									
1.5. Line of credit with Entity 1					OP5: Other									
1.6. Entity's participation in share capital of Entity 1.														
1.7. Others: Specify with Entity 1.														
Table 5.1.: Diversification/Concentration of financial operations.														

Diversification of Financial Operations														
By N° of years since business initiated in main activity EDAD1]														
	1.1.	2.1	1.2	2.2	1.3	2.3	1.4	2.4	1.5.	2.5.	1.6.	2.6.	1.7	2.7
1 - 5	2.86	2.43	1.34	1.00	0.31	0.32	0.97	0.36	1.66	1.00	0.03	0.04	0.34	0.11
6 - 15	2.11	2.12	1.54	1.32	0.49	0.37	0.81	0.40	1.86	1.07	0.02	0.00	0.14	0.05
16 - 30	1.81	1.72	1.08	0.85	0.23	0.19	0.88	0.30	1.98	1.09	0.02	0.00	0.31	0.19
+ 30	2.36	1.97	2.18	1.42	0.33	0.25	1.08	0.47	1.72	1.11	0.00	0.03	0.00	0.14
<i>F</i> -statistic	1.87	0.87	2.55	0.99	0.75	0.42	0.25	0.18	0.19	0.02	0.41	1.15	1.41	0.44
<i>p</i> -value	0.13	0.45	0.05	0.39	0.51	0.73	0.86	0.90	0.90	0.99	0.74	0.32	0.24	0.72
Concentration of financial operations														
By no. of years since business initiated in main activity. [EDAD1]														
Binomial variable: YES (%)					OP1	DP2	OP3	OP4	OP5					
1 - 5					7.7	30.8	53.9	30.8	7.7					
6 - 15					25.0	46.4	67.9	25.0	3.6					
16 - 30					21.7	30.4	60.9	56.5	4.6					
+ 30					17.7	29.4	52.9	17.7	5.9					

Table 5.2: Diversification/Concentration of financial operations.

	No of employees [TAM1]			Sales Volume [TAM2]				Years of SME in main activity [EDAD1]			
	1-10	11-49	50-250	1	2	3	4	0-5	6-15	16-30	+30
[0-5]											
CA1	3.48	3.67	3.29	3.89	3.59	3.14	3.44	3.76	3.87	3.34	2.68
CA2	1.57	1.67	1.00	1.26	1.94	1.94	1.48	1.64	1.72	1.08	1.73
CA3	1.51	1.51	1.76	1.34	2.15	2.15	1.37	1.96	1.87	1.13	1.23
CA4	0.65	0.22	0.71	0.57	0.65	0.65	0.59	0.60	0.43	0.71	0.09
CA5	1.00	0.49	0.35	0.80	1.44	1.44	0.26	0.44	0.96	0.76	0.41
CA6	1.59	0.92	1.06	1.3	1.91	1.91	0.93	1.48	1.06	1.53	0.91
CA7	0.19	0.33	0.47	0.14	0.21	0.21	0.48	0.64	0.36	0.05	0.09
[0-1]											
TI1	0.72	0.57	0.59	0.77	0.68	0.61	0.54	0.92	0.59	0.57	0.57
TI2	0.22	0.36	0.35	0.23	0.32	0.28	0.36	0.16	0.35	0.30	0.30
TI3	0.15	0.11	0.29	0.18	0.24	0.03	0.25	0.20	0.10	0.25	0.13
TI4	0.12	0.21	0.47	0.10	0.21	0.19	0.36	0.08	0.16	0.30	0.26
TI5	0.37	0.51	0.24	0.28	0.53	0.50	0.36	0.52	0.49	0.28	0.39
TI6	0.00	0.02	0.00	0.00	0.00	0.03	0.00	0.00	0.02	0.00	0.00
[%]											
GP1	0.0	11.9	18.4	9.5	11.5	11.1	13.3	12.9	8.8	6.7	17.4
GP2	40.9	33.3	15.8	14.3	31.5	22.2	20.0	23.7	26.5	33.3	17.4
GP3	27.3	28.6	34.2	23.8	29.5	26.7	40.0	29.0	20.6	43.3	30.4
GP4	13.6	7.1	13.2	23.8	13.1	13.3	6.7	15.1	26.5	0.0	8.7
GP5	9.1	9.5	13.2	4.8	6.6	13.3	13.3	9.7	8.8	10.0	13.0
GP6	4.5	0.0	2.6	9.5	3.3	2.3	6.7	2.2	0.0	3.3	4.3
GP7	4.5	9.5	2.6	14.3	4.9	11.1	0.0	7.5	8.8	3.3	8.7
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 6.1.: Guarantees requested by financial entity.

Guarantee	w/o collateral guarantee	w/collateral guarantee	Not indicated by LGA
NO	9.1%	22.6%	23.6%
YES	90.9%	77.4%	76.4%
<i>When? (0 - 5 rating)</i>			
CAU1: On the amount of the loan.	3.6	3.7	3.4
CAU2: On the length of relationship with lender.	1.4	1.5	1.6
CAU3: On the feasibility of the investment project.	1.5	1.6	1.6
CAU4: Operations of less than 12 months	0.6	0.4	0.5
CAU5: Operations between 1 and 3 years	1.0	0.8	0.7
CAU6: Operations of over 3 years.	1.9	1.1	1.3
CAU7: Others	0.5	0.1	0.4
<i>Rate? (binomial variable)</i>			
TIP1: Personal loans NOT related to the SAP	0.7	0.6	0.7
TIP2: Personal related to the SAP	0.1	0.3	0.3
TIP3: Real NOT related to the SAP	0.3	0.2	0.1
TIP4: Real related to the SAP	0.3	0.2	0.2
TIP5: Collateral Guarantee from LGA	0.3	0.4	0.4
TIP6: Other	0.0	0.1	0.0
<i>Ratio: Loan/Guarantee(%)</i>			
- 100	22.2%	10.5%	10.7%
100	11.1%	23.7%	29.3%
101-200	44.4%	23.7%	30.7%
201-300	0.0%	15.8%	13.3%
301-400	11.1%	13.2%	8.0%
401-600	0.0%	5.3%	1.3%
+ 600	11.1%	7.9%	6.7%
total	100.0%	100.0%	100.0%
WITHOUT Guarantee			
NICC (%): No increase in cost of credit.	66.7%	57.8%	67.4%
SICC (%): Yes, there is an increase in the cost of credit.	33.3%	33.3%	28.1%
ND (%): Credit not available	0.0%	8.9%	4.5%
Table 6.2.: Guarantees required by the financial entity			

Table 7: Regression results for the cost of debt

Variable	Coefficient	Standard Deviation	F-statistic	p-value
C	13.034	1.744	7.472	0.000
D3	2.157	0.784	2.751	0.008
D4	1.099	0.676	1.627	0.108
D5	0.008	0.598	0.014	0.989
D6	0.005	0.540	0.009	0.993
OSGR	-0.120	0.416	-0.289	0.773
DFELL	1.082	0.415	2.608	0.011
DDP	1.695	0.478	3.544	0.001
LVT	-0.437	0.150	-2.911	0.005
LED	-0.512	0.224	-2.287	0.025
RA	0.017	0.009	1.966	0.053
Observations	78	Durbin-Watson	1.720	
R2	0.500	F-statistic	6.709	
adjusted R2	0.426	p-value (F-statistic)	0.000	
White's Heteroskedasticity Test				
Obs* R2	14.013	p-value	0.373	
White's Heteroskedasticity Test (with crossed terms)				
Obs* R2	54.430	p-value	0.382	
Normality Test of the residuals				
Jarque-Bera	0.219	p-value	0.896	
<p>Results of the OLS estimation of our regression model (*) where the dependent variable is the nominal short term interest rate that bear 78 firms under study. C is the constant term and D3, D4 D5 and D6 are dummy variables corresponding to the sectors: retail business, wholesale business, construction and services; respectively -the industrial sector works as a basis-. The other dummy variables are: DSGR [it takes value one when the firms have loan guarantees from a LGA]; DFELL [it takes value one when the corresponding survey is received before 03/31/97]. LVT and LED are sales volume and firm's age in logs, respectively, and RA is the percentage value of the firm's debt with respect to its total liabilities. The table includes tests for heteroskedasticity and normality of the residuals.</p>				