‘INFORMATION ASYMMETRIES, CREDIT RATIONING AND BANKING CONCENTRATION: THE ARGENTINEAN CASE’

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Madrid, September 2007

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ABSTRACT

This paper highlights the importance of the information efficiency in the banking sector as a way to ensure his correct operation as financial intermediary and the correct functioning of the economy in general. The problems of information in the banks distort their relation with the financing demand and especially with the sector of the SMEs, what really means an important obstacle for the smooth operation of any market system. The analysis is centred in the relative size of the financial institutions, the generation of different types of information and the way how it affects the sector of the SMEs. By means of empirical evidence we will show how the greater size of the banks has influence on the creation of information systems that are not well adapted for some segments of the demand or even they do not generate information at all.

'The Law of Supply and Demand is not in fact a law, nor should it be viewed as an assumption needed for competitive analysis. It is rather a result generated by the underlying assumptions that prices have neither sorting nor incentive effects. The usual result of economic theorizing: that prices clear markets, is model specific and is not a general property of markets-unemployment and credit rationing are not phantasms.'

Joseph E. Stiglitz and Andrew Weiss, 'Credit Rationing in Markets with Imperfect Information', The American Economic Review, Vol. 71, No. 3. (Jun., 1981)

"…the dream of transforming an idea into a company, without access to the external financing, will not be more than a dream"

Joakim Winborg, 'Finance in Small Businesses. A Widened Approach to Small Business Managers Handling of Finance', Halmstad University, Sweden (1997).

1. INTRODUCTION

In the present work we will try to analyze the existing relation between the banking concentration, the information asymmetries in the financial markets, and the credit rationing to the sector of the small and medium companies (SMEs). As departure point we'll based on the several works on asymmetries of information and rationing of credit published since the already classic work of Stiglitz and Weiss (1981), and we'll take as empirical frame the situation of the financial and SME sectors in Argentina after the called `Tequila Crisis' (1994) up to year 2001, since we think that this period holds the necessary conditions to fit the three subjects.

It is well known that the financial markets and the banks in particular are informational intensive activities and depends critically on their quality and amount, reason why the information deficiencies have a superlative incidence in their correct operation. But this correct operation gains even more importance if we consider that this sector has a vital function as financial intermediary, connecting the savings of the public with the demand for investment, fulfilling a fundamental role in the growth and development of any economy. It is normally accepted that the greater it is the amount and quality of the information the grater will be the resources canalized towards those opportunities of investment, nevertheless the evidence of the financial markets not always fulfils the golden rule of equilibrium between the supply and demand.

It is then when the aspects and situations that we'll mention in the present work starts to gain relevance. The information deficiencies caused by endogenous factors like the particular structure of the small company, or exogenous factors like the banking concentration and the impact of the regulations (as we're going to see further), leads to phenomena known as `adverse selection', `moral risk' or `monitoring costs', causing `credit rationing' on some sectors of the market.

In the first part of this work we will review the basic characteristics of the process that causes the credit rationing, highlighting the information asymmetries. We'll relate them later with the banking concentration that took place and the effects of the financial regulations applied over the mentioned period.

We will continue getting deeper into the analysis, focusing on the difficulties that the financial institutions had to solve the problem of `information asymmetries' and will see the evidences of credit rationing over the most affected sector that was the small and medium companies one. For this task we will consider the size and structure of the financial organizations, type of information used and the relation with the SME sector with their singularities.

In the third part we will try to analyze the microeconomic impact that the credit rationing had in the small and medium companies. We will lean on empirical evidence and perform a simulation that allows us to quantify the financial over-cost that the rationing provokes in a particular company.

In summary, the intention is to relate the general theory of credit rationing' to the real effect on minor companies, analyzing the agents which somehow fulfil a role of intermediaries.

Finally it is important to clarify that the present work does not try to demonstrate the viability of lending to a SME but the costs and obstacles to do it.

2. FRAMEWORK

Towards the end of the 90's decade a particular debate took place in Argentina about the financing to the SMEs (Small and Medium Size Enterprises) between executives of the BCRA[1] and some economists of the private sector[2]. In one of the positions the authorities of the BCRA argued that the companies had not been affected by the process of banking concentration that took place after the `Tequila Crisis' in 1994/95, they based their position on a series of research works coordinated by Guillermo Escudé (Escudé, 2001), at that time chief of the equipment of Economic and Financial Investigations of the BCRA. On the other sidewalk was the position of some economists like Leonardo Bleger (researcher of one of the only two cooperative banks of Argentina, the Credicoop Bank) defending previous financial publications adducing the worsening situation leaded by this process.

The debate was (and is) even more delicate to analyze due to the 'slippery' information handled and the difficulties to obtain it.

Beyond this particular discussion is generally accepted that for one reason or other the SMEs have been witnesses of an increasingly tighten financial conditions from the 'formal financial sector' (FFS)[3] of the economy. Empirical evidence along those

[1] BCRA: acronym of Banco Central de la República Argentina (Central Bank of the Argentinean Republic).
[2] See Appendix, News 1.
[3] For our purposes we'll consider the 'formal financial sector' (FFS) as the financial institutions covered by the regulation of the BCRA and as 'informal financial sector' (IFS) the rest of the financial intermediaries. This classification is normally used in the academic works related with this subject. The composition in this case is: FFS formed by the BCRA, Public and Private Banks, Saving Banks, Cooperative Banks, Savings Societies, Insurance Companies, Pension Funds, Mutual Funds, Stock

years (1994-2001) seems to show a 'credit rationing' process caused by the bank concentration situation that we'll expose in this work.

But in this particular section we believe that is important to mention some macroeconomic aspects and particularities of the Argentinean economy of those years as the following ones.

One characteristic not mentioned very often about the financial system in Argentina is the small participation of the capital market as financial intermediary. The size in terms of market capitalization to GDP was 19.7% on 1999, quite below the size of countries like E.E.U.U. (180.8%), Canada (122.4%), Australia (108.5%) or emerging countries like Malaysia (177.7%) and the Philippines (54.3%) on the same period, but even in comparison with Latin American countries like Chile (101.1%) or Mexico (34.5%) the capital market in Argentina was in an embryonic state (see Figure 1). Thus the Argentinean financial system was very dependent on the banking sector, shrinking the financing possibilities of the private sector and directly increasing a potential 'credit rationing' process.

But even the financial sector was not enough developed and hadn't reached the critical mass necessary to support an efficient system as intermediary. The size of the Formal Financial Sector (FFS) in the decade grown from 11% on 1990 up to 35 % on 1999 (see Figure 2) calculated as Total Loans/GDP, but was still small on an international comparison with Germany (145%) and EE.UU. (85%), or even with other Latin-American countries like Chile (70%), Brazil (53%) or Mexico (37%). This measure, and the previous mentioned, gives us a general idea of basic restriction in terms of available resources and a good intuition of the range covered by the FFS, both factors considered in the credit rationing theory. Moreover, and related with our concern, if we follow some researches (Berger, Rosen and Udell, 2001) we found that small business loan rates depends more on the size structure of the market than on the size of the lending bank.

Along with the mentioned situation of growth on the loan/deposits, undeveloped capital market and small financial system, the bank concentration process took place after the 'Tequila Crisis' on the second half of the decade.

Exchange. IFS formed by Credit Cooperatives, Cooperatives in general, Local Mutual Companies, Professional Associations (lending money to their members), Moneylenders, Loan Companies, Letter Discount Companies (lending money to the general public), Companies selling durable goods (direct commercial credit) 'Non-profit' Organizations (i.e. sports clubs) and other intermediaries not well defined that in some cases operates illegally.

This crisis was provoked by the devaluation of the Mexican peso on December 1994[4] and affected Latin-American emerging economies on different grades; in the case of the Argentinean economy it suffered a 'fly to quality' effect that caused the drainage of 18% of the total deposits in less than 10 months (The Argentinean case was particularly virulent due to the fixed exchange rate in force at that moment that pegged the peso 1/1 to the dollar).

As a result of this the bank sector went through a period of bankruptcies and acquisitions that reduced the number of total institutions 50% from December 1994 until December 1999. An important aspect of this consolidation process is that the regional and cooperative banks were the most beaten in terms of total number of branches, having a decrease of 9.48% and 15.54% respectively[5] on their market participation.

3. CREDIT RATIONING

Following the argument developed by Stiglitz and Weiss (1981) we understand as credit rationing when relatively profitable projects doesn't have access to financing and at the same time the rest of projects with equal apparent profitability does, or when the changes in interest rates or other credit variables are unable to eliminate the excess of demand of loans in the market for an specific group of companies or projects[6].

A credit rationing as stated before can be the consequence of bankers and borrowers having different information about the same projects, situation known as 'imperfect information, residual imperfect information or asymmetric information' leading to the phenomenon known in economics as 'adverse selection' and 'incentive effect'[7]. Focused in the SMEs sector Storey (1993) includes another four factors that are related with the rationing of credit: the high fixed cost of information research; the variety in credit conditions (interest rate, terms and other conditions) used by the banks

[4] The Mexican peso was planned to be devaluated 15% from 3,4 $/U$S up to 4 $/U$$ at the beginning of 1995 but on the following months after the original devaluation the currency depreciated up to 7-7,7 $/U$S, quotation maintained until the Asian Crisis of 1998.

[5] Regional banks (public) decreased their participation from 40.87% down to 31.39% and Cooperative Banks from 20.74% down to 5.20%.

[6] Adjustment via prices, this is when the market is automatically adjusted by the free game of demand and supply.

[7] Known in the Spanish economic literature as 'Selección Adversa' (Adverse selection effect) and 'Riesgo Moral' (Incentive effect).

to compete; the variety of attitudes, skills and motivations that entrepreneurs presents[8]; the high 'mortality rate' that SMEs presents.

This last four factors have directly/indirectly relation with the original two mentioned by Weiss and Stiglitz (1981).

In order to get a more clear understanding of the credit rationing effect, would be useful to describe the decision process that a banker applies pursuing the maximizing of benefits. In order to simplify we'll assume that the banker takes decisions under free risk conditions in a competitive market and without imperfect information; finally we'll consider the bankers as the only loan supplier.

This maximization implies that the banker has to assign the resources (compounded by the deposits obtained at the market interest rate and by his available equity) in between the borrowers trying to make equal expected returns (net of risk) from of each one of them. In the goods and services market where the information is accessible and abundant the pricing mechanism plays a superlative role determining the equilibrium price and eliminating any excess of demand, then the most profitable expected projects would pay higher interest rates crowding out the less profitable ones.

But in the 'real market' the bank has limited information (imperfect information), and limited control over the borrowers actions (incentive effect), leading to what is known as 'Collateral and Limited Liability Theory' in which the banks use collaterals as a way to reduce the risk of default and increase the return. This mechanism (with enormous implication in SMEs financing) by which the bank increases the liability of the borrower in case the project fails leads to different perceptions of the risk and return of the project from both parts: the borrower doesn't take into account the losses of the bank in case of failure and the bank doesn't take into account the profits of the borrower when the project success but only the pay back of the loan (also because it is not sure about the information). Then the expected return of the bank will depend on the risk perception that it has from each project in particular. This risk perception depends as well on the particular conditions of each project and/or borrower, information that normally is very expensive and difficult to obtain ('high fixed costs of information' and 'borrower attitudes'). Another effect of the increase in collaterals required by lenders is that it can stimulate a decrease on the risk aversion of the borrowers leading them to undertake riskier projects.

The interest rate that the borrower is willing to pay doesn't represents a reliable measure of risk as the presence of asymmetric information impede the bankers to know the profit distribution of the project that indeed is known by the borrower.

[8] The importance of this factor has an inverse relation with the size of the company: the smaller the company the bigger the incidence of individual behaviour on the company/project management.

Even more the increase in the cost of credit will reshape the investment portfolio of the bank in benefit of the most risky projects (and discouraging safer borrowers) because higher payoffs as these can better afford such increase, but in average have less probability of success. Nevertheless a situation can occur where the loan is denied due to wrong risk perception even with higher rates, then the rationing is via volume. This phenomenon is known as 'adverse selection'. The other effect perceived is that borrowers could select more risky projects deviated from the original or manage the already financed one under risky circumstances not accepted by the bank in order to afford the increase in the cost of credit. This phenomenon is known as 'incentive effect'.

The mentioned phenomena imply that the loan supply for a determined group of borrowers could not increase when the interest rate is increased, even when the offer is constant (Note figure 5 and Table 6 analyzed further).

In this way, keeping in mind the interest rates paid by other intermediaries and even under an excess of demand, the bank would not encourage the supply of loans since it doesn't implies an increase in the expected return which could allow higher interest rates paid to the depositors in order to obtain larger deposits.

As Stiglitz and Weiss (1981) analyze, due to the credit rationing, among loan applicants who appear to be identical some receive a loan and others do not, even if they offered to pay a higher interest rate; or there are identifiable groups of individuals who with a given supply of credit are unable to obtain loans at any interest rate, even though with a larger supply of credit, they would[9].

Considering this situation for the whole group of banks competing for deposits and trying to maximize benefits an equilibrium situation could be found in which the credit rationing exist: profitable projects/business at the interest rate in force in the market can not get access to financing even paying higher rates.

The possibility of this type of equilibrium increases with the risk dispersion of the projects as the asymmetric information increases too. Thus this probability is higher in between the SMEs sector due to the atomization observed by type of business.

Finally the empirical evidence shows that this situation is less often when the availability of resources increases (i.e. due to a higher saving ratio of the economy or the financial system development). In this point we could make a parallelism with the size of the banking systems of different countries mentioned in the Framework section.

[9] Weiss and Stiglitz (1981), 'Credit Rationing in Markets with Imperfect Information', The American Economic Review, Vol. 71, No. 3, p 395.

3.1. Credit rationing: Focusing in asymmetric information

From the factors mentioned in this work as potential originators of credit rationings one of the most accepted is the asymmetric information problem and this is in particular the functional aspect that we're going to highlight as we consider it the main problem in the SMEs financing.

In some point the incidence of every factor is affected (or originated) by the lack of information or by the quality of the available one:

The 'high fixed cost of information' talks by himself about this problem: as in a great extent this costs are independent from the amount of the loan to grant then the smaller projects (in terms of money) will be more affected, thus this difficulty to reach economies of scale in the assignment of loan portfolio will discriminate *a priori* the smaller firms.

The 'incentive effect' has a direct relation with the information available about the evolution of the project (monitoring) throughout its "period of life": the less the monitoring of the project the higher the probability that the borrower would deviate from the original objectives agreed.

The 'variety in credit conditions' is in part consequence of the diversity of business in between the SMEs sector, which is not a problem in it self but the difficulties to manage the information in a more effective way, forcing the banks to make a more segmented effort increasing the costs of evaluation and monitoring[10].

The 'variety of attitudes' is related with the incentive effect factor and of course either in this point the effort made by the lender has to be more segmented reducing the cost efficiency mentioned in the previous point.

The 'high mortality rate' of SMEs is part of the 'intrinsic' characteristics of this sector[11] and in this aspect the decrease of the mortality not only depends on the information provided to the bank by the company in order to anticipate financial crisis situations but also the information that the company obtain (i.e. consultancy) and of course the commercial aspect of the business.

[10] For more information see Williamson, Stephen D. (1986). "Costly Monitoring, Financial Intermediation and Equilibrium Credit Rationing," *Journal of Monetary Economics*, 18, 159-179. Not necessarily in coincidence with this work.

[11] In the European Union 20% of the SMEs survives after 10 years functioning (FIEL, 1996).

3.2. Asymmetric Information and concentration process

This section will be focused in the reshape of the financial system caused by the banking concentration process after the Tequila Crisis, highlighting the vanishing of financial intermediaries that had been typically oriented to SMEs financing and thus had closer information.

The following analysis has a limitation with respect to the period of time included, because the effect of the mentioned vanishing can not be easily compared against the situation before the ’Convertibility Plan’ implementation in 1991. In the previous decade with periodically high inflation rates, a closed economy resting importance to competitiveness and an extremely inefficient financial system the cost of credit or even the access were not the main problems of the SMEs. At that time alternative sources of financing were used (that disappeared in the next period), like financing at negative interest rates provided by fiscal agencies and the liquation of salary costs associated to the inflation. The terms of financing were extremely short and the information presented by companies and individuals applying for a loan were more distorted due to the variability in the relative prices and the inflation, interest and exchange rates.

Something similar happened on the other side with the recurrent support of the BCRA to maintain the solvency of several institutions including public banks with large participation in the supply of loans, showing a paternalist behaviour more than a clear market functioning (The change in this policy was one of the reasons that explain several mergers and acquisitions in the next decade).

Said this our analysis about the concentration process will include only the decade of 1990 with starting point at the Convertibility Plan of 1991.

4. CONCENTRATION

4.1. The ‘Tequila Crises’

The concentration began with the `Tequila Crisis' at the beginning of 1995, at that time the financial system was made up of 168 organizations covered by the regulations of the BCRA (December 1994), on December 1996 this number had decreased down to 119 and towards the end of the period analyzed, on December 1999,

the total number of institutions was of 92 (see Table 1). In between this reduction the only type of entity that increased his number were the foreign private banks from 31 up to 48. The privatization of public banks and the investment of foreign banks in the financial industry contributed to reduce the presence of national institutions mainly in the first year of the period.

Along with this was a deposit concentration from smaller to larger banks: in 1995 the first twelve banks shared the 58% of loans and the 60% of deposits, four years later in 1999 this amounts increased up to 73% and 72% respectively (Including the first 20 banks the amount of deposits was 83.7% of the total system at June 1999)[12].

Another characteristic of this process was the acquisition of the smaller banks by the larger ones instead of the constitution of larger banks through the merger or consolidation of several minor entities. For our purposes this event has superlative importance due to the fact that cooperative and regional banks (included in the minor segment) were the institutions with higher tendency to SMEs lending and better information of them.

4.2. Regulation

In a first stage from December 1994 up to October 1995 the concentration was caused by an outflow and reshape of deposits from small to large entities that provoked a drastic reduction in their number (almost 50% of the total). From that date the consolidation process was slower but steady until stopping a year before the crisis of December 2001. In this second phase the concentration was caused by the financial regulations implemented by the Argentinean government (see Figure 3).

These regulations were implemented in order to reinforce the solvency and liquidity of the financial system on accordance with the suggested criteria of the Basel Committee of Banking Supervision, and determined the minimum capital and liquidity requirements[13].

At this point the empirical evidence has a correlation with the credit rationing theory formulated by Stiglitz and Weiss, taking into consideration that the regulations of Basel II had still not been implemented at 1981:

'There is another form of rationing which is the subject of our 1980 paper: banks make the provision of credit in later periods contingent on performance in earlier

[12] For detailed information see D'Amato (1997).
[13] These requirements are especially important because they determine the cost and amount of available resources of the financial system.

period; banks may then refuse to lend even when these later period projects stochastically dominate earlier projects which are financed.'[14]

These government regulations consisted mainly in three points that affected the credit rationing directly.

* In 1993 the minimum capital requirements were established by the BCRA demanding a segmentation and adjustment of the assets in accordance with the risk exposure of them. Thus the riskier portfolios have to be supported by a larger amount of assets. As a consequence the banks were encouraged to increase their size in order to afford riskier projects with higher expected returns and in the other hand the small institutions, that had more risk exposure on average, were in some way penalized.

* In 1995 the bank reserve requirements were substituted by the minimum liquidity requirements which have less costs due to they can be invested in certain yielding assets specified by the BCRA, furthermore in all the cases they've to be high liquidity assets in order to be used to face urgent situations.

The liquidity requirements were higher for the short term deposits and lower for the longer ones, thus a deposit for a period up to 89 days had an imposition of 20%, in between 90-179 days was 15%, 10% for 180-365 and 0% for deposits of more than 365 days. Even considering that these types of requirements could yield interest the smaller banks were still affected by this measure as the larger banks had relatively more deposits with longer maturity, probably because the different perception of trust.

* Up to this point the Argentinean regulation was in coincidence with the norms suggested by the Basel Committee, but going a step further the BCRA modified the definition of capital risk including the interest rate as a measure of risk factor. Thus the risk adjustment was increased as the interest rate applied to the loans and other actives increases. This risk indicator is applied on a range in between 0.8 and 6 (see Vrf variable below). This norm encourages lending at lower interest rates on the assumption that the interest rate is related with the risk of the investment, but in other way it provokes another problem of competition to smaller banks: on average smaller institutions in Argentina lent to smaller companies at higher interest rates (normally this kind of borrowers have more risk) penalizing this types of financial intermediaries and deepening the concentration.

As we can see in Table 2 the tendency to lend to smaller companies was stronger in smaller financial institutions and in the same chart checking the 'no collateral' side we can have an idea of the average interest rates applied per type of company.

[14] Stiglitz J., Weiss A.: 'Credit Rationing in Markets with Imperfect Information', The American Economic Review, Vol. 71, No. 3, p.395. June 1981.

* Another regulation in order to provide solvency and liquidity to the financial system was the implementation of the C.A.M.E.L.[15] rating system supervised by the Superintendencia de Entidades Financieras y Cambiarias (Supervision of Financial and Exchange Entities). This internationally accepted standard (applied by the British regulation) measures the quality of banks and financial institutions regulated by the BCRA (formal sector) through a performance evaluation. The rating is compounded of 5 grades: the lower the grade the lower the minimum capital requirement factor, thus with a grade of 1 the bank has to adjust his capital requirements to a value of 0.97 and for a grade 5 the value is 1.125 (See the minimum capital formula below).

The regulation COM "A" 2136 of the BCRA determines the formula to calculate the minimum capital requirement:

$$Cer = k * [a * Ais + c * (Ci + _Fspn) + r * (Vrf + Vrani)]$$

Where:

Cer: minimum capital required in function of the risk

K: CAMELBIG factor (1 = 0,970; 2 = 1,000; 3 = 1,050; 4 = 1,100; 5 = 1,150)

a: coefficient determined by the BCRA (from 1995 equal to 0,15, later was 0,10)

Ais: fixed assets

c: coefficient determined by the BCRA (from 1995 was 0,125, at 2006 was 0,08)

[15] C.A.M.E.L.: The acronym CAMEL represents Capital adequacy, Asset management, Management quality and integrity, Earnings quality and stability, and Liquidity. This method was adopted by the United States regulating institutions in 1978 and evaluates the solvency and stability of the financial system and financial situation of each entity as it is performed 'in situ'. From September 2000, the BCRA started to apply a wider rating system called CAMELBIG considering separately the analysis of management and business risks (Capital adequacy and quality, Asset management, Market sensibility, Earnings quality and stability, Liquidity, Business management capacity, internals controls quality, General management).

Ci: positions in investment accounts

Fspn: financings to the non-financial public sector

r: coefficient determined by the BCRA (from 1995 was 0,115, at 2006 was 0,08)

Vrf: Risk value of loans, other credits due to financial intermediation except inter-bank operations. Obtained after the sum of the results of the following expression:

$p*Ir*f$

where p is the weighed measure as per type of asset (as per Annex I of the norm), Ir pondered measure as per interest rate (as per Annex II of the norm) and f is loans, other credits by financial intermediation and other financings – including guarantees, possible endorsement and other responsibilities except inter-bank operations)

Vrani: risk value of non-fixed assets not included in 'f', '*Ci*' and '*Fspn*' after the sum obtained of applying the following formula:

$P*(Ani - f - Ci - Fspn)$

Where p is the risk weight (as per Annex I of the norm) and *Ani* is the non-fixed assets

As we can see in the formula the interest rate and the type of customer (measured in the *Vrf* and *Vrani* variables) have superlative influence in order to calculate the provision requirements of the bank, which obviously have direct impact in the idle resources and profit of the entity.

- For the *Vrani* variable, in the case of an SME which doesn't have collateral the weight can be of 100% of the loan.
- For the *Vrf* variable, the weight was 0.8 for an investment grade rated loan going up to 6 for a loan with nominal interest rate higher than 74% and 78% in dollars and pesos respectively, always on annual term; as

we're going to see later the SMEs financing are more based on working capital credit than loans, credit which had interest rates higher than 30%.

In the Table 3 we've got a measure of the minimum capital requirements achieved by the private banking sector at September 1999, clearly we can see that the system was quite above the Basel suggestions: The requirements of own capital were 12/15% for risky assets and 11,5% for loans, other credits for financial intermediation and other financings; moreover, and in a broader definition, minimum capital requirements were 11,5%. As a result of it, the effective integration of minimum capital of the Argentinean system at 1999/2000 was 37% above the national regulation and 199% above the Basel adequacy. In terms of money the total requirements at the end 1999 were $ 17.600 millions which represented the 21% of deposits; this amount is quite significant meaning that a reduction would have released considerable resources to the system. Indeed an approximation calculated on that date affirmed that a reduction of requirements to a half would've represented a liberation of resources equivalent to 13% of the total loans lent to the non-financial private sector.

* We can mention two more circumstances that added indirectly to the concentration process:

After the Crisis of 1995 was constituted a deposit insurance fund (similar to the existent one in the U.S.) managed by SEDESA[16] in order to increase the reliance on the financial system decreasing the risk of deposit running. Nevertheless the particularity of the Argentinean system was that the insurance covered deposits up to 30.000 pesos or dollars with an interest rate not higher than 2% of the rate applied by the National Bank (Banco Nacional de la República Argentina), leaving outside the rest of deposits and the banks that assumed more risk, making the entities with risky portfolios even more riskier (i.e. smaller institutions).

Finally the concentration process was encouraged by an institution called Fondo Fiduciario para el Desarrollo Provincial (Fiduciary Fund for the Provincial Development). It was created in order to attend liquidity problems of provincial banks and to support the privatization of them with funds provided by the IMF and the IDB, this instrument smoothed the privatization process which as mentioned before increased the concentration effect.

As mentioned previously 10% of the banks in the financial system shared 72% of deposits at the end of 1999 giving us an idea of the distribution of resources related with the size of institutions (see Figure 4 for detailed evolution).

[16] Seguro de Depósitos Sociedad Anónima.

Note: In some cases, as seems to be the Argentinean one, the 'systemic risk' reached through prudential regulations wouldn't be a relevant indicator of the decrease in financing costs of a country, as several sectors of the economy are not included in such benefits because indeed such benefits have been obtained through their exclusion.

4.3. BASEL II normative and the Size of Banks

The mentioned regulations will be adapted to the norms of BASEL II in order to be applied in Argentina as of 2010. Without considering the large benefits that would contribute these norms as far as transparency and financial stability, that in indeed will be significant, we could also expect certain repercussions with respect to the banking costs analyzed, as following mentioned.

Among other modifications to the risk measurement systems, the new regulation put greater emphasis on internal risks management of the bank denominated `operational risk', that is to say, when the new norm being applied the organizations must include the risks derived from their operations to calculate its requirements of capital, and not only the credit risks. In order to confront and to measure this operational risks the banks will have to apply methods and techniques approved by the Central Bank, which are fitted in three basic types defined by BASEL II: *Basic Indicator Approach, Standardized Approach, Advanced Measurement Approaches (AMA)*:

- The *basic indicator* is calculated with `fundamentals' of the company, like the annual gross income of the last three years;
- The *Standardized Approach* divides the activities of the bank in eight lines of businesses and its relative weight within the organization;
- The *Advanced Measurement Approach* is the most complex level and requires the institutions to develop their own *internal operational risk measurement system*, in agreement with some general criteria and norms supervised and approved by the Central bank.

Another indication of BASEL II establishes that the structure or person responsible of the operational risk will have to be independent of the department of internal audit, reason why an increase in operative cost could be expected.

Although the new norms do not affect the capital requirements directly, it could do it on an indirect way mainly to smaller financial organizations, since they modify the calculation formula:

In first place, the consideration of the operational risk would add another weighted factor of risk, which would negatively affect the qualification of the portfolio of SMEs.

Secondly, the implementation of a structure to evaluate the operational risks could increase as well the operative costs of the banks, reducing the possible economies of scale in the information generation and increasing the information asymmetries.

According to some analysts (Perrotta, 2007) in the countries that have adopted these norms, or those which have an advanced implementation, the minimum capital requirements have increased between 5.5% and 8.9% in Europe and 4% to 13.5% in the other countries. In general it is considered that the impact will be greater in less developed financial systems even increasing the requirements until 50%. In the same way, in the Argentinean case, the financial organizations less prepared to confront these modifications are the regional banks, the smaller institutions and the branches of foreign banks with few offices in the country.

5. BANK SIZE, ASYMMETRIC INFORMATION AND SMEs

In the previous sections we've analyzed the credit rationing theory and concentration process taking as main frame the Argentinean case, in this section and the following ones the work will try to show the empirical evidence found connecting the credit rationing with the SMEs financing problems but highlighting the importance of the asymmetric information related with the size of financial entities.

The sequence of relations would be interpreted as:

a) CONCENTRATION → SMALL BANK DECREASE IN NUMBERS
→
b) ASYMMETRIC INFORMATION INCREASE → TRANSACTIONAL COST INCREASE (ECONOMIES OF SCALE NOT POSSIBLE)
→
c) ADVERSE SELECTION → CREDIT RATIONING

Referential frame: a) bank size b) asymmetric information c) SMEs

5.1. The size of the bank – Economies of scale

We can find asymmetric information in all the relations in between the different agents in the financial system and with different magnitudes: the banks doesn't have perfect information about the project, business, profile and intentions of his customers; the depositors doesn't have exact information about the risk they're taking when they allocate their money; the regulating authorities have difficulties to detect (and anticipate) bank solvency problems and situations. But in the case of bank/customer relation, that is our concern, the cost of information is directly related with his asymmetries, and assuming that banks are intermediaries of information, we'll accept the theory developed by Berger and Udell (1995), that 'the existence of financial intermediaries are the best evidence that the economies of scale on information are possible' in this sector. In other words, we'll accept that the average cost of information decreases as the amount of intermediated resources is augmented, which normally occurs when the size of the entity grows.

This is one of the mechanisms to reach scale economies on information, and can be achieved by the endogenous growth of the bank or by mergers and acquisitions like in a concentration process. But what is not very clear despite the synergies that can be obtained, is if all the information available before the consolidation can be efficiently absorbed. For example, small banks normally work with an important amount of informal information that is not completely standardized and even more difficult to adapt to the complex systems of a large bank. As result of this several information is lost due to the closing of branches or because is very expensive to include that type of information.

Is almost impossible to measure this kind of problem but there're some anecdotic and empirical evidence (Cuenin, 2000) that would indicate that a large number of small business profiles have been lost in that period due to the mentioned closing of branches or due to discrepancies to connect the previous information and the risk systems applied like Veraz or Credit Scoring.

So far we've seen that the economies of scale can be obtained by growth, then the next question is how small banks can achieve information efficiency, and in this matter the answer is focused in which kind of information each type of entity, in terms of size, is based.

5.2. The size of Banks – Information type

The banks normally generates information in order to solve asymmetric problems through standardized processes, technology investments and formal procedures (hard information); and personal relations (soft information)[17]. Each one of these two different processes has a generation and maintenance costs associated to the structure of the bank and thus to the scale economies (Berger and Udell, 1995; Ogura and Uchida, 2007). As mentioned before the fixed costs of information are independent from the amount of the loan: at the same quality of information the structural costs needed to support the steps of searching, generating, analyzing and making decision (e.g. risk department, branches) doesn't decrease in the same proportion when the amount of the loan decreases, the situation is the same when the average amount of loan increases. An example of this is the time spent on a project, that in fact depends on complexity more than in the amount of the loan involved (the same can be assumed for other resources spent as personnel or information needed).

Now, we've seen in Table 2 that smaller banks had more presence in the SMEs financing than larger ones, this is explained mainly due to the efficiency information produced by each institution in relation with his structure. As some empirical studies suggests (Carter, 2002) the small banks make better choices from the available small business loans, mainly because they're better processing credit information than larger banks. This idea could have correlation with the research of Ogura (2007) in which they found that smaller banks produces more 'soft information' than larger banks, and this information has more presence in the evaluation of small business (see Table 4).

Our general idea is that larger banks produce more 'hard information' and they're less able to work with SMEs due to the presence of fixed information costs (mainly 'soft info') which make almost impossible the economies of scale (see Figure 5).

At this point we're going to make a parallelism with the results of some works: Carter (2002) found that the smaller banks had higher risk adjusted-yields than large banks due to their exposure to smaller business but curiously the risk adjusted-yield decreased as the small business loans increases in the total portfolio, the reason given by the work was that the smaller banks have a combination of information advantage and relationship development; in this work we'll classify these factors as 'soft information' (as the definition of Ogura). In the same way Kanatas and Qi (1998, 2003) relates the

[17] Scott (2004) and Uchida, Udell, and Yamori (2006).

increase in the cost efficiency of lending as a result of a previous lending relationship with the customer, ‘as the time increases the information increases’.

The mechanism would be: longer personal relations generates soft information that decreasing ‘information asymmetries’ provokes a decrease in the interest rates applied. Then smaller banks due to their particular structure and closer relation with customer can obtain economies of scale or considerable improvements on cost efficiency.

The question is which kind of information is effectively used to reach economies of scale: even recognizing a mixture of hard and soft information in every entity, we can say that larger banks will be more based on hard information generation processes and smaller banks in soft information ones. The ‘hard information’ generation allow economies of scale through formal procedures, complex risk rating systems, sophisticated computational systems and increasingly complex organizational structures that are adequate for larger operations but not efficient for small lending and that in most of the cases are unaffordable for small entities. An anecdotic evidence can be observed in the Spanish banking system where larger banks policy is focused on the creation of ‘bank agencies’ not depending directly to the bank (like in the insurance industry) in order to substitute the traditional branches structure and improve their efficiency (and profit) through a decrease in fixed costs. In fact this is an inverse process to concentration in which the bank delegates the managing of regional operations in third party agencies, which normally manage more ‘soft info’ delegating the ‘hard info’ to the bank.

An evidence of the scale economies obtained through the development of ‘hard information’ production can be checked in Maudos, Pastor and Quesada (1996) where they found that due to technological improvements the Spanish Saving Banks obtained an annual reduction of 0.64% in average costs and 1.93% in operational costs from 1984 up to 1994. In the same way Altunbas and Molyneux (2001) found that this factor was responsible of an annual reduction of 3% average in the credit costs of the entities in the UE from 1988 up to 1995.

In resume, smaller banks utilizes proportionally more ‘soft information’ than larger banks in the lending activity and this kind of information is proportionally more used by SMEs due to more informal aspects of their business.

Following the theory of Eugene Fama on his 'Efficient Market Theory' and the levels of efficiency[18] we'll present the information efficiency as per bank size in the following chart:

		BANK SIZE	
		SMALL	LARGE
INFORMATION MARKET EFFICIENCY	WEAK	Hard Info	Soft Info
	SEMI-STRONG	Mix	Mix
	STRONG	Soft Info	Hard Info

In our case:

- Size of Bank:

  Banks size as per total assets related with the market average.

- Type of Market:

Market with *weak information efficiency*: we found little information and of bad quality. `Information asymmetries' are quite abundant and sometimes structural. The cost of financing are very high and the competence is almost inexistent. An example can be the market of credit of the SMEs in the sector of largest banks, nevertheless this is the typical characteristics of the IFS (Informal Market) in marginal regions, in the case of Argentina is represented by the SME sector of less developed provinces.

Market with *semi strong information efficiency*: we found a situation intermediate in which the information can be of good or bad quality, abundant or scarce or of an intermediate point, in this case will depend almost completely on the intermediary agent. The gaps between interest rates applied can be significant and the grade of competition depends on the particular segment or situation. An example we can find it in the great urban centers within the Argentine market, where the concentration

[18] The Efficient Market Hypothesis ("Random Walks in Stock Market Prices," *Financial Analysts Journal*, September/October 1965) states that at any given time, security prices fully reflect all available information. There are three forms of the efficient market hypothesis: 1) The **"Weak" form** asserts that all past market prices and data are fully reflected in securities prices. In other words, technical analysis is of no use. 2) The **"Semi strong" form** asserts that all publicly available information is fully reflected in securities prices. In other words, fundamental analysis is of no use. 3) The **"Strong" form** asserts that all information is fully reflected in securities prices. In other words, even insider information is of no use.

of capital and information created intermediate situations, some banks obtained informative efficiency managing the portfolio of SMEs and others not. A peculiar example is the case of the local mutual companies that, working within the informal system (IFS) obtained a surprising informative efficiency dealing with apparent very risky companies.

Market with *strong information efficiency*: the generation and distribution of information are obtained at very low cost, in time and suitable form. The interest rate gap is almost inexistent and the competition is close to perfect. The typical case is represented by the capital market, nevertheless the credit portfolio of 'prime' companies as the privatized ones are another example within the banking sector.

- Type of Information:

Hard info: Information generated by standardized process and systems, standard operational procedures, computational mechanisms and other formal procedures. A typical case is represented by the 'risk measurement systems' that large banks are required to develop and have to be approved by the central banks.

Soft Info: The main source of information is obtained through personal commercial relations along the time. It's extremely influenced by the proximity to the customer and the amount of time, the increase in both factors leads to an increase of quality and quantity.

Mix Info: The information is generated and maintained by a mixture of both types. Normally related with geographical factors that allows a centralization of operations along with a good coverage by branches. The regional banks are a good example of them, even in some cases they have standardized procedures applied to the main industry of the covered area and at the same time the commercial department has close relation with the main producers/customers.

At the end of this section we want to mention some results obtained in recent works about asymmetric information and requirements of collateral to the SMEs, since it is directly related to this subject. At the beginning of this decade arose what is called `Lazy Banks Hypothesis' according to which the bankers do not monitoring the emitted loans to SMEs if they have high collaterals from the companies. The idea in general is that the risk of 'not monitoring' is covered by the collateral. Although the hypothesis is strong, the empirical evidence is not so clear. Some authors like Franks and Sussman (Franks J. and Sussman O., 2003) supports this theory based in a field work made in the United Kingdom that threw positive results. Other authors, mainly Japanese (Ono, Yanagawa, 2003), put in doubt the theory and adduce that the problems are provoked by

deficiencies of the western legislation at the time to face companies financial distress. Nevertheless from our point of view we'll suggest as base evidence the work made by Berger (2007) and people of the Federal Reserve of E.E.U.U., in which they found strong empirical relation between the availability of information of a borrower and the collateral required. Over the sample of 14,000 new loans set to SMEs they detected that the requirements of collateral were smaller as the information gap in between the borrower and the bank were reducing.

Note: Following the accepted works about credit rationing like Stiglitz and Weiss (1981), Greenwald and Stiglitz (1986) and Jafee and Stiglitz (1990) we can understand why a bank classify customers based on imperfect information and the consequent credit rationing via amount, access or price, but it doesn't mean that this type of client is classified in the same way by a small bank since the information available in it causes that the bank evaluates better the risk that takes, therefore the risk perception can be smaller shortening 'information asymmetries'.

5.3. The Argentinean evidence and information generation problems

Based in several studies[19] performed on the 90's in Argentina we can check that credit rationing and asymmetric information problems had place.

5.3.1. Credit rationing

In first place we can check empirical evidence that shows credit rationing effect to the SMEs in the Argentinean financial sector. It's possible to verify an increasing spread between the amounts lent to SME and the rest of the private sector on the second half of the decade. It is quite evident the coincidence in between the beginning of the concentration process and the increase on the spread; over the same period the total funds lent to the private sector were growing and the amount assigned to SMEs was stagnated and even decreasing, thus we can say that existed an adjustment via volume (see Figure 6).

As second empirical evidence we found that the interest rates applied were constantly high during the same period maintaining an average spread of 13,5% higher

[19] FIEL (1996); Yoguel (1999); Cuenin and Busso (2000); Aramburu and Lódola (2000); Arrigoni (2000); Sarghini (2001).

than the rate applied to larger companies, thus there wasn't a price adjustment via interest rate (See Table 5 and Figure 7)[20].

Finally taking into account that the economy grew at an average rate of 6% and the participation of the SMEs on the GDP was steady around 30/40% along the same period, we can assume that the decrease in financing was not followed by a decrease in the SME participation in the economy, thus the sector maintained his relative size or even increased it.

This evidence of credit rationing from the point of view of the financial system (the previous data is collected form banks side) is supported by the results found in the SMEs sector and even more this situation was recognized by the Institutional sector. A study performed at the end of the decade (Yoguel, 1999) in between 57 organizations of different types confirmed that the problems related to credit access were the main factor that prevented the creation and development of businesses in the SMEs sector. As a result 77% of the SMEs adduced that interest rates, terms and collaterals required were the main problem of their business, and most of them had loosed new business opportunities due to the lack of financing. Confirming this priority the 98% of Official and Private Institutions recognized that the access to credit were the first problem of the sector (See Figures 8 and 9).

5.3.2. Asymmetric Information

Up to the mentioned before the SMEs sector suffered 'credit rationing' and was recognized by most of the market agents, now the next point to check is the 'asymmetric information' presence.

It is important to remember that a lack of information from the bank increases the risk perception of a particular customer.

Assuming the results found by Carter (2002) and other researchers, that 'more information leads to a decrease in rates applied by the banks', we couldn't check in the Argentinean case the inverse hypothesis that is 'the interest rates applied didn't reduce because the lack of information', but we'll present some empirical data that supports the evidence of information problems in the Argentinean SMEs sector during the second half of the 90's in order to obtain an idea of why credit was expensive and not accessible.

[20] 13,5% is the average taking the classification of F.I.E.L. (1996) work, our average rate of 17,98% is the result of a simplified measure taking the gap between overdraft current account and 'Prime' interest rates, as we can see in Figure 5. Nevertheless in both cases the spread was steady along the period.

The study mentioned found that there were three main problems related with financing access with the following agreement in between the different agents: excess of collaterals (85%), high interest rates (81%) and deficient evaluation (57%)

The case of high collateral requirements often occurs when the information about the company or the project is deficient so the banks use this instrument to cover potential looses, said in other words, the asymmetric information is intended to be reduced increasing the responsibility of the borrower. Increasing the information available the project is less risky then less collateral is required.

The high interest rates were consequence of the risk perception of the business. The sector indeed has higher dilatoriness rates than the rest of portfolios, nevertheless what is curious is that the rate didn't decrease in the period probably because the information was constant or declining along the time. Following Carter's position we would say that increasing the information available along the time would've encouraged the rates declining.

More directly connected with 'asymmetric information' problem is the evaluation deficiencies adduced. This is a direct evidence of 'credit rationing' due to lack of information quantity and quality.

Another circumstance, not mentioned by the SMEs but found as a result on some studies (FIEL, 1996; Yoguel, 1999), is that the size of the company was the unique influential characteristic in order to access credit, excluding the rest of factors like dynamism, belonging sector, external market business, location or age characteristics. This can be observed as a 'rationing' in which smaller companies are not being taken in consideration due to the costs needed to generate adequate information.

In resume, we'll say that every aspect of the 'credit rationing' factors, i.e. collateral requirements, interest rates, project/company evaluation, monitoring, 'incentive effect', variety of conditions, high mortality, can be positively affected thanks to an improvement in the information quality and quantity (diminishing 'asymmetric information').

As can be noticed we've related the main obstacles of financing with the 'asymmetric information' problem, the same process we've made at the beginning under a theoretical frame relating the main causes of credit rationing with the 'asymmetric information' one (Section 'Credit rationing: Focusing in asymmetric information').

5.4. Measurement systems

The information available regarding the measurement systems used in this period by the Argentinean financial system is scarce, imprecise and not very reliable, thus we'll base our analysis in a work performed by the BCRA on October 2006 (Pailhé, 2006). We've to recognize that the macroeconomic situation suffered significant changes ten years after the period that occupy our work, but in terms of internal development of the banking system the techniques and procedures applied to each customer are quite similar, thus the analysis in this section has to be taken with some precautions.

The measurement technique was and is based on two basic tools which are the 'scoring' and 'rating' ones. The 'scoring' tool is more used to evaluate individuals and SMEs; the 'rating' tool is applied to larger companies.

- <u>Scoring system</u>

The scoring is a tool that allows classifying the applicants of credits and debtors based on its risk, assigning them to groups or giving a determined amount of points (score).

In that process the system uses statistical techniques or artificial intelligence, assigning to each group or score a risk level (probability of default).

These systems are used in the origination of credits, comparing the minimum value (cut-off) associated to the risk that the bank would accept and the return expected. This is known as Lending Scoring System.

They are also used in the monitoring of the clients, to manage credit limits, to identify profitable accounts, to offer new products, to monitoring risk and to anticipate collection problems. This is known as 'Monitoring Scoring System'

- <u>Rating:</u>

Whereas the scores are used mainly for individuals and SMEs, the ratings are used to evaluate larger companies. This method reflects the credit quality of the borrower without taking into consideration the type of product that the customer has taken form the entity.

The rating must represent the evaluation of the bank on the capacity and will of the borrower to fulfil the contract despite of unfavourable economic conditions or the occurrence of unexpected events.

These systems in general have more degrees of risk classification than the norms of the BCRA. In such sense, these organizations declared to have scales up to 26 degrees or levels of risk.

These two systems were the most used by the financial institutions, obviously not taking into consideration the 'soft information' produced by commercial departments and agents in general. But what is more interesting for our analysis is the coverage that these techniques had in relation with the SME sector. We're going to be focused in the 'Scoring' method as was the one applied to evaluate the SME sector.

Again there's no information available on the period covered by this work, but we can accept a high grade of similarity with the results obtained on 2006.

5.4.1. Lending scoring system

As a considerable percentage of 'personal loans' are in fact 'SME loans' we're going to consider both in the data obtained. The same showed that 85% of the entities used some kind of scoring system to 'personal segment'. In between them only 30% declared that the 'score' result was decisive in the lending decision, the rest of the entities used this technique along with another kind of decision tools.

Only 15% of the entities declared to have in operation scoring systems for SMEs, representing around 19% of the commercial credits (see Figure 10).

The 'scoring systems' were developed internally in half of the banks considered in the study, the rest were using systems developed by third parties or even outsourcing the task. In general in the development of the systems statistical techniques are used prevailing the logistic regression. The risk of default measure increases as the score decreases.

At this point we've to clear an important point: due to the lack of valuable collaterals a large percentage of SMEs borrow money as 'personal loans', this is not in the name of the company but in the name of the owner of it.

5.4.2. Monitoring scoring system

Regarding 'personal segment' half of the financial institutions counted on a monitoring scoring system basically to increase the limits of financings granted, thus half of the entities didn't used a 'hard information' generation system for this purpose.

Half of the systems were internally developed.

On the 'SME segment' only 5% of the organizations declared to have in application a monitoring scoring system for overdraft current accounts, that due to the type of product is considered applicable for SMEs.

5.4.3. Notes on the scoring system.

Another important circumstance was that most of the entities coincided on the information regarding customer identification, risk evaluation and legal-economic information, but regarding the 'collaterals' the information dispersion was absolute. This point can give us an idea of the 'asymmetric information' existed between banks and borrowers at the time of evaluate collateral requirements.

In general terms we'll consider an intermediate situation in between the 'personal segment' and 'SMEs segment' at the moment to analyze the 'hard information' generation in the banks on the period 1994/00.

However, it was observed that it would've worked as a 'first filter', in which based on score further actions are taken, which they can be the rejection of the request (low scores), manual revision (scores intervals) or fulfilment of other requirements, like for example the relation income/quote (high scores).

Following the results obtained by some studies (Sarghini, 2001; Pailhé, 2006) we can conclude that the information generated in order to evaluate the SME financing demands was based mainly on 'soft information techniques'. The 'hard information' generation was relatively more used in larger companies through methods like 'rating' or 'scoring system', but even so the financial system doesn't seems to have been a 'hard info' based one.

Closing this section we're going to make a mention to the Latin American market situation and to an experience evaluated in the United States.

The characteristics of the 'credit risk' measurement systems were similar in all the Latham countries over the same period with different grades. On average the 'credit scoring' was used by 14% of the smaller banks to evaluate SMEs loans and 71% of them used the 'case by case' method, that obviously represents higher evaluation costs. Curiously the situation wasn't very different for the rest of banks by size, thus 12% of medium sized banks used the 'credit scoring' and 74% the 'case by case' one (see Table 6). So we can conclude that the high information costs were present in most Latham financial systems of the period.

Finally we're going to make reference to the work performed by the Federal Reserve of the United States (Berger, 2007): they evaluated the performance of a new 'risk measurement' system called SBCS (Small Business Credit Scoring) on the period 1993/97. In between 14.000 individual newly issued loans to small business they found that banks using this technology reduced the information gaps, lessened their need for collateral and furthermore reduced the borrower and lender costs improving the efficiency of the small business lending market.

6. MICROECONOMICS

Before the conclusion of this work we believe that it is important to give a microeconomic vision on the cost of financing of a SME. Until now we've analyzed the impact that the information asymmetries cause on the financing costs but from the credit organization point of view, in this section we will make a brief reference to the impact of the financing costs on the structure of a SME. In the first part we'll mention the importance of the working capital within the company and soon will develop a practical case to give an idea of the effects of the working capital cost on the SME.

6.1. Working Capital

Most of the works published in the decade of the 90's in Argentina (FIEL, 1996; Salloum, 1997; Yoguel, 1999; UIA 1999) agree on the critical importance of the working capital in the SMEs, although it is certain that this factor is important in any company the working capital increases it relative incidence as the size in terms of total sales diminishes. The results of these works showed that the average percentage of working capital over gross sales that companies had to maintain for its operation was 0/10% for larger companies, 20/40% for medium and 40/+% for smaller ones. However, another important factor to consider is that the SMEs normally had to maintain this working capital with own funds in greater proportion than larger companies, this forced smaller companies to reinvest profits in a greater proportion which indeed affected their profitability. As evidence, the mentioned works found that 70% of the companies of all sizes confirmed that were using the utilities reinvestment as financing source.

In summary, due to the lack of information about the liquidity of the business the banks rationed credit, thus the companies were forced to reinvest profits or turned to the financing of suppliers in order to maintain their working capital. Another result of theses works was that this relation reverted as the size of the companies increased. The mentioned circumstance has already been observed by the governments of some countries, such the case of E.E.U.U.: the SBA provided financial guarantees on 70/85% of the amount for working and fixed capital to 180,000 loans, estimated in U$S 31,000 million between 1980 and 1990. The result according to a study of Price Waterhouse (1992) on the matter, demonstrated that the companies covered by this guarantee had grown 300% whereas the rest had only grown 37% in the period 1984/89[21]. This empirical evidence talks by itself about the superlative importance that the working capital (liquidity) has in the business of the SMEs.

In the first part of the Annex I developed a practical model in order to somehow measure the incidence that has an increase of the interest rate in the cost of working capital.

7. DISCUSSION

The possible solutions to the credit rationing faced by the SMEs are related with the improvement on the amount and quality of information generated by the sector in his relation with the financial system.

In the first place the classification in small and medium enterprise has to be defined according to the special feature of each economy. This is a common mistake that distorts the analyses and the policies to apply, more even this classification varies with the time as the economy is developed and its structure changes.

In second term, as far as the specific problems and their possible solution we could mention:

* The `visibility' problems within the credit market could be improved with the access of the SMEs to the capital markets, creating a simplified legislation and reducing entrance costs. The creation of a stock-exchange board for this type of companies is an instrument used by some markets that usually produce good results if it is sufficiently

[21] Another result of the evaluation performed by Price Waterhouse regarding this program was that the employment grew 167% in between the sector covered by this guarantees and no growth was observed in the rest of the companies evaluated. The ILO (International Labour Organization), along with the Office of Financial Attendance, administers and in some cases directs the programs of the SBA for development of exports and the Working Capital of Exporters Program.

supported by the government. The RGC (Reciprocal Guarantee Companies) or MGC (Mutual Guarantee Company)[22] can also be used to improve the entrance on the credit markets.

* The internal information of the company and audit normally presents enormous gaps of information and quality. In this sense a possible solution would be to create accounting norms with specific international standards for the SMEs, as the IAS developed for large companies. In this case also the simplicity and low costs would have a fundamental importance to ensure the success of this tool.

* Another problem related to the previous point is the little interest of the credit rating companies to evaluate the credit quality of the SMEs adducing costs reasons, which is certain in most of the cases. These qualifications are very useful mainly for the entrance on the capital market. This situation could be moderated somehow with the support of the governmental authorities and the financial supervisors to lower the price of this `qualification cost'. To mention a case, in Germany exist a 'record of private debt' that facilitates the work of the credit rating companies[23], in the same way the State recognizes that the SMEs does not have appropriate cost procedures reason why a large part of the consultancy subventions are directed to solve this difficulty.

* With respect to the problems of collaterals asked by the banks we've seen that the RGC normally gives good results when there's a good coordination in between the agents involved, nevertheless their effects can be very limited towards a specific sector, thus the benefits of this instrument for the general sector is a little doubtful. In this sense we must remember that the requirements of collateral have direct relation with the information available (as we've seen on the section `Size of bank - Type of information'), therefore we could expect for a reduction on collateral requirements if the information available is improved by the measures mentioned in the previous points, this way would produce a much more ample effect than the obtained one with the RGC.

* Also it is important to emphasize an endemic problem of the SME sector as it is the high dilatoriness with respect to the rest of the sectors. This is a characteristic without solution since it is inherent to his structure, nevertheless it can be reduced. In many cases the bankruptcy laws of some countries have particularly pernicious regulations for this type of companies, in this sense the legislation has to be improved taking into consideration their particular structure and increasing the possibilities of negotiation and solution previous to the 'going to concern' process.

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[22] In Spanish: SGR (Sociedad de Garantía Recíproca)

[23] According to the Section 14 of the German Banking Act, banks have to report every customer with a credit exposure in excess of DM 3 million to the Bundesbank. In response, the Bundesbank informs the bank of the total volume of reported credit exposures recorded for the debtor in question and the number of banks reporting. On the other hand in the U.S., the Federal Reserve Board prohibited banks from transferring non-public information between their lending and underwriting arms until October 31, 1997.

* Finally we think that it is important to mention a structural aspect of the banking system as it is the reduction of branches, process that may be related to the banking concentration. If we compared the more developed financial systems we found in all of them a common pattern which is the high ratio of financial branches per capita, to mention some cases in the United Kingdom this relation was of 25 branches every 100,000 inhabitants, the same was 98 in Spain, 28 in Greece or 69 in Germany, whereas in Argentina that relation was of 12 branches by the same proportion of population. In the 90's all these systems had some degree of concentration reason why we could say that the problem is not the concentration itself, but the maintenance of the necessary structure to efficiently attend the demands of the market. In this sense it is necessary that the development of medium banks or the correct distribution of the existing ones were stimulated. This problem in particular can lose relevance in the future if the technological advances can substitute the function of the branches.

However in the particular case of Argentina, that it is the empirical frame which we took for this work, some improvements have been performed from the end of the analyzed period to the present time. The access to the capital market has been stimulated by the Government and the CNV[24] with the creation of the Panel de Acciones PyME (Chart of SME Equities) on December 2006. With this differentiated chart of negotiation the companies have access to different instruments like negotiable obligations emission, financial trusts and deferred payment check negotiation, and is even encouraging the financing through Venture Capital. The quotation regime has been simplified for these companies.

The participation of RGC has been also increased in order to canalize resources from the capital market towards the SME sector (20 RGC on 2007 with an amount of 587 ARG$ million, about U$S 185 million).

Nevertheless, the financial system is still undeveloped in terms of size and the volumes compromised in the FFS are small: as per official data loans are equivalent to 19,65% and deposits 34,16% of the GDP[25]. But in this case the situation is not very clear because the effects of the 'Tango Crisis' in 2001 are still latent, thus the actual size can be transitory and can experiment an important increase if the confidence in the economy attracts more capitals to the system (see Table 7).

As some other obstacles to mention, the SME sector has to be redefined as the present parameters exclude several companies from official policy, in example the

[24] CNV: Acronym of Comisión Nacional de Valores the equivalent of the NYSE in the United Status.
[25] Source: MECON (Ministerio de Economía y Producción – Rep. Argentina), I Semester/2007, constant prices of 1993. Some economist adduce that the real size is smaller.

average gross income considered is ARG$ 42 million (around U$S 14 million) that is too low for the sector, in the same sense the maximum amount of Negotiable Obligations for SMEs is ARG$ 5 million (around U$S 1,6 million) clearly insufficient .

8. CONCLUSIONS

Making some final comments on the analyzed subjects, we will say that the banking concentration in itself is neither bad nor good, but that the economy depends on the correct operation of the financial system. This correct operation depends as well on the level of development and critical mass in general, and upon the structure of the system in particular. Thus we can find concentrated banking systems but with an efficient operation so the case of Spain, or other very atomized but equally effective in its relation with the SMEs like the German one.

It is now then where the problem of the information asymmetries starts playing his role, kind of problem that we tried to highlight in this work relating it to the sector of the SMEs that indeed is particularly sensible to this phenomenon. The consequences are even ampler if we only considered the developing countries, since the presence of an informal economy without access to the FFS aggravates the growth problems. Making mention to the case of Argentina we will say that according to some studies (Arrigoni, 2000) one out of two SME in Argentina was financed by the informal financial system (IFS) with a life expectancy considerably smaller. The case is representative for the rest of emergent economies with different implications but with strong presence of information asymmetries in all of them.

Thus, and beside direct active policies like the lines of credit or subsidies to specific sectors, policies would be created in order to diminish the existing information asymmetries between the financial intermediaries, the investment opportunities and the money savers in general. Only after reaching an `efficient financial market', that at the end is an ` efficient information market', then sustainable policies could be generated to support the productive sectors that really need them.

Even more, any substantial improvement in the information will reduce the risk of the financial system and it will even be able to reduce the procyclical tendencies of the economy and other macroeconomic consequences, reinforcing the system to face external shocks.

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ANNEX

Simulation. FINANCIAL COST OF WORKING CAPITAL

In fist place is important to mention that the model developed here is not supported by neither and academic nor empirical research nor is representative of any specific SME sector, nevertheless it is useful to give us a close idea on the real economic and financial effort that a small-medium enterprise has to confront with increasing financing costs.

Starting the simulation in the first scenario we're going to determine the economic point of equilibrium of the SME, in a second step we're going to determine the financial point of equilibrium with a monthly interest rate of 1% and finally with a monthly interest rate of 3%.

STARTING SCENARIO: Economic and financial data

* Simplifying points: no stock, the business cycle is 90 days (money-goods-money) starting on January, incomes and outcomes segmented by 'sales, fixed and variables', periods of payments and collection every 30 days, if financial surplus exist we'll not consider investment opportunities.

MONTHLY ECONOMIC DATA OF THE SME

Total sales (per unit)	50.000
Price (per unit)	10
TOTAL SALES	500.000
Variable costs (per unit)	7
TOTAL VARIABLE COSTS	350.000
Marginal profit	150.000
FIXED COSTS	135.000
EBITDA	15.000*
BREAK EVEN POINT (per unit)	45.000**

* EBITDA = (50.000 - 45.000) x (10 – 7) = 15.000

** Break Even Point = $\frac{135.000}{(10 - 7)}$ = 45.000

BUSINESS CYCLE (purchase-goods production-sales)

	VALUES	PAYMENTS / COLLECTIONS			
		0 days	30 days	60 days	90 days
Sale price	10	0%	33%	33%	34%
Variable C.	7	50%	50%		
Fixed C.	135.000	70%	30%		

BUSINESS CYCLE - BREAK EVEN POINT - 45.000 units

	Units	Value	Total U$S	0 days	30 days	60 days	90 days
Total sales	45.000	10	450.000	0	148.500	148.500	153.000
Variable C.	45.000	7	(315.000)	(157.500)	(157.500)	-	-
Fixed C.		135.000	(135.000)	(94.500)	(40.500)	-	-
Net result			0	(252.000)	(49.500)	148.500	153.000

<u>SCENARIO A: Working capital cost at 1% monthly interest rate</u>

Starting point: FINANCIAL COST - 1% INTEREST RATE - 45.000 units

	0 days	30 days	60days	90 days
Cash/Banks – Start month	-	(254.520)	(307.060)	(160.146)
Net result Payment/Collections	(252.000)	(49.500)	148.500	153.000
Sub-Total	(252.000)	(304.020)	(158.560)	(7.146)
Financial cost (1% monthly)	(2.520)	(3.040)	(1.586)	
Cash/Banks – End month	(254.520)	(307.060)	(160.146)	

<u>Net result at the end of the cycle = (7.146)</u>

New Sale Price at discounting cash flows (1%) = $10 \text{ x } \left[\frac{0,0}{1} + \frac{0,33}{1,01} + \frac{0,33}{(1,01)^2} + \frac{0,34}{(1,01)^3} \right] = 9,8023$

New Variable Cost at discounting cash flow (1%) = $7 \text{ x } \left[\frac{0,50}{1} + \frac{0,50}{1,01}\right] = 6,9653$

New Fixed Cost at discounting cash flow (1%) = $135.000 \text{ x } \left[\frac{0,70}{1} + \frac{0,30}{1,01}\right] = 134.599,0099$

New Break Even Point at 1% interest rate = $\frac{134.599,01}{9,8023 \;\; 6,9653} = 47.445 \text{ units}$

<u>New Break Even Point = 47.445 units</u>

NEW BREAK EVEN POINT (1%) = 47.445 units

	Units	Value	Total U$S	0 days	30 days	60 days	90 days
Total Sales	47.445	10	474.450	0	156.568	156.568	161.313
Variable C.	47.445	7	(332.115)	(166.057)	(166.057)	-	-
Fixed C.		135.000	(135.000)	(94.500)	(40.500)	-	-
Net result			7.335	(260.557)	(49.989)	156.568	161.313

FINANCIAL COST - BREAK EVEN POINT (1%) - 47.445 units

	0 days	30 days	60days	90 days
Cash/Banks – Start month	-	(263.163)	(316.283)	(161.312)
Net result Payment/Collections	(260.557)	(49.989)	156.568	161.313
Sub-Total	(260.557)	(313.152)	(159.715)	
Financial cost (1% monthly)	(2.605)	(3.131.52)	(1.597)	
Cash/Banks – End month	(263.163)	(316.283)	(161.312)	

- In the scenario A to maintain a working capital at a nominal interest rate of 1% (monthly) the company needs an increase of 5.5% on the total sales to reach the new break even point.

- Note that the net result of U$S 7.335 is used to cover the financial costs

→ (2.605) + (3.131) + (1.597) = U$S 7.333

- Nevertheless if we consider the present sales volume the company still has a positive EBIT:
(Total sales unit – B/Even point 1% unit) x Marginal profit = 2.555 units x U$S 3 = U$S 7665

or

(EBITDA – Financial expenses) = U$S 15.000 – U$S 7.333 = U$S 7.667

SCENARIO B: Working capital cost at 3% monthly interest rate

Starting point: FINANCIAL COST - 3% INTEREST RATE - 45.000 units

	0 days	30 days	60days	90 days
Cash/Banks – Start month	-	(259.560)	(318.332)	(174.927)
Net result Payment/Collections	(252.000)	(49.500)	148.500	153.000
Sub-Total	(252.000)	(309.060)	(169.832)	(21.927)
Financial cost (3% monthly)	(7.560)	(9.272)	(5.095)	
Cash/Banks – End month	(259.560)	(318.332)	(174.927)	

Net result at the end of the cycle = (21.927)

New Sale Price at discounting cash flows (3%) = $10 \text{ x} \left[\frac{0,0}{1} + \frac{0,33}{1,03} + \frac{0,33}{(1,03)^2} + \frac{0,34}{(1,03)^3} \right] = 9,4259$

New Variable Cost at discounting cash flow (3%) = $7 \text{ x} \left[\frac{0,50}{1} + \frac{0,50}{1,03} \right] = 6,8980$

New Fixed Cost at discounting cash flow (3%) = $135.000 \text{ x} \left[\frac{0,70}{1} + \frac{0,30}{1,03} \right] = 133.820,388$

New Break Even Point at 1% interest rate = $\frac{133.820,388}{9,4259 - 6,8980} = 52.938$

New Break Even Point = 52.938 units

NEW BREAK EVEN POINT (3%) = 52.938 units

	Units	Value	Total U$S	0 days	30 days	60 days	90 days
Total Sales	52.938	10	529.380	0	174.695	174.695	179.990
Variable C.	52.938	7	(370.566)	(185.283)	(185.283)	-	-
Fixed C.		135.000	(135.000)	(94.500)	(40.500)	-	-
Net result			23.814	(279.783)	(51.088)	174.695	179.990

FINANCIAL COST - BREAK EVEN POINT (3%) - 52.938 units

	0 days	30 days	60days	90 days
Cash/Banks – Start month	-	(288.176)	(349.442)	(179.989)
Net result Payment/Collections	(279.783)	(51.088)	174.695	179.990
Sub-Total	(279.783)	(339.264)	(174.747)	
Financial cost (3% monthly)	(8.393)	(10.178)	(5.242)	
Cash/Banks – End month	(288.176)	(349.442)	(179.989)	

- In the scenario B to maintain a working capital at a nominal interest rate of 3% (monthly) the company needs an increase of 17.6% on the sales volume to reach the new break even point.
- Note that the net result of U$S 23.814 is used to cover the financial costs

→ (8.393) + (10.178) + (5.242) = U$S 23.813

- If the sales volume keeps constant at this interest rate the company will be under looses:

(Total sales unit – B/E point 3% unit) x Marginal profit = (2.938) units x U$S 3 = U$S (8.814)

or

(EBITDA – Financial expenses) = U$S 15.000 - U$S 23.814 = (U$S 8.814)

Note: Simulation based on Porto J. (2000) available at http://cdi.mecon.gov.ar/

Comments

As mentioned previously the simulation performed has indicative character and it doesn't has to be taken as irrefutable fact. Nevertheless the financial results obtained have coherence with the data published in the period:

- The financing of the SMEs depended mainly on working capital which was based (and it is based) on `overdraft on current accounts' whereas the financing of 'prime companies' is guided by the 'Prime' interest rate. However, the interest rate applied for `overdraft on current accounts' was of 32.37% average and the 'prime' rate was of 11.49% on average (see Figure 11) reason why our simulation has coherence when calculating two scenarios with monthly rates of 1% and 3%.
- According to some works (Yoguel, 1999; UIA, 1997) more than 70% of the SMES had unsatisfied needs of working capital financing and adduced like main obstacle the high interest rates.
- Although the rate of 32.37% comes from official data, it does not represent the total of the sector. According to some works published at the end of the 90's (Salloum, 1997; Arrigoni, 2000; Sarghini, 2001) half of the SMEs worked with the

informal market of credit (IFS), and the rates applied were quite higher than the ones published by the central bank normally surpassing 50% annually, reason why it is possible to expect for more critical situations than the simulated in this section.

NEWS 1. SMEs FINANCING DEBATE.

IN THE BCRA THEY ASSURE THAT THE BANKING CONCENTRATION DID NOT HAVE A SLANT AGAINST THE SMEs

Who takes care on the SMEs financing?

A work of the BCRA reveals unknown aspects of the financing to the small companies. Not all are in agreement with the conclusions.

History between the banks and the SMEs (small and medium enterprises) holds a plot of love and hatred. More hatred than love, will say a small retailer from Buenos Aires that this week found out that a bank charged to him a 50% interest by an overdraft current account with agreement. “But nevertheless we want them”, will said the banks, that knows that it is not good business to ignore a sector that in Argentina generates more than the 70% of the economy added value.

In order to get the things even more confusing, the discussion occurs in a field of slippery statistics, with few solid numbers. “The truth is that it is tremendously difficult to obtain information in this area”, explains Miguel Arrigoni, a specialist in corporate finances of Deloitte & Touche.

Facing this lack of information, the investigators of the Central bank felt that they were in front of a statistical gold mine when they decided to approach the subject from a source until now virgin: the ‘Central de Deudores del Sistema Financiero’ (a centralized database of debtors in the financial system), a base that contains all the debts greater than 50 pesos (around U$S 16 at 2007). “The amount of information that there is in the database is overwhelming: we’re talking about millions data”, says Guillermo Escudé, manager of the equipment of Economic and Financial Investigations of the BCRA.

According to the study ‘Las MIPyMEs y el mercado de crédito en la Argentina’ (see Escudé, 2001 on the Appendix), that recently appeared and that it includes temporary series for period 1998-2000, more than half of the loans of the financial system go to this sector.

The work of the BCRA was already circulating around the banks, and caused confronted reactions. The greater controversy occurs by a series of results that favours to the private banks in general, and the foreign ones in particular, and which is against the evidence that was known until now.

Leonardo Bleger, an economist of the Credicoop Bank that published investigations on the SMEs financing in the magazine of the IDES and the Techint Bulletin, is not in agreement with almost any of the conclusions of the report of the institution that Roque Maccarone presides over.

Bleger is not impressed with the sample size of the centralized database of debtors, and affirms that in the controversy about the SMEs financing each one takes water for its own mill depending the definition that is adopted for small company. “In the centralized database Center they consider like SMEs to companies up to 200 employees, that in many cases are big companies”, he explains.

Gray zones and paradoxes

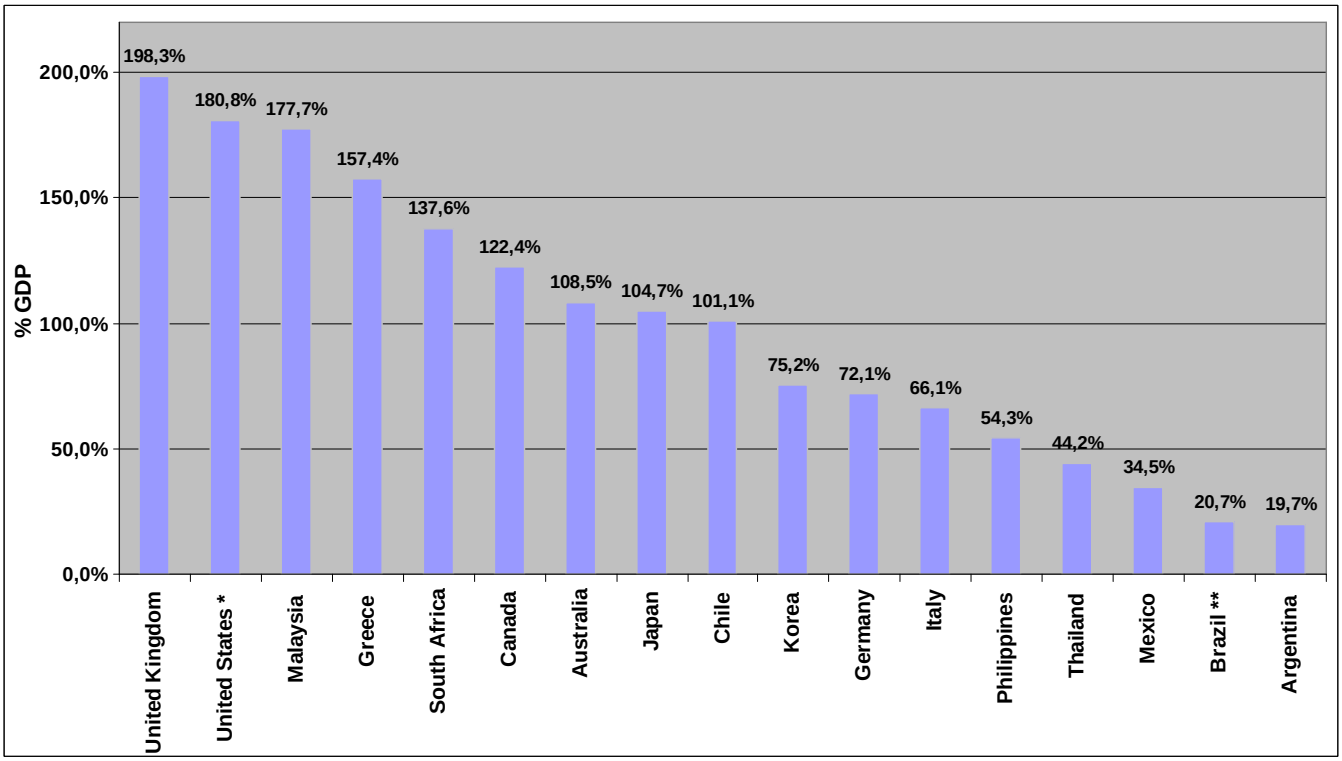
The studies of Bleger, that contemplate a different definition of small company, shows that the participation of the SMEs in the credit is much smaller to the one than reveals

the centralized system: it is below 20%. “If we consider that generates 80% of the employment, and that in addition they don’t have access to other instruments of financing like the larger companies, we realize that the SMEs are underrepresented in the banking credit”, he adds.
Many of the results of the work of the BCRA revealed facts that were intuited, like that the irregularity and the unrecoverable of the loans portfolio to small companies are greater than the one of the loans to large companies; that between the private banks, those of smaller geographic scope tend to lend relatively more to small companies than the banks of national range; or that the credit to the SMEs tends to lower during a recession.
But also, the authors of the report count, appeared a few paradoxes, peculiarities and grey zones. That is to say:
- Perverse incentives: Whereas in the private banks the quality of the SMEs portfolio is deteriorated as the company becomes smaller, the case of the public organizations is exactly the opposite. ‘This is an unusual result, different from the international cases observed, where the loans of the bigger companies are safer, they say in the debtors Center, ‘and suggests the existence of perverse incentives in the process of lending between the public banks’.
- Foreignization: The BCRA assures that his work refutes the idea that the foreignization of the bank has implicit a slant against SMEs. The temporary series observed on the study of the BCRA shows that the credit to the SMEs does not decrease as the national banks were being bought by foreign hands.
‘Also, it is a process that didn’t finish, and the tendency can change’, Escudé clarifies. The foreign banks granted a 42.7% of the credit to SMEs on the mid 2000, 4% more than two years before, according to the data of the BCRA.
‘It is a typical case in which *a priori* it is known to what conclusions were wanted to arrive, and soon the statistics comply to size’, Bleger counterattacks regarding the work of the BCRA. The economist, who investigated the financing of the small companies along with the former SMEs secretary Guillermo Rozenwurcel (they share a chair of Money, Credit and Banks in the University of Buenos Aires), thinks that the process of concentration and foreignization was in detrimental for the segment of SMEs: ‘it tends to diminish the proportion of loans in this sector, as a result of the disappearance of small banks, more specialized in the attention to the small companies’.
Which is the true map of the credit for the small companies in Argentina? As it is seen, the limits and characteristics vary for each cartographer.
Arrigoni thinks that the reality is in an intermediate earth between the conclusions of the BCRA and Bleger. ‘The foreignization was neutral, did not improve nor made worse the thing for the SMEs’, he maintains.
For the man of Deloitte, regarding the greater difficulties of the SMEs financing it is necessary to look for it in the system failures that prevents that the supply and the demand are connected. And it mentions examples: ‘the BCRA requests to a SME as much information to him as to a great North American corporation; the banks have less agility, by the existing regulations, that a table of money to discount checks, etc, etc’.
This history of love and hatred, according to Arrigoni, also has much of misunderstandings between both members of the pair. ‘There is an infinity of cultural prejudices: the small businessmen think that the banks don’t want to lend them, and that is false’, he says. Escudé agrees: ‘no bank can do without a universe that in Argentina involves a million companies, that is clear’.

SEBASTIAN CAMPANARIO

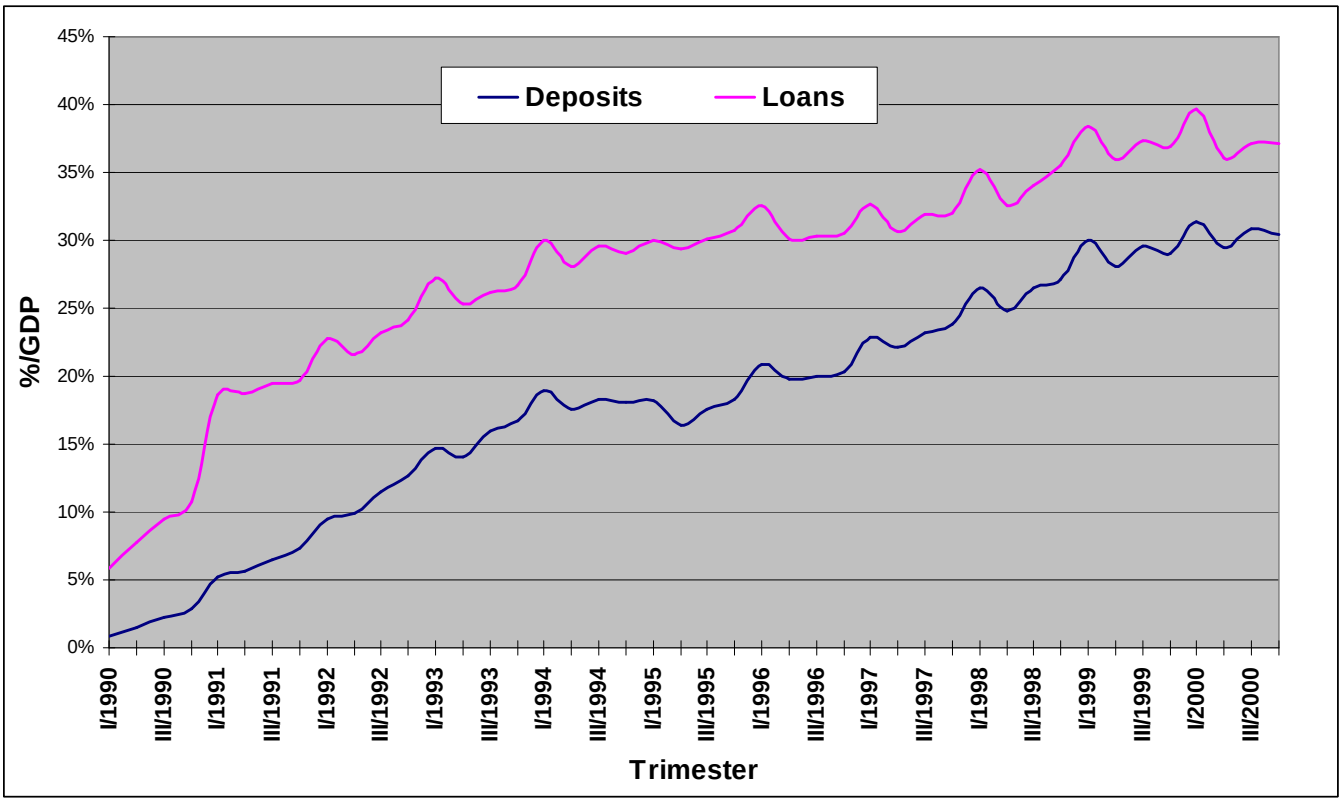
Source: Translated from Campanario S. (2001): ‘¿Quién se Hace Cargo del Crédito PyME?’, Clarín - Suplemento Económico, Sunday July 22,2001. Available at www.clarin.com/suplementos/economico/2001/07/22/n-00211.htm

Figure 1. CAPITAL MARKET SIZE AS PERCENTAGE OF GDP.



* US market capitalization and capital raised includes Amex, NASDAQ and NYSE.
** 1998 data (1999 GDP & GFCF Not Available)
Source: Author. Data from 'Stock Markets Importance in the National Economy', World Federation of Exchanges.

Figure 2. LOANS AND DEPOSTIS – ARGENTINA 1990/2000



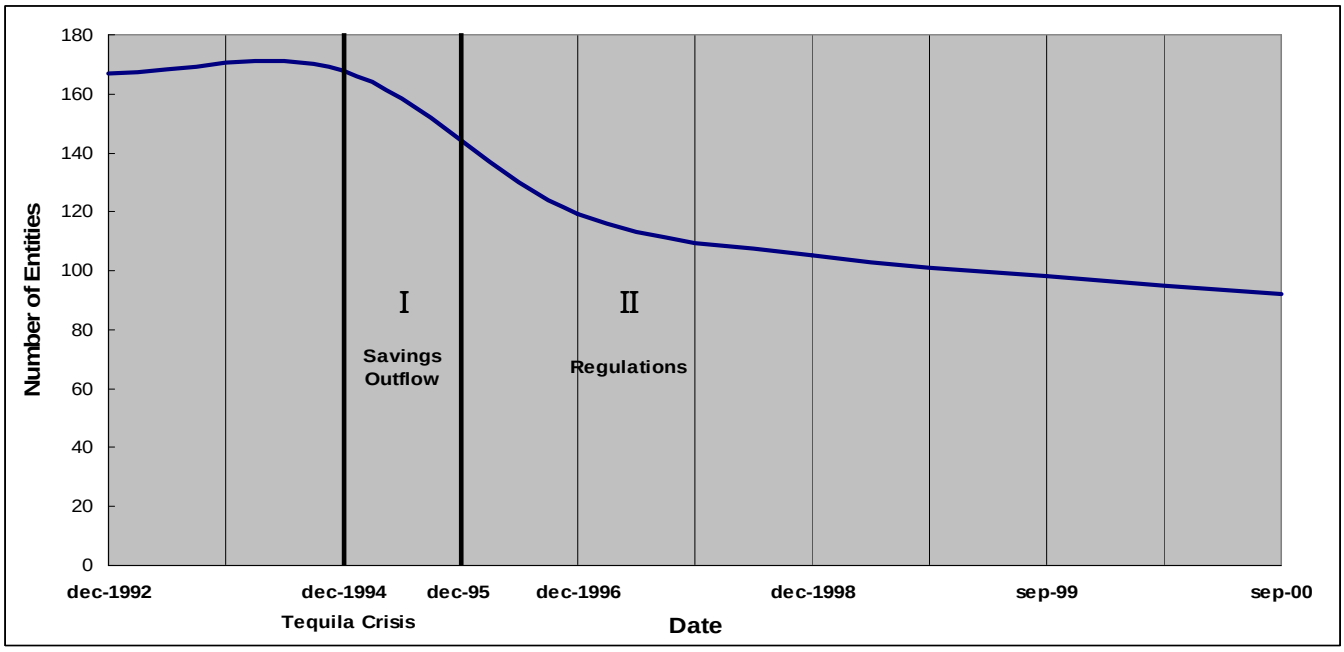
Source: Author. Data from INDEC and BCRA

Table 1. ARGENTINEAN FINANCIAL SYSTEM – ENTITIES – 1980/2000

Type of entity	1980	1992	1994	1996	1998	sep-99	sep-00
Public Banks	35	36	33	21	18	15	14
National Private Banks	152	59	66	53	45	33	28
Foreign Private Banks	27	31	31	39	38	48	48
Cooperative Banks		41	38	6	4	2	2
Non-bank Entities	255	45	37			21	17
Total deposits		23.824	45.618	51.882	75.530	82.985	85.946
Total Private Banks	179	131	135	98	87	83	78
Total number of Banks	214	167	168	119	105	98	92
Total number of Entities	469	212	205			119	109

Source: Author. Data from BCRA and Aramburu (2000).

Figure 3. PHASES OF THE BANKING CONCENTRATION



Source: Author. Adapted from Cuadernos de Cuenin (2000) and data from BCRA.

Table 2. LENDING TENDENCY TO SME SECTOR BY SIZE OF BANK. ARGENTINA. 1995/1999

	Total Loans / Total Assets			No Collateral / Total Assets		
	Dec-97	**Dec-98**	**Dec-99**	**Dec-97**	**Dec-98**	**Dec-99**
1º Quartile (smallest banks)						
Mean	0.5325	0.476	0.463	0.722	0.764	0.736
Standard Deviation	0.1507	0.168	0.175	0.373	0.347	0.37
2º Quartile						
Mean	0.4813	0.485	0.441	0.629	0.611	0.611
Standard Deviation	0.1239	0.128	0.128	0.241	0.285	0.32
3º Quartile						
Mean	0.4809	0.486	0.486	0.602	0.58	0.553
Standard Deviation	0.1964	0.166	0.161	0.258	0.263	0.252
4º Quartile (largest banks)						
Mean	0.5275	0.504	0.478	0.523	0.463	0.448
Standard Deviation	0.1487	0.127	0.139	0.275	0.232	0.204

Source: Translated from Cuenin (2000).

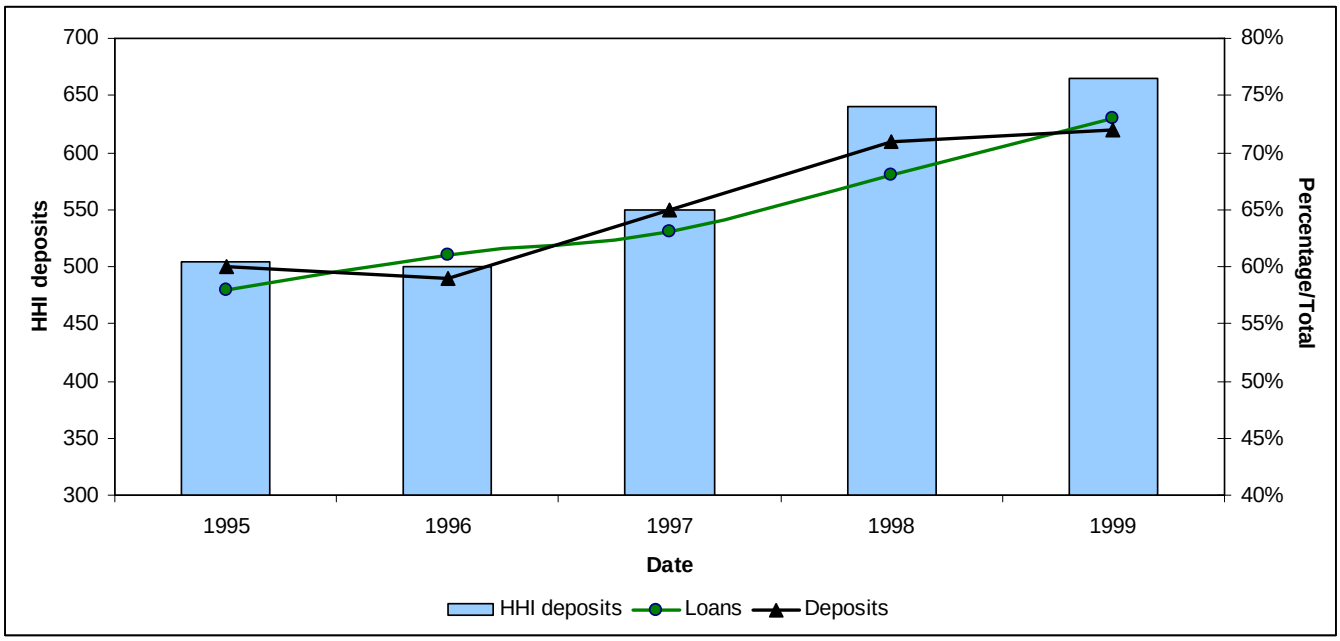
Note: The first quartile represents the 25% of the smallest banks considering the assets without taking into account the type of entity; the last quartile represents the 25% of largest banks. The higher the index the higher the tendency to lend.

Table 3. MINIMUM CAPITAL REQUIREMENTS. PRIVATE BANKS. ARGENTINA 1994/1999

	December 1995			December 1999		
	Risky Assets (ARG$ million)	**Rate (%)**	**Requirement (ARG$ million)**	**Risky Assets (ARG$ million)**	**Rate (%)**	**Requirement (ARG$ million)**
(1) Basel I	33.691	8.0	2.695	56.863	8.0	4.549
(2) National Regulation	40.823	11.5	4.695	63.195	11.5	7.267
(3) Effective Capital Integration			7.218			9.971
	% Variation	% Variation	% Variation	% Variation	% Variation	% Variation
(4) Nat. Reg./Basel I	21.0%	44.0%	74.0%	11.0%	44.0%	60%
(5) Excess over Basel I (3)/(1)			168.0%			119.0%
(6) Excess over Nat. Reg.			54.0%			37.0%

Source: Translated from Aramburu (2000).

Figure 4. EVOLUTION OF LOANS AND DEPOSITS CONCENTRATION. ARGENTINA 1995/2000.



Source: Translated from Cuenin (2000).

Note: Loans: Loans issued by the 10 first private banks, Banco Nación and BAPRO (publics) over the total loans issued.

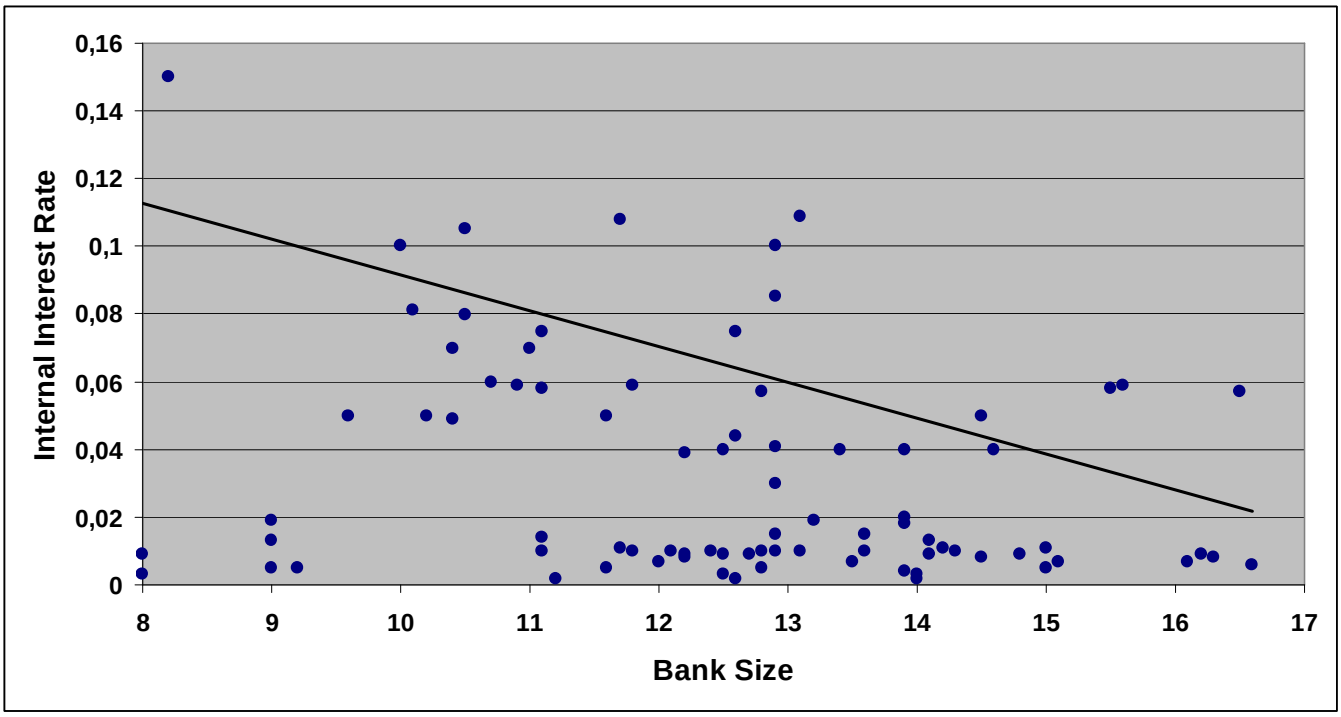
Deposits: Deposits on the 10 first private banks, Banco Nación and BAPRO (publics) over the total deposits of the system.

Table 4. TNEDENCY TO GENERATE HARD AND SOFT INFORMATION AS PER BANK SIZE. JAPAN.

Mean of SOFTINFO (s.d.)	# of obs.	Mean of SOFTINFO (s.d.)	# of obs.	t-test H_0: |(1)-(2)|=0 p-value
(1) Large banks		(2) Small banks		
-0.059	655	0.413	337	0.000
(0.068)		(0.100)		***
A. Large banks only				
(1) Merged banks		(2) Non-merged banks		
-0.049	571	-0.124	84	0.715
(0.074)		(0.186)		
B. Small banks only				
(1) Merged banks		(2) Non-merged banks		
-0.746	24	0.502	313	0.001
(0.445)		(0.100)		***

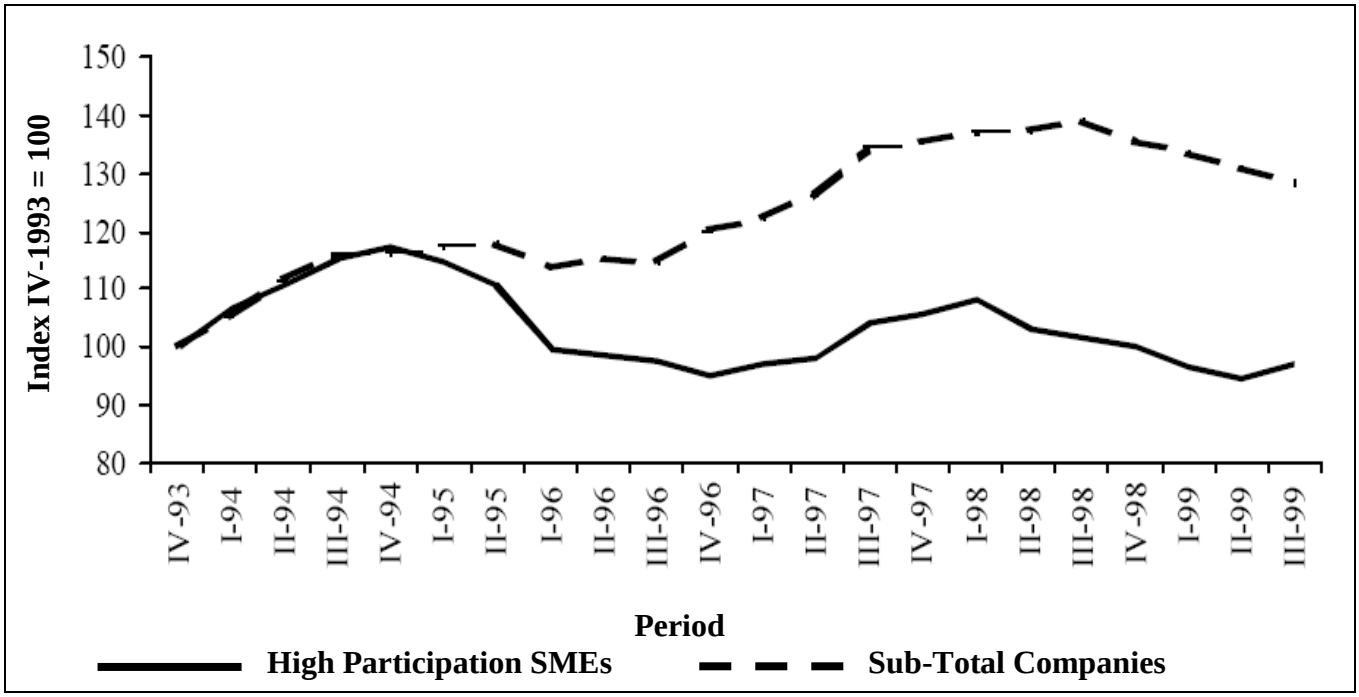
Source: Ogura Y., Uchida H.: 'Bank Consolidation and Soft Information Acquisition in Small Business Lending', RIETI Discussion Paper Series 07-E-037, Table 3. Japan, May 2007. The index shows the tendency to 'soft information' generation, the higher the number the higher the tendency.

Figure 5. FINANCIAL EXPENSES / SIZE OF BANK RELATION. ARGENTINA 1999.



Source: Translated from Cuenin (2000).
Note: Internal Interest rate: Calculated as Financial Expenses/Total Deposits.
Bank Size: Calculated as Total Assets of the entity (natural logarithm).

Figure 6. BANKINING CREDIT EVOLUTION BY SECTOR. ARGENTINA 1993/1998.



Source: Translated from Aramburu (2000).

Note: F.I.E.L. (1996) classification: For the analysis of the banking credit evolution the productive sectors were divided based on the contribution of the SMEs to the added value and the amount of work positions generated on each sector of the economy, according to the National Economic Census of 1994. According to this selection, the branches that these groups compose are the following ones: 1) *High participation of SMEs*: on the manufacturing sector are represented by Metallic products, Clothes and footwear, Wood and cork, Furniture and accessories; on the primary sector are Fruits, Vegetables and legumes, Sugar cane, Cotton, Grapevine, and Poultry; on the Service sector is represented by Retail commerce. 2) *Medium participation of SMEs*: on manufacturing sector are represented by Printing works and editorials, Leathers and Derivative products from the leather, Products of rubber, Non-electrical machinery and Other manufactured products. 3) *Low participation of SMEs*: on the manufacturing sector are represented by Nutritional products, Drinks, Tobacco, Textile, Paper and Derived products of the paper, Chemical products, Derived products of petroleum and coal, Non-metallic minerals, Basic Industries of Metal, Electrical machinery and devices, and Transportation materials; and on the Service sector Electricity, Gas, Sanitary water and services, Financial Intermediation, Construction and Wholesale Commerce.

Table 5. INTEREST RATES BY SIZE OF COMPANY. ARGENTINA - AVERAGE 1994/2000

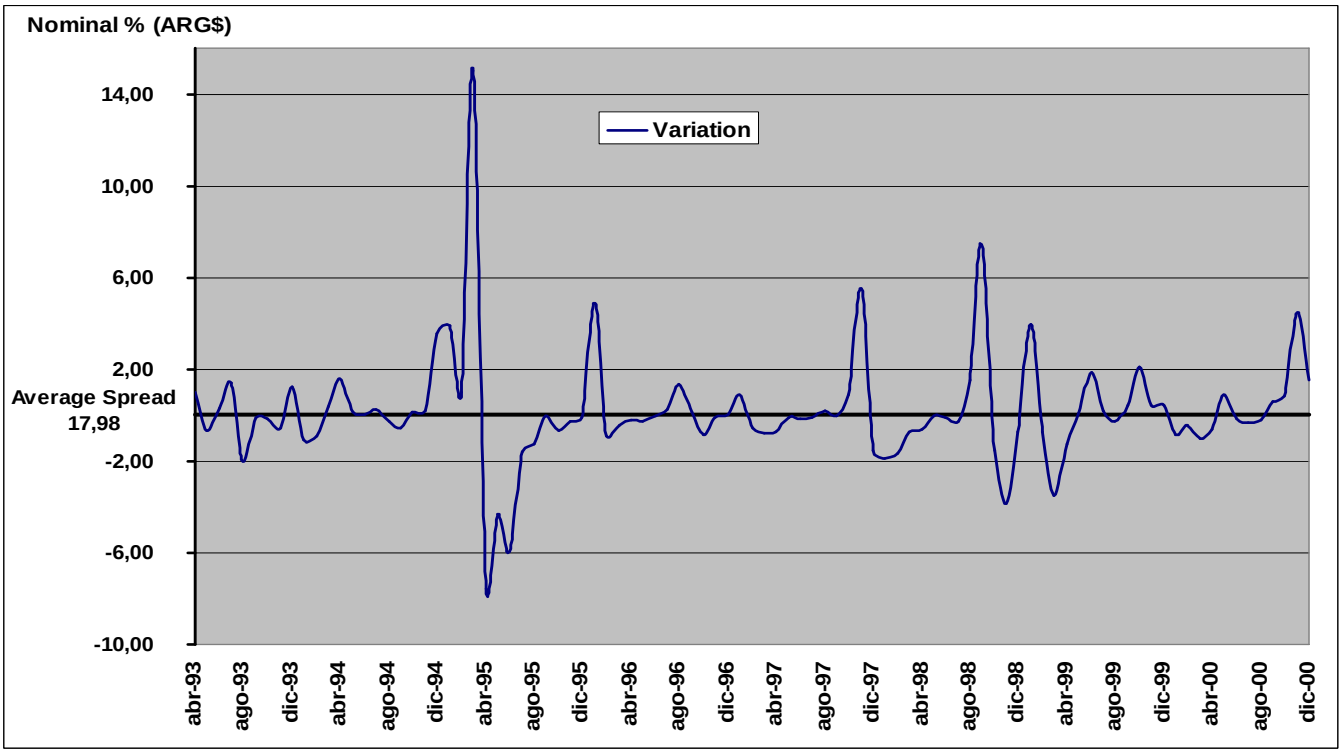
SIZE OF COMPANY (number of employees)	INTEREST RATE AVERAGE (%)
(1) 1 / 200	24,53
(2) 201 / 500	23,50
(3) 500 +	10,80
(1) – (3) Interest Rate Gap	13,73 *

* This gap is observed steady along the decade

Source: F.I.E.L. (1996).

Note: The spread was calculated over the average rate applied to SMEs and large companies. In coincidence this is the spread observed along the period between the SMEs average and PRIME rates.

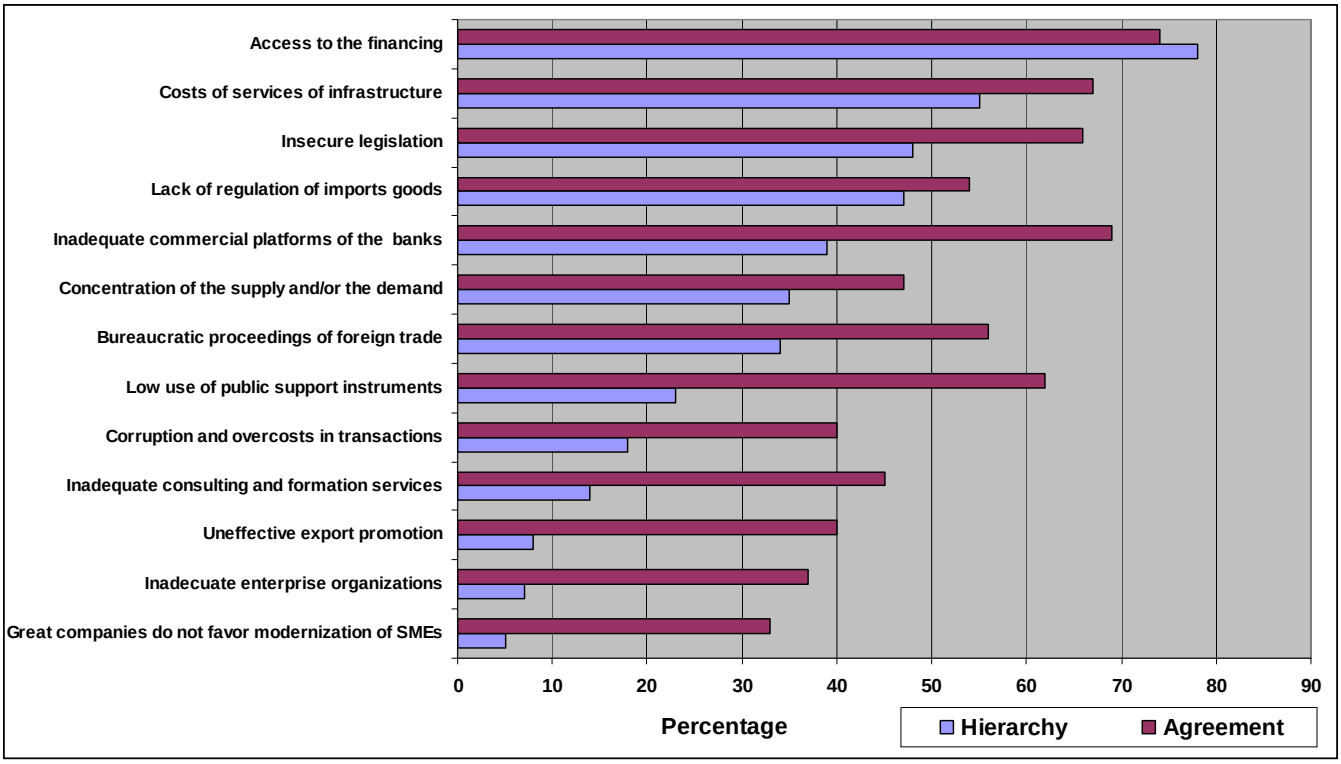
Figure 7. EVOLUTION INTEREST RATE SPREAD. PRIME / OVERDRFAT CURRENT ACCOUNT. ARGENTINA 1993/2000.



Source: Author. Data from BCRA.

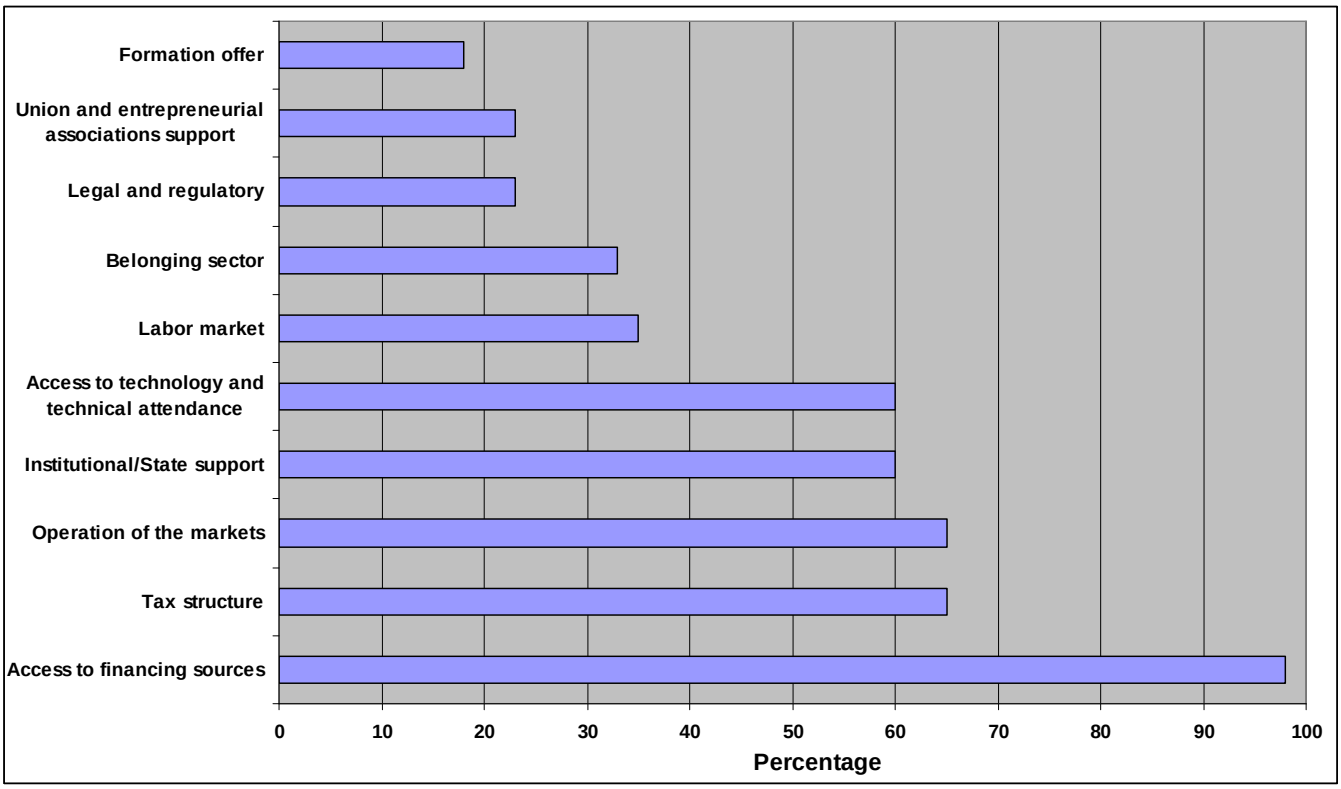
Note: Variation on the spread between the interest rate applied to 'Prime' loans and overdraft current account. Prime rate: Is the interest rate that the banks apply to their better subjects of commercial credit and to his greater corporative clients. The banks use the PRIME rate as reference to establish the rates for credit cards, loans to mortgages houses and other types of loans, including loans for small and medium businesses.

Figure 8. MAIN DIFFICULTIES MANIFESTED BY SMEs COMPANIES. ARGENTINA 1999.



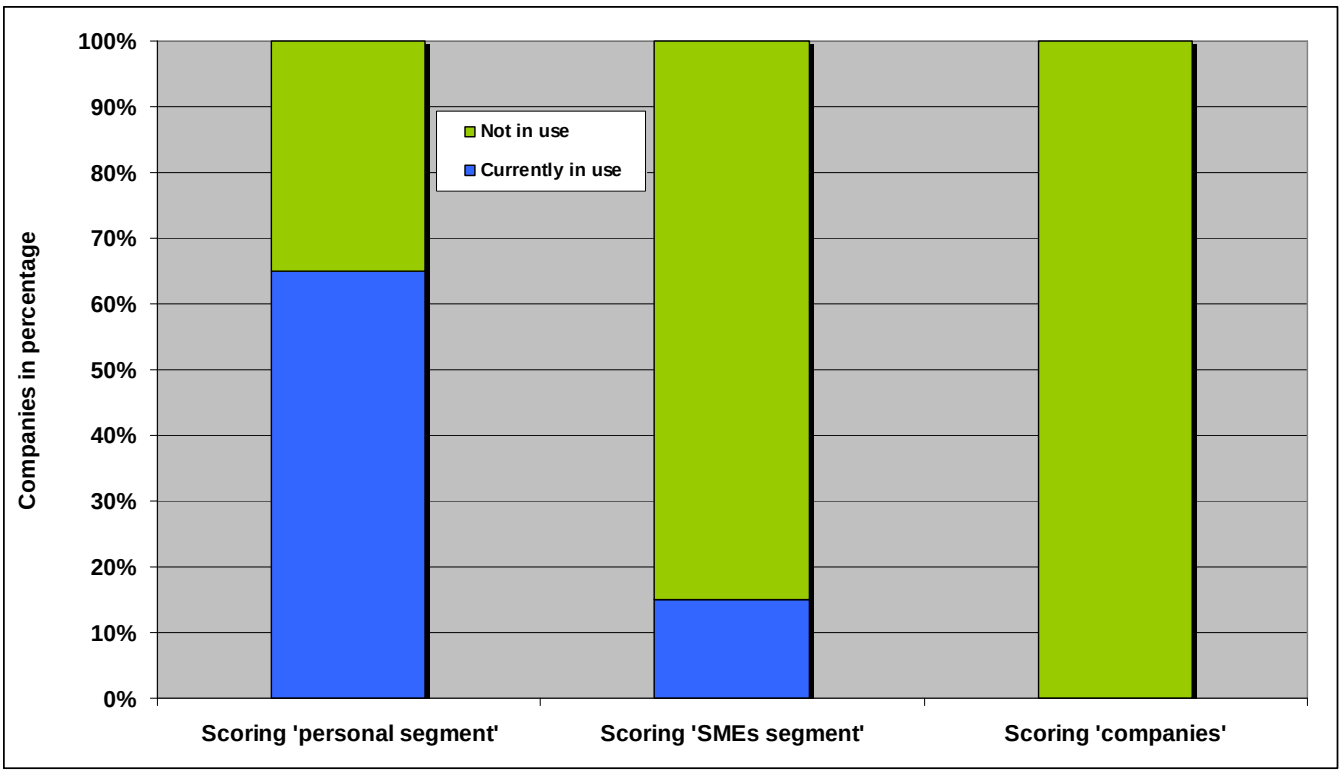
Source: Translated from FUNDES-UNGS (1999).

Figure 9. SMEs MAIN DIFFICULTIES MANIFESTED BY THE INSTITUTIONS. ARGENTINA 1999.



Source: Translated from Yoguel (1999).

Figure 10. UTILIZATION OF 'LENDING SCORING SYSTEM' BY TYPE OFPORTFOLIO. ARGENTINA 2006.



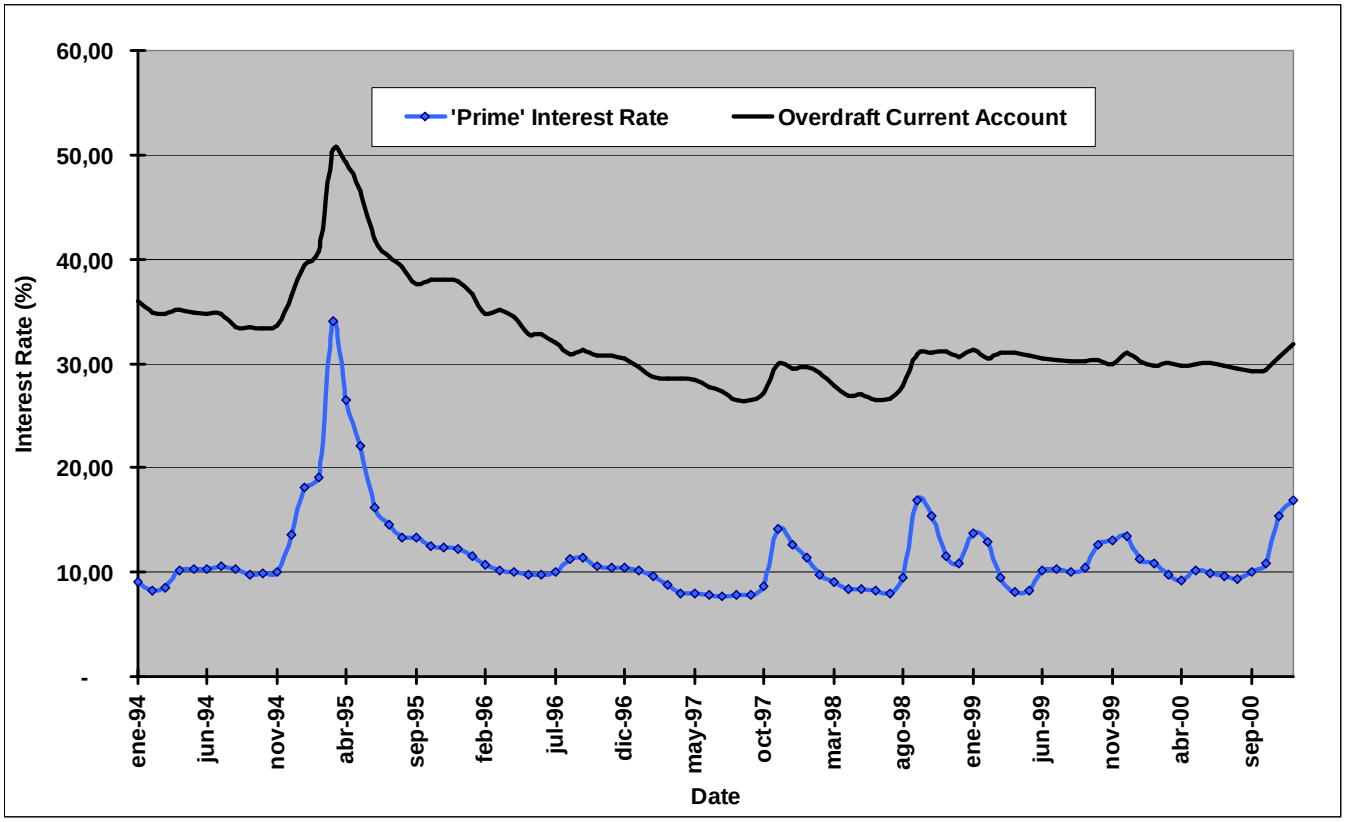
Source: Translated from Pailhé C. (2006).

Table 6. UTILIZATION OF SCORING SYSTEMS BY SIZE OF BANK. LATINAMERICA 2004. ON PERCENTAGES.

TYPE OF MODEL	TOTAL BANKS	BANK SIZE		
		LARGE	MEDIUM	SMALL
Credit scoring ex-ante	4	n/a	n/a	n/a
Credit scoring	15	31	12	14
Case by case	70	44	74	71
Other answers	9	6	9	5
No response	2	n/a	n/a	n/a

Source: Translated from FELABAN (2005).

Figure 11. INTEREST RATES: SMEs (overdraft) VS LARGE COMPANIES (prime). ARGENTINA 1994/2000.



Source: Author. Data from BCRA.
Note: Monthly average nominal interest rate in annual terms for the period Jan.94/Dec.00.

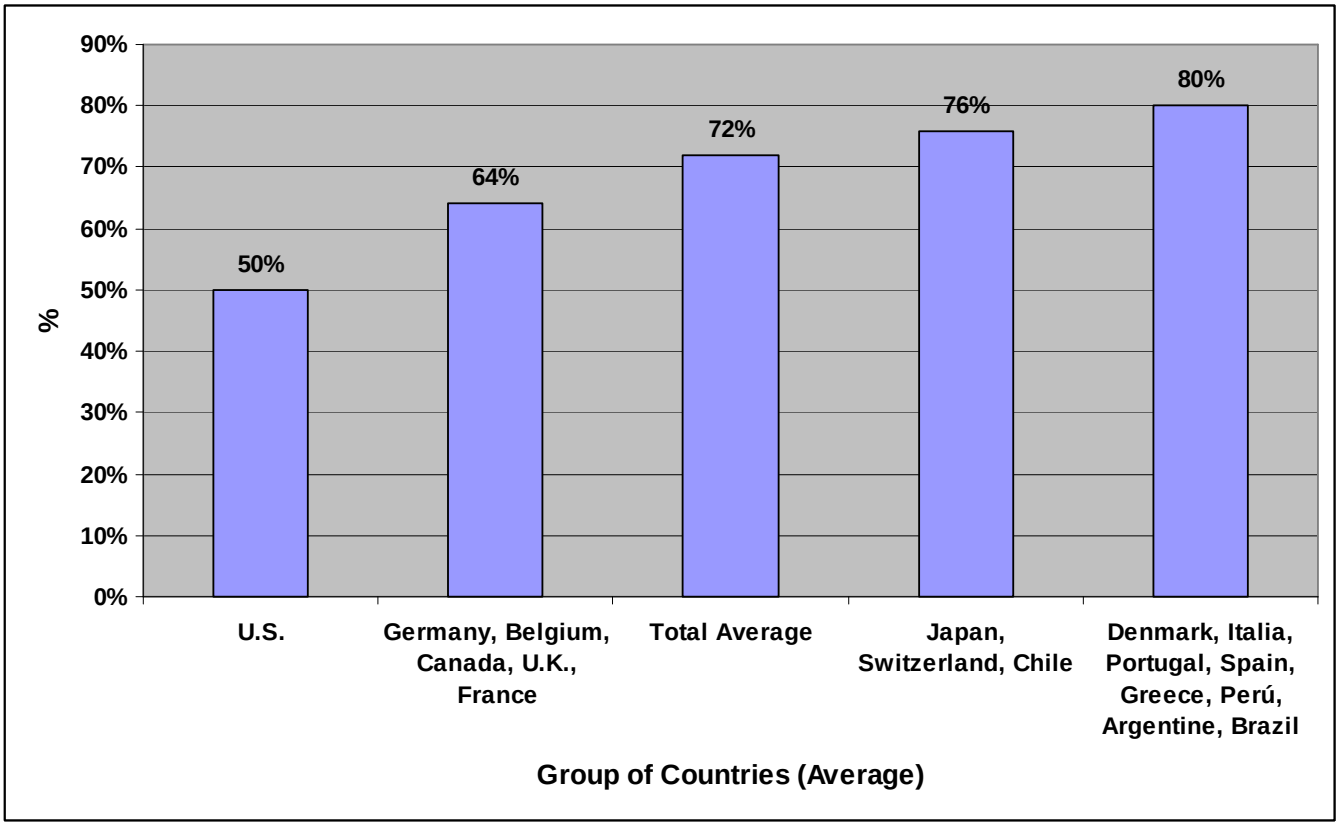
Table 7. FINANCIAL SYSTEM DEVELOPMENT. LOANS TO GDP. APRIL 2007.

COUNTRY	LOANS / GDP*
Chile	75%
Greece	67%
Uruguay	50%
Brazil	33%
India	31%
Colombia	23%
Mexico	18%
Argentine	10,5%

* Loans to non-financial private sector.

Source: BCRA and IMF

Figure 12. SME EMPLOYEMENT BY GROUP OF COUNTRIES.



Source: Author. Adapted from F.I.E.L. (1994)

GLOSARY

BCRA – Banco Central de la República Argentina (Central Bank of the Argentine Republic)
CNV – Comisión Nacional de Valores (Similar to the NYSE)
FFS – Formal Financial Sector
IDB – Inter-American Development Bank
IFS – Informal Financial Sector
ILO – International Labour Organization
IMF – International Monetary Fund
MGC - Mutual Guarantee Company
RGC - Reciprocal Guarantee Companies
SBA – Small Business Administration
SBCS - Small Business Credit Scoring
SEDESA – Seguro de Depósitos Sociedad Anónima
SME – Small and Medium Enterprise