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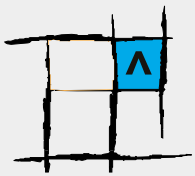
Soft Lending and Hard Landing: Related Lending in Mexico



Related Lending

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Abstract

In many countries, banks lend to related parties, e.g., to firms controlled by the bank's owners. We examine the benefits of related lending using a newly assembled dataset for Mexico. We find that related lending is large (20% of commercial loans) and that it takes place on better terms than arm's-length lending (annual interest rates are 4 percentage points lower). Related loans are 33% more likely to default and, when they do, have lower recovery rates (30 cents/dollar less) than unrelated ones. The evidence supports the view that related lending, rather than enhancing information sharing, is a manifestation of looting.

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I. Introduction.

This paper presents direct evidence on related lending, an important feature of banking systems in many countries. Related lending refers to lending by banks to persons who control or own the bank and/or to firms controlled, or owned by the same persons who control or own the bank. Using credit-level data for Mexico, we show that related lending accounts for roughly 20% of all commercial lending. Moreover, related and arm's-length lending take place on very different terms. For example, real interest rates on related loans average 4 percentage points per year lower than those on arm's-length transactions.

In principle, related parties could be borrowing on advantageous terms because close ties between banks and borrowers improve efficiency. Lamoreaux (1994, page 79) writes that "...given the generally poor quality of information [in post-Revolution New England], the monitoring of insiders by insiders may actually have been less risky than extending credit to outsiders." The view that close ties between banks and borrowers are valuable is related to Gerschenkron's (1961) analysis of long-term bank lending in Germany, to the optimistic assessments of bank lending inside the keiretsu groups in Japan (Aoki, Patrick and Sheard 1994, and Hoshi, Kashyap, Scharfstein 1991), and to theoretical work on credit rationing (Stiglitz and Weiss 1981). Related lending may improve credit efficiency in several ways. Bankers know more about related borrowers than unrelated ones (because, as in the case of Mexico, they are represented on the borrower's Board of directors and share in the day-to-day management of the borrower) and may be able to use such information to assess the ex-ante risk characteristics of investment projects or to force borrowers to abandon bad investment projects early (Rajan 1992). In addition, both hold-up problems and incentives for pursuing policies that benefit one class of investors at the expense of others may be reduced when banks and firms own equity in each other. Thus, *related lending* may be better for both the borrower and the lender because more information is shared and incentives are improved.

Alternatively, related parties could be borrowing on better terms than unrelated ones to divert resources from depositors and/or minority shareholders to themselves. This view is related to the ideas of looting (Akerlof and Romer 1993) and tunneling (Johnson et al. 2000) as well as the revisionist view of the benefits of keiretsu groups in Japan (Morck and Nakamura 1999, Kang and Stulz 1997). Looting can take several forms. If the banking system is protected by deposit insurance, the controllers of a bank can take excessive risk, or simply make loans to their own companies on non-market terms, fully recognizing that the government bears the costs of such diversion (see Demirgüç-Kunt and Detraiache 2000, Gil-Díaz 2000, and

Kane 1989).[1] Even without deposit insurance, the controllers of a bank have a strong incentive to make loans on non-market terms to companies they control if their exposure to the cash flow of these companies is greater than their exposure to the profits of the bank. The basic implication of this view is that related lending is very attractive to the borrower, but may bankrupt the lender. Auditors may later find, as the auditor commissioned by the Mexican congress did, that some related loans "...were granted without any appropriate reference to the capacity of the debtors to repay" and that loan officers had accepted "...collateral from the borrower that they knew was false or of no value to the bank." (Mackey, 1999, pages 215 and 219).

In sum, the economic and finance literature points to benefits of related lending associated with more informed lending decisions, but also recognizes costs induced by agency conflicts. Thus, it is ultimately an empirical question whether related lending is on-balance beneficial or detrimental. In this paper, we assess related lending from the perspective of the *information* and *looting* views using a newly–assembled database of the lending patterns of all the Mexican banks circa 1995. We stress that related lending in Mexico took a very different form than in (contemporaneous) Germany and Japan-- which have been the focus of the existing empirical literature. Specifically, Mexican banks were typically controlled by stockholders who also owned or controlled non-financial firms. The Mexican banking structure is common in many of today's developing countries.[2] Banks that are controlled by persons or entities with substantial non-financial interests are prominent in Bulgaria, Brazil, Chile, Colombia, Ecuador, Guatemala, Hong Kong, Indonesia, Kazakstan, Kenya, Peru, Philippines, Russia, South Africa, Taiwan, Thailand, Turkey, and Venezuela.[3] Faccio et al.

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[1] Demirgüç-Kunt and Detraiache (2000) find evidence that deposit insurance is associated with a higher incidence of systemic banking crisis in a sample of 69 countries. Gil-Díaz (2000) explains how moral hazard problems and deposit insurance were interrelated during Mexico's crisis in 1994-95. Kane (1989) emphasizes the importance of risk-shifting in the 1982 Savings and Loans' crisis in the US.

[2] Barth, Caprio and Levine (2001) examine the rules regarding the ownership of commercial banks by non-financial firms in 107 countries. Perhaps surprisingly, the ownership of banks by non-financial firms is unrestricted in 38 countries (including Austria, Germany, Switzerland, and the UK but also Bolivia, Brazil, Indonesia, Russia, and Turkey). The ownership of banks by non-financial firms is prohibited in only four countries (e.g., in British Virgin Islands, China, Guernsey, and Maldives).

[3] Two general sources on the links between banks and non-financial firms in Latin America and Asia are AmericaEconomia (Annual Edition, 1995-1996, pages 116-128) and Backman (1999), respectively. Country-specific sources include: Edwards and Edwards (1991) for Chile, Revista Dinero (http://www.dinero.com/old/pydmar97/portada/top/topmenu.htm) for Colombia, Standard & Poor's (Sovereign Ratings Service, November 2000, page 9) for Ecuador, African Business (May 1999) for Kenya, Koike (1993) and The Economist (8/5/2000, pages 70-71) for Philippines, Nagel (1999) for Russia, The Financial Mail (12/6/1996) for South Africa, Euromoney (Dec 1997) for Thailand, and Verbrugge and Yantac (1999)

(2000) report that the ultimate controlling shareholder of 60% of the publicly-traded firms in Asia also controls a bank (even in Europe, this figure is as high as 28%).

The Mexican banking setup is similar not only to that of many developing countries but also to that of the early-stages of development in countries such as England, Japan, and the US. In eighteenth century England, "it would quickly become apparent to the industrialist that a banking adjunct not only solved his payment problem but also enabled him to raise a substantial capital from the general public at zero real rate of interest..." (Cameron 1967, page 56).[4] Similarly, once the industrial revolution got underway in Japan "...businessmen founded or obtained control of captive banks in order to obtain funds cheaply and readily for their own use." (Patrick 1967, page 278). And, in the early nineteenth century, the directors of banks in New England "...often funneled the bulk of the funds under their control to themselves, their relatives, or others with personal ties to the board." (Lamoreaux, 1994, page 4).[5] Mexican-style banking structures deserve more attention than they have received so far.

We focus on three questions. First, what is the extent of related lending? Both the *information* and the *looting* views predict high levels of related lending in Mexico. The *information* view says that related lending mitigates moral hazard and asymmetric information problems, both likely to be high in Mexico (La Porta et al. 1998). The *looting* view says that related lending is associated with deposit insurance, lax supervision, and bad creditor rights, all present in the Mexican banking system in 1995.

Second, do banks lend to related parties at different and possibly more favorable terms? Both the *information* and the *looting* views are consistent with favorable borrowing terms for related parties borrow. In the *information view*, banks minimize costs by lending to borrowers they know well and/or to firms whose investment policies they control. These efficiency gains allow borrowers to obtain credit on preferential terms.[6] The gains created by relationship lending may not be fully captured by the borrower. Rather, the split is determined by the competitiveness of the banking market (Gorton and Schmid 2000, Weinstein and Yafeh

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for Turkey. Finally, Beim and Calomiris (2000) discuss the importance of related lending in financial crises.

[4] See also Cottrell (1980, pages 14-15).

[5] Other nineteenth century examples include Mexico (Haber, 1991), Russia (Crisp, 1966, page 221), and Scotland (Munn, 1981, pages 4 and 157).

[6] The information view is also consistent with related parties borrowing on less advantageous terms than unrelated ones if, for example, low-quality debtors are those that are monitored by banks while high-quality debtors borrow against collateral. We do not discuss this hypothesis further because related parties borrow on better terms than unrelated ones in our data.

1998). Similarly, under the *looting* view, related borrowers obtain credit on preferential terms as a result of self-dealing by those who control the banks.

Third, how do related- and unrelated loans perform in a "bad" state of the world? The devaluation in December of 1994 started a severe and prolonged downturn in the Mexican economy, during which many borrowers defaulted on their bank loans. A plausible version of the *information* view holds that low expected default rates and high expected recovery rates justify granting related parties advantageous lending terms. In this view, related lending facilitates the optimal allocation of capital by removing informational barriers to selecting good projects and/or empowering banks to curtail excessive risk-taking by borrowers. Related lending then improves loan performance (i.e., reduces default rates and increases recovery rates) and that some of the gains are passed on to the borrower.[7, 8] The opposite should be true if related lending is a device to tunnel the bank's capital to companies controlled by bank insiders in ways that minimize what the government can recover when the bank's capital is finally depleted.

Using all banks in Mexico, we first examine the identity of each bank's top-300 borrowers at the end of 1995, and find that $1 out of every $5 in loans were made to related parties. We then collect information on the borrowing terms of a random sample of loans from the top-300 loans outstanding of each bank at the end of 1995. Most importantly, we also track the performance of the loans in the random sample across time to evaluate their default and recovery rates. The results show that related parties borrow at lower rates and are less likely to post collateral. The central finding in the paper is that, after controlling for borrower and loan characteristics, related borrowers are 33%-35% more likely to default than unrelated ones. The default rate on loans made to related persons and to privately-held companies related with the bank is 77.4%. The equivalent rate for unrelated parties is 32.1%. Furthermore, recovery rates are $0.30 per dollar lower for related borrowers than for unrelated ones. All these results are broadly consistent with the *looting* view and challenge the *information* view. The sheer magnitude of the gap in default rates between related and unrelated loans makes it difficult to argue that it is optimal to lend to related parties on better terms than to unrelated ones. Furthermore, to the extent that we can measure it, related borrowers emerge from the crisis relatively unscathed, i.e., bank's owners lose control over their banks but not over their industrial assets.

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[7] In fact, related borrowers may take too few risks. For example, critics of German banks argue that banks veto worthwhile investment projects because, as creditors, they do not internalize the benefits that accrue to shareholders when risky projects are successful (Wenger and Kaserer, 1998).

[8] Other versions of the *information* hypothesis are possible and we discuss one of them later in Section VII.

Despite these facts, our results may be consistent with some versions of the *information* view which we discuss later.

The next section summarizes the regulation of the Mexican banking sector and describes the resulting incentives. Section III presents a simple model of looting. Section IV describes the sample and basic methodology. Section V asks how extensive was related lending in Mexico. Section VI compares the borrowing terms obtained by related parties and unrelated ones. Section VII examines the ex-post performance of related and unrelated loans in the aftermath of the financial crisis of 1994. Section VIII relates the ownership structure of the borrower to both the terms and the ex-post performance of the loans to capture the financial incentives of the controllers of banks to loot. Section IX presents conclusions.

II. Mexican Banking.

The Mexican banking business has been anything but dull over the last twenty years. All commercial banks were nationalized in 1982. During the years under state management, banks functioned as an annex to the Treasury.[9] Privatization took place gradually through the placement of minority stakes in the stock market in 1987. By 1992, government ownership of commercial banks was fully eliminated. Shortly afterwards the government became an active participant in the banking business once again as most of the privatized banks had failed by the year 2000.[10]

Initially, the privatization of banks appeared successful. Economic growth was restored in 1988 after a long period of stagnation. Financial penetration (measured as M4/GNP) doubled between 1988-1994 and banks prospered. The success of bank privatization, however, was short-lived. Signs of stress in the financial sector first appeared in 1993 as the economy slipped into a recession. By July 1994, a number of financial institutions were experiencing serious difficulties and the government was forced to take over two banks (Union and Cremi). The devaluation of 1994 ended hopes of gradually nursing financial institutions to health by improving supervision and increasing minimum capital requirements. Only three of the eighteen commercial banks that existed at the beginning of the crisis remained independent by year 2000. The others were under government management (7 banks), or had been acquired by either domestic banks (3 banks) or

[9] Reserve requirements were set at 50% and few loans were made to the private sector. On average, 30% of the loans made by the banking sector during the period 1982-87 went to private-sector borrowers. Even the little private lending that banks did was heavily regulated. For example, banks had to allocate about 25% of their loans to industrial sectors in accordance with government quotas.

[10] For details on the Mexican Banking Crisis see Gavito, Silva and Zamarripa (1998).

by foreign financial institutions (5 banks).

Inappropriate regulation partially explains the spectacular failure of banking privatization. At the time of privatization, Mexico created a deposit insurance system ("FOBAPROA") similar to the FDIC in the US. FOBAPROA guaranteed all deposits equally, regardless of the creditworthiness of the bank. At the same time, minimum capitalization requirements were independent of the riskiness of a bank's loan portfolio. Banks were allowed to set interest rates freely and directed credit was abolished.

In privatization, control over banks was auctioned off to the highest cash bidder. However, important ownership restrictions were put in place at that time to prevent banks from becoming controlled by either non-financial corporations or by foreigners. Specifically, at least 51% of the votes of a bank had to be held by a Mexican group, and control over banks by corporations was ruled out. Instead, banks had to be controlled by a dispersed group of individuals. Each of the members of the controlling group could own up to 5% the equity of a bank without question, or up to 10% with the express consent of the Ministry of Finance. Foreign entities could own up to 30% of a bank's equity in low-voting shares under similar ownership-dispersion requirements as those that applied to individuals.

These ownership restrictions, coupled with the low-level of development of financial markets, severely limited competition at the privatization auction by restricting potential bidders to domestic investors with cash to bid. Nevertheless, the median privatized bank was divested at a Tobin's-Q value of 2.42. By comparison, the median privatized firm was divested at a Tobin's-Q value of 0.62 (López-de-Silanes 1999). Similarly, the average control premium paid for banks at the time of their privatization was 51.8% (50.0%) (López-de-Silanes and Zamarripa 1995).[11] These data are consistent with the view that controlling shareholders of banks perceived private benefits to be high.

Financial institutions were organized according to the European universal banking model. Although banks were barred by law from directly engaging in underwriting, brokerage, and insurance activities, they could participate in such businesses indirectly through independent subsidiaries. To avoid perverse incentive problems, the holding company of the financial group bore full liability for the obligations of each of its subsidiaries and had to own at least 51% of their equity.

Just as corporations were not allowed to control banks, banks were not allowed to own more than

[11] The number of non-financial firms with publicly-traded equity at the time of privatization is too small to compute the value of control for those firms.

5% of the capital of non-financial corporations.[12] Despite the intent of the law, financial and industrial conglomerates were closely linked as many of the controlling shareholders of industrial groups were also members of the groups controlling financial institutions. To illustrate this point, Figure 1 shows the 1995 ownership structure of Serfin (the third largest bank). Adrián Sada González was the Chairman of the Board and owned 8% of the capital and 10.1% of the votes in Serfin. Although his stake in Serfin met the letter of the government rules regarding ownership dispersion requirements, it seriously underestimates Sada-González's control over the Board of Serfin. Other directors and officers of the bank owned 33.6% of the capital and 42.7% of the votes in Serfin. Two sons of Adrián Sada González sat on the Board and eleven of the forty-four members of the Board of Serfin were related by blood or marriage to another member of the same group. Because reporting requirements do not allow us to know the identity of those directors and officers, we cannot pin down the fraction of the votes effectively controlled by Adrián Sada González but it clearly exceeded his reported 10% stake.

Adrián Sada González was also the largest shareholder and Chairman of the Board of Vitro -a publicly-traded maker of glass products.[13] In fact, the Board of Serfin included the controlling shareholders of fourteen other publicly-traded firms (see Table I). To put this figure in perspective, only 185 firms were publicly traded in 1995. As we shall see later, many of the publicly-traded firms controlled by Serfin's directors and officers were among its largest borrowers. In Table I, for example, only three out of the sixteen firms that are affiliated with members of Serfin's Board are not among the bank's largest 100 borrowers. All of these facts suggest that the separation between the control of industrial and financial firms may have been more apparent than real. They also suggest that the agency problems in Mexican banking were different from those in, for example, Japan where both banks and industrial firms are typically widely-held and run by professional managers.

The only bank in our sample that is clearly different from Serfin is Citibank. From a regulatory standpoint there was no difference between Citibank Mexico and domestic banks. Like all other Mexican banks, Citibank's deposits were backed by the deposit insurance scheme. However, Citibank operated in Mexico as a wholly-owned subsidiary of the US parent and some of its Board members were officers of Citibank New York. Loan officers used the same procedures to assess loans in Mexico and in the US. Most

[12] Higher percentages were possible with the authorization of the Ministry of Finance.

[13] Adrián Sada González owned 10.9% of the capital and 18.14% of the votes in Vitro. Other officers and directors of Vitro owned 12.3% of the capital and 20.5% of the votes in Vitro.

large loans made by Citibank's Mexican subsidiary had to be approved by the headquarters office in the U.S. Perhaps as a consequence, Citibank did not mimic the aggressive growth strategy of its domestic rivals and remained a niche player in the corporate-loan and credit-card markets nor did it engage in related lending.

The incentives for banks to make insider deals are universal and are typically addressed by prudential regulation. In Mexico, the rules regarding related lending were rather lenient: related loans could not exceed 20% of a banks' loan portfolio and no special approval was required on loans to related parties as long as each loan was smaller than 0.2% and 1% of the bank's net capital for loans to individuals and firms, respectively.[14] When those limits where exceeded, loans to related parties had to be approved by a majority of the members of the Board of Directors. No rules limited the participation of interested directors in such decisions. Bank supervision was lax partly because regulators were overwhelmed by the rapid growth of credit that followed privatization and partly because prudential regulation was inappropriate (Gil-Díaz and Carstens, 1997 and López-de-Silanes and Zamarripa, 1995).[15]

In summary, during the sample period, banks operated under a generous deposit insurance system and lax supervision. Privatization rules encouraged close-ties between banking and industry. Since corporations and foreigners were not allowed to bid for control, banks fell into the hands of local families that already controlled industrial groups and had the financial resources required to bid. Such ownership structure may have been optimal given the difficulties of screening investment projects and monitoring borrowers stressed by the *information* view but it may also have set the stage for the conflicts of interest stressed by the *looting* view.

III. A Simple Model of Looting.

In this section, we develop a simple two-period model that captures the main features of the *looting* view that we emphasize in the paper. The banking literature stresses the incentives for excessive risk-taking

[14] In February of 1995, restrictions on related lending were changed. The new rules allowed banks to lend to related parties up to their net capital.

[15] For example, López-de-Silanes and Zamarripa (1995) argue that supervision was inadequate for four reasons. "First, for 2-3 years after the privatization, supervision systems did not change. Second, accounting information standards did not evolve or were not set to match international standards. Third, there was no overall system of prudential regulation beyond the old capitalization rules (the methodology used for capitalization did not resemble that of Basle). Fourth, a reform of deposit insurance did not take place. The continuation of the old system of total coverage does not take into account the risk take by the new private institutions. Finally, the rules for asset classification gave insufficient levels of provisions."

when banks are financially distressed. Here we draw attention to other forms of looting that have received considerably less attention.[16] Specifically, we focus on the incentives for controlling shareholders to divert cash for their own benefit. We assume that each bank is controlled by a single shareholder with sufficient managerial discretion to structure self-dealing transactions to frustrate the ability of third parties to collect on related-party loans when these default. One way to justify such assumption is to argue that it is difficult to collect on un-collateralized loans (perhaps because courts don't work) and that the controlling shareholder has the discretion to require no collateral and/or to accept collateral of low quality on related-party loans. Ex-post, outsiders may perceive these un-collateralized related-party loans as bad business decisions but will find it very difficult to prove that they were made with fraudulent intent.[17]

We assume that the bank's controlling shareholder owns a fraction " of the cash-flows of the bank and a fraction $ of the cash flows of an industrial firm (i.e., the "related party") which she also controls. In the first period, a fraction (of the the assets of the bank must be financed by deposits ($D) and the rest by shareholders' equity ($E). Investors are risk-neutral and, initially, there is no deposit insurance. For simplicity, we assume that the risk-free rate is zero while the promised (gross) interest on deposits is *r*. In the first period, the bank lends $L to the related party at the (gross) rate $1_{G,R}$ and $E+$D-$L to unrelated parties at the (gross) rate of $1_{G,U}$. In the second period, loans are due and the world ends. The state of the world can be either "good" or "bad" in the second period, with probabilities q and (1-q), respectively. In the bad state, the bank recovers $1_{B,U}$ per dollar of unrelated loans but nothing on related loans. Effectively, in the bad state, the related party optimally defaults on its loan (at the cost of foregoing the insider's equity in the bank) and banks are unable to recover anything. Finally, to make our results interesting, we assume that the bank goes bankrupt if the controlling shareholder defaults.

We consider the equilibrium in which the insider does not default in the good state since, under our assumptions, outside shareholders cannot break-even when the insider defaults in both states. In the good state, the bank earns $1_{G,U}$ on loans made to unrelated parties, receives $1_{G,R}$*L from the related party in

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[16] Akerlof and Romer (1993) is one notable exception. Their model is deterministic. Looting takes place when the value of the bank's capital falls below a threshold. Instead, we emphasize the option-like nature of default as insiders may default on their bank loans at the cost of foregoing their equity in the bank.

[17] This discussion is related to the argument in Johnson et al. (2000) that self-dealing by insiders are very difficult to challenge when courts assess them under the "business-judgement rule" (which requires that outside investors prove that no prudent businessman would have taken the challenged action) rather than under the fiduciary duty of loyalty (which inverts the burden of the proof by requiring that insiders show that they did not take improper advantage of outside investors).

repayment of its loan, and pays off depositors fully. Accordingly, the profits of the bank in the good state are given by:

$$p_G = \Theta_{G,U} * (E + D - L) + \Theta_{G,R} * L - r * D \quad [1]$$

Depositors are indifferent between investing in the riskless asset or in the bank. They are paid in full in the good state and receive the value of the bank's equity in the bad state. As a result, the value of deposits D is given by:

$$D = q * [r * D] + (1 - q) * \left[\Theta_{B,U} * (E + D - L)\right] \quad [2]$$

Plugging [2] into [1] yields an expression for the expected profits in the good state:

$$q * p_G = R_U * (E + D - L) + R_R * L - D \quad [3]$$

where R_U and R_R are the bank's expected returns from lending to unrelated parties ($q*1_{G,U}+(1-q)*1_{B,U}$) and related ones ($q*1_{G,R}$), respectively. The first two terms of the equation are the revenues from lending to outsiders and from lending to insiders, respectively. These revenues are available to shareholders after paying depositors, on average, \$D to compensate them for their initial investments in the bank.

Insiders receive profits from their equity holdings and from looting. In the good state, insiders receive their pro-rata share of the profits of the bank at the cost of having the related party pay back interest and principal on her loan. Insiders shoulder only a fraction \$ of the interest bill as the rest is paid by minority shareholders in the related party. In the bad state, the related party defaults and pockets the principal of the loan. However, the insider only captures a fraction \$ of the booty from looting as the rest is shared by minority shareholders in the related party. The profits of the controller of the bank are thus given by:

$$q * (a * p_G - b * (\Theta_{G,R} - 1) * L) + (1 - q) * b * L \quad [4]$$

Using [3] to substitute for B_G in [4] we can rewrite the profits of the insider as follows:

$$a * \left(R_U * (E + D) - D\right) + b * \left((1 - q) - (R_R - q)\right) * L - a * (R_U - R_R) * L \quad [5]$$

The first term represents the insider's pro-rata share in the profits of the bank when there is no related lending. Related lending creates "private benefits" that the insider does not share with other shareholders. These private benefits are worth \$*((1-q)-q*($1_{G,R}$-1))*L to the insider as the related party defaults in the bad state and pays back interest on her loan in the good state. However, related lending cuts

into the bank's profits as outside lending is more profitable than related lending (i.e., $R_U > R_R$) and the insider bears a fraction θ of the foregone profits due to related lending.

Four results follow immediately from the expression above. First, the profits of the controlling shareholder are decreasing in R_R when $\beta > \theta$ (which was typically the case in Mexico). The testable implication is that, when $\beta > \theta$, related lending will take place on beneficial terms as the controlling shareholder will minimize the value of R_R. Second, related lending is profitable only when β is larger than θ. When both θ and β are equal, related lending lowers the profits of the insider by $1-R_U$. Stated differently, the profitability of related lending is increasing in β if related lending is at all attractive to the controller of the bank (i.e., when $R_R<1$). This has the testable implication that the controlling shareholder will grant better borrowing terms to high-β firms than to low-β ones. Third, related lending is less attractive when R_U is high. Intuitively, related lending is not attractive when the economy is very productive and lending to outsiders is very profitable. As a result, the model predicts that related lending will increase when outside lending opportunities deteriorate (as they did in Mexico over the sample period). Fourth, assuming that related lending is profitable, the insider will want do so as much of it as possible. Because related lending hurts the profitability of the bank, its extent is limited by the need to provide an adequate rate of return to outside shareholders. Thus, the maximum level of insider lending is such that outside shareholders break-even, or:

$$E = q * p_G \quad [6]$$

which using [3] yields:

$$L_{\max} = \frac{R_U - 1}{R_U - R_R} * (E + D) \quad [7]$$

An alternative way to derive the equation above is to note that both equity holders and depositors are fully reimbursed for their investment in the firm. Thus, the bank needs to generate, on average, E+D through its investments. It can do so from two sources: loans to outsiders which return R_U in expected terms and loans to insiders which return R_R in expected terms. As a result, E+D must equal revenues from lending $R_U*(E+D-L)+R_R*L$. Not surprisingly, related lending is not feasible when lending to outsiders does not generate profits (i.e., when R_U is equal to 1). More generally, outsiders can tolerate a higher level of related lending when banks are very profitable and the bad state is unlikely.

Finally, we focus on the incentives of insiders to voluntarily repay the bank. Consider first the good state. The insider is willing to voluntarily pay her loan to the bank when the value of the equity that she is able to retain by doing so exceeds her liability. Formally,

$$\alpha * p_G \geq \beta * \Theta_{G,R} * L_{\max} \quad [8]$$

This expression ties down the minimum level of ownership such that the insider is willing to repay in the good state:

$$\alpha_{\min} * p_G = \beta * \Theta_{G,R} * L_{\max} \quad [9]$$

When α falls below α_{min}, the insider is willing to forego her equity in the bank to capture $\beta * L_{max}$ by directing the related party to default on its loan. By doing so, he puts the bank in financial distress and, as a result, outside shareholders also loose their equity. Because outside shareholders would lose their investment in both states, $\alpha < \alpha_{min}$ cannot be an equilibrium. In other words, α has to exceed α_{min} to induce related parties to willingly repay the bank in the good state and for outside shareholders to break-even.

Consider next the bad state. The controlling shareholder defaults in the bad state when her liabilities to the bank ($\beta * 1_{G,R} * L_{max}$) exceed her share of the bank's profits if she repays the loan, i.e.,

$$\alpha * \left[\Theta_{B,U} * (E + D - L_{\max}) + \Theta_{G,R} * L_{\max} - r * D\right] < \beta * \Theta_{G,R} * L_{\max} \quad [10]$$

which is more likely to hold the larger is the wedge between β and α. A testable implication of the model is that default rates on related parties loans are higher for high-β firms (e.g., privately-held firms) than for low-β ones (e.g., publicly-traded firms). An insider with $\beta > \alpha$ always defaults given our assumption that doing so puts the bank in a position of insolvency, i.e., when:

$$\Theta_{B,U} * (E + D - L_{\max}) < r * D$$

As a result, banks are very fragile: related parties optimally default on their loans with the bank precisely when outside borrowers are in financial distress.

Deposit insurance has three important effects in our model. First, it makes depositors indifferent about the financial condition of the bank because they receive a subsidy s(L) of $D - 1_{B,U} * (E+D-L)$ from the government in the bad state. With deposit insurance, the extent of related lending continues to be limited by the need for outside shareholders to break even. However, deposit insurance makes it easier for outside shareholders to break-even because the cost of raising deposits falls from r to 1 and the bank is more profitable in the good state. As a result, the maximum level of L that outside shareholders are able to tolerate and break-even is higher. Specifically, in order to fully reimburse equity holders and depositors, E+D must now equal the sum of government subsidies ($(1-q)*s(L)$) plus revenues from lending ($R_U*(E+D-L)+R_R*L$).

Thus,

$$L_{\max} = \frac{R_U - 1}{R_U - R_R} * (E + D) + \frac{1 - q}{R_U - R_R} * s(L_{\max}) \quad [11]$$

which exceeds the maximum amount of related lending in the absence of deposit insurance by the second term. Second, the minimum level of insider ownership ($\theta_{\min}$) required to preclude a default in the good state rises. With more to be gained by defaulting, the insider needs a higher fractional ownership in the profits of the firm to voluntarily pay back his loans to the bank in the good state. Third, if the insider found it optimal to default in the bad state without deposit insurance, he will be even more willing to do so in the presence of deposit insurance. The cost to outsiders (in this case to taxpayers) of his default rises with the level of related lending.

To summarize, related lending is profitable for the bank's insiders because it transfers resources from the bank's minority shareholders and the deposit insurance fund to parties related to her. Since the incentive to engage in related lending is driven by the related parties' ability to avoid payment in the bad state, related lending should be large where, as in the Mexican case, the bad state happens with some regularity and where creditor's rights are difficult to enforce. The model also predicts that related loans, particularly those to individuals and closely-held corporations, should take place on beneficial terms because the related party must pay them back in the good state of nature and insiders have an incentive to minimize their cost. Finally, despite beneficial terms, related loans, particularly those to individuals and closely-held corporations, have very low recovery rates in the bad state. The remainder of the paper examines empirically these predictions.

IV. Data and Methodology.

A. Data

This paper is based on a new database describing the terms and performance of a sample of loans made by 19 Mexican banks circa 1995. We are interested in comparing the terms offered to related and unrelated borrowers as well as the ex-post performance of those loans. The banks in the sample are the 19 that existed in 1992 when privatization was concluded. With the exception of Citibank, all of them had recently been privatized. Three new banks entered the market in 1994 and are not in our sample as they may not have had sufficient time to reach "steady-state". The 19 banks in our sample represent 98% of the assets of the banking system at the end of 1994.

In 1995 banks were required to submit to the banking supervisor a list of the three hundred largest loans together with their size and the names of the borrowers behind each of them. Importantly, banks were

also required to disclose the affiliation of these debtors. We follow legal practice and define related debtors as those who are: (1) shareholders, directors or officers of the bank; (2) family members of the previous group of individuals; (3) firms where the previous two categories of individuals are officers or directors; or (4) firms where the bank itself owns shares.[18, 19]

To illustrate our data, Table II shows the list of Serfin's largest 20 loans to the private sector. To protect the confidentiality of the data, we conceal the name of the borrowers. The largest loan represented 3.55% of the value of all private sector loans among Serfin's top 300 loans. The borrower was a publicly-traded firm controlled by a member of Serfin's Board. This turns out to be a rather common occurrence as 8 of the top twenty loans to the private sector were given to publicly-traded firms controlled by members of Serfin's board. Another 3 of the largest 20 private-sector loans went to privately-held firms owned by Serfin's directors and officers. Finally, the son of a member of the Board was among the top 20 private sector borrowers. All in all, related parties obtained 12 of the largest 20 loans made to the private sector. Furthermore, related lending represented 19% of all the loans to the private sector included in the top 300 loans in 1995.

To examine whether some unrelated loans may have been intentionally mislabeled, we compared their classification in 1995 with that six months after the bank was taken over by the government. The implicit assumption is that most knowable cases of fraud and misreporting are likely to be identified by the new management of the bank within the first six months of a change in control. We found very few (2 to 3 per

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[18] Data on ownership of firms in Mexico are generally not available. We checked the accuracy of the reported classification of related and unrelated borrowers using a list of all the officers and directors of all banks, publicly-traded firms (and their subsidiaries), and the top-500 firms (and their subsidiaries) in 1995. With rare exceptions, all the borrowers with links to the banks as officers and directors had been appropriately classified as related by our primary sources.

[19] Although our definition of related party is quite comprehensive, it leaves out two important modes of self-dealing. First, associates of Bank X may have systematically borrowed from Bank Y whereas associates of Bank Y may have systematically borrowed from Bank X. In fact, audits of some of the bankrupt banks revealed that related lending sometimes took exactly that form. As a robustness check, we have expanded the definition of related lending to include borrowers associated with other banks (8 borrowers). The results are qualitatively similar and we do not report them on the text. Second, some bankers may have avoided related-lending regulations by lending to firms controlled by front men (Mackey, 1999). Unfortunately, we have no way of addressing outright fraud in our database. Fraud, however, biases the results against our findings.

bank) mistakes in the initial classification of a debtor as related or unrelated.[20] Unfortunately, this analysis is not perfect because the post-change-in-control list does not include the status of the 1995 borrowers that had dropped in relative size and were no longer among the 300 largest when control changed hands. It is important to note that to the extent that fraud was an important factor, our results both underestimate the true magnitude of related lending and overestimate the ex-post performance of related loans.

We used the list of the three hundred largest loans from each bank in our sample for two very different purposes: to get a snapshot of the aggregate magnitude of related and unrelated lending in Mexico, and to select a random sample of these loans for further analysis of their terms and ex-post performance. The data on loan terms and ex-post performance covered approximately 90 different borrowers from each bank.

The random sample of borrowers is based on the three hundred largest loans in December 1995 (the first reporting date) or, when unavailable, March of 1996. The loans in the random sample give us a snapshot of the loan portfolio of the 19 banks in our sample circa 1995. In addition, we follow their evolution through time until December of 1999 as they are repaid, renewed, restructured, etc.[21] It is important to notice that the banks in our sample were in varying degrees of financial distress at the time we took the snapshot of their loan portfolio. Table III shows the timing of government interventions and of forced changes in control for the banks in our sample. The first bank failures (Union, Cremi, and Oriente) took place in the second half of 1994 and the last one (Serfin) in 1999. At the onset of the financial crisis, the government took over financially distressed banks with the goal of restructuring them and finding a buyer for them in better times. The government took over three banks in this fashion in 1994 (Cremi, Union, and Oriente). Three years later, the government sold the branches of those three banks but retained most of their (non-performing) loans. Later, the government focused on finding buyers for the failing banks (11 cases) and skipped the restructuring process. Typically, the related party that made the loan in our random sample is not the agent that tries to recover from a non-performing borrower.[22] We believe this is an advantage as related parties may have procrastinated before pulling the plug on loans to their associates. We include bank-fixed effects in the

[20] In contrast, it is relatively frequent for loans to be reclassified from performing to non-performing when there is a change in control.

[21] There are no write-offs in our sample. Circular 1164 prohibited partial write-offs and imposed burdensome requirements for full ones.

[22] Banks that sold loans to FOBAPROA, retained responsibility for the collection of payments and all other administrative matters.

regressions to capture the fact that banks faced different incentives to loot. We also include in the regressions a dummy for whether the bank is under government or private management.

When possible, we sample 45 related and 45 unrelated loans for each bank.[23] Once we selected a random sample of (approximately) 90 borrowers per bank, the National Banking and Securities Commission sent an official request to gather documentation about them.[24] Our sample may be biased towards the "cleaner" forms of self-dealing as it is drawn from loans that were routinely scrutinized by regulators. Each bank was required to locate the relevant files in their regional offices and ship them to the Head of Credit Allocation. In addition, the bank was required to extract and supply the following information from each of these files:

1) characteristics of the debtor (assets, total liabilities, liabilities with the bank, sales, and profits);

2) characteristics of the credit (interest rates, maturity, collateral, and guarantees);

3) performance of the credit (date of default, percentage recovered, terms of any renewals, restructures and/or loan forgiveness);

4) amount of the yearly payments made by the borrower between 1993 and 1998;

5) analogous information about other credits that the debtor had, or obtained within four years of the date of the loan, with the same bank.

Although the information was supplied by the banks, the credit files were made available to the regulator to verify their accuracy.

The total number of loans in the sample is over 1,500. However, we have been able to process data for only seventeen of the nineteen banks (Bancrecer and Banoro are missing). We plan to update the sample shortly. Some borrowers had more than one loan outstanding with the same bank. In such cases, we report the weighted average of the terms (e.g., interest rates) of all loans by the same borrower and we sum the promised and actual payments by borrower.

B. Methodology.

In this section, we discuss how we compute interest rates and recovery rates. We introduce the remaining variables as we discuss them in the text (see Table IV for definitions of the variables). Loans vary

[23] In some cases banks did not have 45 related loans among the largest 300 loans and we had to settle for less. Those cases are: Banpais (40), Cremi (38), and Citibank which did not do any related loans.

[24] Banks were told that the goal of the project was to assess recovery rates.

on the date on which they were granted and on their maturity. This complicates direct comparisons across loans since interest rates were highly volatile over the sample period. To partially address this difficulty, we report realized real interest rates over the maturity of the loan. To illustrate, consider a loan that, on period t, pays a spread of *s* over the reference rate *i* and has a maturity of T months.[25, 26] Letting the inflation rate be B, we compute the average real rate for this loan as follows:

$$\frac{1}{T}\sum_{t=1}^{T}\frac{1+i_t+s}{1+\pi_t} \qquad (1)$$

In addition to real interest rates, we also computed the average difference between the interest rate paid by the loan and the "risk-free" rate measured as the one-month rate on government bonds. Continuing with the previous example and letting r^f be the currency- and maturity-matched rate on government bonds (i.e., depending on the currency of the loan, the US or Mexican government bond rate), our measure of spread over government rates is computed as follows:

$$\frac{1}{T}\sum_{t=1}^{T}(i_t+s-r_t^f) \qquad (2)$$

We keep floating and fixed interest rates separate as they present different risk characteristics. For the same reason, we also keep domestic and foreign interest rates separate and deflate using the Mexican or US wholesale price index as appropriate.[27] As a result, we group loans in four categories: (1) domestic/fixed; (2) domestic/floating; (3) dollar/fixed; and (4) dollar/floating.

One of the goals of the paper is to assess the number of loans that paid less than initially contracted ("bad loans"). To examine the performance of the loans in our random sample, we track them from the time they were granted through 1998 as they are either: (1) paid at maturity; (2) paid in advance; (3) renewed; (4) restructured; (5) transferred to FOBAPROA, (6) settled in court; or (7) in default and not yet settled. We aggregate all these outcomes into a single performance measure ("recovery ratio") by keeping track of the

[25] For data availability reasons, we cap the maturity of loans at December of 1999.

[26] For fixed loans, *s* is zero and *i* is the promised coupon rate.

[27] As a robustness check, we computed the average ex-post spread of the contracted domestic or foreign interest rate over the relevant one-month government rate during the period 1995-1998. The results are qualitatively very similar.

net cash-flows paid to the bank by the borrower once the loan has been granted. Specifically, we define the recovery ratio as follows:

$$\frac{\sum_{t=1}^{T} \frac{payment_t - renew_t}{1+ i_t}}{capital_t} \qquad (3)$$

where: $payment_t$ includes coupon and amortization payments received, amounts recovered in court, and collateral repossessed; $renew_t$ is the face value of loan renewals; i_t is the contracted interest rate; $capital_0$ is the face value of the loan when it was first made; and T is the maturity of the loan extended, if necessary, by renewals, restructurings, or court awards.

Our treatment of renewals and restructures deserves discussion. Problems with related loans may take time to show up if banks renew related loans without paying attention to their credit quality or restructure loans without assessing the repayment ability of the borrower.[28] As a result, the performance of the loan when it is renewed or restructured may convey a misleading image as problems with related loans lay below the surface and will transpire over time. Our calculations are designed to avoid these problems. For instance, suppose that a bank lends $100 for a year and renews the loan at the end of that year, but the borrower defaults once the loan has been renewed. In such case, the recovery ratio would adequately by zero.

Identifying bad loans involves some judgment calls. The most obvious bad loans are those that defaulted. For regulatory purposes, after 90 days of missing a payment, or in the case of a one-payment loan, after 30 days of missing the payment. But because default does not capture the full range of loans that experience distress, we add two important categories to our proxy for bad loans: performing loans sold to the government (FOBAPROA) as part of the bailout of the financial system, and performing loans restructured at a loss to the bank.

A central element of the government bailout program was the transfer of non-performing loans to the deposit insurance scheme. FOBAPROA agreed to acquire roughly two pesos of loans for every peso of additional capital committed by the bank's shareholders. On average, FOBAPROA paid 88.7% of the face value of the loans but have recovered only 15-20% of their face value so far. In total, the government acquired 18% of the loan portfolio outstanding in December of 1994 and the total cost of all government support program for debtors and banking institutions was around 20% of 1999 GDP. Because banks had

[28] At least some of that did take place. "Interest accruing on these loans [referring to loan to Directors] was frequently capitalized rather than paid. In some cases, additional loans were issued to borrowers for the purpose of paying interest on the initial loans." (Mackey, 1999, page 216).

incentives to sell to FOBAPROA those loans with the worst repayment expectations, it is fair to classify all loans sold to FOBAPROA as bad loans even if they had not technically defaulted at the time when they were transferred to the government.

Forced restructurings of performing loans are more difficult to capture. Most loans were typically restructured because the borrower was financially distressed. However, it is possible that some loans were restructured at no loss to the bank. We err on the conservative side by classifying restructured loans as bad loans only when the bank simultaneously takes an accounting loss. Thus, our proxy for bad loans underestimates the true level of noncompliance by not capturing, for example, a bank that grants additional time without interest to pay back a debt.

V. The Magnitude of Related Lending.

In this section, we document the size of related lending for the sample of the three hundred largest loans made by each bank. Table IV presents the basic data. We group banks into two categories. The first group of thirteen banks ("*bankrupt banks*") includes those that were either taken over by the government or were acquired by other banks to avoid a government takeover. The remaining five banks ("*survivor banks*") survived the crisis. We include Bancomer in this second group despite the fact that it was acquired by a foreign bank in 2000 because that acquisition was motivated by standard business reasons, not linked to financial distress, and there was no government support with fiscal funds. We keep both groups of banks separate as they may have faced different incentives to loot. However, some of the members of the "survivor" group of banks experienced considerable financial distress during the sample period.

For both groups of banks, we report the percentage of the top-300 loans made to related parties and the percentage of non-performing loans both in December 1993 (i.e., before the crisis) and in the post-crisis period. We define the post-crisis period as six months after a "bankrupt" bank changes control and as September of 1997 for all "survivor" banks. We arbitrarily picked September of 1997 as the reporting date for the "survivor" banks because it roughly corresponds to the median date of change in control for the "bankrupt" banks. We examine distressed banks six months after they experienced a change in control for two reasons. First, the *looting* view predicts that related lending increases as the capital of the bank is depleted (i.e., when R_U falls unexpectedly). Second, measurement error may be smaller after a change in control than before. Six months after a change in control, auditors are typically able to identify most of the inappropriate practices followed by the previous management. At the same time, six months is probably not

long enough for new management to turn around the bank, alter its lending policies, and deal aggressively with non-performing loans.[29]

We focus first on the related lending figures for the crisis period. Table IV shows that the fraction of related loans ranges from 0% for Citibank to 41% for Cremi. The key result in this section is that related lending is a large fraction of the banking business: related parties obtained 21% (20%) of the largest 300 hundred private loans made by an average (median) bank in the sample. Interestingly, the percentage of related lending is higher for "bankrupt" banks than for "survivor" ones: 24% versus 13% (t-stat of 2.19). The volume of related lending is large relative to the price that bidders paid to gain control of the banks. In fact, the mean (median) bidder obtained $1.50 ($0.72) in (top-300) loans for each dollar that she paid at the privatization auction. In summary, banks appear to have maxed-out the level of related loans as prudential regulation required that no more than 20% of all loans could be made to related parties. These figures are large as they likely underestimate the magnitude of related lending to the extent that the controllers of banks were able to camouflage some self-dealing transactions to avoid detection.

This table also reports the fraction of non-performing loans made to the private sector. We compute non-performing loans based on the loans to the private sector in the sample of top-300 loans for each bank. Naturally, non-performing loans are significantly higher for distressed banks than for healthier ones (32% versus 10%). A striking finding on Table IV is the correlation between non-performing loans and related lending. Figure II presents a scatter plot of the two series. The correlation of the two series is 0.815. This suggests that related loans may have experienced higher default rates than unrelated ones. However, micro-level data is needed to examine this issue in detail and we postpone such analysis until Section VI.

The final set of results on Table IV concerns the evolution of relating lending over time. In the *looting* model, incentives for self-dealing are increased by falls in the value of equity as bank insiders bear a dwindling fraction of the costs of making bad loans. In addition, falls in the value of equity increase the attractiveness of gambling-for-resurrection. Interestingly, the results show that the mean (median) bank in the sample had 12% (13%) of the top-300 outstanding loans with related parties in 1993. These figures on related-lending figures are much lower than those for the crisis year when the mean (median) bank in the sample had 24% (25%) of the top-300 outstanding loans with related parties. Furthermore, consistent with the *looting* view, much of the increase is concentrated in the group of "bankrupt" banks. The mean (median)

[29] We have experimented with a wide variety of reporting windows and found that results are very similar to those on Table IV.

fraction of related lending increases by 12 (12) percentage points for "bankrupt" banks but only by 3 (6) percentage points for "survivor" banks. Note that although there is a big wedge between the fraction of related loans for "bankrupt" and "survivor" banks in the crisis year (11 percentage points for the means), the gap is much narrower in December of 1993 (2 percentage points for the means). One interpretation of the results on the evolution of related lending over time is that they support the predictions of the *looting* view that tunneling becomes more aggressive when lending to outsiders is less profitable. An alternative interpretation is that bankrupt banks also did a lot of related lending in 1993 but were able to conceal it. Reporting problems probably play a large role in the rapid increase of related lending at Banco Cremi. The incumbent management reported that related loans were only 4% of top-300 loans in December 1993. However, once external auditors moved in (and incumbent management out) that figure skyrocketed to 41% of top-300 loans in December 1994 (i.e., twice the legal maximum).

To review the results so far, consistent with both views of related lending, banks make large loans to related parties. Banks appear to step up the intensity of related lending as a forced change in control looms closer. Related loans are strongly correlated with the fraction of non-performing loans. Although the last two findings require further examination, which we undertake in the next three sections, they are consistent with the *looting* view and difficult to reconcile with the *information* view.

VI. Lending Terms.

In this section, we compare the terms under which related and unrelated borrowers obtained credit. On the *information* view, related borrowers obtain preferential terms (e.g., lower interest rates) because they are easier to screen and monitor. Under the *looting* view, better terms for related borrowers reflect self-dealing behavior on the part of insiders of the bank. The results in this section, and in the remainder of the paper, are based on the random sample of roughly 90 loans for each bank. Table V presents descriptive data on borrowing terms for related and unrelated borrowers. For each bank, we collected data on these five categories of variables for roughly 90 random loans: (1) interest rates; (2) collateral; (3) guarantees; (4) original maturity; and (5) grace period.

Panel A in Table V shows the results for real interest rates. Interest rates on related loans are consistently lower for related parties than for unrelated ones. Consider the case of flexible rate loans in domestic currency, the most frequent type of loan in our sample. The mean (median) real interest rate is 9.56% (9.87%) for unrelated loans but only 6.75% (7.36%) for related ones. Spreads over government bonds

tell a very similar story (Panel B). Continuing with the case of flexible rate loans in domestic currency, the mean (median) spread is 6.54% (7.00%) for unrelated loans but only 3.44% (4.00%) for related ones.

Panel C reports the incidence of collateral and guarantees as well as their value as a fraction of the loan's principal at the time it was granted. Although related parties borrow at lower rates, their loans are less likely to be backed by collateral. Whereas 84% of the unrelated loans are collateralized with assets, only 53% of related loans are backed by collateral. Furthermore, the mean (median) collateral-to-face-value ratio is 2.89 (1.84) for collateralized loans to unrelated parties and 1.19 (0.52) for loans to related parties (differences in means and medians are both significant at 1%). Parallel results hold for the frequency of guarantees (see Panel D). Related loans are less likely than unrelated ones to have personal guarantees (47.7% versus 66.3%). The evidence on interest rates and collateral requirements is consistent with the *looting* view and can be reconciled with the *information* view if related parties are the high-quality borrowers.

Panel E shows that unrelated loans have slightly shorter maturities than related ones (although the difference is not statistically significant). The mean (median) maturity is 45.6 (36) months for unrelated loans and 48.7 (36) months for related ones. Similarly, unrelated parties have shorter grace periods than related ones (7.4 months shorter for means and 6 months shorter for medians) before banks have the right to pull the plug on them (Panel F). One interpretation of these findings is that banks need to keep a closer eye on unrelated borrowers than on related ones. Thus, banks may shorten the maturity of loans to unrelated parties to facilitate monitoring and gain bargaining power over low-quality borrowers. The alternative interpretation is that banks are soft on related parties.

Differences in the ex-ante financial risk characteristics of the two types of borrowers may account for the observed divergence in borrowing terms. Table VI rounds up the usual suspects. It presents measures of borrower's size, profitability, and leverage when the loan was granted. To examine the characteristics of borrowers, we break the sample into two groups: corporate and individual. Profitability and sales information is not available for loans made to individuals. As it turns out, related and unrelated borrowers are remarkably similar in their financ`ial characteristics. Differences in means and medians often show opposite signs and are rarely statistically significant. There is no evidence in favor of the view that related loans are less risky than unrelated ones based on the initial levels of size, profitability, and leverage.

We examine next whether our initial finding that related lending is done on more advantageous terms that unrelated lending survives in regressions that control for size, profitability, and leverage. The dependent variables are: (1) real interest rates; (2) interest rate spread over the risk-free rate; (3) a dummy that takes value of 1 if the loan has collateral; (4) the collateral-to-face-value ratio; (5) the guarantee-to-face-value ratio;

(6) the maturity period; and (7) the grace period. Because we pool fixed, floating, and foreign loans, we also include in the regressions dummies for fixed-rate and foreign currency loans. The independent variables also include size, profitability, and leverage, as well as fixed-year and industry effects. Since the profitability and sales information is not available for loans made to individuals, we run two regressions for each dependent variable. The first regression is run using the sub-sample of corporate borrowers and includes the log of sales as a measure of size, the debt-to-asset ratio as a proxy for financial risk, and the income-to-sales ratio as a measure of profitability. The second regression is run using all observations and controls for the log of assets and the debt-to-asset ratio but not for profitability.

Table VII presents the results. In the regressions using real interest rates, size and profitability have the expected signs, but only size is significant. Fixed-rate loans and domestic-currency loans pay lower real rates (presumably because of the surprise devaluation of 1994 and the inflation that ensued). The coefficient of interest is that of the dummy for related borrowing. The estimated coefficient indicates that related loans pay between 4.22 and 4.15 percentage points less than unrelated ones depending on whether we base our results on the sample of all loans or only of corporate ones. In both cases, the coefficients on related borrowing are highly significant. Results using interest rate spreads are very similar, although they imply that related loans pay 5.15 percentage points less than unrelated ones.

The results on collateral are also interesting. Large firms, more profitable firms, and less leveraged firms post collateral less frequently and, when they do, in smaller amounts. Related loans are between 28% and 30% less likely to have collateral and the predicted collateral-to-loan ratio is roughly 2.9 units lower for related than unrelated parties. To put this figure in perspective, note that the mean collateral-to-loan ratio is 2.14 with standard deviation of 3.38. The results on guarantees, maturity, and grace also confirm our findings on Table V.

To summarize, related parties borrow at lower interest rates and longer maturities than unrelated ones. They also post less collateral against their loans and offer fewer personal guarantees than unrelated creditors. The preferential treatment received by related parties does not appear to be tied to differences in size, profitability, or leverage. One interpretation of these results is that the favorable borrowing terms enjoyed by related parties are a manifestation of looting. An alternative interpretation is that related loans are safer than arm's length ones in ways that are not picked up by our controls. We compare the two interpretations in the next section.

VII. Ex-post performance.

In this section, we compare the default and recovery rates of performance of the related and unrelated loans in our random sample of loans. The *information* view generally predicts that related loans takes place on beneficial terms because they have lower default rates and higher recovery rates than unrelated ones. For example, low-quality borrowers should be more prevalent among unrelated borrowers than related ones if having ties to the bank facilitates screening. Similarly, banks with control rights over borrowers should experience higher recovery rates if gambling-for-resurrection is a severe problem when firms are in financial distress. Other versions of the *information* hypothesis are possible and we discuss one of them later in the section. In contrast, the *looting* view predicts that related lending takes place on advantageous terms although related borrowers have higher default rates and lower recovery rates than unrelated ones.

Panel A in Table VIII shows the incidence of bad loans in our sample. Consistent with the *looting* view, the default rate is 37% for unrelated borrowers and 66% for related ones (the difference is statistically significant at 1%). The number of performing loans restructured with forgiveness ("other bad loans") is very small. As a result, the fraction of all bad loans is 39% for unrelated borrowers and 70% for related ones.[30] One can interpret these findings in two ways. One interpretation is that related borrowers were hit disproportionately hard by the crisis. A more cynical interpretation is that related borrowers found it easier to default. Recall that related loans were less likely to be collateralized, raising the incentive to default. In addition, as pointed out by the FOBAPROA officer in charge of recovering bad loans, "...proper procedure was not followed when loans were granted, they lacked some of the required legal documentation, collateral was not duly registered in the Public Register of Property, there was no follow up of how borrowed funds were used or of how loans performed..." (*Jornada* 8/2/99). Plenty of anecdotal evidence is consistent with the cynical view including loans backed by buildings that were never built or by planes that could not fly.

It is worth pointing out that loan default is not tightly linked to bankruptcy in Mexico. Fourteen of the defaulted related borrowers in our random sample were publicly-traded firms, and it is easy to follow them in the post-1995 period. Only one publicly-traded industrial firm, Fiasa, went bankrupt. Courts finally sanctioned Fiasa's bankruptcy because it did not have a known address, which suggests that its assets may also prove difficult to locate (*"El Economista"*, 9/11/2000).

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[30] One possible concern is that defaults may be more likely for loans that mature in 1995 and that related loans may disproportionately do so. The opposite is true. Loans that mature in 1995 are more likely to be unrelated than related ones (58.5% versus 41.5%).

Panel B shows the collection procedures followed by banks. The management that made the loans was often not the same as the one that collected them. Accordingly, one may wonder how aggressive were collection efforts, particularly when the government took over banks. Collection efforts were fairly aggressive as most bad loans were sent to court (461 loans out of 807). Only 13.3% of bad loans to unrelated parties and 12.4% of bad loans to related parties were restructured but not sent to court. Finally, few loans 3-4% were sold to FOBAPROA. These loans were still under the collection efforts of each individual bank and there were further economic incentives to try to recover those loans.[31]

Table IX presents data on the recovery rate of bad loans. As predicted by the *looting* view, the mean (median) recovery rate for bad loans was 46.2% (44.8%) for unrelated borrowers and 27.2% (15.0%) for related ones (the differences are statistically significant at 1%). Some of the large difference in recovery rates may stem from the fact that, as shown in Section V, unrelated credits are backed by more collateral than related ones. But even when the loan was not backed by collateral, collection was substantially higher for unrelated parties. The mean (median) recovery rate for an uncollateralized unrelated bad loan was 42.1% (43%), while a similar related loan only yielded 25.8% (10%). We obtain similar results if we compare the recovery rates of bad loans backed by less collateral than the median loan in the sample.

Panel B shows recovery rates for all loans. We shift the focus of the analysis from bad loans to all loans to aggregate the effects of default rates and recovery rates into a single number. Related loans are hit by a double whammy: higher default probabilities and lower recovery rates in default than unrelated ones. As result, the mean (median) gap in the recovery rate of all loans widens to 30% (60%) from 19% (30%) for all bad loans. The recovery rate for the median related loan in our sample is a paltry 40%.

For robustness, we check whether our results survive in regressions that control for size, profitability, and leverage, as well as bank, year-of-loan and industry effects. Table X shows that borrowers that are bigger, more profitable, and less leveraged when the loan was made are less likely to default and have higher recovery rates when they do. Controlling for everything else, related borrowers are 33-35% more likely to default (depending on whether we use all the sample or only corporate borrowers). The results on recovery rates also show an economically large effect of related lending: the recovery rate drops by 0.28 for a bad loan made to a related borrower, and by 0.70-0.78 for all related loans. The related dummy is significant at 1% in all regressions. All the univariate results survive in the regressions.

[31] The government's subsidy on the loans sold to FOBAPROA was structured in the form of a bond payable in 10 years with a loss-sharing clause based on actual collection by that time.

The results so far indicate that related parties pay lower interest rates despite similarity in size, profitability, and leverage to unrelated borrowers. In addition, related loans are backed by less collateral and guarantees. Finally, payments on related loans are much more likely to be below the promised level than for unrelated loans. These results fit well with the *looting* view of related lending. They may, however, also be consistent with some versions of the *information* view. A realistic model of the world could, for example, include three states (good, bad, and awful) and not just two. In the good state of the world, both related and unrelated loans pay as promised. In contrast, in the bad state of the world, unrelated borrowers default half the time but related ones never default. In the awful state of the world, related loans always default and unrelated ones still default only half of the time. One way to motivate this scenario is to argue that related borrowers are negatively affected by the loss of banking relationships (perhaps because relationship banks have specialized human capital that other banks cannot easily substitute).[32] As a result, the recovery rate for related loans may be very low when a severe crisis destroys the links between banks and borrowers during the awful state of the world. It may then be fair to charge related borrowers lower interest rates if the awful state of the world is infrequent enough. Similarly, since unrelated borrowers have higher default rates under these assumptions, it may also be fair to require more collateral from them. Implicitly, the argument assumes that 1995 was the awful state of the world.

We do not find the three-state model persuasive. Whereas there can be little disagreement that 1995 was a very bad year it is less clear that, the devaluation of that year was a rare event. In fact, the country experienced six devaluations during the period 1970-95 of 20% or more in real terms (in 1976, 1982, 1985, 1986, 1994, and 1995). In addition, the three-state model does not explain the finding in Table IV that banks step up their lending to related parties as the crisis sets in. The next section further suggests that the three-state model would need additional refinements to fit the data.

VIII. Further Results.

In this section, we examine a straightforward prediction of the *looting* view. Under that view, borrowing terms should be more advantageous the higher is the cash flow ownership of the bank's insider (be it a manager or controlling shareholder) in the related party. Data on ownership is simply not available except for rare exceptions (e.g., companies with ADRs in the US). As a proxy for ownership, we use a

[32] Both Bernanke (1983) and Diamond and Rajan (2000) emphasize the losses that result from severing the ties between bankers and their related borrowers during financial crises.

dummy that takes value of 1 if the borrower is a publicly-traded firm and 0 otherwise. The implicit assumption is that related parties own a larger fraction of the equity in privately-held entities than in publicly-traded firms. Consider the incentives of an insider who needs to allocate a loan of $1 to a borrower that she knows will never pay back. Since all banks in the sample are publicly-traded, the controlling shareholder owns only a fraction of the equity in the bank. The controlling shareholder has an incentive to allocate that loan to a related firm only if her fractional equity stake in the firm is larger than that in the bank (which we assume to be always true for privately-held firms). Even in that case, the controlling shareholder has a stronger incentive to allocate one loan to a firm wholly owned by her than to a publicly-traded firm that she partly owns because in the latter case she is forced to share the windfall with minority shareholders. In contrast, the *information* view would hold that banks will charge higher interest rates on loans to closely-held firms than to publicly-traded ones because the former are more opaque.

Table XI shows the results of regressions that explain the borrowing terms and the performance of the loans using the same control variables of the previous regressions but adding the interaction term between related party and publicly-traded firm. Publicly-traded firms pay lower interest rates than non-publicly-traded firms or individuals. However, among related borrowers, banks offer worse terms to publicly-traded firms. Related publicly-traded firms face higher real interest rates and spreads and have higher collateral requirements than related individuals and privately-held firms. Nonetheless, the performance of related parties differs sharply depending on whether they are publicly-traded firms or not. Loans to related parties are 29.4% less likely to be bad when made to publicly-traded firms. Similarly, among related parties, the recovery rate on loans to publicly-traded firms is 0.52 higher than on loans to individuals and privately-held firms. In contrast, borrowing terms and ex-post performance line up much better for unrelated parties. Among the unrelated parties, publicly-traded firms pay lower interest rates and post less collateral than individuals and privately-held firms but the two groups have similar recovery rates.

In summary, banks offer all related borrowers similar terms despite the fact that loans to individuals and privately-held companies are substantially more risky than loans to publicly-traded firms, presumably because they benefit personally more from a dollar diverted to a privately-held than to a publicly-traded firm. Consistent with the *looting* view, the closeness of the relationship between the controllers of the bank and the borrower matters for the terms on which related parties borrow. These results also place constraints on the structure of a successful three-state model: the version of the *efficient view* that fits these data is one in which non-publicly traded firms with close ties to the bank are the best performers in the intermediate state

of the world, followed by publicly-traded firms with close ties to the bank, and unrelated parties are the worst performers.

IX. Conclusion.

Banking crises are common. There is widespread agreement that the fragility of the banking system is related to moral hazard problems. Less understood is the precise nature of the moral hazard problem that makes banks so fragile. One view is that banking crises result from bad management. Another view is that deposit insurance contributes by creating incentives for excessive risk taking. Still another view is that financial crises result from soft budget constraints created by reputational problems . Here we draw attention to perhaps another source of moral hazard: looting or tunneling. According to the *looting* view, the controllers of banks deliberately transfer wealth to their own firms and to themselves making banks inherently fragile. This is in part due to deposit insurance but also to the incentives to expropriate minority shareholders.

Our results shed light on three issues. First, related lending was a large fraction of the banking business in 1995. Consistent with the *looting view*, when the economy slipped into a recession in 1993, the fraction of related lending almost doubled for the banks that subsequently went bankrupt and increased only slightly for the banks that survived. Second, the borrowing terms offered to related parties were substantially better than those available to unrelated ones even controlling for observable financial characteristics. Finally, related loans had much higher default rates and lower recovery rates than unrelated ones. As predicted by the *looting* view, those who benefitted the most from related lending were persons and companies closest to the controllers of banks. In fact, a dollar lent to a related person or a related privately-held company turned out to be a dollar lost (banks recovered 78 cents less on a dollar lent to related parties than to unrelated ones). This evidence speaks to the relevance of related lending as a source of bank fragility.

The results in this paper may have profound implications for the regulatory design of banking institutions. Most of the Basel rules address incentives for excessive risk-taking. Our paper shows the importance of focusing on looting as a key determinant of banking stability. The best way to reduce the fragility of financial systems may be to reduce the importance of related lending (Diamond and Rajan, 2000). This may be achieved by explicit regulation of related lending as well as by enhanced reporting requirements, better investor protection (e.g., more scrutiny of self-dealing transactions and directors' liability in bankruptcy) and closer supervision. Allowing foreigners to own banks may also have beneficial effects as they are likely to have fewer incentives to engage in related lending.

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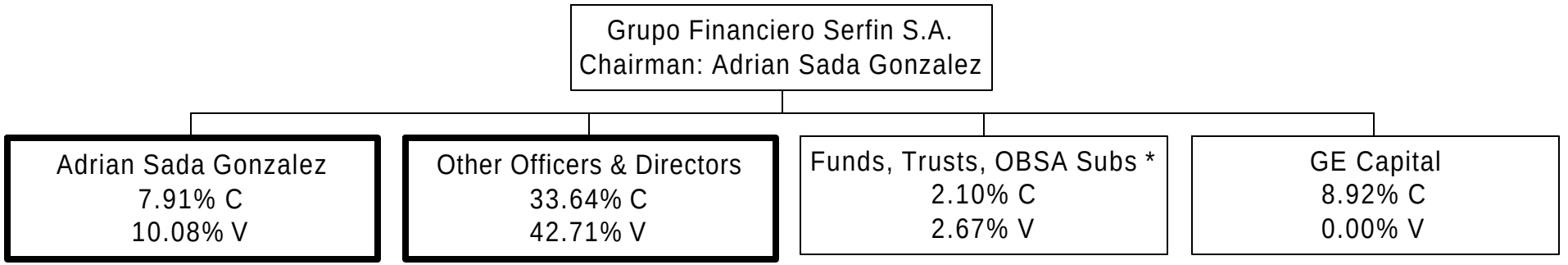
Figure I

Grupo Financiero Serfin S.A.

Ownership structure in 1995



* The Funds are equity funds, managed and partially owned by OBSA (a subsidiary of Banca Serfin) and Banca Serfin. The trusts were established for employees of OBSA and Banca Serfin.

C=Controlling rights; V=Voting rights.

Source: American Depository Receipts filing 20-F (containing ownership for June 1995).

Figure II

Related loans vs. non-performing loans

(as % of the 300 largest private sector loans)

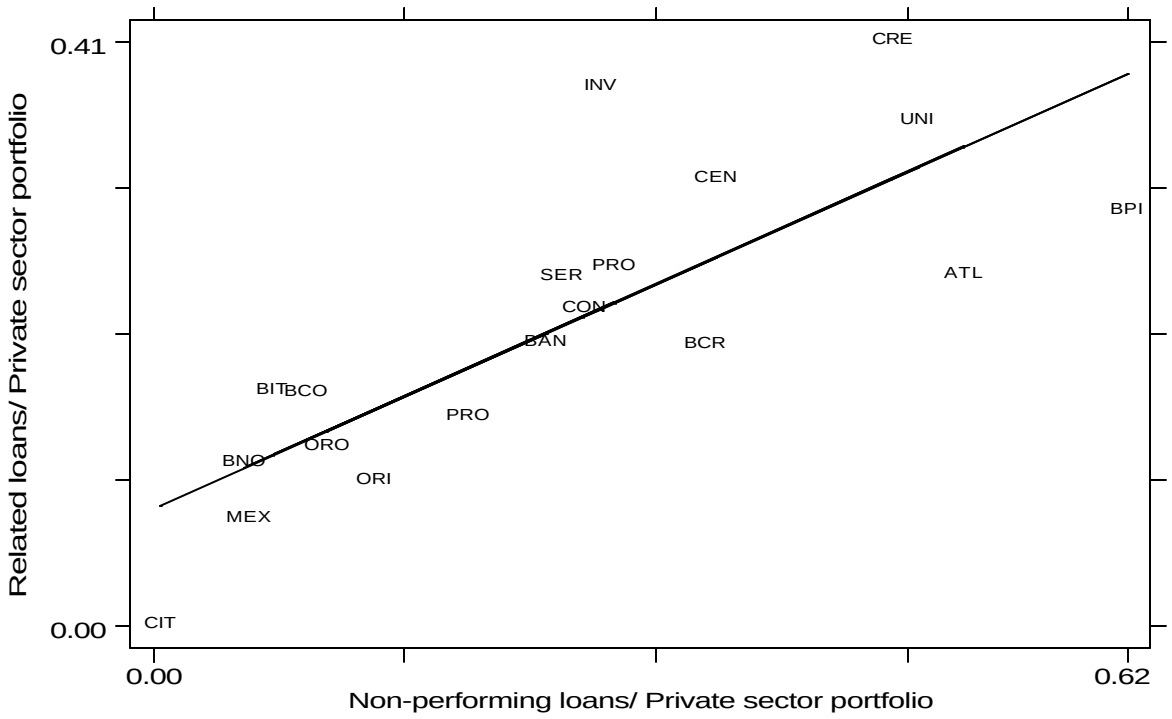


Table I
Grupo Financiero Serfin S.A.
Director affiliations in 1995

This table presents the names of the members of the board of directors of Grupo Financiero Serfin S.A. in 1995 and their affiliations as major shareholders and board members of non-financial firms. The last column specifies whether the firms were amongst Serfin's largest 100 loans in 1995.

Directors of Serfin (Series A)	Their firms	Among largest 100 loans?
A. Sada González ; F. Sada González	Vitro[a]	T
P. González Sada ; A. Sada Treviño	Vitro[a]	T
R. Garza Delgado; D. Garza Medina	Alfa[a]	T
J. González Díaz ; J. González Lobo	Crisol	T
T. González Sada	Cydsa[a]	T
M. Saba Ades ; I. Saba Raffoul	Industrias Ocotlán	T
G. Ballesteros Ch.; J. Ballesteros I.	Grupo de Desarrollo Industrial[a]	T
J. J. Gomez Sainz	Aceites Grasas y Derivados	
F. Terrazas Torres	Cementos Chihuahua[a]	T
J. Souza Lagorreta	Compañía de Descuento Viana	
E. Martens Rebolledo	Aerovías de México[a]	T
J. Garza Calderón	Domos Internacional	T
L. Prado Vieyra	C. Administradora y Promotora	
R. González Barrera	Grupo Maseca[a]	T
E. C. Molina Sobrino	Compañía Industrial Escorpión	T
J. López del Bosque	Grupo Industrial Saltillo[a]	T
J. Mendoza Fernández	Grupo Bufete Industrial[a]	T

[a] Publicly-traded firm or subsidiary of a publicly-traded firm.
Source: American Depository Receipts filing 20-F (December 1995)

Table II

Banco Serfin's top 20 outstanding loans to the private sector in December 1995

The table provides details about the largest 20 private sector loans of Banco Serfin in December 1995. The second and third columns show the main industrial sector of each debtors and the size of the loan as a percentage of the largest 300 private sector loans in Banco Serfin's loan portfolio at the time. The next three columns specify the nature of the relationship between the debtor and Banco Serfin. The last column of the table denotes if the loan was made to a publicly traded firm or one of its subsidiaries.

			Nature of Relationship			
Debtor	Sector	Size of loan (%)	Shareholder[1] in Serfin	Director/Officer in Serfin	Family of Serfin	Publicly traded firm or subsidiary
1	Glass	3.55	T	T		T
2	Diversified	2.54				T
3	Paper	2.19	T	T		T
4	Real Estate	2.04				
5	(Individual)	1.92			T	
6	Steel	1.66	T	T		T
7	Textile	1.62	T	T		T
8	Construction	1.61				
9	Textile	1.50	T			
10	Steel	1.49				
11	Construction	1.45				T
12	Minerals	1.39		T		T
13	Steel	1.39				
14	Metals	1.29				T
15	Construction	1.16		T		T
16	Fibers	1.06	T	T		
17	Hotels	1.02		T		
18	Fibers	1.01	T	T		T
19	Steel	0.91		T		T
20	Construct./Hotels	0.91				
Total related/ largest 300 private sector		**18.99%**				
Total related/ largest 20 private sector		**59.89%**				

[1] Shareholder of 1% or more of Serfin.
Source: Sam-300 and Senicreb databases.

Table III

This table presents the dates of changes in control for financially distressed banks and the timeline of government interventions in the banking system. Panel A describes the dates of government interventions, the dates of sale to private buyers and the name of the buyer for bankrupt banks. Panel B shows the timing of government interventions and specifies the time when our sample of random loans was drawn (last quarter of 1995 and first quarter of 1996).

Panel A – Dates of changes in control for financially distressed banks

Bank	Date of Government intervention	Date of sale to private buyer	Name of private buyer
Cremi	July 1994	July 1997 (branches)	BBV
Union	July 1994	July 1997 (branches)	Promex
Oriente	December 1994	July 1997 (branches)	BBV
Banpais	March 1995	December 1997	Banorte
Probursa	June 1995	June 1995	BBV
Inverlat	June 1995	July 1996	Nova Scotia
Centro	June 1995	September 1997	Banorte
Mexicano	December 1996	December 1996	Santander
Banoro	January 1997	January 1997	Bancrecer
Confia	May 1997	October 1998	Citibank
Atlantico	December 1997	December 1997	Bital
Promex	December 1997	December 1997	Bancomer
Bancrecer	December 1997	To be announced	Banorte
Serfin	June 1999	May 2000	Santander

Panel B – Time of government takeover and of random loan sample

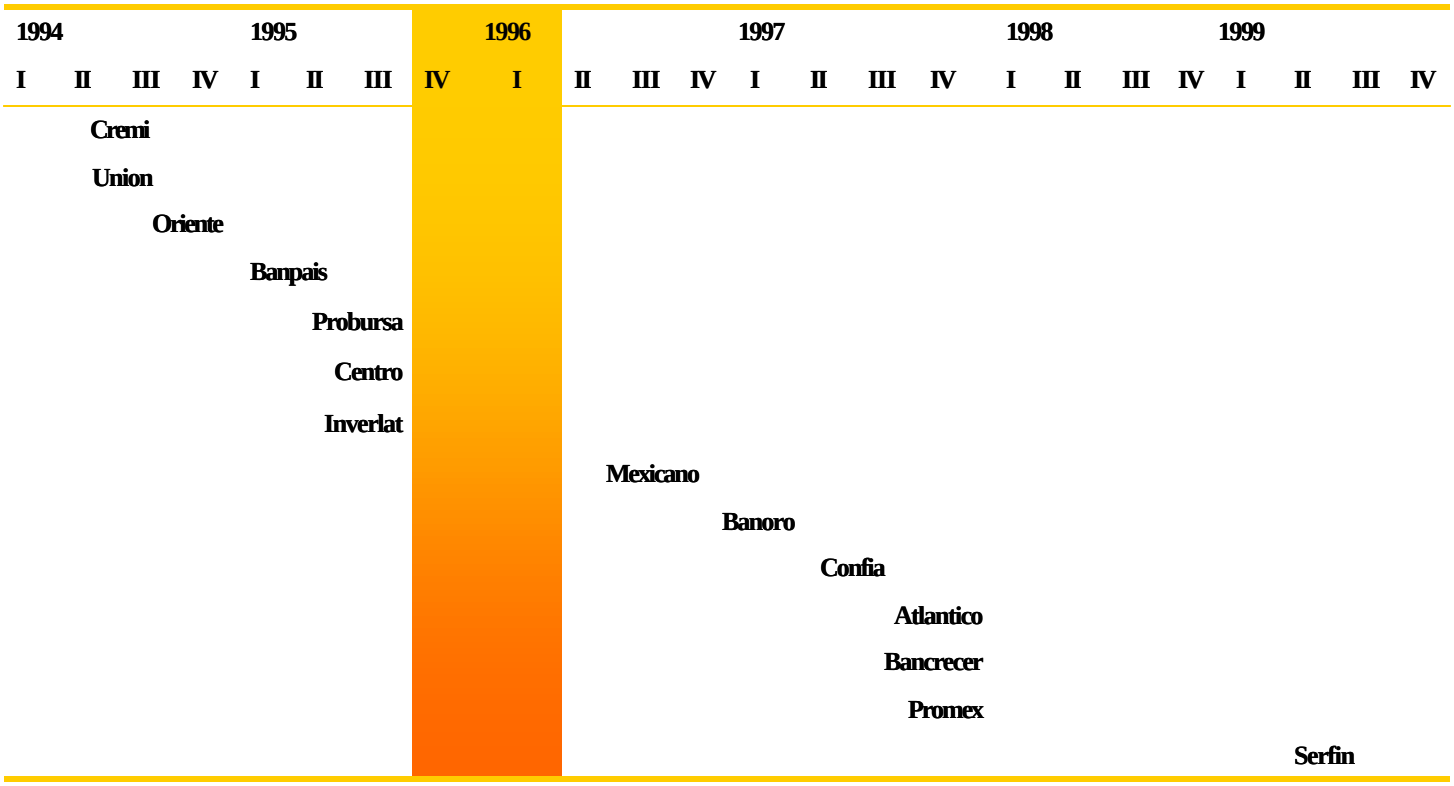


Table IV

The Size of Related Lending

This table presents summary statistics on the size of related loans in Mexico, before the 1995 Mexican crisis and six months after each bank bankruptcy. Panel A presents summary statistics for bankrupt banks taken over while Panel B presents summary statistics for survivor banks. Each panel presents the mean and the median values for bankrupt and survivor banks. Panel C shows the mean and median for all the 19 banks. Finally, Panel D, reports t-statistics and z-statistics (Wilcoxon rank sum) as the test for significance on the difference in mean and median values between bankrupt and survivor banks. Definitions for related and non-performing loans can be found in Appendix A.

Bank	Related loans / private sector loans		Value of related loans / Value paid in privatization	Non-performing loans / private sector loans	
	Before the crisis	Six months after bank bankruptcy		Before the crisis	Six months after bank bankruptcy
			Panel A: Bankrupt banks taken over		
Cremi	0.04	0.41	5.47	0.01	0.47
Inverlat	0.22	0.38	1.17	0.25	0.28
Union	0.17	0.35	7.05	0.20	0.49
Centro	0.11	0.31	1.33	0.03	0.36
Banpais	0.21	0.29	1.67	0.38	0..62
Atlantico	0.14	0.25	0.41	0.04	0.52
Promex	0.15	0.25	0.54	0.06	0..29
Confia	0.15	0.22	1.35	0.02	0.27
Bancrecer	0.14	0.20	2.72	0.03	0.35
Serfin	0.11	0.25	0.72	0.01	0.26
Probursa	0.05	0.15	0.59	0.01	0.20
Banoro	0.05	0.13	0.39	0.02	0.11
Oriente	0.09	0.10	1.42	0.07	0.14
Mexicano	0.04	0.07	0.56	0.01	0.06
Mean	**0.12**	**0.24**	**1.81**	**0.08**	**0.32**
Median	**0.13**	**0.25**	**1.25**	**0.03**	**0.29**
			Panel B: Survivor banks		
Banamex	0.16	0.20	0.31	0.01	0.25
Bital	0.10	0.16	0.71	0.06	0.08
Bancomer	0.10	0.16	0.46	0.03	0.10
Banorte	0.15	0.11	0.19	0.22	0.06
Citibank	0.00	0.00	—	0.00	0.00
Mean	**0.10**	**0.13**	**0.42**	**0.06**	**0.10**
Median	**0.10**	**0.16**	**0.38**	**0.03**	**0.08**
			Panel C: All banks		
Mean all banks	**0.12**	**0.21**	**1.50**	**0.08**	**0.26**
Median all banks	**0.11**	**0.20**	**0.72**	**0.03**	**0.26**
			Panel D: Tests of difference in means (t-stats) and medians (z-stats)		
Bankrupt vs. survivor means	**0.5451**	**2.1850[b]**	**1.3570**	**0.3087**	**2.8094[b]**
Bankrupt vs. survivor medians	**0.3720**	**1.8520[c]**	**2.2300[b]**	**0.4210**	**2.6850[b]**

a=significant at 1%; b=significant at 5%; c=significant at 10%. Source: Sam-300 and Senicreb databases.

Table V
Terms of the loans for the sample of unrelated and related loans

This table presents raw results for the random sample of related and unrelated loans. The table presents, for each empirical proxy, the number of usable observations, the mean, and the median values for unrelated and related loans. We report t-statistics and z-statistics (Wilcoxon rank sum) as the test for significance for the change in mean and median values, respectively. Definitions for each variable can be found in Appendix A.

	Unrelated loans		*Related loans*			
Variable	N	Mean Median	N	Mean Median	Difference	t-statistic z-statistic
		Panel A: Real interest rates				
Flexible rate & domestic currency	381	0.0956	264	0.0675	0.0281	5.28[a]
		0.0987		0.0736	0.0251	7.67[a]
Flexible rate & US dollars	185	0.1247	173	0.1022	0.0225	6.44[a]
		0.1294		0.0981	0.0313	8.59[a]
Fixed rate & domestic currency	181	0.0438	123	-0.0250	0.0688	4.83[a]
		0.0744		-0.0367	0.1111	5.87[a]
Fixed rate & US dollars	111	0.1200	119	0.0792	0.0408	6.36[a]
		0.1197		0.0732	0.0465	6.69[a]
		Panel B: Interest rate spreads				
Flexible rate & domestic currency	381	0.0654	264	0.0344	0.0310	6.42[a]
		0.0700		0.0400	0.0300	12.36[a]
Flexible rate & US dollars	185	0.0687	173	0.0412	0.0275	10.75[a]
		0.0700		0.0388	0.0312	10.55[a]
Fixed rate & domestic currency	181	0.0461	123	-0.0865	0.1326	10.40[a]
		0.0518		-0.1032	0.1550	9.39[a]
Fixed rate & US dollars	111	0.0691	119	0.0217	0.0474	7.67[a]
		0.0609		0.0145	0.0464	7.77[a]
		Panel C: Collateral				
Collateral dummy	858	0.8380	679	0.5272	0.3108	14.02[a]
		1.0000		1.0000	0.0000	13.21[a]
Collateral value / loan	847	2.8950	671	1.1878	1.7072	10.09[a]
		1.8399		0.5209	1.3190	14.51[a]
		Panel D: Guarantees				
Personal guarantees dummy	858	0.6632	679	0.4772	0.1860	7.47[a]
		1.0000		0.0000	1.0000	7.34[a]
		Panel E: Maturity				
Maturity (months)	858	45.6241	679	48.7284	-3.1043	-1.27
		36.0000		36.0000	0.0000	0.98
		Panel F: Grace period				
Grace period (months)	858	4.8077	679	12.1845	-7.3768	-10.83[a]
		0.0000		6.0000	-6.0000	-11.89[a]

a=significant at 1%; b=significant at 5%; c=significant at 10%.

Table VI
Debtor characteristics

This table presents measures of size, profitability and leverage for both the unrelated and related borrowers in our random sample of loans. For each variable, we report t-statistics and z-statistics (Wilcoxon rank sum) for the significance of the difference in means and medians between related and unrelated borrowers. Definitions for each variable can be found in Appendix A.

	Unrelated loans		*Related loans*			
Variable	N	Mean Median	N	Mean Median	Difference	t-statistic z-statistic
		Panel A: Companies				
Sales (Mill USD)	717	72.3640 5.6284	587	68.0224 7.6608	4.3416 -2.0324	0.24 -2.15[b]
Assets (Mill USD)	717	97.4090 13.2574	590	111.5992 16.7684	-14.1902 -3.5110	-0.98 -1.26
Net income / sales	713	0.0460 0.0229	583	0.0405 0.0167	0.0055 0.0062	0.64 0.53
Net income / assets	710	0.0365 0.0114	583	0.0327 0.0101	0.0038 0.0013	0.16 0.61
Total debt / total assets	715	0.6136 0.6298	589	0.6534 0.6823	-0.0398 -0.0525	-3.10[a] -3.10[a]
Debt with bank/ total debt	640	0.3266 0.2514	526	0.3979 0.3287	-0.0713 -0.0773	-3.99[a] -3.56[a]
		Panel B: Individuals				
Assets (Mill USD)	64	9.6136 6.6739	86	14.7664 6.2058	-5.1528 0.4681	-1.61 0.22
Total debt / assets	64	0.5476 0.5912	85	0.6915 0.7225	-0.1439 -0.1313	-3.85[a] -3.46[a]
Debt with bank/ total debt	58	0.5264 0.4930	80	0.7370 0.8117	-0.2106 -0.3187	-4.57[a] -3.68[a]

a=significant at 1%; b=significant at 5%; c=significant at 10%.

Table VII - Panel A
Loan terms regressions

OLS and Probit regressions for the cross-section of loans. For the probit, derivatives are calculated based on the average of the scale factor in the case of the continuous regressors, and as the average of the difference in the cumulative normal distributions evaluated with and without the dummy variable in the case of binomial regressors. Standard errors are shown in parenthesis. OLS regressions have robust standard errors. Definitions for each variable can be found in Appendix A.

	Dependent variables:							
	Interest rates				Collateral			
Independent variables:	Real interest rates		Interest rate spreads		Collateral dummy (Probit)		Collateral value / loan (Tobit)	
Related	-0.0422[a]	-0.0415[a]	-0.0515[a]	-0.0515[a]	-0.2797[a]	-0.2992[a]	-2.9474[a]	-2.9842[a]
	(0.0039)	(0.0036)	(0.0040)	(0.0037)	(0.0268)	(0.0250)	(0.2749)	(0.2477)
Log of sales	-0.0050[a]		-0.0033[a]		-0.0368[a]		-0.2252[a]	
	(0.0012)		(0.0011)		(0.0075)		(0.0705)	
Log of assets		-0.0061[a]		-0.0040[a]		-0.0358[a]		-0.2372[a]
		(0.0012)		(0.0011)		(0.0084)		(0.0754)
Net income / sales	-0.0016		-0.0035		-0.0493		-0.9010	
	(0.0097)		(0.0101)		(0.0715)		(0.6512)	
Total debt / total assets	0.0045	0.0015	-0.0076	0.0100	0.0557	0.0158	1.4546[a]	1.7421[a]
	(0.0099)	(0.0090)	(0.0093)	(0.0085)	(0.0599)	(0.0568)	(0.5789)	(0.5262)
Domestic currency dummy	-0.0600[a]	-0.0564[a]	-0.0292[a]	-0.0309[a]	-0.0419	-0.0612[b]	-0.3811	-0.3994
	(0.0054)	(0.0041)	(0.0040)	(0.0038)	(0.0296)	(0.0278)	(0.2877)	(0.2599)
Fixed interest rate dummy	-0.0407[a]	-0.0422[a]	-0.0360[a]	-0.0385[a]	-0.2396[a]	-0.2318[a]	-1.3987[a]	-1.3471[a]
	(0.0054)	(0.0048)	(0.0057)	(0.0052)	(0.0320)	(0.0299)	(0.3121)	(0.2795)
Individual dummy		0.0042		0.0065		-0.0798[c]		-0.6483[c]
		(0.0052)		(0.0054)		(0.0429)		(0.3816)
Constant	0.1834[a]	0.2035[a]	0.1035[a]	0.1166[a]			5.4295[a]	5.6623[a]
	(0.0287)	(0.0283)	(0.0305)	(0.0304)			(1.8122)	(1.7884)
Bank dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	1307	1470	1307	1470	1257	1418	1289	1451
Adjusted R^2 / Pseudo R^2	0.28	0.29	0.24	0.25	0.20	0.20	0.04	0.05
Log - likelihood					-629.86	-707.40	-2842.09	-3145.93

a=significant at 1%; b=significant at 5%; c=significant at 10%.

Table VII - Panel B
Loan terms regressions

Probit and Tobit regressions for the cross-section of loans. For the probit, derivatives are calculated based on the average of the scale factor in the case of the continuous regressors, and as the average of the difference in the cumulative normal distributions evaluated with and without the dummy variable in the case of binomial regressors. Standard errors are shown in parenthesis. Definitions for each variable can be found in Appendix A.

	Dependent variables:					
Independent variables:	Personal guarantees (Probit)		Maturity in months (Tobit)		Grace period in months (Tobit)	
Related	-0.1918[a]	-0.2286[a]	7.2484[a]	6.0365[b]	20.9650[a]	20.2374[a]
	(0.0288)	(0.0277)	(2.4564)	(2.3681)	(1.7933)	(1.6612)
Log of sales	-0.0117		-2.5309[a]		-1.3417[b]	
	(0.0076)		(0.6361)		(0.4533)	
Log of assets		-0.0280[a]		-1.3380[c]		-1.0094[b]
		(0.0089)		(0.7214)		(0.5033)
Net income / sales	-0.0224		10.0093[c]		6.9071[c]	
	(0.0729)		(5.8785)		(4.0067)	
Total debt / total assets	0.1584[b]	0.0413	-10.0349[c]	-13.5593[a]	-5.6744	-6.4817[c]
	(0.0630)	(0.0620)	(5.2601)	(5.1138)	(3.7215)	(3.4959)
Domestic currency dummy	-0.0661[b]	-0.0638[b]	2.1445	2.7273	0.2294	-0.0459
	(0.0303)	(0.0299)	(2.5962)	(2.5095)	(1.8583)	(1.7268)
Fixed interest rate dummy	0.0569[c]	0.0416	-27.5106[a]	-27.9162[a]	-16.8188[a]	-16.4636[a]
	(0.0323)	(0.0317)	(2.7449)	(2.6349)	(2.0947)	(1.9197)
Individual dummy		-0.3719[a]		-7.7577[b]		-9.6037[a]
		(0.0399)		(3.7026)		(2.5244)
Constant			61.4569[a]	58.4428[a]	-0.1143	-2.6504
			(16.7883)	(17.6659)	(11.4898)	(11.6765)
Bank dummies	Yes	Yes	Yes	Yes	Yes	Yes
Loan year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	1307	1470	1307	1470	1307	1470
Adjusted R^2 / Pseudo R^2	0.09	0.13	0.02	0.02	0.06	0.05
Log - likelihood	-790.33	-870.20	-6736.25	-7608.91	-2768.26	-3121.96

a=significant at 1%; b=significant at 5%; c=significant at 10%.

Table VIII
Loan performance for the sample of unrelated and related loans

This table presents data on the incidence of non-performing loans in the random sample of loans. In Panel B, "other loan outcomes" include: (1) bad loans that were later fully or partially liquidated without requiring court or internal collection; (2) loans for which required reserve was applied and the bank assumed a complete loss; and (3) loans for which negotiations between the bank and the borrower are still undergoing. N is the number of loans in each category. The table reports t-statistics for differences in means. Definitions for each variable can be found in Appendix A.

	Unrelated loans		*Related loans*			
	N	Frequency	N	Frequency	Difference	t-stat
			Panel A: Performance of the loans			
Loans that defaulted	317	0.3695	451	0.6642	-0.2947	-11.99[a]
Other bad loans	15	0.0175	24	0.0353	-0.0178	-2.21[b]
All bad loans	332	0.3869	475	0.6996	-0.3127	-12.81[a]
			Panel B: Breakup of bad loans by outcome			
Restructured	44	0.1325	59	0.1242	0.0083	0.35
Sold to FOBAPROA	10	0.0301	19	0.0400	-0.0099	-0.74
Sent to court	205	0.6175	256	0.5389	0.0786	2.22[b]
Sent to collection department	35	0.1054	72	0.1516	-0.0462	-1.03
Other loan outcomes	38	0.1145	69	0.1453	-0.0308	-1.27

a=significant at 1%; b=significant at 5%; c=significant at 10%.

Table IX
Recovery rates for the sample of unrelated and related bad loans

This table presents data on the recovery rate of non-performing loans in the random sample of loans. N is the number of loans in each category. The table reports t-statistics and z-statistics for differences in means and medians, respectively. Definitions for each variable can be found in Appendix A.

	Unrelated loans		*Related loans*			
	N	Mean Median	N	Mean Median	Difference	t-statistic z-statistic
		Panel A: All bad loans				
All bad loans	332	0.4624	475	0.2721	0.1903	7.62[a]
		0.4475		0.1500	0.2975	6.49[a]
All bad loans & no collateral	53	0.4206	204	0.2580	0.1626	3.08[a]
		0.4299		0.1000	0.3299	2.14[b]
All bad loans & collateral<median	95	0.3705	315	0.2694	0.1011	2.52[b]
		0.1800		0.1200	0.0600	1.56
		Panel B: All loans				
All loans	858	0.7920	679	0.4908	0.3012	15.07[a]
		1.0000		0.4000	0.6000	13.94[a]

a=significant at 1%; b=significant at 5%; c=significant at 10%.

Table X
Loan performance regressions

Probit and Tobit regressions of the cross-section of loans. For the probit, derivatives are calculated based on the average of the scale factor in the case of the continuous regressors, and as the average of the difference in the cumulative normal distributions evaluated with and without the dummy variable in the case of binomial regressors. Standard errors are shown in parenthesis. Definitions for each variable can be found in Appendix A.

	Dependent variables:					
	Default		Recovery rates			
Independent variables:	All bad loans (Probits)		All bad loans (Tobits)		All loans (Tobits)	
Related	0.3303[a]	0.3509[a]	-0.2768[a]	-0.2840[a]	-0.6991[a]	-0.7796[a]
	(0.0315)	(0.0287)	(0.0461)	(0.0429)	(0.0664)	(0.0635)
Log of sales	-0.0572[a]		0.0170		0.0919[a]	
	(0.0096)		(0.0132)		(0.0176)	
Log of assets		-0.0466[a]		0.0263[c]		0.0874[a]
		(0.0100)		(0.0155)		(0.0199)
Net income / sales	-0.6273[a]		0.1403		1.0442[a]	
	(0.0933)		(0.1154)		(0.1594)	
Total debt / total assets	0.1833[b]	0.2884[a]	-0.0484	-0.0227	-0.2301[c]	-0.4537[a]
	(0.0732)	(0.0678)	(0.0994)	(0.0932)	(0.1380)	(0.1327)
Domestic currency dummy	0.0788[b]	0.0482	0.1691[a]	0.1229[a]	0.0048	-0.0167
	(0.0360)	(0.0331)	(0.0503)	(0.0462)	(0.0685)	(0.0645)
Fixed interest rate dummy	0.0434	0.0445[b]	-0.0329	-0.0443	-0.0883	-0.1075
	(0.0379)	(0.0345)	(0.0515)	(0.0472)	(0.0703)	(0.0662)
Individual dummy		0.1328[a]		-0.1058[c]		-0.2742[a]
		(0.0470)		(0.0579)		(0.0878)
Constant			0.4317[b]	0.3817[c]	0.6188[b]	0.9430[a]
			(0.2075)	(0.2331)	(0.2883)	(0.3146)
Bank dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year of loan dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	1307	1470	665	791	1307	1470
Log-likelihood	-629.10	-730.70	-523.07	-620.48	-993.69	-1174.78
Adjusted R^2 / Pseudo R^2	0.31	0.28	0.16	0.15	0.23	0.22

a=significant at 1%; b=significant at 5%; c=significant at 10%.

Table XI
Publicly-traded debtor regressions

OLS, Probit and Tobit regressions of the cross-section of loans. For the probit, derivatives are calculated based on the average of the scale factor in the case of the continuous regressors, and as the average of the difference in the cumulative normal distributions evaluated with and without the dummy variable in the case of binomial regressors. OLS regressors have robust standard errors. Definitions for each variable can be found in Appendix A.

	Dependent variables:					
	Interest rates		Collateral		Default	Performance
Independent variables:	Real interest rates	Interest rate spreads	Collateral dummy (Probit)	Collateral / loan (Tobit)	All bad loans (Probit)	Recovery rate (Tobit)
Related	-0.0450[a]	-0.0547[a]	-0.3295[a]	-3.1174[a]	0.4064[a]	-0.8442[a]
	(0.0039)	(0.0040)	(0.0268)	(0.2653)	(0.0301)	(0.0656)
Publicly traded	-0.0339[a]	-0.0198[b]	-0.3069[a]	-1.6776[a]	-0.0955	0.2570
	(0.0098)	(0.0089)	(0.0671)	(0.5277)	(0.0710)	(0.1731)
Publicly traded and related	0.0302[a]	0.0248[a]	0.1838[a]	1.4215[b]	-0.2943[a]	0.5209[b]
	(0.0118)	(0.0105)	(0.0425)	(0.7051)	(0.0808)	(0.2072)
Individual dummy	0.0031	0.0004	-0.0895[b]	-0.7141[c]	0.1131[b]	-0.2177[a]
	(0.0052)	(0.0054)	(0.0436)	(0.3818)	(0.0484)	(0.0861)
Log of assets	-0.0048[a]	-0.0034[a]	-0.0237[a]	-0.1738[b]	-0.0361[a]	0.0634[a]
	(0.0013)	(0.0012)	(0.0087)	(0.0779)	(0.0102)	(0.0200)
Total debt / total assets	-0.0037	-0.0087	-0.0017	-1.6537[a]	0.2994[a]	-0.4528[b]
	(0.0089)	(0.0084)	(0.0570)	(0.5255)	(0.0683)	(0.1295)
Domestic currency dummy	-0.0574[a]	-0.0314[a]	-0.0713[b]	-0.4517[c]	0.0429	0.0322
	(0.0041)	(0.0038)	(0.0278)	(0.2298)	(0.0337)	(0.0632)
Fixed interest rate dummy	-0.0417[a]	-0.0381[a]	-0.2289[a]	-1.3169[a]	0.0392	-0.0971[a]
	(0.0048)	(0.0051)	(0.0301)	(0.2791)	(0.0352)	(0.0648)
Constant	0.1933[a]	0.1103[a]		5.1223[a]		1.0783[a]
	(0.0281)	(0.0301)		(1.7938)		(03096)
Bank dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year of loan dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	1470	1470	1418	1451	1470	1470
Adjusted R^2 / Pseudo R^2	0.30	0.25	0.21	0.05	0.30	0.23
Log - likelihood			-697.08	-3140.80	-708.75	-1152.98

a=significant at 1%; b=significant at 5%; c=significant at 10%.

Appendix A
Description of the variables

This table describes the quantitative variables collected for the terms and performance of a random sample of loans made by 19 Mexican banks circa 1995. The banks in the sample are the 19 banks that existed in 1992 when privatization was concluded. With the exception of Citibank, all of them had recently been privatized. Reporting requirements in 1995 required banks to submit a list of the largest three hundred loans together with their size and the names of the borrowers behind each of them. The first column gives the name of the variable or the ratio. The second column describes the item. Sources: SAM-300 database (largest 300 loans for each bank), SENICREB database (complete list of loans made by each of the privatized banks), and every bank individual database reported for Mexican Banking Commission's request.

Variable	Description
Related loans	According to the article 73 of the Mexican Code of Mercantile Institutions, a related loan is a loan for which the borrower is either: (1) a shareholder of 1% or more of the voting rights of the bank; (2) a person who has family ties—by marriage or blood up to the second degree—with a shareholder of 1% or more of the voting rights of the bank; (3) a director, officer, or employee of a company or trust fund that holds 1% or more of the voting rights of the bank or a director, officer, or employee of the bank itself with the power to engage into contracts or transactions under the name bank; or (4) a person holding 10% or more of the voting rights of a company that holds 1% or more of the shares in the bank.
Unrelated loan	An unrelated loan is an arms-length loan given to a borrower who is not a shareholder, director, officer, or employee of the bank nor a relative of any of the previous groups of persons.
Shareholder	Any person or company holding, directly or indirectly, 1% or more of the voting shares of the financial group or of the bank itself. Similarly, the definition of shareholder includes any person holding 10% or more of the shares of the borrowing company. For the purposes of Table 1, a shareholder can be either a holder of the bank's equity or of a company's that is related with the bank.
Director/Officer	All members of the board of directors, officers, and employees of a borrowing company or of the bank itself with the power to engage into contracts or transactions under the name of the borrowing company or of the bank. This definition is in line with the statutes described in article 73 of the Mexican Code of Mercantile Institutions.
Family	Any relative of shareholders, directors/officers, or employees of a borrowing company or the lending bank itself, related by either marriage or by blood up to the second degree.
Publicly traded	Dummy variable that takes a value equal to 1 if the borrowing company was listed and publicly traded in the Mexican Stock Exchange during the year of 1995; the variable takes a value equal to 0 otherwise.
Fixed interest-rate dummy	Dummy variable that takes a value equal to 1 if the loan pays a fixed interest rate; the variable takes a value equal to 0 otherwise. A fixed interest rate loan pays an annual percentage rate on a fixed basis without being updated during the duration of the loan.
Flexible interest-rate dummy	Dummy variable that takes a value equal to 1 if the loan pays a flexible interest rate; the variable takes a value equal to 0 otherwise. A flexible interest rate loan pays a spread above a reference rate and is updated with a frequency pre-established in the contract between the bank and the borrower. Typically, flexible interest rates are referenced to market interest rates such as Treasury bills (CETES), the average annual percentage cost of deposits within the banking system (CPP), or the interbank interest rates (TIIE or TIIP).
Real interest rate	The average real interest rate paid during the duration of the loan. The average real interest rate is computed as: $\frac{1}{T}\sum_{t=1}^{T}\frac{(1+i_t+s)}{(1+\ _t)}$, where i is the reference interest rate assigned to the loan, s is the spread above the interest rate and β the inflation rate. For loans in Mexican pesos the inflation rate was calculated using the Producer Price Index (INPP) excluding oil products. For loans in US dollars and other foreign currencies the inflation rate was calculated using the US Producer Price Index (PPI) of finished products.

Variable	Description
Interest rate spread	The average interest rate spread of the loan above the benchmark risk-free security rate. The average interest rate spread is computed as: $\frac{1}{T}\sum_{t=1}^{T}(i_t + s - r_t^f)$, where r^f is the risk-free security rate and s is the spread agreed in the contract between the bank and the borrower above the loan reference rate i. For loans in Mexican pesos the risk-free security is the 28-day Treasury bills (CETES) rate. For loans in US dollars and other foreign currencies, the risk-free security rate is the 1-month LIBOR rate.
Collateral	Dummy that takes a value equal to 1 if the loan is backed up by collateral; the variable takes a value equal to 0 otherwise. Definitions fro collateral include physical tangible assets, financial documents (e.g., title documents, securities, etc.), intangibles, and business proceeds pledged by the borrower to ensure repayment on his loan. Collateral does not include personal guarantees such as obligations backed only by the signature of the borrower or the submission of wealth statements from guarantors to the bank—a usual practice in Mexico.
Personal guarantees	Dummy that takes a value equal to 1 if the loan is secured by a personal guarantee; the variable takes a value equal to 0 otherwise. A personal guarantee is defined as the obligation to repayment by a letter of compromise. Usually, the debtor must submit wealth statements from a guarantor who is willing to backs his loan.
Maturity	The number of months to maturity of the loan starting from the moment in which the loan is given. Maturity varies according to debtor characteristics, loan type, and terms established in the loan contract..
Months-to-maturity from 12/1994	The number of months for the loan to mature starting from December 1994. This variable is set to zero for all loans with a maturity date before or equal to December 1994.
Grace period	Grace period is the number of months, beyond maturity, given to a debtor in order for him to repay his due balance with the bank. A grace period is granted to a debtor on an individual basis. A loan may have no grace period at all but, if granted, the grace period may vary according to the loan type and terms established in the loan contract.
Net income / sales	The ratio of net income to sales. Net income is equal to operating income minus interest expenses and net taxes paid, as well as the cost of any extraordinary items. Sales are equal to the total value of products and services sold, nationally and internationally, minus sales returns and discounts. Net income and sales figures are from 1989-1998 (the first pair available) in millions of Mexican pesos that were deflated to December 1995 using Mexico's Producer Price Index and then converted to US dollars using the average 1995 exchange rate.
Sales (Mill USD)	Sales in millions of US dollars deflated to December 1995. Sales are equal to the total value of products and services sold, nationally and internationally, minus sales returns and discounts. Sales figures are from 1989-1998 (the first available) that were deflated to December 1995 using Mexico's Producer Price Index and then converted to US dollars using the average 1995 exchange rate.
Log (sales)	The natural logarithm of sales as defined above.
Assets (Mill USD)	Assets in millions of US dollars deflated to December 1995. Total assets are equal to the total value of current assets, long term receivables, investment in unconsolidated subsidiaries, other investments, net property plant and equipment and other assets. Total assets figures are from 1989-1998 (the first available) that were deflated to December 1995 using Mexico's Producer Price Index and then converted to US dollars using the average 1995 exchange rate.
Log (assets)	The natural logarithm of total assets as defined above.
Net income/assets	The ratio of net income to total assets. Net income is equal to operating income minus interest expenses and net taxes paid, as well as the cost of any extraordinary items. Total assets are equal to the total value of current assets, long term receivables, investment in unconsolidated subsidiaries, other investments, net property plant and equipment and other assets. Net income and total assets figures are from 1989-1998 (the first pair available) in millions of Mexican pesos that were deflated to December 1995 using Mexico's Producer Price Index and then converted to US dollars using the average 1995 exchange rate.

Variable	Description
Total debt/total assets	The ratio of total debt to total assets. Total debt is equal to the sum of all interest bearing obligations of the debtor plus all other liabilities. Total assets is equal to the total value of current assets, long term receivables, investment in unconsolidated subsidiaries, other investments, net property plant and equipment and other assets. Total debt and total assets figures are from 1989-1998 (the first pair available) in millions of Mexican pesos that were deflated to December 1995 using Mexico's Producer Price Index and then converted to US dollars using the average 1995 exchange rate.
Debt with bank/total debt	The ratio fo total bank debt to total debt. Debt with bank includes all outstanding loans that the debtor had at the end of the first year it started relations with that bank. Total debt is equal to the sum of all interest bearing obligations of the debtor plus all other liabilities. Debt with the bank and total debt figures are from 1989-1998 (the first pair available) in millions of Mexican pesos that were deflated to December 1995 using Mexico's Producer Price Index and then converted to US dollars using the average 1995 exchange rate.
Domestic currency dummy	Dummy variable that takes a value equal to 1 if the currency is domestic, that is, Mexican pesos or the inflation-adjusted currency units UDIs (*Unidad de Inversión*); the variable takes a value equal to 0 otherwise.
Individual dummy	Dummy variable that takes a value equal to 1 if the debtor is an individual—not a firm; the variable takes a value equal to 0 otherwise.
Year of loan dummies	Six fixed-year effect dummy variables. We generated a year of origination dummy variable for the years of 1990, 1991, 1992, 1993, 1994, 1995, and 1996. The year of loan dummy takes the value equal to 1if loan was originated in that year; the variable takes a value equal to 0 otherwise. The year of origination of the loan is the year when the loan was contracted and granted.
Industry dummies	Twelve industry dummy variables. We classified every debtor in one of 12 broad sectors of the economy. The following are the industries captured: (1) agriculture, fishery, and forestry; (2) minning; (3) manufacture of food, beverages, and tobacco; (4) construction; (5) electricity, gas, and water; (6) commerce, hotels, and restaurants; (7) transportation; (8) financial services; (9) community services; (10) civil and mercantile associations; (11) government, defense, public security; and (12) foreign and international organizations.
Non-performing loan or Loans that defaulted	A non-performing loan is a loan that has stopped payment on principal and interest and has defaulted on the original terms of the borrower's loan agreement at the moment we drew the sample of random loans. In Mexico, the general rule for the classification of a loan as non-performing is the is that the debtor must miss one coupon payment or as soon as it fails to pay interest payment when principal is payed at the end, whatever happens first.
Other bad loans	Other bad loans are defined as loans that were not non-performing but still were sent to Fobaproa or had a recovery rate of less than 100%.
All bad loans	Total bad loans is the sum of other bad loans and non-performing loans. Total bad loans are the loans that: (1) were non-performing; or (2) were sold to Fobaproa; or (3) had recovery rates of less than 100%.
Loans sold to FOBAPROA	A loan sold to Fobaproa is a non-performing loan sold to the deposit insurance agency Fobaproa (Fondo de Protección al Ahorro Bancario).
Restructured loans	A restructured loan is a loan for which the original terms have been altered due to the deterioration of the debtor's financial condition. A restructure is generally undertaken in order to avoid complete default or uncollectibility from the debtor. In most of the cases, a restructure involves the extension of the maturity of the loan, the change of the interest rate terms, and/or the rescheduling of payments.
Loans sent to court	A loan sent to court is a non-performing loan for which the bank initiated a judicial proceeding (generally civil lawsuit) against the debtor in a Mexican court of law in order to recover the debtor's due balance with the bank, by either taking over the assets put forward as guarantee or achieving a court injunction favorable to the bank..

Variable	Description
Loans sent to administrative collection	A loan sent to administrative collection is a non-performing loan for which the bank filed an internal payment collection procedure. The procedure works on a borrower-by-borrower basis and is intended to make the borrower resume payments on her defaulted loan, either by negotiating a restructure, a forgiveness of her debt, or both. This is procedure functions as a warning for the borrower with due payments and is less stringent than a court procedure. Generally, if administrative collection fails the bank will then file a lawsuit against the debtor in a Mexican court of law.
Other loan outcomes	Other loan outcomes include: (1) bad loans that were later fully or partially liquidated without requiring court or internal collection; (2) loans for which required reserve was applied and the bank assumed a complete loss; and (3) loans for which negotiations between the bank and the borrower are still undergoing.
Collateralized loans	A collateralized loan is a loan for which an asset has been pledged by the debtor in order to ensure repayment on the face value of the loan. Our definition of collateral includes physical assets, financial documents (e.g., title documents), intangibles, and business proceeds pledged by the borrower to ensure repayment, but rules out personal guarantees such as obligations backed only by the signature of the debtor or guarantors.