SESIÓN 21

Desarrollo e innovación en la banca española y latinoamericana, siglos XIX a XXI: ¿evolución o ruptura?

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# Private and State-owned banks in times of high instability. Mexico 1977-1990.

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Abstract:

What are the effects of banks' expropriation by the government in an environment of high macroeconomic instability? In 1982, in the beginning of the Latin American debt crisis, the Mexican government expropriated the banking industry. This was an inflexion point in the financial system of that country. At the time of the expropriation, global crisis, financial repression and macroeconomic instability created adverse conditions for the financial system. This scenario provides a natural experiment to analyze how coping with a crisis might change from a situation in which banks were privately-owned to one in which they were State-owned institutions. But in such context, strategies to cope with an environment of risk and instability differ among banks and they -individually-exhibit different performance. Our goal is to explain how those strategies changed after banks became state-owned organizations and explain whether legacies in individual banks influenced their strategies and performance after they were expropriated, or not. We advance two preliminary hypotheses. First, as it should be expected, strategies of banks to cope with risk and instability change from private to state-owned, since they respond to their shareholders interest. Moreover, as state-owned firms, the banking system enjoyed better coordination and joint capacity to solve problems emerging from the macro crisis. Second, legacies in the internal organization of banks made a difference in their performance after the expropriation and its aftermath.

Keywords: Banks, crisis, debt crisis, Latin America, Mexico.

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## 1. Introduction

The outburst of the Latin American debt crisis in August 1982 is an episode that, in addition to its importance in world economic history, allows us to analyze the financial system in times of high instability. In this article we study Mexican banks between 1977 and 1990, showing a history of how that industry experienced a period of macroeconomic instability and crisis. In addition, this episode provides a natural experiment, because the Mexican government expropriated private banking in 1982, which makes it possible to analyze banks as private intermediaries and as state-owned enterprises. Our central question is how banks managed to cope with instability and crisis and how this changed when banks were state-owned firms, after the expropriation. In this paper we advance two hypotheses. First, that institutional and political factors are indispensable to explain the outcomes, particularly after the banks were expropriated. And second, after a structural change as the expropriation was, banks might present legacies that help to explain their subsequent performance. The strategy and performance of banks varied individually and needs to be explained by the financial histories of individual banks.

The way in which banks cope with instability and crisis varies due to factors such as the conditions of the local and international financial markets. These aspects are traditionally attributed in the literature as an explanation of crises and their outcomes. Recent literature emphasizes institutional aspects, as well as the political economy of each country. In particular, Calomiris and Haber (2014) develop a theory on the institutional framework of the financial system, and its relationship with the actors and the political context. Likewise, Pénet & Flores-Zendejas (2021) and especially, for the case of the 1982 crisis, Altamura & Flores-Zendejas (2020) emphasize the political economy of the State actions. We follow the work by Alvarez (2019, 2017 & 2015), Del Angel & Martinelli (2009) Del Angel (2005) and to understand respectively, Mexican banks before and after the expropriation in 1982. But in this paper, we also aim to explore how aspects of the banks might persist despite their change in ownership (from private to government-owned), and this may explain, at least partially, their performance. This involves a notion of legacy in firms, as explained by Fernández-Perez and Lluch (2015). We consider that since the decision to expropriate the banks was unexpected, there were certain elements of each bank that might have persisted. For instance, the full leaving of the management and staff, or the closure of some of the banks or their reconversion as new firms; not to mention long term financing projects were an obvious case of continuities. In fact, once the re-privatization process began in 1990, former shareholders were interested to bid for the restitution of their previous banks.

There is a notion in the literature that State-owned banks perform worse as they respond to political goals. La Porta, Lopez-de-Silanes, and Shleifer (2002) put forward a hypothesis known as "the political view of government-owned banks," which asserts that politically motivated banks make poor lending decisions, generating high levels of default and fragility. In the case of this article, we consider that the story is more complex, and there are elements of the banks' financial histories that may have remained after they were expropriated and hence help to explain their performance.

We use contemporary literature and reports from the Banco de México and Banamex Historical Archives. To complement our historical view, we do an econometric analysis of panel data to explain the reasons why within a given historical period a range of systems might survive and, therefore, forms of organizational behavior, social processes and rules of the game or institutions that do not disappear immediately. The data for the quantitative analysis comes from the work of López Romero (2021). We reconstruct individual bank statistics, through the balances published in the Financial Yearbook of Mexico. These sources are located in the archives of the Ministry of Finance and the National Banking Commission. Likewise, aggregated data from reports of the National Banking Commission are used. The information from the database was used to construct the analysis variables for individual banks from 1977 to 1990.

This paper is organized in the following manner. The next section explains the context of the Mexican banking system, its structure and how macroeconomic instability increased in the second half of the seventies until the crisis of 1982. Sections 3 explain how the banking industry managed their strategies and performed in that period. Section 4 explains the expropriation of banks the action of the government after that. Section 5 is an econometric analysis to identify the presence of legacies and how they relate to the performance of banks. The last section are the concluding remarks. Charts are presented at Appendix 1. An analysis of the legacy index is in Appendix 2.

## 2. Banks in times of emerging instability

The Latin American foreign debt crisis in 1982 represented an inflexion point the economic history of the region and for the international financial system (Altamura & Flores-Zendejas 2020). But it was particularly important for the Mexican financial system, since after its outbreak in August of that year, the private banks were expropriated by the government in September. The expropriation closed a cycle of almost five decades of expansion of private banks in Mexico (Del Angel & Martinelli 2009; Marcos 2005).

The Mexican banking industry was constituted by banks that since the decade of the forties expanded in number and scale of their operations. The largest banks enjoyed nationwide branch expansion, but most banks had regional operations. During those three decades growth was steady, the system was relatively sound and enjoyed profitability (Del Angel 2005; Haber 2005).

With few exceptions, most banks belonged to business groups or conglomerates. This implied a high degree of related lending. However, most banks managed risks with relative prudence during the period. Until 1975, the bank law established the separation of financial intermediaries in specialized segments, but banks also had ownership links to other financial intermediaries. In 1976, Mexican banks and their related non-bank intermediaries began a period of consolidation, becoming what was called multi-bank (*banca multiple*). Multi-banks were the merger of groups of specialized intermediaries, for example mortgage banks and trusts funds merged with commercial banks (Del Angel 2015).[2]

Despite that growth, the ratio of credit to GDP was lower than other similar economies, and it was a concentrated industry (Del Angel 2005; Haber 2005). Moreover, banks were protected from foreign

[2] The Bank Law Reform of 1975 established the formation of multi-banks, since in practice different intermediaries under the same proprietary umbrella worked together.

competition. However, since the early 1970s, several foreign banks had operations in Mexico, but they were not authorized to have branches or collect savings from the public.

In addition to regulations in the structure of the sector, banks also faced what has been called “financial repression”, which mainly refers to regulations on reserve requirements, directed credit policies and interest rate controls. Reserve requirements in the central bank were an important regulation for Mexican banks since the late thirties and was a form to channel funds to government financing (Lopez Romero 2021). Directed credit policies were to channel credit to areas that the government considered “strategic”, whether for political or developmental reasons. Financial repression increased considerably in the seventies and eighties. Certainly, all these regulations were decisive in the evolution of the financial industry.

However, in the decade of the seventies, stability was not taken for granted anymore. Brief macroeconomic slowdowns in 1971 and 1976 warned that they system was more fragile than believed. On the one hand, after 1978, an oil export-led economic boom combined with macroeconomic instability was critical for the financial system. Second, in that context, banks entered an episode of risk taking.

The macroeconomic instability at that time has been widely studied. There were global sources for the crisis because the developed economies faced high inflation and low growth (Banco de México 1983). However, domestic imbalances played a critical role. The government spending since the early 1970s was supported by foreign debt, because the sources of internal financing for the government were not sufficient. The oil boom made it possible to increase this external indebtedness disproportionately, with global banks competing to place those loans.

After 1978, the increase in the international oil prices in the seventies prompted an intensification of Mexican oil exports, which had important repercussions on the economy. Among these consequences, the government began an expansionary fiscal policy that led to macroeconomic imbalances, mainly a high fiscal deficit and growing inflation. That stimulated a dependence of the public budget on oil prices. Soaring oil revenues, the government resorted to external borrowing to finance the increasing public spending (Banco de México 1983; Marcos 2005; Cárdenas and Espinosa-Rugarcía 2008 & 2011). In addition to the demand for external credit, an aggressive global supply of sovereign loans by global banks was decisive in the gestation of the crisis, as pointed out by Altamura & Flores-Zendejas (2020), Negrete Cárdenas (2000), and the testimonies of Silva-Herzog (2005 and 2007). International banks exhibited a euphoria to lend to oil-exporting countries and competed to place new credits in the face of the abundance of Eurodollars that were recycled in the global financial markets. Sovereign credit was an attractive and apparently safe alternative for these lenders.

During the Mexican oil boom, the expansion of the value of oil exports led to a significant appreciation of the real exchange rate of the Mexican peso. The availability of foreign funds, both from oil sales and from foreign borrowing, made it possible to keep the exchange rate stable (Banco de México 1983). Marcos (2005), like other economists of that time, explained that this gave rise to what has been called the “Dutch disease”, an appreciation real exchange rate, with its consequent effects on economic activity (contraction of non-oil exports and increase of overall imports). The “Dutch disease” phenomenon also occurred in other Latin American countries. It also propitiated the acquisition of all types of foreign assets (mostly financial and real estate) and caused an increase in the external indebtedness of the private sector. The indebtedness was due to an expectation of growth, but also because the private firms were looking for international interest rates lower than the local ones. However, these loans bore an exchange rate risk, since these were loans in dollars and in most cases, the borrowers did not generate their income in foreign currency. The risks materialized when the oil boom began to end.

The increase in the deficit also led to a rise in inflation. Chart 1 shows the depreciation of the peso since 1976, as well as a growing annual inflation since 1979. A combination of factors concocted a crisis to come, as international oil prices began trend downward and international interest rates showed substantial increase, both in 1981. The first sign of alarm was a devaluation of the Mexican peso in February 1982, causing a drain of reserves of the central bank. The response of the government was not only technical, at the end it also had a strong political angle.

The financial system always was in the midst of the storm. In the years prior to the 1982 crisis, banks began to face risks that jeopardized their stability. Several works have highlighted the situation of Mexican banks at that time. Contemporary studies highlight various risks, for example, Márquez (1987) points to the concentration of credit risk, combined with the exchange rate risk. This author pointed out a problem of concentration of loans in business groups or conglomerates that had ownership links with the lender bank. Also, contemporary reports indicate an increase in foreign currency positions in both assets and liabilities (Banco de México 1983; CIEN 1985). An in-depth research, Alvarez's work (2019 & 2017) explains what factors led Mexican banks that had international operations to be in a high-risk situation. He shows an exposure to foreign exchange risk derived from those operations, prior to the 1982 crisis. Alvarez studies the process of internationalization of banks since the early seventies and presents evidence of a deterioration of the financial situation. Several banks reached a vulnerable financial situation, particularly after an increase in international interest rates and the reduction in oil prices.

The indebtedness of the government in foreign markets directly involved banking system. The banking system had a crucial role in the administration of funds that arrived from abroad. An important part of them remained in the banks' balance sheets, as assets or liabilities in dollars. In large banks with international activities, as Alvarez (2019) points out, the main external fundraising instruments were essentially lines of credit from foreign banks that operated in the Eurodollar, Eurocurrency, and North American money markets. These lines of credit were established through the foreign agencies of Mexican banks (p. 98).

There was a significant growth of assets -mainly loans, and liabilities -mainly deposits, in foreign currency -mainly US dollars. Alvarez (2019) emphasizes the increase in dollar lending in the assets of banks as a source of possible instability. In 1977, loans in dollars accounted for about 20% of total loans of the banks; by the beginning of 1982, increased to 42% (the increase was both, absolute and in real value, considering the devaluation of the Mexican Peso in February, p. 105).

Alvarez (2019) also shows a change in bank liabilities, mainly due to an increase in foreign currency liabilities since the mid-1970s, which he calls a substitution of domestic liquidity for international liquidity. In this environment, dollar liabilities presented an exchange risk, particularly for those banks that had significant international operations.

Additionally in 1977, the government authorized Mexican banks to offer their clients a service of deposit accounts in dollars, which received an interest rate equivalent to LIBOR. These deposits soared between 1980 and 1982, exceeding 50% of the total deposits (CIEN 1985). Therefore, another relevant risk was a change in the maturity structure of liabilities. Alvarez (2019) shows that “time deposits of one year and over were the most important fundraising instruments and accounted for about 70% of total illiquid liabilities in December 1978, they represented 26% by end-1981 and around 18% in 1982. Conversely, time deposits with maturity of less than one year accounted for 30% in 1978 but as much as 82% by 1982. Within this category, shorter term accounts, namely three-month deposits, were the more dynamic components, increasing their share from 12 to 47% over the period” (p. 99).

For Mexican banks, it was a survival strategy but also a risky trap. Faced with inflation, the banks began to increase their loan portfolio in dollars. On the one hand it was a reasonable strategy to insure the value of their assets (namely loans) against exchange rate risk. On the other hand, this made the position of the banks vulnerable, since many of the companies that were indebted in dollars (whether abroad or with Mexican banks), had their income in pesos. At the same time, in the face of inflation and exchange rate risk, savers increased their demand for dollars, this includes growth in dollar deposits in banks.

Inflation, as shown in chart 1, led banks to follow different strategies to safeguard the value of their assets, mainly loans, and therefore maintain their financial health and profitability. Likewise, the strategies were aimed at maintaining the value of their liabilities, mainly deposits, since they faced discontent and worries from depositors. The “dollarization” strategy for the banks turned into in a trap.

The increase in inflation and volatility of the exchange rate, together with the exposure to the risks mentioned, were reflected in the profitability of the banks before 1982. Between 1976 and 1979, Mexican banks experienced a significant increase in the return on capital, ROE. Later, between 1980 and 1982, the ROE fell, reflecting an impact on the performance of the banks. However, it remained at acceptable levels of profitability (Marcos 2005). This fall in profits coincides with a fall in the price of the shares of the three largest banks, Banamex, Bancomer and Serfin, between 1980 and 1982, a notorious event since the price of these shares remained relatively stable for many years (Alvarez 2019). Márquez (1987) points out that the smaller banks, although they exhibited acceptable profitability during the period before 1982, their profitability ranges were lower than the industry average. Small banks tended to be generally controlled by industrial groups or conglomerates, exhibiting concentrations of credit risk.

## 3. Navigating a perfect storm

The strategy of banks before 1982 might be considered actions with unexpected consequences, because the expectations were quite different from the actual events to come. The global bankers and international organizations believed, until late 1981, that oil prices would stay in high levels, hence oil exporters would enjoy a favorable economic situation. Locally, the business community believed, also until late 1981 and despite some critical voices, that the problems in the economy would vanish without much difficulty (Banco de Mexico 1983). Paradoxically, some of the critic voices came from bankers, nevertheless they maintained a relatively cooperating dialogue with the government, until the crisis began.[3]

As explained, due to increasing inflation and depreciation of the exchange rate, many banks increased operations in foreign currency, mainly in dollars. In general, this allowed banks to place loans in dollars, which made possible to hedge their value against inflation and exchange rate depreciation. Loans in dollars were accepted because they had an attractive interest rate, lower than the local one. At the same time, banks significantly increased deposit accounts in dollars, which allowed depositors, both persons and firms, to protect the value of their assets. The latter became politically counterproductive for bankers when the government considered to expropriate. Indeed, when the expropriation of the banks took place, the President blamed the bankers for promoting the purchase of dollars by individuals and companies and therefore of “causing” the devaluation of the Mexican peso.

A concern about the concentrations of risk that some banks had with loans to their related groups was also in the eyes of financial authorities (CIEN 1985; Márquez 1987; Sales 1992). The combination of concentration of credit and debt in dollars in companies that did not receive income in dollars was a vulnerable situation for both the borrowing firms and the banks. Nevertheless, this was not the case for those companies that had revenues in dollars.

Alvarez (2019 & 2017) also points out the situation of banks that participated in international operations, mainly through international consortiums. Those banks had a significant amount of assets and liabilities in foreign currency through their subsidiaries abroad. Many of these international financial transactions were related to loans to the government (federal government and state-owned firms). Most of them were syndicated loans, in which global banks participated.

Our analysis of data for the banking industry provides eloquent information about its aggregate situation. Charts 2.1 to 2.8 show aggregate data of the banking industry. Chart 2.1 shows significant

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[3] See for instance Abedrop (2005), Cárdenas and Espinosa Rugarcía (2008) and the annual reports by Banamex and Bancomer, years 1980 and 1981.

loan portfolio growth up to 1981. The size of the industry's loan portfolio increased fivefold between 1977 and 1981 (measured in current dollars). This shows the growth of economic activity during the oil boom and, at the same time, an excessive expansion of bank activity, something that frequently precedes a banking crisis.

There is also an important growth for holdings of stock and private bonds, which also grew until 1982, as shows in chart 2.2. In many cases, these were holdings of shares of companies in the groups that own the banks, or shares of companies with which they had a broader financial relationship. In the case of large banks, these were also investments in which the bank was only an institutional investor, without a strong relationship (Del Angel 2015).

Likewise, a significant drop in the proportion of government securities in the composition of assets is observed throughout the industry, as shown in the chart 2.6. This was possibly due to a substitution of these securities for some more direct form of government financing, mainly through reserve requirements in the central bank. These requirements grew significantly during the period under study.

An evident fact shown by the data is a deterioration in performance at the threshold of the crisis. First, an increase in the delinquency rate, measured as the ratio of non-performing loans on total loans. Second, a fall in banking profitability measured with ROA and ROE, mainly in 1982, as shown in the chart 2.7. In both variables, most banks showed this behavior, but each bank had a different timing, as well as a different level of impairment.

The four largest banks, Banamex, Bancomer, Serfin and Comermex, present revealing information on this behavior that is shown in the charts 3.1 to 3.5 and 4.1 to 4.20. First, because the big four represented almost 70% of the assets of the banking industry. Second, because between them there were differences in their performance, which we will discuss below. And third, because in addition to their systemic importance, they were banks with relevant international operations and large holders of stock and bonds of private firms. The data that we analyze in the charts shows that at the end of the seventies, this group of banks show a relative reduction in the proportion of stocks and bonds holdings in their assets, because loans were growing at a much faster pace than holding of securities. However, both were growing. Definitely, there was a significant drop in holdings of government bonds. Data also shows an increase in the ratio of non-performing loans on total loans, and a decrease in profitability, from 1980 onwards (the data from Banamex and Bancomer, which were the largest banks in the system, has an important weight in the aggregate of the big four). Of those four banks, Comermex and Serfin were the ones that contemporary reports mentioned having financial trouble, and our data is consistent with this (Márquez 1987; Sales 1992).

Of the largest banks, Banamex was a bank with diversified ownership, therefore, it did not have a dominant ownership linkage with a specific business group or conglomerate. Since 1979, Banamex had increased its investments in stocks and bonds as an institutional investor in many companies. Participating as institutional investor was a common practice in that bank since its origins. In that period, the strategy of investing in stocks was strengthened to protect the value of assets against rising inflation. Although securities did not grow much as a proportion of assets, since these were growing very quickly in the loan side, the absolute position in stocks increased significantly. Bank reports explain an increasing position in stocks of real estate ventures and industrial firms (Banamex Annual Reports of 1980 and 1981). Despite the fast growth in loans, that bank also maintained a sound portfolio, delinquency rate increased only when the crisis exploded in 1982 and stabilized after that. However, Banamex profitability declined from 1980 to 1983, as shown in Charts 4.1 to 4.5.

Bancomer followed a similar strategy. Since the end of 1979, in his Letter to Shareholders, Manuel Espinosa Yglesias, President of that bank, explained that the bank had protected the value of its financial assets against the possible effects of a crisis that they considered as imminent. They invested in securities, mainly of real estate, mining and industrial companies: “[I]n a world in which the erosion of the currency is accelerated by inflation, it is important that the equity of companies be represented by assets that maintain their real value in order to achieve their stability and consequently, protect the capital of the shareholders. For this reason, Bancomer has 223 of its own buildings and, as additional protection, maintains a significant stake it is in industrial and service companie[s…]" (Bancomer, Annual Report 1979). In 1980 and 1981, Espinosa Yglesias announced the same strategy to face the macroeconomic instability. Emphasis was even given to mining and real estate. In 1980, 37% of the stocks held by the bank were in shares of mining and metallurgical firms, some of them related to the bank's shareholders; and 32% in real estate investments as well as shares of construction and developer firms. It also reduced the dividends paid to shareholders. Our data shows a significant increase in equity holdings, consistent with this evidence, as shown in charts 4.6 to 4.10.

For its part, as can be seen in charts 4.16 to 4.18, Comermex had problems for a few years before the crisis broke out and was one of the banks that showed severe problems, according to contemporary reports (Sales 1992). Comermex non-performing loans increased significantly, and profitability had a volatile trend since 1978.

Likewise, Serfin also ran into problems when the crisis broke out, mainly due to a high concentration of related credits in dollars, many of them granted to Alfa, an industrial conglomerate with which they had ownership links. This situation was reflected in Serfin's non-performing loans, which became evident in 1982, when borrowing firms entered financial trouble, as shown in Charts 4.11 to 4.15. It should be noted that Serfin, although it faced problems when the crisis broke out, mainly due to the concentration of its risks and credits in dollars, was not considered a case of severe trouble by the government.

Most of the information about the situation of banks was clearer for the government after the expropriation. It was after the expropriation when the government identified the banks that were in the worst financial condition. The one that was detected with more and greater trouble was Comermex, the fourth largest bank in the system, this included loans to related firms, problems in its international operations and management deficiencies (Sales 1992). Other cases of banks in trouble were Credito Mexicano, Banco Continental, Banco Ganadero and Banco Popular, all of them small banks, which were considered "difficult cases to solve" when evaluating the compensation for the expropriation.

Additionally, to carry out the compensation process for the former bankers, the government made a valuation of all the banks' equity. The banks whose shares obtained the lowest valuations were Comermex and Banco Ganadero (Sales 1992, pp. 63-64). Some of these banks stopped publishing their financial statements before 1982, so it is not possible to identify their individual trajectories. With the expropriation, the smaller banks, particularly those with the worst performance, were merged with larger banks, as will be explained in the next section.

**4. Bank expropriation: the government as banker**

In September 1st, 1982, just immediately after the eruption of the debt crisis and in his last address to the Congress, the President of Mexico decreed the nationalization of Mexican private banks. The causes of this measure are considered political in nature, on the one hand. The government was looking for a scapegoat for the crisis, and it was a decision motivated by the deterioration of the relationship between the bankers and the President. This in an environment of weak institutions to protect private property rights. On the other hand, a group within the government, close to the President ears, had an important influence in designing that decision. That group aimed the State to have ownership of strategic sectors of the economy. Various studies provide evidence for both arguments (Del Angel & Martinelli 2009; Turrent 2009; Cardenas & Espinosa-Rugarcia 2008; Haber 2005, among others). These studies also show that the bank expropriation had relevant political consequences in Mexico, in addition to its effects on the financial system. Together with the nationalization of the banks, the government decreed exchange controls, similar to those existing then in the Soviet world.

One of the relevant political consequences was that, since the banks were owned by the main capitalists and business groups in Mexico, the expropriation was a blow to private property rights and a political rupture with the business community. This political break between the government and the businessmen determined the way in which the government would compensate the former owners of the banks. The political confrontation was evident, since several of the banks' former shareholders, including prominent capitalists, decided to engage in strong political activism in the successive years, something unprecedented in Mexican political life during the previous five decades (Loaeza 2007; Abedrop 2005; Elizondo 2001).

The expropriation of the banks occurred at the end of the presidential term. Three months later, in December 1982, the administration changed. The new government eliminated exchange rate controls since they were ineffective and practically impossible to implement (Marcos 2005). But even though the members of the new administration expressed their disagreement with the expropriation of banks, they were not willing to reverse it either. They were aware that banks in the hands of the government would be an important tool to directly finance the public deficit.

The change in ownership and management led to a series of changes in the activity and strategy of banks. The goals of the new government regarding the banking system were expressed since the beginning of their term. Among other purposes, they sought to clean up the system in the face of the crisis, particularly those banks in trouble. Also, they would carry out a restructuring of the system, because they aimed to have an industry mostly composed by medium-sized and large banks. Since they were not going to reverse the expropriation, later they allowed minority private investment in the banks' equity, a measure intended to be a friendly signal to the business community which perceived that private property rights had been severely altered (Elizondo 2001). After the definite crisis began, the government's strategy for banks is explained in the following three categories.

a) Restructuring of bank liabilities and corporate debt in foreign currency

There was a challenge of preventing the assets (mainly loans) and deposits in foreign currency from causing a solvency problem in the banking system. In the last three months of the leaving government, the exchange rate control played an important role. Later, the new government created a program to support companies indebted in dollars. [4]

First, the exchange rate control allowed the banks not to face large losses from their dollar deposits. After the expropriation, under the exchange control, savers who had deposits in dollars received pesos in exchange (instead of dollars). But the dollar deposits were paid in pesos using a “controlled” exchange rate, which was lower than the market rate. The measure was, literally, a partial confiscation of people's savings, the profits of which were captured by the government (and eventually transferred to international creditors), covering a relevant risk in the liabilities of the banks. As already mentioned, exchange rate controls proved to be operationally ineffective - it was practically impossible to control the holding of dollars and their exchange by individuals and companies. When the new government took over, a “dual exchange rate” was established, but the confiscation of those resources was already underway.

The strategy to resolve the debt in dollars of borrowing companies was through a public trust that absorbed the exchange rate losses. This allowed the banks to reduce the risks they had in the loans they granted in foreign currency. On March 11, 1983, the government established the FICORCA (acronym of *Fideicomiso de Cobertura de Riesgos Cambiarios* or Trust for the Coverage of Exchange Risks), administered by the Banco de Mexico, the central bank. This trust managed foreign exchange risk hedging strategies that allowed the restructuring of the companies' loans with foreign suppliers and banks. Four alternatives to hedge foreign exchange risk were offered within the program, through which debtors could acquire dollars at a controlled exchange rate (namely a form of subsidy), to meet their debt with foreign creditors (IMEF 1983; Carpinteyro 1986; Marcos 2005). A necessary condition to participate in these programs was that the companies previously reschedule their debt to long-term

[4] A restructuring of the public and private external debt was also carried out, mainly for the short-term debt. Marcos (2005) points out that during 1983, 23 billion dollars of the public sector debt was rescheduled (originally it was due in December 1984). The restructure allowed a grace period of four years.

maturity. Marcos (2005) points out that such renegotiation condition was essential to reduce the fiscal cost of this program.

Some of the alternatives that FICORCA offered included the granting of a loan in pesos (a "swap" mechanism for debt), which was structured to smooth the payments during the early years of the loan. That mechanism was accessible for most firms. Thus, 40% of debt was rescheduled to have a maturity greater than four years. This made it possible to soften the debt burden for companies, which, had it not been renegotiated, would have had to be paid within three years; these conditions would have been impossible for companies during the crisis and would have led to solvency problems for many banks. FICORCA registered 1,214 companies, of which 43% participated with loans of at least 1 million dollars. The relative weight of the large debtors in the program was notable. Almost 300 foreign financial institutions were registered in the program, as well as 200 foreign suppliers (Marcos 2005).

b) Reorganization of the system

One of the measures taken by the new government after 1983 was the so-called "rationalization" (*racionalización*) of the banking sector, which consisted of merging small banks that were considered "redundant". These were banks mainly at the regional level, as well as those in weak conditions or had been severely affected by the crisis. Likewise, given the government's budgetary astringency in those years, the size of the system had to be reduced, the logical purpose was to have a smaller number of state-owned firms. From 60 banks in 1982, there were 19 banks left in 1985.

For the public sector, it was a consistent rationale that there were redundant banks, because they were all owned by the State and therefore their existence did not respond to a criterion of market competition. But it was a measure that reduced the number of firms and therefore also the competition in that industry. Therefore, concentration in the banking system increased.

Suárez (1999 and 2005) and Márquez (1987) argue that this rationalization was necessary because there were cases of poor management; in particular, banks subordinated to business groups that had channeled soft credits to their related companies, sometimes at a zero rate and even without collateral. They authors also point out that the large banks, which were independent of industrial groups or banks with broad regional coverage, were the ones that best resisted the crisis.

c) Compensation from expropriation and the structure of the financial system

The compensation to the former owners of the expropriated banks had effects on the structure of the industry. The incoming government opted for a compensation process that enabled a reconciliation with the business sector and recovered the trust of businesspeople. A few weeks after the start of the new administration, on December 29, 1982, a new Banking Law was approved. The new law included the possibility of minority participation of private investors in the equity of state-owned banks. They considered this was a way to "soften" the relationship with the private sector (Cárdenas & Espinosa-Rugarcia 2008; Elizondo 2001). The indemnification for expropriation was established in the Mexican Constitution for expropriations and it had two parts, one a lump sum payment and the transfer of non-banking assets.

The transfer or sale of the so-called "non-banking assets", namely the banks holdings of shares of industrial and commercial firms took longer (it was announced in March 1984), buy it was a relevant part of the compensation. When assessing the assets of the banks to pay the indemnification, the government became aware of a large number of shares of non-financial companies that gave the banks significant percentages of ownership in industrial and commercial firms, among them the largest firms in Mexico (Márquez 1987; Legorreta 2005). For some authors, these participations were a factor that basically motivated the promoters of the expropriation, since they considered that with it, the state would have "control of the economy", meaning a relevant portion of the stock of large industrial and commercial companies (Bazdresch 2005). But the new government administration chose to sell those assets. The sale of those shares was included as part of the compensation process once they were transferred to the former bankers and sold in the stock market. As charts 2.2 and 2.4 show, banks cleared their holdings of stocks. This in turn gave a strong boost to the Mexican stock market and contributed to the gaining importance of brokerage firms (*casas de bolsa*) in the Mexican financial system.

A final element of political compensation for the private sector was to leave the securities market, including CETES, the main government bonds, as an exclusive operation of brokerage firms, which remained in private hands. The new bank law left state-owned banking outside of the brokerage industry. This allowed a rapid growth of the brokerage industry, and a straightforward enrichment of their owners. It was, in effect, a form of compensation to the private sector, mainly to those financiers involved in brokerages, several former bankers among them. In 1987, a final form of compensation to the private sector was the issuance of securities called "Certificados de Aportación Patrimonial", which represented equity of the banks that could be held by the private sector (Del Angel, Suarez & Bazdresch 2005; Cárdenas & Espinosa 2007).

As the decade of the eighties progressed, the banking system had maintained profitability, and little risk. The government had protected it from the crisis and directed its loan portfolio to financing the deficit, which guaranteed a market return and were considered low-risk operations. Chart 2.7 and 2.8 show that good performance due to government lending. But the banking system became a smaller industry, with less penetration in the economy and more concentrated. The four firm ratio increased between 1986 and 1988. Their ability to grant credit had also been weakened, which would become evident after the financial liberalization that began in 1988 and the re-privatization in 1990. Other intermediaries, mainly the brokerages, were gaining a greater presence in the financial system, and would be protagonists in the bank reprivatization process, in the early nineties. This was partly the result of the crisis and the government's strategy to solve it. But it was also the consequence of the measures that the government took to compensate the former owners of the banks and repair the relationship with the private sector, in the face of the political rupture that the expropriation brought.

## 5. Analysis of legacies in banks

The previous section shows how the expropriation was a dramatic turn in the structure of the financial system. However, in the paper we advance the hypothesis that legacies in the banks could help to explain their performance after they were expropriated. For this purpose, we propose a reduced form model with panel data to estimate the potential effects of legacy on bank performance. The logic of the model is the following. According to Fernández-Pérez and Lluch (2015) the legacy in an organization is the outcome of a continuous process of adaptation. For instance, diversification in sectors that present greater expectations of profitability, alternating at the same time, the legal name of the businesses, managerial and expert teams, the organizational chart, organizational culture, governance schemes, among other elements. Then, we start from the hypothesis that, given the high entry costs of the sector and long-term nature of the bank business, banks maintain a natural tendency to generate legacy. Continuities might prolong their survival of organizations over time regardless of political changes.[5] Thus, legacies are a form to capture the enduring effect of the financial history of an organization.

Economic and political factors determine banks' internal decisions. At the same time, such decisions can also be changed by external shocks. So, the tendency toward legacy might not be obvious. Two aspects are key for our analysis. First, when we consider legacy, we refer to banks with a successful business, this might be explained by enduring organizational structures or the connection with the political system. Second, we assume that banks with a legacy show successful performance over time and have the ability to better manage economic instability.

The general intuition of the model is that despite this period of great instability, banks that built a legacy, could show better performance. Performance, as measured by profitability, the ratio of profits

[5] This is related to the concept of *path-dependence*, and consider it is be a form of path-dependence embedded in organizations.

and losses over capital, may even outweigh the fact that banks formally changed ownership. Thus, our hypothesis moves in two directions. On the one hand, to confirm the relevance of legacies in key institutions for economic growth. And, on the other hand, that despite a radical change, such as the expropriation of banks, these legacies were able to remain.

The reduced form model has the following functional form:

$$\Delta \frac{ROE}{ROE} = \beta_0 + \beta_1 \, EXCHANGER_{it} + \beta_2 \, INVESTMENT_{it} + \beta_3 \, LEGACY_{it} + \beta_4 NPERFORMINGL_{it} + \propto BANKS_i + u_{it}$$

**Equation 1.**

$$\Delta \frac{ROA}{ROA} = \beta_0 + \beta_1 \, EXCHANGER_{it} + \beta_2 \, INVESTMENT_{it} + \beta_3 \, LEGACY_{it} + \beta_4 NPERFORMINGL_{it} + \propto BANKS_i + u_{it}$$

**Equation 2.**

**Where:**
**t**= 1..t denotes the time, for the period 1977-1990
**ROE**= ratio of profit and losses over capital
**ROA**= ration of profit and losses over assets
**EXCHANGER**= annual exchange rate variation
**INVESTMENT**= annual variation of the investment over GDP
**LEGACY**= index composed of seven variables
**NPERFORMINGL**= ratio of non-performing loans on total loans
**BANKS**= control variables on the size of the bank

The model estimates the relationship of the set of independent variables on the performance of individual banks, measured as the change in the return on equity (ROE) and return on assets (ROA) ratios. As independent variables we consider four variables. The variation of the exchange rate (EXCHANGER) and the ratio of investment to GDP (INVESTMENT) are two macroeconomic variables that capture the moment of the economic cycle. The expected relationship between profitability and the exchange rate is negative. In the case of the investment variable, the expected relationship is positive, so that if investment grows, bank profitability also increases. We assume that the increase in investment shifts aggregate demand to the right and, therefore, agents' desire to access to a loan. Conversely, a decrease in investment relative to GDP reduces the demand for bank loans and, therefore, a portion of bank profitability. In addition, we include two independent variables that affect banks profitability. First, the ratio of non-performing loans on total loans. The expected sign for this variable is negative. This means that as non-performing loans increase, the financial statements may not be resilient. Thus, the survival or independence of the bank may be compromised. Finally, we include a legacy index. This variable is an index with a value that between 0 and 14, it contains qualitative and quantitative information. We expect the sign to be positive. This indicates that banks that developed a legacy maintain stable, predictable, and consistent profitability over the long term.

The legacy index is composed of seven variables.[6] The categories are: 1) business expansion, 2) capitalization level, 3) relationship to a business group or conglomerate, 4) risk exposure, 5) financial relationsships with the government, 6) solvency and 7) systemic risk. In the following table, we show the summary of categories and definition of variables. In the appendix 2 we explain a more detailed analysis of the index.

| **Variables in the legacy index** | | | |
|---|---|---|---|
| **Categories** | **Variable** | **Definition** | **Values** |
| 1. Business Expansion | BUSINESST | The share of the bank's long-term deposits by the total long-term deposits of the system | High=2<br>Medium=1<br>Low=0 |
| 2. Capitalization Level | CAPITALIZATION | The ratio of bank capital over the total capital of the system. | High=2<br>Medium=1<br>Low=0 |
| 3. Relationship to a business group or conglomerate | GROUPB | The percentage in which banks belong to the groups | High=2<br>Medium=1<br>Low=0 |

[6] Note: this is preliminary, since the index and the definitions of the variables require new adjustments.

| | | | |
|---|---|---|---|
| 4. Risk Exposure | RISKR | The ratio of capital over total loans. | High=2<br>Medium=1<br>Low=0 |
| 5. Financial relations with the government | SECURITIES | The ratio between the sum of bonds plus fixed income securities over assets. | High=2<br>Medium=1<br>Low=0 |
| 6. Solvency | SOLVENCYR | The ratio of the sum of loans plus stocks plus bonds over the capital. | High=0<br>Medium=1<br>Low=2 |
| 7. Systemic Risk | SSYSTEM | The sum of bonds plus fixed income instruments over total system. | High=2<br>Medium=1<br>Low=0 |

The first results of the regressions derived from equation 1 and 2 are shown in the following table.[7] The first part of the table shows the coefficient of the variables and their standard deviations in parentheses. The second part of the table shows the t-statistic and p-value in parentheses. We can observe that the regressions for both ROE and ROA (dependent variables), our variable of interest is significant. However, we obtain a negative sign and not positive as we expected. This is explained because the banks that obtained a higher percentage in our legacy index are not the banks that reported the highest levels of profitability (see appendix 2). In fact, some of them had financial and capitalization problems. This is also explained by the fact that they may have had strong government connections that allowed them to artificially maintain a "healthy" financial state.

The other important aspect to highlight in the table is the significance of investment. The coefficient of this variable also presented a negative sign. This makes sense given the stylized facts of the time. In other words, there is no correspondence between investment and the multiplier effect promoted by the banks. Perhaps, it would have been appropriate to differentiate between public and private investment in order to observe more fully the multiplier effect of the period. With respect to non-performing loans, the result is also consistent with the literature. That is, during the period there were

[7] Note: this results are preliminary and we plan adjustments from the comments of reviewers and comments from conferences.

serious problems regarding the timely identification of a defaulted loan in the banks' balance sheets. Finally, the variation in the exchange rate does not appear to be significant in explaining the behavior of bank profitability.

| **Regressions for ROE and ROA, 1977-1981** | | |
|---|---|---|
| | **ROE** | **ROA** |
| LEGACY | −0.0775445<br>(0.0201597) | −0.00369850<br>(0.000983552) |
| EXCHANGER | −0.000372944<br>(0.00110509) | −1.12534e-05<br>(5.43744e-05) |
| INVESTMENT | −0.0175048<br>(0.00952028) | −0.00129529<br>(0.000468395) |
| NPERFORMINGL | 0.498741<br>(2.08836) | 0.0144740<br>(0.102372) |
| | **T-test** | |
| LEGACY | −3.847<br>(0.0002) | −3.760<br>(0.0002) |
| EXCHANGER | −0.3375<br>(0.7362) | −0.2070<br>(0.8363) |
| INVESTMENT | −1.839<br>(0.7362) | −2.765<br>(0.0064) |
| NPERFORMINGL | 0.2388<br>(0.8116) | 0.1414<br>(0.8877) |

The numbers shown are values of the T-test with the p-value in parenthesis

In the following table we present the results of our regressions for ROE and ROA over a period ranging from 1977 and 1990. This period includes a sample of 17 banks that could be maintained in some way throughout the period. In the first part of the table, we present the coefficient with its standard deviation in parentheses. In the second part of the table, we present the t-statistic and the p-value in parentheses. As in the previous regressions, our variable of interest (the legacy index) is significant and has a positive sign.

This means that the banks that on our legacy scale generated one, are those banks that present higher profitability. That is, they can even generate greater chances of survival in environments of great uncertainty and volatility as was observed during the analyzed period. As we observe in Table 4, banks with legacy or with high levels of legacy according to our scale, are banks that have managed to develop a brand and maintain themselves over time. These banks are the ones that maintain a high level of consumers.

These results strengthen our arguments that legacies are important. Since they make it possible to withstand the most adverse situations. The other point is that this empirical analysis could not have made sense without the wealth of financial history that has been promoted over the years. It is also important to emphasize that our index makes sense in the context in which it is applied and that it allows us to broaden our respective perspective on this period, nationalization and high volatility of the economy.

| **Regressions for ROE and ROA, 1977-1990** | | |
|---|---|---|
| | **ROE** | **ROA** |
| LEGACY | 0.0251835 (0.00417767) | 0.00183767 (0.000330301) |
| EXCHANGER | −0.000151796 (0.000128067) | −3.53612e-05 (1.01561e-05) |
| INVESTMENT | −0.00455681 (0.00188867) | −0.000636855 (0.000149899) |
| NPERFORMINGL | −0.385786 (0.198858) | −0.0132818 (0.0158091) |
| | **T-test** | |
| LEGACY | 6.028 (0.0001 | 5.564 (0.0001) |
| EXCHANGER | −1.185 (0.2373) | −3.482 (0.0006) |
| INVESTMENT | −2.413 (0.0167) | −4.249 (0.0001) |
| NPERFORMINGL | −1.940 (0.0538) | −0.8401 (0.4018) |

The numbers shown are values of the T-test with the p-value in parenthesis

## 6. Concluding remarks

In this paper we aim to explain a story of banking in an episode of high instability and structural change. We are interested in analyzing how banks cope with a situation of risk and instability and their strategies might have unexpected consequences, in detriment of the system itself, and how this changes once the banks become state-owned firms. We explain that two factors play a crucial role in this. First, the politics of the State and its relationship with the financial system, in this way we complement the work by Haber (2005), Calomiris and Haber (2014) and Altamura and Flores-Zendejas (2020). And second, the financial histories of individual banks (however due to space limitations we focus on large banks). Considering that the financial histories are indispensable, we run an econometric exercise to analyze the role of legacies for the performance of banks. In our preliminary analysis we find that legacies have a relevant role to explain performance, measured as profitability. However, we find that the direction of the effect is contrary to what we originally expected, possible meaning that banks performance might have worsen in the hands of the government.

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