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**Credit Information Sharing Mechanisms in Mexico:
Evaluation, Perspectives, and Effects
on Firms' Access to Bank Credit**

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Abstract

This paper describes the evolution of the various information sharing mechanisms that have emerged in Mexico; it studies their evolution, regulation and market structure. Sharing mechanisms alleviate the effects of asymmetric information in the credit market. It is known that the development of the credit market and information sharing mechanisms are closely related. We show that in Mexico information sharing has been limited because of the relatively minor role credit has played in the economy. The fast expansion of credit in the early 90s, when there was only a limited coverage of Public Registry of Credit Information (PRCI), made clear the need to develop mechanisms to share information. The regulation issued afterwards attempted to promote the entry of private credit bureaus. However, only one of them, the Credit Bureau (CB), has remained in the market. This firm is owned by all Mexican commercial banks, and henceforth, it is the recipient of their information and the supply of their demand for reports. It has displaced the PRCI and other potential competitors. Despite this market structure, we show that the quality of the information provided by the CB is better than it was in the days before the regulation. We also show that wider information sharing has resulted in less access to bank credit for small and medium sized firms.

JEL: G2, K2, D8.

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Introduction

Credit markets present asymmetric information problems. Lenders¹ know neither the past behavior and the characteristics, nor the intentions of credit applicants. This creates a moral hazard problem that causes lenders to make credit decisions based on the average characteristics of borrowers rather than on individual characteristics (Rothschild and Stiglitz, 1976). Moral hazard implies a lower average probability of payment, making credit more expensive. Higher interest rates exacerbate another informational problem, adverse selection, because only higher risk borrowers are willing to accept loans at high interest rates (Stiglitz and Wise, 1981). Additionally, precisely those borrowers that have defaulted with a particular lender are the ones looking for alternative credit sources (Akerlof, 1970). This increases the average risk of lending and the corresponding interest rate. Credit is hence allocated to excessively risky projects, and low risk borrowers face tighter credit constraints.

Coordination among lenders to *share* information about their clients' past behavior alleviates asymmetric information problems. This is the function of credit bureaus and public registries of credit information (PRCI). These institutions provide references about the past payment behavior of individual borrowers; they gather, organize and consolidate information from many lenders, who become *associates* and *users* of the bureau by providing information to such aggregate databases. Then, at the request of a user, bureaus provide credit reports that contain particular individuals' credit history. The database of the sharing mechanism is the sum of all associates' databases. Hence, access to such a database mitigates the adverse selection problem. Also, as borrowers realize that there is an institution monitoring their behavior, they have an incentive to pay back their loans, mitigating moral hazard (Padilla and Pagano, 1977). Consequently, information sharing results in lower outstanding payments, lower interest rates, and a better allocation of resources.

In the case of Mexico, the credit expansion of the late 80s and early 90s and the banking crisis that followed, evidenced the limitations of the existing information sharing mechanisms. Reliable information sharing mechanisms, whether they are public registries or private credit bureaus, are a necessary condition for the expansion of credit and for the consolidation of a healthy financial system.

The objective of this paper is twofold. First, I try to provide a comprehensive and critical review of the theoretical background of information sharing. The second goal is to describe and analyze the Mexican experience in this area and the corresponding regulation. To that effect, I present a brief review of some international experiences; I also attempt an evaluation of the effect that information sharing has had on firms' access to credit in Mexico.

From the review of the international experience (10 countries), I find that there is a tight link between the depth of credit and the development of mechanisms that facilitate information sharing; that is, both lending and information institutions seem to grow together. I also find that the countries where the mechanisms had a private and spontaneous origin seem to have more depth than those in which the financial authorities started a public registry of credit information. This is not surprising since PRCIs frequently have limited coverage by design (Miller, 2000). I

¹ In this paper we often refer to lenders as banks, but they could be other types of lenders.

find that there is a strong trend towards concentration in this market, which is related to the intrinsic features of the industry and to technological changes.

Mexico has had a PRCI since the 60s. Before the credit expansion took place, the PRCI was probably sufficient to cover the needs of information sharing because of the policies of financial repression. When the credit expansion occurred, however, credit was extended in many areas not covered by the PRCI. Additionally, I found evidence that in the provision of some loans, financial institutions did not consult the PRCI. The credit expansion indicated that there was a need to develop better information institutions. Hence, financial authorities issued a set of regulations to promote private entry.

The regulatory framework developed from 1993, just before the banking crisis, to 2001. Although several firms entered the market in the mid 90s, only one of them, the Credit Bureau (CB) survived. The CB is the result of the association of all Mexican commercial banks with international institutions to share information. This firm grew rapidly even when bank credit shrank after the crisis. There are several reasons for this growth. In the first place, the CB has been filling an information vacuum in several areas. In the second place, the CB receives all the associated banks' databases and consultations. In a relatively narrow credit market, banks' demand for information is crucial for a credit bureau to survive. The close relationship between the CB and commercial banks has not only driven out private competitors, but also displaced the demand for reports from the PRCI.

Although the CB has a virtual monopoly, there are indications that the information system is currently more efficient than it was before the credit expansion. The regulation seems to have been successful in improving the quality of information, although so far it has failed to introduce competition. On the other hand, the blame for industry concentration cannot be placed entirely on regulations because it also depends on the intrinsic structure of the industry.

This paper is structured as follows. In the first section I make an extensive review of the elements that characterize information sharing mechanisms. In the second section I present some relevant international experience to provide a framework for the analysis of the Mexican case.² The third section presents the Mexican experience in information sharing, describes the regulations and the actual situation of the market. In this section I attempt an evaluation of the sharing mechanisms using several indicators. I also present an analysis of the effect that sharing information has had on firms' access to credit. The fourth section concludes.

1. Credit information sharing mechanisms: a conceptual review

Information sharing institutions, whether they are PRCIs or private credit bureaus³, provide information on the past payment behavior of individual borrowers. They also collect, organize and consolidate information from many lenders, who associate with the bureau by providing access to their databases. Such information is updated frequently, usually every month. Then, at

² These two sections rest heavily on Negrin, 2000.

³ The analysis in this section applies to both PRCI and private credit bureaus. Unless otherwise specified, I will refer to both types as "bureaus."

the request of a user, bureaus provide credit reports that contain particular individuals' credit history. The databases of bureaus are the sum of all the associates' databases. Consequently, access to such an aggregated database mitigates the adverse selection problem. Also, as borrowers realize that there is an institution that monitors their behavior, they have an incentive to pay back loans, thus reducing moral hazard (Padilla and Pagano, 1977). Essentially, the information sharing mechanisms allow the formation of borrowers' reputation. We could conceptualize bureaus as information brokers because they create a market for such information.

Credit bureaus are needed mainly because of moral hazard from borrowers and from bureaus' potential associates. On the one hand, if there were a reliable way for borrowers to provide their full past records to potential lenders, credit bureaus would be unnecessary. However, that is not the case: potential borrowers would only show lenders the information that is convenient for them. On the other, it is unlikely that lenders would exchange information bilaterally between them because they may feel threatened by their competitors.⁴ That is, third-party bureaus can solve the neutrality problem in bilateral agreements.⁵ Bureaus are not just neutral to any associate, but they must have the capacity to coerce its associates to report their information truthfully, completely and timely⁶ (Padilla and Jappelli, 1997).

There is an additional reason for the existence of information sharing mechanisms. Bureaus create a network of information where the database of an associate can be accessed by all other associates. That is, associates' databases complement each other; hence, lenders become nodes in a network. Therefore, even if bilateral agreements were feasible, it would be inefficient to set multiple bilateral agreements at the expense of the network economies that characterize this industry. Such economies provide positive externalities to all bureau subscribers. Obviously, the more extensive the network, the greater the positive externalities generated. The positive externalities are related to an important peculiarity of credit information: it is an excludable public good in the sense that it is non-rival. That is, the fact that a lender knows information about a certain client does not preclude the use of the same information by other lenders.

By reducing informational problems and imposing discipline on borrowers, information sharing generates social benefits like interest rates reduction, credit expansion⁷ (Pagano and Jappelli, 1993) and better credit allocation. However, these benefits are not distributed evenly across groups. Sharing information benefits good payers and those individuals who apply for credit for the first time, while high-risk clients are negatively affected.

⁴ In Mexico there is a legal restriction to sharing information directly among banking institutions indicated in Article 117 of the "Ley de Instituciones de Crédito". This is related to the banking secrecy regulation. Additionally, only institutions authorized to function as "Sociedades de Información Crediticia", i.e., credit bureaus, can work as information brokers (more on this in section 3).

⁵ Laband and Maloney (1994) model credit bureau as an arbitrator between buyers and sellers.

⁶ The capacity to coerce lenders is a must for bureaus' good performance. Usually "penalties" are positive: those lenders that provide information completely and on time receive price discounts. However, penalties could include service cancellation –temporary or definitive-- for the delinquent information generators. It should be noticed, that in bilateral agreements with repeated interactions the lack of neutrality problem is not as problematic.

⁷ When the market expands, the adverse selection problem is so important that it leaves low risk clients out of the market. However, if the reduction of credit to high-risk clients is higher than the increase in credit to low risk clients, the market could shrink.

The effect of information sharing on lending institutions is positive because of the lower default risk. However, this position effect may be accompanied by increasing competition from other lenders (Padilla and Jappelli, 1997). Nevertheless, such harsher competition may have a desirable effect for lenders, in addition to enhanced discipline on borrowers. Padilla and Pagano (1997) indicate that sharing could provide good incentives to borrowers precisely because it creates more competition among lenders; given that competition dissipates informational rents, borrowers perform better because they perceive that the lender is not appropriating all the benefits of their effort to repay their loans.⁸

Another positive outcome of sharing information is the reduced costs of credit research. This makes profitable some loans that were not worthwhile before information was shared. We would expect that loans to small and medium firms and consumers experience more benefits than loans to larger firms. The latter have other mechanisms to transmit information, like the stock market; additionally, the size of loans that these firms would require justifies spending more resources on investigating. The positive effect on small and medium size loans makes the development of an effective information sharing mechanism even more relevant for a country like Mexico, where small firms are prevalent.

In terms of the willingness of lenders to share information, Pagano and Jappelli (1993) find that sharing is more likely, the larger the population, the greater the level of mobility and the more heterogeneous individuals are. Klein (1992) states that credit bureaus in “the Great Society” play the role of gossip in smaller communities; hence, information sharing mechanisms only emerge in large enough societies.

A related aspect that affects the sharing decision is provided by Jappelli (1997) and Padilla and Jappelli (1997). They claim that when there is less competition among lenders, information sharing is more feasible. Their models assume that debtors with good credit histories do not have a reliable method to transmit that information to other credit grantors, except through the credit bureau. They also assume that the sharing mechanism gathers both positive and negative information.⁹ Under these conditions, the lack of an institution to share information allows lenders to make extraordinary profits even if they face competition from other lenders; that is, lenders get an informational rent from charging high interest rates to those clients they have identified as low risk. The lack of information sharing inhibits lenders’ competition for good clients. Consequently, banks may not be willing to participate in the bureau, because sharing information about their good clients will greatly reduce the banks’ informational rents from these clients. On the other hand, when there is less competition between lenders before the sharing mechanism is established, due to collusion or regulation, lenders may be willing to participate because it does not represent a threat to their informational rents.

⁸ Padilla and Pagano (1999) develop this argument in the context of a principal-agent model. They show that sharing information increases competition among the lenders (principals). Such competition favors the borrowers (agents); hence they receive better incentives to perform well, and this increases the repayment likelihood. Hence, sharing information benefits good borrowers and lenders.

⁹ Negative information is only about defaults and frauds while positive are about timely and proper payments. See below for more on the type of information that is shared.

The bureau and its associates have an interesting relationship because lenders are the bureau's source of information but they are also its clients. In general, this relationship is based on the *reciprocity principle*, that is, only those information generators that subscribe to the bureau can request reports from it.¹⁰ In those countries where there is more than one credit bureau, subscribers could associate with several of them as long as the bureaus have different databases or if they produce heterogeneous reports. Subscription decisions are related to the payment mechanism for credit reports. In some cases associates pay a subscription charge plus a fee per report; in others there is no subscription fee and only charges per report.

It is relevant to notice that credit grantors interchange information that they obtained at a certain cost (or risk); consequently, they hold some rights over it. However, information remains private in the sense that not everyone has access to it. At the international level, there has been a strong movement towards the adoption of laws that protect individuals' privacy. These laws define the data that are susceptible to be collected and traded. The issuing of privacy laws may restrict the action of credit bureaus.¹¹ In this paper we assume that bureaus get their information in a fair and legal way and that reports are processed respecting individuals' privacy rights.

1.1 Origin of sharing mechanisms

Despite the obvious benefits involved in sharing credit information, not all countries have such sharing institutions. Furthermore, the origin and development of these institutions around the world, has not been unique. Sometimes the sharing mechanisms have a private, spontaneous, and voluntary origin, like many credit bureaus (CB). Originally many CBs had regional and specialized coverage; currently, most of them have *universal* coverage, that is, they gather information from all lending sources and regions. In other cases, financial authorities started a public registry of credit information; these institutions usually have coverage restricted to financial institutions, whose participation in the mechanism is compulsory. In these cases, after a certain lapse, private bureaus have often entered markets not covered by the PRCI. In yet other cases, financial authorities have started PRCI even though there already were private bureaus in the market (Miller, 2000).

Among the obstacles to the emergence of information sharing mechanisms we find that potential associates must trust in the neutrality and honesty of the mechanism manager. That explains why in their origin, many information sharing institutions were non-for-profit organizations. When the sharing mechanism is a public registry, lenders rest on financial authorities neutrality. When the sharing mechanism is private, the development of a reputation for honesty generates the required trust in the bureau.¹² We also find that credit institutions may not join the sharing mechanism to avoid competition from the other bureau associates. Finally, a wider database creates network externalities that are not internalized by the subscribing agent. When a new

¹⁰ In the case of Mexico this principle is part of the regulation. However, in other countries like the US, even non-subscribers may have access to the information held by a bureau. In the case of the US, users can obtain reports from bureaus they do not subscribe to, although at higher prices than subscribers and with certain restrictions on the type of information contained in the reports.

¹¹ Villar et al (2001) provide an international comparison of the regulation to protect individuals' data.

¹² In the Mexican regulation only honorable may receive authorization to run a mechanism to share information. See section 3.1.

associate joins the mechanism, the new associate benefits from the data that is already held by the institution. However, all the firms that were part of the mechanism also benefit from the data provided by the new associate; these benefits do not accrue to the new associate. Hence, the benefits that all participants receive as a group are added to those that accrue to the company that joins. Given that the new potential associate does not perceive these externalities, it receives a lesser incentive to join than would be socially optimal.

These problems explain why in many countries sharing mechanisms do not emerge spontaneously. They also explain why, even when there is a sharing mechanism, not all lenders join. In this context, based on a model with voluntary participation mechanisms, Klein (1992) finds that there are 3 types of equilibria in the sharing information market. In the least desirable equilibrium, nobody joins, while in the most desirable one, all firms join. There is a multiplicity of intermediate equilibria where some lenders, but not all, participate in the mechanism. Klein analyzes the decision to join the bureau assuming that participants only pay a subscription fee to enter the mechanism. As would be expected, the wider the database (the more associates) the stronger the debtors' incentives to pay back.¹³ Hence, a wider database generates greater benefits to potential participants, for a given entry fee. When the expected participation benefit is greater than the entry fee, the lender subscribes to the bureau; if that is not the case, the lender does not enter. In this model bureau membership is not public information; hence, some lenders decide not to subscribe but rather free ride on the reputation of bureau's real associates. This means that the prevalent equilibrium will not have full participation of lenders. A different approach is taken by Pagano and Jappelli (1993); they consider that once a big enough portion of lenders share information, all the other credit grantors have incentives to participate, so that all lenders end up joining the sharing mechanism.

1.2 About the information that is shared

The information that is shared could be negative (overdue payments, defaults and frauds) or it could also include positive information (good payment behavior in the past, current debt that is being paid and payment patterns). The type of information shared has effects both on borrowers and lenders behavior. Lenders are more willing to share negative information than positive information. Sharing negative information helps them identify high-risk borrowers. However, sharing positive information may affect the rents that lenders can extract from the good clients that they have already identified.¹⁴ Consequently, some countries' financial authorities, like Australia, have restricted the interchange to negative information in order to promote sharing.

In terms of borrowers incentives, sharing both negative and positive information gives them a further incentive to pay their debts and, thereby, obtain better credit conditions in the future. However, Padilla and Pagano (1999) claim that sharing information about debtors' characteristics (i.e., positive information) may have an undesirable effect on borrowers behavior. Revealing just negative information imposes discipline on debtors; in this case, information on

¹³ Klein calls this incentive the "consumers virtue". The bigger the data base, the greater the consumer virtue.

¹⁴ Despite this idea, the "credit relationship" approach claims that as a lending transaction develops, the loaner learns more information about the borrower than the simple record of payments and debts. Hence, even if the lenders provide positive information to the credit bureau, they still keep an advantage in terms of information on those clients they have dealt with.

the payments missed is the only signal of bad risks that lenders receive. When positive information is shared, however, the lending decision is based not just in the lack of payment information, but also on other elements; hence, the incentives that borrowers receive to perform well deteriorate, since they know that the lender incorporates other pieces of information in its credit analysis.

1.3 On the market structure, concentration and competition

The references that we have discussed so far present the information mechanism and the decision to subscribe to it assuming that there is only one bureau. The market structure at the level of the bureaus has received little attention in the literature; in fact, the credit bureau has never been modeled as a firm with a defined goal. It has always been presented as a black box where lenders send in primary information and obtain consolidated reports. On this issue, Pagano and Jappelli (1993) state that once some banks are sharing information, sharing has increasing returns to scale. Hence the bureau would be a natural monopoly.¹⁵ However, in many countries there is more than one mechanism to share information.

It is clear that, if there were several credit bureaus with similar reports (i.e. homogeneous products) and the database of one of them contained the databases of the others, that bureau would be more attractive for all potential subscribers. As its database grows larger this effect would become greater finishing up with a single bureau. The benefits from concentration appear to be even stronger because the greater the number of subscribers to the same bureau, the greater the benefits from the marginal associate. Hence, strictly from the database perspective, concentration in the database generates benefits for potential subscribers and for the associates.¹⁶ Additionally, the recent technological change that has allowed handling big databases with relatively small computational equipments has pushed concentration even further.

In spite of these network (database) externalities, the industry may not be a natural monopoly for a number of reasons. In the first place, there does not seem to be a cost argument to justify a monopoly; in particular, the fixed cost in terms of computational capacity is low to become a barrier to entry.¹⁷ In the second place, reports from different bureaus are clearly differentiated products; such differentiation may occur not only because they have a different database but also because they process and present their information in a distinct format. Also, from the perspective of the subscribers, once they have associated with one bureau, associating with a second or a third has practically a zero marginal cost.¹⁸ The latter would depend on the bureaus pricing schemes.

A third argument against monopoly refers to the way the bureau's database relates with the processing of the information contained in it. The vertical structure of a typical bureau resembles that of other network industries like electricity or telecommunications; in these industries, the transmission network is considered a natural monopoly, but the other parts of the services are

¹⁵ Pagano and Jappelli, 1993, p.1694.

¹⁶ The international evidence that we present in the following section shows a trend toward industry concentration.

¹⁷ Security costs may be high but not enough to become a barrier to entry.

¹⁸ This is so as long as lenders use the same format to provide information to all bureaus they associate with.

not. Similarly, in the credit bureau industry, there are benefits generated by database concentration. However, they do not extend to the processing of information and the provision of reports.

From our perspective, competition at the bureau level is desirable to the extent that it results in greater coverage and higher quality reports. As with any other monopoly, a single credit bureau may not have incentives to increase the quality of its reports, extend the coverage, or charge fair prices. Competition is the best antidote for these problems. Such competition would be feasible if there were several bureaus with different databases, but comparable in size. Even if databases were very similar, there could be competition if the reports were differentiated in their presentation. Furthermore, if there was a concentrated database managed by a neutral agent to which many bureaus (or information processors) had access competition could be kept in the industry. This issue, however, still requires substantial research.

1.4 Credit bureaus and public registries of credit information (PRCIs)

The international experience on the emergence of information sharing mechanisms has been diverse. In many countries, financial authorities have formed a PRCI, which has the same basic functions as credit bureaus. In these cases, financial institutions are compelled to participate in the mechanism, and the mechanism is usually not open for other type of lenders. The PRCI frequently poses a limited scope since they collect data only about loans amounts that are greater than a certain limit.¹⁹ These excludes from the sharing mechanism information about many loans, in particular, about most credit to consumption.

Although it is seems sensible that PRCIs are introduced to the market to solve the start up problem, recent international experience shows several cases in which there is private entry to markets where there is an RPIC; there are also cases in which an RPIC enters a market where private providers operate (Miller, 2000). The relationship between RPIC and private bureaus raises two related questions. The first is about the temporary character of the PRCI and the second is about the interaction between private credit bureaus and PRCI. Jappelli and Pagano (1999) state that once the start up problem is solved by the PRCI, the forced participation by financial lenders generates more credit depth in the economy. As the credit market develops, the PRCI may not meet the need for expansion of informational coverage, and this may cause private credit bureaus to enter. In principle, private credit bureaus develop in those niches that are not covered by the PRCI. However, at some point the credit bureaus are ready to provide the PRCI services; hence the PRCI would not be a permanent institution. The former argument would imply that PRCIs and credit bureaus are substitutes (Jappelli and Pagano, 1999); consequently, once private bureaus are developed, PRCIs are not supposed to compete with them.

However Miller (2000) presents solid empirical evidence that public registries are not started in response to the absence of a private bureau. Henceforth, this evidence suggests that public registries and private bureaus may be complements rather than substitute. Even in this trend of thought, competition between these institutions would not occur because of the differences between the public and private registries.

¹⁹ The Mexican PRCI only gathers information of loans that are greater than some 20,000 dollars; most of these loans are provided to firms.

2. International Experience

This section presents the credit information sharing experience of 10 countries, all of which have some established mechanism, including Mexico. From this comparison we observe that there seems to be a correspondence between a greater depth of the information markets and a greater relevance of credit. We also observe a marked trend towards concentration in the credit information market. Finally, as pointed out by Miller (2000), several of the countries included in our sample that had a PRCI also counted with private credit bureaus.

Of the countries included in this analysis, 5 have had private credit bureaus for decades. In these countries, the origin of the bureau is spontaneous and participation is voluntary.²⁰ We consider 5 other countries that have a PRCI and, in some cases, have had it for several decades. In Table 1, we present indicators of the depth of the credit market and the credit information market in the countries analyzed. We use the ratio of banking credit to the private sector to GDP as an indicator of credit depth and the number of credit reports per capita as an indicator of information depth. We also present the basic features of the corresponding information sharing institutions.

In general, in the cases where the information systems had a spontaneous origin, they started as regional and specialized institutions that shared commercial information. Sharing institutions in the US, UK, Australia, Japan and Argentina emerged spontaneously and can be traced back at least 4 decades. All these countries, except for Argentina, have a high credit depth and a high ratio of reports per capita. The group of countries that started sharing information through a PRCI, like Mexico, Spain, France, and Italy, have a significantly lower depth both in credit (except Spain) and in the information indicator.

Table 1 we can observe that the US is the country with a longer information sharing tradition.²¹ Madison (1993) indicates that the first bureaus in the US were Dunn, founded in 1841, and Bradstreet, founded in 1847; they started as agencies to investigate commercial credit-worthiness. Although the original institutions were regional, Madison indicates that their purpose was to cover the whole nation. As the credit market developed the number of bureaus multiplied. By 1955 there were around 1700 credit bureaus in the US, most of them regional and specialized (Pagano and Jappelli, 1993). As in other countries, there has been a recent trend towards concentration; currently there are 3 national and universal bureaus²² and, by 1999, there were 450 specialized bureaus (ACB, homepage, 1999). It is worth mentioning that many specialized bureaus feed the national institutions with information (Klein, 1993). Therefore, at the national

²⁰ Jappelli and Pagano (1999) show that the countries that have any mechanism to share information –whether it is private bureau or a PRCI- have at least twice as much banking credit than those that do not have any mechanism. They also find that information sharing is closely correlated with the reduction of overdue payment rates. Nevertheless, they suggest that those countries that have better mechanism to share information, also have better legal systems and other institutional arrangements; hence, it is not clear that the higher credit and the lower overdue payments is due to the sharing of information.

²¹ Following the Associated Credit Bureaus of the US, the first sharing information mechanism was organized by the tailors of London in 1802 to avoid that the clients that did not pay to one of them, could do the same thing to any other tailor.

²² Trans Union, Experian (used to be TRW) and Equifax.

Table 1. Sharing Information Mechanisms: International Comparison

2	3	Origin	Type of Information	Market Structure	Consumer Credit as % of Private Consumption	Annual number of per capita credit reports	Credit to Private Sector as % of GDP ^L
	Cou ntry						
	United States	Spontaneous, since 1841 ^A .	Negative and positive	3 national bureaus; around 450 regional bureaus.	8.76 ^B	1.91 ^C	142.5
	United Kingdom	Spontaneous, since 1960.	Negative and positive	Two major agencies at the national level.	16.90 ^D	1.05 ^E	135.1
	Japan	Spontaneous, since 1960.	Specialized bureaus process (+) and (-) information, and share only (-) information.	There are three specialized agencies that share information among them, acting as one agency. There is also an independent universal bureau.	16.5 ^E	2.19 ^G	191.1
	Australia	Spontaneous, since 1930.	Negative	Two major agencies at national level and one regional agency in Tasmania.	17.50 ^H	0.69 ^I	90.3
	Argentina	Spontaneous at a regional level, since 1930. Public Registry since 1996.	Negative and positive	Oligopoly at national level, although there are more than 110 regional agencies.	7.49 ^J	0.04 ^K	23.8
	Spain	Public Registry, since 1983.	Negative	One dominant bureau, besides the public registry.	5.23 ^L	0.02 ^M	92.5*
	Italy	Public Registry, since 1964.	Negative	One dominant bureau, besides the public registry.	2.7 ^N	0.07 ^O	59.2*
	France	Public Registry, since 1990.	Negative	There is only the Public Register.	7.33 ^P	0.09 ^Q	82.9**
	Mexico	Public Registry, had its beginnings since 1930, but the current system started in 1964.	Negative and positive	One dominant bureau, besides the public registry; the latter is almost out of the market.	1.37 ^R	0.06 ^S	15.8
	Chile	Public Registry, since 1975.	Negative and positive	Two major agencies for business information, one for consumer information, besides the public registry	10.04 ^T	0.49 ^U	68.0

Sources: Updating and extension of the table in Pagano and Jappelli, 1993, page 1708.

3.1 Data for 2000 *data for 1998, **data for 1997.

3.2 Madisson (1973).

^B According to the FRB, consumer credit from commercial banks in 1998 was about 508.9 billions of dollars, http://www.bog.frb.fed.us/releases/g19/hist/cc_hist_cb.html, whereas according to IFS private consumption was about 5,807.9 billions of dollars. It is important to mention that the consumer credit from the whole financial system was 1300.5 miles billions of dollars for that year (22.4% of private consumption).

^C According to a note of March, 1998, from the ACB (Associated Credit Bureaus), "ACB Facts in Response to US PIRG Proposed Announcements" more than 2 million of reports were furnished for each business day in the United States <http://www.acb-credit.com>.

^D The National Statistics Office from The UK reported, according to the Central Bank, that private banks gave credit for consumption purposes for 87.4 billions of pounds in 1997, <http://www.statistics.gov.uk/statbase/xdataset.asp>. According to IFS, private consumption for that year was 517 billions of pounds.

^E Japelli and Pagano (1999), Table 1. This datum refers to the number of reports per capita in 1989.

^E Japelli and Pagano (1993).

^G According to a note from the ACB, "Consumer Credit Reporting Agencies in Japan" approximately 27.91 millions of reports were furnished in 1998, <http://acb.cyberserv.com/qs/Ospage.cfm?pageid=22>.

^H In the Bulletin of the Reserve Bank of Australia (June, 1999), in the article "Consumer Credit and Household Finances" it is reported that the consumer credit for 1998 was 60 billions of Australian dollars; http://www.rba.gov.au/bulletin/bu_ind.html. According to IFS, in 1998 private consumption was 342.77 billions of Australian dollars.

^I According to CRL (Credit Reference Limited), a private Reporting Agency, there are 50,000 consults processing each day, though this agency represents 80% of the Australian market, <http://www.credref.com.au>.

^J In the Statistic Bulletin of the Central Bank of Argentina, was reported that in 1998 the credit that private banks granted to households was about 15,796 millions of Argentine pesos. According to IFS, private consumption represented 210,857 millions of Argentine pesos.

^K Japelli and Pagano (1999), Table 1. This datum refers to the number of reports per capita in 1997.

^L The Central Bank of Spain reported that consumer credit was 2,672.8 billions of pesetas in 1998, <http://www.dbe.es/infoesti/ie0810.txt>. Whereas, according to IFS, private consumption was 51,115.6 billions of pesetas.

^M Japelli and Pagano (1999), Table 2, reports furnished by the public register during 1997, were approximately 758,000. To this number it is necessary to add those furnished by private agencies.

^N Japelli and Pagano (1993).

^O Japelli and Pagano (1999), Table 2, reports furnished by the public register during 1994, were approximately 1.4 millions. Whereas according to Table 1, reports furnished by private agencies during 1996, were close to 2.6 millions.

^P According to the 1998 Annual Report of the Central Bank of France, consumer credit that private banks granted was about 341.7 billions of francs. According to IFS, private consumption for that year was 4,658.7 billions of francs.

^Q Japelli and Pagano (1999), Table 2, reports furnished by the public register during 1990, were approximately 5.4 millions.

^R As reported in the Economic Indicators of Banco de Mexico, consumer credit in 1998, only represented 35,296 millions of pesos. According to IFS, in 1998 private consumption was 2,585,196.25 millions of pesos.

^S It is estimated that in 1997 Credit Bureau furnished about 5.6 millions of reports, and those furnished by the public register were 180,000.

^T As a study conducted by the Central Bank of Chile "Evolución de la Banca en el Segundo Trimestre de 1999" showed, consumer credit was 2,241.9 billions of Chilean pesos, and private consumption was 22,311.7 billions of Chilean pesos.

^U Japelli and Pagano (1999), Table 1. This datum refers to the number of reports per capita in 1997. The public register transfers the information it process to a private agency.

level, the market structure is an oligopoly. The US is probably the country with the most intensive use of credit information; credit bureaus provide more than 2 million reports per day.²³

In the UK and Australia credit has considerable depth as well; both countries have a long history of private credit bureaus and the number of reports per capita is high. In the Australian case, however, the law only allows for negative information exchange. Both countries also have registered the concentration trend that we mentioned above; while in Australia 30 years ago there were 30 credit bureaus (Pagano and Jappelli, 1993), now there are only two nationals and one regional bureau.²⁴ In the UK there were 4 bureaus at the beginning of the nineties (Pagano and Jappelli, 1993) and there are only two now.

Japan's credit and information market are also deep and its bureaus originated spontaneously several decades ago. Nevertheless, the Japanese information market is very peculiar. In the seventies, three specialized information agencies were formed, each of them using positive and negative information. The first agency collects information from banks; the second gathers consumers' information and the third specializes in information from commercial firms. Each generator of information provides data to only one of these agencies. Recently, these agencies started sharing their databases through a common network. There is an additional universal and national bureau, but the market is dominated by the 3 specialized agencies.

Among the countries where the bureaus had a spontaneous origin, the Argentinean case is very peculiar. Around 40 years ago, regional non-profit agencies that shared commercial information emerged. These agencies²⁵ are organized around the local chambers of commerce. Currently there are more than 110 of these agencies, and besides commercial information they collect information from local banks. In addition to these regional institutions, private bureaus with national scope have existed for several decades. Despite the development of these institutions, the credit and informational depth of Argentina are both relatively low. Hence, in 1991 the Argentinean Central Bank launched a service to provide information about big debtors.²⁶ The service was expanded with the introduction of the "Central de Deudores del Sistema Financiero", which operates today. The database includes information from all financial institutions engaged in lending, as well as from non-financial institutions that issue credit cards, for all debts exceeding \$50 US. This system has consolidated an unusually wide database for a PRCI. Although entry of a public institution into an area where there were already private providers may be questionable, the Argentinean government has argued that the public registry does not engage in elaborate risk analysis, so it is not crowding the private information providers out. Besides, the private sector can obtain information from other sources (BCRA, 1997). In the rest of the countries presented in the table, financial authorities started a PRCI. In most of these countries, the public registry started relatively recently, except in Mexico and Italy. It is interesting to notice that these countries tend to have lower information depth.

²³ Reports in the US may include job and personal information.

²⁴ One of the national bureaus, CRL, controls almost all the personal reports while the other one, Dunn and Bradstreet controls the firms reports.

²⁵ They are called Institutos de Informaciones Crediticias.

²⁶ Miller (2000) indicates that Chile is another case where the PRCI was launched after private bureaus were already established.

Our limited sample seems to suggest that the countries that share information through private bureaus have greater credit depth than those that share information through a PRCI. However, in a cross section study for 169 countries, Pagano and Jappelli (1999) do not find evidence to support that claim. Additionally, as it is shown by Miller (2000), in our sample we see that private bureaus do coexist with PRCIs.

3. The Mexican Experience

In this section we present the Mexican experience in information sharing. In the first part we describe the evolution of the public registry that Banco de Mexico manages. Then we present the regulation that has been established in this area, the private entry that has occurred and the current market structure. Throughout this section, we try to evaluate the use and quality of information emphasizing the situation before and during the banking crisis and the use and quality of information that emerged from the adoption of the current regulation. We also present evidence of the effect that the use of information has had on firms' access to banks' loans.

3.1 The Public Registry of Credit Information: Senicreb

In the nineteen thirties the Association of Mexican Bankers (AMB), worried about the credit history of its banks' clients, created an office that received information from the banks, consolidated the data of specific clients and provided information on the debtors back to the banks. This office did not function effectively, so, given the need that Banco de Mexico had to generate statistics, the ABM transfer it to Banco de Mexico in 1933. This is the antecedent of Senicreb, the formal PRCI that was founded in 1964, which still operates today. As it occurs with many public registries (Miller, 2000) Senicreb's main job is the generation of statistics for the regulation of the financial system. The provision of credit history reports has always been a secondary function.

Senicreb gathers information only from commercial banks, development banks and other financial institutions, located throughout the country. Other providers of credit that are not part of the financial system, like department stores, are not part of this mechanism. Financial institutions are compelled to provide their information to Banco de Mexico.²⁷ The information collected is about individuals and firms that have received credits of more than 200,000 pesos²⁸, the balances of such credits and the characteristics of the clients' debt. This means that Senicreb gathers negative and positive information. All information about debts that are below the threshold is received in aggregated form, not by individual debtor. Senicreb signs contract with its associates committing to provide the information service in exchange for their databases. It is important to notice that despite the fact that financial institutions are forced to provide their raw information to Senicreb, they are not forced to request its reports.²⁹

²⁷ See Ley General de Instituciones de Crédito y Organizaciones Auxiliares, Art.14.

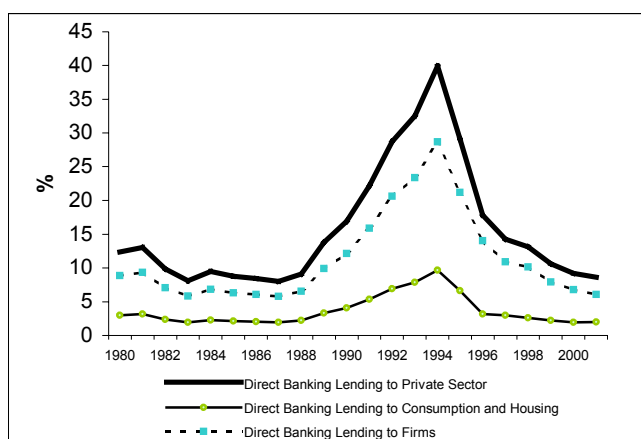
²⁸ Around 21,000 dollars.

²⁹ As we will see in the next section, after the entry of private credit information societies, the Mexican regulation established in 1998 the obligation to get a credit report before a loan was granted. This obligation only applies to financial institutions. The regulation, however, does not indicate which credit bureau or PRCI should provide the report. This regulation has been made more flexible, recently.

Given its purpose and the information it gathers, Senicreb, has important limitations. Its database is constrained given that it only covers relatively large loans provided exclusively by financial institutions. Since providing reports is not its main function, it does not have incentives to adopt technology or to invest in this area. Finally, since participation in the system is compulsory, some institutions may have had bad incentives to provide information properly and on time.

The role of Senicreb as a provider of information is better understood in the context in which it developed. Mexican banks were privatized from 1989 to 1991; up until then, banks' credit decisions were so constrained by regulation that the usefulness of credit information was limited. The regulation at the time established a high reserve requirement³⁰ and forced banks to finance certain sectors ("directed credit"). Hence, most banks' resources were used to finance the government and to support particular industries. Since the resources that banks had to invest freely were limited, information was not that necessary. By the same token, there was a poor generation of new data. In these circumstances, Senicreb's information services were probably enough to satisfy the banks' needs. The early nineties bank's privatization was part of a general process of financial liberalization that changed matters significantly. The government reduced its deficit and with that its need to finance it. The reserve requirement and directed credit were removed, while interest rates were left free to be set by the market.³¹ These measures not only gave banks freedom to provide loans to a wider variety of clients, but also set a competitive framework for banking. These measures made credit information more relevant as they had a positive effect on lending.

Graph 1. Direct Lending to Private Sector (% of GDP)



Graph 1 contains data on commercial banks' *direct credit* to the private sector as a proportion of GDP. Direct credit excludes resources lent as part of renegotiation programs to support debtors in problems; it is a closer concept to new credit, although it is not exactly that. The graph shows that, as a result of the reforms, banks' credit to the private sector increased from less than 10% of the GDP in 1998, to more than 40% in 1994. It is worth pointing out that even at the peak of the

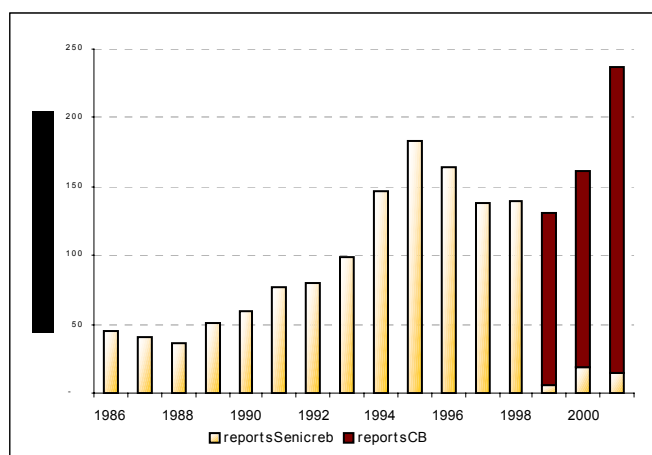
³⁰ This was called "encaje legal".

³¹ It was first substituted for a liquidity coefficient (May/1989), and eliminated later on (Sep/1991) and directed credit was removed (May/1989).

credit expansion, credit to the private sector in Mexico was very low for international standards (see Table 1). The graph also shows direct credit for private firms and for consumption plus housing. It is clear that the biggest part of the credit expansion was directed towards firms. After the crisis, credit to all sectors plummeted.

Given the size and the speed of the credit expansion, it is hard to believe that Senicreb's information infrastructure could support it. It is important to investigate the role of information in the banking crisis. For that purpose, we present several indicators that provide an idea not just about the use of existing information, but also about its quality. For this analysis, we assume that all Senicreb's database and consults are about loans to firms, and do not include information on loans to people. We base that assumption in the high threshold of the minimum loan amount that Senicreb's has set to register individual loans. We also present these indicators for the period when a private credit bureau had entered Senicreb's segment of the market, after 1998.

Graph 2. Reports about firms (includes Senicreb and CB)



Graph 2 shows the evolution of the number of reports about firms provided by the market. From 1986 to 1998, Senicreb was the only firm in the market; we have assumed that all Senicreb's reports were about loans to firms. From 1999 to 2001 the data includes reports provided by both Senicreb and a private bureau –the Credit Bureau. We only include the bureau's reports about firm's.³² The graph shows a significant increase in the number of reports during the credit expansion period. The number of yearly consultations rose from around 50,000 in 1989 to 180,000 in 1995. However, this does not mean that the increase in the number of reports was enough to satisfy the need of information. In the years that followed and up to 1998, the number of Senicreb's reports remained relatively high given the sharp credit contraction suffered by the Mexican economy.³³ From 1999 on, Senicreb's demand for reports fell dramatically while the number of reports of the Credit Bureau increased. We discuss this phenomenon in detail later on.

A better indicator of the use of information than just the number of reports is the number of reports per amount lent. We keep here the assumption that all Senicreb's reports were about

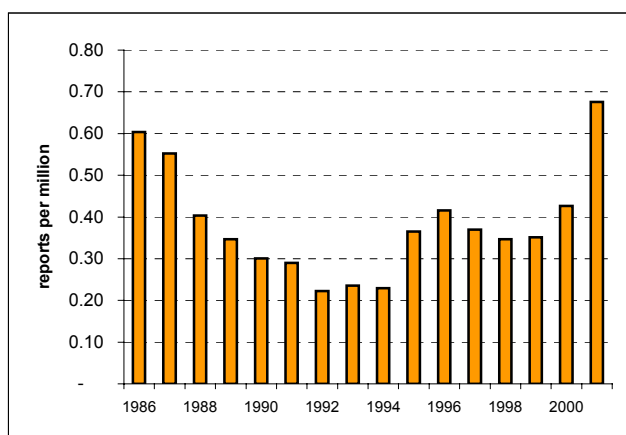
³² The CB provides information about both, people and firms.

³³ The data for 1998 may be underestimated because we did not include the number of reports that the CB provided. The CB started working close to the end of the year so this exclusion seems inconsequential.

firms. Given that only financial lenders receive reports from Senicreb, Graph 3 presents the number of reports per million pesos lent to firms by Mexican commercial banks (expressed in constant pesos of 1994). Again, from 1999 on, the graph includes data about other information societies and about other financial sources (banking and non-banking). Assuming that the average size of loans did not change, a jump in the number of reports per amount lent would mean that the loans were provided using more information. As we can see, during the credit expansion the number of reports per million pesos fell, reaching a minimum in 1992 to 1994 when less than 0.25 reports were requested per million pesos lent to firms. This implies that during the credit expansion period, the credit to firms grew faster than the use of information about firms. That is, banks may have provided loans without even consulting Senicreb. This may have played a role in the banking crisis that followed the credit boom.

Graph 3 also shows that from 1995 to 1998, the number of reports per million lent remained high due to the credit contraction. However, from 1999 on, the number of reports per million increased consistently. In particular, in 2001 the number of reports per million reached a level that it had never had before. Again, this increase is related to the entry of the Credit Bureau.

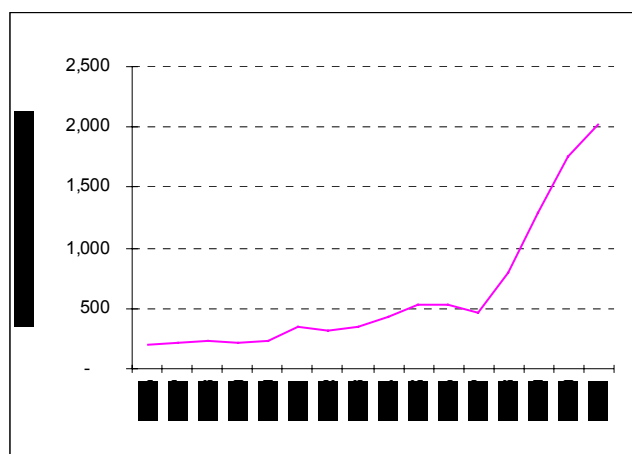
Graph 3. Number of reports per million of pesos lent to firms (includes Senicreb and CB)



The former were merely quantitative indicators of information use; however, they say little about reports quality. An indicator of the latter is the size of the database used to elaborate them. The larger the number of registries in the database, the better the quality of the information is. Keeping our assumption that Senicreb's information is only about firms, Graph 4 presents the number of registries that composed the database used to provide reports about firms. From 1986 to 1997 the registries were those included in Senicreb's database. From 1998 on, the registries are contained in the database of the firm's segment of the Credit Bureau. The database of the private bureau comprehends that of Senicreb because all financial institutions that report to Senicreb are associated to the CB. As we can see in the graph, the number of registries increased very slowly before and even during the credit expansion. That is, the fast increase in credit did not result in an equally dynamic database. This may indicate, that banks provided more credit mainly to firms they already knew. Hence, the quality of the reports during the credit expansion did not increase significantly. The real boost in the number of registries occurred after the CB entered the market. This should not be surprising since on the one hand, the CB gathers

information from many credit providers, not just financial institutions³⁴; on the other, all the information generated in the credit expansion was now included in banks databases. The increase in the size of the database of firms' loans is a good indication that the quality of the information reported has improved after 1998.³⁵

Graph 4. Database size about firms (Senicreb up to 1997; CB from 1998 on)



3.2 The regulation

The expansion of credit to many areas not covered by Senicreb in the early nineties and the typical problems faced by PRCIs, made financial authorities acknowledge the need of a better information infrastructure. Hence, in 1993 financial regulators began to set up a framework to promote entry to the market of private institutions, named Credit Information Societies (CIS).³⁶ However, the main elements of the regulation were not in place until 1998, several years after the crisis. In fact, the regulation of the sector has kept on changing suffering an important overhaul as recently as December of 2001. In this last reform, the regulation of the sector went from a single article of the “Law to Regulate Financial Groups” to a standing alone “Law to Regulate SICs”. This law is complemented by a set of practical rules.³⁷ The regulation deals with three main issues. The first is the protection of the databases of the institutions associated with any CIS. The second is the protection of the privacy of investigated subjects. These issues were taken for granted when the manager of the data was a public institution like Senicreb. The third element refers to the competition and interaction among CIS.

The new regulation states that finance ministry (SHCP) is in charge of authorizing the firms that enter the market; Banco de México sets up the main regulatory rules while the Banking

³⁴ Some of the more important sector represented among the CB’s associates are: 115 car loan providers (other than banks), 37 commercial stores, 37 mortgage providers, 32 banks and 32 credit unions; there are more non-bank users.

³⁵ For the case of loans to individuals, an even more striking improvement can be seen.

³⁶ From now on we refer to the private credit bureaus indistinctly by the acronym CIS or just by bureau.

³⁷ The new “*Rules to which the CIS and its users must be subject*” (Reglas a las que deberán sujetarán las operaciones y actividades de las SICy sus usuarios), were published in March of 2002. There was an original set of Rules that was published on the 15 of February, 1995, which was abandoned with the adoption of the new rules.

Commission (CNBV) supervises the CIS' market. The regulation states that to obtain an authorization to enter the CIS market, the applicant must prove that it counts with the technical qualifications to provide a good service; it should also demonstrate that it counts with high security standards for information handling and that its managers are honorable people.³⁸ These restrictions attempt to solve the start-up problem by providing confidence to the potential associates of a CIS. The law also establishes the reciprocity principle (Article 26), by means of which a CIS could refuse to provide reports to firms that, being information generators, are not associated with that particular CIS. The new law is very explicit in the protection of individuals' rights. Article 28 of the law indicates that a CIS can only provide a report when the investigated individual has given written authorization.³⁹ The law sets precise mechanisms for individuals to get their own information and to perform corrections in their records when needed. This is relevant because in the previous regulation, individuals did not have clear protection mechanisms. Additionally, the law establishes time limits for negative information to be held by bureaus (article 23).⁴⁰ The new law also establishes penalties to those CIS that violate individuals' privacy rights.

Maybe the most interesting aspect of the Mexican regulation refers to the interaction between CIS. The regulation attempts to impede exclusivity deals between a given CIS and its associates and designs mechanisms to promote entry and competition. Article 35 states that "a CIS cannot impede its associates to provide or to get information from other societies". However, as it has occurred, exclusivity deals may arise on the lenders side: lenders may decide on their own to provide their databases to just one CIS. This is not forbidden by the law. If all associates to different CIS were to act that way, then CIS databases would be fragmented, reducing thereby the benefits of information sharing.

Exclusivity deals have occurred in Mexico between the Credit Bureau and the commercial banks that own it. To deal with this problem, the regulation has designed two mechanisms. The first one indicates that CIS should share their databases with other CIS that request it (Article 36). The law states that they would only share "primary data bases", which is composed by defaults, frauds and information about firms with sales or income above 53 million pesos. The requesting CIS must make a certain payment for the database, which, if the firms do not reach an agreement, would be set by Banco de Mexico. Database interchange was part of the older regulation. Experience has proved that such interchange is hard to operate and to monitor.

The second mechanism that the law designed to deal with exclusivity agreements has not been tested yet. Rule 13 of the *Rules to which the CIS and its users must be subject*, indicates that "All information that financial entities provide to a SIC, should be sent simultaneously to all other SICs, using the same format and the same detail. Financial entities cannot set any charges for sending this information to the SICs". It is relevant to notice that it only refers to financial entities, which are banks, credit unions and the like, as opposed to commercial firms that provide credit. This rule may be able to solve the exclusivity deals problems.

³⁸ Before the new law passed, entry was conditioned on the owners of the firm having strong "moral values". Another barrier to entry that was part of the old regulation was that foreign participation in any CIS could not represent more than 49% of the social capital of the CIS. The new law eliminated that rule.

³⁹ The law sets some exceptions to this requirement.

⁴⁰ Vercamen (1995) analyzes the diminishing reputation effects from information holding.

The final feature of the regulation is also peculiar to the Mexican case. In order to reduce the risk in the financial system, authorities established that all banks and other credit institutions (not commercial) must obtain a report from any authorized CIS before granting a loan to an applicant.⁴¹ If they do not do so, they must back up that loan at the highest provisioning level. This regulation has the virtue of making credit institutions use the available information and, with that, expanding the databases. However, it has two problems. The first is that when there is only one CIS in the market, as is the case in Mexico, the regulation provides a captive set of clients to such bureau. That is, the regulation forces financial institutions to buy the monopoly product. The second problem is similar to the difficulties that all PRCI face: participation ought to be voluntary, because the service should be useful.

3.3 The current situation

As the first regulation on this area was issued, several firms entered the credit information market.⁴² In 1994 a group from Guadalajara and the American bureau TRW International⁴³ formed the firm Comcred that would become a CIS named Datacredit. At the same time, the Association of Mexican Bankers (AMB) announced that the commercial banks that form the AMB would create a CIS using the database already gathered by Datum.⁴⁴ For this project, the banks would associate with Trans Union of Mexico for the sharing of individuals' credit information and with Dunn & Bradstreet for the sharing of firms' credit information; the name of this firm with two branches would be the Credit Bureau (CB).⁴⁵ Both CIS were authorized in July and August of 1995, respectively.⁴⁶ Yet a third firm, Equifax of Mexico, was authorized to provide credit information services in October of the same year.

The fact that all commercial banks formed a CIS affected the market structure because exclusivity deals were established between them. Comcred feared that this would occur, even before the CIS were authorized to enter the market. Hence, in February of 1994, Comcred filed a suit before the Mexican Federal Competition Commission (MFCC) against the AMB and a group of banks for "monopoly practices". Comcred claimed that the AMB had the "intention" of not allowing its associates to share information with other CIS. However, the MFCC rejected the

⁴¹ See CNBV circulars 1413 (September, 30th, 1998), 1476 (August, 16th, 2000) and 1503 (August, 14th, 2001) for the original decision and further modifications.

⁴² There was a previous attempt by the Mexican commercial banks to share credit card information. This attempt went through several stages, starting in 1963 and ending in 1993 without success, partially due to the fact that banks were not committed to the project, so that it always faced participation and technological limitations. The last name of the firm formed to share credit card information was Datum.

⁴³ Its name has changed to Experian.

⁴⁴ As it turned out, this database was worth very little for the CIS that the banks formed.

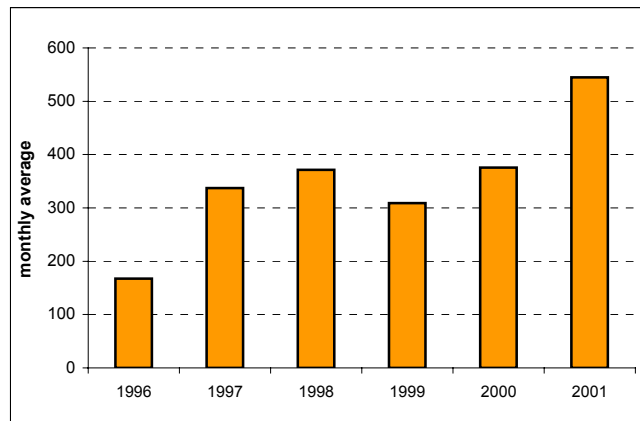
⁴⁵ In terms of the ownership structure of the CB, in the branch of personal information, Trans Union owned 25% of the shares, Fair Isaac (an American firm specialized in credit scoring technologies) 5% and the rest was divided among the commercial banks. The shares were split in proportion to their contribution to the database of the CIS. However, no bank would be allowed to own more than 15% of the shares, independently of its contribution to the database. In the branch of firms, Dunn & Bradstreet owned 25% of the shares, Trans Union 5% and the rest was split between the banks. Commercial banks split the CB's ownership as follows: Bancomer, Banamex and Serfin had 15% each, Inverlat 6.6%, Confia 2.4%, Banorte 1.45 and the rest is split between approximately 30 other banks.

⁴⁶ Although the section of information about individuals in the CB started in 1996, the section on firms' information did not start working until 1998.

suit because it could not be followed based on “intentions” that had not materialized; to be prosecuted, monopoly action should be “imminent, not a future and uncertain act”. Indeed, as Comcred feared, banks decided not to provide information directly to any other CIS but the one that they own.

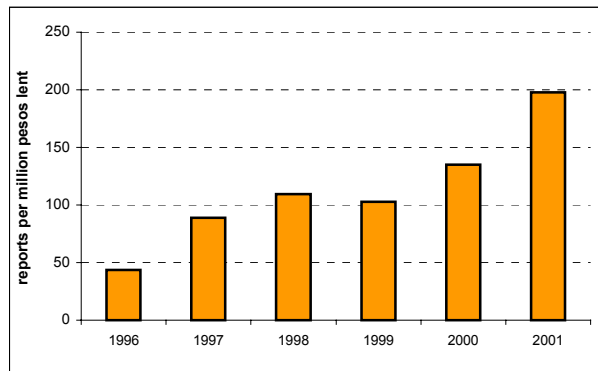
In the years in which it has functioned, the CB has registered a fast increase in its demand. As it is shown in Graph 1, in the branch of firms’ reports, CB’s demand went from a monthly average of 5,284 reports in 1998 to 18,527 in 2001; that represents an increase of 78%. In the branch of individuals’ information, the number of reports has risen from a monthly average of 167,690 in 1996 to 545,906 in 2001; that is an increase of more than 224% (see Graph 5). This is particularly noticeable because it has happened at a time when banks’ credit provision has shrunk (see Graph 1). Additionally, since the CB started operations, the number of reports per million peso lent to people, has increased considerably (see Graph 6).

Graph 5. CB: Number of Reports about People (monthly average)



As opposed to the growth of the CB, both its competitors went out of business. Datacredit closed in 1997 while Equifax officially shut down in 2000. The exit of these firms from the market seems to be related to several factors. In the first place, not having access to the database directly from the banks affected not just the quality of their reports, but also, and maybe more importantly, their demand. In terms of the database, by the time the rules to interchange databases between CIS were defined, Datacredit was already out of the market; Equifax did exchange databases with the CB, but it did not happen smoothly. Equifax managers complained that the interchange had taken too long, that when it finally happened, they only received partial information from the CB and that the information was not provided in a manageable format. Even if the interchange of information had occurred smoothly and on time, it only covers negative information, so the quality of the competitors’ reports would not have matched that of the CB. By the same token, the demand of reports from Senicreb has fallen dramatically as shown in Graph 2 and it has completely been canalized to the CB. Senicreb only remains active because the provision of reports is not its main function.

Graph 6. CB: Number of Reports per Million pesos Lent to People



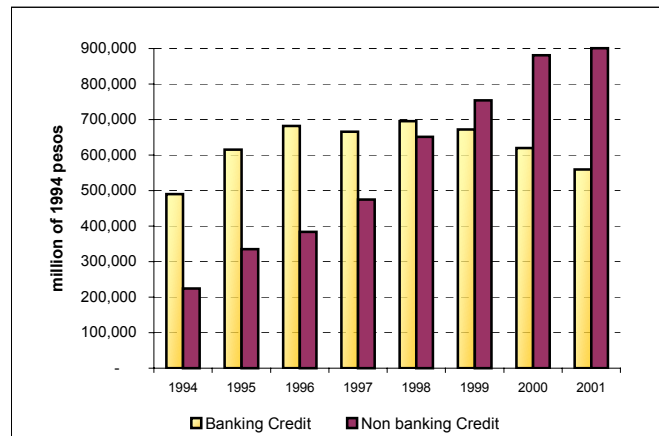
In the current market structure, the CB is a monopoly in the personal information area and it is very close to being one in the firms segment. Given this situation, two questions emerge. The first one is whether the change from a PRCI to a private monopoly has meant an improvement in the provision of information services in the system as a whole. The second question is whether the virtual vertical integration of the set of commercial banks and the CB explains fully the monopolization of the market. The answer to these questions represents an evaluation of the regulation.

Graph 3 and Graph 4 show that the operation of the CB has meant a significant improvement in information's quality of for the reports about firms. Also, Graph 2 indicates that there has been an important increase in the use of reports since the firms' branch of the CB started operating. Such increase in the number of firms' reports relates mainly to 2 factors. First, the CB is filling the information vacuum existent in the segments not covered by the PRCI, like the non-banking demand for information. This is particularly true because non-bank lending has been rapidly growing as it is shown in Graph 7.⁴⁷ Therefore, non-bank lenders are becoming increasingly important generators and users of information. Secondly, the regulation that requires banks to obtain a report before they provide a loan has pushed the number of reports even further. Such an improvement is even more striking in the people's segment which was practically uncovered by Senicreb.

An even stronger indicator of the quality of information is the hit ratio, that is, the percentage of requests that actually find a person that has received a loan before. The CB has reported that its hit ratio in the firms' segment has increased from 56% in 1999 to 69% in 2001, while the hit ratio in the individual segment went from 58% to 76% from 1996 to 2001. This would mean an important improvement in the quality of information.

⁴⁷ See note 34.

Graph 7. Banking and Non-banking Credit to Firms



In order to evaluate the usefulness of information, in 2001 Banco de Mexico collected a survey from CB users. The results of such survey seem to imply that users are not dissatisfied with the CB performance. The survey indicates that 78.4% of users considered that the quality of the information was good and 8.1% considered that it was excellent. In the same survey, 31.6% of the users reported that the tariff structure that the CB charges was expensive and 65.8% considered that it was fair. Only 2.6% thought that the CB provided the service cheaply. Also 24% of the users surveyed considered that the minimum volume required for gaining access to quantity discounts was too high. The main problem that the survey found was that 42.1% of the users considered that the updating of the CB's information, was not timely (Galvan, 2001).

About the second question, we have indicated that the CB is basically the only supplier of information and that this situation is related to its association with commercial banks. Considerations of the size of the Mexican market for information are relevant at this point. It is not clear that the Mexican market is wide enough to support several CIS, in particular at a time when credit is contracting. The virtual vertical integration between banks and the CB is relevant because banks' request of reports represent the largest proportion of the CB's demand. In year 2000, of the total consultations that the CB received in the consumer segment, 66% were from banks; that same year, banks' demand for reports about firms' represented 72% of the CB's total demand. There is no doubt that banks' demands explain the CB's recent expansion. However, it does not follow from it that potential entrants would have survived had these demands been split between several CIS. Additionally, this industry has tended toward a higher concentration worldwide. This has to do with technological change and with the existence of network economies. Hence, both the Mexican market characteristics and the industry's growing concentration, make harder the introduction of competition.

From the perspective of regulators, however, competition in this market still is desirable. Hence the regulation has attempted to leave the door open for entry by regulating the database interchange between SICs and requesting that financial firms provide the same information to all SICs.⁴⁸ It remains to be seen how effective this measures can be in the promotion of entry and competition.

⁴⁸See rule 13 of the "Rules to which the CIS and its users must be subject", March 2002.

A related issue is the role of the PRCI, once there is a private provider of information in the market. In Mexico, the main role of this institution was not to provide credit reports, hence it does not seem to be a problem that the demand for its reports has fallen. In fact, the Mexican case would seem to confirm the idea that the PRCI is just a temporary institution. However, if the financial authorities were to take a competitive stand in this industry, the PRCI could be used as an instrument to promote competition. The Argentinean case shows a PRCI that has extended its database even though there are private bureaus in the market. By allowing any firm access to its database, the PRCI sets a minimum quality to the information that a SIC could have. It could also palliate the problem caused by the integration between the commercial banks and the CB. The use of the PRCI as a competitive instrument rather than as a direct competitor is a subject that still needs more research.

3.4 Effect of sharing information on firms' financing

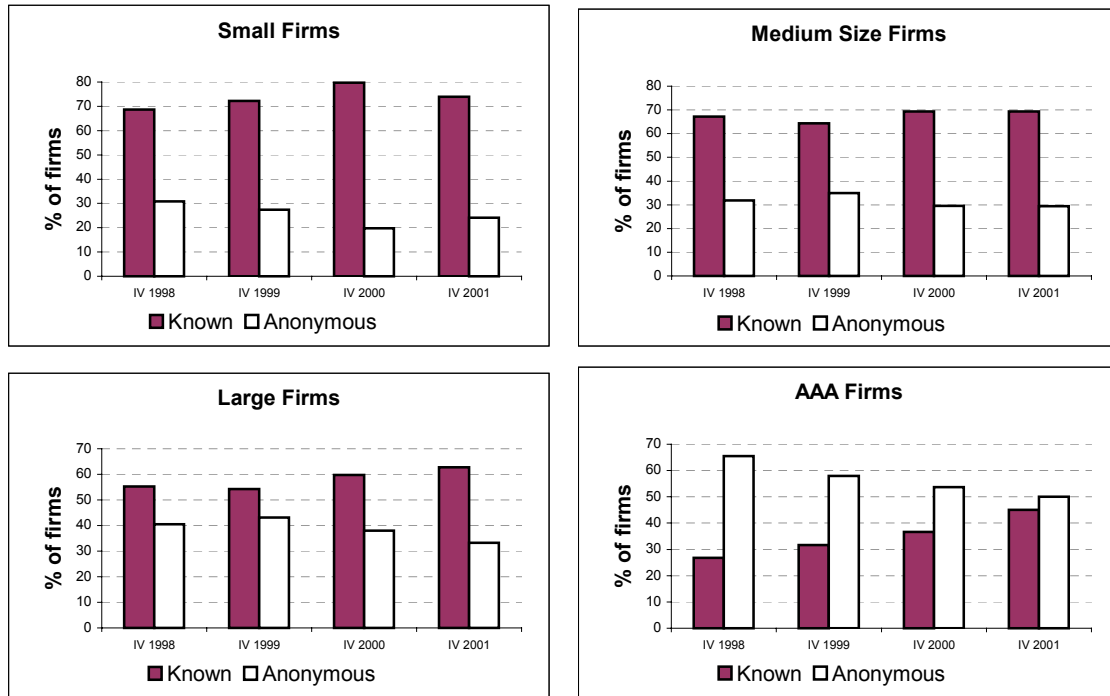
The indicators presented show that in recent years there has been an improvement in the availability and in the quality of information. In this section we present some indicators of the effect that such improvement has had on firms' access to banking credit. Sharing information generates two contradictory effects over firms' access to credit. First, it makes the investigation process cheaper, which could increase access to credit. Small and medium loans are too small to justify a full fledged research process; without information sharing granting these loans may be too expensive. Assuming small and medium firms get small and medium loans, these firms would be the main beneficiaries of information sharing. The second effect of information sharing over firms' access to credit is negative: those firms that have a bad history see their access restricted. Both effects are desirable from the point of view of a healthy financial system, but from firms' perspective, if the second effect were to dominate, it would mean less access to credit.

In this section we use information from the quarterly "Survey on Credit Markets" by Banco de Mexico⁴⁹ to develop indicators on the effect that information sharing has had over firms financing.⁵⁰ The survey reports the proportion of firms of different sizes that received or did not obtain loans from different sources. We grouped the sources of credit included in the survey in *known* and *anonymous*. Known credit sources include trade credit, credit from parent offices and from another firm in the same corporation. Anonymous credit sources include loans from commercial national banks, foreign and development banks. It is obvious that the information from the sharing institutions is more relevant for anonymous credit than for known credit.

⁴⁹ Encuesta de Coyuntura del Mercado Crediticio. The survey does not report amounts of credit obtained by firms. It only reports the proportions of firms that received credit or not. The survey has only been taken from 1998 on.

⁵⁰ The survey groups firms according to their level of sales. Small firms had sales for 1 to 100 million of 1997 pesos; Medium firms had sales for 101 to 500 million pesos and Large firms had sales for 500 to 5000 million of 1997 pesos. The survey includes an additional set of firms (AAA) that had sales over 5000 million pesos.

Graph 8. Sources of Credit by Firms' Size



As we see in Graph 8, a high proportion of the small, medium and even large firms surveyed predominantly got credit from sources that knew them. In fact the proportion of firms that got known credits is considerably higher than the proportion of firms that got anonymous loans. Only for AAA firms the percentage that predominantly received anonymous credit was larger than the percentage that received known loans. Now, for small, medium and large firms, known credit is not just very important, but the proportion of firms that mainly receives it, has tend to increase slightly in the last years. The proportion of small firms that predominately received known credit passed from 70% to 73% from 1998 to 1999. The proportion of medium and large firms that received mainly known credit went from 59.8% to 63.9% and from 52% to 65.8%, respectively, in the same period. This means that information sharing has not resulted in an increase of the proportion of firms that receive anonymous loans.

The drop in banking credit has affected firms of all sizes. The proportion of firms covered in the survey that received banking credit from 1998 to 2001 appears in Table 2. The first striking feature is the low proportion of small and medium size firms that received credit from banks. The second aspect is that that proportion has shrunk further. Thirdly, the proportion of large firms that received banking credit has fallen dramatically recently, and even AAA firms have been affected. This data imply that, even though credit information is more and it is better, it has not been an important enough factor to turn the credit contraction.

Table 2. Proportion of firms that received anonymous credit

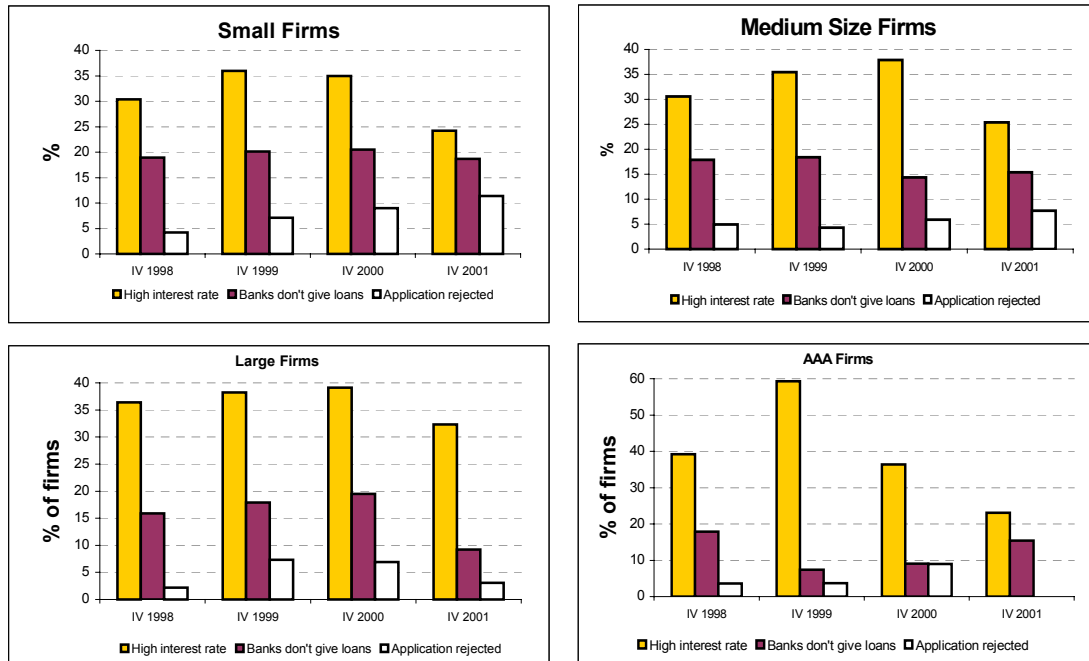
Quarter	Small	Medium	Large	AAA
IV 1998	29.10	40.20	48.00	70.60
IV 1999	28.10	38.30	52.30	61.30
IV 2000	23.90	37.30	38.90	72.40
IV 2001	26.40	36.10	34.20	62.10

Source: Banco de México. Survey on Credit Markets

Given that banks' loans to firms have dropped significantly, it is relevant to know to what extent that is due to wider information availability. That is, credit contraction may be partially explained by the lending institutions distinguishing better between good and bad applicants. The survey presented before contains information on the reasons why firms did not receive loans from banks. The reasons included are that potential borrowers considered that the interest rates were too high, that the market's future appeared uncertain, that banks were not providing loans, and finally, that the "borrowers got their applications rejected". The latter could have happened because the borrower had a bad credit report or because the bank just did not consider that the project was worthwhile. Graph 9 provides information on the relevance of some of the abovementioned reasons for the lack of banking credit. We see that a growing proportion of small and medium firms did not receive credit due to rejection of applications. The proportion of small firms rejected increased from 4.2% in 1998 to 11.4% in 2001. The proportion of middle size firms rejected grew from 4.9% to 7.7% in the same period. Interestingly large and AAA firms did not register the same growing rejection proportion.

These indicators imply that a growing proportion of small, medium size and large firms have been getting their applications rejected. That is likely related to a reduction in the adverse selection problem due to a better process of information sharing.

Graph 9. Reasons for the lack of banking credit by firm size



4 Conclusions

There is a correspondence between the depth and the pace at which the credit market and the information sharing mechanisms develop. In the case of Mexico before the nineties, regulatory constraints limited credit so much, that it did not require nor generated that much information. The credit expansion of the early nineties occurred at such fast pace that it caused an institutional mismatch: the information existent in the PRCI was not enough to support a healthy provision of credit. By the same token, the process was so short lived that the information generated was not useful for the immediate needs of the credit expansion.

Senicreb was the information sharing mechanism available during the credit expansion. Although its consultations grew significantly in that period, some indicators seem to imply that many loans to firms were provided without information from Senicreb. Additionally, Senicreb's database did not grow at the same rate as its reports; hence, the quality of its information did not improve significantly, even for its restricted coverage.

During the last years of the credit expansion and even after the banking crisis, a regulation of this area was issued with the goal of promoting entry and competition of private information societies. As a result of the regulation, three firms entered the market, but only one of them, the Credit Bureau (CB), has survived. This firm is owned by the set of commercial banks; hence, it concentrates banks information and demand for reports. Even the demand for reports that used to be satisfied by the public registry has shifted to the CB. The CB has expanded its services very rapidly at a time when banking credit is going down. Such growth has been based on the filling of the informational vacuum that existed in several areas. It has also been supported by regulations that, for prudential reasons, compel all financial firms to get a credit report before providing a loan.

Despite the fact that the CB is practically a monopoly, several indicators suggest that the information of the CB is not just used more, but is also of higher quality than what existed before the regulation was issued. That should not be surprising since the CB is covering many areas that were not covered by the PRCI. In fact, the increase of the reports from the CB has surely been supported by the expansion of credit provided by non-banking institutions. To the extent that the regulation can be evaluated at this early stage, its results have been mixed. It has succeeded in that there is now more and better information in the market. However, it has failed in creating competition. It remains to be seen if the new law is more successful in the future.

In terms of the effect that information sharing has had over firms access to credit, so far it seems that it has not improved it. In fact there is some indication that as a result of information sharing, banks' credit to small and medium size firms has shrunk further due to bad credit reports. Finally, it is worth mentioning that, while the credit is falling, the services of the CB –or of any other mechanism to share information- can only keep on growing while the vacuum of information is been filled. As soon as that has happened, the expansion of the sharing mechanisms will find a limit. Banking credit reactivation is needed to generate the new information that feeds the sharing information mechanisms. In the long run, the link between credit depth and information market expansion cannot be violated, as the Mexican experiences shows.

References

- Akerlof, George A. (1970), "The Market for Lemons", *Quarterly Journal of Economics* 84, 488-500.
- Banco Central de la República Argentina (1998), "Credit Information: Conceptual Issues and Description of the Argentine Case", mimeo.
- Banco Central de la República Argentina (1997), "Central de Deudores del Sistema Financiero", mimeo.
- Galván, Sybel (2001), "Calidad de la información crediticia en México". Unpublished work in progress.
- Jappelli, Tullio (1997), "Credit bureaus: effects on market performance and the role of government intervention", mimeo presentado en el Workshop "The role of timely and reliable information in the development of stable financial markets", World Bank and BCRA, Buenos Aires, Argentina.
- Jappelli Tullio and Pagano Marco. (1999), "Information Sharing, Lending and Defaults: Cross-Country Evidence", mimeo, *Centre for Studies in Economics and Finance*, Working Paper No. 22.
- Klein, Daniel B. (1992), "Promise Keeping in the Great Society: A Model of Credit Information Sharing", *Economics and Politics*, vol. 4, no. 2, 117-136.
- Laband, David. N. and Maloney, Michael T. (1994), "A theory of credit bureaus", *Public Choice* 80, 275-291.
- Madison, James H. (1974), "The Evolution of Commercial Credit Reporting Agencies in Nineteenth-Century America", *Business History Review*, Vol. XLVIII, No.1, 165-186.
- Miller, Margaret (2000), "Credit Reporting Systems Around the Globe: The State of the Art in Public and Private Credit Registries", World Bank. Presented at the Second Consumer Credit Reporting World Conference, held in San Francisco, California, October.
- Negrin, Jose L. (2001) "Mecanismos para compartir información crediticia. Evidencia internacional y la experiencia mexicana". Banco de México, serie documentos de Investigación No. 2000-5.
- Padilla, A. Jorge and Pagano, Marco (1999), "Sharing Default Information as a Borrower Discipline Device", mimeo, *Centre for Studies in Economics and Finance* Working Paper no. 21.
- Padilla, A. Jorge and Pagano, Marco (1997), "Endogenous Communication Among Lenders and Entrepreneurial Incentives", *Review of Financial Studies*, vol. 10, no. 1, 205-236.
- Pagano, Marco and Japelli, Tullio (1993), "Information Sharing in Credit Markets", *Journal of Finance*, vol. 48, no. 5, 1693-1718.
- Rothschild M. and Stiglitz S. (1976), "Equilibrium in Competitive Insurance Markets: an Essay on the Economics of Imperfect Information". *Quarterly Journal of Economics* 80, 629-49.
- Stiglitz, Joseph E. and Weiss, Andrew (1981), "Credit Rationing in Markets with Imperfect Information", *American Economic Review*, vol. 71, no. 3, 393-410.
- Vercammen, James A. (1995), "Credit Bureaus Policy and Sustainable Reputation Effects in Credit Markets", *Economica* 62, 461-478.

Villar, Rafael del, Alejandro Díaz y Johanna Gil (2001), “Regulación de Protección de Datos y de Sociedades de Información: Una Comparación de Países Seleccionados de América Latina, los Estados Unidos, Canadá y la Unión Europea. Banco de México, Documento de Investigación No. 2001-07.