The seventh in a series of seminars conducted by Sequoia Institute with the sponsorship of the Agency for International Development convenes on Friday, October 20, 1989, at the Madison Hotel in Washington, D.C. The series' theme -- **Including the Excluded:** Extending the Benefits of Development -- is inherent in the topic of this seventh seminar:

IF TEXAS WERE CHILE: Financial Risk & Regulation in Commodity-Exporting Economies

7:15- 8:00 Registration Reception (Continental Breakfast)

8:00- 8:05 Welcoming Remarks, **Jerry Jenkins**

8:05- 8:15 Introduction to Proceedings, **Philip L. Brock**

8:15-10:00 Discussion of a paper by **Salvador Valdes** and **Sergio de la Cuadra, "Myths and Facts about Instability in Financial Liberalization in Chile: 1974-1983,"** is initiated by **Gary Gorton.**

10:00-10:15 Rw/R: Break for Return-with-Refreshment

10:15-12:00 **Peter Diamond** launches the discussion of **Paul M. Horvitz**'s paper, **"The Causes of Texas Bank and Thrift Failures."**

Lunch

1:15- 3:00 **"Analysis of the 1986 Chilean Banking Legislation,"** authored by **Francisco Rosende** and **Guillermo Ramirez** is opened to discussion by the lead-commentary of **Kenneth E. Scott.**

3:00- 3:15 Rw/R -- Break for Return-with-Refreshment

3:15- 5:00 Discussion of **Charles W. Calomiris'** paper, **"Do Vulnerable Economies Need Deposit Insurance?: Lessons from the U.S. Agricultural Boom and Bust of the 1920s,"** is initiated by **Richard Webb.**

Concluding comments: **Philip L. Brock**

THEME & CONTRIBUTORS

The origins of **If Texas were Chile** date to the very first seminar in the Series, in May 1987; especially to the contributions of one of its select scholar participants, Philip L. Brock. The nascent idea took on its present form in the aftermath of the Series' fourth seminar in June 1988 on Capital Markets & Development, and, by October, Dr. Brock's work toward organizing the present seminar had commenced in earnest. In the process, he has fulfilled one of its initial objectives by bringing together Latin American and U.S. scholars who are working on similar problems of financial regulation. The following summary of the seminar's theme and direction explains its title:

> The flurry of proposals for restructuring financial systems (and minimizing bank failures) in the United States signals that no country's economic welfare is immune from the instability of its financial system. Exacerbating the general problem of financial stability are the peculiar circumstances of countries that are heavily dependent on oil, copper, or other primary commodities. In these countries, changes in the world -- especially of an export good's prices and of real interest rates -- appear to be more immediately and thoroughly experienced by all sectors of their economies. The links between internal financial stability and external stability of commodity prices and real interest rates is the stimulus for (and focus of) this seminar.
>
> The combination of papers prepared for this seminar reflect the belief that the best answers to the **combined** problems of external shocks and financial stability might be more valuable than separate answers to **either**.
>
> U. S. government deposit insurance prevented massive failure of Texas banks during the sharp drop in oil prices of the 1980s, producing a significant transfer of income from the rest of the United States to Texas. In contrast, the rapid decline in asset values that accompanied the sharp rise in real interest rates and the 40 percent fall in the price of copper, forced the Chilean government in 1983 to take over the country's largest banks. If Chile were Texas, the Chilean financial system would have been bailed out by the FDIC.
>
> It is more interesting to explore the hypothetical consequences for Texas if Texas were Chile, without government deposit insurance and without substantial "foreign" investment links to the rest of the United States. Such an ordering focuses attention on the extent to which external shocks and international (or inter-

state) diversification of risk interact with banking regulations to produce financial stability. In addition to the seminar's papers on Texas and Chile, the paper by Calomiris on the farm belt states in the 1920s provides additional insights into the links between financial structure and the consequences of external instability.

A second important theme of the seminar that also juxtaposes the experience of Chile and Texas is the transition of commodity-exporting economies from heavily repressed financial systems to liberalized systems with fewer restrictions on deposit-taking and lending activities. Financial deregulation in the late 1970s and early 1980s preceded the bank collapses in both Texas and Chile. Even if the newly-deregulated systems, imposed **de novo**, might have been stable, the transition away from the heavily regulated financial systems may have contributed to the underlying fragility of the new systems.

Professor Brock has assembled an impressive array of talent for exploring the unique focus of this seminar/volume. In order of their appearance in the seminar agenda, the principal contributors to the day's proceedings are:

Philip L. Brock's contributions to Latin American Debt and Adjustment: External Shocks and Macroeconomic Policies, which he also co-edited, reflect the unique capacities which he brings to the present seminar/volume. Completing Financial Regulation and Financial Crisis in Latin America as he accepted responsibility for If Texas were Chile, the cross-fertilization should further distinguish both volumes.

Salvador Valdes' doctoral dissertation (M.I.T. PhD, 1986) on the Chilean banking collapse of 1982-3 as well as his ongoing research contribute to his work for this seminar/volume. He is currently a member of the Faculty of Economics and Business Administration of the Catholic University of Chile.

Sergio de la Cuadra is a former Minister of Finance and Central Bank president in Chile. He is currently a member of the Faculty of Economics and Business Administration of the Catholic University of Chile, and a member of the board of directors of Chile's largest private sector bank.

Gary Gorton's publications are of extraordinary range and quality. Among these, his "Clearinghouses and the Origin of Central Banking in the U.S.", Journal of Economic History (June 1985) may be the most appropriate background reference to his lead-commentary for the present seminar/volume. Professor Gorton is a member of the faculty at the Wharton School of Business (University of Pennsylvania).

Paul M. Horvitz, a former research director for the U.S. Federal Deposit Insurance Corporation (1967-77), is presently the Judge James A. Elkins Professor of Banking and Finance at the University of Houston. He co-authored the widely-cited book, Safe and Sound Banking.

Peter Diamond is a member of the faculty at the Massachusetts Institute of Technology's Department of Economics. His earlier work on overlapping generations models played an important part in the development of recent general equilibrium models with banks. His more recent work on stochastic credit in search equilibrium reflects his interest in the basic theoretical problems connected with the efficient functioning of financial markets.

Francisco Rosende, currently the Director of Studies of the Central Bank of Chile, wrote a number of influential articles that helped to shape the current Chilean banking legislation.

Guillermo Ramirez presided over the re-privatization of banks in Chile, and is currently the Superintendent of Banks for that country's government.

Kenneth E. Scott, a Senior Research Fellow at the Hoover Institution, has written extensively on legal regulation of corporate structures and financial institutions, and serves as a member of the Financial Institutions Committee for the State Bar Association of California.

Of **Charles W. Calomiris'** numerous publications, perhaps the most useful as background to his paper in the present volume is, "The Purpose and Optimal Structure of Deposit Insurance: Lessons from the Record," Economic Perspectives (May 1989). He is currently a member of the Department of Economics, Northwestern University, and the Research Department, Federal Reserve Bank of Chicago.

Richard Webb is well-known as an academic, both as a professor at Princeton and as a researcher at the World Bank, for his long-standing work on the association between economic growth and income distribution. He also worked at the Central Bank of Peru for a number of years, including service as President of the Central Bank between 1980 and 1985.

INCLUDING THE EXCLUDED: Extending the Benefits of Development, is the theme of a series of seminars introduced by Sequoia Institute in 1987, with the sponsorship of the Agency for International Development. The series seeks to shed new light on critical issues of "third world" development -- light that will enable development assistance to accelerate the inclusion of all people in the process of individual and societal development.

Fora

In order to facilitate an intensive exchange of views, each of the seminars is restricted to no more than 50 participants, including authors and lead-commentators on papers prepared for the series. Dialogue is additionally facilitated by delivery to invited participants of the three or four papers prepared for a seminar at least one week prior to its convening.

Because attendees are expected to have read the papers in advance of a seminar, the time allotted for authors' introductory presentations of their work is limited to 10-15 minutes. A like amount of time is accorded to lead-commentators for initiating the general discussion among all attendees. The hour- to two-hour-long discussion of each session correspondent with a paper may largely consist of questions and answers, and an author may, in fact, occupy most of a session's time in the course of addressing issues raised by other participants. The final 10 minutes of each session are allotted to author(s) for presentation of their concluding remarks.

The seminars are thus structured with the intent of minimizing monologue and redundancy in favor of maximizing dialogue and discovery.

Both the structure of each seminar's proceedings and the characteristics of invited participants reflect a preeminent objective of the series: to serve as a catalyst for a new generation of thinkers and ideas on development and its assistance.

This endeavor is epitomized by the series' "select scholar" program.

Select Scholars

At least ten of each seminar's invited participants are selected from nominations of outstanding scholars who are relatively "new" to LDC/international development issues, by virtue either of their youth or of their concentration of previous scholarship on other subject matter.

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Nominations of "select scholars" for participation in the series are welcomed from social scientists throughout the United States. A nominator's letter of recommendation should indicate for which seminar(s) the nominee's participation would be of greatest mutual value, and, if possible, be accompanied by a resume reflecting the nominee's qualifications.

Nominations should be submitted to:

Select Scholar
Sequoia Institute
1800 K Street, NW, Suite 929 Phone: (202) 467-0799
Washington, DC 20006 FAX: (202) 785-3842

The select scholar program embodies the intention of the series to encourage increased (and fresh) attention to third world development issues both among younger academics who might become specialists in the field and among established scholars who might never become "third world specialists." What all have in common, however, is their demonstration of: (1) original thinking, (2) outstanding scholarship, and (3) keen interest and penetrating thought regarding development issues.

Publications

In order to serve as a catalyst for a new generation of thinkers and thinking about development and its assistance, the dialogue of the seminars must reach the vast audience unable to have participated in their occurrence. To this end, ICS Press is publishing and distributing the entire series' product. Thus a widely advertised volume results from each of the seminars.

In addition to at least three papers and lead-commentaries of a seminar, the resulting book includes most of the transcribed discussion of each paper and commentary, and the authors' responses to the commentary and ensuing discussion of their respective papers.

In order that the ensuing book might accurately reflect their thoughts, each participant whose oral contributions were transcribed during the course of a seminar are provided a complete transcript of that day's proceedings. Self-edits of a transcript (including revisions and/or elaborations) should be returned to Sequoia within two weeks of their receipt by seminar participants.

Finally, six to eight months subsequent to a seminar's occurrence, each of its participants will receive the published product of the event.

Series Titles

As of October 1, 1989, the publication status of the first seven titles in the Sequoia Series from ICS Press, is as follows:

In Print

Elliot Berg, ed., Policy Reform and Equity: Extending the Benefits of Development. In addition to Elliot Berg, contributors include Charles E. McLure, Jr., Miguel Urrutia, Erik Thorbecke, Rolf Gusten, Gary Fields, Anne Krueger, and Raymond Vernon.

Jerry Jenkins, ed., Beyond the Informal Sector: Including the Excluded in Developing Countries. In addition to Jerry Jenkins, contributors include Hernando de Soto (2 chapters), James L. Payne, Janet Landa, Robert H. Bates, Tyler Biggs, Merilee Grindle, Donald Snodgrass, and John P. Powelson.

Anne O. Krueger, ed., Development with Trade: LDCs and the International Economy. In addition to Anne Krueger, contributors include D. Gale Johnson, Edward Schuh, Robert E. Baldwin, Patrick Low, David Finch, Constantine Michalopoulos, and John Whalley.

Forthcoming (in press; printer's queu)

Steve H. Hanke and Alan A. Walters, eds., Capital Markets & Development. In addition to Steve Hanke and Alan Walters, contributors include Lawrence H. White, Ronald I. McKinnon, Rolf Luders, Murray Sherwin, Terrence Reilly, Flora Painter, and Robert Rourke.

Peter Berger, ed., Institutions of Democracy and Development. In addition to Peter Berger, contributors include Douglass C. North, Deepak Lal, Elinor Ostrom, Samuel L. Popkin, Ronald C. Nairn, and Edwin G. Corr.

Forthcoming (in linotype for delivery to printer)

Richard M. Bird, ed., More Taxing than Taxes?: The Tax-like Effects of Non-tax Policies in LDCs. In addition to Richard M. Bird, contributors include Dan Usher, Joel Slemrod, John Whalley, Jesus Seade, Wayne Thirsk, Maxwell Fry, Malcolm Gillis, and Charles E. McLure, Jr.

IF TEXAS WERE CHILE

Financial Risk and Regulation in Commodity-Exporting Economies:

Introduction and Overview

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DRAFT

October 1989

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In the decade of the 1980s, a sustained decline in world commodity prices and a prolonged rise in world real interest rates produced severe financial pressures on the banking systems of many commodity-exporting economies. This seminar focuses on the experiences of two of those economies, Chile and Texas, in some detail in order to explore the possible links between external shocks and financial distress. In addition, the seminar will look at the historical experience of financial distress in U.S. farm belt states during a period of falling commodity prices in the 1920s.

Although the financial collapse of Texas is well-known in the U.S., the extent of financial collapse elsewhere in the 1980s is not generally appreciated. Section 1 offers a brief overview of financial problems in Latin America in the 1980s as a way of putting the experiences of Chile and Texas into a broader perspective. Section 2 offers a simple analytical framework that offers some insights into the way that external instability affects investment and consumption decisions in a commodity-exporting economy. Finally, Section 3 provides a partial list of topics for discussion at the seminar.

1. Financial Distress in Latin America in the 1980s

Financial collapse or distress characterized most Latin American economies in the 1980s. In the wake of government intervention into the domestic financial systems, a number of countries revised their banking

legislation. Many countries established a deposit insurance fund modeled on the FDIC, but other countries have seen proposals for reform tied up in a political struggle. Chile is unique in its attempt to reform banking regulation in a way that encourages the private sector's assessment of bank risk. The following short summaries indicate the widespread nature of financial problems in the region.

Argentina

Argentina was the first country to undergo a large-scale bank collapse, as 20 percent of banks were liquidated during the 1980-82 banking crisis. In July 1983 the economic team of José Dagnino Pastore and Domingo Cavallo began a process of reducing the internal debt burden by engineering a hyperinflation with deposit controls that imposed a capital levy on depositors via highly negative real deposit rates. Between June 1982 and February 1983 the real value of deposits in the banking system fell by 58 percent. Even with the capital levy, the third largest bank (Banco de Italia) failed in May 1985 and half a dozen other banks failed in September - October 1986. In 1987 a new banking law was passed that attempted to tighten controls over the banking sector.

Brazil

Although Brazil had a number of minor financial problems during 1980-83, the first major problem was the collapse of the five largest independent savings companies in April - May 1984. The system's supervisory agency was left with the clean up of a massive default on mortages made by the savings companies. In 1985 the government intervened in Comind, Banco Sul-Brasileiro, and Banco Auxiliar, the eighth, thirteenth, and fifteenth

largest banks. In May 1988 Brazil approved a new banking law that bans bail-outs of failed banks with public funds and establishes a special reserve fund for banks.

Chile

Between 1981 and 1983 the government took over banks, including the two largest banks, that accounted for over fifty percent of the financial system's assets. Between 1983 and 1986 the government engaged in two global reschedulings of private sector debt, purchased large quantities of uncollectable loans from banks at face value, provided large subsidies to dollar debtors, and oversaw the bankruptcy and restructuring of some of the largest firms in the country. In September 1986 the government approved a new banking law that is designed to prevent future government rescues of the financial system. The law was amended in May 1988 and is currently being amended in an attempt to limit fiscal discretion in circumventing the law.

Colombia

Between June 1982 and October 1984 the government intervened in 22 financial entities. In 1986 the government created a deposit insurance fund. By late 1987 the deposit insurance fund had been forced to intervene in a number of large banks. By early 1988 the government, via the deposit insurance fund, controlled the operation of 80 percent of the nation's financial institutions.

Mexico

After two large devaluations of the peso in 1982, President López Portillo nationalized the Mexican banking system on September 1 of that

year. The nationalization imposed exchange controls and capital losses on holders of dollar deposits. Although the size of uncollectable loans of the system is not known with much certainty, there are estimates that it was somewhere in the neighborhood of 15 percent of total loans. Much of the period following 1982 was spent discussing the reprivatization of the banks, a process that finally began in 1987.

Peru

In November 1981 the government of Peru intervened in the operation of BIC (Banco de la Industria de la Construcción), the flagship bank of a conglomerate that invested heavily in property development. In late 1982 the government liquidated the third largest private commercial bank, Banco Comercial, after having found $100 million of irrecoverable loans on the bank's portfolio. In April 1983 the seventh largest private commercial bank was liquidated due to a cited "loss of capital and reserves and a complete lack of liquidity." In July 1984 the Banco Popular, Peru's second largest commercial bank and one of the three banks owned by the state, was forced to stop lending when 12 percent of its loans were classified as irrecoverable by the Superintendency of banks. In July 1987 President Alan García announced the nationalization of the banking system, but was forced to retreat on the issue during 1988.

Uruguay

During 1981 and 1982 several large banks failed in Uruguay. The Central Bank repurchased a large part of the uncollectable loan portfolio of the banks, including banks that were subsidiaries of foreign banks. By 1983 the Central Bank's portfolio of uncollectable loans was about 15 percent of GDP.

Venezuela

In November 1982 the Superintendency of Banks took over the management of the country's largest bank, the Banco de los Trabajadores de Venezuela (BTV), because of an inability to meet clearing house payments. In December 1982 three of the four largest banks recieved an injection of funds of $U.S. 2.3 billion via a domestic bond issue purchased, in large part, by the state-owned oil company. In 1985 several other large banks were taken over by the government, including Banco de Comercio. In May 1985 the government set up a deposit guarantee fund. During 1986-1988 legislation to overhaul the regulation of the banking system was mired in a political battle.

2. The Transmission of External Instability to Commodity-Exporting Economies

The papers in this seminar focus on the functioning of financial systems in commodity-exporting economies without explicitly examining the interaction between the external environoment facing the economies and the behavior of agents within the economies. As a way of complementing the analysis of the papers, this section presents a simple model of the transmission of external instability to a commodity-exporting economy.

The analysis will focus on terms-of-trade instability because such instability is important to commodity-exporting economies and can be measured empirically. Table 1 presents figures on terms-of-trade instability for fifteen Latin American countries for the period 1938-1954. The instability index, which is the standard error of a first-order autoregression of the terms-of-trade for each country, ranges from about .12 for Peru, Costa Rica and Argentina to about .18 for El Salvador, Colombia, and Ecuador. The statistical tests indicate that one cannot reject the

Table 1

Autoregressions for Latin America's Terms of Trade

Model: $\text{Log TOT}_t = \gamma_1 \text{Trend} + \gamma_2(\text{Log TOT}_{t-1}) + u_t$

Sample Period: 1938 - 1984

Country	Instability Index	γ_1	γ_2	LM-Test	c-statistic H_0: $\gamma_2 = 1$
Ecuador	0.187	-.0005 (-0.27)	1.005	1.99	0.33
Colombia	0.179	.0008 (0.38)	0.994	4.52*	-0.30
El Salvador	0.175	-.001 (-0.80)	1.012	1.00	0.78
Venezuela	0.169	.003 (1.71)	0.972	0.15	-1.27
Uruguay	0.160	-.0002 (-0.14)	0.997	1.75	-0.18
Chile	0.155	.0003 (0.21)	0.994	0.71	-0.45
Honduras	0.148	.0006 (0.40)	0.993	2.34	-0.55
Mexico	0.147	-.0009 (-0.57)	1.009	1.05	0.72
Guatemala	0.146	-.001 (-0.69)	1.007	1.44	0.63
Brazil	0.142	-.001 (-0.67)	1.006	-0.01	0.54
Bolivia	0.139	.003 (2.03)	0.968	0.62	-1.60
Nicaragua	0.138	-.0003 (-0.21)	1.003	0.89	0.31
Argentina	0.123	.001 (1.11)	0.986	0.01	-1.31
Costa Rica	0.116	-.001 (-0.71)	1.010	0.37	0.87
Peru	0.115	.0001	1.000	1.77	0.07

*Significant at the 5% level. The trend is never significant.
Note: The Instability Index is the standard error of the equation. The LM-test is for white noise residuals.

hypothesis that the terms of trade follow a random walk for these countries. By way of international comparison, similar autoregressions for the OECD countries produce values of about .02 -.03 for the instability index.

By assuming as a working hypothesis that the instability in the terms of trade facing commodity-exporting economies is produced by a random walk process, the following simple model can illustrate some of the possible consequences of that instability for economic decision-making within the economies.

Assume that a representative economic agent lives in an economy that produces a good for export using capital (K) and one unit of labor with a neoclassical production function. The world price of the export good (p) is the economy's terms of trade. The value of output is the following: $pF(K) = r^K K + w$, where r^K is capital's rental (equal to the value of the marginal product of capital, $pF'(K)$) and w is the real wage. The agent imports a good for consumption (C) and a good for investment (I). Capital depreciates at a constant rate δ, so that the change in the capital stock is the following: $dK_t = (I_t - \delta K_t)dt$. The agent can also acquire net foreign bonds (b) that pay a constant real interest rate (r).

The terms of trade facing the economy evolve as a Wiener process, the continuous time limit of a random walk:

$$dp_t = p_t \alpha dt + p_t \sigma dz_t \tag{1}$$

where dz_t is the instantaneous increment to the random walk and σ is the theoretical counterpart to the instability index of Table 1.

Given the terms-of-trade process in equation (1), the agent's instantaneous budget constraint is the following:

$$\left[p_tF(K_t) + rb_t - C_t - I_t\right]dt + p_tF(K_t)\sigma dz_t = db_t \tag{2}$$

Equation (2) indicates that production is risky because of the stochastic component of output, $p_tF(K_t)\sigma dz_t$.

By assuming that the agent maximizes the discounted value of utility from consumption U(C) (where the agent's discount rate is set equal to the world real interest rate), the behavior of consumption and investment can be derived as in Brock (1989). Under the assumption that the agent exhibits constant absolute risk aversion, the solution to the agent's maxization problem takes on a particularly simple form. The rental on capital is the following, where $\Gamma = -U''(C)/U'(C)$ is the coefficient of absolute risk aversion:

$$r^K(K,p) = \frac{r + \delta}{1 - \Gamma rpF(K)\sigma^2} \tag{3}$$

By totally differentiating equation (3), it is straightforward to show that the equilibrium size of the capital stock in this economy is negatively related to the variance of the innovations in the terms of trade process. The size of the capital stock is also negatively related to the agent's coefficient of absolute risk aversion. In the limiting case of risk neutrality ($\Gamma = 0$), the rental on capital ceases to depend on the variance of the terms-of-trade process.

With constant absolute risk aversion, consumption can be expressed as the following closed-form solution:

$$C_t = p_tF(K_t) + rb_t - dK_t - \Gamma rp_t^2F(K_t)^2\sigma^2 \tag{4}$$

By making use of the arbitrage condition (3) for capital, the solution for

consumption can be rewritten as follows:

$$C_t = r(b_t + K_t) + w_t\left[1 - \Gamma r p_t F(K_t)\sigma^2\right] \tag{5}$$

Equation (5) indicates that an increased variance in the terms of trade process affects consumption in two ways: first, it causes the agent to produce with a smaller capital stock; and second, it causes the agent to save a portion of wage income as insurance against future fluctuations in the terms of trade.

Both equations (3) and (5) indicate that lack of complete international markets for risk has caused the agent's production decisions to become intertwined with the agent's insurance decisions. In particular, by operating with a smaller capital stock and by saving in the form of foreign bonds, the agent insures itself against risk at the cost of a lower expected stream of income from production.

With regard to the papers for the seminar there are two points that come out of this analysis of a commodity-exporting economy. First, mechanisms for the external diversification of risk are important. Svensson (1988) made the important observation that even though output in an economy like the above economy is traded, claims to future streams of the output are non-traded. Opening the economy to foreign investment provides one way to improve welfare (by raising the size of the capital stock and real wages). Allowing the agent to trade in other risky assets (such as shares in the New York stock exchange) will also improve welfare. Both such risk-reducing mechanisms will raise the capital stock and lower the amount of precautionary saving undertaken by the agent. In the limit, if the agent's income is spanned by the traded assets (where spanning refers to the existence of linear combinations of the traded assets that have the same

risk characteristics as the agent's output), the agent will behave as if the agent were risk neutral.

This important role for external risk-bearing links was the reason for including Texas and Chile in the seminar. Presumably the links between Texas and the rest of the United States differ in some important respects (such as sovereignty issues, enforcement of contracts, the ability to have interstate banking, and so on) from the links between Chile and the rest of the world.

The second point related to the model concerns the assumption that an economy can be represented as a representative agent. When an economy is composed of heterogeneous agents who have access to complete internal markets for risk, the economy as a whole will behave like a single, representative agent in resonse to terms-of-trade risk. When domestic markets for risk are incomplete, however, the economy may exhibit externalities due to these missing markets, as shown in some detail by Greenwald and Stiglitz (1986) and elaborated upon by Dixit (1987, 1989).

Dixit (1987), in particular, showed that in an economy with heterogeneous agents subject to terms-of-trade risk and moral hazard, government intervention can improve upon the market solution if the total purchase of insurance by agents <u>cannot</u> be observed. However, if the purchase of insurance by agents <u>can</u> be observed, there is no role for government intervention. Since a number of economists have stressed 1) the importance of asymmetric information between borrowers and lenders as an explanation for the existence of banks, and 2) the accompanying problems of moral hazard and bank runs as possible information-related reasons for the regulation of the banking industry by the government, the structure of banking regulation in commodity-exporting economies may be closely tied to

the external uncertainty faced by these economies.

The importance of this second point lies in its relation to the contrasting financial regulatory structures that have been adopted in Chile, Texas, and the farm belt states in the 1920s. Since economic theory is not well developed in this area, comparative and historical studies of the behavior of banking systems become important for understanding the links between the information requirements imposed by alternative financial regulatory structures and the stability of the financial systems. The study of commodity-exporting economies is particularly useful in this regard because a major source of risk to the economy (i.e., fluctuations in the terms of trade) can be observed directly.

3. Topics for Discussion

Each paper for the seminar brings out specific issues that will form the basis for much of the day's discussion. In addition, the observations of Section 2 of this Introduction suggest the following partial list of topics for the seminar:

-- What are the links between internal and external risk bearing in an economy? One can imagine a country facing undiversified external risk but with sufficiently well-developed internal markets for risk that the economy behaves like the single representative agent in the preceding section. Or, one can imagine that internal markets for risk are also incomplete so that the external risk has a magnified effect on the economy relative to a single representative agent (where the single representative agent's response represents the best the economy can do in response to external risk). At

the other extreme, one can imagine that the economy is able to make use of a complete set of traded risky assets so that internal markets for risk (and any role for regulatory policy) become unimportant.

-- What is the difference between banking with government deposit insurance, banking with the Chilean regulatory structure, and banking with a self-regulating system of bank cartels? Do the extensive information gathering and evaluating requirements made by the Chilean banking law correct an information externality in a way that produces different behavior than a deposit insurance plan or a bank cartel?

A closely-related topic (discussed in the Calomiris paper) is the difference between unit banking and branch banking within a state or country. Does the adoption of branch banking within a commodity-exporting economy promote banking stability in a way that deposit insurance of unit banks does not? Are differences between the two systems related to differences in the underlying incentives to collect and evaluate information?

-- What are the political interactions with the alternative plans for bank regulation? Will governments always prefer to intervene in a discretionary manner in response to pressure from deposit holders of failing banks, or do regulatory structures such as the Chilean one or banking cartels impose well-defined rules on governments that limit such intervention?

Explicit or implicit government deposit insurance is commonly characterized as a put option written by the government. The value of the option is close to zero when the bank is very solvent, but becomes worth

much more when the bank's net worth is close to zero (or negative). In the latter situation, a number of economists have suggested that deposit insurance causes banks to engage in activity to increase the riskiness of the bank's loan portfolio, since greater riskiness increases the value of the (implicit) put option.

Following the initial fall in copper and oil prices (and rise in real interest rates) at the start of the 1980s, did Chilean and Texan banks alter their behavior to increase the riskiness of their operations? If so, what precisely was changed in order to increase the riskiness? Did the access of Texas banks to brokered deposits from the rest of the U.S. and the access of Chilean banks to syndicated loans from outside of the country interact with incentives for increased risk taking?

In addition, the following topic has emerged from the papers as an important, but difficult one:

-- Suppose that we knew the "correct" way to structure and regulate a financial system. If we initially start with a financial system that is different than this system, how should financial deregulation (or re-regulation) take place to move the system in that direction? Are there problems with financial instability during such a transition that would not characterize the new system in the absence of the old system? What is the role for learning on the part of banks, the public, and the regulatory officials during such a transition?

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Second Draft

MYTHS AND FACTS ABOUT INSTABILITY IN FINANCIAL LIBERALIZATION IN CHILE: 1974-1983.

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September 29, 1989

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1. Introduction

The Chilean experience of financial liberalization in 1974-1982 has claimed the attention of a host of analysts that have hoped to extract lessons from it. This paper contributes to this literature by providing detailed analyses and evidence of the main episodes and facts. In addition, we provide a link with the literature on bank regulation, an issue that turns out to be critical for the success of a financial liberalization.

The first area in which this paper contributes relates to the importance of lax supervision practices as a cause of macroeconomic fluctuations in Chile, in 1974-1982. After the 1982-1983 recession a number of analysts have singled out financial system regulatory failures as an important causal factor in the recession. For example, Edwards (1987) concludes that

> "The financial reform, which meant no supervision of the financial system, was important in explaining the strength of the crisis".

We are interested in more precise conclusions, so that they may allow truly useful insights for other counties and time periods. The first important finding of our study is that some of the specific regulatory problems that have been proposed as the critical factors behind the Chilean intermediary insolvencies are simply not there.

For example, Harberger (1985) proposes that rollover of unrealized loan losses allowed insolvent banks to play a ponzi game over the 1977-1981 period. We find that there was no ponzi game in the Chilean financial system in 1978-1980, because the banks were able to dilute the old loan losses that were rolled over with abundant new loans, earning positive profits. Nevertheless, rollover of unrealized loan losses turned into a ponzi game in 1981 and 1982. This was a critical factor behind the regulatory takeovers of 1983.

The same happens with allegations that moral hazard was rife in the Chilean financial system in 1977-1981. This is simply inconsistent with the fact that over this period Chilean banks earned important profits and had a positive present value of future profits. It is not worthwhile for a bank to engage in moral hazard if it is earning large quasirents allowed by the slow entry into a new, fast-growing market. However, this problem

surfaced again in 1981 and 1982 because banks experienced losses, and the Superintendency was still unable to police effectively the loan classification machinery it had been introducing since 1980.

Conversely, we found that the most damaging regulatory problem ocurred in a different area, ignored by other authors, which is contingent government subsidies. It was due to the structural limitations arising from the fact that the supervisory agency depend from the government. This failure could happen in any country where the government's macroeconomic policies introduce specific risks, which the supervisory agency cannot stop banks from taking without embarassing its political masters. In the case of Chile in 1981, the Superintendency of Banks could not force banks to classify loans as risky when the debtor was highly exposed to foreign exchange and interest rate risk, without embarassing the Minister of Finance, who proclaimed publicly that there would never be a devaluation and that interest rates would fall shortly. This structural problem of bank regulation worsened the 1982 recession.

Another over-emphasized regulatory problem ocurred with self-loans by business groups that controlled insured banks. In 1981 the Superintendency began a head-front attack on the self-lending practices of the large local business groups. Of course, the Superintendency could not be expected to prevent them from profiting from the 1981 contingent government subsidy to exchange rate risk and interest rate risk. During 1982, however, the Superintendency tightened its controls over the business groups, just in time to avoid the possibility that further self-loans would worsen the recession. This was not true of the securities markets, however, where the business groups continued obtaining funds without giving information to investors. Finally, the regulators took over the banks controlled by the speculative business groups and forced them into virtual bankruptcy.

A second area where this paper contributes is in the analysis of the Chilean financial liberalization, excluding prudential supervision issues. As we show, financial liberalization is a multidimensional reform where coordination between the different aspects of it affect the result critically. The main reforms concern quantitative and cualitative credit controls, interest rate liberalization in deposits and loans, the reduction of marginal and average reserve requirements, the authorization of indexation of bank assets and liabilities at different maturities, the opening of banking to entry, the creation of new instruments and markets for monetary control, and the coordination of these reforms across the

different types of financial intermediaries. We present the Chilean experience in this area, which exhibits the costs of insufficient coordination in the liberalization of a repressed financial system. One of the most notable consequences was the unneeded bankruptcy of the savings and loans in 1975.

The issue of learning by doing in the management of banks after many years in which the main activity was to comply with the Central Bank's credit guidelines turns out to be critical too. In addition, we show that the process of financial deepening should be expected to require relatively high real deposit interest rates for several years, in order to reach the steady state where the financial sector has attracted the long-run volume of deposits.

The connection between financial liberalization and prudential regulation is explored in detail. We show first that the Chilean authorities thought that a liberalized banking system meant free banking, and in fact made Chile to go through a free banking period in 1976. Even though they were unable to sustain this policy stance and guaranteed ex-post five important intermediaries in 1977, they insisted in promoting a free banking approach to bank regulation up to 1980. This three-year delay was critical in allowing the Chilean financial system to grow up in a fragile way. If loan classification had been imposed in 1977, as a minority within the authorities proposed, learning by doing would have been speeded up and more loan loss provisions would have been made. It is reasonable to expect that in that case self-loans would have been controlled earlier. Nevertheless, given the volume of the contingent subsidy on exchange rate and interest rate risk offered by the authorities in 1981, many Chilean banks would have failed anyway in 1982 and 1983.

A third area where this paper contributes is in proposing a program for research. The first main area is a more detailed and realistic analysis of the main prudential regulation issues. We make a clear conceptual distiction between structural contingent subsidies, moral hazard, and ponzi games played by rollover of unrealized losses, which have been frequently confused in the literature. Then we show the importance of self-lending by business groups for the degree of informational asymmetry faced by bank regulators, which in turn worsens some of the previous problems. We also posit the importance of incompetence of private bankers in difficulting supervision.

The other area for research relates to the dynamics of financial liberalization. The dynamics of learning by doing and portfolio adjustment are critical. We suggest that learning by doing in the supervisory body is critical to assure the improvement in resource allocation that is promised by financial liberalization.

The rest of the paper is organized as follows. Section 2 reviews the real interest rate dynamics in the Chilean financial liberalization, excluding prudential regulation issues. Section 3 provides a conceptual framework for the analysis of prudential regulation issues. Section 4 covers the Chilean prudential regulation experience, 1976-1982. The subsections here include the Chilean experience with contingent government subsidies, with moral hazard, with rollover of unrealized loan losses, and with the problems raised by self-lending by business groups that control government-guaranteed banks. Finally, section 5 draws lessons both for financial liberalization and for prudential regulation.

2. Real Interest Rate Dynamics in the Chilean Financial Liberalization Experience.

In this section we intend to explain the high level exhibited by the real interest rate during Chile's financial liberalization in 1974-1980. The approach is basically microeconomic, in the sense that it emphasizes the behavior over time of the suppliers of funds and the borrowers, and the production costs of financial services. We start with a brief description of the liberalization process, that refers mainly to the banking industry. The timing and sequencing of deregulation of different controls are discussed with more detail since it is relevant to the two hypotheses that we propose on the dynamics of the real interest rate.

These are the following: the first one posits a slow adjustment of investors'portfolio. A small speed of adjustment makes the interest rate to overshoot at the beginning of the liberalization. Second, after many years of financial repression the banking industry loses its capacity to intermediate funds efficiently, hence, when it is deregulated, it will behave like an infant industry where costs decline through time.

The high level of the interest rate in Chile in 1974-77 is also due to macroeconomics factors. We propose that the 1975 recession was perceived as a transitory real income shock, explaining a large fraction of the rise in the real interest rate in the first stage of the Chilean financial liberalization.

The empirical evidence is consistent with our hypotheses for the 1974-1980 period. However, they are unable to explain fully the sharp rise of the real interest rate in 1981. This issue is discussed in section 3.

2.1. The Financial Liberalization Step by Step

Financial liberalization in Chile comprised two policy areas: deregulation of the banking industry, and development of a securities market. In the first, the main actions were those geared to phase out a battery of credit controls, such as: credit ceilings; maximum interest rates; reserve requirements; and ceiling on foreign borrowing by banks. It included also uniformation of operations and regulations among three types of banks[1]: commercial, development and financieras.

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[1] Uniformation was also extended to some operations of credit and saving cooperatives.

The basic principle followed in this process was to regulate specific operations without distinction among institutions; so, the difference between commercial and development banks disappeared. Financieras, however, were excluded from the checking account market and foreign trade financing (the idea was to induce them to become banks). In this sense, the Chilean bank deregulation policy included a shift towards multiproduct) banking.

In the second area were all those policy measures intended to establish the basis for developing a secutiries market. These included the modernization of the legal framework and the creation of new financial institutions. Important changes were made to several laws that regulate corporations and public offerings of commercial paper and long term debt (bonds and debentures). New institutions were introduced to the market, like: Agencias de Valores (market makers for securities), Mutual Funds, and Private Pension Funds. Other traditional institutions were boosted by the financial liberalization; among these are: the stock exchange and the insurance industry.

Since this paper deals mainly with the banking industry, our description of the liberalization process will concentrate on this sector. We start by pointing out the types of restrictions present at the outset and the timing of their elimination.

(a) Credit ceilings. This tool for monetary control is quite common in countries where the Central Bank is the main source of financing for public sector deficits; this was the case of Chile since its Central Bank was created in 1925. During Allende's socialist government the public sector deficit increased to 14% of GDP, relying heavily on the money press for financing it. By the end of 1973, when the military government came into power, inflation was reaching a rate of 1000% (annualized monthly rate). A deep fiscal reform was done in 1975, eliminating the deficit by 1976; credit ceilings were applied until April 1976. In the two years previous to the credit liberalization, four stages can be distinguished; they are:
January 1974 to September 1974: global limits for the banking system were established, and sectoral sublimits for agriculture, non-agriculture and capital goods credit. This simplified to manageable levels the previous tangle of credit controls.
October 1974 to December 1974: ceilings were not applied during this quarter.

- January 1975 to July 1975: ceilings were restablished, but banks were allowed to lend the increment in time deposits over the outstanding amount as of September 1974.
- August 1975 to March 1976: the ceiling is made equal to the outstanding loans as of July 1975. In April 1976 the authority decides to abandon this tool of monetary control.

This experience shows that the attempt to liberalize credit on October 1974, before the required fiscal adjustment, was rapidly aborted --it lasted only one quarter. The reason is that credit ceilings are equivalent to 100% marginal reserve requirements, which increase the base to levy the inflation tax. Credit ceilings were reestablished in January 1975, and in October they became more stringent to assure fiscal equilibrium. Once the fiscal reform produced its results a sustained liberalization was possible.

(b) Interest rate controls. Maximum interest rates fixed substantially below the market clearing rate were defended by politicians, in the Chilean case, on two grounds: First, as a way of subsidizing specific groups of borrowers and, second, as a way to "fight inflation" -- similar to the argument given for fixing goods' prices.

The nominal rate was much below the on-going inflation, imposing a high tax on time deposits. Consequently, during the financial repression time deposits never were not significant in relation to GDP (see Table 1).

Until June 1974, maximum interest rates were fixed both for time deposits and loans. The lending rate was 20 percentage points above the deposit rate. The liberalization started by liberalizing the deposit rate, while maintaining a ceiling on the rate for loans --this was 115%, annual rate, on 30 days loans-when inflation was over 400%. In May 1975 the lending rate was also liberalized, and inmediately went up to impressive levels of 1300% nominal and 246% real. This experience was short-lived; in October of the same year interest rates for deposits and loans were fixed again. In January of 1976 interest rates were allowed again to be freely determined in the market, and this policy was maintained until December 1982, when the Central Bank began to intervene the market "suggesting" a deposit rate to the banks.

TABLE 1
MONETARY AGGREGATES, RATIOS
(percentages)

	M1/GDP	Time Dep./GDP	Time Dep./M1
1940	12.0	1.9	15.8
1950	10.5	0.4	3.8
1960	9.0	1.9	21.1
1970	10.2	0.8	7.8
1973	22.2	0.1	0.5
1975	8.7	2.5	28.7
1980	7.3	12.0	164.4

Source: Central Bank, Indicadores Económicos y Sociales.

Another important event in this process was an Act of May 1974[2], by which interest was defined as "the amount received by the creditor in excess to the capital adequately adjusted by inflation". This legislation can be singled out as the institutionalization of indexation in the Chilean financial system[3]. Indexation was allowed at the beginning only for operations contracted with one year term or more; in July 1976 this restriction was reduced to 90 days. In September 1977 commercial banks were allowed to contract using a unit of account indexed to the CPI[4]. Until then this unit was used only by mortgage and development banks.

In the same Act it was established that interest rates should be freely determined in the market, but commercial banks, the State Bank and Savings and Loans were exempted from this scheme. These institutions were subject to a different timing, described above.

(c) Reserve requirements and interest paid on them.
In the very high inflation context of the Chilean experience, legal reserves on banks'deposits were intensively used as a way of raising funds by the Central Bank to finance its own loans; the commercial banks' role was only one of an intermediary between depositors and the Central Bank.

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[2]Decree Law № 455, of May 1974.

[3]Monetary correction was incorporated to the tax system in 1975.

[4]On the 10th of each month the daily value of the unit is fixed for the next 30 or 31 days, according to the inflation rate measured by the CPI in the previous month.

The policy definition taken in April 1976 establishes a clear cut between financial repression and financial liberalization. In that month credit ceilings were abolished and a program for phasing out high reserve requirements (RR) was started.

There had been some previous attempts to cut down RR. In October 1974, RR on 30 - 89 days deposits (RRT1) were reduced from 40% to 8% and the same for RR on 90 days - 1 year deposits (RRT2). In July 1975, reserve requirements on demand deposits (RRD) were also reduced, fixing them at a uniform rate of 80% --previously there was a base rate of 100% and a marginal rate of 80%. However, in August 1975 there was a policy reversal, when 30 - 89 days time deposits were subject to a high technical reserve (95% in August, 90% in September and 80% onward)-- a mandatory investment in Treasury bills.
The reduction of RR took place in five stages, which are summarized in Table 2.

TABLE 2
RESERVE REQUIREMENTS

		Demand Deposits (%)	30-89 days Time Deposits (%)	90 day - 1 year Time Deposits (%)
First Stage:	May 76 - December 77			
	Initial Rates	85	55	55
	Final Rates	59	20	8
Second Stage:	January 78 - July 78			
	Initial Rates	59	20	8
	Final Rates	42	20	8
Third Stage:	August 78 - March 79		(No changes)	
Fourth Stage:	April 79 - December 79			
	Initial Rates	42	19	8
	Final Rates	42	8	8
Fifth Stage:	January 80 - December 80			
	Initial Rates	21	7	7
	Final Rates	10	4	4

Source: Central Bank, Boletín Mensual.

The general idea was to uniform the RR rates on time deposits and to procede faster in the reduction of RR on longer term deposits. The initial targets were the minimum rates authorized by the law at that time; these were: 20% on demand deposits and 8% on time deposits; an

ammendment reduced these minimum rates to 10% and 4%, respectively.

When the liberalization program started in May 1976, the RR rates were calculated in such a way that the lending capacity of the banks in that month was equal to the credit ceiling that was being eliminated.

The gradual reduction of the rates through the period 1976-1980 was managed according to a credit program which established targets for credit expansion and for reducing Central Bank lending, i.e., substituting commercial bank credit for Central Bank credit. The minimum rates reached in December 1980 have been maintained since then (on average they are not binding in the sense that they are quite similar to voluntary reserves).

The RR reduction program was slow to avoid a steep rise in the money multiplier that would have jeopardized the parallel process of reducing the inflation rate. However, high RR meant a heavy tax on funds intermediated by banks and others financial institutions. To alleviate this situation the Central Bank decided to pay interest on RR on time deposits. The interest rate paid changed through time in the following way:

May 76 - October 76	:	was equal to the return on short term Treasury bills.
Nov. 76 - December 76	:	was equal to 70% of the rate paid on time deposits.
January 77 - April 77	:	was equal to 90% of the rate paid on time deposits.
May 77 - April 79	:	was equal to the rate paid on time deposits.
May 79 - August 79	:	was equal to 50% of the rate paid on time deposits.
September 79 and onward	:	interest is not paid anymore.

In regard to RR on foreign currency liabilities a distinction was made among two types of liabilities: deposits and foreign borrowing done by banks, firms and individuals. Through all the period and until December 1979 the RR rates on foreign currency deposits were: 20% on demand deposits and 8% on time deposits. The rates were reduced to 10% and 4%, respectively, in January 1980.

Reserve requirements on foreign borrowing were established in April 1978, as part of a policy designed to restrict this kind of indebtness. Loans with an average maturity of two years or less were forbidden; for longer terms the required reserves were:

Average maturity less than 36 months	:	25%
Average maturity from 36 to 47 months	:	15%
Average maturity from 48 to 65 months	:	10%
Average maturity of 66 or more months	:	0%

No interest was paid on these reserves, since the idea was to tax this source of finance in a way that promoted longer term borrowing. This objective was achieved quite successfully, since most borrowing was done in the longer terms, favoring a maturity structure of the foreign debt more manageable by the Central Bank.

(d) Ceilings on foreign liabilities. Foreign borrowing by banks was limited in terms of their capital and reserves (CR). Until December 1977 this source of funding was authorized for financing loans related to foreign trade only. In January 1978 they were allowed to extend this loans for any other purpose, but they would have to be used to fund foreign currency loans (FCL) only[5]. The evolution of these limits over time is shown in Table 3.

TABLE 3
CEILING ON FOREIGN BORROWING BY BANKS

Date	Limit as % of Capital and Reserves	
	Global	Extra
January 74	200%	0
January 75	100%	0
June 76	150%	0
March 78	160%	0
April 78	160%	20%
December 78	180%	35%
April 79	180%	45%
June 79	free	free

Source: De la Cuadra and Hachette (1988).
Note: There was no limit on foreign indebtedness for non-bank corporations.

When the FCL were authorized they were limited to 25% of CR, and this sub-limit was included in the global limited listed above. Starting in april 1978, extra limits were assigned for FCL with

[5]This means that commercial banks were not allowed to take foreign exchange risk directly.

average maturities over 36 months. These were additional to the 25% sublimit and to the global limit (see Table 3).

FCL were also limited in terms of flows. There was a maximun amount that each bank could lend in one month. These amounts were:

January 78;	:	5% of CR.
November 78; the larger of	:	5% of CR or US$ 2 mill.
July 79; the larger of	:	5% of CR or US$ 1 mill.
February 80; the larger of	:	5% of CR or US$ 2 mill.
April 80; free (limited by the legal maximum debt/equity ratio of 20).		

Central Bank policy with respect to foreign borrowing by domestic banks was to manage the growth of this foreign debt. The argument to support this policy was the instability introduced by volatile capital flows. The supply of foreign capital to the country had proven in the past to be a unstable function. Hence, the Central Bank's authorities were trying to smooth the fluctuations of the capital account.

This policy suffered a strong attack from the business community, in general, and by some academic economists. The first group blamed it for delaying a decline in the interest rate and for discriminating among borrowers --those better connected had access to cheaper financement. The second group did not agree with the hypothesis of instability in supply, although they recognized a justification to tax foreign borrowing on the grounds of an upward sloping supply of foreign capital.

Finding no support for its stance, the Monetary Authority ended up opening the capital account without restrictions except for the prohibition of foreign loans with less than two years average maturity and the tax on foreign loans with maturities between 24 and 65 months. This action took place in April 1980, and was followed by large capital inflows during this year and 1981.

2.2. The Dynamics of Financial Liberalization[6].

The Chilean experience points out interesting issues related to the microeconomic dynamics of a financial liberalization, which have not been dealed with in the literature, in spite of its importance for a successfull implementation of this policy.

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[6]For a more complete discussion see de la Cuadra and Valdés (1989).

In the case of Chile's financial liberalization, there was: an interest rate overshooting; a costly market development process that took about five years; and a delayed reaction by the supervisory authority in the introduction of prudential regulations. We proceed to discuss the first two issues, and in section 3 we deal with the third one. We will not discuss here the macroeconomic effects on the interest rate of a deep recession at the start of the liberalization process.

2.2.1. Asymmetric Portfolio Adjustment Costs

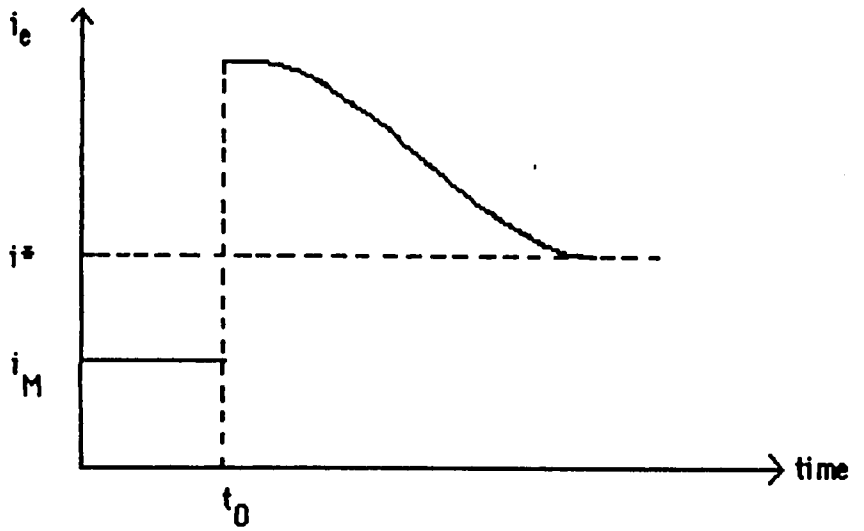
Interest rate control during financial repression meant fixing them at nominal levels quite below market equilibrium, and negative in real terms when inflation was rising; this was the case for more than thirty years, since 1940, but reached its most extreme form in the early 1970's with Allende's hyperinflation.

The asymmetry consists in a slow adjustment in the stock-supply of credit --steep flow-supply-- and a fast adjustment by borrowers-- relatively flatter flow-demand for credit. These conditions reflect, in our opinion, the most probable reaction of the economic agents when facing a liberalization.

It should take a time for investors to move out of physical assets and into the new financial assets; on the other hand, there is a large number of firms and individuals which have had no access to the credit market during the repressed period, so speed of adjustment must be very high.

The implication is that any financial liberalization should expect that freeing interest rates -given that interest rate ceilings were the only distortion- should generate an overshooting of the real interest rate above its long run level as shown in figure (1). This helps to explain the Chilean experience of high but falling real interest rates.

FIGURE 1



i_M = maximum interest rate.

i^* = long-term equilibrium rate

i_e = short-term equilibrium rate

In Table 4 we show the interest rate on short term loans (30 - 89 days) in commercial banks, starting in 1974 and until 1983. The initial year was the last of the financial repression --first liberalization attempts started in 1975--, and the final year correspond to the deep recession of 1982-1983.

TABLE 4
REAL RATE OF INTEREST ON THIRTY-DAY DEPOSITS 1/
(Annualized)

	%	%		%	%
1974	-48.0		1979	19.6	
I		-74.3	I		40.9
II		-54.8	II		14.0
III		-21.5	III		6.2
IV		-19.6	IV		18.2
1975	0.0		1980	11.4	
I		-37.2	I		29.8
II		-69.0	II		8.7
III		246.1	III		12.7
IV		47.6	IV		-2.4
1976	49.4		1981	34.5	
I		54.6	I		21.0
II		36.1	II		28.3
III		37.7	III		47.6
IV		75.5	IV		42.6
1977	56.5		1982	31.4	
I		105.8	I		49.4
II		58.3	II		45.9
III		32.9	III		31.4
IV		36.1	IV		2.4
1978	45.9		1983	8.7	
I		38.0	I		29.8
II		23.9	II		1.2
III		25.3	III		1.2
IV		52.9	IV		4.9

1/ Commercial Banks lending rate, for 30-89 days loans, deflated by the CPI.
Source: Central Bank of Chile, Boletin Mensual.

During the first six quarters real interest rates were highly negative; at this time maximum nominal rates were fixed by the Central Bank and inflation was 376% in 1974 and 341% in 1975.

By the end of the second quarter of 1975 interest rate control was eliminated and the real rate sky-rocketed, reaching 246% during the third quarter. This episode is quite on line with the hypothesis about the adjustment costs after liberalization, i.e., the demand for credit adjusting much faster than the supply. Such different adjustment pace was, in this case, magnified by the existence of credit ceilings at that time --which were maintained until March 1976. The unexpected overshooting of the rate scared the authority, who returned to fix interest rates in October of

the same year. The new maximum rates were much higher, allowing a real rate of 48% during the last quarter of 1975. This is almost the same as the market clearing rate that prevailed in 1976.

On January 2nd, 1976 interest rates were completely liberalized, never fixing them again for the rest of the period. The market-determined rate found an equilibrium at a very high level, which was maintained during the next three years; the real lending rates were: 49% in 1976; 57% in 1977 and 46% in 1978; fluctuating in a range of 105% to 24%. The stubbornly high real rates subsided only in the second quarter of 1979, when the rate fell to 14%; since then it continued declining until it reached a bottom of minus 2.4% in the fourth quarter of 1980.

This evidence suggest that portfolio adjustment by asset holders, when the financial market is liberalized after a long repression, may exhibit a lag of three years.

If we look at the outstanding amount of interest bearing deposits issued by commercial banks (see Table 5), we can observe that the increase between 1975 and 1978 was distributed as follows: 12% in 1976; 25% in 1977; and, 63% in 1978. This distribution is consistent with the idea of a slow adjustment during the initial year of a liberalization.

TABLE 5
TIME DEPOSITS 1/
(1983 pesos)

	Billions	Δ %
1974	19.3	1.6
1975	23.5	21.8
1976	38.9	65.5
1977	72.3	85.9
1978	152.6	111.1
1979	168.0	10.1
1980	197.0	17.3
1981	362.0	83.8
1982	383.3	5.8
1983	298.0	-22.2

1/ It includes also passbook accounts.
Source: Central Bank of Chile; Indicadores Económicos y Sociales 1960-1982.

The downward pressure on interest rates that it is observed after the third year must be explained also by the behavior of foreign capital

flows. As it is shown in Table A.2, foreign lending to Chile was very scarce during the first two years; this source of funds recovers in 1978 and keeps growing in the following years until 1981. In spite of the growing capital inflow, real interest rates rose again in 1981.

2.2.2. Market Development

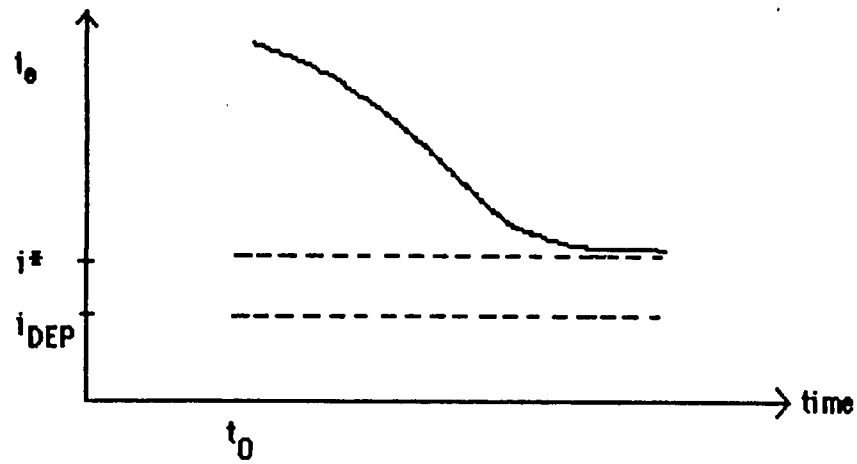
Our hypothesis is that at the moment when banks were liberalized, they did not have the capacity to supply intermediation services efficiently, due to a lack of expertise, qualified human resources and adequate technology. Such conditions on the banking system should imply high intermediation costs, represented by a large spread, i.e., the difference between interest rates charged and paid. On the same ground, one should expect that banks portfolios should have turned more risky as a consequence of a poor risk evaluation capacity and higher interest rates.

The same limitations faced by the banks were present in the supervisory agency (Superintendence of Banks). Before liberalization, the main functions of the bank regulators were to enforce the interest rate and credit controls dictated by the monetary authority; paying not attention at all to the quality of the banks' assets. So, there was a complete lack of capacity to control risks assumed by banks; and, prudential regulations were almost absent from the regulatory body of rules. Neither, one could have expected that in the newly liberalized banking system the public would have been helpful in controling bank risk, since they had never been exposed before to such risks. This topic is taken up in section 3 with more detail.

Bank liberalization after many years of financial represssion is like starting a new business, behaving similarly to an infant industry --the costs can only be reduced through time by the learning process. In Chile, bank modernization was expensive. Banco de Chile for example, spent over US$ 1,5 million in 1978 alone in consulting fees for a reorganization plan bought from Booz, Allen & Hamilton.

Summarizing, the hypothesis can be stated as: when banks are liberalized the industry will show high intermediation costs but declining through time. This in turn implies high initial real lending rates, for a given constant level of deposit interest rates, as shown in figure (2):

FIGURE 2



In addition, the slow reduction in reserve requirements -see 2.1- introduced another independent reason for a reduction of intermediation costs over time.

Held (1989) has documented how the different elements of intermediation costs fell over time, supporting the concept of an evolution over time as in Figure 2. These phenomena should be taken into account in any financial liberalization.

The intermediation costs are estimated by the differential between the lending and the borrowing interest rates. Since legal reserve requirements were fixed high above voluntary reserves, it is necessary to deduct the cost of holding such reserves; so the spread is measured net of reserve cost --net spread (NS).

In Table 6 we can appreciate how the NS evolved from 1976 to 1983. There is a declining trend from 1977 to 1980; from a very high level (17.4%) to a more "normal" one (5.2%). This evidence looks similar to the cost function of an infant industry, supporting the hypothesis that financial repression destroys the productive capacity of the banking industry. This consideration adquires great importance for the design of a financial liberalization because, in the learning process the banks can take excess risk without any notice by an infant supervisory authority.

TABLE 6
ADMINISTRATION COSTS AND SPREADS IN THIRTY DAYS OPERATIONS
(Annualized)

	AC* %	SPREADS %	%		AC* %	SPREADS %	%
1976	6.9	8.1		1980	4.9	5.2	
I			1.2	I			3.8
II			6.7	II			6.8
III			14.3	III			5.7
IV			10.7	IV			4.4
1977	5.9	17.4		1981	4.3	6.3	
I			26.8	I			3.4
II			19.3	II			5.3
III			14.3	III			7.2
IV			9.8	IV			9.5
1978	5.7	10.7		1982	3.6	9.6	
I			15.9	I			10.0
II			11.2	II			11.0
III			8.1	III			9.3
IV			7.8	IV			8.0
1979	5.1	7.3		1983	2.8	11.0	
I			11.9	I			12.4
II			5.5	II			11.2
III			6.8	III			10.8
IV			5.3	IV			9.8

1/ The spread is defined as: $NS = i_L - i_B - C$;
where i_L = lending rate; i_B = borrowing rate; C = interest cost of the legal reserves.
* Average cost, defined as Non Financial operating cost over total assets NS.

Source: For spread Central Bank of Chile, Boletín Mensual.
Administration costs elaborated by Held (1989), Table I-9.

We can observe that during the first year of free interest rates, the spread did not go up inmediately. It took four quarters to reach a peak. The explanation for this graduallity may be found on the same inexperience of bank managers, not knowing how to price a new product.

In 1981 the NS starts to go up following the interest rate trend. One explanation could be that the higher interest rates incorporated a growing risk premium and, therefore, higher intermediation costs. The crisis that was starting to develop in this year, is consistent with this view.

2.3. Coordination Failures in Financial Liberalization: The bankruptcy of the Savings and Loans

This subsection will show that financial liberalization is fraught with coordination failures. This imposes the need for the utmost care in the detailed design of financial liberalizations.

At the start of 1975 the financial intermediaries in Chile were the following: 1) the commercial banks, all of which continued under government control since Allende's nationalization; 2) the SINAP (Savings and Loans National System), regulated by the government, but most of whose members were controlled by the private sector; 3) the large commercial and development state bank (Banco del Estado); 4) the formal financieras, created during the second half of 1974, which were privately owned and free to set interest rates and mostly unregulated; 5) the informal financieras, which had been inadvertently allowed by a 1974 statute that gave to the Superintendency of Banks the task of policing the intermediation of credit by non-banks, while this body did not have enough resources for the job; and 6) a few growing and unregulated financial Cooperatives that operated like formal financieras.

The SINAP exhibited very fast growth during the second half of 1974, but suddenly it lost the confidence of depositors in January 1975. By June 1975 it had been taken over by the regulatory authorities because of insolvency. A description of this high-frequency boom-bust cycle is available in De la Cuadra and Valdés (1989).

The best explanation is a coordination failure in financial liberalization, coupled with non-economic objectives. In the case of SINAP, the board of senior regulators was heavily committed to the increase of the supply of housing.

On the other hand, the Savings and Loans were unable to do anything else when the Central Bank decided to return SINAP's excess reserves in 1974. They had no way of lending those funds at short term in such a way as to protect themselves from interest rate risk. For one, there was no short term instrument that offered CPI indexing in the market, apart from the one issued by SINAP itself and the savings passbooks at Banco del Estado, because deregulation had merely started. Second, the only short term instruments yielding free nominal interest rates were the liabilities

issued by the newly created financieras, which were much smaller than than SINAP, and which exposed SINAP to inflation risk. Even more important, the SINAP was not allowed to invest in money market instruments nor savings passbooks at Banco del Estado, because only mortgages and loans to construction companies were permitted. Finally, individual Savings and Loans were unable to return to depositors the funds it could not use safely by, say, reducing deposit interest rates, because those rates were fixed by the board of regulators. Only too late, in March 26, 1975, the SINAP was allowed to invest in the short term for non-housing purposes.

This episode is then a good example of what financial liberalization might mean when it is not designed properly: the failure of the long term mortgage intermediaries. At the start of a financial liberalization, the biggest peril is not moral hazard, but the strains of an incomplete and uncoordinated liberalization.

The crisis developed as follows. In mid 1974, the SINAP started to draw on its excess reserves and to invest feverishly in new housing, first financing construction companies and then lending to the buyers, at long term. Housing starts by the private sector increased 50% during the second half of 1974, as compared with the three previous semesters. As its deposits were exempt of reserve requirements, the banking multiplier allowed a 100% growth in real terms in SINAP's size during 1974. Starting in August 1st, 1974, SINAP's regulators attempted to limit bankruptcy risk by decreeing a new requirement on deposits in order to be eligible to indexing, which was a minimum maturity of 180 days. This was three times the traditional sixty days. Even though financieras' liabilities became still more attractive, depositors continued increasing their deposits at SINAP. We assign this fact to the effect of the banking multiplier operating in a semi repressed market, which increased hugely total investible financial wealth.

The end of the game ocurred in January of 1975, when depositors began to withdraw. The detonator was an exogenous event, the steep fall in the world price of copper, Chile's main export and the government's main source of revenue, that started in October1974[7]. The fall in the price of

[7] Authors such as Jeftanovic (1976) assign the demise of SINAP to the extension of the minimum maturity requirement for indexing that took place in August 1st, 1974. However, that hypothesis is contradicted by the huge increase in deposits at SINAP for 5 more months after that date.

copper had two effects: First, a steep recession began, and many depositors withdrew funds to finance growing inventories. Second, the shock on the fiscal side put into doubt the government's resolve to honor its guarantee.

Moreover, the way SINAP's crisis was handled set precedents for the future. In June 1975, after many depositors have fled SINAP and only the ones that believed in official promises of guarantee remained, the government decided to freeze the most notorious type of SINAP deposit, the 60-day one, called VHR. In the next months, VHR holders were authorized to withdraw the equivalent of US$ 100 per month per account, while the remainder could be exchanged for long term bonds whose price in the secondary market fluctuated between 80% and 60% of the face value. Holders of other types of SINAP liabilities, even liquid ones, were not touched. Therefore, the basic rules of precedence in a bankruptcy were not respected, signalling that the authorities considered themselves entitled to redistribute wealth according to political priorities in financial intermediary insolvencies.

A side effect was that government guarantees on deposits lost all credibility. Note that a high government official had declared in a seminar at the Central Bank in April of 1974, that one of the most urgent policy measures was:

> ".....,foreseeing that the free real interest rate might be high, and that SINAP has a large volume of loans at low fixed real interest rates, the government will subsidize directly the SINAP to make up the difference, preventing its bankruptcy."[8]

What became clear for all depositors is that the military government was willing to force them to pay for losses. For the next 18 months, there would be no implicit guarantee of bank deposits in Chile, opening a free banking episode.

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[8] Sergio Undurraga, in Estudios Monetarios III, Banco Central de Chile (1974). This promise was repeated publicly by the Finance Minister in March 1975.

3. A framework for the analysis of prudential regulation

This section dissects the issues in prudential regulation, to show the distinct types of problems that must be addressed. The failure to consider these distinctions permeates the banking literature, both applied and academic. In addition, this framework will be useful to analyze the Chilean experience.

We assume that free banking is not considered viable in this economy, in order to be able to study the problems posed by deposit insurance as is currently practiced around the world[9]. There is regulation of banks by the government. It is conducted in an environment where the government insures most bank deposits, either explicitly or implicitly, so most depositors do not take into account the solvency risks of banks when allocating their funds. In this setting, bank owners have an economic incentive to take advantage of the guarantee. Therefore, the government must control the use of its guarantee by regulating banks.

The regulatory problem can take many forms. Most analyses have been restricted to study the consequences of assymmetry in information or contingent government subsidies. We posit that some of the problems confronted by bank regulators are of a different form, especially after taking into account the effect of the main complicating factors. The following two-way table provides an overview.

TABLE 7
A CLASSIFICATION OF PURE BANK REGULATORY PROBLEMS
(YES = the requirement is essential for the presence of that Regulatory Problem)

Requirements\Result	Structural Contingent Subsidies	Moral Hazard	Rollover of Unrealized Loan Losses
1. Exogenous Uncertainty	YES	YES	NO
2. Asymmetric Information	NO	YES	YES
3. Inability to assess risks related to govnmt. policy	YES	NO	NO
4. Inability to denounce own regulatory errors	NO	NO	YES
Complicating Factors A. Self-Lending by Business Groups B. Incompetence of Private bankers			

Note: Simple incompetence of Bank Regulators was excluded because the solution for it, restructuring, is obvious, although difficult to put in practice.

[9]For current practices, see Mc Carthy (1980)

This table shows that moral hazard is only one of the regulatory problems. Rollover of unrealized loan losses is very important in regulatory experience, and the same can be said of structural contingent subsidies. Moreover, the table singles out the causes of each regulatory problem. In practice, these problems usually appear in combination, for example, structural contingent subsidies plus rollover of unrealized loan losses. The result is that most real regulatory problems must be attacked simultaneously on several fronts. In addition, the practical importance of the complicating factors cannot be overemphasized. The Chilean experience shows this abundantly.

The ultimate causes of the main regulatory problems include facts of the technology or the economic environment (the first two), and facts that derive from the institutional setting in which bank regulation is conducted (the other two). The inability to assess risks affected by government policy can stem from the simple fact that a government official cannot be expected to price properly a guaranty against the failure of the policy of his superior, or from pressures by other high officials to influence the risk evaluation process. The inability of individual bank regulators to denounce ex-post their own risk-management errors is evident. In the following sections we will explain in detail each of these causes, and sketch the likely result of the existence of each regulatory problem.

3.1 Structural Contingent Subsidies

The issue in this section concerns the incentive effects of giving away a deposit guarantee, given that all agents have access to the same imperfect information about the future. Exogenous uncertainty is a requirement for the guarantee to be valuable in the market.

As is well understood from modern financial theory (Mayer (1965), Merton (1977), Marcus (1984)), if the government gives away a valuable guarantee, without charging a market price for it, then it is offering a contingent subsidy. As with most subsidies, the receiving economic agents have an incentive to ask more of it. For an individual bank that confronts given market prices, the profit earned is an arbitrage profit, in the sense that by expanding it can get an unlimited amount of subsidy.

This induces individual competitive banks that are risk-neutral to grow in excess of what is socially optimal, because they become a vehicle for arbitrage that exploits the difference between the market value and

the goverment price of the guarantee. Of course, decreasing returns to scale in the aggregate eventually put a limit on the expansion of competitive banks. Banks that earn other rents, monopolistic or otherwise, wheigh the benefits of getting more of the free guaranty against the risk of losing the bank with its other rent.

A second aspect of this bank regulatory problem happens when the receiving banks can take actions that increase the per-unit value of such a guarantee, like increasing their debt/equity ratio[10] and lending to riskier projects. We assume here that these actions are perfectly observable by the authorities, so that we concentrate on the pure problem of contingent government subsidies.

The obvious solutions to this problem is for the government to charge banks the market price of the guarantees it provides. Alternatively, the government could drive the value of that guarantee to zero through the limitation of banks' risk of failure through regulation[11], but still give away the guarantee.

The particular solution of charging the market price for this guarantee may not work in some cases, even if the government can perfectly observe risk. This happens when -above some risk level- the bank must reduce the expected return of lending in order to increase the variance of returns. As Herring and Vankudre (1985) showed, when the government attempts to limit risk-taking by raising the charge for the guarantee, the bank reacts optimally by taking even more risk of failure, even though the expected return of lending is reduced. Obviously, the government is unable to compensate for this last effect by raising the charge, so an optimal schedule of risk-rated guarantee charges simply does not exist over the whole range of bank choices in this case. The government is forced to use a combination of risk-rated premiums and maximum individual quotas of risk to manage this situation.

Real world governments follow the last route most of the time. This route, known as risk-rated capital requirements or risk-rated loan-loss provisioning requirements, is a conceptually sufficient solution because the market value of the guarantee is basically reduced to zero. Therefore, this regulatory problem appears to be solved.

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10 The debt/equity ratio is inversely related to the Net Worth/Assest ratio, through the formula $D/E = \{1 - NW/A\}/\{NW/A\}$

11 The best regulation of this type are risk-wheighted capital requirements.

However, if that were the case, we would not have included as an important regulatory problem the one of Structural Contingent Subsidies. The problem we want to highlight includes as a requirement that the regulators are unable to assess risks related to government policy. There are structural elements in the workings of the regulatory process that renders regulators unable to evaluate correctly a subset of risks that affect the solvency of banks. Therefore, the government continues to give contingent subsidies in this subset of risks.

The structural problem is that regulators seem to be unable to use risk-rated capital requirements with regards to some risks when other government policies would be affected by putting this suggestion in practice. A well documented example is the failure of the U.S. government to limit exposure of its international banks to country risk in the late 1970's (Meigs,1984). In that case Treasury officials wanted to avoid interference with the recycling of petrodollars, and State Department officials wanted to avoid souring relations with debtor countries. We show below that the Chilean government suffered a similar problem in 1981, when the Finance Minister decide to bet on maintaining his previous decision of fixing the exchange rate, even though many expected that this policy would not be sustainable. It was unthinkable to expect Chilean bank regulators to force banks to provision more when debtors were more exposed to currency risks, because that would have undermined their boss's exchange rate policy. We would also argue that Federal Reserve regulators have been unable to push capital requirements proportional to interest-rate risk for Savings and Loans because the Federal Reserve itself can affect the outcome of that risk decisively.

Therefore, we posit that the best explanation for the continued existence of contingent government subsidies in banking is that government regulators are unable to assess risks whose outcome is driven by their superiors' actions or omissions. This is a permanent regulatory problem that is inevitable while bank regulators continue to depend administratively from other authorities that influence or determine the outcome of the risks that must be assessed. It is interesting to outline the likely consequences of this situation:

A free-entry competitive financial industry transfers the contingent government subsidy that distorts the system, to both depositors and debtors. In addition, banks can shift their lending to riskier borrowers, that promise a higher interest payment if they don't fail. This shift increases the value of each unit of the deposit guarantee, and to exhaust

this larger subsidy the banking system must grow still more. This means increasing the deposit interest rate and reducing the lending interest rate relatively to the fair lending rate given the borrower's risk class. However, as this fair lending rate is also growing as banks shift to higher risk classes, the observed real lending rate may grow too.

Meanwhile, borrowers of lower risk classes are excluded from credit markets, unless they increase their debt/equity ratio enough to be able to offer the large contingent interest payment which the banks require. For most businesses, increasing their debt/equity ratio is the easiest way to adapt to bank predilection for risky borrowers that demand large amounts of credit[12].

When a recession year is realized, the distorted system exhibits large losses and failure is unavoidable. The government must honor its deposit guarantee and pay for misregulation. If the system is competitive, most banks should fail under the impact of the recession. Many of the business debtors that had to gear up to avoid exclusion from credit markets in the previous phase must also go bankrupt. The government finances may be better off by rescheduling debts to most business debtors than by taking over them, because it can draw on their management capacity and avoid the economy-wide disruption caused by a massive transfer of business control.

After the government takes over and absorbs the losses with taxpayers' money[13], there is an excess of deposits in comparison to the volume of loans that are requested at reasonably safe risk classes, at the previous interest rate. This need not imply a fall in interest rates if the government finances the losses fully with issues of new domestic public debt. Otherwise, real deposit interest rates could fall.

If the realized business cycle had a higher frequency, and smaller amplitude, so the run of good years were shorter and the recession were shallower, it is conceivable that in the bad years business borrowers would not fail massively while banks could merely exceed the limit on the debt/equity ratio without failing.

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[12] This theoretical consequence of a distorted, misregulated, financial system has been overlooked by the deposit insurance literature. However, it could multiply many times the welfare costs of misregulation, especially when including the eventual bankruptcy costs.

[13] Including the inflation tax revenue.

From an empirical point of view, it is not obvious to establish the existence of structural contingent government subsidies. The first obvious element is that an explicit or implicit government guarantee on deposits must exist. However, implicit guarantees are hard to document, as one must interpret the previous record of government bailouts of failed intermediaries.

The second element is lack of enough prudential regulation of the guaranteed intermediaries. The main methodological problem to produce convincing evidence on this point is that, after some banks fail, it is easy to assert ex-post that regulation was reckless in the area which actually led to the failures. As this is too easy, there is a temptation to describe too many of the realized bank failures as the result of contingent government subsidies. There is a solution, however. It should be feasible to establish that a structural limitation on regulators' ability to assess some risks from the institutional structure, and from the absence of risk assessing instruments designed to deal with that particular risk.

3.2 Moral Hazard

The moral hazard issue is concerned with asymmetric information. In particular, it considers the situation where the government is unable to observe the actual risk choices of the guaranteed bank. The problem is that the actual outcome of loans depend both of the bank's actions and of exogenous risk factors, which forbid the inference of the bank actions from the profit outcomes alone. Clearly, in this case it is profitable for competitive banks to increase their failure risk <u>after</u> the guarantee is obtained, but <u>before</u> the state of nature is realized, changing the basis on which the charge was fairly estimated, which is moral hazard.

Many have proposed that in this case, governments should approach the problem by adopting a series of procedures to control lending risk which are usually referred to as prudential regulation. The idea is that, even though bank risk decisions are publicly unobservable, the government can privately observe those risks much more precisely if it forces the bank to adopt some administrative procedures, like the classification of individual loans in a risk scale. Then the government can use its inside information to prevent the bank from taking excessive risk.

It must be said that as modern banks are a hierachy of executives and teams of employees, in which each layer must respond to the superior layer, the process of risk classification is a necessity for the bank

managers and owners. Historically, many of the methods of risk classification have been developed by private banks. Therefore, prudential regulation understood as the participation of bank regulators of the inside information of banks does need to impose a big cost, as long as private banks themselves already use these methods in their own interest.

In this sense, moral hazard is regulatory problem that should not present regulators with unsurmountable difficulties. However, we will show below that there exist important complicating factors that can make moral hazard a difficult problem in practice. The one will focus on here is the case labeled as incompetence of private bankers.

It is not uncommon to find that a subset of private banks do not have an internal risk classification scheme in place. This may be due to mere incompetence or calculated fraud, but the fact is that the private information that the regulators need to access is fragmented among executives or teams of employees. It is clear that the absence of a reliable risk clasification system is a sign of incompetence, because the managers and owners need this input to keep the bank under their control.

This complicating factor becomes massive when the banking system has been recently liberalized after decades of financial repression, where risk classification schemes were entirely superfluous. This was the situation in Chile in 1976, and in other developing countries in the last decade. In this setting, the only safe policy alternative is to subsidize the installation of the risk classification systems that are required.

The likely consequences of moral hazard given that some complicating factor makes inside information unavailable to regulators are the same as in the case of contingent government subsidies described before, because banks would not be reigned in by appropiately risk-adjusted capital requirements.

From an empirical point of view, it is not obvious to establish the existence of moral hazard. As before, the existence of an explicit or implicit government guarantee on deposits is hard to establish for implicit guarantees. The special feature of moral hazard is information asymmetry. For this reason, it is necessary to document the existence of a substantial information asymmetry in order to claim that this regulatory problem was empirically important. It is possible to document this point by checking if information on risk-taking by banks was or was not available to the

regulators, and by analyzing the reaction of regulators as information became available to them.

3.3 Rollover of Unrealized Loan Losses

Up to now, the problem of rollover of unrealized loan losses has not been acknowledged in the academic literature as an important feature of banking. In a nutshell, it consists of the continuation of independent operation of a bank after the realized state of the world is known, given that it led to insolvency[14]. The point is that bank regulators are able to avoid or postpone bankruptcy proceedings, and the bank continues operating even though it is insolvent. This problem is conceptually different from moral hazard because it does not concern abusing a guarantee by taking more risk than the one assessed when the guarantee was given. Indeed, the problem of rollover of unrealized losses may exist even if there is no risk in the economy after the bank's failure.

Of course, in practice this situation may lead to additional risk taking by insolvent intermediaries becase further opportunities for risk taking become available as times goes by. In this case rollover of unrealized loan losses combines with moral hazard to produce an explosive mixture.

We have chosen to stress that no further risk taking is required after insolvency, in order to highlight the independent nature of this regulatory problem, and to simplify the exposition of its consequences. In addition, this allows us to present a solid foundation for the concept of a "false demand for credit", raised by several authors[15] to explain Chilean events in the 70's.

The important requirements for this problem to exist are the following: First, that the structure of responsibility in the regulatory agency is such that the obvious inability of an individual to denounce its own policy errors is extensive to the agency as a whole. The second requirement is that the authorities that supervise the bank regulatory agency are subject to asymmetric information with regards to the policy errors of the agency. The insolvency of most businesses can be easily

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[14] Therefore, rollover of unrealized loan losses is not a special regulatory problem when some economic net worth was not entirely eliminated. In that case, the only effect of rollover of unrealized loan losses is that profits/accounting net worth are reduced.

[15] See Harberger (1984) and Held (1989). However, the mechanics were outlined first by Emilio Sanfuentes, cited in Hoy № 32, January 4-10, 1978.

detected by outsiders who watch its liquidity, but this method is not available in the case of insured banks, which always enjoy a lot of liquidity. This increases the scope for an asymmetry in information such that authorities cannot detect regulatory errors easily. This combination allows the regulatory agency to delay taking action as soon as possible, a liberty which may be used or not according to the motivation of the officials in charge.

The result of the rollover of unrealized losses is a simple Ponzi game. The insolvent bank has, by definition, more liabilities than assets. Assume first that the bank pays market interest rates. Therefore the bank must incur in operating losses, whose present value is the unrealized loss. However, the insolvent bank has access to a government guarantee on deposits, which allows it to cover the negative net cash flow from operations with the issue of new deposits. Therefore, the size of the deposits at the insolvent bank grows geometrically. The same happens with the size of the effective liability of the government. The government's liability is not contingent, but effective. The only problem is that the liability has not been realized or acknowledged, and this allows the failed bank to continue operations. A direct implication is that the deposit interest rate must rise over time, in order to attract the required additional deposits.

A complementary strategy for the bank is to direct part of loan recoveries to finance part of the operating loss. This means that the volume of healthy loans outstanding falls over time, restricting credit. By healthy loans we mean the portion of the loan portfolio that is able to service the current lending interest rate. The rest of the loan portfolio are simply unrealized losses.

This means that there will be a rising lending rate and a falling volume of healthy loans, ceteris paribus. The volume of deposits will rise at the rate of interest minus the rate of reduction of healthy loans outstanding.

If there is competition in banking, and there are enough banks free of the unrealized loss problem, the spread between the lending and deposit interest rates will narrow down to efficient operating costs. However, if most banks roll over unrealized losses, they will have a third source of funds to tap to absorb their operating loss: an increase in the spread. As long as most banks roll over unrealized losses, and the spread between the lending and borrowing rates can be sustained at a large enough size, then

banks cease to be insolvent, deposits do not need to grow geometricaly, and healthy loans do not need to be restricted.

The situation is unstable because given a large spread, marginal loans are very profitable. Then, if high marginal reserve requirements and quantitative credit controls are eliminated, or foreign and new domestic banks are authorized to operate, as in a financial liberalization, competition will lead market interest rates to sustain a margin smaller than the one required to eliminate operating losses. The weakest banks, that is those with the larger share of unrecoverable loans under automatic rollover, will be the first to play the ponzi game described above.

The behavior of debtors is also interesting. A regular debtor is squeezed by high lending rates. Therefore, even with passive behavior, the estimate of its riskiness should be raised. This means that, by itself, high real lending rates increase the share of unrealized losses of banks, and accelerate the ponzi game. A further acceleration effect is obtained if debtors react to high lending rates increasing their leverage and their operating risk. This is indeed optimal for the debtors that are also rolling over unrealized losses. They are able to participate in the ponzi game, because the creditor bank insists in rolling over their debts, even if they are insolvent.

Summing up, the main empirical requirements for the rollover of unrealized losses hypothesis to be feasible are the following: government guarantee on bank deposits, large unrealized losses in the loan portfolio of the banking industry, and reluctance to take over failed banks.

3.4 Self-lending by business groups

We will show that this is not a pure regulatory problem, but is instead a complicating factor. A diversified conglomerate of business firms that includes a government-guaranteed bank will be called a "business group"[16].

a) The case of symmetric information.

If there existed a way to evaluate the risk of such a bank, and the government charged an appropiate fee for the guarantee, the fact that this bank is owned by a business group would be irrelevant as a first

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[16] In Chile, the term carries the additional requirement that the group is closely held.

approximation. The situation would be as if the bank were independent and closely held. Likewise, if the independent bank is owned by many different shareholders, the situation would be similar to the one of a bank that is part of a conglomerate that exhibits diluted ownership.

A widespread argument against self-lending is that it leads to insufficient diversification of loans, as too much is lent to an individual debtor (the business group). This argument is flawed if the debtor is a diversified conglomerate that has invested in many sectors across the economy, as it is obvious that the risk is similar to the market's portfolio. Of course, our assertion relies on that the regulator is well informed about the actual risk of the conglomerate, which also depends of its debt/equity ratio.

Some authors have argued that lending to the other firms in the group is subject to a less rigorous risk evaluation. Such investments are evaluated only once within the business group, namely in the unit that wants to use the funds, and then the loan is drawn from the group's bank without further evaluation. For example, the Chilean Superintendency of Banks argued in 1983 that "there was an unrestricted liason between banks and their owners, and an unending cycle of loan renewals with interest capitalization was observed"[17].

However, such a procedure for risk evaluation does not imply that the quality of the evaluation is more relaxed than what an independent bank would require before making the loan. If that were true, the implication would indeed be far reaching: investments financed with equity would be subject to a systematic bias in risk evaluation, when compared to those financed through loans from independent creditors.

Investments financed with equity are not equivalent to investments financed with the depositing public's money. When a business group draws a loan from its bank, which in turn draws a deposit from the public, one should ask who is evaluating the risk of that deposit in representation of depositors. In a setting with deposit insurance and symmetric information, the Superintendency of Banks does the evaluation, and there is no special problem with business groups.

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[17] J. Acevedo and G. Ramírez, in Información Financiera, SBIF, March 1983.

b) Taking Assymmetric Information into account

The practice of self-lending by business groups must be analyzed in terms of the ability of bank regulators to classify self-loans nad the rollover of self-loans in a risk scale. We want to compare the Superintendency's ability to monitor the risk of self-loans of a business group, as compared with monitoring the risk of loans to a regular debtor, given the degree of risk aversion of the bank owners.

As explained before, the usual practice of prudential regulation overcomes most of the informational asymmetries by adopting a series of procedures to control lending risk and the debt/equity ratio of banks. Even though bank risk decisions are publicly unobservable, the government can privately observe those risks much more precisely when it forces the bank to give it access to its internal risk evaluation procedures.

This method largely fails when the bank is part of a business group and self-lending is allowed[18]. The reason is that the business group is able to locate the risk-evaluation procedures for self-loans outside the bank, without losing control over employees. In addition, the business group has access to a much larger array of (legal) methods to avoid presenting the true risk of a self-loan to bank regulators. The resulting inability of regulators to access the private information of banks may be present **both** when the business group is closely held and when it is controlled by a remote risk-neutral management that responds to dilute shareholders.

Chilean experience shows that the business group can avoid the identification of a loan as a self-loan, by dividing it into smaller pieces, then lending each piece to an expressly created shell company, and finally having the shell companies to relend the funds to the unit in the business group that requested the funds. When classifying such a loan portfolio, the individual loans may fall below the size limit over which loans must be classified. An alternative method is to ask friends and employees to accept the loan and do the relending. This method may be defined as evasion from regulatory control through vertical disintegration.

In addition, the business group can drag its feet when classifying the self-loans. It is easy to see that if the bank is unabashedly optimistic

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[18] In fact, this difference was so strong in Chile in the 1970's that some authors have concluded that the only important type of moral hazard is self-lending by business groups. See Tagle (1988), p. XIX.

when evaluating its self-loans, the Superintendency of Banks is forced to do its own evaluation. It is clear that the Superintendency might discover insolvency too late when this happens.

Moreover, when the Superintendency attempts its own risk evaluation of self-loans, it confronts severe informational asymmetries. This is because such an evaluation must obviously attempt to figure out the solvency and cash flow of the business group taken as a whole, i.e. consolidating all the shell companies. The problem is complicated further because non-controlling shareholders in some of the business group's firms must be taken into account. In addition, the network of holding companies is always changing, and can be made to change very fast, so the Superintendency cannot put much faith on information gathered by ordering the regulated bank to inquire some aspect of a debtor holding company's situation. Finally, these difficulties can be compounded by the incompetence of the business group's administration, if it does not keep records of its consolidated situation[19].

The critical regulatory problem is that the regulatory powers of the Superintendency reach only to the bank, so it has no authority over the successive layers of holding companies that define the structure of the business group. For example, the powers of a bank to request information from a debtor are legally limited in most countries. Therefore, the Superintendency is subject to a loss of control through vertical disintegration that leaves it unable to monitor for moral hazard or for rollover of unrealized losses.

In conclusion, the problem with self-lending by business groups is not conceptually different from contingent subsidies, moral hazard and rollover of unrealized losses. However, implementing prudential regulation when it is present is several orders of magnitude more difficult than when dealing with independent banks, because the informational asymmetries are much deeper and the usual regulatory tools are more easily blunted by a non-cooperative business group. This is true regardless of the ownership structure of the business group.

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[19] In the Chilean case, we know that Group Yial did not develop consolidated information until mid 1981, when it found it was bankrupt. This is common in fast growing business groups.

4. Prudential Regulation in Chile: 1976-1982

Observers of the Chilean financial evolution have asserted that until 1982 Chile had a "worst of both worlds" bank regulatory system. The reason offered has been that the government was issuing a subsidized guarantee, but did not regulate adequately the risks taken by the guaranteed institutions. This section attempts to be more precise about this, in order to extract specific lessons about the experience. We find that, on the whole, the general diagnosis is correct. However, it is also true that the Superintendency of Banks adopted important steps towards improvement of bank regulation over this period.

Section 4.1 studies pure moral hazard in 1976-1979, with emphasis on the failure of Banco Osorno. We find that moral hazard was important in Chile in 1976. We show that there was a serious failure in banking policy in 1977-1980, mainly because important authorities insisted that free banking was feasible. However, we believe that moral hazard was not present in those years, because banking was very profitable and was expected to continue to be so. Nevertheless, this erroneous banking policy made Chilean banking very fragile.

Section 4.2 studies the hypothesis of a ponzi game in the shape of rollover of unrealized loan losses in 1977-1981. We find that there was no ponzi game up to 1980, because real interest rates were smaller than real growth of new loans, and banks enjoyed positive profits. This means that the load of unrealized loan losses carried from 1978 was diluted, and banks had positive economic net worth. This does not imply that their accounting net worth was positive in 1980. However, starting in 1981, there are clear signs of a ponzi game through the rollover of unrealized loan losses. This was triggered by the 1981 rise in real interest rates, showing that the Chilean banking system had been debilitated by not acknowledging loan losses.

We document in section 4.3 that structural contingent subsidies were very important in Chile in 1981. The Superintendency did not rate bank loans according to the debtors' exposure to foreign currency and interest rate risks, because the policy of the Minister of Finance was assure everybody that there was no risk of devaluation whatsoever, and that international interest rates would fall shortly. This allowed Chilean commercial banks to take a lot of risk by lending to debtors that assumed

these forms of risk. Symmetrically, this allowed individual debtors to consider that dollar-denominated debt was cheaper than peso debt, which in fact was true only because banks did not charge an appropiate risk-premium. In turn, banks did not do so because it was profitable to take risk and the the Superintendency did not require a downgrading of debtors with high exposure to currency and interest rate risk. This explains the excessive foreign debt accumulation experienced in Chile in 1981.

Finally, section 4.4 studies the practice of self-lending by business groups. We find that they used their informational advantage in 1981 to avoid the new unwinding requirements imposed on self-loans in mid 1982, and to exploit -like other smaller debtors- the contingent subsidy on exchange rate and interest arte risk-taking. In addition, they used their informational advantage to facilitate rollover of losses over 1981 and the first half of 1982. They were unable to continue this practice after mid 1982 because of steeper regulations and control. Finally, they used their advantage to exploit small investors in the security markets in the second half of 1982. However, we find no evidence for pure moral hazard in 1981 and 1982.

4.1 Moral Hazard: the Chilean Experience, 1976-1978.

The moral hazard issue is concerned with asymmetric information, as explained in section 3. There are three items of evidence that must be met to establish the occurrence of moral hazard problems. One is the existence of a government guarantee on deposits. The second is the presence of a significant information asymmetry. The third item allows an assessment of the extensiveness of the moral hazard problem. It consists of checking the market-wide consequences of unregulated moral hazard. In this section, we will review the episode that has been singled out as critical in the literature, the failure of Banco Osorno y La Unión, and the next three years.

4.1.1 Moral Hazard before Banco Osorno

The privatization of the commercial banks, expropiated by Allende, ocurred in the middle of the liberalization of interest rates, elimination of credit controls and the uniformation of regulation across intermediaries. Bids for the banks were asked just after the freezing of SINAP's short term deposits, in July of 1975. The government offered its shares with at least 20% of down payment and the remainder over the next two years,

with an interest rate of 8% plus CPI variation[20]. Most banks were bought by local business groups. They obtained actual control by February of 1976, so our analysis starts in 1976.

In January 6, 1977, less than a year after privatization, regulators took over one of the banks sold to business groups, Banco Osorno y La Unión. This was the first failure of a privately owned bank in Chile since 1926.

In early December of 1976, a spate of ten insolvencies of intermediaries took place. They started when the manager of financiera "Manuel Rodríguez" (informal) fled to Buenos Aires. The authorities declared that this was to be expected of informal (non-regulated) financieras.

But when "Finregio" (a formal financiera) failed a week later because it had concentrated its lending in only two companies, which were the main shareholders of the financiera, the public came to realize that supervision was practically inexistent even in formal institutions. For example, Finregio violated in a grand way article 5 of Resolution 26 of the Superintendency of Banks, that banned loans to owners of more than 10% of equity[21]. In the following weeks failed La Familia, Colocadora Central de Valores, Financiera Gain, Financiera Farema, Financiera El Sendero, Eduardo Montes (informal), Inversiones Décima Región and Banco Osorno.

The government announced that Banco Osorno's deposits would be backed by the Central Bank. In addition, the next day the government announced the creation of an explicit guarantee for small deposits in banks, supervised financieras, and supervised Savings and Credit Cooperatives. The limit on the guarantee was set in a CPI-adjustable amount[22] near US$ 2,750 per account. The government also guaranteed ex-post the small deposits at Finregio and La Familia, and none at the informal institutions.

We will follow our proposed procedure to check empirically if Banco Osorno's failure was due to moral hazard. The first element to be checked is the existence of a government guarantee on deposits.

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[20] This interest rate was substantially below ex-post market rates, so the government was able to inflate the prices received.

[21] See Ercilla Nº 2161, Dec 29-Jan 4, 1977.

[22] It was set at 100 Unidades Tributarias Mensuales, which amounted to 175 Unidades de Fomento.

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The only experience previous to Banco Osorno, apart from the spate beginning in December 1976 , was the one of SINAP. In that case, the government had initially declared it would guarantee its liabilities. However, in the event the government did not meet its promise (see 2.3). As the evidence below shows, this implies that the depositing public did not believe in government guarantees of deposits, even though there existed a Superintendency of Banks. In this sense, the first requisite for moral hazard is not met for the case of Banco Osorno. This fact has been frequently overlooked when studying the case.

The second element is to check if there existed an asymmetry of information between the banks and regulators. However, given that there was no guarantee in place, it is also relevant to check whether depositors had some information about bank solvency. We show that these assymmetries existed and were substantial.

Therefore, as there is no empirical evidence for the first requisite, we conclude that the Banco Osorno failure was not the result of moral hazard against the government. We argue that between the privatization of commercial banks in February 1976 and the failure of Banco Osorno in January 1977, Chile lived a free-banking episode. This is because there were no guarantees on bank deposits, there was no prudential regulation worth telling, there was free entry, and the failure of intermediaries did result in losses to depositors. However, we will show that the spate of failures of intermediaries was the outcome of moral hazard against depositors.

Finally, it is interesting to pose the question if moral hazard was a market-wide phenomenon in 1976. With regards to this, the facts are that real interest rates were falling rather than rising in late 1976, and that the real volume of deposits was not rising, as moral hazard theory predicts. This is not surprising, because the dynamics of moral hazard against the government are quite different from those of moral hazard against depositors, who can run. The widespread distrust of banks by depositors and the negative vision of the financial system that can be gleaned from reading the press of the time, and the small growth of aggregate deposits in 1976, suggest that the public perceived it could become the subject of fraud.

4.1.2 Banking Policy after Banco Osorno's failure

An important aspect of Banco Osorno's failure is that it exposed the absence of prudential regulation in Chile in 1976. The Central Bank authorities became suspicious only after Banco Osorno asked for unusual amounts of emergency credit, in December 1976[23]. Bank regulators began to worry somewhat when they found that Banco Osorno had experienced an operating loss in November 1976.

At the time, the Superintendency of Banks was supposed to employ up to 120 employees, but only 60 remained because of quits in response to low public sector wages. Of those 60, only ten were inspectors, and they had to supervise 14 banks and 26 formal financieras, which was obviously an impossible task.

It was also revealed that Finregio violated the maximum debt/equity ratio of 5.0 applicable to financieras, had lent at long term with short term funds, and had lent without evaluating the collateral of debtors.

After takeover, the regulators found that Banco Osorno's failure was associated with the failure, in the previous month, of the informal financiera called "Soc. de Inversiones Décima Región", controlled by the same business group (Mrss. Fluxá and Yaconi). This business group had used the bank's borrowing capacity to buy several big firms that the government was privatizing in 1976, like Fundición Libertad, Agencias Graham, Enagás, and Santiago Centro office building. Banco Osorno had opened off-balance sheet credit lines to these firms, and issued guarantees to others without registering them.

Banco Osorno was not abusing any government guarantee. In our view, Banco Osorno abused the depositing public's confidence that banks were serious institutions. In fact, during December 1976, as the failures of intermediaries came one after the other, the depositing public came close to a panic and began to move funds towards the largest banks. This shows that the public did not believe in government guarantees of deposits. In this sense, Chilean 1975-1976 financial experience looks like a free banking episode of the 19th century, before governments regulated banks.

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[23] See Qué Pasa Nº 354, January 26 1978, which interviewed Mr. Francisco Fluxá. Banco Osorno asked for a US$ 10 million bridging loan until a hypothetical new foreign partner invested in Banco Osorno shares.

The analogy is confirmed by the fact that, after the failure of Finregio, and in the middle of rumours about the failure of other banks, the local press informed that Javier Vial, the president of the Bankers' Association, was trying to form a pool of banks to bail out Finregio and avoid the public's loss of confidence. This is exactly what the New York bank cartel did before the formation of the Federal Reserve (Gorton, 1985). A difference is that, in this case, the government did intervene in the end.

Several authors have singled out the Banco Osorno episode as the one that set the stage for the massive bank failures of 1982 (see Harberger,1984). The argument is that if depositors at Banco Osorno had suffered some losses, and/or regulators had supervised banks more strictly, then domestic banks would not have engaged in moral hazard practices and foreign banks would have been more careful in lending to Chile in1981.

To check this point of view, we review the banking policy stances expressed in the local press at the time. A columnist that worked at the Central Bank asserted that:

"The financial market is special because bankruptcy produces public alarm.... There is consensus that the Superintendency must be refurbished to be able to exercise enough control.... We must rethink the objective of bank regulation. At present, the objective is to make sure the norms are complied with. But by itself, this doen't assure the ability to analize the loan portfolio and its guarantees."[24]

We see that an important school of thought, which we will call the "Refined Supervision School", argued that the government had to guarantee bank liabilities, and that therefore the government should regulate the risk of failure. An implication was that the government was right in bailing out Banco Osorno depositors.

However, this view was not shared by important authorities at the Ministry of Finance and the Central bank, who insisted in a free-banking view of the financial market. They were not convinced that bank failure was special, and refused to accept that government guarantees should be involved. The President of the Central Bank, when asked about future bank failures, answered that:

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[24] Daniel Tapia, Ercilla № 2164, January 19-25, 1977.

"The government will respond only up to the small-depositor guarantee, as it did in the cases of Finregio and La Familia."[25]

This answer pretended that only small depositors would be insured in the future, although it had been obviously untrue for Banco Osorno. This school of thought preferred to explain the spate of insolvencies around Banco Osorno as the result of poor management and fraud. Poor management was not for the government to mind, while fraud could be dealt with by defining white collar crimes more precisely and enabling the affected parties to protect their interests in the courts. Small depositors would be guaranteed only because they would be unable to inform themselves properly or find it worthwhile to sue in court. Therefore, for this school the right decision with regard to Banco Osorno would have been to let it fail[26].

The only lesson from Banco Osorno that captured the attention of these authorities was that it was so hard to make Banco Osorno's executives and directors legally accountable for what they thought was simple fraudulent conduct.

There was a third school of thought, represented by old-timers at the Superintendency of Banks. This group asserted that risk-taking by banks could not be controlled, and that the government should bail depositors out. Therefore, the best policy was to repress the financial market, assuring a small size and low risks because of lending at negative real rates.

Summing up, the authorities were of a divided mind on financial policy. The outcome of bank regulation in Chile was heavily influenced by this underground clash. After the Banco Osorno episode, the Free banking school obtained legislation that defined new crimes, but continued to be distrustful of prudential regulation. However, it failed in withholding the government's guarantee. The Refined Supervision school obtained some new powers for the Superintendency and a government guarantee for deposits to keep the public's confidence, but was unable to assure fast implementation of tight prudential regulation. The Financial Repression group obtained the government's guarantee for depositors and delayed the implementation of tight prudential regulation, but could not return the financial market to

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[25] Alvaro Bardón, interviewed in Ercilla Nº 2164, January 19-25, 1977.

[26] It is unlikely that they realized that the result of this policy would have been a bank cartel, who would have regulated its members.

repression. The social cost of this incoherent financial regulatory policy was substantial.

The argument set out by Harberger, i.e. that inflicting some losses on Banco Osorno's large depositors would have avoided the creation of an implicit government guarantee and the problems suffered in 1982, is not convincing unless we also accept that it free banking is a good idea. In our view, free banking is not such, because that institutional environment leads to the formation of a bank cartel. In Chile, such a bank cartel would have been dominated by the business groups, who would have multiplied their lock-out power.

Harberger also suggests that an alternative feasible policy after the failure of Banco Osorno would have been to introduce tight prudential regulation. In our view this is correct, but it ignores that even with prudential regulation in place, the steep 1982-83 recession and structural contingent subsidies would have forced the failure of many banks anyway. We discuss this in detail in 4.4.

In the years after Banco Osorno's failure, the Free Banking school introduced legislation that defined new crimes. A sampler[27] of those legal reforms must include:

i) It became a crime for a bank manager to omit the accounting of an operation.

ii) It became a crime for a bank director, manager, employees, external auditors, and agents to "disfigure" balance sheets, books, mail, accounts and other documents.

iii) Extended to financieras the crimes defined for bank managers and directors for the cases of approval or presentation of a false balance sheet.

iv) Giving false or maliciously incomplete data for the purpose of obtaining a bank loan became a crime.

v) External auditors would have to examine the accounts of all banks, and their report would have to be published.

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[27] The best reference is Errázuriz (1982). The decree laws are № 1638 (Dec 30, 1976) and № 2099 (Jan 13, 1978).

Many authors have overlooked these reforms, and have argued that these crimes were committed up to 1982. This hypothesis is simply unreasonable for usual loans, because the penalties included jail. The cases of self-loans and fraud will be taken up later.

The Refined Supervision school obtained reforms like the following:

i) The Superintendency of Banks would have a larger budget, and its employees would obtain salaries above the public sector pay scales. In the future, a council of ministers would define the wage scale and the number of employees, and meanwhile, the Central Bank sent 40 employees to help the Superintendency as inspectors.

ii) The minimum capital for a formal financiera was raised to 75% of the one required for a bank, in an explicit attempt to reduce the number of financieras and the regulatory load.

iii) Informal financieras were banned by a legal reform, while formal financieras were prohibited from acting as brokers for commercial paper issued by companies.

iv) The volume of guarantees issued by a bank to each individual client began to be limited to the same levels applicable to loans. These limits were 5% of capital and reserves for loans each person and company without guarantees and 10% if the guarantees covered the extra 5%. For stock companies and state enterprises, the limit was 10% without guarantees and 25% if the guarantees covered the extra 15%.

v) The acceptable collateral for a bank loan was restricted by the exclusion of bills of exchange and commercial paper.

vi) The Superintendency of Banks was empowered to order the correction of the accounting value of any investment, when it established that the registered value was not realistic. However, this power did not cover loans.

An interesting reform was the one that imposed that the liquidator of a bank had to be designated by the Superintendent of Banks. This reform bears the influence of the Refined Supervision school, in that regular liquidators were excluded. However, the need for a special bankruptcy procedure for banks was not acknowledged. For a bank, liquidation usually means very large losses, because it ceases to be a going concern and

debtors become laggard in payment because the capital value of their reputation as good payers dissappears. It turned out to be most unfortunate that the Chilean Banking Law, as other countries' laws, considered only two avenues for the management of a bank's failure: liquidation and takeover by the government[28].

Finally, we will check which of the schools of thought was supported by the facts. In the first place, the Free Banking school lamented the ex-post guarantee on all deposits at Banco Osorno. But on the other hand, the government allowed the regular bankruptcy of several of the small financieras without intervention. The government also allowed losses to be inflicted on large depositors at Finregio and La Familia. Later in 1977, the government allowed large depositors to lose important amounts in the failures of saving and credit cooperatives Crediclán, SICOOP, Copecrédito, Servicoop, Magicoop, Credibioma, Ignacio Serrano and Credicon, showing the clout of the Free Banking school. For the Free Banking school, these episodes showed that there was no government guarantee in Chile.

However, many authors have overlooked that Banco Osorno was not the only contradiction suffered by the Free Banking school. During 1977 the government also took over and refunded cooperatives IFICOOP, SODIMAC, Creditec and Credival, bailing out all creditors, regardless of size. These rescue operations were critical to establish the government's reputation in the public's mind. The common characteristic of these institutions and Banco Osorno was that they were larger than the others, so their failure would affect much more people. An implication was that their liquidation would freeze for a long time a substantial amount of transaction money, and that political support for the government would suffer. Therefore, in the public's mind, it became clear that medium-sized and larger banks were in fact guaranteed.

Given this record, it is amazing that the Free Banking school could still argue that there were no deposit guarantees in Chile. In order to be consistent, it should have acknowledged that free banking was impossible in Chile after 1977, and prudential regulation was a necessity.

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[28] Such an alternative has been introduced in Chile by the 1986 and 1989 Banking Law reforms, ten years too late. The need for special bankruptcy procedures for banks has been proposed by new advances in banking theory, that have influenced the current Chilean banking law heavily.

For the public, the Refined Supervision school was right. For example, a 1977 press article, titled "The Morals of Banco Osorno" asserted that:

"Central Bank assistance to Banco Osorno shows that the authorities do not consider banks to be similar to other firms, so banks cannot fail. Therefore it is important to move towards professional supervision, where loans are evaluated in accordance to risk. This means that the Superintendency of Banks must have a larger budget, and salaries must be higher than in the rest of the public sector."[29]

The episode that turned the tide in favour of the Refined Supervision school was the one of Banco Español in 1979, two years later. Since late 1978, banks had to obtain external audits of their accounts. Price Waterhouse asserted that Banco Español accounts were representative in 1978, but changed opinion in their 1979 report, where they stated:

"The analysis showed that, regarding a loan portfolio of 37% of total loans, there was no information that could allow the evaluation of the debtors' capacity to pay. Many of these debtors had their loans renewed repeatedly, without paying interest nor CPI adjustment at the moment of renewal."

Although the loans were documented, as required by the 1978 laws, the bank still did not collect information to evaluate the risk. The press[30] informed about the consequences of this report as follows:

"When it had become widely known that Banco Español <u>was going towards takeover by the government</u>, the owners (Puig business group) sold out to Sahli and Tassara's business group."

The point we want to make first is simply that, by 1980, everybody was convinced that depositors at a failing bank would be bailed out by the government. There was no alternative for a failed bank but being taken over.

The Free Banking school was never happy to acknowledge its practical defeat and was slow to press the Superintendency to improve the quality of its supervision. The same happened with the Financial Repression school, who was in actual command of the Superintendency, but was totally unable to block the financial liberalization. One empirical

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[29] Ercilla № 2167, February 9-15, page 21.
[30] Ercilla № 2333, April 16-22 , p. 22.

result was that the Superintendency did not move fast from 1977 to 1979. Another result was that when confronted with the failure of Banco Español, the free banking authorities refused to take over. Instead, they devised the worst possible alternative: they authorized its sale to Mrss. Sahli and Tassara, who were not required to inject fresh capital into the bank. The Refined Supervision school was shocked.

They reacted strongly to the Banco Español case, as the next sections will show, and by early 1980 the Refined Supervision school had taken over bank regulatory policy in Chile.

The conclusion is that in 1977-1980 the authorities assumed that free banking was feasible and refused to acknowledge that that was impossible after the rescues of Banco Osorno, IFICOOP, SODIMAC, Creditec and Credival. Although they introduced prison sentences for undocumented loans and other frauds, which improved the workings of the system in comparison to 1976, they did not acknowledge that prudential regulation and risk evaluation were necessary, and placed their trust with external auditors. The blockade of prudential regulation was capped by the authorization of the sale of failed Banco Español to a business group without capital.

4.1.3 Market-wide Moral Hazard after Banco Osorno: The evidence.

There is still the question about the market-wide impact of moral hazard in the period 1977-1979, when both a government guarantee and ineffective prudential regulation coexisted. It turns out that during this three-year period the Chilean economy exhibited high GDP growth, so even if moral hazard was practiced, it did not lead to large scale insolvency of intermediaries. The states of nature turned out to be good.

For this situation, section 3 predicts rising real deposit interest rates and more slowly rising real lending interest rates. Regarding deposit rates, an adjustment of the theory to consider the falling marginal reserve requirements experienced over this period leads us to expect that real deposit rates should have risen even faster. The reason is that a reduction in marginal reserve requirements is like eliminating a tax on intermediation, and competition leads to a reduction in loan rates and an increase in deposit rates.

Of course, the problem with checking if these predictions fit the Chilean data is that there was a simultaneous financial liberalization under way. It is not easy to discriminate between the safe liberalization hypothesis and the market-wide moral hazard one. Both imply falling loan interest rates.

One big difference between the two hypothesis lies in that liberalization implies rising deposit rates - but the opening up to capital inflows prevents a check here. The increased access to international credit during this period induced an increase of the net capital inflow to Chile to a plateau level of US$ 1.1 Billion per semester since the second half of 1978. This could have induced a reduction in deposit interest rates since mid-1978, hiding the moral hazard dynamics[31].

The other difference between the two hypothesis is that moral hazard dynamics predict a credit squeeze to safe borrowers, while liberalization means a widening access to credit for most borrowers. Unfortunately, a liberalization with moral hazard might have an ambiguous effect on access to credit for safe borrowers.

When assessing the presence of moral hazard of the pure type, it must be remembered that this requires willingness to fail and lose some capital in the bad states of the world. The following table shows banking profits in Chile:

Year	1976	1977	1978	1979	1980
Pre-tax Profit/N Worth	2.6%[a]	8.7%[a]	18.5%	23.0%	23.5%
Operating profit[b]/NW	-13.8%[a]	1.1%[a]	13.5%	17.6%	22.1%

a : This includes tax paid.
b : Defined as Pre-tax Profit minus Other Expenses plus Non Operating Income.

Source: Held (1989), Table I-9.

Given the large profits of most banks over 1978-1980, and the optimistic expectations of more to come, it is hard to believe that pure moral hazard was important. This is a direct extension of Marcus (1984)

[31] See Edwards (1988) for the data.

result for monopolistic rents to transitory rents earned by competitive banks. Note that our argument is that after profits were obtained, it was not sensible to engage in further moral hazard. This means that moral hazard was profitable in 1976 and 1977, but not afterwards. It would start to be profitable again if banking prospects appeared bleak. Of course, these figures should be cleaned of the loan losses that may have been rolled over, but this will be taken up in section 4.2.

An important implication is that a financial liberalization, which always produces transitory profits, has a built-in insurance against moral hazard. This requires that the intermediation margin be larger than the high costs due to lack of expertise.

In conclusion, it is most likely that the Chilean financial system was not engaging in moral hazard over the period, although most of the required conditions were there, because banking was too profitable to be worthwhile. However, this is hard to establish, because the high growth of the economy implies that there were mostly good states of nature. In any case, even if moral hazard existed, it was not determinant in the short run. Of course, the Chilean financial system was a fragile one in early 1980, because moral hazard in a massive scale could be expected in response to low profit expectations. Chile had an opportunity, in late 1980 and 1981, to escape from this fragility.

4.2 Rollover of Unrealized Loan Losses: the Chilean Experience

We start by checking the requirements for this hypothesis to be feasible. The first requirement is that the government guarantees deposits. As documented above, the bailout of all depositors at Banco Osorno and cooperatives IFICOOP, SODIMAC, Creditec and Credival convinced bank creditors that they were defacto guaranteed by the government. This requirement was not met before 1977, because financial intermediaries were allowed to fail.

The second requirement is for the bank to be bankrupt. If this is not so, delay in acknowledging loan losses simply shows up as a profit rate below normal standards, and no ponzi game is played. In particular, this hypothesis requires large unrealized losses in the loan portfolio of the banking industry at the start of the process, in early 1977.

What is forgotten by most analysts is that a bank is bankrupt only if the present value of its economic profit is negative. Economic losses exist permanently if interest earned on true loans is below interest paid on deposits. If this is not so, the unrealized loan losses are absorbed over time and the bank is not bankrupt in an economic sense. It may be bankrupt in an accounting sense, but there is no ponzi game if profits are positive.

The third requirement is to show that the government was reluctant to take over failed banks. The structural reasons for this outcome are that a takeover is an acknowledgement of flawed regulation, and that most authorities that supervise regulators are unable to obtain independent information on bank solvency.

In Chile, the regulators that took over Banco Osorno and the other big intermediaries in 1977 justified them by the argument that "previous" regulation was unsound. This attitude had changed by 1980. The regulatory approach was strongly questioned by the case of Banco Español. In desperation, the Free Banking school decided to allow the sale of the bank to Mrss. Sahli and Tassara, who injected no capital. A year and a half later, in November 1981, Banco Español was taken over because its losses had grown still more. Therefore, it is clearly documented that regulatory delay was present in Chile from 1978 to mid 1980, when the Free banking school was dominant.

Given that in 1978-1980 the first and the third requirements are met, the only remaining question is about the second. Did large unrealized loan losses exist, such that the many banks were suffering economic losses and were economically insolvent? As no formal examination was practiced on bank portfolios until 1980, there is no quantitative evidence on this point.

We present other types of evidence now.

4.2.1 The facts, 1977-1981.

In early 1977 the Chilean economy was in shambles. After suffering the ravages of Allende's populism, the halving of the price of copper in 1975 forced a steep recession, where GDP fell 12,9%. A strong fiscal contraction, a sharp real devaluation and very high real interest rates reduced the strength of the recovery, and the economy grew at 3,5% in 1976. Therefore, the solvency of most business firms that had survived

Allende's drive towards central planning was clearly reduced in those years, and many of them became actually insolvent.

On the other hand, several large business firms that had been nationalized by Allende were privatized by auction over 1976 and 1977. Most of these firms had no working capital, so they pressed on the financial market inorder to finance inventories. Many of them also had excess manpower, but firing required severance payment of one month's salary per year served. Rationalization implied even more loans from the banks.

Initially, the high real interest rates recorded in 1975 could be absorbed easily because the ratio of debt paying market interest rates to equity was very low for most business firms in late 1974. However, during 1976 the persistence of high interest rates began to affect the solvency of some business firms. Therefore, it is safe to assume that the local press reports that insisted on these problems were essentially correct. Consider this one, dated one year after Banco Osorno's failure i.e. in January 1978:

> "In financial circles it was assured that, according to the Superintendency's revisions, the volume of loans not serviced in time is between 10% and 15% of the banking system's portfolio. There is little hope that those debtors will be able to pay."[32]

In addition, an economist reported in his column that, after studying the balance sheet of many important companies, he had concluded that the country had entered into a vicious circle: high real interest rates forced firms to increase their demand for credit, which in turn kept interest rates high even if the supply of funds rose[33]. These reports came after 1977's record growth rate of 9,9%, which completed the recovery from the 1975 recession.

However, 1978 turned out to be a good year too: real growth was 8,2%, and 1979 exhibited 8,3% real growth. Real interest rates began to fall, although slowly. In addition, the reforms to the banking law of early 1978 had required banks, for the first time in Chile, to publish their financial statements in newspapers of wide circulation. Those statements would have to be audited externally.

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[32] Hoy № 32, January 4-10, 1978, p. 27.

[33] Rolf Lüders, in a column in Hoy № 35, January 25-31, 1978.

Starting in early 1979, the four main auditing firms in Chile (Langton Clarke, Price Waterhouse, Deloitte, Haskins & Sells, and Coopers & Lybrand) certified that loan provisions of the order of 1% of loan portfolios were adequate for most banks[34]. At the time, the authorities of the free banking school argued that the presence of these auditors, who would defend their reputation, assured that any unrealized loss problem would be discovered and solved. An alternative view, which we subscribe, is that most of these auditors were either duped or bought off by the bankers who paid their fees. We posit that the banking policy debate was won by the Refined Supervision school, and the Superintendency switched towards direct supervision, in 1980 when it was realized that external auditors would be unable to enforce adequate banking practices.

The experience of Banco Español is ilustrative. Recall that in April 1980, Price Waterhouse's report on Banco Español informed that its examination had found that the bank had no information that might help to evaluate the probability of recovery of loans adding up to 37% of the loan portfolio. Some interpreted this event as showing that the external auditing process was uncovering the rotten apples in the banking system, and their confidence increased. An alternative view is that external auditors had been fooled or bought off. The fact is that in the following April, after Banco Español was bought by Mr. Tassara, Price Waterhouse declared that all the problems had been solved, but seven months later, in November 1981, the Superintendency took over Banco Español to stop massive fraud.

We compare now the auditors' claims with the Superintendency of Banks' reports and behavior. The Superintendency had adopted several measures after Banco Osorno's failure. The first was to introduce new legislation, which was approved in early 1978 and described above. By late 1978 the Superintendency was concentrating on assuring the completion of the first year of auditing by external auditors. In March 1979, the Superintendency prohibited for the first time the accrual of interest on <u>delinquent</u> loans. In December 1979, it reduced the required general loan loss provision from 2% of loans, to a number independent of the actual delinquency rate, but linked to "the volume of outstanding loans and the historical experience of recovery, which may be different for each bank".

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[34] For example, for the year ended in December1979, the auditors required provisions of 0,70% of Banco de Chile's loans, 2,40% of Banco Español's loans, 0,68% of Banco Austral's loans, 0,43% of Banco de Concepción's loans, 0,15% of Banco de Santiago's loans, and 0,69% of BHC's loans.

Of course, this last item of regulatory behavior should be described as incompetent.

In February 1980 came the Superintendency's first attempt to classify loans. It established an experimental system where each bank would have to classify (in a risk scale from A to D) its 30 largest individual debtors. For each of them the Superintendency required the opening of a especial folder with the relevant information. Initially, provisions were not required in relation to the classification. It is impressive to read the Superintendency's comments on the result of this preliminary exercise :

> "It could be appreciated that *some* institutions didn't have the information necessary to identify their debtors..... In *several* institutions, it was verified that the loans were disbursed without knowledge of the credit needs of the borrower and with absolute ignorance about the uses to which the funds would be put."[35]

Note that if a bank can't identify a debtor it means that some loans were undocumented, which violated the new legislation introduced in early 1978. This comment was published a couple of months after Price Waterhouse's revelations about Banco Español, and its purpose was to support Price Waterhouse's independent attitude.

These results pulled the Superintendency into action. In June 1980, the Superintendency requested that the classification be extended to the 80 largest debtors of each bank. In April 1981 it required the classification of the 300 largest debtors, and introduced classification procedures for the consumer loan and housing mortgage loan portfolios.

In August 1981 the Superintendency obtained the approval by the Junta of a set of draconian reforms to the Banking Law[36], which took the banks by surprise. However, the main purpose of the reform was not to force the realization of hidden losses. Rather, it redefined the concept of individual debtor, in response to the huge scale of detected self-lending of business groups. This topic will be taken up in section 4.3, but the point that is of interest here is that hidden losses -correctly or not- were not perceived by the Superintendency to be the main legislative problem.

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[35] Published as Circular № 1686, June 19, 1980.

[36] Law 18022, August 19, 1981.

In November 1981 the Superintendency took over eight banks and financieras[37], starting with Banco Español. These financial institutions covered 6-7% of total loans. This was a result of the loan classification effort started in 1980. Its declared purpose was to put an end to the rollover of loan losses by these institutions. On the other hand, these takeovers are proof that the external auditors had been either duped or bought in the previous years, because they had assured that provisions were reasonable for all these financial institutions. Economic activity had began to decline only recently, in mid 1981. Of course, takeover implied that the government assumed the losses and guaranteed all depositors and creditors.

The discredited Free Banking school was still alive within the government, because its reaction was to introduce a law[38] that expanded the explicit government insurance of small deposits that had operated since 1977. It consisted of an optional guarantee that could be purchased by each depositor up to some US$ 3,500 in addition to the original guarantee that was free. The optional guarantee covered only up to 75% of the loss suffered in that sum. This law was an aberration, because the takeover of eight institutions in the previous month reaffirmed the widesprad view that the government insured all bank liabilities. Evidence of this is that very few depositors paid to take the optional guarantee. However, this confusion in the minds of some of the authorities has introduced some confusion into the later discussions between econcmists.

In December 1981, the Superintendency required a general loan loss provision at a rate of 0,75% of loans, this time independent of the historical experience of recovery[39]. In February 1982, the Superintendency requested quarterly classification of the 400 largest debtors, which on average covered 75% of the banking system's loan portfolio.

It was only in March of 1982 when the Superintendency required provisions in relation to the classification of loans. However, it also gave banks a generous deadline, as the required provisions would be allowed to be built up linearly for the next 33 months. By this time, the Chilean economy had entered into the steep 1982 recession.

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[37] They were Banco Español, de Talca, de Linares, de Fomento del Bío-Bío and Financieras Cash, De Capitales, Del Sur, and Compañía General Financiera.

[38] Law 18080, December 16, 1981.

[39] Circular Nº 1764, December 14, 1981.

We finish our review of the evidence by noting that the Chilean banks grew very fast in 1977-1981, period in which the real size of loan portfolios increased 513%[40]. In addition, the economy exhibited strong growth up to 1981, so new loans were profitable and had the potential to dilute the old bad loans.

4.2.2 The evidence for unrealized loan losses, 1977-1980.

The cualitative evidence presented above can be used to support either of two alternative hypothesis: One, that unrealized losses were diluted through vigorous growth, so they were not important by 1980. Two, that the Superintendency of Banks was irresponsible and incompetent, and those losses continued to be significant[41]. We will propose a third interpretation: Rollover of unrealized losses was not important as a generalized phenomenon until late 1981. However, it was important in a few business groups, notably in the case of Banco Español.

There are two pieces of evidence that may help to discriminate between these hypothesis. The first is that when the overall result of the classification procedure came to be published, it turned out that by June 1982 only 6.03% of loans[42] were considered to be at risk. This means that 1% of B loans, plus 20% of B- loans, plus 40% of C loans plus 100% of D loans added up to 6.03% of all loans[43]. To put this number into perspective, we should note that in May 1988, which was considered to be a good year, the volume of loans at risk in Chilean banks was 5.33% of the portfolio[44]. The difference is that in late 1981 provisions were only 1.73% of loans, while in 1988 they were 6,08% of loans.

In addition, 1982 was a very bad year, in which GDP fell 14.1%. Banking indicators worsened very fast in that year, as shown for example, by the percentage of delinquent loans. This indicator rose from 2.34% in December 1981 to 6.31% in May 1982. Therefore, we believe that the volume of loans at risk, as measured by the Superintendency, was below 6% in December1981, after the takeover of Banco Español.

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[40] The real growth rates in loans from banks and financieras were: 1977: 76%; 1978: 53,6%; 1979: 31,9%; 1980: 45,9% and 1981: 17,8%. The ratio of loans to GDP rose from16,6% in 1977 to 50,4% in 1981. See Held (1989).

[41] See for example Held (1989).

[42] Excluding loans from the institutions taken over in November 1981.

[43] Información Financiera, January 1983, in article by Julio Acevedo.

[44] Información Financiera, May 1988. There was a change in definitions, as C loans were provisiones in 60% in 1988.

This level of net unrealized losses of the order of 4% (a bit less than 6.03%, minus1.73%) of total loans must be compared with the level of capital and reserves of the banking system to assess the loss. As accounting capital and reserves were 10.4% of loans in December 1981, we find that Chilean banks had a real economic capital of some 6.4% of total loans. As Chilean banks had a loan/asset ratio of 0.774 in 1981, the overall capital/asset ratio was near 5% in 1981. This system-wide ratio is certainly positive, and was not small by contemporaneous international standards[45].

There is a second piece of discriminating evidence. It is a fact that the Superintendency became very militant and aggressive during 1981 and took over the banks it considered to be insolvent after completing the loan classification procedure. Recall that in December 1981, the Superintendency required a general loan loss provision at a rate of 0,75% of loans, smaller than the average 1,73% of total provisions that banks had in their books. This confirms that by late 1981, when the classification procedure was fully in place, the Superintendency did not believe unrealized losses were a substantial problem per-se. Note that the Superintendency could have requested a much higher provision without jeopardizing its position, because the mood was to mop up the troubles bred by the free banking approach. If it had believed unrealized loan losses was a critical problem, it would had required a much higher provision, to avoid the distribution of dividends.

Consider now the critiques to these two pieces of evidence. The first set of figures can be questioned on the grounds that the basic number, i.e the loans at risk for June 1982, is biased downwards. It is a fact that at least in some important banks the Superintendency had not reviewed the loan classification of loans made by most banks, and self-loans simply had not been classified[46]. The second piece of evidence can be reinterpreted by the fact that the authorities simply did not know in November 1981 if the banks not taken over were solvent. The interpretation that loan losses were huge in 1980 cannot be discarded yet. We turn now to additional evidence on entry, growth and real interest rates.

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[45] The Book value of equity/ assets ratio of US banks was, in 1980, 3.69% for the 17 international banks, 4.12% for the domestic banks with more than US$5 billion in assets, and 6.77% for the domestic banks with assets between US$300 million and US$ 1 billion. See Talley, S., of the Board of Governors, Staff Study Nº 122, February 1983.

[46] Günther Held, for Banco de Concepción.

4.2.3 Checking a Ponzi Game by Rollover of Unrealized Loan Losses

This section reviews the Chilean experience in 1977-1980 regarding the most important consequence of a persistent rollover of unrealized losses: a ponzi game that crerates a vicious circle. Recall that the theoretical implications of a POnz game are that real interest rates rise, healthy debtors suffer a credit squeeze, the real volume of deposits and debts to others grow geometrically, and banks suffer economic losses in most periods. Competition, free expansion and new entry into banking accelerate the ponzi game.

It is difficult to measure a Ponzi game in the period 1977-1980 through growth in deposits in excess, because there is a good alternative explanation: Financial liberalization was producing its expected results. By the end of 1980 the Chilean Loan/GDP ratio had reached 37.6% (Held, 1989), which may be compared with other developing countries' M2/GDP ratios for1980: South Korea: 33.7%; India: 38.2%; Argentina: 23.4%, Taiwan: 66.8%. Germany had in 1960 a M2/GDP ratio of 29.4%[47].

Consider entry and expansion of new banks during the period. The Chilean government allowed the creation of new banks and the opening of branches and subsidiaries by foreign banks[48] since 1974, fact which could have theoretically increased the likelihood of a ponzi game in 1977-1980. However, during the period, the main entry was due to domestic banks. The following table puts this discussion into perspective:

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[47] See McKinnon, 1988.

[48] In November 1974, a decree exempted foreign investment in long term banks from the Andean Pact's limitations.

TABLE 8
SHARE AND GROWTH OF NEW AND OLD BANKS.
(Real terms, end of year)

Year	1976	1977	1978	1979	1980	1981
Total Real Loans	100	176	270	357	520	613
New Banks' Share(%)		1,4%	5,5%	10,3%	19,4%	25,6%
Foreign		0,5%	0,6%	2,3%	3,1%	4,6%
Bank of Santiago		0,9%	4,9%	7,2%	8,4%	8,6%
Other Chilean		-	-	0,8%	7,9%	12,4%
Real Loans of older Banks	100	174	255	320	419	456
Growth rate of older banks		74,0%	46,6%	25,5%	30,9%	8,8%
Proportion of 1977-1981 growth ocurring in each each year, for older banks		20,8%	22,8%	18,3%	27,8%	10,4%

Sources: Held (1989), Table I-5 ; and Arellano (1983), Table 8. The large growth of 1980 is due to a big inflow of international bank loans to Chilean banks.

The growth of new entrants was certainly not fast enough to dampen significantly the real growth of older banks. Therefore, these older banks had the chance, as a group, to grow out of their unrealized loan losses to some extent by diluting them with new loans, if the latter were sound. On this point, it is obvious that even a bankrupt bank has an incentive to limit loan placements to those that are privately profitable. As the moral hazard hypothesis is not supported for this period, as seen in section 4.1, we can safely assume that new loans were sound.

Moreover, the growth rate of total real loans fell throughout the period, with the exception of 1980, suggesting that the process was stable. The proportion of total growth ocurring each year was falling, with the exception of 1980, the year of opening to international capital inflows. This is consistent with the view that bank growth was the result of financial liberalization, and inconsistent with a ponzi game.

In the next Table, we see that real interest rates fell over those years and reached normal levels by late 1980 This supports the

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interpretation that a series of high growth years ate away and diluted the original loan losses.

TABLE 9
DYNAMIC SIMULATION OF MAXIMUM LOAN LOSSES
(end of year, except interest rates)

Year	1976	1977	1978	1979	1980	1981
Total Real Loans	100	176	270	357	520	613
Average Loan interest rate (real)						
Held (1989)		46,1%	35,9%	15,8%	11,6%	33,2%
Arellano (1983)		39,4%	35,1%	16,6%	12,2%	38,8%
Maximum share[a] of bad loans in:						
older banks' portfolio		10%	9,3%	8,6%	7,3%	8,9%
banking system portfolio		10%	8,7%	7,7%	5,9%	6,6%

Sources: Elaboration from Table 8, Held (1989), Table I-8 and Arellano (1983) Table 11. Arellano uses Cortázar and Marshall's corrected CPI.

Note (a): The size of unrecoverable loans is taken to be an initial 10% of the loan portfolio, suggested by the press reports of January 1978 cited above, which grows at the loan interest rate (calculated by Held) in real terms.

This simple calculation[49] shows that the dynamics of loan losses favored dilution in a larger pool of loans, even though absolute loan losses were able to grow by 134% in 1978-1981. This means that there was no ponzi game by rollover of unrealized loan losses in Chile until 1980. We have shown already that banks were earning positive economic profits in this period, so the present value of those earnings was also positive.

[49]Held (1989) has proposed an alternative method of estimation of the volume of unrealized loan losses, which we think is flawed. He starts by taking the average elasticity of the real volume of bank loans to GDP for developing countries, which is 2.7. Then he multiplies this elasticity by two, and then assumes that the maximum volume of healthy loans in 1980 can be estimated by applying this elasticity to the 1978 size of bank loans. The excess is taken to be bad loans. This procedure is flawed because it ignores the fact that Chile underwent both a domestic financial liberalization and an opening to international capital inflows, which the average developing country didn't. In addition, the initial size of the Chilean banking sector was very small, so growth rates and elasticities are misleading. Also, the procedure ignores the importance of the initial portion of bad loans, and of the level of real interest rates.

Moreover, in the optimistic mood of those years, both banks and bank shares were sold and bought at high positive prices.

This does not imply that the Chilean banking system was solvent in 1980 in an accounting sense, because historical accounting that acknowledged loan losses may have shown a negative accounting net worth. This net worth depends of the initial level of loan losses. An inverse calculation shows that if one wants to argue that unrealized loan losses were near 20% of the loan portfolio by the end of 1981, then one must support the notion that initial unrealized loan losses added up to 30% of the loan portfolio in early 1978.

There is no evidence on: how large unrealized loan losses were in early 1978 or late 1981 . Guesstimates published in the press in early 1978 asserted that 10% to 15% of loans were not being serviced on time. It is easy to see that unrecoverable loan losses is not equivalent to loans not serviced on time. Our impression is that the high GDP growth over 1978-1981 probably improved recoverability, but also other problems such as fraud reduced it.

The conclusion then is that no ponzi game was played in Chile in 197-1980. We contradict Harberger (1985), Mc Kinnon (1988) and Held (1989), who have asserted unrealized loan losses were so large that most of the Chilean banking system was insolvent during all this period, and most of the growth was a ponzi game all along.

However, our simulation shows that a ponzi game began to be played in 1981, because real interest rates were very high and new loans were much smaller. It must be acknowledged that a portion of this ponzi game was stopped by the November 1981 takeover of Banco Español and others, but they held a small share of the total unrealized loan losses. The ponzi game started in 1981 continued until late 1982. That year's recession imposed huge new losses on the economy, and turned sound loans into failures

In any case, rollover of unrealized loan losses was not the cause of the steep rise in real domestic interest rates observed in 1981. It was one more consequence, that fed back into banks' demand for deposits and fueled the initial rise in interest rates. This shows that although a ponzi game was not played over 1978-80, the existence of unrealized loan losses increased the sensitivity of the Chilean banking system to exogenous rises in interest rates and other problems.

In this environment, the Superintendency reacted by introducing a loan classification scheme. In our opinion, this happened too late to reduce the fragility of the Chilean banking system. In order to have been effective, the loan classification scheme should have been in place in late 1977, because in that way the Superintendency could have forced banks to reinvest all the profits of the good years. This was not done because of the misguided policy of the free banking school, which only ceded responsibility to the refined supervision school in mid 1980, when it was too late.

4.3 Structural Contingent Subsidies in Chile in 1981

This section presents the Chilean experience with structural contingent subsidies. This concept was explained in section 3, and basically refers to the fact that bank regulators may be unable to impose risk-rated provisioning requirements to banks on account of the set of risks that are heavily influenced by the regulators' superiors. An understanding of the Chilean experience on this point requires a brief presentation of the risks under partial control of the Ministry of Finance.

4.3.1 Risks influenced by the authorities in Chile

We start with a brief macroeconomic overview. In 1981 Chile seeked and obtained an extraordinary volume of foreign loans, while domestic real interest rates in peso loans rose towards the 40% annual rate level. Obviously, the increase in the supply of funds was overwhelmed by an increase in demand. During 1981 the domestic currency appreciated, and GDP grew by 5.5%. The foreign debt incurred in that year was borrowed by domestic banks, and was then relent to the domestic private sector. The next year, 1982, exhibits the end to the excess level of foreign capital inflows, the continuation of a very high real interest rate in peso loans, a large real devaluation, and a depression where GDP fell 14.1% and unemployment rose by 20 percentage points. The overall ratio of loans to GDP, which was 37.6% in 1980, rose to 50.4% by the end of 1981, and to 71.2% by the end of 1982. By the end of 1982 most of the banking system was insolvent.

The international debt crisis arrived to Chile in a bizarre way, because it was a private sector crisis. Contrary to most Latin American governments, the Chilean one did not borrow abroad in the 1977-1981

period. In 1983 the government took over a large portion of the banking system, and guaranteed the external debt contracted by private domestic banks. During 1983 GDP fell a further 0,7%. By the end of 1983, the foreign debt crisis had ceased to be a private sector problem in Chile, because the government was forced by the international bank cartel to extend its guarantee to commercial banks' foreign debts. From then on, Chile's debt crisis became like most Latin American countries' crisis.

When analyzing structural contingent subsidies, we will concentrate on two risks: exchange rate riks, and interest rate fluctuation risk.

a) Interest Rate Fluctuation Risk

The first element to be considered is Chile's reaction to the extraordinary 1981 rise of international real interest rates. The analysis is complicated by the excessive willingness to lend to developing countries exhibited by the international banks in the late 1970's and early 1980's, before the onset of the debt crisis. A side product of research into the causes of overlending by international banks[50] is the separation of the factors that were peculiar to Chile in explaining this period's high rate of external debt accumulation, from the factors that were shared with other developing countries.The following table shows this decomposition.

TABLE 10
ACTUAL AND EXPECTED LEVELS OF THE TRADE BALANCE FOR CHILE IN 1977-1982.
(millions of US dollars of each year)

Year	1977	1978	1979	1980	1981	1982
Net external Debt	5078	5748	6297	7134	11876	14679
LIBOR- D% U.S.WPI	0.5%	-0.6%	-2.4%	1.5%	10.7%	11.7%
Prudent Trade Balance	-178	-224	-296	-285	-71	308
Expected Trade Balance	-244	-259	-516	-728	-986	323
Actual Trade Balance	-170	-422	-281	-871	-3010	33
Accumulated excess of actual over Prudent T. Balance	-8	189	192	801	3852	4774
Accumulated excess of actual over Expected T.Balance	-74	84	-143	-17	2004	1985

D → Δ
symbol

Source: Valdés (1989). The last two lines were accumulated at the LIBO rate.

[50] One of us has argued that the recycling of petrodollars cannot explain by itself the pattern of international lending experienced in the late 1970's (Valdés, 1989).

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The "prudent" trade balance is the one required to keep the foreign debt from exploding in the face of changes in the international real interest rate. The "expected" trade balance is the one that Chile should have exhibited if it had behaved as other middle income oil-importing developing countries did in those years. The expected trade balance takes into account the impact of overlending by international banks and the average policy errors of developing countries, including their slow reaction to the rise in international interest rates. The last line shows that in 1981 Chile deviated strongly from similar developing countries' pattern of behavior. The country incurred in a huge excess foreign debt in 1981, which must be assigned to domestic factors.

This was not a normal[51] reaction to the 1981 rise in international interest rates, from 1.5% to 10.7%. This rise, if permanent, is a brutal shock to a borrower with no access to long-term fixed-interest rate funds, as was the case of most Chilean companies and investors. A real interest rate shock of the size of the international rise of 1981, even if it lasts for only two years, reduces the value of an asset with a constant cash flow by 15%. On the other hand, if the interest rate increase is short-lived, the shock is much smaller. As we will see, interest-rate speculation in Chile took the form of betting that the international interest rate would fall soon.

During 1981, domestic interest rates rose in step with international rates. The domestic rise was much steeper, however. Real ex-post peso loan interest rates increased from 12% in the last quarter of 1980 to 35% in 1981. It is important then to establish the likelihood of a fast reduction in local interest rates in 1981. The Finance Minister's policy stance was the following: there would be a gold-standard type of adjustment to the excess expenditure observed in early 1981, so the domestic money supply would be driven by the balance of payments. This meant a monetary contraction as soon as the balance of payments came into deficit, which would raise the local interest rate because of imperfect capital mobility. The implication was that local interest rates would not fall rapidly even if the international interest rate did. This was an important inducement to

[51] There is substantial evidence in favour of the concept that consumers and investors had excessively optimistic predictions about the future in 1979-1981. This hypothesis is supported by the extraordinary rise of the local stock market in 1975-1980, and the positive impact of the free-market structural reforms undertaken in 1975-1981 on investor psychology. This cannot explain, however, the increase in expenditure observed in 1981, when international interest rates rose strongly.

Chilean debtors to reshape their debts so they would benefit if international interest rates fell, which meant switching to U.S. dollar-denominated debts.

This documents that interest rate risk was substantial in Chile in 1981, for the highly indebted corporations and individuals. Although this risk was not under the control of the Chilean Finance Minister in its international component, he controlled the domestic component through monetary policy. In addition, the authorities controlled the access to dollar- denominated funds through the exchange control law. Clearly, the Minister of Finance influenced strongly the outcome of the local interest rate fluctuation risk, and access to the foreign interest rate risk.

b) Exchange rate risk

One of the legacies of Allende was a 25% of GDP budget deficit, which was covered with Central Bank credit. The result was an inflation rate near the 500% (annual) level in 1973. From 1974 to 1978 the government was successful in eliminating of the fiscal deficit and reducing the inflation rate. The inflation rate reached an annualized level of 29.2% in the fourth quarter of 1978.

The government confronted difficulties to reduce the inflation rate further, and was alarmed by the rise to 34.6% in the second quarter of 1979. Inflation was not caused by the budget, which was in surplus, and the reduction in tariffs had reduced the scope for price rises in internationally tradeable goods. The government's diagnosis was that the Central Bank caused the continuing inflation, because it devalued the exchange rate continuously on the basis of past inflation. This led the government to attempt a new brand of stabilization policy, based on fixing the nominal exchange rate[52].

In practice, the convergence of the domestic inflation rate to the international one took a couple of years. The local inflation rate began to fall only in the first quarter of 1981, to 18.4% annual rate, and achieved the international inflation level the next quarter. Then it continued falling, to undo the accumulated real appreciation. Convergence was slow and costly in part because of some rigidities in the labour market, particularly the government-required full backward indexing of nominal wages to past

[52] There has been an interesting debate on the appropiateness of this policy approach. See Corbo (1985), Dornbusch (1985) and Edwards (1988).

inflation. Of course, the unpredictability behavior of inflation helped to confuse investors with respect to the real interests rates they were contracting. In the first half of 1981, ex-post real interest rates became very high.

There was talk about the need for a devaluation since mid-1980, as a review of the local press shows. The discussion centered on whether a devaluation of the local currency would correct the real appreciation that was eroding the tradeables' sector competitiveness, or would merely be diluted in higher domestic inflation. The rise in real interest rates observed in the first half of 1981 was considered by many to be a seasonal effect and also the result of higher international interest rates.

But after the failure of a large sugar refining company because of heavy speculation in the futures market, in May 1981, the mood changed and most investors thought that a devaluation was forthcoming. The huge buildup of external debt contracted at a floating interest rate implied a crushing debt-service cost because of the higher international interest rate. The way to adjust and reduce imports was to devalue. The reduction in the rate of GDP growth experienced in the second semester of 1981 brought devaluation expectations to the fore again. A fall in the price of the country's main export, copper, also fueled expectations of devaluation.

This documents that exchange rate risk was very substantial in Chile in 1981. The Minister of Finance controlled directly the outcome of this risk, through Central Bank intervention in the foreign currency market and through exchange controls.

4.3.2 Evidence on Structural Contingent Subsidies

In a nutshell, we will argue that the Superintendency could not include into its loan classification procedure an independent assessment of the exposure of bank debtors to foreign exchange risk and to the domestic and international interest rate risks, because it would have interfered with official macroeconomic policies. As these risks were high in Chile in 1981, the institutional constraints on bank supervision allowed part of the private sector to draw on the government's deposit guarantee at a subsidized price. The portion of the private sector that was willing to take this contingent subsidy was the set of corporations and individuals that had little true capital to lose if the bet was unsuccesful.

It is well known that by late 1980 there was an important set of individuals and corporations that was heavily indebted. We will define this group as the "optimists". They believed that the fast growth of the last three years could be sustained, so they were willing to invest with borrowed funds. This group covered small and large firms, and also many consumers. We define the oposite position as the "conservatives". It included many firms, of every size up to some large traditional business groups. They had been willing to sell their assets at prices they considered inflated, and some of them had moved funds out of the country.

In 1981 domestic inflation fell and ex-post real interest rates in peso loans rose steeply. Interest rates in local dollar-denominated loans were also large in real terms, but much lower because there was ample supply of foreign funds at LIBOR plus 2-7%. A substantial number of investors and economists thought that the government was going to devalue the peso and abandon the fixed exchange rate in early 1981. This was the response they expected to the rise in international interest rates and the U.S. recession, given the large Chilean external debt.

The natural reaction of "conservatives" was to prepare for a devaluation by reducing their dollar debt and increasing peso debt while reducing expenditure as feasible. In 1981, Chile experienced capital flight for the first time since the Allende period. On the other extreme, the reaction of highly indebted "optimists" was to bet that the government would keep the exchange rate fixed, as promised. In addition, there was a debate about the perspectives of international interest rates[53]. The "optimists" hoped that the high 19% dollar nominal interest rates would fall shortly. This was the only alternative open to them, because accepting peso loans at high interest rates meant bankruptcy for sure. Therefore, "optimists" wished to change their peso debts into dollar debts in order to bet that foreign interest rates would fall shortly and that there would be no devaluation[54].

However, a healthy financial system would have met the optimists' requests for more credit with clear opposition. This is because the

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[53] Some would add a third debate about the value of the US dollar against the yen and deutchmark. A dollar appreciation inflicted losses on Chile because most of its foreign debt was denominated in dollars, while only a third of its exports went to the U.S.

[54] In addition, many investors remembered too well the 1960-1962 Chilean attempt to fix the exchange rate, that had to be abandoned in the middle of a balance of payments crisis in which the government bailed out most dollar debtors.

increase in debt is a bet financed by creditors whose beneficiary is the debtor. The only way a healthy financial system would be willing to lend more is at higher interest rates to compensate for the higher risk. When considering the darkening prospects for the next few years, the optimal policy was probably not to lend more. Note that this was the healthy credit policy without considering that the banks themselves might have incurred in currency or interest rate risk. This is appropiate, because the Central Bank required banks to attain strict matching of foreign curency asset and liabilities.

The government made the mistake of not recognizing that a timely devaluation could help the country to adapt faster to the worsening external scenario, even though stabilization would be sacrificed. A small devaluation in early 1981, for example, would have inflicted losses on dollar debtors and induced a reduction in capital inflows, while reducing the devaluation risk premium included in peso loans. Even more important, such a signal would have finished with the excessively optimistic expectations of growth held by part of the private sector up to 1981 (Barandarián, 1988).

This combination left the Superintendency of Banks, which depends directly of the Minister of Finance, in an impossible position. The Superintendency of Banks was unwilling to consider and unable to include in the loan classification procedure a minus for exposure to foreign exchange risk of the debtor, since the Minister of Finance had promised not to devalue. Therefore, banks were left free to draw on the deposit guarantee by incurring more credit risk, lending to debtors exposed to currency and interest rate risk. The bankers rushed to offer cheaper dollar-denominated loans (financed through new external debt) to their customers, hoping that the contingent subsidy for currency risk would allow them to survive, and absorbing the associated credit risk. Among debtors, the most avid were the less solvent debtors.

The overall situation then is as if the government had extended a foreign exchange risk guarantee to the private sector, through the Superintendency's lack of penalization, in the loan classification criteria, of credit risk due to the foreign exchange risk taken by the debtors. This is not moral hazard, of course. The government simply did not adjust its risk-rated provisioning guidelines, refusing to acknowledge the part of the foreign exchange and interest rate risk that was transformed into credit risk. In practicem this allowed banks not to penalize, through a larger risk premium, loans to debtors that accepted a lot of foreign exchange risk.

Therefore, banks lent at *subsidized* interest rates to debtors that accepted a lot of foreign exchange and interest rate risk, because those rates did not take those credit risks fully into account.

The outcome of this structural contingent subsidy was that many small and medium-sized businesses got deeply into debt in1981. Debts to banks increased in 1981 from 37.6% to 50.4% of GDP, in response to the rise in real interest rates. The counterpart was an increase in the foreign debt, because domestic deposits did not rise rapidly.

We must recall that this contingent subsidy is valuable only for debtors with little capital. It is hard to believe that the private sector had little capital in late 1980, even considering that in 1977 many were near insolvency, because there had been three years of vigorous GDP growth. Experience shows that many debtors had acquired in 1975-77 the less than honest habit of shifting collateral out of the reach of their corporations and societies that were indebted with the banks and subject to limited liability. The banks did not defend the collateral of their loans over 1978-1980 because of five reasons:

First, they had limited capacity and there was a shortage of qualified personnel, i.e. many banks were still incompetent. Second, the practice of collateral shifting was widespread among debtors. Third, the Chilean court system was (and is) so slow that obtaining full redress is a very costly and lengthy process. Fourth, many banks were dominated by business groups that prefered to assign their limited management resources to shift the collateral of their own self-loans out of the reach of their bank. Fifth, in those years they experienced rapid growth, so the drive to place more loans tempered considerably their interest in designing effective collateral contracts.

In this setting, most banks found that their effective capital plummetted as soon as debtors became less willing to pay when the net worth of their corporations fell, and became willing to take the new credit risks derived from exchange rate and interest rate risks, exploiting the government's guarantee on deposits.

In addition, speculators were offered the easy claim on the government that they had believed in official exchange rate policy, so they should be helped if a devaluation did happen. This effect improved further the value of the contingent subsidy to taking exchange risk offered by the government.

Finally, many debtors that were initially honest were caught by the huge rise in domestic interest rates of 1981 and lost most of their equity. Their response was to shift collateral out of the reach of the banks, arguing that they were merely defending themselves from the Finance Minister's policy of allowing domestic interest rates to rise to expropiatory levels. Redistributions of wealth of this size between debtors and creditors were considered by many to be simply illegitimate.

4.3.3 The Cost of Structural Contingent Subsidies

Starting in 1982, unemployment rises steeply, and consumers realize that they must stop spending. The recession deepens and deflation becomes a reality. The number of employed people fell 22% between mid-1981 and December 1982. A substantial proportion (160,000 out of 690,000) left the labor force, and 230,000 were employed by the government in low-wage emergency employment programs.

This becomes relevant by mid-1982, when the fall in GDP is so steep that a depression is obvious. The government realized that the required real depreciation to undo the previous appreciation would take several years at current deflation rates. In June 1982 it finally decided to devalue. Initially, the devaluation was 14%, but in July the peso was left to float freely, and it doubled in nominal terms in a few months. By the end of 1982, the losses that the devaluations inflicted on the holders of dollar-denominated debts had spread out insolvency across all firm sizes. Capital flight was rife, as the Central Bank scrambled to reestablish the foreign exchange controls it had been lifting in the last few years. Debtors attempted to shift their dollar debts to pesos, managing to reduce by 13,4% their aggregate dollar exposure in the domestic banking system during 1982.

Of course, the sorry state of most debtors meant that banks were having trouble to recover their loans. Delinquent loans rose from 2.34% of loans in December 1981 to 3.83% in February 1982, and 6.31% in May. Most delinquent loans turned out to be 100% losses, so they reduced the net worth of banks. Moreover, a correct estimation of net worth should substract from capital the "Loans at Risk", estimated from the loan classification procedure. However, loan loss provisions should be added to net worth. The following table shows the impact of the recession and contingent subsidies to speculation on the solvency of the banking system.

TABLE11
DELINQUENT LOANS AND BANK CAPITAL, 1982
(Billions of Chilean pesos)

Month	Delinquent Loans	Loans Sold to C. Bank	Capital & Reserves	Loan Loss Provision	Net Worth(1)
Dec 1981	16.831	-	76.685	5.206	65.060
Jan 1982	21.627	-	76.685	13.359	68.698
Feb	27.164	-	77.484	14.456	64.776
Mar	31.232	-	80.256	15.294	64.318
Apr	41.631	-	81.993	15.294	55.621
May	42.963	-	82.760	16.565	56.362
Jun	45.537	-	89.692	21.000	65.155
July	45.837	8.800	89.559	18.969	53.891
Aug	41.816	23.895	89.626	22.330	46.245
Sep	45.984	28.500	91.405	21.920	38.841
Oct	49.643	33.860	95.800	26.654	38.951
Nov	45.625	40.930	96.854	27.153	37.452
Dec 1982	41.118	41.607	105.035	34.737	57.047

Source: Información Financiera SBIF, several issues.
Note (1): Net Worth is calculated from the other columns as Capital plus Provisions minus Delinquent Loans minus Loans Sold to the Central Bank. This estimate of net worth is not precise because it should also substract the loans at risk estimated by loan classification, and should add the recoverable portion of delinquent loans and the economic value of intangible assets. For June 1982, the Loans at Risk were estimated by the Superintendency to be 6.03% of loans (Acevedo, 1983), i.e some B$ 44.288, which puts effective net worth at B$ 20.866 for that date.

This table documents the dramatic reduction in the solvency of the banking system in 1982. In July 12, 1982, the Central Bank decided to allow banks to defer their losses over several years, so it began to buy from them the delinquent loan portfolio and loans classified worst in the risk scale, at face value. The banks, however, had to promise repurchase of those loans at face value over time, so the scheme did not improve bank solvency by itself. Banks accepted to commit 100% of their profits to this purpose until the portfolio was bought back. The scheme solved a liquidity problem, but also set the stage for making good the implicit contingent subsidy that the government had offered to speculators in 1981.

Naturally, in this environment the problem of rollover of unrealized loan losses presented itself again. The bank debtors that had speculated insisted on obtaining a rescheduling or at least a rollover. Contrary to the

situation in 1975, however, now the Superintendency had the powers and the machinery in place to classify loans and question loan renewals. Nevertheless, the authorities confronted steep difficulties to stop undiscriminated rollover of unrealized losses. As insolvency was widespread, many thousands of debtors hoped that the government would announce a massive bailout package. In the meanwhile, they pressed for rollover, and the banks accepted willingly.

The reaction of the authorities to rollover was the "Process of Definition of Bank Debtor Solvency" of November 1982. Hordes of inspectors and many persons of the operating staff of the banks revised the banks' evaluations of recovery of their debtors, and many debtors had to prepare a presentation to their banks to show that they were still solvent or that they deserved a rescheduling. The explicit purpose of the exercise was to stop rollover of unrealized loan losses, which had become a public issue because it was squeezing out the wrong debtors and worsening the problem.

The publicly announced outcome of the evaluation process was the following: a volume of BCh.$ 110,688 of debts were due by "non-viable" debtors, so their guarantees would be seized and the banks would have to request their bankruptcy[55]. In addition, the volume of debt issued by debtors defined to be "In Problems" only was BCh.$ 315,107, and they were chosen to get the sought-after rescheduling.

The banks, however, dragged their feet both on guarantee execution and rescheduling, forcing the authorities to think of alternative mechanisms. They will be reviewed in the next section.

4.4 Self-lending by Business Groups in Chile.

We defined the complicating factor posed by self-lending in section 3. The Chilean response to this problem has been, starting in August 1981, to limit drastically the volume of allowed self-lending by business groups. This strategy imposes some costs in terms of resource allocation under perfect information, namely puts a ceiling on business group indebtedness in the local banking system and forces banks to be independent entities. However, the approach avoids the large costs that moral hazard can impose

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[55] In response, many debtors rushed to accelerate the shifting of collateral out of the debtor corporation.

in the presence of substantial asymmetric information. Until 1981, self-lending by business groups without limit was a widespread reality in Chile.

It is well known that business groups in some countries of the Far East, notably South Korea and Japan, are not subject to this type of limit. In compensation, however, the large business groups in South Korea are closely supervised by the government, not only from a prudential point of view, but also in their investment plans, labor policy and other operational aspects as well. Japanese business groups were closely monitored by the government in the 1950's and 1960's (Johnson,1982). in the 1980's they have grown to be so solvent that moral hazard is a small regulatory concern now. In this sense, the Far East countries have not followed the strategy of allowing free self-lending by business groups either.

4.4.1 Origin of Chile's large business groups.

As a more or less market-oriented economy, Chile has always exhibited a number of important diversified conglomerates, most of whom included a bank and fall into our definition of a business groups. Most Chilean conglomerates included a bank because during the financial repression of 1940-1973, the ownership of a bank or savings & loan secured access to scarce loans at the interest rates below inflation fixed by the authorities.

However, there was an unprecedented growth in the size of business groups in Chile during the 1976-1981 period. At the time, critics argued that this was the inevitable result of the shift towards free-market policies, and insisted that industrial concentration was becoming too high and that the business groups would hijack the political process[56].

Now it is clear that these prejudices were unfounded. The business groups grew unexpectedly fast in Chile in the 1976-1981 period because of three specific government policies, not because of the general free-market approach. These were, first, the decision to privatize banks before privatizing the industrial firms expropiated by Allende. This policy allowed relatively small business groups to acquire a bank[57]. The business groups were thus given access to the public's deposits, which were lent to

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[56] See Hoy № 145, May 1980, which denounces the "Cruzat-Larraín Empire", and Dahse(1979).

[57] Bids were required to offer a 20% down payment, plus quarterly installments over the next two years at CPI variation plus 8% annual interest rate, below market rates. These financial conditions, however, merely allowed the government to claim that a higher price had been paid.

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the group itself and used to buy the industrial firms privatized by the government between 1976 and 1978.

Given the previous policy, the second specific government policy that eased the way for business groups was to privatize both banks and industrial firms through auctions to the highest bidder. There was no government effort to introduce any type of popular capitalism, which would have meant diluting ownership across tens of thousands of investors. Given the recession of 1975, the large real interest rates of available bank loans, and the complete absence of large foreign investors from post-Allende Chile, meant that the only competitive bidders were a few local business groups. The same was done when selling industrial companies taken over by Allende.

However, what really gave these business groups their clout were the large profits they made in the 1977-1980 period. A substantial part of these profits were made arbitraging between the high domestic interest rate and the low foreign interest rate. This type of arbitrage was possible, in part, because the government maintained in place until 1980 the old set of regulations on international private capital mobility. The other part is the natural advantage of any large firm that can access the wholesalers of funds directly, i.e. the possibility of paying lower interest rates for a larger volume of loans, as emphasized by Ramos (1988).

As the government decided not to use the government's or the state enterprises' external borrowing capacity to bring funds to Chile and earn arbitrage profits, competition was slight. Only a few big industrial companies and banks, dominated by new business groups, had access to private foreign lending, and this subject to individual quotas strictly enforced by the Central Bank. Given the high -but falling- local interest rate, the few business groups that had access to foreign loans could enjoy a large arbitrage rent in 1977-1980.

In addition, the business groups were able to grow with the economy. This growth was independent of government policy. A substantial chunk of the business groups' equity were capital gains in property and share values. These capital gains were impulsed in part by the reduction of real interest rates over time, but mostly by the expectations of permanent high growth that became believable as the economy improved over the period, and by the new business groups' acquisitive habits that raised market prices.

In addition, two of these business groups were very successful in obtaining the goodwill of smaller investors. This allowed them to obtain control of several large loosely held corporations through the purchase of a relatively small share block. In this way, groups Vial and Cruzat-Larraín became partners of thousands of smaller local investors and rentiers in Banco de Chile, Cervecerías Unidas and COPEC, among other companies. This was not the result of government policy, but merely the reflection of these two groups' exceptional appeal among rentiers. The possible conflicts of interest between small and controlling shareholders began to be regulated in 1981's reform to the Securities Law.

The Chilean business groups enjoyed exceptional growth over the period because of two additional reasons. First, the strong performance of the economy in 1977-1980 generated substantial operating profits in most sectors of the economy. Second, the large business groups took advantage of the opportunities opened by the reduction of tariff rates enforced by the government in 1976-1979. They moved rapidly to invest in the newly profitable export sectors, and prepared to exploit fully the advantages of serving large foreign markets afforded by their size. It is clear that these possibilities were open to many Chilean and foreign investors, and not only to local business groups. In fact, many traditional business groups, medium-sized new groups and small investors made large profits in this period precisely because of these reasons.

What we know about the business group's solvency by the end of 1980 is not very precise. However, we do know that the consolidated indebtedness of the two largest business groups was high, with a most likely debt/equity ratio between two and three[58]. A confirming point is that, at the time, the managers of the largest business groups used to argue that high indebtedness was necessary to sustain high growth in developing countries. For the largest group, which controlled assets near US$ 2 billion in 1981, it has been asserted independently that its controllers' equity was near US$300 million. If non-controlling shareholders' equity was a similar sum, which seems likely, the solvency of the group would have been in the range indicated above.

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[58] This is equivalent to an Equity/Assets ratio between 0.33 and 0.25. The main holding companies of the two big groups had an Equity/Assets ratio near 0.50, and the largest subsidiaries had a similar ratio. In a straight two-level hierarchical structure the consolidated ratio is the product of both, i.e. near 0.25.

These were high levels of debt because the domestic component was short term (i.e. expected to be renewed at the interest rate that would prevail in the short term market) while the foreign portion was on a floating rate basis. This means that Chile's two largest business groups were very exposed to interest rate risk. A rise in interest rates would reduce the value of their fixed assets while keeping the value of their debt. The riskiness of this exposure was not well understood at the time even within the business groups. In group Vial, consolidated accounts began to be calculated for the first time in 1981. Incompetence of private bankers extended to the business groups themselves. This was the natural result of very fast growth and the rapidity of the shift towards free-market policies in 1975-1980, which made obsolete many of the old habits of local businessmen and created an acute shortage of qualified personnel.

4.4.2 Self-loans versus Loans to independent parties.

This section attempts to compare self-loans of banks with loans to independent borrowers in order to establish some kind of preferential access of business groups to bank borrowing. It is well known that independent borrowers were able to obtain large loans during financial deepening. Arellano (1983) shows that the ratio of debt to the domestic banking system to sectoral GDP rose rapidly over 1977-1980 for most sectors. It is telling that growth was faster for the sectors known to be dominated by small and medium-sized businesses.

TABLE 12
LOCAL BANK DEBT/GDP AND DEBT/EQUITY RATIOS BY SECTOR

Sector	Debt/GDP ratio 1977	1980	Δ(% points)	Debt/Equity ratio 1980
1. Dominated by Small Firms				
Agriculture	20.1	65.6	45.5	
Building	8.0	64.3	56.3	
Transport	4.2	28.8	24.6	
2. Dominated by Large Firms				
Industry	20.8	42.5	21.7	
Mining	1.5	10.0	8.5	
Commerce	25.5	50.6	25.1	

Source: Arellano (1983), Table 9C. Last column based on the sectoral Capital/GDP ratios calculated by Coeumans (1988) and the second column.

In fact, the dollar-denominated debt to the local banking industry of the building sector, which is dominated by medium-sized firms, grew by 284% in 1981, and agriculture's grew 48% while the peso-denominated debt rose 13% and fell 9% respectively[59]. There is ample evidence that even humble consumers speculated by buying imported consumer durables.

It is also important to compare the financial policy of the large business groups up to 1980 to the financial policy of smaller debtors and investors. It turns out that large business groups split on this point, just as smaller investors did. The two largest business groups, Vial and Cruzat-Larraín, were optimistic about the future and very indebted. Groups Matte and Angelini, on the other hand, chose a slower growth/lower risk strategy. In fact, many analysts have concluded that the two largest groups were the largest precisely because they were willing to incur high debt/equity ratios. For this reason, we will call these two groups the "speculative" business groups.

Our conclusion is that until 1980 the two largest Chilean business groups were more indebted than the average of other businesses, but that this was also true for a substantial number of smaller investors. As all optimists were able to incur a high debt/equity ratio, independent of their size, we conclude that the informational advantages of a business group over the Superintendency of Banks was not an important factor up to 1980. This is not true for the cases of fraud, mentioned below in the analysis of the November 1981 takeovers by the Superintendency.

4.4.3 Monitoring of Business Group Self-loans.

As shown in the theoretical section, self-lending by business groups may become a problem mostly because the risk of such loans is much harder to evaluate for the Superintendency of Banks than of ordinary loans. Therefore, in order to propose that self-lending by business groups was important in Chile in 1981 and 1982, we must first document the extra difficulties encountered by the Superintendency because of self-lending.

The evidence on the difficulties encountered by the Superintendency of Banks to evaluate the risk of self-loans begins to accumulate in 1980. Recall that in April of 1980 Price Waterhouse revealed the lack of information at Banco Español on 37% of the loan portfolio. The Superintendency was shocked, and supported Price Waterhouse in its June 1980 statement. It was known later that the Superintendency found that

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59 See Arellano(1983), Tables 9A and 9B.

many of the loans for which information did not exist were self-loans to the banks' owners. During that year the Superintendency thought that the main problem with self-loans was that fraud became harder to detect. It was worried that some banks had been subject to fraud through self-loans, but this problem was thought to affect only a small portion of the banking system.

By early 1981, there was growing animosity against business groups within the military government. Their power and influence were feared by the military, and suspicion reached its climax when they found out that the largest business groups would dominate the newly created pension fund management industry. The political opposition had been in campaign against the power of business groups since mid-1980. In this setting, the Superintendency of Banks began to attempt the construction of a map of the holding companies of all important business groups in Chile. On the other hand, in March 1981 the Superintendency of Securities forced public companies to reveal all their dealings with affiliated companies.

In August 19, 1981, the Superintendency surprised business groups as it obtained the approval of a reform to the Banking Law that changed the approach towards self-lending. The new law stated that:

> "....it will be understood that a bank is managed in a defficient way if it has not diversified its loans away from persons and societies linked to the bank through ownership or management, directly or indirectly."

The new law gave new powers to the Superintendent, like the power to ban the extension or renewal of specific loans, and the power to prevent the bank from lifting guarantees in the case of self-loans. The new law informed business groups that self-lending could be stopped by the Superintendency at any moment. Of course, these powers were excessive because bankers had no way to appeal to a court, but they represented the first response to the need to deal with self-loans.

In addition, the reform introduced a diversification requirement on bank investments, by which a bank could not invest more than 30% of its capital in the securities of each issuing society. Finally, the law forbade banks from owning shares in other companies, except as a result of underwriting, and shares ceased to be acceptable guarantees.

A month later, the Superintendency established specific guidelines to define self-loans[60], which also limited drastically the maximum volume of self-loans by business groups that would be allowed. If the limit was not met, the Superintendency would declare the bank in a state of "defficient management". The Superintendency proceeded tightening the diversification requirement on loans, by redefining what an individual debtor was. This approach has confused some analysts, because the Superintendency seemed to be worried about diversification.

Before the new law, an individual debtor was a society or person. After the reform, an individual debtor included all the societies where the debtor had more than 50% of ownership or control, plus the prorated share of debts of societies where the debtor owned or controlled between 50% and 10%. Considering that a bank would be able to lend at most 25% of its capital to any one debtor, and that at the time self-loans were between 2 and 5 times capital for the largest business groups, this implied a drastic cut in the volume of allowed self-loans to business groups.

An critical defect of this package of reforms was that it did not provide for a period of adjustment of business groups to the limitation on self-lending. This was obviously necessary, because there was a large stock of self loans to unwind and everybody perceived that a world recession was coming in a context where Chile had a large external debt.

The reaction of the largest business groups to the new limitations was to evade them. First, they recognized that a participation of less than 10% in a society made it eligible for loans. Therefore, they increased the density of the network of shell companies, in order to keep the direct participation of the group in shell companies at 9,9%. In second place, the business groups adopted the tactic of continuous creation and dissolution of shell companies, which increased the difficulty of the Superintendency's task.

A third reaction of business groups was to link up and replace self loans for new loans to another business group, in exchange for the same treatment by the ther business group's bank[61]. Although this was criticized at the time, it was inevitable given the size of the self-loans. More deeply, the process began to allow the Superintendecy to rely on independent risk evaluations. However, the episode also exposed the problem of collusion among business groups. This is an interesting example of the impact on the

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[60] Circular № 1753, September 14, 1981.

[61] See Tagle (1988).

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monopolization of Chilean industry of the growth of just a few very large business groups.

A fourth reaction was to take advantage of the recent authorization to Chilean banks to lend abroad. The way to do it was for the Chilean bank to lend to a foreign person, such as a Cayman Islands society, which would bring the money back to Chile, and lend it to the other firms in the business group.

A fifth method of evasion was to use the authorization to establish bank subsidiaries abroad. Banco de Chile and Banco BHC (both of group Vial) were the only ones to use this route. They established subsidiaries in Panama, Uruguay and New York. The panamanian subsidiary drew its funds from BHC's loans, and then lent directly to the other firms in the business group. The uruguayan subsidiary got loans from Banco de Chile and then lent to the Chilean firms in the group. Of course, this subsidiary engaged in moral hazard against the uruguayan government too.

Tagle (1988) acknowledged that the difficulties in supervision ran deep. For example, he states that even one year after self-lending by the largest Chilean business groups had stopped, the Superintendency continued finding that loans that it thought had been given to independent parties were in fact self-loans. This led to a 10% real increase in the estimated volume of self-loans in 1983.

This documents how difficult it was for Chilean bank regulators to overcome the informational assymmetry in the case of self-loans by business groups.

4.4.4 Motives for abuse of the informational advantage.

This section will review possible motives of the large business groups to engage in moral hazard or rollover of unrealized losses. The difficulties for supervision described above can be interpreted in two ways. The most popular is that the business groups attempted to evade prudential regulation to engage in moral hazard and rollover of unrealized losses. An alternative is that the business groups were forced to find a way to obtain the time required to reduce the stock of self-loans without having to pay excessive prices to the new creditors or to accept low prices when selling assets.

In this second interpretation, the practices documented above would have been induced by the Superintendency's failure to provide a reasonable timetable for disengagement. The need for such a timetable is clear from the fact that in June 1982 the Superintendency created a two-year timetable, which was extended in 1984 for six more years in acknowledment of the fact that the 1982-1983 recession was much deeper than anticipated[62]. In addition, some business groups had investment programmes in progress during 1981, which could not be stopped rapidly without raising losses further.

It is critical to separate the analysis of 1981 from 1982, because in the latter year the steep recession -GDP fell 14.1%- reduced the solvency of most Chilean firms, including business groups. For example, a finding that the debt/equity ratio of business groups was too large in December 1982 cannot be considered good evidence of moral hazard, because the recession could have wiped out the group's equity exogenously. Therefore, the evidence that would allow us to choose from these alternative hypothesis is a risk evaluation of self-loans versus ordinary loans, for 1981. However, the Superintendency has never published such information because its judgement on the speculative business groups's solvency could be challenged as biased in court and in the political process, given subsequent events.

An alternative way to proceed is to review if the speculative Chilean business groups had a good motive to engage in moral hazard, and in rollover of unrealized losses in 1981.

First, we check the feasibility of moral hazard. During 1981, overall local indebtedness increased substantially in the Chilean private sector, from 37.6% to 50.4% of GDP, as a counterpart of the accumulation of foreign debt. If we keep equity constant, this rate of growth of debt implies increases in debt/equity ratios from 2 to 2.7 or from 3 to 4. In 1981 there was also a steep rise in real interest rates that reduced equity substantially. The share price index in the Santiago Stock Exchange fell 27% in real terms during 1981. Assuming a conservative 15% reduction in asset values, we get that market-value debt/equity ratios rise from 2.7 to 6, and from 4 to16. Clearly, after suffering these losses moral hazard can become a dominant motive of behavior, given the informational advantage they enjoyed.

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[62] See Tagle (1988) p. XV.

The evidence shows that the business groups took advantage of their informational advantage over bank regulators in order to be able to draw implicit government subsidies for speculating against a future devaluation, as other speculators did. Their informational advantage made the new guidelines on self-loans non-binding during 1981.

However, it is misleading to assert that self-lending was the dominant factor behind the excessive foreign debt accumulation experienced by Chile in 1981. Self-lending by the speculative business groups merely allowed them, first, to avoid inmediate unwinding of self-loans, and second, to draw on the government's contingent subsidy on foreign exchange and interest rate taking. They used self-loans to draw on the contingent foreign exchange and interest rate risk subsidy offered without barriers to other speculators.

We conclude that speculative business groups did not engage in moral hazard, because they didn't need to. ¿ Why engage in moral hazard if a contingent subsidy is available ? Recall that moral hazard implies drawing a contingent subsidy that the issuer did not want to issue.

If the speculative business groups had used their waning informational advantage to avoid an hypothetical guideline that forced provisioning in account of foreign exchange risk and interest rate risk, then they would have engaged in moral hazard. If the Superintendency had controlled for these risks properly, the speculative business groups would have been tempted into moral hazard, but this was not the case in Chile in 1981.

Now we check the feasibility of rollover of unrealized losses by abuse of the informational advantage implicit in self-loans. The question is the following: given that losses were large both for small entrepreneurs and for big business groups, did the latter obtain special treatment by taking advantage of their informational advantage over the Superintendency ? The following table shows the initial level of self-loans and their evolution.

TABLE 13
SELF-LOANS AND ROLLOVER OF UNREALIZED LOSSES BY BUSINESS GROUPS

Business Group	Financial Institution	Self-Loans as % of Total Loans June 1982	December 1982	February 1983
Cruzat-Larraín	B. de Santiago	44.1	42.3	45.8
	B. Colocadora	23.4	23.8	24.4
	BHIF	28.2	18.5	18.9
Yiai-BHC	B. de Chile	16.1	18.6	19.7
	BHC	17.1	18.5	n.a.
	Morgan-Finansa	7.2	n.a.	6.8
Yarur	B.Crédito e Inv.	8.6	11.9	12.0
Errázuriz	B.Nacional	29.1	25.7	30.1
Edwards	B. de A.Edwards	15.9	14.9	15.4
Matte	BICE	4.0	4.0	5.5
Concepción	B.Concepción	17.0	12.2	12.0
Sudamericano	B.Sudamericano	13.0	14.8	16.2
Internacional	B.Internacional	20.1	16.9	25.9

Source: Información Financiera, December 1982, February 1983, July 1988.

This Table shows that self-loans were very high at the initial stage, but they also show that they did not rise substantialy in the second half of 1982. This means that the Superintendency succeeded in preventing business groups from using their informational advantage to roll over their unrealized losses in a preferential way. The reason is that the Superintendency had, by this time, attained the ability to estimate the consolidated solvency of business groups. The rollover of losses by business groups during 1981 and the first half of 1982 is a fact too. We believe that, although it happened together with generalized rollover by all types of investors, it was more available to the groups' companies. In other words, we believe that the share of self-loans in banks in early 1981 was smaller than the one documented above for June 1982.

We review now other regulatory problems related to the informational advantage of business groups, in other segments of the financial system. In 1982, the Cruzat-Larraín business group began to use its control of the mutual fund industry to channel the funds it obtained from thousands[63] of small investors to lend to the groups companies and holdings. The shareholders were kept happy by the large increases in the

[63] In December 1982 there were 131,017 shareholders at mutual funds.

prices of several securities held by the mutual funds. It was soon found out, however, that the group was manipulating the price of those securities, issued by the same group's firms. In addition, many of the mutual funds publicized their 1982 shift to fixed income securities, stressing the reduced risk, but shareholders failed to realize that these securities were mostly commercial paper issued by the group's largest companies, including some holding companies.

The larger firms of the group financed the rollover of unrealized losses through the sale of commercial paper to medium-sized[64] investors and to mutual funds. This raised real interest rates in commercial paper to very high levels by late 1982. The critical problem was that investors didn't have access to any estimate of the consolidated balance sheet of the main business groups, so they were unable to rely on a serious risk evaluation. Smaller investors and companies were unable to rely on this type of rollover of losses.

Unfortunately, the speculative business groups succeeded in fooling the public in the security markets, by drawing on the confidence the public had developed in well known company names. This happened even though the 1981 reforms to the Securities Law and the Joint-Stock Companies Law had severely restricted the scope for those practices. For example, the timely disclosure of relevant information was required of high company executives, and the Superintendency of Securities made sure that compliance was the rule. However, this Superintendency failed miserably in making sure that investors had access to the relevant information, because it never required business groups to publish their consolidated balance sheet.

4.4.5 The outcome: Takeover by the Superintendency of Banks.

We finish this section on self-lending by business groups by documenting the end of the two speculative business groups. In June 1982, using the new powers obtained in 1981, the Superintendency announced a new limit on self-loans to 5% of total loans, i.e. to 100% of capital and reserves. All banks were forced to present "Diversification Plans" within 45 days. The target would have to be met in five semesters, with the first 20% due by December 1982. Two weeks later, the target was changed to a

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[64] The minimum denomination for commercial paper had been set in 1977 in 350 UF.

complete ban of self-loans to shell companies, and the limit to self loans to productive companies was reduced to 2,5% of total loans.

Apparently, the reason for this tightening was to strengthen the Superintendency in the negotiations it had opened with Vial's business group. The authorities wanted the payment of some of the debts owed to Banco de Chile with shares in the group's productive[65] firms. However, Vial did not fulfill his commitments and refused to handle over control of Banco de Chile, opening a period of several months of hard bargaining. Nevertheless, Vial had lost effective control. The devaluation of the peso in this period made sure that his group was bankrupt.

Recall now that after the November 1982 Process of Solvency Definition, the authorities found that banks were unwilling to reschedule selectively on the basis of a case-by-case analysis of debtors, and prefered to roll over all loans. This put pressure on the authorities to stop rollover of losses.

In January 7, 1983, a large paper-pulp firm of the Cruzat-Larraín group announced it could not continue servicing its debts. The group had been unable to survive the recession on its own, and the only question left was if the authorities considered the group to be "non-viable" or "in problems". In the second case it would have deserved a rescheduling according to the November 1982 rules.

The authorities answer came in January 13, 1983, when the Superintendency took over the flagship banks of both speculative groups, and declared the forced liquidation of another three banks. The Finance Minister argued that the solvency of all banks had been reviewed with the risk classification procedure of the Superintendency, including the results of the Process of Solvency Definition of November 1982. They had found that banks clustered in three groups:

First, banks whose estimated losses were less than 100% of capital and provisions, so still had a positive net worth. Second, banks that had losses between 100% and 200% of capital and provisions. These banks were taken over because they had negative net worth, and included five banks: Banco de Chile (Vial), Banco de Santiago (Cruzat-Larraín), Banco Colocadora Nacional de Valores (Cruzat-Larraín), Banco de Concepción, and Banco Internacional (two other smaller business groups). Third, the

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[65] Means non-holding company.

institutions whose estimated losses were above 200% of capital and provisions were liquidated. These banks were Banco Hipotecario BHC (Vial), Banco Unido de Fomento (owned by a consortium of foreign banks) and financiera Ciga.

Of course, the estimate of solvency of these banks included an assessment of the solvency of the speculative groups. For example, Banco de Santiago's solvency depended of the estimated recovery of the amazing 45% of loans it had placed with its own business group.

At this point, a different element entered the analysis: the authorities had become convinced that the existence of business groups, where banks and productive firms were managed jointly, was one of the important sources of the excess debt burden in the Chilean private sector (see Lüders, 1985). This judgement was shared by other students of the situation (Díaz-Alejandro, 1985, p.13). The analysis of this paper has shown that this was not exactly the case, because a substantial part of the excess debt burden was caused by the implicit goverment subsidy to foreign exchange and interest rate risk taking during 1981. We agree however, with the diagnosis that the informational advantage of business groups allowed them to roll over their losses to a larger degree than smaller debtors, which caused a part of the excess debt burden.

This was the analysis that led the authorities to complement the takeover of the speculative business groups' flagship banks (de Chile and de Santiago) with a planned acquisition of control of the large companies that had been controlled by these business groups. In practice, this control was achieved by a refusal to renew the thirty-day peso loans that these firms owed to their previously affiliated banks. This forced these industrial companies into bankruptcy proceedings, and the creditors' commitees came to be dominated by the representatives of the flagship banks. In this way, the goverment took over the two speculative business groups, achieving an unexpected nationalization. The result for the banking system's balance sheet was the following:

TABLE 14
DELINQUENT LOANS AND BANK CAPITAL, 1983
(Billions of Chilean pesos)

Month	Delinquent Loans	Loans Sold to C.Bank	Capital &Reserves	Loan Loss Provision	Net Worth
Dec 1982	41.118	41.607	105.035	34.737	57.047
Jan 1983	47.704	37.535	102.941	35.753	53.455
Feb	86.650	37.514	103.105	47.201	26.452
Mar	103.667	37.548	103.105	48.934	10.824
Apr	110.592	38.524	103.115	50.480	4.479
May	116.889	38.480	103.254	53.549	1.434
Jun	126.867	36.915	104.277	55.367	-4.138
Jul	132.781	41.662	104.793	55.394	-14.256
Aug	109.144	71.343	105.869	52.512	-22.106
Sep	108.399	85.434	106.993	56.465	-30.375
Oct	90.024	112.095	107.462	55.465	-38.697
Nov	88.724	117.695	108.289	57.528	-40.602
Dec 1983	92.190	109.675	127.714	61.963	-12.188

Source: Información Financiera SBIF, several issues.

Some business groups have argued that they should have been treated as smaller debtors "with problems" were, receiving a long term rescheduling financed with the concurrent subsidy. They tend to forget the large losses suffered by investors in the commercial paper issued by their firms, and the abuse of the confidence put on them by the mutual fund shareholders. They also forget that depositors at BHC and the other liquidated banks lost 30% of their funds. Furthermore, they forget that by excessive rollover of losses in 1981 and the first half of 1982 they contributed to a rising real interest rate and the squeezing out of more credit worthy independent debtors. Finally, they forget the losses inflicted on minority shareholders in several large companies they controlled. Summing up, they forget that in order to claim subsidies from the political system one must not have committed abuses against other citizens.

In late 1982 and during 1983 the Chilean authorities had the information, the will and the power to stop rollover of unrealized losses and moral hazard. Moreover, the speculative business groups proved to be no match for the Superintendency of Banks and the authorities.

5. Lessons for Financial Liberalization and Prudential Supervision

The Chilean experience offers important lessons for both financial liberalization and bank regulation. We can divide them among two groups:

5.1 A Program for Research

Among the most important points that require further exploration in the area of financial liberalization and prudential regulation are the following:

First, the dynamics of financial liberalizations are virtually unknown. We suggest the importance of asymmetric portfolio adjustment costs, and of the costs of market development, in which we include learning by doing. The issue of coordination between the different reforms that conform a financial liberalization package is important also.

Second, in the 1970's financial liberalization was confused with attaining free banking. The discussion on the feasibility of attaining practical forms of bankruptcy, adapted to modern banks, that distribute the losses among creditors is wide open. ~~While~~ Until this issue is unsettled, a real world financial liberalization should assume that the goal is a banking system subject to prudential regulation.

Third, experience shows that prudential regulatory issues are much more complex and varied than what the literature would suggest. We propose a framework for analysis that stresses the difference between structural contingent subsidies, moral hazard and rollover of unrealized losses. The complicating factors of incompetence of (some or many) private bankers and self-lending by business groups deserve special study, especially for applications to financial liberalizations.

5.2 The specifics of the Chilean experience.

This paper also contains the most detailed presentation of the Chilean experience known to us. This allows an assessment of banking policy over the different episodes and across different regulatory issues. We find that the main culprits of the 1981-1983 bankruptcy of most of the Chilean financial system were the following:

First, the steepness and depth of the depression of 1982 and 1983, which by itself forced many debtors into insolvency, bringing down with them the banks. A GDP reduction of 14.1% in 1982, followed by another reduction of 0.7% in 1983 was obviously unexpected. Moreover, the rise in international real interest rates from 1.5% in 1980 to 10.7% in 1981, to remain high thereafter, were also critical to force into bankruptcy many Chilean firms. Other exogenous macroeconomic factors were influential too, like the fall in the terms of trade, and the overlending by international banks in 1979-81.

Second, there were important banking policy errors over the period. The most important was the inconsistent claim by the dominant economic authorities ~~on the concept~~ that free banking was viable in Chile, even after the failure of Banco Osorno, IFICOOP, SODIMAC, Credival and Creditec in 1977. This delayed for three years the introduction of loan classification schemes, with the associated delay in learning to manage a modern banking system. They only ceded control of banking policy after the Banco Español fiasco of 1980. Another policy error was not due to banking policy, but to the combination of a structural limitation caused by the dependency of the Superintendency of Banks from the Finance Minister, with a misguided macroeconomic adjustment policy in 1981 up to mid 1982. This policy was misguided because it relied exclusively on higher real interest rates to reduce expenditure, ignoring that excessively high real interest rates lead to rollover of unrealized losses and a critical increase in bank debtors' willingness to shift collateral out of the reach of creditors.

On the other hand, our detailed analysis shows that several purpoted regulatory problems in Chile 1974-1982 are mythical. The main one, a ponzi game through rollover of unrealized loan losses, was not present in 1978-1980, as many have asserted. It became very important in 1981 and 1982, though, because of the other problems listed above. In the same way, moral hazard by banks was simply not there in 1978-1981.

The case of self-loans by business groups is more complex. This is certainly a pernicious practice, but for different reasons from the ones usually proposed. The main business groups followed a financial policy similar to many smaller groups and individual investors', and went bust together with many of them. After mid 1982, business groups were seriously hemmed in by the bank regulatory authorities, who were able to take over them easily in early 1983. Nevertheless, the two largest business groups were able to use their informational advantage over regulators between mid 1981 and mid 1982 to postpone the unwinding

requirements on self-loans imposed by an August 1981 law. They also used it to roll over their self-loans more freely than independent debtors,worsening the real interest rate rise of 1981 and squeezing out more creditworthy independent debtors. Finally, the business groups used their informational advantage to dupe small investors in the security markest in the second half of 1982, forcing losses into many of them.

We believe that even if the regulatory problems had not existed in 1981, many Chilean banks would have failed in 1982-83. This assumes that the recession and the macroeconomic policy errors of the time and institutional constraints on bank regulation are kept constant. We know that some of the steepness of the recession was due to the problems in the banking system, so a solution by 1980 to the bank regulatory problems would have had a positive feedback effect. Nevertheless, as the authorities at least had the sens[illegible]ot allowing any Chilean bank to stop operations or close its doors during the period, we suspect that this particular feedback effect was not very substantial in the Chilean case.

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THE CAUSES OF TEXAS BANK AND THRIFT FAILURES

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During the 1950's, '60's, and '70's, bank failures were relatively rare events in the U.S. The greatest number in any of these years was 16 in 1976, and the average number of failures per year was 5. What bank failures did occur tended to be geographically concentrated in those states with large numbers of small banks.

There were virtually no failures of large banks during the 1950's and '60's, though a few large banks did fail during the 1970's. Each of the large bank failures was viewed as an aberration, though I suggested in 1975 that we were likely to face such failures on a regular basis in the future (Horvitz, 1975).

A similar story could be told about failures of thrift institutions, though the thrift industry did suffer significantly from the first interest rate crunch in 1966, and in subsequent periods of high interest rates, such as 1974 and 1979. To protect the thrift institutions from commercial bank competition during such periods, governmentally set ceilings on deposit interest rates were made binding on commercial banks and imposed on thrift institutions in 1966.

For both commercial banks and thrifts, however, the 1980's have been an entirely different story. Bank and thrift failures have become much more common, and have included the largest institutions in the industry. American Savings (FCA), at one time the largest savings and loan in the country, failed in 1988, while Continental Illinois National Bank, the 9th largest

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commercial bank in the country, failed in 1984.[1] Other money center banks, such as Bank of America and Manufacturers Hanover underwent severe pressure during the 1980's, but did not fail.

A number of mostly macroeconomic explanations have been given for the increased financial failures in recent years. These include the increased volatility and record high levels of interest rates following the change in Federal Reserve operating procedures in 1979, the inflation the followed the first oil crunch in 1973 and the ultimate deflation in the early 1980's, the decline in bank capital ratios, a decline in the value of the bank charter due to increased competition. Some writers trace the problem to changes in regulation—elimination of deposit rate ceilings, broader powers for thrifts, increased deposit insurance coverage. A sizable literature has developed which analyzes the thrift problem, including useful books by Carron (1982), Brumbaugh (1988), and Kane (1989). Book-length treatments of the failure of Penn Square National Bank by Singer (1985) and by Zweig (1985), and of the problems of Bank of America by Hector (1988), have made useful contributions

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[1]It turns out that "failure" is a rather difficult term to define precisely. Most banks that "fail" in an economic sense do not simply close their doors and disappear—they are often merged into a healthy institution, or recapitalized or sold to a new owner with financial assistance from the federal deposit insurer (FDIC or FSLIC), sometimes without being put into receivership. It should be noted that banks are not subject to the usual bankruptcy laws (see Tim Campbell and David Glenn, "Deposit Insurance in a Deregulated Environment," Journal of Finance, July 1984). I will count as "failures" all those institutions that are put into receivership or receive government assistance. In nearly all of these cases the stockholders of the failed institution are wiped out, though in some cases they may (as in corporate bankruptcy) receive some securities that ultimately turn out to have real value (First Pennsylvania bank is the best example of that). I will distinguish failure from "insolvency," by which we mean an institution whose liabilities exceed its assets (negative net worth). Differing concepts of insolvency are possible depending on whether the assets are valued on the basis of market values, or in accord with GAAP or so-called "regulatory accounting principles" (RAP).

to our understanding of the national problem.

My aim in this paper is different. I focus on the collapse of the banking industry and the savings and loan industry in Texas. "Collapse" is the correct term since virtually all of the large savings and loans failed during the 1980's, along with 7 of the ten largest commercial banking organizations (two others were acquired by out-of-state bank holding companies at a fraction of their pre-crisis price). 113 Texas banks failed during 1988, a number that has already been exceeded in 1989. Of course, the national or macro-economic factors that led to increased failures in the U.S. during this period affected Texas as well, but those factors and normal variability do not seem sufficient to explain the Texas situation. That is, problems at the national level can not be expected to affect each of 50 states to the same extent (as the pre-1980 bank failure data suggests). But the Texas situation seems well beyond what might be expected from national considerations and normal state-to-state variability.

The Economic Background

The Texas economy enjoyed great prosperity during the 1970's and into the 1980's. The increased price of oil following the first OPEC action in 1973 meant an immediate increase in exploration and production activity in the State. Houston enjoyed a boom as a world center of oil service operations. Midland/Odessa became the center of new development activity, and became the metropolitan area with the highest ratio of millionaires to population.

Following the 1973 OPEC price increase, oil prices remained under $15

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through the second half of the 1970's, until the second oil price shock in 1979 brought the price to almost $40 per barrel for a brief time in 1980. Even after a decline to $35 in 1981, many energy economists were predicting "$85 in '85," a forecast which, despite its symmetry, turned out to be far off the mark. It must be emphasized, however, that this was a forecast shared by responsible observers of the industry, and not just the dreams of perennially optimistic wildcatters.

The price gradually slipped to $26.50 in 1985 and then collapsed to under $10 in July 1986. While the recovery in prices has been substantial, the impact of the 1986 crash has persisted. The possibility of future price declines discourages investment in exploration or development that would be profitable if there were certainty that current prices would be maintained. Drilling activity in the U.S. virtually stopped in 1986, as the number of active rigs fell from about 4500 in 1981 to under 1000. Many "conservative" oil loans collateralized by oil reserves were protected with oil at $20, but became at risk at the 1986 price levels. Further, the finances of the State of Texas are tied to the price of oil to an inordinate extent. Ad valorem oil and gas severance taxes make up a large part of State tax revue. Such taxes represented 13.6% of revenue in 1970 (before the first price increase), and 21.0% in 1985.

The effect of the price changes on employment is interesting because the employment data suggest less of an economic disaster than is generally believed. The first price decline was associated with a net loss of over 200,000 nonagricultural jobs in the State from the 1982 peak to the 1983 trough, but this decline was made up by 1983. Much of the 1982-83 decline was concentrated in Houston. Dallas experienced a flattening of employment

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growth, but employment did continue to increase until 1986.[2] Total nonagricultural jobs in the State peaked at 6.7 million in early 1986, dropped to 6.4 million in the next year, and expanded gradually to exceed 6.8 million in 1989.

The job loss was significant, representing a 44% peak-to-trough decline in the mining (oil) sector, and a 24.9% decline in the total industrial employment base. The mining sector represented over 15% of State Real Gross Product in 1980. Recovery in the oil-related sector of the economy has been meager, though activity in the chemical industry has benefitted from lower prices of oil used as a raw material. It is important to recognize, however, that employment and other measures of the real Texas economy now exceed the previous peak. Retail sales, for example, totalled $125 billion in 1988, finally exceeding the 1985 peak of $124 billion.

This decline in employment is comparable to that experienced in other downturns in the primary industry in other states--the auto industry in Michigan, the steel industry in Pennsylvania, the coal industry in West Virginia or the textile industry in New England. Those industry declines had serious economic effects, but they did not lead to bank failures (or even loan losses) to an extent at all comparable with the Texas experience. The decline in Texas was perhaps more rapid, and that may influence the effect on banks.

One explanation for this difference is that many oil-related loans were tied to the price of oil rather than to the level of production. That is,

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[2]This experience led many to believe that the well-diversified Dallas economy was immune to economic problems associated with the energy business, and may have led to a continuation of real estate construction long after such activity had virtually closed down in Houston.

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banks did not take losses on loans to General Motors or U.S. Steel or Exxon. Banks in Michigan did make loans to suppliers to the auto industry and banks in Texas made loans to independent oil producers and oilfield service firms. The auto-related firms were able to handle their obligations as the industry cut production, but the oil-based loans were dependent on oil as collateral. Perhaps the past experience of Michigan banks led them to be more conservative in loan underwriting to the auto industry, or to be more careful about maintaining a diversified loan portfolio. Many lenders in Texas had the view that the price of oil could only go up, and "worst case" scenarios looked at current prices [see Arnold, Harvard Business Review].

These data focus on the nonagricultural sectors of the Texas economy, but Texas has a large agricultural economy (third largest in the U.S., following California and Iowa). One might hope for some benefits from that diversification, but it turned out that problems in the agricultural sector coincided with the decline in the manufacturing-mining sectors (a coincidence that occurred nationally during the Depression of the 1930's). All of the major Texas agricultural commodities--cotton, corn, wheat and cattle--hit new low prices for the decade in 1986 (these prices recovered sharply in 1987). A large number of Texas bank failures were due to agricultural problems (prices and drought), but the Texas experience here is akin to that in Kansas, Iowa and other farm states during the mid-1980's. The number of such failures declined in 1988 and 1989 as the farm problems eased.

Most analyses of the Texas economy focus on oil and gas. But there have been some attempts to put this in a broader context. Weinstein and Gross

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argued in a 1986 paper that:[3]

> ...what is playing out in the 1980's is the reversal of forces that benefited the state during the 1970's....Texas was a regional beneficiary of the high inflation rates that characterized the 1970's. As is always the case during inflationary periods, commodity prices rose faster than those of fabricated products; so Texas received more for the energy and agricultural products it sold relative to the prices it paid for finished goods produced in other regions. The result was a substantial transfer of real income from other sections of the U.S. to Texas.

In a later paper they go on to argue that along with the change in the terms of trade, there was also a change in the international value of the dollar that first benefitted, and then harmed, Texas exports. This was accompanied by an increase in foreign protectionism that particularly affected Texas products--beef, citrus, semiconductors, construction and engineering services. In fact, Weinstein and Gross conclude, "the strong dollar and foreign protectionism probably had a greater negative impact on Texas than the drop in oil prices during the 1981-1985 period."[4]

In analyzing the Texas economy it is important to distinguish between the "real" production economy and the real estate market. As noted above, the real economy has recovered, and is now operating at levels above previous peaks, but the real estate market is still in a very depressed state. There is room for difference of opinion as to whether real estate prices have begun to move up or not. There is some scattered evidence for this, particularly residential prices in Houston, but it is clearer that at least prices are not declining. It is difficult to be precise about price trends on apartments and commercial property because sales are infrequent (other than foreclosures

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[3]Bernard L. Weinstein and Harold T. Gross, The Texas Economy in Transition: Causes, Implications and Policy Responses, mimeo, 1986.

[4]Weinstein and Gross, The Texas Economic Rebound, Southern Methodist University, mimeo, 1988.

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and commercial property because sales are infrequent (other than foreclosures or sales of REO with below market financing). It is not unusual for the real estate market to lag the real economy in an upturn, particularly when there is a large backlog of unoccupied rental space. In any case, it is clear that the performance of the financial sector has more closely tied to the real estate market than to the real economy. We will return to the reasons for this problem at a later point in this paper.

Why Is Texas Different?

The Texas banking structure is different from that of the rest of the U.S. Texas has a long-established populist, anti-bank tradition (including, for a time, a Constitutional prohibition of banking). This tradition is embodied in the (until 1987) prohibition of branch banking. This prohibition, in a very large state with a prosperous economy, led to a proliferation of unit banks. In 1980, before the wave of failures, Texas had over 1,500 banks. As of 1987 Texas had 10.5 banks per 100,000 population, as compared with 3.5 in Florida (which also had severe restrictions on branching until recently) and 1.1 per 100,000 in New York. Texas did allow multi-bank holding companies, and this led to the creation of a number of very large holding companies.

This structure consisting of a great many small banks does have implications for bank failures, since it is virtually impossible for a small bank to be well-diversified. Large banks may fail to diversify, or may choose not to diversify, but small banks are at the mercy of their local economy. This is a significant factor in explaining the number of bank

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failures in Texas during the mid-1980's (when farm banks in the rest of the midwest were also failing in record numbers), but it is not the explanation for the failures of the large banks in Texas.

Texas has long had a large savings and loan industry. Growth in Texas led to a large demand for housing and, traditionally, commercial banks were not active in residential mortgage lending.

Nationally, the majority of savings institutions are organized as mutuals, but in Texas stock institutions predominated.[5] Until recently, stock institutions could not obtain a federal charter. Thus the majority of Texas thrifts are state-chartered, stock-holder-owned institutions.[6] While this structural difference was not significant during the 1960's and '70's, it became important in the 1980's, as Texas savings and loan law was

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[5]There is some evidence that stock savings and loans are more aggressive and risk-prone than mutuals, but the differences are not great. For analysis of that evidence, see: Eugene Brigham and R. Richardson Pettit, "Effects of Structure on Performance in the Savings and Loan Industry," Study of the Savings and Loan Industry, Irwin Friend, ed. (Washington: U.S. Government Printing Office, 1969); Donald D. Hester, Stock and Mutual Associations in the Savings and Loan Industry, (Washington: Federal Home Loan Bank Board, 1968); Theodore Kohers and W. Gary Simpson, "Ownership Form, Regulator Status and Performance in the Savings and Loan Industry," Review of Business and Economic Research, Fall 1984. The earlier studies were accurately summarized by the conclusion of Jones and Pettit (The Role and Viability of Mutual Banks, Philadelphia: Rodney L. White Center for Financial Research, 1974) that "there is relatively little difference between mutual and stock deposit institutions in terms of either their objectives or the ability to emplement efficiently these objectives." However, none of these studies deals with the reactions of management and owners to financial crisis.

[6]A recent study compared the cost to FSLIC of resolving failed federal and state-chartered savings and loans. These costs (in millions) since 1980 were as follows:

	1980-1982	1983-1985	1986-1988
State	$ 540	$1,219	$27,263
Federal	1,188	821	10,405

See Savings Institutions, May 1989, p.9.

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extremely liberal as to the powers of state-chartered institutions.[7]

In addition, savings and loans were allowed to branch, even though commercial banks were not. This led to a proliferation of S&L branches, as they provided the consumer convenience facilities that commercial banks could not.

Some other aspects of the Texas economy and culture must be kept in mind. First, the Texas economy is not well diversified now, and was less diversified until recently. The dependence on oil and oil-related business is substantial, as described earlier. The loan portfolios of the major banks were even more dependent on the energy sector than the economy as a whole. Given this situation, the decline in the price of oil during the 1980's would have had a significant effect on Texas banks.

The Texas economy, and particularly Texas real estate, had enjoyed a long period of prosperity. While Texas had historically experienced dramatic cycles in oil prices, similar cycles had not taken place in real estate in the major cities. It is possible that this long history of price increases in real estate led lenders to be unduly optimistic in their approach to such lending. Also, several of the large Texas banks had traditionally been active in construction lending and other non-residential real estate lending. After all, the booming growth in Texas during the 1960's and 1970's meant

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[7]Texas law delegates to the State Savings and Loan Commissioner complete discretion to issue rules governing loans and investments. During the relevent time period, there were no limits on the percentage of assets used for loans secured by first liens on commercial real estate, raw land, or personal property (up to 100% of appraised value). Up to 10% of assets can be invested in service corporations (which can then borrow) which can make direct real estate investments. A recent study cites Texas, along with California, Arizona and Florida as the "four states [that] probably have the most liberal laws." See Norman Strunk and Fred Case, Where Deregulation Went Wrong (Chicago: U.S. League of Savings Institutions, 1988), p. 84.

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that a tremendous amount of construction was going on, and financing that activity was logical for the local banks.[8] As compared with past real estate lending problems for banks, the Texas banks concentrated their real estate lending in local markets that they thought they understood. It is easy to criticize bank managements that took losses in lending to REIT's in the 1970's to finance developments in Florida or Atlanta or Tennessee, but out-of-area lending was not the source of the Texas real estate lending losses. In fact, lending in Texas has been a major source of such losses for non-Texas banks. The last downtown skyscraper built in Houston was completed in 1987 and financed (to the extent of over $200 million) by Bank of America. That building remains empty today.

Federal tax policy deserves some of the blame. The Economic Recovery Tax Act of 1981 (ERTA) allowed investors to write off roughly 40% of their investment in real estate projects during the first five years of the project (pre-ERTA depreciation rules allowed a five-year write-off of 22.6%). James Christian, chief economist of the U.S. League of Savings Institutions, recently wrote that "Early on, it was generally known that tax syndicators were having a field day with ERTA and that projects were being built just to milk the tax benefits."[9] The Tax Reform Act of 1986 represented a drastic change in the tax incentives for investment in real estate. The five-year depreciation write-off was reduced to 18%. Passive loss treatment was restricted, limiting the ability of investors to deduct from other income the tax losses resulting from depreciation of income-producing property.

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[8]It is interesting to note that construction employment was higher in 1986 than in 1981.

[9]See "U.S. Tax Policy Shares Some Blame For FSLIC's Woes," Savings Institutions, June 1989, p. 25.

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Further, preferential capital gains treatment was repealed. This meant that in 1986 and 1987 there were few investors interested in buying the projects developed in response to the incentives of ERTA. And because of the growth in Texas up to 1983, a disproportionate amount of the development inspired by ERTA was located in Texas (and financed by Texas banks and thrifts). Christian's point is well-taken—many of these projects were uneconomic from their conception in the absence of tax benefits.

A final consideration is more speculative and less susceptible to quantitative measurement. There appears to be a prevalent Texas attitude that the appropriate action when things are going badly is to double the bet rather than cut one's losses. As we will see, there were opportunities for Texas banks to accept the fact that the decline in the oil business meant significant losses and a halt to their growth. Most could not accept that economic reality, and instead attempted to continue growth with a shift into the other major Texas industry—real estate.[10] Examples of this attitude are the decision of Republic management to take over Interfirst rather than concentrate on seeking to work out of their own problems, and the efforts of MCorp to remain independent. The decision of Texas Commerce to cut its losses and sell (at what appears to have been an attractive price under the circumstances) is the exception. The general willingness of Texas managements to take additional risk as their situation worsened was

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[10]A recent study of the causes of bank failures by the Office of the Comptroller of the Currency put heavy weight on aggressive growth. In interviews, the CEO's of healthy banks in troubled economic regions "these bankers emphasized profitability and conservative lending, even at the expense of growth. Each of the bankers interviewed pointed to the overly aggressive pursuit of growth...as a major weakness in the troubled banks in their areas." See Bank Failures, (Washington: Office of the Comptroller of the Currency, June 1988), pp. 15-16.

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intensified by certain incentive aspects of the federal deposit insurance system, and the policies of the supervisory agencies.

Sources of the Losses

Obviously, the decline in the oil industry led to losses for the large Texas banks, but these losses would not have been sufficient to cause failure in most cases. Energy-related lending accounts for much of the loan losses suffered up to 1983 or 1984. The strategy that was widely followed, after the 1981 oil price decline, was a massive switch into real estate lending. The reasons for this can only be found in the success with real estate lending in the past and the absence of significant real estate downturns in the past. The pattern can be seen by reviewing changes in the First City Bancorp portfolio over this period.[11]

First City was one of the most aggressive energy lending institutions in Texas, and its failure is widely believed to be due to the oil collapse. At the end of 1982, First City's energy portfolio amounted to $2.4 billion, about 15% of its total assets. This figure stayed roughly constant over the next several years. But First City was also an active real estate lender, with a portfolio of about $1.8 billion at this same time. About 70% of these were construction or land development loans.

During 1983 and 1984 First City dramatically expanded its real estate lending, so that such loans totalled $3.4 billion (nearly 20% of assets) by the end of 1984. First City continued to grow during this period. Charge-

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[11]This discussion draws on Dennis Jacobe, "Money Market," Savings Institutions, October 1987.

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offs of real estate loans were much smaller than energy-loan losses, but by 1986 nonperforming real estate assets exceeded nonperforming energy loans ($404 million vs. $337 million).

Commercial banks lagged in recognition of the extent to which the decline in real estate was dragging them down. (First City's 1986 real estate charge-offs amounted to only $34 million). Some of this was no doubt deliberate--hoping to postpone recognizing problems until recovery in the real estate market would make such recognition unnecessary. But some was error. At least with respect to the commercial banks, it seems that the major error was a failure to recognize the loss potential in performing loans. That is, real estate loans on which the borrower was making payments were not viewed as potential problems, even though the value of the property fell below the amount of the loan. A borrower will carry such debt only so long, particularly if there is no personal liability. In many cases, the amount of debt swamped the personal resources of the borrower, so that personal bankruptcy is the likely outcome. If the real estate downturn had been short-lived (even if sharp), these loans might have come through without loss. The length of the real estate depression assured that all such projects would result in loss.

The decline in the energy and real estate sectors would have led to losses by banks, no matter how prudently they were managed. The economic decline would not have led to widespread failures, if the banks had been more diversified. It is an important question to investigate whether better diversification could have been expected. U.S. restrictions on interstate banking make diversification more difficult or more expensive. We have noted that diversification may be impossible for small banks. But it appears that

Texas banks were not concerned about their concentration on energy loans—these were not viewed as risky assets that called for diversification. Even those banks emphasizing the risky sector of the market—the oil-field servicing activities—seemed to believe that that risk could be diversified by holding a portfolio of such loans. It is somewhat harder to explain the concentration in real estate, other than the previously mentioned long upswing in Texas real estate.

In recent years, several states, including Texas, have changed their laws regarding interstate banking. The changes in the Southeast were not related to concern about bank failures, but the changes in law in the energy belt states (i.e., Texas, Oklahoma, Alaska) were clearly intended to facilitate rescue of failing institutions. It is interesting to speculate as to whether Interfirst or Republic would have failed if they had been owned by NCNB all during the 1980's. It is possible that the answer to that question depends in part on the rules relating to inter-affiliate transactions of bank holding companies, such as the Federal Reserve's "source of strength" concept, or the recently enacted requirement for subsidiary cross-guarantees.

Savings and loans were not lenders to the oil industry directly, and had little in the way of losses due to the first oil price shock. Their problem, of course, was real estate lending, which was also what ultimately did in the banks. It is obvious in retrospect, but was apparently not so clear to the participants at the time, that the real estate projects being financed in the early 1980's in Texas were based, directly or indirectly, on the energy business. It should have been obvious that a loan for a housing development in Midland could be viable only if there were employment increases in the oil business. Similarly, a strip shopping center in Houston was dependent, in

the final analysis on the viability of the Houston economy and this, in turn, was dependent on the fortunes of the oil patch.

The real estate collapse, when it came, was so severe that virtually all savings and loans were severely impacted. It has become very difficult to distinguish between the reckless operators and the sound managements on the basis of financial results alone. That is, as recently as 1986 or 1987 it was reasonable to view the most insolvent institutions as badly managed (or worse). But by 1988 and 1989, even those institutions with highly regarded managements were massively insolvent. In several cases, highly regarded managements were recruited to serve as managers of insolvent thrifts in the FSLIC's Management Consignment Program, and then were themselves taken over by FSLIC. University Savings of Houston managed three MCP institutions before being put into receivership. Merabank acquired one of those MCP institutions (State Savings of Lubbock) as FSLIC acted to put the institution under sound ownership and management, and then Merabank ran into severe problems itself. When the FSLIC's Southwest Plan for case resolutions was announced in early 1988, such institutions as Commonwealth Savings, San Antonio Savings, and Olney Savings were viewed as well-run, potential acquirers of insolvent institutions under the program. By the end of 1988, all were insolvent themselves (and Olney was actually acquired under the Southwest Plan).

Finally, it must be stressed that lending institutions as a whole were not simply innocent victims of an unprecedented real estate depression. Overbuilding took place, and all of the overbuilding was financed by lenders. If it had not been for the availability of financing, much of the development activity would never have taken place. It is an old (but true) saw that a

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developer will build anything he can get financing for. What we found in Texas was that at least some lenders will finance anything on which they are promised 50% of the profits. Had the lenders been more skeptical during this period, or had the supervisors stepped in earlier, the extent of the overbuilding (and the subsequent depression) would have been very much less.

Many discussions of the savings and loan problem emphasize fraud. Fraud was indeed present in many failed savings and loans and small failed commercial banks (no one alleges that fraud was responsible for any of the large bank failures). A GAO study found fraud present in 25% of a sample of failed savings and loans. But the presence of fraud does not mean that fraud caused the failure, or that fraud was responsible for most of the losses suffered in those institutions. A recent review of FSLIC's 1988 experience in handling 205 failures concluded that no more than 10% of FSLIC's cost in these cases could be attributed to fraud.[12]

Some fraud took place after the fact, in an economic sense. That is, when it was clear to owners and managers that the institution was doomed to fail, some fraudulent transactions were undertaken to funnel assets out of the bank or thrift. Also, some of what is frequently thought of as fraud is really an insider abuse without necessarily having fraudulent intent. A developer who owns a bank or thrift may be inclined, improperly or illegally, to use the bank's funds to finance his development projects. He may believe that the project is sound and that it represents a good opportunity for the

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[12]These results were reported in a speech by James Barth, Chief Economist of the Office of Thrift Supervision before a U.S. League of Savings Institutions Conference, August 22, 1989. Barth indicated that the 205 failures represented a total cost to FSLIC of $32 billion, of which no more than $3 billion could be attributed to fraud. Barth noted that "Fraud and insider abuse exacerbated the problem but it's wrong to say fraud was rampant."

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bank. It is not, of course, my intent to defend fraud or self-dealing, but rather to argue that many discussions exaggerate the importance of fraud in explaining FSLIC losses.

Economics of Financial Institutions

Conceptually, the economics of depository institutions is rather simple: banks raise funds from the public and lend those funds to individuals or institutions that need funds. Profitable earnings spreads arise from their ability to charge a higher rate on their loans than they must pay for funds, though profitability is achieved only if these spreads are sufficient to cover the operating costs of the institution.

The markets in which most institutions raise funds and invest funds are rather competitive, so that spreads are relatively narrow.[13] It is clear that non-interest operating costs play a key role. But perhaps more important than interest rate spreads or non-interest expense is the relationship between the volume of interest-earning assets and interest-costing liabilities.

Obviously, in an accounting sense, total assets must equal total liabilities plus capital. But not all assets yield income, and not all sources of funds require an interest payment. Banks do not earn interest on

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[13]For most of our post-World War II experience, of course, the profit margins of financial institutions were protected by regulatory ceilings on deposit interest rates—Regulation Q. There is no doubt that the elimination of such ceilings has made the banking business a much more competitive and difficult one, and has reduced the franchise value of the bank charter (see Frederick T. Furlong and Michael Keeley, "Bank Capital, Regulation, and Asset Risk," Federal Reserve Bank of San Francisco Economic Review, Spring 1987.

fixed assets and cash. Banks always have some amount of loans that are not performing, and perhaps some real estate that has been obtained through foreclosure of non-performing loans. On the liability side, equity capital does not require an explicit interest payment (though, of course, the owners expect a return on their investment). Commercial banks historically have obtained a large fraction of their funds from demand deposits on which interest payments are prohibited by law. Since the introduction of NOW accounts, only corporate checking accounts are an interest-free source of deposit funds.[14] But despite their decline in relative importance on commercial bank balance sheets, these deposits significantly affect the ratio of earning assets to costing liabilities.

This ratio is important in understanding the differing performance of banks and thrift institutions in Texas and the differences between Texas institutions and those in the rest of the country. Traditionally, commercial banks have had higher ratios of capital to assets. The minimum regulatory requirements in place during the early 1980's were a 6% ratio for banks and a 3% ratio for thrifts. Further, thrift institutions do not have interest-free demand deposits. Given the low capital ratio, and the need for some amount of cash and fixed assets, it is very difficult for a thrift to maintain an earning asset/costing liabilities ratio of 100%. Most commercial banks will routinely have a ratio in excess of 100%.[15]

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[14]Corporate demand deposits are not totally free, since the rational corporate Treasurer expects the bank to provide services which involve operating costs to the bank. Nevertheless, most commercial banks view demand deposits as their most profitable source of funds.

[15]This is offset to some extent by the fact that commercial bank non-interest operating costs tend to be higher than those of thrifts (because of the need to service high-activity corporate checking accounts), and thrifts have historically had a higher volume of low-cost passbook savings accounts.

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The major impact on these ratios has come from nonperforming assets.[16] At year-end 1985, commercial banks in Texas had nonperforming assets equal to 2.7% of total assets, compared with 1.9% for other banks (as of 1982 the Texas figure had been only 1.6%). By the end of 1987 the ratio in Texas had climbed to 6.9% while the non-Texas banks' figure had increased only to 2.3%. There was a great deal of variation in these figures. For example, First Republic's nonperforming loans exceeded 15% of total assets in 1987. With an excess of costing liabilities over earning assets, it is very difficult, in competitive markets, to earn positive profits.

The picture is much more dramatic when we look at Texas thrifts. At the end of 1985, REO represented 1.8% of assets in Texas, as compared with 1.5% for the U.S., but by the end of 1988 the figures were 12.4% for Texas and 1.8% for the U.S. Total nonperforming assets represented 5.9% of assets of Texas thrifts at year-end 1985, 16.5% in 1986, and 23.4% at the end of 1987. If troubled assets equal 15% of assets, there is no way that a savings and loan can earn enough on the remaining 85% of assets to cover its interest costs on virtually 100% of liabilities. Such a situation tends to worsen as operating losses reduce capital, and hence further reduce the earning asset/costing liabilities ratio.

The Impact of High Interest Rates: 1979-1982

The distinctly Texas failure experience addressed in this paper took place in the mid- and late-1980's. It was affected, however, by the national

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[16]See Robert T. Clair and Jeffery W. Gunther, "Problem Loans and the Profitability of Eleventh District Commercial Banks in 1986," Economic Review, Federal Reserve Bank of Dallas, November 1987.

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experience of record high interest rates following the change in Federal Reserve operating procedures in October 1979. This was particularly true of the savings and loans.

A rise in interest rates is potentially devastating to financial institutions that, like the traditional thrift, uses short-term deposits to fund long-term, fixed-rate loans. In 1980 adjustable rate mortgages (ARMs) were virtually non-existent. As deposit costs rose with market rates, while interest income on the mortgage portfolio increased only slowly, thrifts found themselves with negative interest spreads in 1981 and 1982.

This situation can be expressed in terms of the income statement or the balance sheet. It meant substantial operating losses for those thrifts that paid going market rates. Any institution that attempted to limit interest payments to what it could afford, faced heavy deposit outflows that eventually forced it to pay market rates.

The increase in interest rates also meant a decline in the market value of fixed rate mortgages. If assets and liabilities of banks and thrifts were reported on a market value basis (as are those of securities firms, for example), or on the basis of a lower of cost or market (as are those of many firms), they would have shown a substantial negative net worth. It is only a peculiar accounting convention that allows these institutions to carry their loans and investments at their historical cost, rather than at fair market value, that presented the illusion that most were solvent.

The accounting conventions have real effects on behavior (which is why the industry has so vigorously opposed suggestions for market value accounting). The supervisory agencies have generally been reluctant to take over or close an institution that is solvent on a book (historical cost)

basis.[17] If Texas banks and thrifts had been closed in recent years when the market value of their assets was less than their liabilities the cost to the insurance agencies would have been much less. Also, removal of these institutions from the market would have precluded construction of some projects that contributed to the overbuilding in Texas, and would have reduced the demand for funds by insolvent institutions that bid up rates in Texas and contributed to the "Texas premium."

Savings and loan managements were not deceived by the illusion of solvency created by their accountants. They knew that in an economic sense they were under water. There were only limited strategic choices available to them. The simplest option was simply to continue as they were doing, and pray for lower interest rates. While this strategy may have been unimaginative, it turned out that such prayers were answered. Rates did decline in late 1982 and 1983 and, following a mild increase in 1984, declined again from 1984 to 1987. Those that followed that strategy—the majority of the industry—are healthy today.

Another strategy was to attempt to grow out of the problem. A thrift with $50 million of deposits and a negative (real) net worth of $5 million is in serious condition. If it could increase its deposits by $500 million, and earn a 1% return on the marginal funds, it could erase its deficit. In the 1970's such a strategy would not have been available, since a $50 million institution could not generate $500 of new deposits. But the end of interest rate ceilings resulting from the Depository Institutions Deregulation and Monetary Control Act of 1980 did make that feasible. That legislation also

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[17]The Federal Home Loan Bank Board and the Comptroller of the Currency issued proposed regulations in 1989 that assert their authority and intention to take action against institutions that are marginally solvent on a book basis.

increased the coverage of federal deposit insurance to $100,000, so that by offering somewhat more than going market rates, a bank or thrift could attract virtually unlimited funds. The fall in computer and communication costs made it possible for money brokers to raise large amounts of funds to be divided into insured deposits.[18] During 1983 and 1984, savings and loan deposits increased by 18.7% and 20.3%, an extremely rapid rate of growth, particularly when we note that commercial bank time deposits declined during this period. Texas savings and loans grew at a rate even faster than the national average--32.4% in 1983 and 37.7% in 1984. The problem with this strategy was not in raising the funds, but rather in finding a way to invest huge volumes of high-cost funds at a profit. Very few who adopted this approach were successful.

A third strategy, often combined with the second, was to intentionally invest in high-risk assets. The Garn-St Germain Act of 1982 broadened considerably the powers of federal savings and loans, particularly in commercial lending. Several states already granted broad powers to state-chartered thrifts, and others, particularly California, amended their restrictions in line with the federal changes. The California law was most liberal, and allowed state-charted institutions to invest virtually all of their assets in anything they wanted. Texas has long allowed state-chartered

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[18]The FDIC and the Federal Home Loan Bank Board made a concerted effort during this time to outlaw the money brokerage business. Their efforts were misguided because money brokers contribute to economic efficiency by moving funds to where they are most valuable. They put together large numbers of small accounts, and divide large accounts into insurable amounts. And they do this cheaply by taking advantage of the falling costs of computer power and communications. A bank can do this for itself by setting up a money desk and calling large depositors directly, though that might be more expensive. The problem, of course, is not in the generation of funds, but in what the acquiring institutions do with the funds. In any case, the Courts ultimately ruled against the agencies' efforts to consider such deposits as uninsured.

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liberal, and allowed state-charted institutions to invest virtually all of their assets in anything they wanted. Texas has long allowed state-chartered institutions to invest substantial portions of their assets in real estate development. Some institutions used these new powers wisely, diversifying their portfolios by expanding into commercial and consumer lending, and thereby reducing their exposure to interest rate risk. Many were unsuccessful, particularly when the move to riskier assets was accompanied by rapid growth.[19]

An example of this can be seen by considering investments in development and land loans--a risky activity--during this period. Such assets represented less than 5% of assets for savings and loans in the U.S. (and in Texas) in 1980. By 1985, following the liberalization of powers by the Deregulation Act, the U.S. average rose to about 5%. The forty Texas thrifts that were in worst shape in 1985 (this includes Vernon Savings, Sunbelt, and others of their ilk) held nearly 30% of their assets in this form, and the remaining Texas thrifts exceeded 20%.

An important part of the high-risk strategy was seeking assets that promised the potential of very high returns, i.e., those with an equity participation. Some savings and loans would <u>only</u> make loans on projects on which they were promised a share of the profits. The philosophy of some managements/owners was simply that they were so far under water that an extra

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[19]It is difficult for a savings and loan to enter the commercial lending business on a sound and profitable basis. After all, the best customers already have commercial banking relationships. The thrift entering this market is likely to attract those who have been turned down by the commercial banks. Those thrifts that were sensitive to this problem, and moved gradually as they slowly built up experience, have generated profits from commercial lending. Those that attempted to grow a large portfolio quickly almost invariably suffered losses.

percent or two return would not be sufficient to get them back in the black--they literally needed to take a flier with a chance for a big hit in order to be resurrected.

This situation led many to take a final option—sell out. But this leads to an obvious question: why would anyone buy a business that was insolvent and losing money? Some buyers were probably fooled—after all, we have already noted that thrift accounting was misleading. But most knew what they were doing. Some might have seen an opportunity to adopt strategies (2) or (3) profitably. Some, however, were focusing not on the (negative) net worth they were acquiring, but on the large assets they were controlling for a small investment. They saw opportunities to divert some of those assets to their own pockets. It has become common to attribute much of the savings and loan mess to fraud and insider abuse, and that is true. But many of those whose intent was fraudulent came into the business because the economic circumstances led legitimate operators to sell out.

The high interest rates of the early 1980's did not have an impact on commercial banks that was comparable to the savings and loan problem. Commercial banks generally are not as exposed to interest rate risk as thrift institutions, and the Texas banks were better balanced than the typical commercial bank. The Texas banks at this time tended to have higher than average loan/asset ratios, and most of the loans were short-term or floating rate loans. Thus their interest income increased as their interest costs increased. In retrospect it is clear that the riskiness of bank portfolios increased during the 1980's, but this was not in response to losses imposed by the interest rates of 1981-82.

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The Role of Deposit Insurance

Deposit insurance played an important part in the failure of Texas financial institutions. Deposit insurance fulfilled its designated role of maintaining stability in the system in the face of stress. In the absence of deposit insurance, a fractional-reserve banking system is vulnerable to runs in response to adverse information. Depositors have little to lose in withdrawing their funds if response to bad news, even if they believe the information is false. In that case, withdrawing funds promptly may protect them against a failure caused by a run by other depositors.

With deposit insurance, no one has an incentive to participate in a run. It is rather remarkable that despite the wave of failures in Texas during this period, and the reams of adverse publicity (including discussions of the insolvency of the FSLIC), serious runs did not occur. Some institutions did suffer brief runs, as well as significant long-term outflows of funds, but no bank or thrift failure was caused by a run. In fact, no insolvent institution was forced to close its doors because of a run.

If that were the only effect of deposit insurance, we would chalk it up as a great success. Unfortunately, deposit insurance also has a rather insidious side effect that tended to exacerbate the problem. With deposit insurance, depositors have no incentive to choose their bank on the basis of its financial soundness. Weak banks have virtually the same access to funds as healthy banks.[20] This allowed insolvent banks to stay in operation long

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[20]This is not exactly correct—weak banks have had to pay more for deposits than strong banks, but the differences are measured in tens of basis points rather than the hundreds that the differences in credit quality would require in the absence of deposit insurance.

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after market forces, in the absence of deposit insurance, would have closed them. What is worse, these institutions had every incentive to take greater risks and they were enabled to obtain virtually unlimited funds with which to take those risks. Deposit insurance did not cause more banks to become insolvent, and hence it is incorrect to blame the failures on deposit insurance, but it did make the public cost of failures much greater than it otherwise would have been.[21] The greater cost simply reflects the fact that if insolvent banks are identified and closed as soon as their net worth is depleted, the cost to the deposit insurance system is small. That is, if banks are closed when the value of assets is approximately equal to the value of the liabilities, only stockholders suffer a loss. If, on the other hand, insolvent institutions operate for a long time, it is likely that when they are finally closed the losses will be much larger. An empirical study of FSLIC losses found that the length of time between insolvency and FSLIC action was an important explanatory variable. There is a difference between the banks and thrifts that might be noted, though it is hard to document. It is clear that many thrift operators recognized in the early 1980's that their situation was hopeless and that desperate measures might be appropriate. Many of these consciously adopted high-risk strategies. That does not seem to be true of the large banks. Most of them seemed to believe

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[21]Some economists, particularly Kane, emphasize the moral hazard problem caused by our current system of fixed rate deposit insurance, whereby all banks pay the same premium. That provides a subsidy to riskier banks, and may lead some banks to take grater risks in order to obtain that subsidy. If this behavior is common, then deposit insurance could be responsible for increasing the <u>number</u> of failures, and not just their cost. Also, if deposit insurance allows insolvent banks to stay in business and provide competition for solvent banks, that increased competition may increase the number of failures. There is little doubt that if all the insolvent thrifts in Texas had been closed when they became insolvent, the profit margins of the remaining banks and thrifts would have been significantly better.

that if they could just hang on, real estate recovery would eventually bail them out. Many of them seemed to fail to recognize just how precarious their position was. To take the extreme example, Republic's acquisition of a clearly troubled Interfirst without FDIC assistance does not seem to have been intended as a doubling of the bets, but as an unwarranted, perhaps arrogant, belief that they had sufficient management capability and resources that they could pull it off successfully. Of course, whether conscious or not, the ability to operate in a risky manner once insolvent is only the result of deposit insurance, because without deposit insurance the bank could not obtain funds.

The Supervisory System

This discussion raises the question of the efficiency of the supervisory process in detecting impending failures and acting on them. With respect to the Texas S&L situation, the FHLBB has received a great deal of criticism and has received a great deal of the blame for the catastrophe.22 There has been relatively little criticism of the banking agencies for the bank failures. The reasons for that have more to do with the cost to the public of the S&L failures than to differences in the failure rate.

The U.S. has a very complicated system of regulation of financial institutions. Both banks and thrifts can be chartered by either the federal government or by the states. At the federal level, banks and thrifts are supervised by different agencies. And federal deposit insurance is available to both types of institution, through different insurance agencies, and to state as well as federally chartered institutions. The principal supervisor

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of each institution is its chartering agency--the State for state-chartered institutions, the Comptroller of the Currency (OCC) for national banks, and the Federal Home Loan Bank Board for federal S&Ls. The deposit insurance agencies (the FDIC and the FSLIC) had somewhat limited supervisory authority over the institutions they insure, though FIRREA does strengthen the FDIC's powers.

There are several inherent conflicts here that have been glossed over for many years. An extreme view of the relationship between federal and state regulators is that both seek to expand their power by gaining new "constituents," and that the result is a "competition in laxity."23 There seems to be little basis to support that view, but there is basis for concern that the chartering authorities will be less concerned about risk, bank failure, and its cost since it is the insurance agency and not the chartering agency that bears those costs. The problem is greatest with respect to the powers of state-chartered institutions.

Until rather recently, most states have been rather cautious in approving broader powers for state-chartered institutions. There have long been some discrepancies between the powers of state and federally chartered institutions, but these were not believed to impose an intolerable risk on the federal insurance system (partly because no institutions appeared to abuse those powers). For example, Texas-chartered S&Ls have long had the power to invest in real estate development through service corporation subsidiaries, but this was generally done in modest amounts and was generally profitable during the 1970's. In the interests of comity between federal and state regulators, the general posture of both the FDIC and the FSLIC was simply to tolerate those differences.

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several different motives at work here. Some states sought to attract out-of-state institutions after observing the benefits to South Dakota of attracting Citicorp's credit card operation. As noted earlier, some states broadened powers of their institutions in response to the broader powers granted to federal S&Ls by DIDMCA and the Garn-St Germain Act of 1982. From the point of view of the states, such actions were costless, as long as they required federal deposit insurance. The FSLIC was forced to respond to this initiative by requiring California institutions to file business plans promising to limit use of these broadened powers.

The broadening of powers was not a significant factor in Texas. There were no significant changes that affected either state-chartered banks or S&Ls. Federally-chartered thrifts did gain broadened powers by DIDMCA and Garn-St Germain, but most of the larger S&Ls in Texas were state-chartered and already had broad real estate investment powers. The bulk of the losses in Texas thrifts were accounted for by greater <u>use</u> of powers that they had had for many years and had used only modestly--investments in real estate development, and loans for acquisition, development and construction ("ADC loans") of real estate projects (many of which were made with "equity kickers"). The commercial bank losses were accounted for by traditional commercial bank activity--farm loans by smaller, rural banks, and energy and real estate lending by the major banks.

"Deregulation" then, in the sense of a broadening of powers, was not a factor in the Texas failures (though it may have played a role in the California S&L failures). As noted above, though, deregulation of interest rate ceilings did allow those institutions that wanted to take greater risks to obtain all the funds that they needed. This did not increase the

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probability of failure, since most of these institutions were already insolvent or close to it because of their interest rate risk problems. What it did do is to make the amount of the losses greater. The distinction between Texas bank and thrift failures lies in the ultimate cost to the insurance funds (and the taxpayer), and not in differences in the number of failures or the size of the failed institutions. After all, no Texas S&L failure involved the volume of assets as First Republic, First City, or MCorp.

The explanation for this lies in bank supervision and administration of the deposit insurance system. The role of supervision is not necessarily to prevent failures, but to monitor the condition of weak institutions so that they can be closed (or other appropriate action taken) when they become insolvent or close to it.[22] Regardless of the risk posture of a bank, if it is closed when its net worth is depleted, the cost of the failure is borne entirely by stockholders or subordinated creditors who are paid to take that risk. To the extent that the regulators are successful in detecting insolvency, the cost of failure to the insurance system is small.

The FDIC has been much more successful at this than the FSLIC. Most of the large bank failures have been resolved at a cost to the FDIC of only a few cents per dollar of deposits.[23] There is some reason for concern about

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[22]See Paul M. Horvitz, "A Reconsideration of the Role of Bank Examination," Journal of Money, Credit, and Banking, November 1980.

[23]The largest failing-bank case handled by the FDIC is Continental Illinois. That bank had assets of about $40 billion dollars and will ultimately cost the FDIC between $1 and $2 billion, or less than five cents per dollar. That is approximately the cost of First City and First Republic. One of the largest failures in the past was Franklin National Bank of New York, on which the FDIC recovered all of its initial outlay (with interest).

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a deterioration in the FDIC record in Texas in view of the long delay in dealing with the insolvencies of many of the subsidiary banks of MCorp, National Bancshares, and Texas American Bancshares. Nevertheless, the record is vastly different from that of the FSLIC which is incurring losses of 50 cents or more per dollar of liabilities.

Part of the reason for that is simply that resolving cases takes money, and the FSLIC for some time has not had the resources needed to dispose of insolvent S&Ls efficiently. Many insolvent institutions have been allowed to continue in operation and losing money, so that the ultimate resolution cost is greater. But it must also be recognized that the FSLIC supervisory mechanism has been weaker. To a considerable extent, the magnitude of the S&L losses in Texas can be viewed as a failure of supervision.

The supervisory failure in Texas was due in part to inadequate personnel—inadequate in terms of both numbers and quality, and also due to a poor organizational structure. The supervisory problem needed attention by 1983. That was the time in which many institutions, weakened by the high interest rates of the previous years, were moving into higher risk activities. The savings and loan examiners were trained and experienced for the relatively simple tasks they had had—evaluating portfolios consisting mostly of single-family mortgage loans. In 1983 they were confronting portfolios of complicated commercial real estate development projects. Even if they had the ability to analyze these deals, such analysis takes a great deal of time. There simply were not enough examiners to do the job, with the result that many weak institutions went much longer between examinations than

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was appropriate.[24] The problem was recognized by the Chairman of the FHLBB, Ed Gray (some would say, "recognized too late"), who attempted to convince the Reagan Administration to increase his budget so that the number of examiners could be increased. He was turned down by Administration officials who were committed to a policy of deregulation, and failed to see the difference between regulation and supervision.[25]

At this time the supervisory efforts of the FHLB System were organized in a peculiar fashion. The examiners were employees of the Federal Home Loan Bank Board. They did their on-site investigations as fact-gatherers, and submitted their findings to the FHLBB. The Examination Reports were then sent to the supervisory staff of the individual Federal Home Loan Banks. All supervisory efforts were handled by the District Banks, whose President served as Principal Supervisory Agent (PSA) for the District. There are some historical reasons for this distinction between examiners and supervisors, but they are not good ones. The system was an awkward one, with virtually no direct contact between examiners and supervisors, and it was easy for problems to slip between the cracks.[26] There are numerous cases in which

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[24]It should be noted that as problems arose with commercial banks in Texas, the banking agencies had too few examiners in place to maintain their schedules. The FDIC and the OCC responded to that by temporarily assigning many examiners from around the country to examine Texas banks. At this time economic conditions in the rest of the country (other than the farm belt, with its relatively small banks) were favorable, so that the examiners could be spared.

[25]Ultimately, Gray went around the Administration by moving the examination force to the District Banks. The Home Loan Banks were not subject to Civil Service salary restrictions or to federal manpower constraints, so that a substantial improvement in the capability of the examination staff was possible.

[26]Note that the action by Bank Board Chairman Gray in moving the examiners to the District Banks removed this artificial separation between examiners and supervisors. The top supervisory officials of the Banks now

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problems spotted by examiners were not acted on promptly. As Congressional Hearings have made clear, the case of Empire Savings of Mesquite was a most egregious example. It is true that fraud played a large role, and the books were showing substantial profits up to its closing in 1984, but the examiners had pointed out problems much earlier.

Even if the structure worked effectively, there were too few supervisors to handle the task. In 1983 the Federal Home Loan Bank was in the process of moving from Little Rock to Dallas. The 48 person supervisory staff at Little Rock would no doubt have proved to be inadequate for the task, but in fact only 11 members of that group (mostly clerical and junior supervisors) made the move to Dallas. Efforts were made immediately to recruit and train new employees, but certainly the numbers and experience level were too low at least through 1984. During the 12 months prior to relocation of the Federal Home Loan Bank (October 1982 to September 1983), 166 examinations of Texas savings and loans were conducted. During the following 12 months, the number dropped to 100, and dropped even further, to 91, during the October 1984 to September 1985 period, just when the need for <u>increased</u> examinations was becoming obvious.[27]

How different would the end result have been if the supervisory effort had been handled effectively? I believe that correct recognition of the problems earlier could have had a profound effect on the ultimate failures and losses of commercial banks as well as savings and loans. This is so even though it is clear that the FSLIC would not have had the resources to deal

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have both examination and supervisory personnel reporting to them.

[27]These data are discussed in Lawrence J. White, "The Problems of the FSLIC: A Policy Maker's View," <u>Contemporary Policy Issues</u>, forthcoming.

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with all these cases in 1983-1987.

Many S&Ls were operating out of control. They were making vast amounts of imprudent loans, in many cases based on little more than a desire for the up-front fee income generated. The worst offenders were already insolvent, so taking action against them would not have prevented those failures. Their losses would have been smaller, even if they could not be closed but only put into the FSLIC's "Management Consignment Program,"—a sort of holding action that removed untrustworthy management. More important, removing those institutions earlier would have reduced considerably the competitive pressures to pay higher interest rates on deposits that adversely affected the healthy S&Ls (and banks) in Texas. Perhaps even more important in the long run, a great many ill-conceived real estate projects in Texas would never have been built. In the absence of some of these projects, some better-run thrifts might have survived, and some bank failures would have been avoided.

Conclusion

It is difficult to summarize a complex story briefly. It is clear that lack of diversification played a key role in causing the failure of Texas banks. The oil price collapse would not by itself have led to massive failures if the bank response had been cautious and conservative. The attempt to continue growing in the face of the energy lending problems, and particularly to expand in real estate lending represented a risk exposure of a different order of magnitude. This was exacerbated by the reckless lending activities of many thrifts.

If the U.S. had had a system of national banking in place before 1980, many of the failures might have been avoided. Failures of supervision, particularly in the savings and loan industry, bear a heavy responsibility for the magnitude of the losses. Deposit insurance itself, which allowed the losses to accumulate without touching off financial panic, contributed to the size of the loss.

There is now rather general agreement within the academic community concerning the sort of financial restructuring or deposit insurance reform that is necessary to prevent a recurrence of the disaster. Congress clearly agreed that major change was necessary, and refused to appropriate funds to cover the losses without some significant reform. It is clear, however, that the legislated changes embodied in FIRREA do not represent reform of the sort that is needed.

There is agreement that a high capital requirement is essential to sound banking in order to provide a cushion against losses but also (and more important) to make sure that the incentives of the owners are compatible with the public interest in bank safety. There must be a good monitoring system to enable the supervisors to be sure that the capital is real. Such a system requires both on-site examination and market value reporting of asset and liability values. And the supervisory authorities need the power to act before net worth is depleted, either by forcing owners to inject new capital or by taking over the institution. Interstate banking is clearly desirable to allow greater diversification.

There are two principal alternatives to this type of regulatory structure: First, the "narrow bank" approach, a more radical reform that would limit bank investments to riskless (or, in some versions, marketable)

assets so that failure could not occur; Second, a return to pre-1980 type regulation, restricting the powers of thrifts and perhaps reinstituting deposit interest rate ceilings. While the first does not seem to be politically realistic, there is support for the second (and the stiffened "qualified thrift lender test" in FIRREA is a step in that direction). In my view, that is the wrong message to draw from the Texas experience.

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DRAFT

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CHILEAN BANKING LEGISLATION*

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I - INTRODUCTION

The financial crisis that the Chilean economy underwent early in the present decade struck a serious blow to the stability -even the continuity- of the social market economy that had begun to be implemented in the mid-seventies.

The serious difficulties encountered by the financial system not only required in-depth strengthening and rehabilitation of the sector, but also pointed to the pressing, unavoidable need to draw up a new, more efficient, banking law that would also be more consistent with a stable social market ecnomy.

The bases, mechanisms, and implications of this body of law, in force since 1986, are examined below. Section II describes the basic features of the macroeconomic context in which the existing banking law was reformed and the influence thereof. Section III discusses the financial crisis of the early years of the decade. This event is emphasized to the extent that it triggered a far-reaching reform of the then prevailing financial legislation. Section IV summarizes the major stepas taken by the economic authorities in the process of rehabilitating the financial sector.

Section V lists the conceptual bases for the amendments to the bank law, with special emphasis on the logical consistency thereof with a social market economy system.

The more substantial points of Chilean banking legislation are examined in Sections VI and VII, with special emphasis on bank capital adjustment mechanisms contained therein. Section VIII discusses difficulties that might be encountered when implementing the banking suspension and adjustment mechanisms included in the law.

Lastly, Section IX describes the evolution of the Chilean financial market after the above reforms became effective.

It should be noted that the object of this paper is basically to describe the origin and scope of amendments made to Chilean financial legislation, rather than to analize the causes of the crisis or the theoretical foundation of the law.

II - THE MACROECONOMIC FRAMEWORK

In the mid-seventies a major economic reform process began in Chile, aimed at enhancing foreign trade, emphasizing the market as a preferred tool for resource allocation, and encouraging private initiative. In this context, the government was to be responsible for setting up a stable macroeconomic framework consistent with such objectives, while fiscal policy would preferably address the task of gradually suppressing poverty.

Completing a program to open the economy to foreign trade and encouraging the development of private initiative were basic issues in the structural reforms conducted in Chile as

from the mid-seventies. By reducing tariffs and removing various prevailing non-tariff regulations, the reform aimed to foster reallocation of resources towards sectors where Chile enjoys comparative advantages. In addition, price and market liberalization were expected to originate incentives consistent with efficient allocation of productive resources. In this way, to the extent that a price system freely determined by supply and demand conditions was successfully set up, with a high degree of integration to foreign trade and macroeconomic management within the restrictions resulting from keeping up the context described, it would be possible for the Chilean economy to perform satisfactorily, on a par with other economies adopting comparable strategies.

Initially, the program for structural reform of the Chilean economy was hampered by significant macroeconomic imbalances carried over from the previous administration, i.e. more than 500% inflation in 1973 resulting from fiscal deficit amounting to 25% of GDP that year. Furthermore, the international reserve position was more than fragile, sufficient to finance imports for only a few days. The high prevailing rate of inflation, together with numerous restrictions to the development of banking and the financial market, in particular, led to a very low degree of monetization of the economy ans the M1-GDP ratio was only

9.6% in 1973.

The difficulties arising from macroeconomic imbalances at the outset of the structural reform program in 1973 were compounded in 1975 by a severe adverse external shock entailing a drop of about 40% in the terms of trade. Under such circumstances, the need to apply stringent adjustment measures became even more pressing.

As a result of energetic adjustment of the level of internal expenditure, the level of activity and employment dropped abruptly. GDP fell by 12.9% in 1975, while unemployment rose to around 15%. However, once necessary measures were adopted to improve the macroeconomic accounts and despite persistingly depressed terms of trade compared with pre-shock levels, the results of the adjustment effort began to be seen. From 1976 to 1980 GDP grew by an average 7.5% per annum, inflation fell from 350% to 30% in 1980 to 9.5% in 1981, while non-traditional exports rose spectacularly by an average 23% per annum between 1976 and 1980 (in physical terms) for agricultural and livestock items, 21.5% for industrial items.

Despite significant progress in the Chilean economy in the second half of the decade, as regards price stabilization and opening to foreign trade, the aim of achieving a deep and efficient financial market was still beset by difficulties. Indeed, one of the most significant issues in

the set of reforms introduced in the Chilean economy in the past decade was precisely the creation of a deep and efficient financial markey, 1/ the latter being viewed as a basic tool in the task of achieving more efficient allocation of resources, particularly those linked to savings and investment.

Interest rate liberalization, which took place in 1975, and the return to the private sector of the various banks taken over by the previous administration, and now authorized to engage in a wide range of brokerage activities, were all basic issues in the financial reform program. Moreover, the above set of measures was intended to lay the foundations for a proper financial market. The then prevailing market was hardly worthy of the name, when 76.7% of private financial liabilities were current and 78% of all loans were made by Banco del Estado, as was the case until 1973. In addition, high persistent inflation rates in a context where interest rates were set administratively by the authority turned the banking business into a mechanism for capturing the inflation tax.

In spite of the authorities' efforts to develop the financial market, supplemented by macroeconomic measures addressed to heighten stability, both in relative prices and in price levels, the sector failed to consolidate as a stable and deepmarket. On the contrary, between 1976 and

1981, when the Chilean economy experienced a high rate of growth, the financial market was characterized by high real interest rates, 2/ (see Table 2), high interest rate spreads (see Table 3), and substantial increase in financial activity as reflected by violent expansion of loans by an average 45% per annum in real terms, from 1976 to 1981 (see Table 5-A). It should be noted, however, that most of these operations concentrated in the short term, as a result of a market for money substitutes rather than a market for financing investment as such 2a/ (see Table 5-B). In addition, during this period several financial institutions ran into solvency problems from time to time, pointing to the presence of stumbling blocks in the organization of such a market. Several "informal financial institutions" failed in 1976. Savers, however, had not considered them "informal", which raised serious difficulties for those responsible for carrying out economic policy, when the time came to declare such institutions bankrupt and allocate bankruptcy costs among their creditors. Subsequently, in late 1976, Banco Osorno, whose net worth position was weak, came under intervention. This occurrence --which has been viewed by many analysts 3/ as a major "signal" from the authorities to public opinion, signifying that in the event of banking net worth difficulties, depositors could count o official support-- clearly illustrated the kind of

difficulties encountered in consolidating a stable and efficient private market, to the extent that the difficulties faced by Banco Osorno --a major private bank at the time of its intervention-- pointed not only to defective management but also to defective ability, on the part of the supervisory bodies, to detect such difficulties in timely fashion using the available tools.

III - THE FINANCIAL CRISIS

In mid-1981 difficulties again arose in the asset position of verious banks and financial institutions, ten of which --including two major private banks: Banco Español and Banco de Talca-- came under intervention by the authorities. Intervention in the above institutions revealed a significant degree of concentration in the banks' loan portfolio, a situation that was subsequently found to be true to some extent for nearly all the banking system. It is worth noting that the need to support the institutions under intervention in performance of their obligations led Banco Central to supply such institutions with substantial domestic credit, so as to assure continuity in their operations. 4/

On the other hand, interest rates prevailing in the international financial markets had risen considerably since mid-1980, followed by a drop of about 20% in the terms of trade in 1981 and interruption in the supply of voluntary

foreign credit, all of which caused GDP to fall abruptly by 14.1% in 1982. In this context, there was an urgent need to adjust the level of internal expenditure to the Chilean economy's possibilities of financing thereof; this led the authorities to give up the fixed nominal rate of exchange in force until 1982 and turn to devaluation by 11.5% in real terms in 1982 and 20% in real terms in 1983.

One of the most eloquent expressions of the crisis faced by the Chilean economy were the difficulties that the financial market was undergoing as a result of falling levels of activity, rising real exchange rates, plus reduction in the price of assets brought about by a combination of the above. Starting in 1980, in particular, the volume of external financial resources handled by the financial market had risen steeply to US$2,044 million in 1980 and US$3,162 million in 1981. Simultaneously, the current account of the balance of payments showed a deficit of US#1,971 million in 1980 and US$4,744 million in 1981, equivalent respectively to 42% and 123.4% of exports of goods.

Then, the interruption in the supply of external credit to Chile put an end to a major source of bank borrowings. In addition, the rising real exchange rate brought about by the policy of adjusting expenditure levels, together with the drop in activity levels, affected the net worth position of the financial system in two ways. One the one hand, through

an increase in the real value of debts denominated in US dollars, which affected a substantial portion of the loans granted by the financial system, as shown above; on the other, by the falling percentage of recovery of loans granted, as well as the diminishing price of the assets backing such loans.

The economic authorities, of course, faced serious problems in defining the strategy to be followed to face the crisis. In particular, the financial system was seriously affected by a falling level of aggregate expenditure and a rising exchange rate, while the prevailing financial legislation provided no measures for net worth adjustment to be handled by the private sector, thus avoiding official intervention to rescue savers and also debtors. It does not therefore seem hazardous to suggest that the succession of measures adopted to resolve the more pressing problems of banks and their debtors, given the information then available to the economic authorities regarding the extent of the crisis, were in general the seemingly most appropriate response to individual problems resulting from diminishing economic activity, rather than the outcome of a deliberate adjustment strategy applied to the sector. 5/ These policies were structured implicitly on the basis that full convertibility of all debts between banks and depositors should be guaranteed by the government. As the

then prevailing banking law contemplated no scheme for bank capitalization by changing the conversion value of such debts, the scope of available opportunities to face the problems of the financial system was severely restricted. The financial crisis posed a more complex problem for the economic authorities than resolving the sector's difficultoes, to the extent that keeping up a fixed nominal exchange rate did not appear viable as Banco Central had to commit a substantial amnount of funds to support the banks and financial institutions, and prevent losses to depositors. 6/ Given the importance attached to the exchange rule as a means of ensuring macroeconomic stability in an economy with a long history of inflation and balance of payments crises, suspension of the rule dealt expectations a hard blow. The conceptual angles of the manifold alternatives open to the authorities vis-á-vis the recession are too lengthy to discuss here; it should be pointed out, however, that stability in the financial market --under the circumstances described and given the prevailing legislation-- was critically dependent on the will of the authorities to make sure that banks' and financial institutions' debts were convertible. Indeed, the economic agents always behaved as though they were aware of this rule of conduct of economic policy, which was seen as a form of insurance on the banks' debts, free of charge and not (at

least perceptibly) linked to the level of risk that the institutions were running with their loans. 7/

As the various economic sectors were successively attained by the drastic fall in the level of aggregate expenditure, and the effects thereof spread to the financial market and its capacity to recover loans, pressure built up for the authorities to adopt new support measures for both financial institutions and their debtors. After the fixed ecxhange rule was abandoned in mid-1982, Banco Central set a "preferential" rate of exchange, which was lower than the "official" rate and was used to repay US dollar-denominated debts to the financial system. The value difference of these obligations resulting from applying the two rates of exchanhge was replaced by issuing Banco Central debt (Preferential US Dollar Note) to the banks, accruing a certain level of real interest.

As a result of the recession under way since mid-1981 and the external account imbalances described above, Chilean banking was left in an extremely precarious condition. In all, 22 institutions, accounting for about 60% of loans in the private banking market, were intervened or liquidated between 1981 and 1983. In early 1983, in particular, when the financial crisis (and the production crisis also) reached its peak, the authorities decided to bring four banks and four financial companies under intervention, while

two banks and one financial company were liquidated. The banks that came under intervention included Banco de Chile and Banco de Santiago, then the largest Chilean private banks. Paradoxically, as a result of intervention in the above banks plus Banco del Estado, after liberalizing the financial market the State controlled about 50% of the latter's loans. According to SIB estimations, by December 31, 1984, aside from the losses of institutions under liquidation in the period 1981-82, the banks' expected losses on assets unprotected by provisions averaged 200% of their capital and reserves, equivalent to 18% of GDP for that year (1984). It was technically a picture of acute insolvency except for government support, which eventually absorbed a substantial portion of such losses.

The debilitated financial position of the banking system, which required intervention in the largest domestic private banks to ensure debt convertibility, as described above, led to great uncertainty regarding the future ownership of such banks and of the business concerns more or less linked thereto, because of the significant interrelationship among these banks and the business operations of the groups to which they belonged. Such uncertainty affected a majority group of the most significant firms in the Chilean economy.

IV - THE BANKING REHABILITATION PROGRAM: GENERAL

The weak net worth position of private banks, which

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necessitated intervention in major Chilean private banks in January 1983, led the authorities to grant priority attention to rehabilitating the financial system. Private sector debts to the financial system were restructured for the first time in 1983, with reduction of the real interest rate charged thereon. The operation was addressed primarily to small-scale debtors and involved a substantial volume of non-monetary debt issue by Banco Central. Debts were rescheduled anew in 1984, with amended interest rates and repayment terms for outstanding obligations with the banking system. The associated restructuring costs were again borne by Banco Central. In all, in 1983-84 about one-third of the loans granted by the banking system were thus included in long-term reprogramming at substantitally lower real interest rates (5-7% per annum in real terms).

A vigorous bank capitalization program was carried out in 1975 and 1986, based on sale --to new owners-- of stock in the banks under intervention. In the case of Banco de Chile and Banco de Santiago, the process became known as <u>capitalismo popular</u> or broadbased capitalism, 8/ based on purchase of stock in the above banks by small-scale stockholders using special credit granted by the State through its agency Corporación de Fomento de la Producción (CORFO), the Chilean development agency. The loan was secured by the shares purchased. Simultaneously, a bank

capitalization process was promoted by SIB, as a form of access to State guaranty on deposits. The capital base of banking institutions was thus expanded, as consistent with the levels of debt incurred, decree of concentration, and portfolio quality.

Between 1984 and 1987 the banking system collected new capital on the order of US$900 million, or a gross increase of about 60% for the system as a whole. Two-thirds of this figure was accounted for by broadbased capitalism, while the balance was direct contribution by domestic and foreign investors, largely taking advantage of the incentives under the debt conversion process. As a result, seven banks, which in 1986 accounted for 60% of the loans granted by the private financial system, returned to the private sector.

Another central element in the Chilean financial rehabilitation program conducted between 1982 and 1986 involved transferring all the bad debts in the banking system to Banco Central, at book value. This operation was known as "purchase of past-due portfolio". As counterpart to transferring the banks' bad debts to Banco Central, the program required the banks involved to enter a commitment whereby all profits --after paying dividends to the broadbase capitalists, who were preferred creditors-- would be devoted to repurchasing the portfolio. In 1986, at year-end, the total loans transferred to Banco Central in

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this way amounted to about US$3,0 billion, or 28% of the total financial system loans.

As we said before, a detailed discussion or interpretation of the causes of the steep drop in activity and employment in the Chilean economy between 1982 and 1983 is beyond the scope of the present paper. Without a full analysis of the subject, it is difficult to conjecture through what channels the adverse evolution of economic activity was conveyed to the financial system, in particular, given that there was obviously a feedback effect between these variables, which been extensively discussed in the literature. 9/ The description of major developments in the Chilean economy since the beginning of the reform period until the crisis nonetheless shows clearly that there were flaws in the structure of the Chilean financial market, which detracted from its performance. In addition, the authorities, particularly the Superintendency of Banks (SIB), were found wanting in supervisory capability to make a timely evaluation of the net worth position of that significant sector of the economy. In fact, economic policy was seen to respond after the fact to the difficulties that the financial systemnm was undergoing, rather than establish preventive measures to reduce the likelihood of such difficulties taking place.

As was the case in other economies that went through similar

financial crises, the experience of 1981-83 in the Chilean banking system triggered strong support for more government intervention in the sector. For many authors, what had happened in financial activity was the resu:t of excesses brought about by deregulation, which, while it encouraged economic expansion on the one hand, it also made production highly vulnerable to exogenous changes, even in entrepreneurial expectations, thus threatening to follow the growth process of production and financial activity with subsequent depression and banking crisis. 10/

history of the Chilean financial market between 1976 and 1981 clearly shows the weighty part played therein by the private sector, evidenced particularly by the gradual reduction of resources channeled through Banco del Estado as percentage of the total (Table 4). It does not seem reasonable, however, to posit on this basis that blame for the financial crisis should be laid solely on the behavior of the private sector, to the extent that the behavior of private banks, as well as of depositors, arose from the incentives offered by the authorities, including deposit insurance, which seems to have been highly influential on economic agents. Notwithstanding, the significant role of the private sector in financial activity, the considerable expansion and subsequent crisis of the latter, seemed to point --as a logical conclusion-- to the need for exercising

more control over the operation of the financial market. However, while more importance attached to the notion that erratic banking behavior stemmed from incentives provided by prevailing financial legislation and from lack of appropriate supervision of the level of risk being assumed by banks in their operations, whereas official guaranty was granted to the debt issued by the same banks, the policy proposals arising from such a diagnosis were certainly different.

Though a thorough discussion of the significant influence of implicit deposit insurance had on financial market performance would be too lengthy, it may be recognized that this state of thingq introduced an incentive structure for depositrs, where the sole significant variable in their allocation of deposits among banks was the rate of interest promised thereby. In other words, the financial market institutions prevailing at this tine failed to provide incentives for individuals to discriminate among banks and financial institutions based on portfolio quality. A moral hazard thus arose, where the banks with the most risk-prone loan policy pushed the rest of the market to similar behavior. 11/

Beyond the need to face the asset problems suffered by the Chilean financial system after the crisis, a no less complex and significant task had still to be undertaken, that of

defining the institutional framework for the sector to operate in future, the crisis having made it abundantly clear that the prevailing institutions were incapable of foretelling financial sector problems in timely fashion and of providing expeditious adjustment channels.

Two alternative paths suggested themselves: one was to advance towards a higher degree of governmental regulation of the financial sector, in pursuit of closer control of banking risk levels and a limit to the extent of the commitment that the economic authorities --particularly Banco Central-- were assuming by granting deposit insurance. The other was to proceed to effective privatization of the financial system by providing explicit private adjustment channels vis-á-vis banking net worth difficulties, while introducing a risk variable into deposits.

The latter option was of course perceived to be more consistent with the spirit of an economic system based on development of private initiative and attaching much importance to achieving a framework of macroeconomic activity as a requisite for good performance. Notwithstanding, the very difficulties affecting the financial system following the crisis made it unfeasible to privatize quickly the institutional régime in which the system operated. In particular, the prospect of carrying out major reforms in the sector's organization was dependent

upon the pursuit of solutions for the net worth problems of the banks under intervention, which implied, inter alia, making a decision as to future bank ownership.

The amendments made to Chilean financial legislation in 1985, which are described below, were based on the notion that financial sector stability required proper incentives. In particular, private forms of financial market control and adjustment were seen to be more consistent with a market economy régime. The difficulties faced by the sector after the crisis, however, together with the extenral debt problems affecting the nation as a whole, recommended acting conservatively in introducing reforms to avoid speculation against domestic paper. The amendments made to the banking law are therefore an attempt to combine greater forecasting capability as regards financial problems with a weightier role of the private sector in the supervision and adjustment process. Retaining some degree of deposit insurance of course gave SIB a major supervisory part to play.

V - THE BASES OF PRESENT BANKING LEGISLATION

Of the many factors involved in the Chilean financial crisis, which subsequently gave rise to the amendments made to the prevailing legislation, some deserve special mention. First, the supervisory apparatus of SIB was clearly inefficient and allowed the difficulties suffered by financial institutions to be identified at a very late stage. Legislation then in force failed to provide sufficient "preventive" measures for SIB --or ideally the management of the banks themselves-- to correct any unfavorable situation before it turned into a major problem. For example, the recent history of the Chilean financial market, as reflected in the bahavior of bank loans and interest rates paid on borrowings, when the financial crisis was in full force, seems to reflect banks' preference for "betting" on the emergence of some form of "exogenous rescue" rather than taking steps to adjust their net worth and so resolve the problems they were facing in that regard. Massive loan renewals plus higher passive interest rates, so as to balance banks' cash flow, while helping to overcome the more immediate liquidity problems were obviously explosive in terms of overall outcome. 12/

Another major issue to be addressed in legislative reforms was how to introduce incentives for depositors to distinguish among institutions according to the respective

portfolio risk. Similarly, stimulii had to be provided for banks to be interested in exhibiting security vis-á-vis depositors. This was a crucial issue among intended amendments to the banking law, for achievement of a stable financial market required the creation of a system whereby granting insurance on bank indebtedness had to have a price, so as to encourage greater transparency in the brokerage process. As a result, to the extent that discrimination among banks was effectively encouraged, a downward bias would be promoted in real interest rates, by comparison with situation where official deposit insurance would be unaccompanied by proper control of risk in the banks' portfolio, as was the case in Chile before the crisis. 13/
The precise way in which risk was to be introduced into bank deposits was not an easy problem. A small economy, with a currency "dominated" by stronger currencies and burdened with the sequels of financial crisis and substantial external payment problems, found it difficult to do without official insurance on bank debts, both internal and external.
Furthermore, aside from state-owned and foreign banks, if the financial market was to make a positive contribution to the development of production, it appeared unwise to establish conditions likely to conspire against normal payment performance in the economy, which would happen, for

instance, if convertibility of sight deposits were not fully guaranteed. In other words, the varying degree of liquidity associated with different forms of bank indebtedness in fact proposed a scenario where the potential response of individuals in the face of changing risk perceptions associated with their deposits could lead to rapid, even violent, changes in holdings of sight deposits and other liquid obligations of the banking system. The expectation of potential loss on liquid debts in the financial system could therefore cause runs on banks, which would be detrimental to the operation of the payment system in the economy, similar to the results of high inflation.

Explicit introduction of the risk variable into depositors' decision-making processes had to be designed so maximize the credibility of the rule being set. In other words, the history of the Chilean economy being what it was, it seemed difficult to think that in the event of poor performance of one or more banks, a loss could be applied to depositors such that banks could fully recapitalize by such means. It was therefore advisable for the new law to cover the likelihood of depositor losses, but only for other than sight deposits. This was intended to prevent paralyzing the payment system completely in the face of actual or apparent difficulties in the banking system, and to limit risk to a certain percentage of term obligations. A full guaranty was

therefore provided on term deposits amounting to less than 120 unidades de fomento, 14/ extensive to 90% of such obligations per person, thus providing support to small-scale depositors and helping to make application of the system more credible, while protecting the groups with smaller savings and fostering system stability. The official guaranty on term deposits has a ceiling per natural or juridical person, so that the rule cannot be circumvented by distributing deposits across the system.

Another significant issue involved in banking law reform was the search for alternative channels of official intervention in case of asset or liquidity problems affecting institutions. The idea is of course reflected in the introduction of some degree of risk in deposits, which in practice becomes an automatic mechanism for bank capitalization. It was nonetheless necessary to seek other alternatives, such as establishment of explicit conditions under which a bank could be capitalized by other financial institutions, with a view to providing alternative forms of bank capitalization also based on agreement among private persons, though obviously this option had to be consistent with overall legislation, in terms of controlling risk levels and loan concentration. Lastly, it seemed unrealistic to disregard the possibility of official intervention in a bank under difficulties, although this

option was deemed less desirable in terms of the stability of a market economy régime. The fact was, however, that it had been in the past, and would most likely continue to be in the future, a major path to bank adjustment. Having recognized the validity of the intervention mechanism, it was reasonable to include the rules to govern it under the same bank law.

The above issues basically refer to incentives for bank operation and adjustments thereto. Notwithstanding, having recognized the fact that sight deposits were fully secured law and that term deposits would be secured only for a percentage of their value, SIB evidently still had a significant task to perform in supervising bank operations. This task emerged as a supplement to the adjustment mechanism described above, and involved overseeing compliance with provisions for concentrating asset adjustment of banks in an initial stage of distress, as well as making sure that institutions kept up the proper level of capital in regard to the level of risk they were running with their loans. Such official supervision of the risk factor of banks' portfolios was seen as particularly significant in the process of financial rehabilitation following the crisis and full enforcement of the new legislation.

VII - THE NEW INSTITUTIONAL FRAMEWORK FOR BANKING IN CHILE

The new Chilean banking legislation enacted in late 1986 (Law No. 18,756) and supplemented in 1988 (Law No. 18,707) and 1989 (draft law currently under discussion) reflects to a considerable extent the experience undergone since the financial liberalization process until the crisis of the early eighties. The new bank law seeks to balance a weightier role of the private sector in supervising and adjusting the net worth position of banks with efficient oversight by SIB.

The amendments made to the Bank Law in 1986 were the outcome a process that SIB had begun, partly by administrative means, in the early eighties. In view of the emerging crisis, SIB took the first steps in that direction in 1980, setting guidelines for rating loan portfolios, measuring the volume of related credits, and making provisions following the same procedure. 15/ In 1984-85, following the financial crisis, efforts were made to increase the degree of the public's information as to the actual position of banks, with the inception of a policy of disclosing "significant facts" and modifying bank accounting procedures so that assets and revenues of financial institutions would clearly and accurately reflect bank condition. Accounting concepts were thus brought closer to the equivalent economic concepts.

The main mechanisms contemplated in the law are described

below.

(a) Preventive control and transparency of the banking business

The Bank Law, with amendments thereto adopted in 1986, provides (under articles 13 bis, 14, 116, 119, and 126) for an active SIB role in rating the quality of banking investments, along the lines of the mechanisms in effect since the early eighties. The regulations habitually applied to measure a bank's net worth condition, such as debt-equity ratio or minimum capital requirements, though still in force, have given way in importance to automatic recognition of expected losses chargeable to surpluses or capital; this provides net or economic worth for facing possible unforeseen risks. The emergence of solvency problems in a bank is identified when "the value of its assets less provisions, after deducting losses not covered by provisions, is equal to 40% or less of paid-in capital and reserves as of January 1 of the year in question, plus adjustment for monetary devaluation in the period."

A primary element for proper operation of the law is a set of indicators that accurately describe the banks' bill of health. Such indicators should give timely notice of impending asset or liquidity problems, given the strong emphasis that the law lays on anticipating banking distress. In this context, the Chilean law seems to be quite unique as

to the amount of information delivered to economic agents regarding the financial condition of each banking institution. SIB is explicitly forbidden by law to admit any accounting delay in recognizing a bank's losses (article 14). At the same time, it is required to publish in a newspaper, at least three times a year, a detailed individual report on compliance with capital requirements by each bank, the result of rating assets according to an estimate of expected losses (article 13 bis). This practice is apparently unique in Latin America and has been in force the period 1987-89; to date seven such publications have been made.

In addition, the Bank Law (article 20) and the Security Market Law (Law No. 18,660) set significant limits to "bank secrecy", which is now reduced exclusively to protecting a depositor's privacy. Removal of this legal barrier is a major step in the new legislation, for exaggerated "bank secrecy" in the past --and also in other countries-- has been the cause of mounting bank problems, which finally became unmanageable from a private standpoint, eventually requiring government intervention.

Based on these new circumstances, private risk-rating firms were organized for giving an opinion on banks' condition, so as to provide information to depositors, a most important element in a scheme where banking business risks are shared.

Under the law, each banking institution must be subject to two private ratings in one year. 16/ The task of rating the level of portfolio risk is of course highly complex. Moreover, in the liberal view, the fact that SIB should directly or indirectly conduct the process is not comfortable to live with. However, while recognizing the undeniable problems linked to this method in terms of ensuring stability in a market economy system based on private ownership, the existence of some degree of government guaranty on bank debts gives SIB a degree of unavoidable responsibility for bank supervision.

From the standpoint of financial stability and suppression of discretionary practices, it would of course be highly beneficial if some form of impersonal procedure could be found to rate banking portfolio risk, on the basis of a set of rules governing the size of provisions to be made by the bank, consistent with the level of portfolio risk. The present legislation is an effort to advance in that direction by giving the private sector a role in risk rating; it seems unlikely, however, that SIB's action could be regulated to the point of suppressing its discretionality. As mentioned before, SIB action in rating bank's portfolio risk is the logical outcome of the need to keep up some measure of government security on deposits, intended to strengthen the stability of financial

operations.

Also in pursuit of preventing banking difficulties from arising, the new bank law contemplates additional liquidity requirements for banks, designed to improve banks' abiity to face possible changes in the volume of sight obligations. The presence of liquidity problems in a bank, possibly affecting its capacity for facing its sight obligations, is revealed by non-compliance with the provision requiring a technical reserve to be maintained for any sight obligations exceeding two and one-half times the capital. If a bank should fail to comply with this provision, it must report the fact to SIB on the next business day following the event, together with the steps it plans to take to comply with the regulation. Should such failure be continuing for more than fifteen days, the bank's board of directors must submit agreement proposals to creditors, except those with priority status, as in the case of sight deposits. In any event, SIB has power to designate a provisional admninistrator or order the bank to liquidate.

A case of liquidity problems is covered in the law, such as when the financial management requirements imposed by Banco Central on a specific commercial bank are repeatedly violated, in respect of granting emergency loans for more than 15 days or renewing existing loans. In such cases the law presumes that there is an ongoing liquidity problem.

A major issue in the new bank law, which stems from financial crisis experience in Chile and elsewhere in the region, is the establishment of stringent restrictions on banks' power to do business with related parties. The various loans granted to firms owned by the same group of shareholders are viewed as a single individual loan subject to relevant loan limitations (5% or 25% of the bank's capital and reserves, depending on the whether valid guaranties are involved (article 84 No. 2)). In addition, the agreed terms for such debt must be market terms. SIB is further legally empowered to object to various kinds of contracts being executed by the bank and related parties (article 19 bis).

(b) Adjustment mechanisms

As mentioned before, one of the fundamental elements in the framework of the new Chilean financial legislation is the explicit possibility that part of a bank's liabilities is not necessarily fully convertible and that as a result the risks of such operations are shared by stockholders, depositors, and State.

The basic elements of the adjustment process, which is discussed in the following subsection, are outlined below.

(i) The law provides for full convertibility of liquid debts in the banking system, defined as close substitutes of Banco Central money, that is, sight deposits and term deposits

with residual maturity at 10 days or less. To avoid disturbing the means of payment in the economy in the event of a banking crisis, debt service is assured by support from Banco Central. To minify the effect on monetary policy of distress in the financial sector, whether in isolated cases or overall, the bank law requires commercial banks to set up technical reserves for liquid debts exceeding two and one-half times the bank's capital and reserves (article 80 bis). This is designed to prevent runs on banks that might attempt against normal operation of the economy's payment system. Simultaneously, this provision induces banks to structure liabilities in more conservative fashion, for illiquidity risks are thereby penalized.

(ii) In the event of moderate solvency problems, the new law peremptorily requires stockholders to put back an amount of capital sufficient to ensure a debt-equity ratio of 20:1 (article 116).

(iii) In the event of severe ongoing insolvency or illiquidity problems, which it has not been possible to overcome through the usual banking market channels, such as capital replenishment, sale of loan portfolio, or merger, the law provides that creditors or depositors holding bank debt with a different term than liquid liabilities may enter into an agreement with the distressed bank whereby the debt is converted into capital in the bank, thus safeguarding the

bank's continuity as a firm in operation and providing an alternative to liquidation pure and simple by the bank's creditors (article 118 to 125).

The attraction of this mechanism is currently being reinforced by means of a draft law intended to avoid as much as possible any conflicts among the parties involved, by granting a number of benefits to creditors required to turn their deposits into shares. To this end the law provides for a basic debt-equity swap agreement in an amount sufficient to return the bank to a debt-equity ratio of 14:1 and, among other things, for recovery or repurchase of such shares with bank surpluses designed for the original shareholders.

The operative mechanism of the above agreements is a key part of the new law and partakes of the essence of the principle of shared risks. As before, in an environment of conservative banking regulation and abundant market information, this procedure breaks away from full banking debt convertibility and gives way to a floating scheme that is dependent on the price of the bank's assets. In establishing this mechanism much weight attached to Chile's experience during the period of full, explicit, or de facto security on deposits. It also suggests a pessimistic view of the prospect of setting up a deposit guaranty fund, aside from Banco Central contributions, financed by differentiated

premiums duly calculated according to the risks assumed.

(iv) As a result of the crisis suffered in the period 1981-83, the government was forced to grant full guaranty on deposits until 1986, when the banking rehabiitation program was completed. Subsequently, as a transitional measure in 1987 and 1988, guaranty was granted upon payment of a uniform premium by the financial system, to which financial institutions adhered on a voluntary basis; the guaranty involved gradual reduction of insurance coverage from 90% in early 1987 to 60% at the end of 1988 (transitional article Law No. 18,576).

Following the above transitional period, a form of government guaranty remains in effect, free of charge, which involves 90% of deposits held by small-scale investors (about US$2,000 each). In practice, this provision effectively puts an end to government guaranty on bank labilities (term deposits) and becomes the keystone of the new financial regulation scheme (article 141-150).

(v) Lastly, in an effort to "privatize" the costs of a banking crisis and promote self-control in the market, the law allows private banking institutions to share in salvaging a bank in distress by granting a subordinate loan accountable as capital (article 137). Clearly, to the extent that "sound" banks perceive that the externality arising from a run on the bank is greater than the

investment risk, they will be prepared to make use of this mechanism. In addition, it is reasonable to assume that the banks participating in such capitalization will impose clauses on the loan granted to improve the probability of recovery thereof.

(c) The adjustment process

As mentioned above, one of the major innovations included in Chilean banking legislation is the establishment of private adjustment channels vis-á-vis difficulties in a bank's financial statements. The object of this provision is to prevent government intervention from being the sole available resort to overcome possible difficulties affecting the sector, and alternatively suggests bank capitalization by its own creditors or by other banks. The Chilean banking law thus retains the legal category of SIB intervention in financial institutions, using this mechanism to face non-performing managements or repeated violations of the law. Notwithstanding, the possibility of avoiding government intervention is critically dependent on the ability to diagnose and undertake the solution of a crisis in a financial institution at an early stage of problem development. It is thus reasonable to think that the private sector will take positive part in capitalizing a bank if it can be ascertained that such bank's difficulties are minor and do not compromise its medium-term performance.

Conversely, if an agreement proposal is submitted to a bank's creditors in a context of serious bank distress, then, even if creditors must share in the financial restructuring process, it is highly likely that a flight of deposits to other banks will ensue, compounding the distress and finally necessitating intervention. Therefore, both from the standpoint of watching over economic stability and in order to enhance privatization of the bank adjustment process, the necessary tools should be designed to detect financial difficulties at an early stage thereof.

One way of approaching the problem in the law is by creating incentives for bank management to report promptly any anomalies observed in the bank's financial condition. For example, by giving prompt notice of any shortfall in the technical reserve obligation mentioned above, or by reporting to the bank's board of directors on loans granted, purchase or disposition of movables or immovables, stocks, and securities, etc. The bank manager is also required to report to SIB whenever one and the same natural or juristic person is granted loans exceeding 5% of paid-in capital and reserves.

Any provisions contained in the law in order to encourage greater transparency in the banking business are useful, of course, in terms of consolidating system stability. For private arrangements within the system to operate properly,

however, a basic element is the organization of a relatively developed banking information market. Given the essential features of the bank law, it is implicitly assumed that the necessary incentives for developing such a market are contained in the law. There is a need to strengthen that market, however, to the extent that the interest of banks in contributing to market development is limited by: (a) the weak net worth position in which many banks remained after the financial crises in the early years of the decade; (b) perception that the public do not really discriminate by risk, which would make investing in goodwill less attractive; and (c) the subsistence of a high degree of SIB supervision, which to some extent limits development of an information market. As pointed out earlier, distancing SIB from financial supervision is practically not to be thought of, at least in the medium term, to the extent that the market is still convalescing after the crisis; it seems reasonable to conjecture, however, that the same law contains the necessary elements for progressing towards a system where the task of overseeing is performed to a substantial extent by the private sector.

In order to contribute to a swift solution of liquidity and/or solvency problems affecting the normal operation of a financial institution, the law contemplates specific situations that would trigger an adjustment process. There

is the case of non-compliance with the technical reserve requirement, which requires a creditor agreement proposal if the problem is not promptly resolved. The same applies if the bank's debt-equity ratio is higher than 20 as of January 1; bank capitalization is also in order when the value of assets adjusted by non-provisioned losses is less than 40% of capital, or when the bank finds it difficult to meet its obligations. Ongoing illiquidity is also assumed when the rules for Banco Central last-resort loans have been repeatedly violated (article 119).

It is worth noting that the above provisions, especially regarding solvency, are quite stringent, in the sense that fairly moderate variations in the value of bank assets require speedy adoption of capital adjustment policies. In principle, these rules, which might be viewed as a source of financial instability, in fact help to make the shared-risk scheme possible, for they inspire bankers to adopt more conservative policies and so alter the historical attitude in the face of investment risk.

The main traits of adjustment mechanisms for a bank's assets in the event of financial distress are described below. Special reference is made to alternatives to government intervention, which has been described at length.

Creditor Agreement

The agreement proposal, which in essence is an adjustment in bank net worth by varying the exchange rate of its obligations, may take the form of

1. Total or partial capitalization of loans;
2. Extension of non-preferential debt terms;
3. Remission of part of the debt;
4. "Any other licit object in respect of debt payment."

As in the foreign debt agreements, there is here a pari passu clause to the effect that all agreement proposals must be similar for all applicable creditors. This provision is complemented by the Banco Central agreement to make available to the bank any amounts required for necessary convertibility of sight obligations.

A program for restructuring part of a bank's obligations by drawing up a draft creditors' agreement may of course be an effective vehicle for resolving a shortage of capital. Only to the extent, howeverm that this adjustment process does not arouse adverse behavior in depositors, leading them to withdraw their deposits from the distressed institution, either immediately --which is unlikely owing to the preferential treatment given to sight deposits-- or gradually, once capitalization has taken place. In this context, proper information to describe the bank's actual asset position is mnost important, so that after

capitalization is completed it is possible to judge whether it has been sufficient to ensure normal operation of the bank in the medium term, thus discouraging speculation. As pointed out before, the establishment of conditions to make partial capitalization of bank debts effective by means of a creditors' agreement, may be a valuable contribution to the good performance of an economy, to the extent that the risk variable is properly identified by depositors as well as by banks. This condition, however, obviously requires the complement of a sufficiently developed information market, which in turn requires anticipating bank problems at an early stage of development. If this condition is not met, it is highly likely that any bank problems will be detected at an advanced stage, which not only conspires against the formation of a financial market but also precludes the use of private adjustment formulas.

An institutional context where neither Banco Central nor the Treasury have any incentive to perform bank adjustment and then let private channels work is essential for success in this system. If depositors realize that Banco Central is not prone to take arms in support of banks in trouble --owing to budget restrictions, for example, as in the case of an independent central bank, or to compliance with a specific monetary or exchange rule--, it is more likely that a solution will be found by bank management and creditors

thorugh an agreement proposal, without counting on "official rescue", as in fact happened in Chile and other economies in the region during the financial crisis of the early eighties. 17/

The incentive structure available to the agents participating in a bank adjustment process --bank management, creditors, Banco Central, and the Treasury-- will be crucial for determining the feasibility of utilizing a mechanism such as an agreement proposal, otherwise a conventional intervention scheme will be applied. As pointed out above, an autonomous central bank facing a degree of capital restriction or required to submit to a predetermined monetary or exchange rule will play its role in securing banks' sight obligations, but will not be as willing to support other banking obligations. The fiscal authority, in turn, will find itself in the complex situation of having to raise (present or future) taxes to rehabilitate the bank in distress without inflicting losses on depositors, or else facing the political cost of accepting capitalization of part of such bank's debts. As mentioned earlier, the viability of resorting to Banco Central will depend upon the significance of the latter's budgetary restriction and/or the policy rules imposed thereon. In the case of an autonomous central bank, the loss of capital involved in taking over banking problems

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attempts in practice against keeping up true independence vis-á-vis the public sector or currency stability. 18/ Effective application of the banking adjustment procedure through an agreement proposal therefore assumes a number of conditions regarding the prevailing incentive structure, so that the formula will truly contribute to system stability and "privatization."

The board of directors of a bank, having identified a situation where the institution is undergoing solvency and/or liquidity difficulties, shall make agreement proposals to its creditors, except preferential ones. Detection by bank management of problems in the bank's financial statements thus opens up an adjustment channel where creditors help to raise bank capital and thereby alter the structure of liabilities to restore a more solid asset position.

From the standpoint of non-preferential depositors, implementation of this mechanism reflects materialization of a capital loss owing to poor financial performance of the bank, to the extent that a debt of predetermined replenishment value is replaced by bank stock, which, while confidence in the bank's prospects is not restored --the likelihood of which must have been damaged to some extent by the call to agreement proposal-- must be worth less on the market than the original debt was worth. A similar

situation comes up when the formula proposed by the board involves altering the original debt's maturities or terms.

As we have already pointed out, the effectiveness of bank capitalization through a creditors' agreement will depend primarily on the magnitude of the difficulties to be resolved by this means. Prompt management response to problems threatening to affect the bank's asset position must enhance the likelihood of success of a creditors' agreement as adjustment tool. In particular, the magnitude of the problems faced by the institution not only determines the feasibility of counting on the agreement as sole adjustment variable, but also affects the reaction of creditors and depositors generally, regarding the funds they keep in the bank once the agreement is concluded.

In this context, bank management is faced with conflicting motivations. On the one hand, prompt action is necessary in the face of adverse operational results in the bank, so as to minify the cost of adjustment. On the other, there is a strong leaning to defer adjustment as long as possible, so as to try to reverse the unfavorable results and preserve the status of bank executive and/or director. This of course requires a decision to be made by the bank management in the space allowed by the indicators set by SIB, which set the adjustment process in motion by force of law.

In the original version of the amendments to the bank law

introduced in 1986, the board had to submit agreement proposals to creditors once the existence of problems affecting the bank's solvency was confirmed. The creditors had to evaluate this proposal and vote approval thereof within not more than fifteen days from publication thereof in the Official Gazette. The proposal in question was deemed accepted when approved by creditors representing the majority of the total voting liabilities. Should the agreement proposals submitted be rejected by the creditors, however, mandatory liquidation of the bank would ensue, upon favorable resolution of Banco Central.

It will be observed that the law gave creditors few options and practically forced them to approve the agreement proposal as submmitted by the bank's board, or face mandatory liquidation of the bank. 19/ Moreover, under the law the liquidator had three years to complete his task, which entailed additional cost to creditors, aside from uncertainty as to the amount of capital increase required by the bank. Therefore, in spite of the obvious benefits to normal operation of a market economy and macroeconomic stability in general arising from the existence of private channels to adjust bank asset problems, it seems reasonable to think that the creditors' agreement formula, as originally provided in the 1986 amendments to the bank law, helped creditors to be exploited by the bank's board of

directors, inasmuch as rejection of their proposal would lead to mandatory liquidation of the bank.

The difficulties surrounding the creditors' agreement formula in its original form certainly promoted a bias in favor of applying the traditional intervention scheme to face banking problems. For this reason, amendments were made recently to the form of agreement application. The idea behind these amendments was to strengthen the ability of the creditors' agreement to resolve a bank's problems by means of an analysis by SIB of the agreement's capacity to ain actual improvement of the bank's financial statements. In addition, the amendment contemplated a "standard agreement" for cases where the formula originally submitted by the board was rejected: "The agreement proposed by the board shall be judged by SIB as to its effect on actual improvement of the financial institution, in particular, whether the partial remission of debts proposed is indispensable. SIB will issue a ruling within five business days; should it fail to do so, the creditors' agreement may be submitted. If SIB raises objections the board shall accept them within two business days. If the board's proposal is rejected or SIB objections are disregarded, an agreement shall be submitted as provided under article 121 (Standard Agreement)." 20/

The "standard agreement" is submitted to creditors for

conaideration once the original proposal of the board has been rejected. However, if this further proposal, which is described below, is also rejected by creditors, mandatory liquidation applies. "If the agreement proposed by the board of directors is rejected, the board within the next three days shall submit to the same creditors entitled to vote the agreement another agreement based on reducing the bank's deposits and obligations to third parties to fourteen times its paid-in capital and reserves, by capitalizing the relevant credits. In the case of a financial association, the reduction will be to ten times." 21/

It will be observed that the recent amendments to the bank law governing the use of an agreement proposal are designed to offer an intermediate option between the board's proposal and mandatory liquidation, and so place a "floor" to the volume of non-preferential deposits in the bank open to capitalization.

Mandatory liquidation

If it proves impossible to resolve the bak's net worth problems by means of a creditors' agreement, or if the Superintendent finds that the bank lacks the necessary solvency to continue in operation, the bank's authorization will be revoked and the bank will be declared under mandatory liquidation, following a resolution to that effect by the Executive Committee of Banco Central de Chile. As

mentioned above, the liquidator designated by SIB will have a period of three years to carry out this task; the period may be renewed.

Consistent with the spirit of the law, the available cash funds and funds invested in Banco Central paper will be used to ensure convertibility of sight deposits. If such funds are insufficient, Banco Central will put up the necessary resources and be given preference over all other creditors not holding sight obligations.

Mandatory liquidation implies a number of priorities and the liquidator must first reserve resources as necessary to meet the costs of liquidation and pay off preferential creditors, then distribute the balance among ordinary creditors, in proportion to the amount of their respective credits. "If for any reason the bank's obligations cannot be paid in full, they will be covered pro rata, without prejudice to legal preferences."

Lastly, SIB may give shareholders any resources available after paying off the credits of depositors and other creditors, and covering liquidation costs.

Inter-bank capitalization

An additional alternative for facing solvency problems in a financial institution is an inter-bank loan to strengthen the capital position of the distressed bank. The terms and conditions of such loan require the agreement of the

meetings of stockholders of both financial institutions involved, and approval by SIB. Under prevailing legislation, no bank may grant loans of this nature in an amount equivalent to more than 25% of its paid-in capital and reserves.

This loan will be accounted for as capital of the lending bank, for purposes of the margins provided in the bank law, and may be paid only if the debtor bank is duly capitalized, irrespective of the above loan.

Under the law, if the loan is not repaid within the agreed term, it may be: (a) capitalized in the event of merger of the two banking institutions involved; (b) used for making a capital increase as resolved by the lending institution, provided that the shares issued are underwritten by a third party; and (c) used to underwrite and pay for a capital contribution. In this event, the shares acquired shall be disposed of in a formal secondary market within a period of 180 days from the date of capitalization.

This mechanism offers a private adjustment channel for the bank's net worth position as an alternative to submission of a creditors' agreement. Similarly, capitalization or general support among private banks may offer an effective mechanism for resolving net worth problems, to the extent that such problems are deemed by the management to be manageable. In other words, if problems are descried

affecting the solvency of a particular bank, it is reasonable to think that other banks will be interested in helping to rehabilitate it, to the extent that the difficulties requiring the bank's capital to be increased are perceived to be resolvable within a reasonable period. In this context, the management of the bank in distress may be interested in avoiding the cost of calling to a creditors' agreement and of intervention, and will negotiate some form of loan with other banks in a stronger position. On the other hand, granting this loan may not only be good business for the lending bank but it is also backed by whatever share of the market the distressed bank may have. If the terms and conditions agreed for granting the loan are not met, the lending bank is likely to capitalize the loan granted and take over management of the debtor bank, so benefiting from possible scale economies in the brokerage operations of both banks.

This inter-bank support mechanism basically means spontaneous negotiation among the parties. It differs in this respect from the Deposit Guaranty Fund operating in certain countries, e.g. the U.S.A. and Spain. In the latter case, the Deposit Guaranty Fund provides limited guaranty to depositors in the event of a bank suspending payments or becoming bankrupt. It is also possible for the Fund to take over control of the distressed bank should the latter prove

unable to overcome its difficulties on its own. Thus "the Fund is an institution that acquires banks in distress as one of its essential aims, in order to restore such banks to a sound footing in a fairly brief period. To this end, the Fund takes over direct control by underwriting the increase in equity capital of banks in financial distress owing to explicit or implicit losses jeopardizing the bank's normal operation and necessary solvency." 22/

Unlike the Chilean case, this Fund is formally part of the Spanish financial organization and operates with the support the banks and Banco de España. Private banks join the Fund or withdraw therefrom voluntarily and the Fund operates in the purview of the Ministry of Economic Affairs.

Under Chilean banking legislation, the prospect of inter-bank support loans is limited by banks' available capital and is not dependent on a institutionally organized mutual aid association. Should such an association arise, however, e.g. through banking syndicates that would guarantee the convertibility of members' debts, the degree of supervision exercised by the association on the quality of members' portfolio would very likely be at least as stringent as that of SIB, in order to safeguard the reputation of the syndicated banks. 23/

VII - COMMENTS ON ADJUSTMENT MECHANISMS IN THE BANK LAW

A central issue of economic development seems to be the pursuit of ever more efficient and sophisticated forms of trade. The extensive use of money as a means of exchange, the growing participation of banks in an intermediary role, even the latest schemes for creating means of exchange and credit, which in more advanced economies are simple entries in computerized records, have meant continuing innovation in an area closely linked to the overall performance of the economy. In particular, in a private economy, performance transactions under previously agreed terms and at low costs are a basic requirement for success. That is why liberal economists traditionally emphasize the need to ensure a high degree of currency stability, as well as the advisability of having a well-organized financial market. 24/

For a developing economy, a deep and efficient financial market is a major tool for proper utilization of resources, especially those arising from savings and investment. Notwithstanding, the efficiency of the financial market will be critically dependent on the macroeconomic context around it. In other words, financial institutions can hardly be expected to consolidate a stable market if monetary policy, for instance, is not handled accordingly. Similarly, a well-structured financial market containing incentives for

correct evaluation of available savings and investment alternatives is a major aid for efficient allocation of resources; it cannot, however, be expected to neutralize the internal implications of terms of trade shocks, such as strike the Chilean economy from time to time.

If the terms of trade fall, as they did in 1975 by about 40%, a depositors' loss is practically inevitable. It will take the form of a creditors' agreement to capitalize part of the debts or the traditional inflation tax. In the face of events of this nature, however, an operative law aiming - make the fact explicit that there is risk in the brokerage process should help to avoid excessive increase of domestic debt and expenditure during the expansive stage of the cycle and so keep the financial market from becoming a factor of economic cycle expansion.

It is not of course reasonable to expect that by enacting a well-structured bank law the economy as a whole, and the financial market in particular, will be free from the influence of change in international circumstances. To the extent, however, that the incentives provided by law are truly internalized by the agentes involved in intermediation, the law will be influential in limiting the extent of the cycle through measures such as encouraging more rigorous assessment of the banks' investment portfolio, of the relative share of foreign currency debts, etc. In

this context, any efforts made under the aegis of the bank law to make clear the fact of risk in financial savings, should help to avoid severe procyclic movements in credits, which only contribute to stress fluctuations in activity. Accordingly, proper evaluation of the characteristics of prevailing financial institutions requires a set of parameters consistent with the objective of such institutions. As mentioned earlier, it is reasonable to suggest that financial market efficiency should translate precisely into appropriate signals for efficient allocation resources in the economy. In this context, introduction of a stability criterion as additional element seems appropriate in that a stable supply of credit should mean using less resources for information than if the above requiremnent is not met. 25/

Banking law amendments enacted in Chile in 1986 were basically intended to set the bases for fulfilling the efficiency and stability criteria discussed above, so as to make them compatible with utilization of private initiative in this sector. The powers granted for the private sector to play a leading role in financial brokerage were retained, even extended to permission for banks to set up affiliates devoted to security or stock exchange brokerage, or mutual fund management. Simultaneously, these amendments attempted to resolve the problems of moral hazard and adjustment in a

bank's net worth so clearly perceived during the financial crisis of the early eighties. The risk variable was therefore explicitly introduced into term deposits and all forms of banking debt other than sight deposits. Simultaneously, development of a private information market was encouraged and channels for adjustment of bank net worth were set up to take account of the existence of a risk factor in the portfolio decisions of individuals.

The fate of such a financial organization is of course closely linked to the ability to consolidate an efficient banking information market. In addition, the view that economic agents have of the authorities'attitude in the event of banking problems is most important. To the extent that Banco Central action is seen to be subordinate to the Executive, expectations are likely to arise that the authorities will try to avoid the costs of bank capitalization by the depositors, that help from Banco Central will be available in the event of bank difficulties, or intervention will be resorted to directly. In this context, it seems reasonable to think that the degree of effectiveness with which the explicit presence of the risk variable will act on depositors', as well as banks', behavior, will be critically dependent on the view taken of Banco Central's attitude in the event of capital losses by banks.

VIII - POTENTIAL WEAKNESSES OF THE DEVICES UNDER THE BANK LAW

The energetic measures for banking market liberalization enacted since 1975 were not supplemented by adaptation of the regulatory and supervisory institutional framework, such as to give their proper place to incentives vis-á-vis risk, and the forms of transfer of wealth among economic agents as a result of banking crises. The amendments adopted as from 1986 are higly significant steps towards preventing a repetition of the problems discussed above and seems safe to sav that such amendments appear to be appropriate to preserve solvency and stability in the banking system, in an environment of competition and liberalization.

Nonetheless, an effort should be made to pinpoint possible weaknesses in the system enforced in Chile. To begin with, it should be recognized that the experience is unique and very young, of not more than 2 or 3 years. It is therefore, in practice, a project whose qualities will become apparent in the course of time.

Similarly, despite the stringency of the devices involved and the shared-risk philosophy contained in the law, it is very difficult to give an unambiguous opinion on the stability it offers to the financial system, primarily because in the past four years the Chilean economy has

enjoyed a sound position with appreciable GDP growth and successful macroeconomic balances. In the face of sectoral or external shocks, for instance, the indicators of financial market condition will show a decline in banks' net worth position. Obviously, no bank law can hold back the damage caused by a major shock; however, a regulation scheme systematically moderating the risks assumed and promptly triggering asset adjustment mechanisms tends to reduce system vulnerability in the face of such disturbances, provided incentives are included for proper assessment of the risk involved in the brokerage process. 26/

Unfortunately, in particular in small countries exposed from time to time to economic and political fluctuations, the steps taken to overcome such conflicts as financial crises are very often substantially dependent on the individuals possessing authority to face the crisis, and the expectations and signals generated by those responsible for economic and financial policy. The use of private adjustment mechanisms for banking problems may be virtually nullified if the authorities tend to prefer historical support measures based on bank intervention.

In countries with a tradition of governmental security on deposits, the establishment of such adjustment devices as those provided by the Chilean bank law will always clash

with the general public's ignorance of the subject or with popular expectations arising from such security. Though promotion of transparency schemes partly help to resolve the problem and institutional investors may act as leaders of opinion, it is nevertheless true that there will always be dissimilar information costs that might warrant government intervention for the sake of small-scale depositors and financial savings. 27/

Lastly, though a general topic, strict application of such devices in Chile may be limited in future, given that a substantial portion of banking rehabilitation following the crisis of 1981-83 was conducted with the help of government financing (broadbase capitalism and sale of portfolio to Banco Central).

IX - RECENT EVOLUTION OF THE FINANCIAL SYSTEM AND EFFECTS OF THE 1986 LAW

The amendments to Chilean financial legislation, as regards introduction of non-traditional adjustment mechanisms, substantial reduction of government security on deposits, and emphasis on transparency in the net worth condition of institutions, should contribute to alter the structure of the capital market. In practice, however, the above assumption is not easily proved, largely because

(a) a very short time has elapsed since the law began to be enforced;

(b) in the same period the Chilean economy has performed exceptionally well and there has been no chance to observe the new legal preventive adjustment devices in operation; and

(c) as a result of the crisis and the need to conduct a complex net worth adjustment process in conjunction with implementing a deconcentration program, banks have adopted an extremely conservative loan policy. This attitude has been reinforced by the active part played in the financial market by Pension Funds, which are severely restricted as to the possibility of taking risks.

A brief examination of the financial market in the recent past shows that the Chilean banking community handles financial assets on the order of US$21.2 billion, which break down into US$13.5 billion in loans and US$7.7 billion in holdings of financial investments (Table 7). Total deposits and domestic financial obligations amounts to about US$11.7 billion, while the assets held by all banking institutions add up to some US$1.9 billion, in the hands of 41 banks and financial companies. By loan volume, domestic banking institutions concentrate 70% of the market, Banco del Estado de Chile 17%, while branches and affiliates of

foreign banks, about 20 in all, more or less cover the remaining 13% (Table 8).

The Chilean economy today exhibits a reasonable degree of monetization and financial intensity. Total financial assets held by banks in late 1988 were equivalent to about 95% of GDP, the loan portfolio to 58%, domestic deposits to 51%. In addition, total financial liabilities issued by banks, bonds and shares in non-financial firms, and public sector paper, as a measure of financial intensification, accounted that same year for the equivalent of 96% of GDP.

Financial system dynamics following the amendments made to the bank law in 1986, according to information available for the period January 1987-April 1989, show substantial growth in brokerage levels. Loans increased at an average 7.4%, while domestic sight and term deposits averaged 10.6% growth. Both figures developed more dynamically than GDP, though retaining a reasonable degree of correspondence therewith (Table 9).

From another angle, the different treatment granted by law to sight, versus term, deposits, does not seem to have affected either to date. The behavior of sight deposits has in fact been rather erratic, apparently influenced by variations in demand for money during the period. 28/ Term deposits, supposedly more seriously affected by lack of

deposit security, have grown at highly positive uniform real rates, averaging about 15%, far beyond GDP growth rates.

It is interesting to wonder whether the mechanisms of the bank law have realigned the market towards institutions perceived as safer or endowed with more than average support; specifically, whether investors' preference has veered towards Banco del Estado de Chile or foreign banks, against domestic financial institutions. Contrary to intuitive perception, the participation of domestic banks in total domestic banking obligations has tended to increase. The most relevant case is participation in total term deposits, where domestic institutions rose from 56% in 1986 to 63% in April 1989 (Table 9).

A substantial increase in local borrowings from the public by domestic banks stems from an effort to replace foreign obligations by peso liabilities, as part of the intense process of foreign debt repayment and conversion thereof into domestic assets that began in 1985. Isolating this factor, the next question is whether private banking institutions have declined, in respect of Banco del Estado and foreign banks, in their volume of business, especially loans. The figures for 1987-89 show that domestic banking institutions have gained ground considerably against the higher dynamism of foreign banks before 1985. While the

share of domestic banks has risen in real terms at annual rates on the order of 8%, somewhat lower than the 10-% share of foreign banks, the former have retained their share in the market at about 70%.

A process of financial intensification regarding the overall capital market has been visible in Chile in recent years. With reference to the stock of banking liabilities, Banco Central paper, Treasury securities, bonds and shares issued by non-financial firms, all totalled US$11 billion in 1985 and US$17 billion in 1988, or an increase from 69% to 98% of GDP, respectively.

Conversely, the relative share of bank obligations has declined from 55% in 1985 to 44% in 1989. To say that this is the result of amendments to banking legislation would be unreasonable. Rather, the explanation seems to lie in the severe shock of the capital market crisis and subsequent recovery, together with the increased rate of economic activity and favorable business expectations. Besides, the Chilean authorities have made a remarkable effort to modernize the institutions governing the non-banking capital market. Lastly, it is not surprising that as the degree of financial modernization grows in a country, there is an inevitable tendency towards development of more sophisticated forms of financial intermediation. 29/

It is worth wondering whether the more conservative nature of the shared-risk scheme and the supervision system that links bank provisions and net worth to the outcome of loan portfolio ratings has contributed to distort the structure of the banking market or competition therein. With no attempt at being exhaustive, it may be held that no symptoms have appeared to justify such concern. For example, in late 1986 the Herfindahl concentration index was 0.1027 against 0.0825 in late 1988. Similarly, the share of the five main institutions in total loans in the same period fell from 61% to 55%. Brokerage costs in the same period, though slightly higher according to partial information available, still keep within reasonable bounds. Indeed, the real average rate of gross annual return on financial assets has stabilized around 4% and 3.3%, while the average spread ranges between 3% and 3.8%. 30/ (Table 11)

From the figures discussed in this section it may be reasonably concluded that to date the new institutionsl scheme enforced in Chile since late 1986 has not aroused elements of uncertainty to block the development of the banking industry. On the contrary, elements of stability are perceived as risk internalization progresses.

It should be emphasized, however, that the years that the system has been in operation are still too few and that both

Chilean banking and the Chilean economy are going through an extremely favorable stage. In the period 1986-89 GDP has shown sustained growth at a yearly average of more than 6%, while bank surpluses in the three-year period 1987-89 accounted for an average return of 19% on the industry's capital, up from 12% in the period 1985-86. The healthy asset position prevailing today in the financial system contributes to this state of affairs. 31/ Some time is still required to prove the full benefits of this consistent and pioneering system.

NOTES

1/ A major source of inspiration for the financial market development policy were the works of McKinnon. See, in particular, McKinnon (1973) and (1977). On the bases for Chilean financial reform, see Estudios Monetarios III, Banco Central de Chile, 1974.

2/ There are some interpretations of the level of real interest rates in Sjaastad and Cortés (1977), Barandiarán (1974), Rosende and Toso (1984), Rosende and Vergara (1986), and Zahler (1985).

2a/ It should be borne in mind that strong growth of financial activity during the expansion phase of the cycle has been pointed out by many analysts --especially Henry Simons and Hayek-- as an element of deepening fluctuations, thus a factor of instability. In particular, when substantial concentration of short-term financial operations is observed.

3/ For example, see Wisecarver (1983) and Harberger (1984).

4/ A fixed nominal rate of exchange was operating in Chile since mid-1979. According to the monetary theory of the balance of payments underlying the establishment of such exchange rate, to the extent that Banco Central went ahead with expansion of domestic credit beyond growth of

demand for money, the levels of international reserves in the economy would be affected.

5/ A description and summary of the main economic policy steps taken to rehabilitate the financial sector are found in Información Financiera, SIB (1985).

6/ This interpretation of the breakdown of the exchange rule is discussed in Rosende (1988).

7/ As mentioned earlier, the financial crisis episodes arising in previous years seem to have consolidated this expectation among economic agents, insofar as nothing had changed since then in the environment in which banking institutions operated that might lead to expect a different response from the authorities in the face of a new crisis.

8/ On this issue, see Buchi (1987).

9/ For example, see Bernanke (1983).

10/ This view is based on the hypothesis developed by H. Minsky ( ) and C. Kindleberger (1978), about the highly unstable and speculative nature of private financial markets.

11/ On this point see Rosende and Vergara (1985).

12/ This hypothesis is formally examined for the Argentine case in Fernández (1983).

13/ Rosende and Vergara, op. cit.

14/ The Unidad de Fomento (UF) is a unit of account widely

used in credit operations in Chile; its movement is determined by the variation in the Consumer Price Index during the previous month.

15/ Since 1980 SIB has been perfecting its asset portfolio rating system in accordance with expected risk. Information is gathered for this purpose every four months. This supervision process currently covers 94% of all loans and the comptrolling institution reviews the ratings by field inspections conducted once or twice a year according to the nature of the financial institution concerned. In addition, trade-related credit, consumer loans, and the housing mortgage portfolio are also rated by special methods.

16/ There are at present five bank-rating firms. The system began operating in 1989 and the firms' first opinions of the banking system were published in March 1989. A joint commission composed of members from public and private organizations is also operating since 1985, under D.L. 3,500. It is known as Comisión de Riesgo (Risk-Ranking Commission) and its object is to prepare a public ranking of risk involved in capital market instruments, including paper issued by banks for purchase by Pension Funds (AFP).

17/ Barandiarán (1983).

18/ To the extent that Banco Central would have to resort to

the public sector to reconstruct its capital, had it engaged in supporting the banks' creditors independently, without coordinating with the government.

19/ This issue was raised initially by De la Cuadra, Valdés, and Wisecarver (1986).

20/ Proyecto de Modificaciones a la Ley General de Bancos, final version, June 1, 1989, page 6.

21/ Proyecto de Modificaciones..., op. cit., page 7.

22/ On this issue, see Sánchez Carlero, pp. 35 and 36.

23/ On this issue, see White (1985) and Gorton (1985).

24/ For example, see M. Friedman (1973) and H. Simons (1946).

25/ In practice, uncertainty acts as a tax especially on time-intensive activities such as savings and investment.

26/ State aid to sectors affected by unforeseeable shocks for which the firms involved cannot be held responsible --such as the recent cyanide scare in the Chilean fruit sector-- is not inconsistent with full application of the provisions of this law, although the value of banks' assets is thereby indirectly enhanced and government aid is thus channelled to the banks.

27/ For this reason the law contemplates state security on term deposits up to UF 120.

28/ On the evolution of demand for money in the Chilean economic cycle, see Matte and Rojas (1988).

29/ Precisely for that reason the Bank Law of 1986 allowed Chilean banks to go into investment banking by acting as holding companies for a number of affiliates devoted to stock brokerage, mutual fund management, bank leasing, and financial services. A significant number of such organizations are operating today.

30/ For an analysis of these indicators, see Chamorro (1989). The notion of spread as used here is broad and covers all interest rates charged on all financial assets, together with the cost of all liabilities, including sight deposits and net worth.

31/ According to the latest estimates by Superintendencia de Bancos, in March 1989 the average economic worth of the financial system was 9.7% higher than capital and reserves, that is, an asset coverage coefficient of 109.7. In 1988, banks' after-tax surpluses amounted to 20.8% of banks' capital and reserves. About 68% are ordinary resources, the balance being special revenues, including operations with foreign debt paper, the benefits from which amounted to 6.3% of capital and reserves.

CUADRO Nº 1

Año	Crecimiento PGB 1	Inflación 2	Inversión en capital Fijo $1977 1	Tasa Desempleo (Oct-Dic. Cada año) INE[2]	Indice Remun. Reales (Dic. 1982=100[2]	Indice Términos de Intercambio 1970=100 [3]
1975	-12,9	340,7	38.992	14,9	53,26	53,2
1976	3,5	174,3	33.215	12,7	59,47	57,1
1977	9,9	63,5	38.346	11,8	72,25	51,3
1978	8,2	30,3	45.009	14,1	82,57	49,8
[illegible]	[illegible]	38,9	52.593	13,6	91,59	53,4
1980	7,8	31,2	64.105	10,4	99,47	49,0
1981	5,7	9,5	74.848	11,3	108,39	38,6
1982	-14,3	20,7	49.448	19,6	108,71	33,5
1983	-0,7	23,1	42.091	14,6	96,81	36,7
1984	6,3	23,0	45.870	13,9	97,05	34,4
1985	2,4	26,4	52.650	12,0	92,72	31,9
1986	5,7	17,4	56.370	8,8	94,64	34,7
1987	5,7	21,5	65.529	7,9	94,45	36,2
1988	7,4	12,7	72.537	6,3	100,51	44,1

1. Fuente: Cuentas Nacionales Banco Central de Chile.
2. Fuente: INE.
3. Fuente: Cepal.

TABLE 1

Year	GDP Growth 1	Inflation 2	Investment in fixed capital $1977 1	Unemployment Rate (Oct-Dec. each year) INE 2	Real Remunerations Index (Dec. 1982-100) 2	Terms of Trade Index 1970-100 3

1. Source: National Accounts, Banco Central de Chile
2. Source: INE
3. Source: ECLAC

CUADRO 2-A

TASAS DE INTERES EFECTIVAS PAGADAS POR LOS BANCOS EN OPERACIONES DE 90 a 365 DIAS

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Ene.		12,74	19,50	18,10	12,64	6,00	13,45	12,52	6,94	10,76	5,92	3,57	4,33
Feb.		12,82	19,50	19,77	13,10	9,67	15,78	9,57	8,26	7,82	5,37	3,51	4,25
Mar.		13,53	19,25	16,61	13,06	12,43	14,68	8,34	7,49	7,81	5,11	3,76	4,18
Abr.		13,68	15,87	18,09	9,35	16,13	15,98	8,58	5,37	9,07	4,60	3,04	4,05
May.		14,72	17,00	17,40	7,27	10,27	20,68	8,19	7,01	10,16	4,44	4,04	4,11
Jun.		16,27	16,80	17,93	6,98	18,14	15,62	8,29	7,86	8,70	3,91	4,37	4,53
Jul.		16,15	16,80	15,07	6,94	14,94	14,08	8,72	7,96	7,58	3,61	4,28	4,90
Ago.	10,20	16,64	16,80	10,75	6,29	17,85	9,97	6,82	8,07	7,87	3,40	4,29	4,73
Sep.	11,42	16,62	17,00	10,10	6,84	18,21	7,27	5,14	11,04	7,67	3,28	4,76	5,08
Oct.	11,77	17,01	17,00	9,22	6,28	14,10	5,67	5,31	9,08	7,38	3,14	5,12	5,01
Nov.	12,43	18,03	17,50	8,89	5,94	12,83	5,52	5,19	7,49	6,86	3,28	4,84	4,71
Dic.	12,36	18,26	17,50	11,68	6,33	7,36	5,90	6,06	14,68	6,20	3,47	4,47	4,99

FUENTE: Banco Central de Chile

TABLE 2-A

ACTUAL INTEREST RATES PAID BY BANKS ON OPERATIONS AT

90-365 DAYS

Jan.

Feb.

Mar.

Apr.

May

June

July

Aug.

Sept.

Oct.

Nov.

Dec.

SOURCE: Banco Central de Chile

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CUADRO 2-B

TASAS DE INTERES EFECTIVAS COBRADAS P LOS BANCOS EN OPERACIONES DE 90 A 365 DIAS

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Ene.	24,97	19,20	12,17	19,72	10,04	8,40	9,91	9,01	6,88	7,33
Feb.	22,40	18,15	11,92	16,14	12,21	9,03	9,32	8,63	6,87	7,38
Mar.	26,10	18,56	12,97	16,21	11,40	7,90	9,20	8,46	6,77	7,33
Abr.	25,90	16,82	14,18	19,30	9,50	8,31	9,36	8,31	6,98	7,01
May.	26,18	16,62	14,80	20,98	9,16	7,59	9,67	7,94	7,13	7,46
Jun.	26,97	14,60	14,75	20,52	10,46	8,27	9,20	7,58	6,95	7,54
Jul.	24,65	14,43	14,35	23,17	9,27	8,71	9,74	7,56	7,21	8,37
Ago.	17,06	13,66	13,29	18,98	9,68	9,07	9,98	7,24	7,44	8,02
Sep.	22,39	12,79	13,69	14,63	9,26	10,08	9,61	6,86	7,52	7,51
Oct.	20,93	13,15	17,19	13,27	9,01	10,17	9,30	6,84	7,95	7,90
Nov.	20,01	12,93	18,67	10,76	9,73	9,61	8,97	6,96	7,87	7,95
Dic.	18,08	13,28	15,95	10,36	8,20	10,43	8,87	6,63	7,51	7,66

FUENTE: Banco Central de Chile

TABLE 2-B

ACTUAL INTEREST RATES PAID BY BANKS ON OPERATIONS AT

90-365 DAYS

Jan.

Feb.

Mar.

Apr.

May

June

July

Aug.

Sept.

Oct.

Nov.

Dec.

SOURCE: Banco Central de Chile

CUADRO 3-A

SPREAD DE TASAS DE INTERES EN

OPERACIONES DE CORTO PLAZO

		SPREAD BRUTO	SPREAD NETO
		(1)	(2)
1976	I	4,47	0,10
	II	3,23	0,54
	III	3,77	1,12
	IV	3,90	0,85
1977	I	4,37	2,00
	II	2,63	1,48
	III	1,70	1,12
	IV	1,33	0,78
1978	I	1,36	1,24
	II	1,24	0,89
	III	0,97	0,65
	IV	0,95	0,63
1979	I	1,10	0,94
	II	0,93	0,45
	III	0,96	0,55
	IV	0,82	0,43
1980	I	0,54	0,31
	II	0,67	0,55
	III	0,58	0,46
	IV	0,48	0,36

(cont.)

1981	I	0,42	0,28
	II	0,57	0,43
	III	0,72	0,58
	IV	0,91	0,76
1982	I	0,95	0,80
	II	0,94	0,87
	III	0,78	0,74
	IV	0,73	0,64
1983	I	1,03	0,98
	II	0,95	0,89
	III	0,92	0,86
	IV	0,83	0,78
1984	I	0,80	0,75
	II	0,80	0,76
	III	0,72	0,67
	IV	0,55	0,50
1985	I	0,86	0,80
	II	0,48	0,42
	III	0,47	0,44
	IV	0,40	0,37
1986	I	0,61	0,58
	II	0,51	0,49
	III	0,50	0,47
	IV	0,39	0,36

(cont.)

1987	I	0,45	0,42
	II	0,53	0,50
	III	0,48	0,45
	IV	0,54	0,47
1988	I	0,50	0,48
	II	0,46	0,44
	III	0,42	0,39
	IV	0,36	0,33

FUENTE: Banco Central de Chile

Spread Bruto: Diferencia entre tasa de colocación y captación.

Spread Neto: Diferencia entre tasa de colocación y captación, deduciendo los costos del encaje y reservas técnicas.

TABLE 3-A

INTEREST RATE SPREAD ON SHORT-TERM OPERATIONS

	GROSS SPREAD	NET SPREAD
.....		

SOURCE: Banco Central de Chile

Gross Spread: difference between loan rate and borrowing rate.

Net Spread: difference between loan rate and borrowing, rate after deducting costs of required and technical reserves.

CUADRO 3-B

SPREAD DE TASAS DE INTERES EN OPERACIONES DE 90 A 365 DIAS

1979	I	6,33	1984	I	0,88
	II	8,54		II	1,31
	III	9,39		III	0,26
	IV	9,74		IV	-0,35
1980	I	5,70	1985	I	0,68
	II	8,15		II	0,10
	III	6,94		III	2,07
		6,94		IV	2,23
1981	I	2,99	1986	I	3,23
	II	-0,27		II	3,63
	III	-3,22		III	3,79
	IV	5,84		IV	3,51
1982	I	2,72	1987	I	3,23
	II	2,84		II	2,90
	III	8,19		III	2,95
	IV	5,77		IV	2,97
1983	I	1,07	1988	I	3,09
	II	1,35		II	3,11
	III	2,51		III	3,06
	IV	3,46		IV	2,93

TABLE 3-B

INTEREST RATE SPREAD ON OPERATIONS AT 90-365 DAYS

CUADRO 4

COLOCACIONES BANCO DEL ESTADO
COLOCACIONES TOTAL SISTEMA BANCARIO COMERCIAL

		MONEDA NACIONAL	MONEDA EXTRANJERA
1975	Dic.	62,2	41,4
1976	Ene.	60,0	47,3
	Feb.	58,1	49,8
	Mar.	56,8	49,0
	Abr.	55,4	52,3
	May.	48,5	50,7
	Jun.	47,3	50,0
	Jul.	48,1	49,0
	Ago.	47,0	45,6
	Sep.	48,6	43,3
	Oct.	47,0	41,2
	Nov.	45,8	36,6
	Dic.	43,8	32,4
1977	Ene.	38,5	32,2
	Feb.	37,8	29,5
	Mar.	34,6	28,0
	Abr.	33,6	27,0
	May.	31,2	25,3
	Jun.	30,5	25,8
	Jul.	30,6	22,7
	Ago.	30,7	21,2
	Sep.	32,0	19,3
	Oct.	34,0	18,7

(cont.)

	Nov.	33,8	17,1
	Dic.	34,7	17,2
1978	Ene.	34,5	19,4
	Feb.	33,0	19,2
	Mar.	31,9	22,7
	Abr.	31,1	22,7
	May.	30,7	22,9
	Jun.	29,5	22,7
	Jul.	28,5	22,2
	Ago.	28,5	20,4
	Sep.	26,8*	21,3*
	Oct.	28,7	21,0
	Nov.	29,4	20,7
	Dic.	27,2	20,6
1979	Ene.	26,6	20,5
	Feb.	26,5	20,2
	Mar.	25,9	20,2
	Abr.	25,0	20,4
	May.	24,4	19,8
	Jun.	24,0	19,9
	Jul.	23,7	18,2
	Ago.	23,0	18,4
	Sep.	22,6	18,5
	Oct.	21,9	19,2
	Nov.	21,8	18,9
	Dic.	25,4	19,2

(cont.)

1980	Ene.	24,0	18,4
	Feb.	23,6	18,0
	Mar.	23,3	17,4
	Abr.	23,1	16,6
	May.	23,3	15,1
	Jun.	24,0	15,4
	Jul.	23,6	14,5
	Ago.	24,6	13,4
	Sep.	23,8	13,0
	Oct.	24,1	11,9
	Nov.	23,0	11,8
	Dic.	23,4	10,7
1981	Ene.	22,8	10,3
	Feb.	22,9	10,0
	Mar.	20,9	9,7
	Abr.	21,4	9,4
	May.	23,0	9,2
	Jun.	20,1	8,9
	Jul.	19,7	8,6
	Ago.	18,7	8,2
	Sep.	18,3	8,3
	Oct.	19,3	8,7
	Nov.	22,9	8,5
	Dic.	26,4	8,6

FUENTE: Banco Central de Chile

* Estimado

TABLE 4

BANCO DEL ESTADO LOANS

TOTAL COMMERCIAL BANKING SYSTEM LOANS

1975 Dec.

1976 Jan.

Feb.

Mar.

Apr.

May

June

July

Aug.

Sept.

Oct.

Nov.

Dec.

.....

SOURCE: Banco Central de Chile

* Estimated

CUADRO N°5-A

COLOCACIONES SISTEMA FINANCIERO

	MONEDA NACIONAL (miles Mill.$)	MONEDA EXTRANJERA (mill. US$)
Dic.79	165.703	2.257
Mar.80	189.925	3.590
Jun.	232.061	4.211
Sep.	270.595	4.885
Dic.	336.888	5.747
Mar.81	386.553	6.434
Jun.	450.406	7.105
Sep.	486.206	7.838
Dic.	530.470	7.948
Mar.82	517.834	7.894
Jun.	443.611	7.863
Sep.	473.869	6.999
Dic.	547.545	6.354
Mar.83	536.292	5.688
Jun	564.166	5.539
Sep.	594.273	5.210
Dic.	677.023	4.761
Mar.84	711.045	4.703
Jun.	748.401	4.582
Sep.	826.389	4.371
Dic.	1.013.477	3.762
Mar.85	1.121.782	3.478

(cont.)

Jun.	1.182.083	2.857
Sep.85	1.280.659	2.836
Dic.	1.334.355	2.633
Mar.86	1.402.112	2.514
Jun.	1.393.733	2.443
Sep.	1.449.110	2.583
Dic.	1.543.703	2.563
Mar.87	1.632.692	2.540
Jun.	1.743.397	2.666
Sep.	1.819.887	2.658
Dic.	1.984.240	2.633
Mar.88	2.085.474	2.422
Jun.	2.196.261	2.571
Sep.	2.310.755	2.791
Dic.	-	-
Mar.89	-	-

FUENTE: Banco Central de Chile

- No disponible

TABLE 5-A

FINANCIAL SYSTEM LOANS

	DOMESTIC CURRENCY (billion Ch$)	FOREIGN CURRENCY (million US$)
Dec. '79		
Mar. '80		
June		
[illegible]		
Dec.		

.....

SOURCE: Banco Central de Chile

- Not available

CUADRO N°6

SISTEMA FINANCIERO

DEPOSITOS 1/

(mill.$)

	Hasta 1 año 2/	% sobre el total	A más de 1 año 3/	% sobre el total
Dic.78	126.375	86,4	19.945	13,6
Dic.79	215.378	86,7	32.953	13,3
Dic.80	377.713	83,5	74.859	16,5
Dic.81	439.248	82,4	93.699	17,6
	489.836	77,8	139.977	22,2
Dic.83	512.842	72,1	198.722	27,9
Dic.84	726.354	74,1	253.394	25,9

FUENTE: Superintendencia de Bancos e Instituciones Financieras

1/ Moneda Nacional y Moneda Extranjera

2/ Incluye depósitos y obligaciones contingentes

3/ Incluye depósitos y obligaciones contingentes, más obligaciones hipotecarias

TABLE 6

FINANCIAL SYSTEM

DEPOSITS 1/

(million Ch$)

	Up to 1 yr. 2/	% of total	More than 1 yr. 3/	% of total
'78				

.....

SOURCE: Superintendencia de Bancos e Instituciones Financieras

1/ Domestic Currency and Foreign Currency

2/ Includes deposits and standby obligations.

3/ Includes deposits and standby obligations plus mortgage obligations.

CUADRO N°6-B

SISTEMA FINANCIERO

COLOCACIONES 1/

(mill. $)

	Hasta 1 año 2/	% sobre el total	A más de 1 año 3/	% sobre el total
Dic.78	110.603	68,4	50.984	31,6
Dic.79	192.028	66,7	96.070	33,3
Dic.80	355.005	64,2	198.038	35,8
Dic.81	417.536	58,1	301.438	41,9
Dic.82	430.408	44,2	542.936	55,8
	304.071	30,4	697.420	69,6
Dic.84	426.396	31,3	934.679	68,7

FUENTE: Superintendencia de Bancos e Instituciones Financieras

1/ Moneda Nacional y Moneda Extranjera

2/ Incluye colocaciones con recursos propios, con recursos del Banco Central y colocaciones contingentes.

3/ Incluye colocaciones con recursos propios, con recursos del Banco Central y colocaciones contingentes más colocaciones hipotecarias.

TABLE 6-B

FINANCIAL SYSTEM

LOANS 1/

(million Ch$)

	Up to 1 yr. 2/	% of total	More than 1 yr. 3/	% of total
Dec '78				

.....

SOURCE: Superintendencia de Bancos e Instituciones Financieras

1/ Domestic Currency and Foreign Currency

2/ Includes loans from own resources, Banco Central resources, and standby loans.

3/ Includes loans from own resources, Banco Central resources, and standby loans plus mortgage loans.

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CUADRO I -A

SISTEMA FIN CIERO
(millones de olares)

	1985	1986	1987	1988
Colocaciones	10.037	10.225	11.110	12.757
Inversiones financieras	10.213	10.463	9.613	8.161
Depósitos vista	1.891	2.381	2.600	2.978
Depósitos plazo y ahorro	4.014	4.491	5.719	6.827
Bonos hipotecarios	1.148	1.243	1.258	1.389
Capital y reservas	1.302	1.726	1.715	1.711
Excedentes	186	179	305	339

Fuente: Superintendencia de Bancos e Instituciones Financieras.

TABLE 7-A

FINANCIAL SYSTEM

(million US$)

Loans and discounts

Financial investments

Sight deposits

Term deposits and savings

[illegible]gage bonds

Capital and reserves

Surplus

SOURCE: Superintendencia de Bancos e Instituciones Financieras

CUADRO N°7-B

ANEXO
INDICADORES GENERALES
(pesos)

	P.G.B. (miles de millones)			Variación del IPC	Tipo de Cambio	
	en $ de 1978	en US$	Crecimiento (%)	%	medio	fines
1984	544.638	19.227	6,3	23,0	98,5	127,8
1985	557.957	16.018	2,4	26,4	160,9	180,2
1986	589.564	16.825	5,7	17,4	192,9	201,4
1987	623.367	18.959	5,7	21,5	219,4	234,1
1988	669.228	22.085	7,4	12,7	245,0	249,7

Fuente: Banco Central de Chile

TABLE 7-B

APPENDIX

GENERAL INDICATORS

(pesos)

GDP (billion)			CPI Variation	Exchange Rate	
in Ch$ of 1978	in US$	Growth	%	mid-yer	year-end

.....

SOURCE: Banco Central de Chile

SISTEMA FINANCIERO
(millones de pesos de cada año

	Bancos Nacionales	Banco del Estado	Bancos Extranjeros	Financieras	Sistema
Colocaciones					
1.985	1.205.566	377.061	194.135	32.074	1.808.836
1.986	1.368.907	388.725	268.250	34.058	2.059.940
1.987	1.765.975	449.638	340.290	44.475	2.600.378
1.988	2.168.204	534.665	424.326	58.269	3.185.464
1989*	2.325.502	570.354	463.087	61.883	3.420.826
Inversiones					
1.985	1.128.514	500.976	198.526	12.614	1.840.630
1.986	1.293.171	540.947	263.645	10.124	2.107.887
1.987	1.311.874	585.293	340.063	12.732	2.249.962
1.988	1.077.423	568.071	380.201	12.156	2.037.851
1989*	1.023.980	466.730	453.145	11.728	1.955.583
Depósitos Vista (**)					
1.985	126.963	72.358	27.298	150	226.769
1.986	188.313	86.016	45.395	96	319.820
1.987	215.626	106.439	56.024	519	378.608
1.988	302.308	152.616	98.071	82	533.077
1989*	306.737	103.514	103.910	700	514.861
Depósitos Plazo					
1.985	395.103	173.186	126.459	26.904	721.652
1.986	476.997	204.516	196.779	26.402	904.694
1.987	764.633	312.841	225.915	35.048	1.338.437
1.988	985.038	365.156	309.160	45.346	1.704.700
1989*	1.099.609	327.075	358.650	49.638	1.834.972

Fuente: Superintendencia de Bancos e Instituciones Financieras.
(*) Abril
(**) Netos de Canje

TABLE 8-A

FINANCIAL SYSTEM

(million pesos of each year)

	Domestic banks	Banco del Estado	Foreign banks	Financial companies	System
Loans					
.....					
Investments					
.....					
Sight deposits (**)					
.....					
Term deposits					
.....					

SOURCE: Superintendencia de Bancos e Instituciones Financieras

(*) April

(**) Net of required reserve

CUADRO N°8-B

SISTEMA FINANCIERO
(millones de pesos de cada año

	Bancos Nacionales	Banco del Estado	Ban Extranjeros	Financieras	Sistema
Bonos Hipotecarios					
1.985	140.823	41.375	19.846	4.804	206.848
1.986	186.159	36.500	22.313	5.516	250.488
1.987	219.851	39.075	29.917	5.520	294.363
1.988	261.339	48.589	31.352	5.432	346.712
1989*	278.008	55.815	32.410	5.403	371.676
Capital y Reservas					
1.985	137.414	52.838	39.633	4.680	234.565
1.986	202.123	80.385	61.849	3.290	347.647
1.987	199.110	99.505	98.203	4.499	401.317
1.988	230.564	65.874	125.261	5.459	427.158
1989*	243.535	70.024	139.666	6.521	459.746
Provisiones Riesgos					
1.985	101.097	48.541	9.924	758	160.320
1.986	132.301	33.411	11.344	936	117.992
1.987	110.449	37.994	11.849	1.327	161.619
1.988	118.073	45.379	11.405	1.632	174.489
1989*	126.026	44.096	11.939	1.604	183.665
EXCEDENTES de impuestos					
1.985	10.103	7.909	14.986	508	33.506
1.986	20.865	8.233	5.788	1.153	36.039
1.987	48.716	12.388	8.661	1.580	71.345
1.988	60.089	9.521	11.613	3.319	84.542
1989**	69.700	8.000	1.077	3.250	28.061

Fuente: Superintendencia de Bancos e Instituciones Financieras.
(*) Abril
(**) Abril (anualizado)

TABLE 8-B

FINANCIAL SYSTEM

(million pesos of each year)

	Domestic banks	Banco del Estado	Foreign banks	Financial companies	System
Mortgage bonds					
...					
Capital and reserves					
.....					
Risk provisions					
.....					
Tax surplus					
.....					

SOURCE: Superintendencia de Bancos e Instituciones Financieras

(*) April

(**) April (annualized)

CUADRO Nº9-A

SISTEMA FINANCIERO
(tasas reales de crecimiento anual,

	Bancos Nacionales	Banco del Estado	Bancos Extranjeros	Financieras	Sistema
Colocaciones					
1.985	-10,15	8,85	14,69	2,55	-4,23
1.986	-3,28	-12,19	17,70	-9,55	-3,00
1.987	6,18	-4,80	4,41	7,48	3,90
1.988	8,94	5,51	10,64	16,25	8,70
1989*	9,09	7,33	14,93	5,91	9,50
Inversiones					
1.985	68,43	52,84	78,02	-0,88	64,04
1.986	-2,39	-8,03	13,12	-31,64	-2,45
1.987	-16,51	-10,95	6,16	3,51	-12,15
1.988	-27,13	-13,88	-0,80	-15,28	-19,63
1989*	-24,10	-50,96	49,70	-20,60	-21,86
Depósitos Vista					
1.985	-5,56	14,43	-0,70	-66,85	0,51
1.986	26,34	1,26	41,65	-45,49	20,13
1.987	-5,76	1,85	1,58	344,96	-2,57
1.988	24,40	27,23	23,65	-85,98	24,93
1989*	-7,64	-72,41	108,47	-	-20,34
Depósitos Plazo					
1.985	20,02	21,13	26,07	2,90	20,50
1.986	2,83	0,59	32,54	-16,41	6,78
1.987	31,94	25,90	-5,51	9,26	21,76
1.988	14,31	3,57	21,43	14,80	13,01
1989*	23,00	-36,46	38,04	15,97	10,28

Fuente: Superintendencia de Bancos e Instituciones Financieras.
(*) Abril anualizado

TABLE 9-A

FINANCIAL SYSTEM

(real annual growth rates, %)

	Domestic banks	Banco del Estado	Foreign banks	Financial companies	System
Loans					
Investments					
.....					
Sight deposits (**)					
.....					
Term deposits					
.....					

SOURCE: Superintendencia de Bancos e Instituciones Financieras

(*) April (annualized)

CUADRO N°9-B

SISTEMA FINANCIERO
(tasas reales de crecimiento an %)

	Bancos Nacionales	Banco del Estado	Bancos Extranjero	Financieras	Sistema
Bonos Hipotecarios					
1.985	6,15	-1,70	-6,07	6,16	3,21
1.986	12,60	-24,86	-4,23	-2,20	3,15
1.987	-2,80	-11,89	10,35	-17,64	-3,28
1.988	5,48	10,34	-7,01	-12,68	4,51
1989**	6,44	34,02	-2,33	-12,99	8,89
Capital y Reservas					
1.985	25,19	2,05	21,61	0,97	18,01
1.986	25,29	29,59	32,93	-40,12	26,24
1.987	-18,92	1,88	30,68	12,55	-4,99
1.988	2,75	-41,26	13,18	7,66	-5,56
1989**	4,20	6,20	22,56	50,71	10,24
Provisiones Riesgos					
1.985	-24,87	5,68	16,04	-19,18	-15,61
1.986	11,47	-41,37	-2,63	5,18	-5,43
1.987	-31,29	-6,41	-14,03	16,69	-25,27
1.988	-5,14	5,98	-14,59	9,13	-3,11
1989**	7,51	-18,87	1,43	-16,06	-0,35
Excedentes después de impuestos					
1.985	-10,85	-32,93	17,88	-21,04	-8,16
1.986	75,91	-11,33	-67,10	93,33	-8,38
1.987	92,17	23,84	23,16	12,79	62,94
1.988	9,45	-31,80	18,97	86,39	5,14
1989**	2,58	-25,98	-75,40	-13,05	-11,96

Fuente: Superintendencia de Bancos e Instituciones Financieras.
(**) Abril anualizado

TABLE 9-B

FINANCIAL SYSTEM

(real annual growth rates, %)

	Domestic banks	Banco del Estado	Foreign banks	Financial companies	System
Mortgage bonds					
...					
Capital and reserves					
.....					
Risk provisions					
.....					
Tax surplus					
.....					

SOURCE: Superintendencia de Bancos e Instituciones Financieras

(*) April (annualized)

CUADRO N°10

MERCADO DE CAPITALES
(Millones de pesos de 1978)

PASIVOS FINANCIEROS	1985	1986	1987	1988(Jun)
Sistema bancario	205.001	223.982	265.511	280.308
- dep. y cap. plazo	101.603	101.059	130.149	125.770
- vta. PDBC c. pacto	4.422	9.126	17.501	21.362
- ahorro vista	399	462	395	489
- ahorro plazo	32.409	40.200	42.715	47.426
- bonos y lts. en circul.	43.773	45.225	43.905	44.742
- moneda extranjera	22.395	27.910	30.846	40.519
Financieras	7.162	6.228	6.532	7.116
- dep. y cap. plazo	5.643	4.663	5.165	5.248
- vta. PDBC c. pacto	287	335	361	829
- ahorro	190	212	167	246
- y lts. en circul.	1.042	1.018	839	793
SISTEMA FINANCIERO	212.163	230.210	272.043	287.424
(a) Banco Central	52.738	68.995	92.013	125.202
(b) Tesorería	29.214	23.140	12.978	10.682
(c) Otros	1.654	1.371	1.134	897
SECTOR PUBLICO	83.606	93.506	106.125	136.781
ACC. Y BONOS EMP.	88.908	159.534	198.150	227.970
OTROS	1.149	1.147	1.155	1.144
PASIVOS FINANCIEROS	385.826	484.397	577.473	653.319
COMPOSICION (%)				
Sistema Financiero	54,99	47,53	47,11	43,99
Sector Público	21,67	19,30	18,38	20,94
- Banco Central	13,67	14,24	15,93	19,16
- Tesorería	7,57	4,78	2,25	1,64
Acciones y B. Empresas	23,04	32,93	34,31	34,89

Fuente: Banco Central de Chile

TABLE 10

CAPITAL MARKET

(million Ch$ of 1978)

FINANCIAL LIABILITIES

Banking system

- term deposits and borrowings
  sale PDBC w. agreement
- sight savings
- term savings
- bonds and notes in circulation
- foreign currency

Financial companies

- term deposits and borrowings
- sale PDBC w. agreement
- savings
- bonds and notes in circulation

FINANCIAL SYSTEM

CORP. STOCKS AND BONDS

FINANCIAL LIABILITIES

BREAKDOWN (%)

Financial system

Public sector

- Banco Central

- Treasury

Corp. stocks and bonds

SOURCE: Banco Central de Chile

CUADRO N°11

SISTEMA FINANCIERO

	1986	1987	1988
Nº de instituciones	41	41	41
Indice Herfindahl	0,1027	0,0972	0,0825
Participación 5 mayores en colocaciones.	61%	58%	55%
Tasa real promedio de retorno de los activos	3,15%	2,96%	3,28%
Tasa real promedio de costo de los pasivos (*)	0,17%	-0,08%	-0,53%
Spread promedio	2,98%	3,05%	3,82%
Gastos de gestión sobre activos promedios	1,90%	2,00%	2,20%
Monto de depósito a plazo y bonos hipotecarios en inversionistas institucionales. (**)	279.800	427.900	582.200
Participación inversionistas institucionales en el total de los depósitos y bonos hipotecarios.	22,2%	26,2%	28,4%

Fuente: Superintendencia de Bancos e Instituciones Financieras, Superintendencia de AFP's y Superintendencia de Valores y Seguros.

(*) Incluye pasivos a la vista y patrimonio.

(**) Incluye AFP's, Compañías de Seguros y Fondos Mutuos. Cifras en millones de pesos.

TABLE 11

FINANCIAL SYSTEM

No. of institutions

Herfindahl index

Share of 5 largest in loans

Real average rate of asset recovery

Real average rate of cost of liabilities (*)

Average spread

Management expenses on average assets

Amount of term deposit and mortgage bonds in institutional investors (**)

Share of institutional investors in total deposits and mortgage bonds

SOURCE: Superintendencia de Bancos e Instituciones Financieras, Superintendencia de AFP, and Superintendencia de Valores y Seguros

(*) Includes sight liabilities and net worth

(**) Includes AFP's, insurance companies, and mutual funds.

Figures in million pesos.

CUADRO N°12

SISTEMA FINANCIERO
(millones de pesos de cada año)

	Riesgo de cartera (%)	Pérdida total de los activos	Provisiones	Excedente neto (**)	Capital y reservas	Indice de cobertura patrimonial (***)
1984	18,9	381.892	140.128	-60.149	157.250	-92,0
1985	12,7	407.753	192.783	13.489	234.564	0,8
1986	6,9	231.413	189.872	13.707	347.647	92,4
1987	5,1	156.812	164.563	17.610	401.316	107,4
1988	4,7	163.472	184.095	21.715	424.561	110,0
1989*	4,4	160.525	183.148	21.172	449.339	109,7

Fuente: Superintendencia de Bancos e Instituciones Financieras.

(*) Marzo.
(**) Excedentes menos provisiones para recompra de cartera al Banco Central y para dividendos preferentes.
(***) Patrimonio económico sobre capital y reservas contable = (capital y reservas + provisiones + excedente neto - pérdidas de activos)/capital y reservas.

TABLE 12

FINANCIAL SYSTEM

(million pesos of each year)

Portfolio risk	Total asset loss	Provisions	Net surplus (**)	Capital and reserves	Net worth coverage index (***)

.....

SOURCE: Superintendencia de Bancos e Instituciones Financieras (*)

(**) Surplus less provisions for repurchasing portfolio from Banco Central and dividends.

(***) Economic net worth over accounting capital and reserves = (capital and reserves + provisions + net surplus - asset losses)/capital and reserves

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CUADRO N°13

CAPITALIZACIONES DEL SISTEMA FINANCIERO CHILENO
ENTRE 1985 - JULIO DE 1988
(Cifras en millones de $ de julio de 1988)

a.- Distribución por período

	1985	1986	1987	1988(Julio)	Total
Ley Nº 18.401	70.298	43.044	0	0	113.342
Cap. XVIII, Anexo Nº 4	0	6.279	3.868	0	10.147
Cap. XIX	0	2.544	2.687	10.010	15.241
D.L. Nº 600	6.899	11 162	19.380	0	37.441
Ley Nº 18.577	0	5.266	0	0	5.266
Capitaliz. provisiones	0	22.547	0	0	22.547
Otros mecanismos	0	2.607	645	260	3.512
	77.197	93.449	26.580	10.270	207.496

b.- Distribución por agrupación de instituciones

	Bancos Nacionales	Bancos Extranjeros	Banco del Estado	Sociedades Financieras	Total
Ley Nº 18.401	113.342	0	0	0	113.342
Cap. XVIII, Anexo Nº 4	9.763	0	0	384	10.147
Cap. XIX	2.599	12.642	0	0	15.241
D.L. Nº 600	0	37.441	0	0	37.441
Ley Nº 18.577	5.266	0	0	0	5.266
Capitaliz. provisiones	0	0	22.547	0	22.547
Otros mecanismos	281	2.971	0	260	3.512
TOTAL	131.251	53.054	22.547	644	207.496

Fuente: Superintendencia de Bancos e Instituciones Financieras.

TABLE 13

CAPITALIZATION IN THE CHILEAN FINANCIAL SYSTEM

1985 - JULY 1900

(million Ch$ of July 1988)

a. Breakdown by period

Law No. 18,401

Chap. XVIII, App. 4

Chap. XIX

D.L. 600

Law No. 18,577

Capitalized provisions

Other devices

b. Breakdown by group of institutions

	Domestic banks	Foreign banks	Banco del Estado	Financial companies	Total
Law No. 18,401					
Chap. XVIII, App. 4					
Chap. XIX					

D.L. 600

Law No. 18,577

Capitalized provisions

Other devices

SOURCE: Superintendencia de Bancos e Instituciones Financieras

CUADRO N°14

CLASIFICACIONES DE BANCOS Y FINANCIERAS.

INSTITUCION	CLASIFICACION ESTATAL O MIXTA		CLASIFICACION PRIVADA (+++) (3)		
	Cobertura Patrimonial(%) Superintendencia (+)(1)	Comisión Clasificadora de Riesgo (++)(2)	Clasificación N°1	Clasificación N°2	Nombre de los clasificadores (Clas. N°1- Clas.N°2)
FINANCIERA FUSA S.A.	197,2	A***	AAA	Aaa	Rate - Prisma
BANCO DEL DESARROLLO	184,5	A*	Aa	A	Clasif. Asoc.-Aninat M...
CORP. FINANCIERA ATLAS S.A.	175,6	A***	AAA	Aa	Rate - Clasif. Asoc.
BANCO HIPOT. INTERNACIONAL FINANCIERO	144,9	A*	Aaa	AA	Prisma - Aninat M...
BANCO BICE	142,5	A***	AAA	Aaa	Rate - Prisma
BANCO OSORNO Y LA UNION	141,9	A*	Aa	Aaa	Clasif. Asoc.- Prisma
BANCO SUDAMERICANO	141,7	A	AA	Aa	Feller S...- Prisma
BANCO O'HIGGINS	141,3	A	Aa	AA	Clasif. Asoc.-Aninat M...
BANCO DE CHILE	134,2	A*	AA	AAA	Aninat M...-Feller S...
BANCO DE CREDITO E INVERSIONES	134,1	A*	Aa	AA	Clasif. Asoc.-Feller S...
BANCO CONCEPCION	133,4	A*	Aa	Aaa	Clasif. Asoc.- Prisma
FINANCIERA CONDELL S.A.	131,6	A***	Aaa	AA	Prisma - Aninat M...
BANCO DE SANTIAGO	123,7	A*	Aa	AAA	Clasif. Asoc.-Feller S...
REPUBLIC NATIONAL BANK OF N.Y.	122,1	A***	Aaa	AAA	Prisma - Aninat M...
THE BANK OF TOKYO LTD.	119,7	A***	AAA	AAA	Feller S...- Rate
BANCO DE A. EDWARDS	117,5	A*	Aaa	AA	Prisma - Aninat M...
BANCO DEL ESTADO DE CHILE	114,0	A***	Aa	Aaa	Clasif. Asoc.- Prisma
FINANCIERA COMERCIAL S.A.	111,7	A*	AA	AAA	Aninat M...-Feller S...
BANCO SUDAMERIS	110,5	A***	Aa	AAA	Clasif. Asoc.-Aninat M...
CITIBANK N.A.	110,0	A***	AAA	Aa	Rate - Clasif. Asoc.
BANCO DE COLOMBIA	109,9	A**	AA	Aa	Rate - Clasif. Asoc.
THE FIRST NAT. BANK OF BOSTON	109,5	A***	Aa	AAA	Clasif. Asoc.-Aninat M...
BANCO SECURITY PACIFIC	109,4	A***	AAA	AAA	Feller S...- Rate
THE CHASE MANHATTAN BANK N.A.	109,4	A**	Aa	AAA	Clasif. Asoc.-Feller S...
MORGAN BANK CHILE	109,0	B*	AAA	AAA	Aninat M...-Feller S..
BANCO ESPAÑOL-CHILE	108,9	A*	Aa	AAA	Clasif. Asoc.-Feller S...
BANCO INTERNACIONAL	108,9	A*	A	AAA	Aninat M...-Feller S..
BANCO DO ESTADO DO S. PAULO	108,9	A**	Aa	Aaa	Clasif. Asoc.- Prisma
BANCO DO BRASIL	106,6	A**	Aa	AAA	Clasif. Asoc.-Feller S...
AMERICAN EXPRESS BANK LTD.	106,5	A***	AAA	AAA	Aninat M...-Feller S..
CHICAGO CONTINENTAL BANK	105,8	A**	AAA	AAA	Aninat M...-Feller S..
THE HONGKONG AND SHANGHAI BANKING CORP.	103,8	A**	AA	A	Rate - Prisma
BANCO DE LA NACION ARGENTINA	102,8	A**	Aa	Aa	Clasif. Asoc.- Prisma
BANCO REAL	102,8	A**	AA	Aa	Rate - Prisma
BANCO EXTERIOR 3 A	101,6	A*	Aa	AAA	Clasif. Asoc.-Aninat M...
CENTROBANCO	100,6	A***	AAA	AAA	Rate -Aninat M...
BANK OF AMERICA	100,0	A***	AAA	AAA	Rate -Aninat M...
MANUFACTURERS HANOVER BANK CHILE	99,5	B*	AA	Ba	Rate - Clasif. Asoc.
BANCO CONTINENTAL	98,8	A	AA	AAA	Rate -Aninat M...
BANCO NACIONAL	92,6	B	B	C	Rate - Clasif. Asoc.
BANCO DEL PACIFICO	47,4	B	C	C	Rate - Clasif. Asoc.

(+) Fuente: Diario Oficial del 31 de diciembre de 1988 (Con cifras al 30 de noviembre de 1988). Publicación de la calidad de los activos de los bancos y las sociedades financieras.
(++) Fuente: Diario Oficial del 28 de febrero de 1989. Clasificación para efectos de las inversiones de los fondos de pensiones.
(+++) Fuente: Diarios Oficiales del 1° al 6 de marzo de 1989. Clasificación obligatoria contemplada en la Ley de Valores.

COMENTARIOS:

1.- La clasificación de la Superintendencia apunta a medir la cuantía de los resguardos que poseen los bancos para enfrentar pérdidas, en proporción a su capital. Las otras tres clasificaciones califican la capacidad de los bancos para cumplir con el pago de sus obligaciones.
2.- La clasificación de la Comisión Clasificadora de Riesgo responde a la aplicación de una metodología estricta contenida en un reglamento. Las metodologías de los evaluadores privados se encuentran registradas en la Superintendencia y pueden contener o no algunos elementos subjetivos.
3.- Se aprecia que el mercado de las clasificaciones privadas se reparte bastante equilibradamente. Clasificadores Asociados presenta la mayor participación.
4.- Las diferentes nomenclaturas utilizadas por los clasificadores privados dificultan las comparaciones. En todo caso, todos ellos, con excepción de Clasificadores Asociados, utilizan las subcategorías triple A, doble A y A. Clasificadores Asociados no utiliza la triple A.
5.-De las 42 instituciones clasificadas, 33 recibieron calificación máxima por parte de al menos uno de los dos evaluadores privados y, de estas últimas, 23 recibieron calificación máxima de los dos evaluadores privados que las clasificaron.
6.- Entre los evaluadores privados se aprecian algunos casos en que existen distintos puntos de vista en relación al riesgo de las instituciones bancarias. Por ejemplo: Desarrollo, BHIF, O'Higgins, Chile , etc.
7.- Las clasificaciones estatales y privadas coinciden en que, en general, se puede afirmar que nos encontramos en presencia de una banca sana y solvente.
8.- La evolución de los indicadores de la Superintendencia y de la clasificación de la Comisión Clasificadora de Riesgo muestran una tendencia favorable en cuanto a la solvencia de la banca en el curso de los últimos tres ejercicios.
9. Las clasificaciones estatales y privadas coinciden en los casos que se han otorgado las calificaciones más desfavorables.

TABLE 14

RATING - BANKS AND FINANCIAL COMPANIES

INSTITUTION	GOV'T OR MIXED RATING		PRIVATE RATING (+++) (3)		
	Net worth coverage (%) Superintendencia (+)(1)	Risk Rating Commission (++)(2)	Rating 1	Rating 2	Name of rating company (R 1 - R 2)

(+) SOURCE: Official Gazette, December 31, 1988 (Figures as of November 1988). Publication on quality of bank and financial company assets.

(++) SOURCE: Official Gazette, February 28, 1989. Rating for pension fund investments.

(+++) SOURCE: Official Gazette, March 1-6, 1989. Mandatory rating under the Law on Securities.

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REMARKS:

1. The Superintendencia rating aims to measure the amount of bank safeguards in the event of losses, as percentage of capital. The other ratings refer to bank ability to fulfill obligations.
2. Rating by the Risk Rating Commission applies strict methods contained in a set of regulations. Private rating methods are registered with the Superintendencia and may or may not contain some subjective elements.
3. The private rating market is shared in a fairly balanced way. Clasificadores Asociados has the largest share.
4. The different nomenclatures used by private rating companies make comparisons difficult. In any event, all except Clasificadores Asociados use 3-A, 2-A and A. Clasificadores Asociados do not use 3-A.
5. Of 42 institutions rated, 33 were given top rating by at least one of the two private rating companies; of these, 23 were given top rating by both the private rating companies that rated them.
6. Among private rating companies opinions sometimes differ as to banking institution risks, e.g. Desarrollo, BHIF, O'Higgins, Chile, etc.
7. Government and private ratings agree that, in general, the banking community is sound and solvent.

8. The evolution of ratings by Superintendencia and Risk Rating Commission show a favorable trend as regards bank solvency in the past three fiscal years.
9. Where lowest ratings have been given, government and private ratings agree.

NOTES TO TABLE 14

1. This rating refers solely to the quality of bank and financial company assets, and is published three times a year, pursuant to article 13 bis of the Organic Law of Superintendencia de Bancos. This provision was amended to this effect by Law No. 18,756. Bank rating according to quality of assets and qafeguards against potential losses was published for the first time for May 1985; there have been 6 such publications to date (always in the Official Gazette).
2. This rating refers to overall risk of debt instruments issued by financial institutions. The rating is performed by Pension Funds and confirmed or amended by a commission composed of 4 representatives of public agencies (SVS, SAFP, SBIF, BCCH) and 3 private sector representantives designated by the pension funds themselves. Ratings are reviewed and published monthly in the Official Gazette. Risk rating and operation of the Risk Rating Commission are governed by DL 3,500 of 1980, amended to this effect by Law No. 18,398. of January 1985. Risk Rating by AFP's and this Commission began in July 1985.
3. Private rating is performed by private evaluators

governed by the provisions of the Security Market Law and the Organic Law of Superintendencia de Bancos. Mandatory quarterly rating was established by Law No. 18,660, of October 1987, which amended the Security Market Law. This rating was performed for the first time in March 1989. Each bank must be rated by 2 private rating companies. For this purpose, the latter have access to restricted information about the institutions concerned. Each rating company has its own methods, which must be registered with Superintendencia.

Do "Vulnerable" Economies Need Deposit Insurance?: Lessons from the U.S. Agricultural Boom and Bust of the 1920s

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I. INTRODUCTION

To justify the substantial protection that governments offer banks, regulators frequently refer to banks' unique position as the channel through which payments clear, and through which essential short-term commercial and working-capital credit are provided to parties whose access to other sources of funds is limited. Banks are "special" because all other industries rely on them to maintain their operations and execute their transactions in a timely, convenient way. In particular, whether one defines the payments system narrowly to include only check clearing, or more broadly to include lines of short-term credit to "information-intensive" borrowers, it would be hard to conceive of a payments system without banks.

Thus shocks that threaten the viability of banks, encourage financial disintermediation, and cause disruptive bank failures or suspensions of deposit convertibility can be very costly to society, and these costs may be far greater than the reduced profits, or bankruptcy costs, incurred by banks. Recent research on the peculiar severity of the Great Depression and the vulnerability of agricultural producers to banking disturbances in the 1980s have received particular emphasis as examples of socially costly financial disruption (see Bernanke, 1983; and Calomiris, Hubbard, and Stock, 1986). The externalities generated by banks' special role as check clearing agents and commercial credit suppliers, therefore, may provide a rationale for regulation of banks.

Notwithstanding this presumed vulnerability of the

payments system and the essential role of banks, critics of current government interventions into banking have argued that the government has gone too far in guaranteeing bank liabilities and consequently has promoted an unacceptable degree of socially undesirable risk taking by banks. For example, from a theoretical perspective, Calomiris and Kahn (1988) argue that demandable-debt banking, and the first-come first-served rule of bank repayment to depositors, were part of an incentive-compatible equilibrium in which informed depositors (often other banks) were rewarded for investing resources in monitoring banks. Insurance removes the reward, and hence the incentive, that encourages such monitoring. Insured banks' incentives to undertake excessively risky projects are magnified by shocks that reduce bank capital (see Calomiris and Kahn, 1989), which increases the value of the put option inherent in deposit insurance (see also, Karaken and Wallace, 1978). Empirical evidence of excessive risk taking by insured financial intermediaries, especially in response to adverse shocks that reduce bank capital, has been provided by Kane (1988) and Calomiris (1989), among others.

Furthermore, critics argue that regulators underestimate the extent to which the financial "safety net" could be provided with little or no government insurance of banks. For example, private clearinghouses historically provided coinsurance among member banks that reduced the incentive for depositors to remove funds from banks during periods of

financial uncertainty. Mutual regulation and monitoring ensured that members would not free ride on the group protection (see Cannon, 1910; and Gorton, 1985). Coordination among banks, sometimes even across state lines, was enhanced in and among states that permitted branch banking -- in particular, in the antebellum American South (see Calomiris, 1989).[1] With fewer, and better diversified, banks it was easier for banks to respond to crises as a group, again effectively coinsuring by continuing to "make markets" in other banks' deposits and notes.

Similarly, in three unit-banking states of the antebellum North, statewide bank liability insurance plans modeled on private clearinghouse coinsurance arrangements managed to protect the payments system and limit (or eliminate) bank failures and suspensions of convertibility without encouraging excessive risk taking by members. These plans gave member banks authority to enact and enforce regulations, and provided the incentive for effective self regulation and monitoring by making member banks fully and mutually liable for the liabilities of any failing banks. These systems managed to maintain the smooth functioning of the payments system within and across states, and saw few, if any, bank failures relative to states that lacked an effective means of bank coordination. A review of the experiences of these antebellum bank insurance success stories, and the very different experiences of other state bank insurance schemes, is provided in Calomiris (1989).

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The apparent lesson of historical bank clearinghouses, early Southern branch banking, and mutual-guarantee self-regulating insurance plans under government sponsonship is that banking coalitions can act to coinsure effectively against many threats to the payments system. The successful operation of private clearinghouses in today's financial markets -- for example, the CHIPS network, or the futures and options clearinghouses -- indicate that these lessons can be applied successfully in the modern context, as well.

Private coinsurance schemes, however, cannot offer unlimited protection against financial collapse in all circumstances. Private insurance is not effective in preventing disintermediation by depositors who question the ability of the coalition to guarantee the losses of its members. Once a shock becomes large enough to threaten the capital of the group of banks as a whole -- rather than simply a small subset of its members -- coinsurance ceases to be credible.

Furthermore, the geographic range of privately coinsuring groups -- and consequently the potential for coinsurance -- may be restricted by laws that limit branch banking, and thus impair the ability of bankers in different locations to communicate, monitor one another, and coordinate their behavior. Most financial crises in U.S. history began as small disturbances, relative to aggregate bank capital, which were insurable, in principle, by mutual protection among banks.

Reasonable fears of insolvency of a subset of banks, confusion as to which banks had suffered most from the shock, and the absence of a mechanism for mutual protection at the state or national level, however, provided incentives to depositors, who were unable to determine the precise incidence of the disturbance, to withdraw their funds (see Gorton, 1989; and Calomiris, 1989). Lacking effective means to coinsure against such disturbances, the thousands of independent and geographically distant unit banks sometimes were forced to suspend convertibility as a defensive reaction during such economy-wide bank runs. Other banks failed due to losses incurred as the result of "fire sales" of assets to meet withdrawal requests (see Calomiris and Schweikart, 1988; and Calomiris, 1989).

The relative success of statewide systems of branching banks, or mutual-liability banks, in meeting such crises as the Panic of 1857 suggests that, for an economy as diverse nationally as the United States, a combination of full nationwide branch banking and government-sponsored, privately-managed mutual-liability insurance may be sufficient to prevent large sector- or region-specific shocks to bank capital from becoming a threat to aggregate bank capital, and therefore, the payments system.

One could argue, however, that this approach might not be sufficient for economies with intrinsic vulnerability to large sector-specific shocks that threaten aggregate bank solvency.

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In the case of the United States, full interstate branching virtually could eliminate the risk to banks from regionally concentrated shocks to the terms-of-trade, which have proved particularly important for the agricultural and oil-producing sectors (see Alston, 1983; Stock, 1985; and Calomiris, Hubbard, and Stock, 1986). In smaller countries with less diversified economies, however, the risk from terms-of-trade shocks is large (see Brock, 1988), but the potential for reducing payments system risk through diversification is more limited because national sovereignty limits the development of full international branch banking. The limitations due to national sovereignty can be viewed as an example of the "time-inconsistency" problem. Banks chartered in country X may decide to leave their local branches in country Y stranded rather than pay for their losses during bad times, and there may be no way for country Y to force them to do so. Furthermore, governments may find it optimal to limit the repatriation of bank profits to support bank branches in other countries.

Should the governments of such intrinsically risky economies stand ready to bail out banks in the event of a large adverse shock to the country's economic base? The question may be posed in two parts: How great are the advantages of a government's insuring the payments system (whether narrowly or broadly defined) from the strains of such shocks, rather than relying on a privately administered, mutual-guarantee system?;

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Are the social costs of excessive risk taking by banks, which result from the existence of bank deposit insurance, greater or less than the supposed benefits of insurance?[2]

The specific historical cases I will discuss are the experiences of agricultural areas of the United States in the 1920s -- a period that witnessed a rapid, sharp terms-of-trade reduction for agricultural producers and an unprecedented rate of farm, business, and bank failures in the most affected regions. The 1920s provide a particularly useful context to investigate the role of different regulatory regimes in reducing or magnifying the effects of the shock on the viability of financial intermediaries. Interstate branch banking was not permitted, though some states allowed full, or limited, intra-state branching. Furthermore, some states had enacted deposit insurance prior to the crisis. Finally, the existence in each state of nationally chartered banks (under a common regulatory regime across states) provides a point of comparison across states of the magnitude of the shock to banks in each state, which can provide insight into the comparative performance of the various state-chartered banking regimes, and the contribution of deposit insurance or branch banking in magnifying or lessening the impact on banks.

In Calomiris (1989) I presented evidence from the 1920s of much higher initial growth, and subsequent failure rates, for four state-chartered, insured banking systems relative to national banks operating in the same state, which were

prohibited by the Comptroller from joining state deposit insurance funds. While this comparison was a useful first step, it is important to establish that the differences between insured state-chartered and uninsured national-chartered bank failure rates are not merely an artefact of different exposure to agricultural risk, due to different locational patterns (rural vs. urban) for state- and national-chartered banks, or more restrictive regulations on national-chartered banks -- in particular, stricter limitations on real estate loans.[3] Here I look at all eight of the insured systems, and compare the performance of national- and state-chartered banks within and across states, taking account of differences in economic and regulatory environment (e.g., the existence of branching and deposit insurance), and using additional indicators of bank performance.

No single historical example can provide a conclusive "answer" to the broad question of whether banking system bail-outs are socially desirable in price-sensitive economies; but it is only through the accumulation of evidence from examples on the costs of such crises, and the consequences of the decisions to provide insurance or allow branching, that policy makers will be able to make the difficult choices of bank regulatory policy in an informed manner.

Section II provides cross-sectional evidence on price, income, and wealth movements, and indicators of financial distress experienced by the various states in the 1920s.

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Section III measures changes in the size, number, and portfolio structure of national- and state-chartered banks prior to and during the crisis. Section IV evaluates differences in the performance of the state-chartered banking systems in response to the crisis -- specifically, the rates of bank suspension and bank failure, the costs to depositors of failures, and the ability of the banking systems to recover from the crises, under different state regulatory regimes. Section V returns to the central question of whether deposit insurance is desirable for economies with intrinsic vulnerability to large income disturbances.

II. THE POST-WORLD WAR I AGRICULTURAL CRISIS

Typically, wars have been good times for farmers. World War I, like the Napoleonic Wars, and the Crimean War of the 1850s, witnessed a rapid expansion of agricultural income. As for previous wartime booms, however, the end of war brought with it a severe decline in the agricultural terms of trade. Declines in price and income became translated into declines in farm land values, and farmers who had expanded operations with debt financing during the boom found their incomes slipping as their leverge ratios rose, often to levels that were unsustainable.

The crisis was quite sector- and region-specific. Indeed, for most sectors (and consequently, the "non-agricultural" states) in the U.S. the 1920s were a "new age" of unprecedented

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stability and growth. In many states with a heavy reliance on agricultural earnings, however, the period was one of sustained declining income and financial collapse.[4] Differences across the states in the degree of agricultural stress reflected different movements in earnings and wealth, as well as differences in farmers' financial vulnerability to those declines.

Table 1 provides an index of real gross farm income and its components for 1910-1930. These figures show that the decline in agricultural income affected virtually all producers, though the timing and severity of decline varied across activities, with staple foodstuffs and textile raw materials suffering the worst percentage declines from 1919 to 1921.

The uneven sectoral decline within agriculture produced different responses of income and wealth across states. Furthermore, Alston (1983) finds that similar farm wealth and earnings reductions produced far greater rates of farm foreclosure in some states than in others. States that had expanded farm acreage, and farm leverage, during the wartime boom, suffered much higher rates of farm foreclosure, holding declines in wealth and income constant.

Foreclosure rates for farms throughout the country during the 1920s and 1930s reached historic highs that have never been exceeded. For 1921-1940 foreclosure rates averaged more than five times the highest average levels for any other decade from

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1913 to 1980. While the national average was high during the interwar period, the uneven incidence of foreclosure across states made matters far worse in some states. In Montana, from 1921 to 1923, 28 percent of farmers lost farms or property.[5] From 1926 to 1930, foreclosures in Montana relative to owner-operated farms in the state averaged 52.2 per thousand, per year.[6] Other Northern and Western states with extremely high foreclosure rates (per thousand owner-operated farms) for 1926-1930 include South Dakota (70.4), North Dakota (58.0), Oklahoma (50.0), Iowa (48.3), Arizona (42.7), and Colorado (42.4). In the South, South Carolina (68.0), Georgia (56.5), Mississippi (47.7), and Louisiana (40.1) had substantially higher rates of foreclosure than the other Southern states. Arkansas (39.7), Nebraska (38.4), Idaho (37.6), and Missouri (34.1) also experienced foreclosure rates substantially above the national average of 27.1 per thousand.

Tables 2 and 3 provide a variety of measures of economic conditions for each of the 48 contiguous states during the period 1919-1930. Table 2 contains data on: gross farm income growth from 1919 to 1921; growth in total net income from all sources received by the farm and non-farm populations from 1919 to 1921; the ratio of farmer to non-farmer income in 1920; the percentage difference in the value of crops sold from 1922 to 1925, and from 1925 to 1928; and the percentage change in the state-specific crop price index from 1919 to 1924.

Table 3 reports: the change in the value of farm real

estate per acre over the periods 1913-1920, 1920-1925, and 1925-1930; the ratio of mortgage debt to farm real estate value in 1920; the farm-to-total population ratio for 1920; and the farm foreclosure rate for 1926 to 1930.

The choices of dates for each series in Tables 2 and 3 reflect data availability, as well as the peaks and troughs of the agricultural cycle. While the income, wealth, and price variables in Tables 2 and 3 are all expressed in nominal terms, rather than adjusted for aggregate price level movements, the GNP deflator was roughly constant for the years 1919-1929, with the exception of 1920, according to recent estimates, both by Romer (1989), and Balke and Gordon (1989). These estimates are reproduced in Table 4. Moreover, from the standpoint of the sustainability of farms and farmers' ability to repay debt to banks, it is nominal income and wealth that matter, since debt and debt service are set in nominal terms.

Tables 2 and 3 indicate that the first decade of the agricultural crisis (1920-1930) can be divided usefully into three stages: the initial shock of 1920-1921, a period of partial recovery from 1922 to 1924, and a subsequent period of decline. Because of differences in crop mix, supply-side variation, and financial vulnerability, the experiences of the various states differed substantially during these three sub-periods, as the tables show.

No single indicator provides an adequate index of the experience of a particular state during one of these sub-

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periods. First, income and price indicators are extremely sensitive to the specific dates over which they are calculated. For example, 1924 was a relatively good year for Montana and North Dakota, and differs markedly from either 1923 or 1925 in this respect. Second, some income or price movements are perceived as transitory, while others are viewed as more permanent. Aside from the immediate cash-flow effects of such changes, the economic impact of income shocks on farmers' wealth and financial viability depended on perceptions of how permanent these disturbances were. Third, the impact of a wealth or income shock depends on the vulnerability (leverage) of farms -- that is, how severe the shock was relative to previous expectations of future income. The highest foreclosure rates occurred in states with a relatively high ratio of farm mortgage debt to farm real estate value, as indicated in Table 3. These considerations suggest that, while the changes in prices and income provide measures of the sources of disturbances, the value of farms and the farm foreclosure rate are more indicative of the likely (anticipated) long-run changes in farm income associated with those shocks.[7]

Finally, in evaluating the impact of agricultural shocks on statewide bank performance, the proportion of state income derived from farming, and the proportion of the labor force employed in farming, are of obvious importance. The geographical isolation of farming communities is also relevant,

as it affects the abilities of merchants or bankers in these areas to diversify.

The links (explored in section IV, below) between indicators of economic condition reported in Tables 2 and 3, and the threat to banks in a given state, therefore, are subtle. Ideally, in analysing these links, one would want to take account of the perceived permanence of different income shocks, the degree of financial leverage, the rapidity and cumulation of shocks, and the link between the degree of concentration of income in agriculture and the impact on banks from agricultural shocks.

The focus of this study is on the role of regulatory regimes in limiting the incidence and costs of financial disruption in the face of a substantial challenge to the financial system. To evaluate the influences of the different state regulatory decisions in propagating adverse shocks, I compare the performance of banks in the states that were substantially affected by the agricultural depression, under different regulatory environments.

The sample of states defined to have been substantially affected, whose financial systems are analysed in greatest detail below, includes any state that experienced farm real estate value reduction (per acre) of greater than 20 percent from 1920 to 1930, or an average annual farm foreclosure rate of greater than 20 per thousand from 1926 to 1930. This sample includes states that suffered extreme depression, as well as

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those with more moderate commercial failure rates and bank failure experiences (discussed in section IV). The states in the sample are listed in Table 5, categorized according to their deposit insurance and branch banking laws.

III. BANK MEMBERSHIP AND BALANCE SHEET PATTERNS ACROSS STATES

Regulation's Influence on Membership, Location, and Risk

National banks were governed by common regulations across different states, and thus their experience provides something of a state-specific benchmark against which to compare the behavior of state-chartered banks across states. Bank entry and asset growth, as well as financing and portfolio decisions of state-chartered banks, can be compared to one another, in absolute terms, as well as relative to the behavior of national banks in the respective states.

Of course, national banks were not identical across states and faced different exposure to agricultural risk. While in every state national banks were larger on average, and located more often in cities than their state-chartered counterparts, differences across states in the locational and size patterns of national and state banks were important. In some states, national or state banks operated more in urban locations and were larger on average than in others. Furthermore, national banks in cities that served as regional reserve centers for agricultural areas may have suffered asset depletion due to the

impact of agricultural disturbances on correspondents. In what follows, I try as much as possible to control for these differences across states.

The years prior to 1920 saw the establishment of deposit insurance systems in several states. Often it has been remarked that incentive problems due to insurance made insured banking systems grow at a "reckless" rate, and caused them to limit the growth of capital, and overextend themselves in the farm loan market (Thies and Gerlowski, 1989; Calomiris, 1989; White, 1983; FDIC, 1956; ABA, 1933; Robb, 1921); however, no systematic quantitative comparisons of the behavior of the different state-chartered systems have been made before, to my knowledge.

It is difficult to distinguish incorrect expectations of persisting prosperity from excess risk taking induced by deposit insurance unless one has a standard against which to measure the behavior of insured banks. When one controls for differences in economic environment, uninsured state banking systems in other states, and national banks in the same state, one has provided such standards of comparison.

The dates for which the different state deposit-insurance systems came into and out of operation are given in Table 5. For three states (Kansas, Texas, and Washington), participation in state-run deposit insurance was voluntary. Numbers and deposits of participating and non-participating state banks in these states are given in Table 10. All state-run insured

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banking systems were in operation during the boom of 1918-1920, and with the exception of Washington, the state-operated insurance systems were the dominant component of the state-chartered systems by 1920. In Texas, state banks that did not belong to the state-run system were privately insured, as required by regulation; while in Washington and Kansas state-chartered banks could avoid insurance altogether.

In describing the peculiar incentives of insured banks, one should distinguish between voluntary and involuntary state systems. Under voluntary insurance legislation, banks could retain state charters without joining the insured system. Since national charters were a costly means for many banks to avoid the insurance fund, voluntary state insurance was an important additional option.

The laws governing withdrawal from a state's insurance plan were extremely important as well. In two of the three voluntary systems (Washington and Kansas), banks opting out of state-run insurance could avoid any form of insurance. These two systems also limited the effectiveness of insurance -- and thereby reduced risk subsidization among banks -- by allowing member banks to leave the insurance system at any time. Washington's system went further, and provided essentially no protection for large losses, because it allowed banks to opt out at any time without even retaining liability for past losses. In Washington, low initial insurance premia and the ability to leave the voluntary systems seem to have encouraged

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many banks that were not aggregious risk takers to join, only to opt out once troubles began. In Texas, voluntary withdrawal was not permitted until the insurance law was amended in 1925. Of course, banks could also opt out of any of the compulsory or voluntary state systems by securing a national charter, although this would have entailed costs to banks that relied on activities prohibited by national law, or those with insufficient capital.

In Texas, even though all state-chartered banks were required to have some form of insurance, the privately insured banks were unlikely to have had the same opportunities to take advantage of insurance through excessive risk taking. While there is much evidence that supervision and regulation were lax in the state-run plans, historical examples of privately run insurance (see Calomiris, 1989) indicate that excessive risk taking was not a problem because of strong incentives by insurers to provide effective regulation and supervision. Thus Texas' state-chartered banks that chose private rather than state-run insurance are likely to have assumed risks comparable to uninsured banks in other states.

Both compulsory and voluntary insurance during this period differed from current U.S. federal deposit insurance in several important respects. Typically, interest rates on insured deposits were restricted by law (except in Nebraska), and capital requirements were much higher than today (typically, 10 percent of deposits for insured banks). While these interest

rate ceilings were sometimes hard to enforce because of outright fraud, or the use of discounts as an alternative to interest (see Cooke, 1910), they constrained the availability of funds somewhat, in contrast to FDIC and FSLIC regulations that allow risk-taking member to attract funds by offering unusually high-interest insured CDs. Furthermore, as in virtually all state systems, and the national banking system, stockholders had extended liability equal to the amount of capital in the bank. This was not equivalent to a doubling of the capital stock because collections from assessments on the stockholders of failed banks averaged less than 50 percent of assessments, for all state banking systems from 1921 to 1930.[8] Finally, the state systems were not insured by the state treasuries, but rather by member banks as a group, through an insurance fund to which banks contributed annual assessments. These assessments had upper bounds annually, which meant that solvent banks' liability was limited. Furthermore, by leaving the system, or forcing repeal of the insurance statute by threatening to do so, solvent banks who belonged to the insured systems in the 1920s were able to avoid much of the liability to depositors of failed banks (more on this below). All these considerations imply that the effective protection of depositors, and the potential for excessive risk taking would have been less under the historical insured systems than under current federal deposit insurance. Thus evidence on incentive problems in these plans provides an a fortiori case for

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potential excessive risk taking under government-guaranteed insurance of the kind available in the U.S. currently.

Evidence on the Effects of Deposit Insurance

Tables 6 through 10 present measures of state banking system averages and aggregates, disaggregated by type of bank charter and by state, for the 32 "agricultural-crisis" states for various dates. The indicators include: the number of banks, the proportion located in towns or cities of 2500 or more, average total assets per bank, aggregate total asset growth, and the ratio of capital to assets.

As the data for the various state- and national-chartered systems show, not all types of banks were equally likely to join one or another system. Larger minimum capital requirements and more restrictive portfolio regulations for national banks meant that small banks, particularly those that wished to specialize in agricultural credit backed by real estate, would be attracted to the state-chartered systems. Table 7 reports the proportion of banks in each system that were located in towns and cities of greater than 2500 inhabitants, and the average size of banks in each system. While there is considerable variation among states, national banks were always larger on average, and always had a higher proportion of banks located in cities.

Historical accounts and economic theory lead one to expect

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that deposit insurance for state-chartered banks reinforced this propensity for small, rural banks to belong to the state system, and for large, urban banks to join the national system, because the potential benefits of deposit insurance were greater for small rural banks. White (1983, pp. 198-200) finds that the support for deposit insurance regulation was greatest among small bankers operating in agricultural areas in unit banking states with low minimum capital requirements. For large, urban state banks (which opposed deposit insurance legislation) deposit insurance was seen as a burden, a legislated subsidy from large to small banks operating in the periphery.[9] Insured deposits typically had interest rate ceilings that kept them from being as competitive in the market for large, sophisticated depositors as in the market for deposits in rural areas.[10] Capital requirements in the insured systems (typically 10 percent of deposits) were more of an impediment to risk taking for large banks than for smaller banks operating in the periphery. A group of oil men, ranchers, or farmers could organize a small bank to finance their expansion, while placing limited funds of their own at risk.[11] Many of the large city banks found advantages to operating in a more disciplined environment, with stockholders and subordinated debtholders keeping watch over conflicts of interest between bank and banker. For urban banks, the expanding opportunities in trust activities and alternatives to standard demand-deposit banking as a means of finance were the

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wave of the future; for small rural banks, deposit-financed agricultural lending was the way to expand.[12] There were exceptions. Some particularly unscrupulous large city banks chose to enter the insured systems, intending to use them as a means to create and exploit conflicts of interest, and finance speculative expansion on a scale that would not have been possible for a rural unit bank.[13]

Bank membership and balance sheet patterns indicate that deposit insurance was an important force in determining who joined or left the various systems, and in influencing bank expansion and risk taking during the boom and bust. No single indicator in Tables 6 through 10 provides a "litmus test" of the importance of deposit insurance for adverse selection in bank membership and excessive risk taking, but a combination of factors apparent in the tables indicates that state systems that featured deposit insurance were a special class, during both the era of expansion and that of contraction.

During the boom period of 1914-1920 the insured banks grew more rapidly than others. Sixteen state banking systems grew by a factor of greater than 2.5 from 1914 to 1920, as shown in Table 11. Of these 16 systems, 7 were insured (one of the voluntary systems, Washington, is excluded from this list). The compulsory systems ranked first, fourth, fifth, eighth, and eleventh in asset growth over this period. Two of the voluntary-participation state systems (Kansas and Texas) ranked thirteenth and fifteenth. High growth, by itself, does not

imply excessive risk taking. As Table 11 shows, high growth was not confined to insured systems, as the experiences of Wyoming, North Carolina, and Idaho demonstrate, in particular.

Three factors, however, made the high growth rates of the insured systems unique: they accomplished high growth mainly through increases in the numbers of banks, rather than in assets per bank; growth seems to have been concentrated in relatively sparsely populated regions; and insured banks operated with low capital-to-asset ratios, typically reserved for systems of larger average size. Of the 8 banking systems that averaged less than $400,000 in total assets in 1920, 6 were insured banking systems, with the frontier states, Wyoming and New Mexico, accounting for the remaining two.

The West as a region, therefore, was experiencing its era of extraodinary banking growth, comparable to the growth of New England banking in the early national period (1790-1830), or the South from 1820 to 1860.[14] But the insured banks differed in certain respects from the other high-growth Western states. In New Mexico, state-chartered banks operated in more populous areas, on average (see Table 7), and the fragility inherent in such rapid growth and small size were offset, in part, by the unusually high capital-to-asset ratio of banks (12 percent) in 1920, as shown in Table 9. Wyoming's capital-to-asset ratio of 9 percent was higher than any of the insured banks of comparable size, as well. Thus if one uses the combined

standard of high growth, small bank size, and low capital-to-asset ratios, the insured banking systems appear especially vulnerable at the peak in 1920. Texas operated with a relatively high capital ratio, because its law required capital as a percentage of deposits of between 10 and 20 percent (depending on deposit size), while other insurance systems required 10 percent.

It is important to verify that the high growth and unique vulnerability of the insured state systems relative to other state systems is attributable to different banking responses, rather than different fundamental economic conditions. To this end, additional comparisons of insured systems with other banking systems within and across states are useful. Specifically, I consider three standards of comparison: the relative growth of insured and uninsured state banks in states where insurance was optional; the growth of state-chartered banks across states, relative to the growth of national banks in the same state; and the growth of insured banking relative to uninsured state-chartered banking in adjoining states with similar "economic fundamentals."

For two of the three states with voluntary systems (Kansas and Texas), it is clear that the growth differences between national- and state-chartered banking from 1914 to 1920 (Table 8) were due to the disproportionate growth of state-run insured banking, as Table 10 reveals. These two voluntary systems grew rapidly during the boom period 1914-1920 relative to other

state banking, both in number of banks and total deposits. The Texas' system -- which did not allow voluntary withdrawal by member banks, and therefore, provided more anticipated insurance protection than the Washington or Kansas system -- was the fastest growing of the three voluntary insurance systems, relative to national or uninsured banks in the state. In Texas, the deposits in banks of all types in the state grew by 271 percent from the end of 1914 to the end of 1919, while those in insured banks grew by 402 percent.[15] The total number of banks in the state increased by 11 percent, while the number of insured banks increased 25 percent, from 1914 to 1920. In Kansas, total deposit growth was 131 percent for 1914-1919, while insured-banking deposit growth was 173 percent.

In the third voluntary-insurance state, Washington, the state-chartered system as a whole grew slowly compared to the national system, and the insured system never accounted for more than 41 percent of state-chartered deposits (FDIC, 1956, p. 50). Several features of the Washington experience made it a special case. First, Washington's free-exit provision provided virtually no protection, and hence no encouragement for excessive expansion. Second, its was the last insurance system to be established (in 1917), and there was less time for banks to join prior to 1920. Third, Washington's banking growth during this period was concentrated more in the large urban banks. Its national banking system was third among the sample of 32 states in average asset size of banks in 1920, and

experienced above average growth in assets from 1914 to 1920. The lack of a rural/agricultural boom in Washington -- farm land prices grew a modest 38 percent from 1914 to 1920 -- further limited any perceived advantages to small rural banks of membership in the insured system.

A second standard for comparing growth during the boom -- one that controls for state-specific economic conditions -- is the relative growth of state and national systems across states with and without insurance. Typically, state banking systems grew faster than national systems, but in some states this difference is especially pronounced; in others it is actually reversed.

A rough comparison is provided in Table 12 -- a four-by-four matrix, that arranges states according to the quartile growth rates of their national- and state-chartered banking systems for 1914-1920 Only two state-chartered systems ranked two or more quartiles higher in growth of assets than the quartile rank of their state's national banks: Mississippi and Nebraska. These were two of the five compulsory insurance states.

A more formal approach to comparing state-chartered banking growth to national bank growth, across states, is presented in Table 13. Using cross-sectional data for the sample of 32 states, I regress state-chartered bank asset growth for 1914-1920 on: national-chartered asset growth, the percentage rise in farm land value per acre, the ratio of farm

population to total population, and dummy variables for the presence of insurance. In one version I separate the voluntary insurance states -- Kansas and Texas -- from the compulsory insurance systems. Washington is excluded from the set of insured states altogether. I also add a dummy variable (which interacts with the growth of national banking) for states that contained especially important "reserve centers". National asset growth is included as a measure of state-specific opportunities for expansion, holding regulation constant. The growth in the value of farm real estate is included to control for different expectations of long-run profitability from agricultural loans (which should have a disproportionate effect on state banks). The reserve center dummy is included to control for peculiarities in the growth of national-chartered banks due to interstate influences through correspondent relations.

The regression results confirm that insurance was associated with very high relative rates of growth of state-chartered banks, and that national banks in reserve-center states grew more than national banks elsewhere. As predicted, the effect of compulsory insurance is stronger than that of voluntary insurance, because voluntary plans provide less cross-subsidization, and because (in Kansas) withdrawal was allowed for by law. Even in Kansas and Texas, however, the effects of insurance dummies were important (accounting for an additional 33 percent of asset growth from 1914 to 1920),

although the few degrees of freedom, and consequent high coefficient standard errors, limit the power of hypothesis tests.

Finally, comparisons among state banking systems in the same regions also support the conclusion that insured banking growth was unusually high, and that insured states were more vulnerable, during the boom. First, consider the states in the Western region adjoining the Western insured states. These include: Arkansas, Colorado, Idaho, Iowa, Missouri, Minnesota, Montana, New Mexico, and Wyoming. How do these states compare, in growth, bank size, and capitalization, to the insured states of Kansas, Nebraska, North Dakota, Oklahoma, South Dakota, and Texas. Data on the ratio of state-chartered bank assets in 1914 relative to 1920, average state-chartered bank size, and capitalization are reported in Table 14. A similar comparison is performed in Table 14 between Mississippi statistics and those of the uninsured states in the deep South in our sample: Alabama, Georgia, and South Carolina (Louisiana is excluded, because of the special role of New Orleans as a financial center.).

These data reveal that the nine uninsured state-chartered systems of adjoining Western states were larger on average, grew less, and had higher capital than their counterparts in the insured systems. On average, uninsured Western asset ratios (1914/1920) were 0.42, compared to 0.35 for the insured group. The average size of the uninsured group was $448,000 in

total assets, while the insured banks averaged $334,000. The historic vulnerability of small banks explains why, ceteris paribus, their depositors required them to maintain higher than average ratios of capital to deposits.[16] But in this sample, capital averaged 9 percent of assets for the uninsured group, and 8 percent for the insured. When Texas is excluded -- the insured state with a high legally mandated capital-to-deposit ratio that exceeded "market-determined" bank leverage in other states -- the difference becomes even greater.

The comparison between Mississippi and its neighbors is similar. The asset ratio averaged 0.45 in the uninsured states, as compared to 0.34 in Mississippi. The ratio of capital to assets for the uninsured states was 9 percent, as compared to 6.6 percent in Mississippi. Average bank size in Mississippi was greater than that of the other states (664 as compared to 538), but this size difference is partly attributable to the much higher growth in assets in Mississippi, which tripled from 1914 to 1920, compared to the other states whose aggregate assets roughly doubled over the same period. Also, Mississippi's state-chartered banks included older, relatively large branching banks (10 banks with 24 branches in 1920) that were allowed to continue operating, even though new branching was not allowed. Finally, as discussed in section IV, many of Mississippi's rural banks had failed during the boll weevil crisis of 1912-1913, and the state banking regulators were notoriously restrictive in

granting entry by new banks.

Insured Banking: From Boom to Crisis

Having established, using several standards of comparison, that deposit insurance produced high growth and greater bank vulnerability (small size and low capital) during the boom, I now turn to evaluate the effects of insurance on the membership and balance sheet responses of state banking systems to the crisis. As several authors (ABA, 1933; FDIC, 1956; White, 1983; and Calomiris, 1989) have documented, the insurance plans did not provide effective protection to the states' payments systems or to bank depositors. Reimbursements to depositors were neither timely nor complete, and exit from the insured systems relieved solvent banks of the responsibility of covering insolvent banks' liabilities. Here I quantify the role of deposit insurance, and the vulnerability it entailed, in preventing state-chartered banking systems in states with insurance from responding to the crisis as well as other state systems.

As one would expect, failures and assessments rose during the collapse, and there was widespread defection of relatively healthy insured banks to alternative systems, as shown in Table 15. In all cases, there was a net transfer of banks from the insured state systems to the national system.

Table 15 reports data on changes of charter across the two systems within each state from 1921 to 1930. From 1921 to 1930

the 48 contiguous states as a group experienced a total of 346 net conversions from state- to national-chartered banking. All 8 states with deposit insurance had positive net conversions over this period, and as a group they accounted for 278 of the 346 net conversions -- an average of 43 per state. At the same time, neighboring states in the West experienced virtually no net conversions to national banking. As a group, Montana, Iowa, Colorado, Idaho, Wyoming, Oregon, Arizona, Arkansas, Minnesota, and New Mexico had only 5 net conversions in all. Furthermore, few other states witnessed a substantial number of conversions to national banking. Only 8 states other than those with insurance plans had net conversions of greater than 5: Alabama, California, Illinois, Minnesota, Missouri, Oregon, Virginia, and Wisconsin. This group of states -- unlike the insured states -- did not suffer a collapse of state banking during this period. Alabama's state system showed essentially flat total assets over the period; California's, Wisconsin's, and Virginia's state systems experienced substantial intensive growth; in Illinois only a small percentage of banks converted, and total state banking assets grew substantially relative to that of national banks; in Minnesota, the percentage that converted was also small; and Oregon was not an "agricultural crisis" state. Thus the insured state-chartered systems were virtually the only cases of national banking gaining at the expense of state banking in response to the agricultural crisis.

In the states with voluntary state-run insurance participation, there was widespread movement to the other state systems, as well. In Kansas and Texas banks switched en masse, from 1924 to 1926. The timing of the demise of the Texas system reflects the fact that withdrawal was not allowed by law until 1925. In Kansas, the failure of the largest bank in the insured system in 1923, and a court ruling in 1926 that absolved withdrawing banks from liabilities for prior bank failures (above the amount of securities already deposited in the state fund), explain the timing of withdrawal. In Washington, one bank failure -- again, that of the largest bank in the state, which accounted for one-fifth of insured deposits -- prompted all other insured banks to leave the system.[17]

Thus while deposit insurance produced abnormally high growth during the boom, it caused abnormally low state-chartered growth during the crisis. Table 16 reports regression results analogous to those of Table 13, but for the periods 1920-1926 and 1920-1930. The average annual rate of business failure from 1921 to either 1925 or 1929, relative to the average rate for the four years prior to 1921, is included in the regressions to capture better the financial distress banks faced in each state. The regressions are run for two sub-periods because prior to 1930 Nebraska's insurance fund chose not to close many insolvent banks, thus contaminating the measure of solvent bank deposits. For this reason I exclude Nebraska from the dummy for insured states in the

1920-1926 regression. Results for the 1920-1930 regression are reported with and without including Nebraska in the dummy banking variable.

The regressions show that the presence of insurance was associated with lower growth during the decline. Growth for the insured systems from 1920 to 1926 was 27 percent lower (as a fraction of the 1920 level) than in uninsured state systems. Not surprisingly, the difference in growth is lessened if one chooses a longer period (1920-1930) to gauge recovery from the crisis. When the postponed collapse of Nebraska is included for the 1920-1930 sample, there is an increase from a 19 percent to a 24 percent slowdown in decadal growth. Other variables generally have the predicted signs -- failure rates and farm population concentration are associated with lower growth, and controlling for omitted variables by including national bank growth is important for the 1920-1926 period. Land value changes add little after taking these other control variables into account.

Insured banks were not the only ones that saw a decline in growth during the crisis. Many states experienced a substantial decline as agricultural earnings fell and bankruptcies rose. Interestingly however, there was substantial variation in the rate of recovery from the crisis across states, and across banks within states. As Table 8 shows, the state systems of Arizona, Idaho, and Wyoming saw high growth rates in the period 1927-1929 that essentially

reversed the negative growth of the previous seven years. In all three cases, state-chartered banking growth for the period 1920-1929 exceeded the growth of national-chartered banks in those states.[18]

Furthermore, within states the growth of state-chartered banks was not identical across banks. In almost all cases (with the exception of the insured systems) the average size of state-chartered banks increased from 1920 to 1929. In some extreme cases assets per bank doubled (Arizona, Illinois, Michigan, Ohio, and Wyoming).

Interestingly, aggregate recovery of banking asset levels and increases in average bank size are positively related during this period (as exemplified by the experiences of Arizona and Wyoming, in particular). This suggests that as small, rural banks failed they were not likely to be replaced by similar institutions, but rather by larger banks. While several factors could account for this fact (e.g., a reduction in the perceived desirability of rural farm loans and a change in emphasis toward industry located in cities and towns, in which larger unit banks operate), in part these patterns may reflect different regulations across states, in particular laws governing branch banking.

In states that allowed branch banking, it should have been easier to acquire small rural banks that failed or replace them with new branches, because the cost (including risk) of establishing branches was lower than that of opening a bank.[19]

Chapman (1934, chapter XI) provides evidence of relatively high growth of branching banks for the nation as a whole during the 1920s. A thorough analysis of the relative growth of branching banks and unit banks during the 1920s in states that permitted branching would require a panel data study at the level of individual banks, which is beyond the scope of this paper. Instead, using available data, I examine the growth in the number of branching banks and their branches at the state level and link it to total banking growth, in number and total assets. I also report results using disaggregated data (at the individual-bank level) for a few states where this is feasible.

Branch Banking and Banking System Recovery

Table 17 summarizes the data on the growth of the number of total banks, branching banks, and branches of national and state banks for 1924 (the earliest available data) and 1928 (the last disaggregated data available for the 1920s), categorized according to state banking laws on branching, for the 32 "agricultural-crisis" states. The state-bank regulatory regimes are divided into four groups: full free entry for branching banks statewide, full free entry with locational limitations on branches, limited (or zero) entry of new branching banks but continuation of existing branching, and a final category in which prohibitions kept branching from developing.

Wyoming is an exceptional case in that it allowed statewide branch banking, but no banks opened branches during the 1920s. Apparently, in Wyoming's mainly livestock-producing hinterlands opportunities for diversification through branching were limited (as contrasted to Arizona's economy in which cotton, livestock, and copper all offered substantial opportunities in rural areas), and profitable opportunities for bank entry were concentrated in the major cities. As Woods (1985, p. 101) points out, banking outside of major cities was confined mainly to very small banks organized in rural areas to provide financing for expansion to local groups of insider entrepreneurs. Of Wyoming's 113 non-national banks in 1920, 31 had a deposit base of under $100,000 (see Woods, 1985, p. 96).

National banks often were permitted to maintain branches in existence at the time of their conversion to national charters, which explains why national banks operated branches in some states. In no states prior to 1927, however, did national banks maintain significant branching systems. Upon passage of the McFadden Act (February 1927), limited national bank branching was allowed in states that permitted branch banking. Even under the McFadden Act national banks were still restricted to establishing branches within the "city, town or village" of their main office. Thus there is little cross-sectional variation across states in national bank branching during the 1920s.

Several interesting patterns are visible in Table 17.

Because of switching between national and state charters, it is best to focus on branching within the states for national and state banks as a whole. Of the 18 states that allowed branches to exist, only 3 saw a reduction in the number of total branch-banking facilities from 1924 to 1928. These reductions all occurred in states that prohibited the establishment of new branches, but allowed existing branches to be maintained (Georgia, Minnesota, and Washington). In all three cases, the reduction is accounted for by the departure (failure or closing) of a single bank.[20] In all the other states that allowed branching to continue, but prohibited the establishment of new branches, the number of branching facilities remained the same. In states that allowed new branching, branching facilities uniformly increased at a rapid rate, often as the total number of banking facilities declined, and branching thus came to comprise a much larger fraction of total banking facilities.

Moreover, the recovery of total bank asset levels was higher for systems that permitted growth in branch banking. Arizona, Kentucky, Louisiana, Michigan, North Carolina, Ohio, Tennessee, and Virginia all saw relatively high rates of asset recovery in the late 1920s relative to other states. These were also the states that experienced the largest increases in the average size of banks. South Carolina was the only exception to the rule, with negative asset growth in both banking systems during this period. Clearly, this exception

"proves the rule," as South Carolina witnessed a more than doubling of its branch banking facilities from 1924 to 1929, even though the combined growth of unit and branching banks was negative.

More formally, in Table 18, I regress bank asset growth from 1920 to 1926 and 1926 to 1930 on the same regressors used in Table 16, with the addition of branching dummies for city-restricted and out-of-city branching. Out-of-city branching includes the statewide branching systems, and Ohio, that allowed limited out-of-city branching. I also report regressions using the change in average bank size as the dependent variable. While the few degrees of freedom in the regressions recommends a cautious interpretation of the results, the branching indicator variables were both relatively large and statistically significant. Indeed, branching indicators have a larger, more significant, and more persistent effect on total asset growth than deposit-insurance indicators in the regression. These results indicate that, from the standpoint of long-run banking recovery, the distinction between unit and branch banking was more important than the distinction between insured and uninsured banking. Deposit insurance mainly caused a retreat from the state-chartered systems until the insurance fund was dissolved, after which the state systems gradually recovered as well as other unit banking systems. In contrast, the effect of branching on banking growth and average bank size increase with time.

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These comparisons actually understate the difference in growth between branching banks and independent unit banks, because many unit banks operated as members of bank "chains." The Federal Reserve, which collected data on "chain" banks, distinguished chains from other banking conglomerates. Chains were defined as groups of corporately independent banks "under centralized control."[21] As was recognized at the time, chains sometimes served as a "second best" substitute for branches in states where branching was prohibited. While banks in chains were separate corporate entities, they imitated to a lesser degree some of the advantageous features of branch banks. First, chains of banks could reduce individual bank risk by coordinating their response to crises and coinsuring as a group. Second, chains pooled resources and staffs to reduce overhead expenses and improve account management procedures (see Chapman, 1934, pp. 322-363). The potential for chains to allow member banks to diversify seems to have been more limited, as the high failure rates of chains relative to branching banks indicates.[22]

As Table 19 shows, the freedom to branch was inversely related to the prevalence of chain banking. Table 19 reports the number and proportion of chain banks in the state- and national-chartered systems for our sample of 32 agricultural-crisis states. States with branching restrictions saw much higher incidence of chain banking, and that incidence increased with the extent of the branching prohibition.

Summary of Findings

The evidence on the aggregate growth, average size, and membership patterns of banks during the 1920s indicates that state banking systems can be usefully grouped into three categories: states where deposit insurance made the system more fragile, magnified the expansion in response to the agricultural boom, and worsened the contraction during the bust; other unit banking states with less drastic swings in aggregate growth; and branch-banking systems (restricted, or statewide) that managed to respond most successfully to the challenges brought by the declining terms of trade in agriculture.

IV. BANK FAILURE COSTS AND THE ROLE OF REGULATION

Aggregate data on numbers of banks and their assets over time do not distinguish voluntary exits by banks from bank failures. In particular, it is conceivable that the decline in insured banking was primarily the result of voluntary exit in response to rising assessments once a few banks failed, in conjunction with laws that permitted banks to switch charters. If this were the case, skeptics of the failings of the insured systems might argue that the prohibition of voluntary exit would have been sufficient to make the systems viable.

Evidence on bank failures, and their costs, therefore, provides a complement to the results reported in section III.

A study of bank failure propensities permits one to distinguish exits from failures, and supplies further direct evidence on the extent of risk taking during the boom across different regulatory regimes.

ABA (1933), Calomiris (1989), and Thies and Gerlowski (1989) provide evidence that insured banks were more likely to fail than national banks in the same state, uninsured state banks in the same state, and uninsured state banks in other states. While the within-state comparisons made by these authors of the failure propensities of insured-state and uninsured-state banks in Kansas (summarized below) is compelling, the other evidence is less so. Differences in states' product specialization, and differences across states in the relative agricultural risk exposure of national and state banks (due to other regulatory differences between national and state banks) must be controlled for if one wants to isolate the role of deposit insurance regulation in promoting risk taking.[23]

Furthermore, the definitions of "bank failure" may differ across these studies in ways that are not always clear. In analysing bank failures, I restrict attention to involuntary liquidations of banks. Sometimes banks suspended operations, and reopened; other times banks were acquired by other institutions; and, finally, banks could choose to close while still solvent. The withdrawal of a bank, therefore, may reflect very different events with different social costs.

Suspensions, consolidations, and voluntary closings may have had social costs as well -- consolidations and closings may have reduced the supply of banking services in some areas, and suspensions were disruptive to the payments system. I focus on failures because they offer a clearer index of the costs of the crisis across states -- forced permanent departure of banks and depositor losses -- and provide a clearer measure of the risk-taking of banks, since closings, acquisitions, and suspensions often had explanations other than bank insolvency.[24] I also focus on average failure rates for several years, rather than perform a year-by-year comparison across states. Differences in state closure rules (in particular, the long delay in closing insolvent banks by the Nebraska Guaranty Fund)[25] argue for this approach.

I examine three dimensions of the failure "performance" of banking systems: the rate of bank failure, the severity of bank failure -- measured as the ratio of claims on failed banks to their remaining resources (excluding payments by insurance funds) -- and the efficiency of the bank-liquidation process, with emphasis on the roles of deposit insurance and branching regulations.

Bank Failure Rates

Table 20 provides data on average annual bank failure rates, by state and type of banking system, for various sub-periods from 1917 to 1929, for the sample of 32 agricultural-

crisis states.[26] These data echo the substantial variation in economic fundamentals and banking system responses across states and types of banks that were visible in earlier tables. Clearly, the cotton belt and the grain-producing states suffered disproportionately during the 1920s. Table 20 shows the pitfalls of using the difference between state and national bank failure rates for a given state (as in Calomiris, 1989) as a measure of the role of deposit insurance. While it is true that the difference between state and national bank annual failure rates for 1921-1929 are greater for insured states than for uninsured states on average (1.4 percent for compulsory-insurance states, as compared to 1.0 percent for states without deposit insurance), this difference is positive for most states, presumably because of their smaller size and more liberal real-estate lending regulations.

Similarly, state comparisons across state-chartered systems reveal several cases where uninsured systems fared worse than insured. The difference in annual failure rates between uninsured (2.26 percent) and insured (2.92 percent) state-chartered banking systems for 1921-1929 on average is 0.68 percent, but by varying the definition of region -- a control used in Thies and Gerlowski (1989) -- one could easily conclude from such simple comparisons that insured state-chartered banks had lower failure experiences than uninsured state-chartered banks. For example, one could define Texas and Oklahoma to be in the same region as Arizona and New Mexico or

define Mississippi to be in the same region as Alabama, Georgia, Louisiana, and South Carolina.

Regional distinctions, of course, are intended as rough proxies for economic environments under which banking systems operate. Thus, rather than experiment with different definitions of economic regions, I include measures of economic environment directly in weighted-least-squares regressions to capture the marginal effects of deposit insurance on bank-failure propensities.[27] I refrain from reporting these results because I found that, depending on the precise mix of control variables one uses, the measured impact of deposit insurance (and the control variables) varied greatly and were typically positive and insignificant.[28] In other words, given the few degrees of freedom available, regression results seem unable to deliver much information on the contribution of deposit insurance to bank failure propensities. The only robust findings from this analysis were the strong positive association between commercial failure rates and bank failure rates, and the strong negative relation between average bank size and bank failure rates.

Perhaps the best evidence of excess failure rates for insured banks remains the simple comparison of failure propensities of insured and uninsured state-chartered banks operating in Kansas.[29] Kansas provides a unique "controlled experiment" because it was the only state with a large number both of insured and uninsured state-chartered banks. The

annual failure rate for insured banks in Kansas from 1921 to 1924 (prior to the mass conversions of banks to uninsured charters) is 1.90, compared to an annual failure rate of 0.67 percent for uninsured banks.

Bank Failure Severity for Insured and Uninsured Systems

It would be a mistake to place too much emphasis on bank failure rates as indicators of the costliness of financial crises. Bank failures are discrete events; particularly severe financial crises force many banks to cross the threshold of failure. For this reason, bank system performance may be better gauged by the overall losses of depositors, rather than the propensity to fail, which may show relatively little variation.

Data exist with which to perform cross-state, cross-system comparisons of insolvent banks' asset shortfalls in the 1920s and thereby measure the average severity of bank failures across states. Complete data for insured banking systems are provided in FDIC (1956), but data for the rest of U.S. banking systems are only available for banks whose liquidations were completed by 1930 (see Data Appendix). As Table 21 shows, for some state-chartered systems only a small percentage of liquidations that occurred during the 1920s were processed in time to be included in this sample. The ratio of repayments to total unsecured deposit claims from the limited sample in each state is likely to be a biased indicator of the total sample; for example, banks with higher losses might take longer to

liquidate.

Notwithstanding this problem, there is little room for doubt that insolvent insured banks suffered worse asset depreciation in the 1920s than state-chartered banks in other states. The rates of shortfall for insured state banks, were among the highest in the country, as shown in Table 21. Regional comparisons are particularly telling. Consider the difference between North and South Dakota's low ratios of repayments from assets to total claims (17.2 and 24.1 percent, respectively) and their neighbors' ratios: Montana (51.9), Idaho (47.4), Wyoming (53.7), Colorado (68.1), and Minnesota (48.2). A comparison of insured banking in Nebraska (35.4) with Iowa (53.6), Missouri (52.6), Colorado, and Wyoming is similarly revealing.

Kansas, Oklahoma, Texas, and Mississippi showed ratios more similar to the average experience of their neighbors. Significantly, two of these were voluntary-insurance states, and Texas' exceptionally high required capital ratio may have played a role here, as well.

Oklahoma's compulsory insurance system lasted only until 1923, and thus should have had a relatively small influence on failure propensity for the 1920s as a whole. As current critics of deposit insurance emphasize, much of the losses that occur in an insured system reflect responses by banks to adverse shocks that reduce bank capital and magnify the incentives for risk taking (see Kane, 1988; and Calomiris and

Kahn, 1989). By closing its system early in the 1920s Oklahoma may have avoided this magnification of risk taking.

Mississippi had the lowest rate of asset shortfall of the five compulsory-insurance states, as well as the lowest rate of bank failure for that group by far for the period 1921-1929. Mississippi's special experience may reflect, in part, the circumstances of its creation. The Mississippi deposit insurance law was passed in response to the state banking crisis of 1912-1913, induced by the destruction of cotton crops in those years by the boll weevil. The relatively low failure rate and degree of asset shortfall in Mississippi during the 1920s may indicate simply that many of the most vulnerable banks in that state had collapsed prior to the period of deposit insurance coverage, leaving surviving banks that on average were less likely to use deposit insurance protection to promote high-risk agricultural expansion. That is, larger, more urban banks were more likely to survive the attack of the boll weevil. Entry by new banks seeking to take advantage of deposit insurance was notoriously difficult in Mississippi, as well, due to the strict chartering standards set by the state's regulators.[30] Thus Mississippi seems to have avoided the failure rates of the other compulsory systems mainly because its insurance system was enacted after a major agricultural depression, and because its regulators prevented the entry of small rural unit banks that were so common in the other insured states. This view is consistent with the relatively

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large average size of banks in 1918 and 1920 in Mississippi, relative to its neighbors, or relative to other insured banking systems (see Table 7).

Inefficient Bank Liquidation Procedures in Insured States

A final interesting difference between insured and uninsured banking was the efficiency of the liquidation procedures. Delays in winding up the operations of banks impose costs of illiquidity and foregone interest on depositors, apart from the ultimate larger losses due to asset shortfalls. Delays in closing banks, or in final liquidation of closed banks, also may afford insolvent bankers greater opportunities for risk taking or fraudulent behavior.

On average, for the United States as a whole during the 1920s, it took 3 years and 11 months for state-bank liquidations to be completed, and for national banks it took 4 years and 2 months. In the five compulsory-insurance states time delays for insured state banks were much longer than for state banks in other states, and much longer than for national banks in those states (see Table 22). In Nebraska, state-chartered banks that were liquidated before 1930 took an average of 6 years and 4 months to be liquidated, compared to 4 years and 9 months for national banks. In North and South Dakota state-bank liquidation delays averaged 6 years and 3 months, and 5 years and 7 months, respectively, compared to 4 years, and 4 years and 8 months, for national banks in the

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respective states. In Oklahoma, delays averaged 5 years, compared to 3 years and 8 months for national banks. Voluntary-insurance systems showed roughly comparable average delays to national banks operating within the same states, as did virtually all other agricultural-crisis states.[31]

What can explain this phenomenon? Others have noted that deposit insurance systems redeemed the losses of depositors slowly and partially, owing in part to the limited resources of the funds (see ABA, 1933; and FDIC, 1956), but these data reveal that even the liquidation of failed banks was more protracted in the insured systems than otherwise. One explanation for the inordinate delays is political. Perhaps solvent banks and bank regulators sought to delay insolvent bank asset liquidation to limit the rate of increase of the obligations of the guarantee funds. The evidence of delayed closure of banks, especially in Nebraska, is consistent with this interpretation of delayed liquidation. This is akin to the FSLIC's recent policy of delaying the closure of insolvent savings and loans, purportedly at the behest of members of Congress or Savings and Loan owners themselves.[32] State politicians of the 1920s may have acted similarly, and clearly solvent banks had a motive in encouraging delays, as this would have given them an opportunity to switch charters in anticipation of increasing obligations and assessments. Whether political motives or other factors explain delays in closures and liquidations must await further historical

research into the process of bank liquidation in these states.

The Unusual Survivability of Branching Banks

In section III, I established that branch banking flourished in response to the crisis of the 1920s in states that allowed branching. While it is likely that the physical costs of entry of branches was lower than unit banks in many cases, another dimension of the advantage to branching -- one that was particularly noted by contemporaries in the 1920s -- was that branching banks suffered lower risk of failure.

References to this phenomenon were quite common, (e.g., Cartinhour, 1931). The Congressional hearings of 1930 on "Branch, Chain, and Group" provided data that allow some quantification of the lower risks of branch banking in the U.S. during the 1920s. From 1921 to 1929, only 37 branching banks operating 75 branches were liquidated. More than two-thirds of these banks operated a single branch, and no more than 6 of them operated three or more branches.[33] In 1924 714 banks operated 2,293 branches. Thus only 112 of the 3,007 branch banking facilities in existence in the middle of the decade, or roughly 4 percent of branching facilities, failed over the entire decade.

Of course, national comparisons can be misleading. California and other states that were relatively prosperous during this period account for a large percentage of branching facilities. In 1924, the 32 agricultural-crisis states

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contained 1,312 of the 3,007 branch banking facilities. But even if all branching failures had been concentrated in these states during the 1920s, the annual rate of branch-banking facility failure would be only 0.85 percent. This is a very low rate of failure compared to the those of state systems on the whole. Only four state-chartered systems had lower failure rates than 0.85 -- Illinois, Michigan, Ohio, and Nevada -- and none of these states was among those most affected by the crisis; for example, they all had below-median farm foreclosure rates (see Table 3).

In some cases, specific within-state comparisons are possible. In the states that prohibited new branching from 1924 to 1928, but allowed branching banks to continue to operate branching (Alabama, Arkansas, Indiana, Minnesota, Nebraska, Washington, and Wisconsin), branch-bank failures can be derived from the difference between the number of branches in operation in 1928 and the number in operation in 1924.[34] In this sample of seven states, 28 branching banks operated 58 branches in 1924; and 26 branching banks operated 53 branches in 1953, for a remarkably low annual failure rate (for all facilities) of 0.02 percent.

Finally, for other states, branch-bank failure experiences can be gleaned from data on bank "disappearances," using The Bankers Encyclopedia to trace the presence or absence of banks from 1920 to 1929. In all cases, a careful review of entries revealed whether disappearances were due to acquisitions or to

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closings. I traced the entries for the branching banks of three states over this period: Arizona, Mississippi, and South Carolina. These states were chosen because they experienced high rates of bank failure, had a small number of branching banks (making data collection easier), and because branching banks in these states operated branches mainly outside their home city. In Mississippi, all 24 branches in operation in 1920 were located outside their banks' home cities. The same was true of Arizona's 20 branches in operation in 1920. In South Carolina, 13 out of 15 branches operated outside the home city. These banks, therefore, provide a useful measure of the potential advantages of statewide branching during a crisis.

Arizona permitted statewide branching throughout the period. In Arizona in 1920, 8 banks operated 20 branches. By 1929, 2 of these (each operating one branch) had been acquired by larger branching banks. One of the branching banks (operating one branch) failed. In the interim, three new branching banks had entered, which explains the stability in the total number of branch banks (see Table 17). The average annual failure rate for total branching facilities, therefore, was 1.6 percent for 1921-1929, compared to 4.3 percent for the state-chartered banks as a whole.

Mississippi had allowed branching outside home cities, but later prohibited branching, except for the establishment of limited agency facilities within home cities. Nevertheless, the existing statewide branches were permitted to continue

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operating. During the 1920s none of the 10 branching banks operating 24 branches failed, while the average annual failure rate for state-chartered banks as a whole was 1.4 percent.

In South Carolina from 1920 to 1929, 4 out of 8 branching banks in operation in 1920 closed, but all of these were banks that operated a single branch, and 2 of the 4 operated branches within their home city. Thus of the 23 towns or cities in which branch banking facilities were located, 19 retained their branch-banking facilities. This is important since the lack of available banking facilities in peripheral areas (where virtually all branches were located in Arizona, Mississippi, and South Carolina) increases transactions costs in those locations and can inhibit the flow of capital to worthy enterprises located there. The overall failure rate of existing branching facilities in South Carolina was 2.9 percent, compared to a rate of 4.9 percent for all state-chartered banks.

Entry into branch banking was especially strong in South Carolina, and entrants apparently learned the importance of establishing multiple branches. Two new entrants -- The Peoples Bank of South Carolina and the South Carolina Savings Bank -- entered during the 1920s and established 18 and 9 branches, respectively, operating outside their home cities.

The lessons of the high survival rates of branching banks during the crisis apparently were not lost on bankers. As Table 17 shows, and these examples confirm, in states where

branching was allowed, it flourished and increasingly took the form of multi-branch banks, where that was allowed. Four of the eight states that had enacted deposit insurance legislation prior to the 1920s passed laws in the aftermath of the crises of the 1920s and 1930s allowing branching. By 1939, North Dakota had provided for limited branching, and Mississippi had reversed its previous prohibition on new branches to allow limited branching as well. South Dakota and Washington permitted full statewide branching. For the U.S. as a whole, 19 states allowed full branch banking, and 17 allowed limited branching, compared to 12 statewide and 6 limited branching systems in operation in 1924.[35]

Unfortunately, policymakers in many agricultural unit banking states did not change their approach to branch banking following the debacle of the 1920s and 1930s. Thus the 1980s saw a repeat of the same patterns of high unit bank failure rate in states hit by the agricultural crisis of 1980-1985. As in the earlier period, branching banks weathered the storm far better than unit banks. In California, for example, despite relatively high farm-loan delinquency rates and loan charge-offs, only one bank failed during the crisis (see Calomiris, Hubbard, and Stock, 1986, p. 469).

V. LESSONS FOR POLICY IN PRICE-SENSITIVE LDCs

It has been widely known that deposit insurance systems enacted in the 1920s failed *ex post* to offer sufficient and

timely protection to depositors, or the payments system more generally. In this paper I have shown that deposit insurance created costs as well. It provided incentives for excess risk taking by banks and hampered banking system recovery from the agricultural crisis because of the costs to solvent banks of remaining in the insured banking system. The excessive growth of the halycon days of 1914-1920 was matched by the excessive failures of banks and declines in banking operations of insured states in response to the crisis.

Voluntary insurance systems provided less coverage than insured systems. In the extreme case of Washington's free-exit policy, there was virtually no insurance protection. The positive aspect of the failed voluntary plans, however, was that the limits on depositor protection also limited the cross-subsidization of risk among banks. This explains the differences between the observed responses to voluntary and compulsory insurance.

During the boom voluntary-insurance systems grew less than compulsory-insurance systems, but more than did unit-banking state systems without insurance plans. Voluntary-insurance states were also intermediate cases with respect to failure rates and liquidation delays. Branching banks suffered much lower risks of failures and enjoyed disproportionately high rates of growth and entry during the 1920s, relative to unit banks, in states that permitted branching, especially those that allowed branching outside the home city of the bank. Thus

from the standpoint of desirability of outcomes during the 1920s the various regulatory regimes could be ranked (in descending order) as follows: full statewide branching, limited branching, uninsured unit banking, voluntary-insurance unit banking, and compulsory-insurance unit banking.[36]

The contrast between the effects of branch-banking regulations and deposit-insurance regulations is ironic, since the two regulatory choices were viewed as alternative solutions to the problem of providing banking-system stability, without sacrificing banking services in remote areas, during the years of active bank regulatory reform after the Panic of 1907 (White, 1982 and 1983).[37] The history of the 1920s reveals that branching and deposit guarantee in fact had opposite effects with respect to generating banking stability. From this perspective, an added cost of deposit insurance legislation was that it was incorrectly perceived as an alternative to branch banking, and thereby helped to perpetuate unit banking.

Proponents of deposit insurance, however, might argue that it was the manner in which deposit insurance was implemented, not insurance per se, that caused systemic collapse in the 1920s. They might argue that higher capital requirements, better supervision, risk-based insurance premia, and government financing of the insurance fund might have produced a better result. Clearly with high enough capital requirements and sufficiently strict entry barriers (as in Mississippi), the

moral hazard and adverse selection problems of deposit insurance will be reduced and may disappear, but at the expense of higher financing costs to banks, and less entry of banking into peripheral areas. Elsewhere (Calomiris, 1989) I have argued that a more successful, efficient, and historically proven reform of deposit insurance would be to move to a mutual-guarantee system of self-regulating branching banks, in which the governments' main role would be to define membership criteria for mutually insuring groups of banks. Such systems were extraordinarily successful in dealing with financial panics during the pre-Civil War years in the U.S., while providing access to affordable loans in peripheral areas. Unlike virtually all government deposit insurance regulators, banks regulated and monitored one another effectively, discovered and corrected unsound banking practices quickly, and kept the payments system operating smoothly in the face of financial crises.[38]

A possible objection to this approach is the difficulty of banks as a group to insure themselves against very large disturbances because of limited aggregate banking capital. In such circumstances, a systemic collapse could occur. Furthermore, given this possibility it might be impossible for the government to commit credible to allowing the banking system to fail. Knowledge of this implicit guarantee may provide incentives for risk taking.

I have two responses to this objection. First, if an

economy is prone to shocks of this magnitude it may be that deposit insurance is inadvisable altogether. Why should not banking capital in aggregate be allowed to fall drastically at a time when the investment opportunities of an economy have been so devastated? In the presence of free entry and branch banking, one would expect new banks or branches to arise to take the place of failed ones, as in Arizona and South Carolina in the 1920s. Furthermore it seems inadvisable for an economy so devastated by a terms-of-trade shock to attempt a banking-system rescue, particularly in a developing economy that relies on indirect (often financial) taxation to finance such bail-outs. It might be more advisable to act in advance to subsidize new industries with an eye toward diversifying the economy, rather than focus on banking system solvency as a panacea. The fundamental problem of such an economy, after all, is not its financial system, but its economic base.

My second response to the supposed need for government-financed and government-regulated deposit insurance is an empirical one. In most cases during the 1920s aggregate banking capital within each state would have been sufficient to repay losses to depositors of failing institutions -- and thus mutual-guarantee, self-regulating systems operating even at the state level would have been feasible.

Table 23 reports total deposits of suspended banks (deposits of failed banks are not available) aggregated by state from 1921 to 1929 for national and state banks in the 13

states with the largest total bank failure rates and provides estimates of the total shortfall of assets in failed banks of each type. A rough indication of the rate of asset shortfall for national- and state-chartered banks that failed in these states can be derived from Table 21, although as already noted these data are imperfect indicators. To obtain an estimate of total asset shortfalls I multiply the total deposits of suspended banks by the shortfall rate from Table 21 (one minus the repayment rate) and multiply this product by the ratio of failed banks to suspended banks. As Table 23 shows, in many states, the number of bank suspensions far exceeded the number of bank failures, because banks were sometimes reopened or acquired rather than being placed in receivership. A comparison of the average size of failed banks (estimated using data on completed liquidations) and average size of suspended banks revealed that larger banks were more likely to avoid liquidation after suspension. Thus I adjusted for the average size difference between suspended and liquidated banks in estimating the total asset shortfalls. To summarize, the estimated shortfall of assets (the difference between depositor claims and receipts from asset liquidation) is given by the product of four terms: total deposits of suspended banks, the ratio of liquidations to suspensions, the shortfall ratio (estimated using data from completed liquidations, and the ratio of the average size of liquidated banks to the average size of suspending banks (again, estimated using data from

completed liquidations).

These estimates appear in Table 23 for state- and national-chartered banks. The level of bank capital plus surplus (bank equity) of solvent banks in 1930 is provided for comparison. Only 3 of the 13 states show a ratio of shortfall to bank equity approaching or above unity: Nebraska, North Dakota, and South Dakota. For all other states banks as a whole would have had sufficient capital to support failing banks. Notably all three states that depart from this rule had compulsory deposit insurance laws. Furthermore, the national banking failures in all three states could have been absorbed by surviving national banks in all three cases. Three state systems, however, suffered bank losses several times the size of remaining banks' equity. Nebraska, North Dakota, and South Dakota were the <u>only</u> states that had compulsory insurance for most of the 1920s (this criterion excludes Oklahoma), and that also allowed substantial entry by new banks (this criterion excludes Mississippi). These states had foreclosure rate and land depreciation experiences comparable to several other states (see Table 3) --notably Montana, Georgia, and South Carolina -- but none of these other states' state-chartered systems approached the banking losses relative to remaining equity of the three long-lived, compulsory-insurance systems.

This evidence supports the evidence from balance sheet data and the evidence on failure rates and failure severity reported above. Moreover, it supports the argument that,

absent compulsory deposit insurance (and free entry), the fundamental disturbances experienced in these states would have had very different consequences for their banking systems. If statewide branch banking had been permitted within these states, bank failures would have been even lower, and the entry of banking capital during the 1920s would have been higher. Moreover, in a mutual-liability, self-regulating system of banks (like that of three states in the pre-Civil War era) bank risk taking would have been substantially circumscribed by self-imposed regulations and vigorous supervision of other banks.

Of course, no degree of regulatory wisdom could, or should, have made the 1920s a profitable time for banks in agricultural regions affected by drastic declines in prices and land values. In the face of these shocks, some failures were inevitable. What regulation could have done, but did not do, was make the system as a whole less susceptible to shocks and more resilient in its response to failures.

NOTES

1. For a discussion of the behavior of Southern branching banks during the Panic of 1837 and the Panic of 1857, see Calomiris and Schweikart (1988).

2. Of course, any government transfer program must be financed somehow, and this gives rise to additional costs. Raising revenue, either through direct taxation or money creation, can have important adverse allocative consequences. Indeed, as McKinnon (1973, 1988) and others (see Fry, 1988 for a review) point out, in less-developed economies, the need to raise revenue often places a disproportional burden on the banking system. Reserve requirements and mandated loan subsidies are among the means to tax financial intermediaries. The ease of enforcing these taxes, and their indirect nature presumably have made them a desirable means of raising funds for governments with little power to impose or enforce direct taxation. The fact that governments in less-developed economies need to rely on banks as a source of finance may limit the ability of the government to bail out banks. I return to this point in the concluding section of the paper.

3. As White (1983) has shown, these points are related. Banks wishing to locate in rural areas were more likely to choose a state charter, presumably because of the less restrictive provisions for making loans on agricultural real estate.

4. The sector-specific crisis of the 1920s was followed by the general Depression of the early 1930s. The dust storms of 1934-1935 kept agriculture from sharing in the general recovery of 1933-1937. These factors combined to produce a period of agricultural depression that lasted for some fifteen years.

5. Alston (1983), p. 886.

6. Foreclosure data are provided in Table 3. These data are not identical to those reported in Alston (1983), for two reasons. First, 1928 rather than 1930 is used as a benchmark for the number of farms operating from 1926 to 1930. Second, and more important, Alston only subtracted "croppers" from the total number of farms to estimate the number of farms at risk of foreclosure; my estimates subtract all farms operated by tenants, not only "croppers." This alternative definition is meant to capture better the relevant population of farmers subject to foreclosure risk, assuming that tenant-run farms typically are owned by individuals who operate their own farms, as well.

7. It is also important to note that the threat to the financial viability of farms and farm lenders from a given decline in income or wealth depends in a non-linear fashion on the rapidity of the decline and its persistence. Two consecutive years of drastic price and income reductions may produce far more bankruptcies than a similar decline amidst intervening good years, or a similar overall decline spread over a longer period. This is especially true when a rapid decline follows a boom period -- farm leverage, having first been increased by borrowing during the boom becomes further increased by reductions in farm values during the bust, precisely at a time when the cash-flow necessary to meet debt service requirements is reduced.

8. See Goldenweiser et al. (1932), vol.5, pp. 205-207.

9. See, for example, the discussion of large urban bank reactions to deposit insurance in cities such as Chicago and Philadelphia in White (1983), pp. 191-197.

10. Specifically, in Oklahoma and Kansas interest rates were limited to 3 percent; in Texas deposits bearing any interest would be exempt from insurance; in Mississippi and South Dakota interest rates were limited to 4 and 5 percent, respectively; and in North Dakota and Washington interest rate limits were set by the Guaranty Boards. Summary tables of these and other regulations are provided in White (1983, pp. 210-11) and Calomiris (1989, p. 18).

11. Evidence of this phenomenon can be found in numerous historical studies of the operations of bankers under deposit insurance. For example, see Robb (1921).

12. In Oklahoma and Kansas, trusts were not admitted to the insured system, which further discouraged large urban banks from joining.

13. Oklahoma's first bank failure, that of the Columbia Bank and Trust, was a clear case of speculative expansion through loans to the oil firms owned by the banker, W. L. Norton. For details, see Robb (1921), pp. 50-53.

14. See Fenstermaker et al. (1984) and Schweikart (1987).

15. The data in Table 12 are end-of-year, unlike the other tables which are end-of-June. Thus, the peak in Table 12 occurs in 1919, rather than 1920.

16. For the 48 contiguous states the correlation between the ratio of capital to assets and the average size of banks is strongly negative. For state-chartered banks the correlation

in 1920 is -0.47 (significantly different from zero at the 99 percent confidence level); for national banks the correlation in 1920 is -0.43 (significant at the 97 percent confidence level).

17. See FDIC (1956), pp. 55-58.

18. Some of this exceptionally high banking growth in these states reflects favorable economic fundamentals. As Table 1 shows, livestock prices rose rapidly in the late 1920s relative to grain prices; thus livestock-dependent states like Wyoming, Idaho, and Arizona should have seen more banking recovery. In regression results that follow, I control for economic environment to isolate the role of regulatory regimes in promoting banking growth.

19. The reduced riskiness of branch, as opposed to unit, banks is established in section IV, where I show that branching banks were less likely to fail during the 1920s than unit banks. See also Cartinhour (1931), Schweikart and Doti (1989, chapter III), and White (1983), pp. 218-219.

20. In Georgia, one of the largest banks in the state, operating 30 branches, failed. According to Cartinhour (1931, p. 307), the cause of this failure was "poor management."

21. The Federal Reserve's agents used their own judgment in determining whether banks under a single holding company operated under centralized control. While they attempted to provide an exhaustive survey of bank practices, sometimes the agents found that "neither the power to exercise such control nor the amount of control actually exercised [could] be determined." See Board of Governors (Dec. 1929), p. 766.

22. Data on chain bank failures have not been collected in a consistent or thorough manner, but evidence reported in Chapman (1934), and other examples of the collapse of large chains indicates that unit banks belonging to chains were not insulated from shocks as were branch banks. The failure rates of branching banks are discussed in section IV.

23. Thies and Gerlowski (1989) provide a detailed discussion of the Oklahoma experience, and describe regression results showing that insured state systems had a 0.7 percent higher propensity to fail on average than uninsured state-chartered systems, for the period 1921-1929. A separate regression for national banks found no significant difference for national banks in the insured states. While the authors do control for "time, region, and urbanization" (specific results and explanation of data are not provided), this is insufficient to capture differences across states in fundamental disturbances.

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24. The distinction between failures and suspensions is empirically important. Their incidences often differed greatly, and the fraction of suspended banks that reopened differed across states and chartering systems. A cross-sectional analysis of these differences remains a topic for future research. Thies and Gerlowski (1989) seem to have used suspensions as their measure of bank failures.

25. See FDIC (1956), p. 69

26. These are calculated using the banks in existence immediately prior to the period of failure as a scale variable (denominator) in the calculation. As noted above, insured banks sought to avoid rising assessments, and converted to national charters (as shown in Table 17). This avoids exaggeration of failure rates due to voluntary exit by banks that arises when the average number of banks in existence over the whole period is used instead as the denominator. Using either measure there is an adverse selection problem to consider in measuring failure rates of different systems within the same state. Early failures in the insured system could lead insured banks to exit to the other available systems, and thereby raise the subsequent observed failure rates for national and uninsured state banks. This means that observed differences in failure propensity provide a fortiori evidence of greater riskiness of insured banks. Empirical evidence, however, indicates that the movement of banks from one system to another did not have an important effect on bank failure rates. For example, compare failure rates for national and state banks reported in Table 21 for the periods 1921-1924 and 1925-1929 for Kansas, North Dakota, Oklahoma, Mississippi, and Texas -- all states with a substantial rate of conversion from state to national charters. In two cases (Mississippi and Oklahoma), national bank failure rates fell in the later period; in the other three cases, they rose slightly.

27. Weighted least squares is the appropriate regression technique in circumstances where aggregate failure rates are compared across different samples. I used the log-odds ratio (the log of p/(1-p)) as the dependent variable in the regressions to control for truncation bias, where p is the probability of failing, measured by the proportion of banks failing. For a more complete description of the weighted-least-squares technique and its applicability to this case, see Maddala (1984), pp. 28-30.

28. The variations I experimented with included: whether to include Mississippi with the other compulsory-insurance states (given its stricter entry requirements, discussed below); whether to pool national- and state-chartered banks, estimate them separately, or allow their coefficients to differ within a pooled regression; whether to include the ratio of capital to

assets and the average size of banks in the regressions; and whether to use commercial failures, real-estate loans, and land price declines, by themselves, or interacted with farm-population proportion and bank real estate loan holdings, as control variables.

29. See also ABA, 1933; Calomiris, 1989; and Thies and Gerlowski, 1989. The inability to separate unincorporated and incorporated state bank failures in Texas and Washington makes a similar comparison impossible for those states. Also, the small number of uninsured banks in Texas, and the short duration of insurance in Washington make such comparisons less interesting.

30. ABA (1933), p. 22 and Robb (1921), pp. 165-170 argue that Mississippi maintained exceptionally high standards for admission of new banks. For example, ABA (1933) writes that "the banking authorities in Mississippi had full discretion in the matter of granting new charters and used it liberally in refusing permission for unneeded banks or to unqualified promoters to open new institutions."

31. For sources see Data Appendix.

32. For a discussion of the costliness of these delays in liquidating Savings and Loans see Barth et al. (1989).

33. U.S. House of Representatives (1930), volume I, p. 462.

34. Georgia is not part of this group because it prohibited new branch banking only in August 1927.

35. See Chapman and Westerfield (1942), pp. 126-130.

36. Note that I am not arguing that insurance systems should allow voluntary exit. I would argue, however, that since none of the insurance systems succeeded in providing payments system protection, voluntary insurance was superior to compulsory insurance in the 1920s because it engendered less loss.

37. Not only does branching lead to a more stable banking system; it also increases the ability of banks to meet the banking needs of peripheral areas. Using current county-level data from the U.S., Evanoff (1988) shows that branch banks provide a far superior means of servicing remote areas than unit banks. Holding demographic factors constant, branching increases the number of banking offices per square mile by 65 percent.

38. Ideally, such a system would allow branching, as well. In the absence of freedom to branch the large number of unit banks creates a problem, as noted in Calomiris (1989). For mutual

guarantee systems to be effective they must be small enough to make interbank monitoring worthwhile to individual banks. Systems of hundreds of mutually liable banks entail trivially small marginal gains to monitoring the behavior of another bank. An alternative would be separate smaller groups of mutually liable unit banks. A second problem that arises in either the branching or unit banking versions of the mutual-guarantee system is the potential for banks to abuse their self-regulatory power to inhibit competition. To prevent this, the government should create more than one group of banks, and define group membership in a manner than encourages inter-group competition. For example, in a unit-banking mutual-guarantee system (where local monopolies may arise) groups should overlap geographically.

DATA APPENDIX

Income and Price Data

Data on indices of gross income by type of farm product reported in Table 1 are taken from Strauss and Bean (1940), p. 31. Data on income -- farm and non-farm, gross and net -- and farm and non-farm population are taken from Leven (1925), pp. 192-209, 259. The state-specific crop price index is defined as the relative price in 1924 of the bundle of crops sold in 1919. These data are reported in U.S. Department of Commerce (1927), passim. Data on the value of crops sold, by state, was compiled by the Bureau of Agricultural Economics, Department of Agriculture, and reported in U.S. Department of Commerce, Statistical Abstract of the United States, various years.

Farm Land Values, Mortgages, and Foreclosures

Data on farm real estate values per acre, total real estate value, and amount of farm mortgage debt are provided in Clifton and Crowley (1973). Farm foreclosure data are from Stauber (1931).

GNP Deflator Estimates

Alternative annual estimates of the GNP deflator, reported in Table 4, are from Balke and Gordon (1989) and Romer (1989).

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Branch and Chain Banking

Data on state branching regulations, numbers of branch banks and their branches, and banking chains are taken from Board of Governors (1924, 1926, 1927, Feb. 1929, Dec. 1929).

Bank Balance Sheet Data

Bank balance sheet data, and total numbers of banks, disaggregated by state and by type of charter are taken from Board of Governors (1959), and -- for insured banking systems-- from FDIC (1956), pp. 66-67.

Locations and Survival of Individual Banks

Data for individual banks, and bank locations, are taken from Bankers Encyclopedia Co., various years.

Numbers of Bank Liquidations

Liquidations of national banks are reported in the Annual Report of the Comptroller of the Currency. State-bank liquidations for each state were published in the Comptroller's Annual Report, as well. The definition of banks employed in Board of Governors (1959) is used to construct state-level series for failed "state" banks. This definition includes trusts and unincorporated banks, as well as narrowly defined state-chartered banking corporations. It is not possible to derive consistent series of narrowly defined state-chartered bank balance sheet or failure data using these sources.

Charter Switching

Data on bank charter switching are taken from Board of Governors (1937), pp. 1087-1122.

Business Failures

Business failures and number of solvent enterprises for each state are reported in U.S. Department of Commerce, Statistical Abstract of the United States.

Number and Deposits of Suspending Banks

The number and deposits of state and national bank suspensions are reported in Board of Governors (1943), pp. 286-291. These are used to derive the average size of suspended banks in Table 23.

Data on Liquidated Banks

Data used in Tables 21-23 on the number, deposits, losses, and time taken to liquidate banks for which liquidations had been completed by 1930 are reported in Goldenweiser et al. (1932), vol. 5, pp. 191-207.

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Table 1

Indices of gross income, from various groups of farm products and from total farm production, crop years [1909-13=100]

Year	12 important crops1	Staple food-stuffs2	Fruits3	Dairy products, chickens, and eggs	Textile raw materials4	Meat animals slaughter and export of live cattle5	Meat animals adjusted for for changes in inventory values	Total farm production	Total farm production adjusted for changes in inventory values of meat animals
1910	99.8	93.2	101.6	100.3	105.3	99.7	96.1	101.4	101.5
1911	97.6	97.7	106.8	88.7	96.0	89.9	83.0	95.3	94.2
1912	102.4	101.0	108.5	101.5	99.5	95.2	92.7	102.1	102.4
1913	101.3	99.6	102.4	103.9	110.0	107.7	110.9	105.6	107.7
1914	102.4	131.3	109.0	105.5	77.0	107.5	117.3	106.5	110.6
1915	112.1	146.5	117.7	104.5	85.9	104.4	112.2	110.1	113.6
1916	143.3	154.6	126.0	117.1	134.3	129.0	133.1	134.2	136.9
1917	220.3	222.2	147.3	158.6	201.6	180.8	189.5	194.6	199.2
1918	239.5	284.2	189.2	191.7	231.9	242.7	232.8	231.5	231.3
1919	269.4	326.2	260.7	223.1	255.4	239.0	219.5	253.5	250.5
1920	177.5	252.7	269.4	241.6	136.5	186.6	173.6	204.0	202.3
1921	109.6	150.7	183.5	173.8	84.7	116.4	112.5	132.6	132.8
1922	132.9	140.5	222.3	167.0	135.6	129.1	126.5	146.3	147.0
1923	150.2	127.3	203.1	189.4	179.2	132.0	122.5	160.0	158.7
1924	167.9	162.0	222.8	191.3	195.4	135.8	118.6	169.6	166.1
1925	167.9	176.4	223.6	211.9	198.8	163.2	147.4	182.8	180.0
1926	142.4	176.8	231.5	223.8	145.6	172.8	163.5	178.0	177.3
1927	156.6	177.3	220.1	223.6	167.6	158.9	155.2	179.5	180.2
1928	147.0	144.9	221.0	234.9	170.6	163.6	164.1	180.4	182.4
1929	143.7	159.7	233.6	245.0	161.7	171.4	172.6	184.1	186.4
1930	87.5	106.8	184.4	205.7	90.3	146.5	147.6	141.0	143.0
1931	56.7	65.5	150.0	157.1	62.3	102.6	105.8	100.9	103.0
1932	50.5	51.9	102.9	119.8	53.1	68.2	73.4	76.7	79.0
1933	74.1	83.0	137.3	112.3	80.9	73.8	76.7	89.0	90.7
1934	71.2	73.4	145.6	126.0	87.0	86.0	64.8	95.0	89.7
1935	82.4	88.0	160.8	155.5	83.0	114.1	110.8	115.8	116.1
1936	110.3	116.3	166.5	160.8	107.1	139.2	130.3	133.1	132.0
1937	105.4	121.2	195.7	169.7	111.0	141.8	136.2	139.6	139.5

[1]Contained in the index of crop production of the Business of Agricultural Economics: wheat, corn, oats, barley, rye, buckwheat, flaxseed, hay, potatoes, sweetpotatoes, cotton and cottonseed, tobacco.
[2]Wheat, rye, potatoes, sweetpotatoes, dry beans, rice.
[3]Orchard fruits, citrus fruits, grapes.
[4]Cotton and cottonseed, flaxseed, wool.
[5]Slaughter of cattle, calves, hogs, sheep, and lambs, and export of live cattle.
Sources: See Data Appendix.

Table 2

Price and Income Changes Across States

	1919-1921 % Δ gross farm income	1919-1921 % Δ total net farm income	1919-1921 % Δ total net non-farm inc.	1919-1924 % Δ crop price index	1922-1925 % Δ value of crops sold	1925-1928 % Δ value of crops sold
Alabama	-44	-38	25	-29	2	-16
Arizona	-37	-26	14	-35	18	44
Arkansas	-44	-49	27	-33	1	-10
California	-24	58	82	-45	20	0
Colorado	-41	-19	56	-43	41	-24
Connecticut	-7	162	44	-36	-7	-19
Delaware	-39	-39	39	-34	13	-15
Florida	-35	8	51	-37	8	31
Georgia	-57	-78	20	-54	11	0
Idaho	-39	-58	20	-54	61	-22
Illinois	-50	-89	45	-45	11	-4
Indiana	-48	-101	23	-55	10	-14
Iowa	-50	-113	3	-50	5	3
Kansas	-45	-66	39	-32	9	19
Kentucky	-46	-32	51	-48	-10	-2
Louisiana	-47	-64	35	-43	-23	-43
Maine	-26	24	48	-65	-60	-65
Maryland	-42	-10	45	-45	-20	-45
Massachusetts	-14	111	53	-41	-35	-41
Michigan	-34	-6	27	-55	-23	-55
Minnesota	-48	-75	38	-34	-23	-34
Mississippi	-51	-54	17	-37	-25	-37
Missouri	-48	-116	42	-51	-14	-51
Montana	-30	NA	34	-47	2	47
Nebraska	-51	-92	16	-37	23	2
Nevada	-38	NA	53	-38	0	-3
New Hampshire	-12	222	40	-49	10	-39
New Jersey	-29	17	44	-51	8	-11
New Mexico	-37	40	47	-18	51	-6
New York	-25	35	61	-50	19	-36
North Carolina	-41	-40	29	-47	4	-9
North Dakota	-46	-39	69	-1	21	-16
Ohio	-44	-49	25	-56	11	-21
Oklahoma	-50	-76	14	-32	21	0
Oregon	-30	-32	29	-48	17	-13
Pennsylvania	-32	11	42	-46	23	-34
Rhode Island	-22	64	61	-48	18	-42
South Carolina	-56	-88	-6	-62	6	-14
South Dakota	-53	-101	-19	-36	3	-14
Tennessee	-39	-28	42	-39	-10	-6
Texas	-44	-63	37	-16	-15	27
Utah	-43	14	37	-50	43	-16
Vermont	-15	77	43	-44	1	-30
Virginia	-41	-36	32	-46	-5	-7
Washington	-21	-21	37	-55	41	-25
West Virginia	-33	1	43	-48	14	-22
Wisconsin	-30	1	40	-54	26	-26
Wyoming	-43	106	77	-34	28	1

Sources: See Data Appendix.

Table 3

Farm Land, Population, and Foreclosure Data

	1913-1920 % Δ value farm real estate per acre	1920-1925 % Δ value farm real estate per acre	1925-1930 % Δ value farm real estate per acre	1920 ratio of farm mortgage debt to farm value	1920 ratio of farm to total popul.	1926-1930 average annual farm farm foreclosure (per 1000)
Alabama	77	-11	-7	.12	.57	29.5
Arizona	65	-56	2	.20	.27	42.7
Arkansas	122	-20	-12	.11	.65	39.7
California	67	10	-2	.13	.15	16.3
Colorado	41	-31	-10	.17	.28	42.4
Connecticut	37	10	2	.13	.07	5.3
Delaware	39	-3	-1	.15	.23	13.7
Florida	78	75	0	.08	.29	11.1
Georgia	117	-40	-14	.08	.58	56.5
Idaho	72	-34	-6	.21	.46	37.6
Illinois	60	-27	-21	.09	.17	29.0
Indiana	61	-32	-22	.08	.31	23.8
Iowa	113	-34	-17	.16	.41	48.3
Kansas	51	-19	-2	.12	.42	27.2
Kentucky	100	-30	-9	.09	.54	20.2
Louisiana	98	-22	-6	.10	.44	40.1
Maine	42	2	0	.10	.26	10.5
Maryland	66	-5	-6	.13	.19	16.8
Massachusetts	40	8	-1	.13	.03	6.5
Michigan	54	-6	-9	.15	.23	21.6
Minnesota	113	-27	-16	.15	.37	36.2
Mississippi	118	-34	-10	.11	.71	47.7
Missouri	67	-30	-18	.14	.36	34.1
Montana	26	-37	-4	.22	.41	52.2
Nebraska	79	-32	-8	.13	.45	38.4
Nevada	35	-41	-3	.20	.21	21.0
New Hampshire	29	11	-2	.10	.17	7.3
New Jersey	30	24	1	.16	.05	7.2
New Mexico	44	-31	2	.13	.44	26.3
New York	33	3	-7	.16	.08	13.8
North Carolina	123	-7	-16	.06	.58	23.4
North Dakota	45	-28	-13	.19	.61	58.0
Ohio	59	-23	-18	.08	.20	16.4
Oklahoma	66	-20	-3	.16	.50	50.1
Oregon	30	-13	-3	.14	.27	17.4
Pennsylvania	40	-4	-6	.10	.11	6.9
Rhode Island	30	14	5	.08	.02	6.0
South Carolina	130	-34	-25	.07	.63	68.0
South Dakota	81	-37	-19	.13	.57	70.4
Tennessee	100	-19	-10	.09	.54	20.5
Texas	74	-14	-5	.12	.48	23.7
Utah	67	-20	-3	.16	.31	13.5
Vermont	50	-7	-2	.18	.36	10.6
Virginia	89	-7	-13	.07	.46	15.6
Washington	40	-17	-3	.13	.21	20.0
West Virginia	54	-8	-13	.04	.32	9.0
Wisconsin	71	-12	-10	.21	.35	22.6
Wyoming	76	-54	-2	.15	.34	26.3

Sources: See Data Appendix.

Table 4

GNP Deflator Estimates

	Balke and Gordon (1989)	Romer (1989)
1917	11.36	13.06
1918	13.35	15.20
1919	15.23	15.58
1920	17.58	17.75
1921	15.30	15.12
1922	14.22	14.30
1923	14.63	14.69
1924	14.64	14.51
1925	14.90	14.77
1926	14.98	14.84
1927	14.72	14.48
1928	14.60	14.59
1929	14.64	14.60

Sources: See Data Appendix.

Table 5

32 State Regulatory Regimes of the 1920s

	No deposit insurance	Compulsory insurance	Voluntary insurance
Full intrastate branching allowed	Arizona North Carolina South Carolina Virginia Wyoming[1]		
Limited new branches	Kentucky Louisiana Michigan Ohio Tennessee		
No new branching, old branches remain	Alabama Arkansas Georgia[2] Indiana Minnesota Wisconsin	Nebraska (1911-30) Mississippi (1914-30)	Washington (1917-21)
No branches allowed	Colorado Idaho Illinois Missouri Montana Nevada New Mexico	North Dakota (1917-29) Oklahoma (1908-23) South Dakota (1916-27)	Kansas (1909-29) Texas (1919-27)

[1]Branches authorized by implication; none in existence.
[2]New branching prohibited in 1927.

Sources: See Data Appendix.

Table 6

Number of banks

	National banks						State banks					
	1914	1918	1920	1923	1927	1929	1914	1918	1920	1923	1927	1929
Alabama	90	91	101	106	105	106	267	238	251	254	251	244
Arizona	13	18	20	20	15	14	47	60	67	55	32	34
Arkansas	57	72	83	88	79	73	425	389	404	403	376	347
Colorado	124	122	141	143	124	121	206	236	262	224	175	159
Georgia	115	97	93	97	83	80	675	659	686	586	412	362
Idaho	55	68	81	73	52	43	134	136	141	109	92	94
Illinois	463	469	480	505	490	487	1439	1434	1489	1416	1358	1319
Indiana	255	258	254	251	233	224	664	773	798	854	827	757
Iowa	341	352	358	349	287	265	1410	1561	1564	1506	1222	1129
Kansas	212	234	249	266	257	247	932	1037	1100	1068	923	830
Kentucky	143	132	134	139	142	138	467	444	450	474	444	432
Louisiana	31	31	38	34	32	33	217	218	229	232	200	193
Michigan	99	105	112	119	134	133	702	740	739	765	739	718
Minnesota	273	294	331	344	277	272	863	1141	1177	1151	912	794
Mississippi	37	33	30	31	36	35	282	266	302	303	290	277
Missouri	130	131	136	132	135	134	1337	1407	1516	1495	1304	1191
Montana	61	126	145	121	74	69	226	277	286	242	136	129
Nebraska	228	191	188	182	153	158	749	946	1037	968	896	714
Nevada	10	10	10	11	10	10	21	23	23	24	25	25
New Mexico	37	43	47	42	29	28	47	74	76	59	30	30
North Carolina	73	81	87	83	77	73	384	434	491	477	432	399
North Dakota	146	165	181	184	141	125	619	693	718	648	390	309
Ohio	379	369	370	368	340	323	746	778	772	745	724	703
Oklahoma	343	340	348	459	350	307	574	580	612	446	348	344
South Carolina	51	81	82	84	65	53	329	336	379	345	216	170
South Dakota	105	125	136	131	98	93	526	517	543	556	319	303
Tennessee	113	106	98	105	104	99	378	415	450	466	418	393
Texas	518	543	556	561	649	623	1038	1037	1125	1071	852	791
Virginia	133	149	165	181	167	164	274	300	331	343	334	321
Washington	77	80	87	115	109	106	296	281	306	274	224	233
Wisconsin	131	147	151	155	156	157	652	778	819	838	810	801
Wyoming	32	38	47	45	30	25	72	98	113	89	58	62

Sources: See Data Appendix.

Table 7

Total Assets per bank

	National banks						State banks					
	1914	1918	1920	1923	1927	1929	1914	1918	1920	1923	1927	1929
Alabama	806	1224	1516	1449	1944	2311	283	368	543	522	578	545
Arizona	1215	1299	1766	1389	1863	2608	555	807	974	974	1745	2107
Arkansas	607	818	1020	1004	1285	1352	164	304	456	404	445	492
Colorado	1069	1614	1801	1695	2116	2244	263	397	460	514	437	477
Georgia	884	1676	2145	1704	3299	3377	224	355	534	519	489	538
Idaho	546	811	1088	827	1079	1094	162	335	487	334	436	568
Illinois	1912	2764	3562	3068	3737	3295	739	996	1322	1610	2085	2584
Indiana	960	1319	1667	1635	1890	2097	352	451	609	628	769	806
Iowa	692	1010	1301	1144	1264	1381	314	423	563	542	562	596
Kansas	531	839	977	870	1016	1104	146	269	326	285	304	320
Kentucky	900	1474	1824	1957	2118	2162	245	389	497	537	651	826
Louisiana	2075	3677	4119	3416	3846	4099	581	950	1592	1472	2029	2184
Michigan	2054	2826	3784	3634	4324	4991	635	988	14780	1505	2272	2555
Minnesota	1220	1682	1979	1785	2325	2468	235	287	425	403	443	466
Mississippi	756	1281	1843	1956	2589	2702	238	450	664	552	632	660
Missouri	2820	4276	5507	4162	4887	4509	350	493	572	631	722	741
Montana	895	746	761	766	1191	1489	269	391	436	393	605	680
Nebraska	694	1342	1566	1424	1496	1615	155	298	335	319	365	383
Nevada	972	1545	1823	1529	1990	2299	593	817	1030	947	1063	1228
New Mexico	612	879	963	968	1047	1331	197	277	347	364	365	466
North Carolina	921	1379	2064	2086	2544	2634	232	345	578	565	744	809
North Dakota	338	499	563	528	644	702	106	165	248	211	262	289
Ohio	1545	2484	2912	2470	2638	2785	806	1162	1645	2167	3095	3271
Oklahoma	343	766	1096	848	1219	1448	95	228	346	211	279	292
South Carolina	908	1244	1818	1520	2048	2371	241	342	536	424	471	588
South Dakota	446	718	862	731	733	871	136	271	395	344	272	318
Tennessee	1026	1583	2352	2070	2459	3033	240	396	562	558	626	714
Texas	705	1081	1588	1356	1567	1771	159	242	375	304	379	429
Virginia	1265	2045	2461	2110	2381	2347	329	478	613	656	819	878
Washington	1610	2570	3039	2482	2958	3306	449	637	752	520	606	703
Wisconsin	1592	2065	2720	2476	2979	3413	365	440	626	634	776	752
Wyoming	630	1102	1365	1369	1442	1711	148	242	300	307	431	514

Sources: See Data Appendix.

Table 8

Asset Growth (% Δ)

	National banks						State banks					
	1914 1918	1918 1920	1920 1923	1923 1927	1927 1929	1929 1930	1914 1918	1918 1920	1920 1923	1923 1927	1927 1929	1929 1930
Alabama	53	37	0	33	20	60	16	56	-3	9	-8	-2
Arizona	48	51	-21	1	31	3	86	35	-18	4	28	10
Arkansas	70	44	4	15	-3	17	70	56	-12	3	2	-7
Colorado	48	29	-5	8	0	7	73	29	-4	-33	-1	-37
Georgia	60	23	-17	65	-1	35	55	57	-17	-33	-3	-47
Idaho	84	60	-32	-7	-16	-47	94	51	-47	10	33	-22
Illinois	46	32	-9	18	-12	-6	34	38	16	24	20	73
Indiana	39	24	-3	7	7	11	49	39	10	19	-4	26
Iowa	51	31	-14	-9	1	-21	56	33	-7	-16	-2	-24
Kansas	74	24	-5	13	4	12	105	28	-15	-8	-5	-26
Kentucky	51	26	11	11	-1	22	51	30	14	14	23	60
Louisiana	77	37	-26	6	10	-14	64	76	-6	19	4	16
Michigan	46	43	2	34	15	57	64	48	6	46	9	69
Minnesota	48	32	-6	5	4	2	61	53	-7	-13	-8	-26
Mississippi	51	31	10	54	1	71	78	68	-17	10	0	-9
Missouri	53	34	-27	20	-8	-19	48	25	9	0	-6	2
Montana	72	17	-16	-5	17	-7	78	15	-24	-13	7	-30
Nebraska	62	15	-12	-12	12	-13	142	23	-11	6	-16	-21
Nevada	59	18	-8	18	16	26	51	26	-4	17	16	30
New Mexico	67	20	-10	-25	23	-18	121	28	-19	-49	28	-47
North Carolina	66	61	-4	13	-2	7	68	89	-5	19	0	14
North Dakota	67	24	-5	-7	-3	-14	75	56	-23	-23	-13	-50
Ohio	57	18	-16	-1	0	-17	50	40	27	39	3	81
Oklahoma	121	46	2	10	4	17	142	60	-56	3	3	-53
South Carolina	118	48	-14	4	-6	-16	45	77	-28	-30	-2	-51
South Dakota	91	31	-18	-25	13	-31	96	46	-6	-55	11	-47
Tennessee	45	37	-6	18	17	30	81	54	3	1	7	11
Texas	61	50	-14	34	9	25	52	68	-23	-1	5	-19
Virginia	81	33	-6	4	-3	0	59	41	11	22	3	39
Washington	66	29	8	13	9	33	35	29	-38	4	11	-29
Wisconsin	46	35	-7	21	15	30	44	50	4	18	-4	17
Wyoming	108	53	-4	-30	-1	-33	122	43	-19	-9	27	-6

Sources: See Data Appendix.

Table 9

Capital as a percent of total assets

	National banks						State banks					
	1914	1918	1920	1923	1927	1929	1914	1918	1920	1923	1927	1929
Alabama	14	10	8	9	7	7	17	12	9	9	10	9
Arizona	7	7	5	6	5	5	7	6	6	9	7	6
Arkansas	15	10	8	9	7	7	20	12	8	10	9	9
Colorado	8	5	5	5	5	5	12	8	8	8	8	7
Georgia	15	8	7	8	7	7	20	12	10	11	12	12
Idaho	12	7	6	8	6	6	17	9	8	10	7	6
Illinois	9	6	5	6	5	6	10	8	7	7	7	7
Indiana	11	8	7	8	7	7	13	10	8	9	8	7
Iowa	10	7	6	7	7	6	10	8	7	7	7	7
Kansas	11	7	7	8	7	7	14	8	8	9	9	9
Kentucky	14	9	7	7	7	6	17	11	9	9	8	9
Louisiana	11	7	6	7	7	7	12	8	6	7	6	6
Michigan	8	6	5	6	5	5	8	6	5	6	5	5
Minnesota	8	7	5	7	6	6	10	9	7	8	6	6
Mississippi	13	9	7	8	6	6	16	8	7	7	6	6
Missouri	10	7	6	8	7	6	12	9	7	8	8	8
Montana	10	8	8	8	6	5	14	10	9	10	7	7
Nebraska	10	6	6	7	6	6	14	8	8	9	8	8
Nevada	15	9	8	9	7	7	14	9	7	8	7	6
New Mexico	9	7	7	8	7	6	19	13	12	12	11	8
North Carolina	13	8	7	8	8	8	13	9	7	9	8	8
North Dakota	11	8	7	8	6	6	14	10	8	10	9	9
Ohio	11	7	6	7	6	7	8	6	5	6	5	6
Oklahoma	13	6	6	8	6	6	16	8	7	10	8	8
South Carolina	17	9	8	10	7	8	16	11	8	11	10	9
South Dakota	9	6	5	6	6	5	12	7	6	7	9	8
Tennessee	11	8	6	8	7	7	16	9	8	9	9	9
Texas	14	9	7	9	8	8	21	14	11	13	11	10
Virginia	11	7	6	8	8	8	15	10	11	12	10	10
Washington	9	6	5	6	6	7	12	9	7	9	9	8
Wisconsin	9	6	6	7	6	6	9	8	6	7	6	6
Wyoming	9	5	5	6	6	5	16	10	9	10	7	6

SOURCES: See Data Appendix.

Table 10

Voluntary Insurance Systems

	Kansas				Texas				Washington			
	Participating		Not participating		Participating		Not participating		Participating		Not participating	
	#	Deposits	#	Deposits	#	Deposits	#	Deposits	#	Deposits	#	Deposits
1917	577		430		828		46		46		239	
1919	649		427		907		41		104		191	
1920	683		409		990		41		116		190	
1922	698		369		936		34		-		-	
1924	651		371		896		37		-		-	
1926	399		547		34		748		-		-	
1928	794		39		-		-		-		-	
1917		152		73		204		12		40		109
1919		205		88		321		15		80		123
1920		191		81		266		14		75		107
1922		180		62		252		11		-		-
1924		195		75		302		21		-		-
1926		79		154		3		226		-		-
1928		219		3		-		-		-		-

Sources: See Data Appendix.

Table 11

High-Growth States: Insured vs. Uninsured

	Assets 1920/Assets 1914		Assets per bank in 1920		1920, capital/total assets	
	National Bank	State Bank	National Bank	State Bank	National Bank	State Bank
Arkansas	.408	.379	1020	456	.084	.085
Colorado	.522	.450	1069	460	.081	.083
Idaho	.341	.316	1088	487	.059	.088
Iowa	.507	.503	1301	562	.057	.104
Minnesota	.509	.406	1979	425	.054	.069
Missouri	.490	.540	5507	572	.063	.072
Montana	.495	.489	761	436	.077	.091
New Mexico	.501	.352	963	347	.073	.119
Wyoming	.314	.315	1365	300	.048	.090
Average	.454	.418	1673	448	.066	.090
Kansas	.463	.380	977	326	.066	.079
Nebraska	.537	.335	1566	335	.057	.082
North Dakota	.485	.367	563	248	.068	.081
Oklahoma	.309	.259	1096	346	.126	.070
South Dakota	.400	.351	862	376	.053	.062
Texas	.414	.391	1588	375	.071	.112
Average	.435	.347	1109	334	.074	.081

Sources: See Data Appendix.

Table 12

Growth Quartile Comparison

National-chartered	State-chartered Lowest 25th percentile growth	25% - 50% (second quartile)	50% - 75% (third quartile)	Highest 25th percentile growth
Lowest growth quartile	Nevada, Illinois, Kentucky	Colorado, Georgia, Indiana, Ohio		Nebraska
Second quartile	Iowa, Missouri, Montana	Minnesota, Wisconsin	New Mexico, Tennessee	Mississippi
Third quartile	Alabama, Washington	Michigan, Virginia	Arizona, Kansas, North Dakota, Texas	
Fourth quantile			Arkansas, South Carolina	Idaho, Louisiana, North Carolina, Oklahoma, South Dakota, Wyoming

Sources: See Data Appendix.

Table 13

Regression Results: Early Asset Growth of State-Chartered Banks

Dependent variable: Growth in total assets of state-chartered banks, 1914 - 1920

Independent Variables	Coefficient	Standard Error	Prob > |T|
Intercept	0.156	0.468	0.741
National bank growth	0.682	0.147	0.000
(Reserve center)x(Nat. bank growth)	-0.115	0.063	0.080
Growth in land values, 1914-1920	0.526	0.334	0.127
Ratio of farm to non-farm popul.	-0.328	0.655	0.621
Presence of voluntary insurance	0.327	0.251	0.205
Presence of compulsory insurance	0.609	0.189	0.004

$R^2 = 0.683$

$\bar{R}^2 = 0.607$

Dependent variable: Growth in total assets of state-chartered banks, 1914 - 1920

Independent Variables	Coefficient	Standard Error	Prob > |T|
Intercept	0.101	0.465	0.829
National bank growth	0.681	0.147	0.000
(Reserve center)x(Nat. bank growth)	-0.132	0.060	0.038
Growth in land values, 1914-1920	0.555	0.333	0.107
Ratio of farm to non-farm popul.	-0.283	0.654	0.669
Presence of vol. or comp. insurance	0.518	0.165	0.004

$R^2 = 0.670$

$\bar{R}^2 = 0.607$

Table 14

State-Chartered Regional Comparison: Insured vs. Uninsured

	Assets 1914/ Assets 1920	Assets per bank in 1920	Capital /total assets in 1920
Arkansas	.379	456	.085
Colorado	.450	460	.083
Iowa	.503	563	.067
Idaho	.316	487	.077
Minnesota	.406	425	.069
Missouri	.540	572	.072
Montana	.489	436	.091
New Mexico	.352	347	.119
Wyoming	.315	300	.090
Average	.417	450	.084
Kansas	.380	326	.079
North Dakota	.367	248	.081
Nebraska	.335	335	.082
Oklahoma	.259	346	.070
South Dakota	.351	376	.062
Texas	.391	374	.112
Average	.347	334	.081
Alabama	.553	543	.087
Georgia	.412	534	.097
South Carolina	.390	536	.085
Average	.452	538	.090
Mississippi	.335	664	.066

Sources: See Data Appendix.

Table 15

Charter Switches

	From State - to National-	From National - to State-	Net Change
Alabama	10	0	10
Arizona	1	1	0
Arkansas	7	4	3
California	16	0	16
Colorado	6	1	5
Connecticut	0	1	-1
Delaware	0	2	-2
Florida	4	6	-2
Georgia	7	0	7
Idaho	0	13	-13
Illinois	13	3	10
Indiana	3	7	-4
Iowa	2	2	0
Kansas	14	2	12
Kentucky	7	3	4
Louisiana	0	2	-2
Maine	0	1	-1
Maryland	1	1	0
Massachusetts	4	1	3
Michigan	4	0	4
Minnesota	19	5	14
Mississippi	10	0	10
Missouri	10	4	6
Montana	1	0	1
Nebraska	31	0	31
Nevada	0	0	0
New Hampshire	0	1	-1
New Jersey	2	11	-9
New Mexico	1	1	0
New York	7	8	-1
North Carolina	6	5	1
North Dakota	12	0	12
Ohio	2	1	1
Oklahoma	113	50	63
Oregon	7	0	7
Pennsylvania	11	8	3
Rhode Island	0	1	-1
South Carolina	4	1	3
South Dakota	4	1	3
Tennessee	8	3	5
Texas	130	8	122
Utah	0	0	0
Vermont	0	1	-1
Virginia	16	3	13
Washington	27	2	25
West Virginia	2	0	2
Wisconsin	9	1	8
Wyoming	1	6	-5

Sources: See Data Appendix.

Table 16

Regression Results: Late Asset Growth of State Chartered Banks

Dependent Variable: Growth in total assets of state-chartered banks, 1920-1926

Independent Variable	Coefficient	Standard Error	Prob > |T|
Intercept	0.400	0.458	0.391
National bank growth	0.598	0.239	0.019
(Reserve center)x(Nat. bank growth)	0.213	0.098	0.039
Ratio of farm to non-farm popul.	-0.251	0.347	0.477
Growth in land values, 1920-1925	0.269	0.540	0.622
Business failure rate, 1921-1925	-0.048	0.039	0.233
Business failure rate, 1917-1920			
Presence of deposit insurance (excluding Nebraska)	-0.271	0.123	0.036

$R^2 = 0.537$

$\bar{R}^2 = 0.426$

Dependent Variable: Growth in total assets of state-chartered banks, 1920-1930

Independent Variable	Coefficient	Standard Error	Prob > |T|
Intercept	1.482	0.554	0.013
National bank growth	0.063	0.225	0.782
(Reserve center)x(Nat. bank growth)	0.141	0.135	0.308
Ratio of farm to non-farm popul.	-0.648	0.475	0.185
Growth in land values, 1920-1930	-0.091	0.659	0.891
Business failure rate, 1921-1929	-0.095	0.053	0.088
Business failure rate, 1917-1920			
Presence of deposit insurance (excluding Nebraska)	-0.194	0.171	0.267

$R^2 = 0.405$

$\bar{R}^2 = 0.262$

Table 16 (continued)

Dependent Variable: Growth in total assets of state-chartered banks, 1920-1930

Independent Variable	Coefficient	Standard Error	Prob > |T|
Intercept	1.467	0.529	0.010
National bank growth	0.055	0.220	0.803
(Reserve center)x(Nat. bank growth)	0.130	0.133	0.337
Ratio of farm to non-farm popul.	-0.593	0.465	0.214
Growth in land values, 1920-1930	-0.065	0.641	0.920
Business failure rate, 1921-1929	-0.094	0.052	0.079
Business failure rate, 1917-1920			
Presence of deposit insurance (including Nebraska)	-0.240	0.155	0.134

$R^2 = 0.429$

$\bar{R}^2 = 0.292$

Table 17

Growth in Branch Banking

		National Banks					State Banks						All Banks			
	Total fac.	Br. Banks	Bran- ches	Tot.	B.B.	Br.	Tot.	B.B.	Br.	Tot.	B.B.	Br.	Tot.	B.B. & Br.	Tot.	B.B.& Br.
		1924			1928			1924			1928			1924		1928
Arizona	19	0	0	15	0	0	64	6	20	53	8	23	83	26	68	31
North Carolina	86	2	3	83	4	6	535	39	64	437	39	73	621	108	520	122
South Carolina	84	2	3	66	3	8	347	7	17	247	12	28	431	29	313	66
Virginia	352	7	11	182	9	16	216	24	34	376	30	47	568	76	558	102
Wyoming	37	0	0	26	0	0	79	0	0	60	0	0	116	0	86	0
Kentucky	145	3	7	155	4	15	483	1	5	480	29	34	628	16	635	82
Louisiana	41	1	8	41	1	8	303	33	85	299	42	103	344	127	340	154
Michigan	144	10	23	181	9	48	906	53	309	989	55	374	1050	395	1170	486
Ohio	363	4	4	338	7	7	947	47	199	960	52	243	1310	254	1298	309
Tennessee	110	2	2	122	7	19	512	19	51	446	20	42	622	74	568	88
Alabama	105	0	0	107	0	0	276	5	19	269	5	19	381	24	376	24
Arkansas	88	0	0	79	0	0	400	2	3	361	2	3	488	5	440	5
Georgia	101	2	7	97	4	16	608	19	46	394	15	21	709	74	491	56
Indiana	248	0	0	229	1	2	863	4	8	808	3	7	1111	12	1037	13
Minnesota	345	3	11	285	2	6	1081	0	0	855	0	0	1426	14	1140	8
Mississippi	36	1	1	37	1	1	346	10	24	313	10	24	382	36	350	36
Nebraska	177	2	2	160	2	2	925	0	0	746	0	0	1102	4	906	4
Washington	114	1	2	111	1	2	272	4	5	247	3	4	386	12	358	10
Wisconsin	157	1	2	159	1	2	839	6	7	817	6	7	996	16	976	16
Colorado	141	0	0	123	0	0	201	0	0	164	0	0	342	0	287	0
Idaho	70	0	0	46	0	0	107	0	0	94	0	0	177	0	140	0
Illinois	502	0	0	484	0	0	1408	0	0	1337	0	0	1910	0	1821	0
Iowa	347	0	0	270	0	0	1438	0	0	1169	0	0	1785	0	1439	0
Kansas	260	0	0	250	0	0	1033	0	0	864	0	0	1293	0	1114	0
Missouri	134	0	0	134	0	0	1478	0	0	1231	0	0	1612	0	1365	0
Montana	93	0	0	70	0	0	155	0	0	132	0	0	248	0	202	0
Nevada	11	0	0	10	0	0	23	0	0	25	0	0	34	0	35	0
New Mexico	33	0	0	29	0	0	43	0	0	29	0	0	76	0	58	0
North Dakota	165	0	0	136	0	0	523	0	0	354	0	0	688	0	490	0
Oklahoma	421	0	0	333	0	0	388	0	0	337	0	0	809	0	670	0
South Dakota	116	0	0	97	0	0	437	0	0	315	0	0	553	0	412	0
Texas	573	0	0	638	0	0	1046	0	0	816	0	0	1619	0	1454	0

Sources: See Data Appendix.

Table 18

Regression Results: Late Asset Growth and Bank Size of State-Chartered Bank

Dependent Variable: Growth in total assets of state-chartered banks, 1920-1926

Independent variable	Coefficient	Standard Error	Prob > |T|
Intercept	0.544	0.450	0.239
National bank growth	0.602	0.235	0.018
(Reserve center)x(Nat. bank growth)	0.178	0.098	0.084
Ratio of farm to non-farm popul.	-0.404	0.346	0.254
Growth in land values, 1920-1925	0.037	0.541	0.946
Business failure rate, 1921-1925	-0.040	0.038	0.308
Business failure rate, 1917-1920			
Presence of deposit insurance (excluding Nebraska)	-0.190	0.126	0.146
Out-of-city branch banking	0.179	0.124	0.163
Within-city branch banking	0.204	0.132	0.136

$R^2 = 0.601$

$\bar{R}^2 = 0.462$

Dependent Variable: Growth in total assets of state-chartered banks, 1920-1930

Independent variable	Coefficient	Standard Error	Prob > |T|
Intercept	1.539	0.449	0.002
National bank growth	0.124	0.200	0.539
(Reserve center)x(Nat. bank growth)	0.078	0.115	0.502
Ratio of farm to non-farm popul.	-0.936	0.405	0.030
Growth in land values, 1920-1930	-0.386	0.551	0.490
Business failure rate, 1921-1929	-0.072	0.044	0.118
Business failure rate, 1917-1920			
Presence of deposit insurance (excluding Nebraska)	-0.065	0.140	0.647
Out-of-city branch banking	0.398	0.150	0.014
Within-city branch banking	0.428	0.161	0.014

$R^2 = 0.625$

$\bar{R}^2 = 0.495$

Table 18 (continued)

Regression Results: Late Asset Growth and Bank Size of State-Chartered Bank

Dependent Variable: Assets per bank for state-chartered banks in 1926

Independent variable	Coefficient	Standard Error	Prob > |T|
Intercept	1341.96	739.24	0.082
National bank growth	0.101	0.115	0.385
(Reserve center)x(Nat. bank growth)	0.084	0.072	0.256
Ratio of farm to non-farm popul.	-1782.05	580.74	0.005
Growth in land values, 1920-1925	-160.61	884.00	0.857
Business failure rate, 1921-1925	-40.55	60.60	0.510
Busines failure rate, 1917-1920			
Out-of-city branch banking	593.49	198.93	0.007
Within-city branch banking	540.64	257.51	0.047

$R^2 = 0.688$

$\bar{R}^2 = 0.597$

Dependent Variable: Assets per bank for state-chartered banks in 1930

Independent variable	Coefficient	Standard Error	Prob > |T|
Intercept	1868.64	847.17	0.037
National bank growth	0.072	0.128	0.577
(Reserve center)x(Nat. bank growth)	0.100	0.079	0.219
Ratio of farm to non-farm popul.	-2642.12	725.33	0.001
Growth in land values, 1920-1930	-375.72	952.96	0.697
Business failure rate, 1921-1929	-24.39	75.20	0.749
Business failure rate, 1917-1920			
Out-of-city branch banking	876.91	244.74	0.002
Within-city branch banking	736.32	330.63	0.036

$R^2 = 0.700$

$\bar{R}^2 = 0.612$

Table 19

Chains and Banks in Chain Systems, by States: June 30, 1929

	Numbers of Chain systems		Banks in chain systems	
	Total	Total	National	State
Total	230	1,561	596	965
	State-Wide Branch Banking Permitted			
Total	8	49	25	24
State				
Arizona	1	6	1	5
California	4	30	20	10
Delaware				
District of Columbia				
Maryland				
North Carolina				
Rhode Island	1	3	1	2
South Carolina				
Virginia				
Wyoming	2	10	3	7
	Branches Restricted as to Location			
Total	61	337	135	202
State				
Kentucky	1	4	4	
Louisiana	2	10	6	4
Maine	1	5	2	3
Massachusetts	4	33	19	14
Michigan	11	71	3	68
Mississippi				
New Jersey	12	49	22	27
New York	17	111	58	53
Ohio	1	6	3	3
Pennsylvania	9	38	12	25
Tennessee	3	10	6	4
	Establishment of Branches Prohibited by Law			
Total	141	1,026	365	661
State				
Alabama	3	22	11	11
Arkansas	4	63	13	50

Table 19 (cont'd)

State				
Colorado	2	13	8	5
Connecticut				
Florida	4	32	13	19
Georgia	6	23	8	15
Idaho	3	23	7	16
Illinois	11	81	20	61
Indiana	1	3	2	1
Iowa	12	92	33	59
Kansas	10	55	15	40
Minnesota	34	279	130	149
Missouri	4	26	7	19
Montana	2	15	4	11
Nebraska	9	63	15	48
Nevada	2	14	2	12
New Mexico	1	6	4	2
Oregon	6	32	14	18
Texas	6	37	7	30
Utah	5	50	12	38
Washington	11	62	26	36
West Virginia				
Wisconsin	5	35	14	21

Establishment of Branches Prohibited in Practice

Total	20	149	71	78
State				
New Hampshire				
North Dakota	7	60	20	40
Oklahoma	8	59	41	18
South Dakota	5	30	10	20
Vermont				

Sources: See Data Appendix.

Table 20

Average Annual Bank Failure Rate: 32 "Agricultural-Crisis" States

	1918-1920		1921-1924		1925-1929		1921-1929	
	National AFR1820	State AFR1820	National AFR2124	State AFR2124	National AFR2529	State AFR2529	National AFR2129	State AFR2129
Alabama	.0000000	.0014124	0.002475	0.00697	0.005714	0.011673	0.004400	0.009739
Arkansas	.0049751	.0034364	0.003012	0.01052	0.013636	0.029219	0.009371	0.020627
Arizona	.0000000	.0000000	0.037500	0.07090	0.000000	0.031111	0.016667	0.043118
Colorado	.0000000	.0029240	0.007092	0.02958	0.015603	0.024876	0.011820	0.023749
Georgia	.0000000	.0031299	0.002688	0.03098	0.019149	0.058007	0.011947	0.040168
Iowa	.0000000	.0004424	0.002793	0.01055	0.043228	0.027816	0.024519	0.018897
Idaho	.0000000	.0000000	0.043210	0.05674	0.028571	0.028037	0.032922	0.037037
Illinois	.0000000	.0016317	0.000521	0.00386	0.004382	0.004830	0.002778	0.004253
Indiana	.0000000	.0017683	0.000984	0.00533	0.005645	0.012164	0.003500	0.009607
Kansas	.0000000	.0016617	0.004016	0.01432	0.005385	0.021878	0.004909	0.017778
Kentucky	.0000000	.0007491	0.000000	0.00667	0.000000	0.011416	0.000000	0.009630
Louisiana	.0000000	.0015798	0.006579	0.01638	0.000000	0.014679	0.002924	0.015041
Michigan	.0000000	.0004617	0.000000	0.00169	0.001653	0.001038	0.000992	0.001353
Minnesota	.0011614	.0045537	0.005287	0.01954	0.031138	0.039630	0.019805	0.028887
Missouri	.0000000	.0021536	0.000000	0.01022	0.007463	0.023275	0.004085	0.017150
Mississippi	.0000000	.0000000	0.008333	0.01407	0.005714	0.014667	0.007407	0.014349
Montana	.0000000	.000000C	0.067241	0.10140	0.032258	0.019355	0.041379	0.050894
North Carolina	.0000000	.0000000	0.008621	0.01884	0.019277	0.024000	0.014049	0.021951
North Dakota	.0000000	.0009592	0.035912	0.07103	0.036364	0.066922	0.034377	0.058651
Nebraska	.0000000	.0007491	0.017287	0.01808	0.016000	0.042737	0.015957	0.029787
New Mexico	.0000000	.0000000	0.079787	0.08882	0.018182	0.051163	0.042553	0.055556
Nevada	.0000000	.0000000	0.000000	0.01087	0.000000	0.000000	0.000000	0.004831
Ohio	.0008985	.0004323	0.001351	0.00130	0.001671	0.005906	0.001502	0.003742
Oklahoma	.0009921	.0017889	0.017241	0.04820	0.014727	0.028866	0.017561	0.031590
South Carolina	.0000000	.0000000	0.000000	0.02309	0.037037	0.079394	0.020325	0.048666
South Dakota	.0000000	.0006588	0.040441	0.05985	0.048276	0.058581	0.040850	0.052793
Tennessee	.0000000	.0000000	0.000000	0.00389	0.003704	0.021166	0.002268	0.013827
Texas	.0000000	.0019685	0.005845	0.01689	0.006283	0.013958	0.006195	0.014716
Virginia	.0000000	.0033784	0.001515	0.00982	0.001099	0.009169	0.001347	0.009735
Washington	.0000000	.0023474	0.005747	0.01961	0.010714	0.011321	0.010217	0.014161
Wisconsin	.0000000	.0000000	0.003311	0.00336	0.005161	0.009615	0.004415	0.006919
Wyoming	.0000000	.0000000	0.042553	0.06195	0.016216	0.050633	0.026005	0.047198

Sources: See Data Appendix.

Table 21

1921-1930 Bank Liquidations (as of 1930)

	National Banks			State Banks		
	# completely liquidated	# in process of liquid.	repayment ratio[2]	# completely liquidated	# in process	repayment ratio[2]
Alabama	2	11	1.00	9	39	.59
Arizona	2	0	.50	4	20	.91
Arkansas	3	15	.87	37	96	.36
Colorado	8	9	.60	62	9	.68
Georgia	5	11	.51	120	130	.44
Idaho	17	4	.47	28	11	.49
Illinois	2	31	.76	9	131	.63
Indiana	1	12	.77	6	109	.88
Iowa	14	69	.69	182	130	.54
Kansas	4	10	.79	119[1]	0[1]	.53[1]
Kentucky	0	3	.NA	18	41	.NA
Louisiana	1	0	.69	16	19	.41
Michigan	0	4	.NA	2	8	.72
Minnesota	13	43	.58	50	245	.48
Mississippi	2	3	.88	64[1]	0[1]	.52[1]
Missouri	2	10	.66	109	200	.53
Montana	38	15	.34	27	28	.52
Nebraska	13	15	.44	317[1]	0[1]	.35[1]
Nevada	0	0	.NA	0	0	.NA
New Mexico	12	2	.51	18	19	.70
North Carolina	4	17	.71	2	87	1.00
North Dakota	21	38	.45	340[1]	0[1]	.17[1]
Ohio	3	7	.66	0	42	.NA
Oklahoma	25	26	.43	139[1]	0[1]	.56[1]
South Carolina	8	16	.51	16	189	.66
South Dakota	16	34	.51	242[1]	0[1]	.24[1]
Tennessee	1	4	.93	12	61	.83
Texas	21	22	.58	138[1]	0[1]	.54[1]
Virginia	1	3	.90	4	41	.57
Washington	4	5	.84	1[1]	0[1]	.75[1]
Wisconsin	2	6	.30	20	40	.66
Wyoming	8	2	.70	15	13	.54

[1]Insured Banks only. Includes liquidations completed after 1930.
[2]The repayment ratio is defined as the ratio of deposits repaid from asset liquidation for banks that were completely liquidated.

Sources: See Data Appendix.

Table 22

Average Time elapsed between closing and Completed Liquidation
(for banks liquidated 1921-1930)

	National Banks			State Banks		
	Years	Months	# banks	Years	Months	# banks
Alabama	3	2	2	3	3	8
Arizona	4	10	2	3	8	3
Arkansas	2	5	3	2	10	37
Colorado	4	5	8	2	11	60
Georgia	3	9	5	3	8	113
Idaho	4	2	17	4	6	28
Illinois	3	3	2	3	10	8
Indiana	7	6	1	4	4	5
Iowa	3	8	14	3	7	179
Kansas	3	3	4	3	4	117
Kentucky	NA	NA	NA	3	4	17
Louisiana	7	2	1	4	3	14
Michigan	NA	NA	NA	6	3	2
Minnesota	4	1	13	5	7	48
Mississippi	1	1	2	6	0	2
Missouri	3	6	2	3	2	109
Montana	4	6	38	4	4	23
Nebraska	4	9	13	6	4	15
Nevada	NA	NA	NA	NA	NA	NA
New Mexico	4	5	12	5	0	17
North Carolina	2	11	4	7	1	1
North Dakota	4	0	21	6	3	35
Ohio	3	5	3	NA	NA	NA
Oklahoma	3	8	25	5	0	64
South Carolina	3	10	8	3	11	8
South Dakota	4	8	16	5	7	22
Tennessee	0	11	1	3	11	6
Texas	4	0	21	3	9	19
Virginia	4	8	1	3	11	4
Washington	4	2	4	4	1	32
Wisconsin	3	8	2	3	2	20
Wyoming	4	10	8	3	4	10

Sources: See Date Appendix.

Table 23

Estimated Asset Shortfalls of Failed Banks Relative to Remaining-Bank Equity in "Severe-Failure" States

	National Banks						State-Chartered Banks						All Banks
	Deposits of Suspended Banks 1921-30	Number of Liq. Relative to Suspensions	Avg. size of Liq. Bks Rel. to Susp.	Rate of Asset Shortfall	Estimated Shortfall	Total Bank Equity June 1930	Deposits of Sus. Banks 1921-30	Liq./ Susp.	Size Ratio	Rate of Asset Shortfall	Estimated Shortfall	Total Bank Equity June 1930	Ratio of Shortfall to Equity
Arizona	1256	.67	.83	.50	349	3,815	15,056	.80	.06	.09	65	8,496	.03
Colorado	11003	.94	.45	.40	1,862	13,776	12,187	.95	.95	.32	3,520	10,273	.22
Georgia	16538	.84	.09	.49	613	39,064	46,318	.75	.70	.56	13,618	39,805	.18
Idaho	10601	.81	.65	.53	2,958	4,612	9,185	.85	.63	.51	2,509	4,983	.57
Iowa	55984	.79	.50	.31	6,855	35,750	138,995	.75	.66	.46	31,649	74,935	.35
Minnesota	28338	.97	.59	.42	6,812	69,387	80,634	.77	.47	.52	15,174	38,417	.20
Montana	16287	.87	.44	.66	4,115	9,999	31,361	.89	.47	.48	6,297	9,947	.52
Nebraska	13695	.80	.94	.56	5,767	26,083	78,093	.85	1.04	.65	44,872	27,760	.94
North Dakota	17438	.84	.80	.55	6,445	9,210	45,199	.92	1.05	.83	36,240	9,695	2.26
Oklahoma	27364	.72	.70	.57	7,861	41,251	38,986	.79	.28	.44	3,794	11,493	.22
South Carolina	12153	.92	.57	.49	3,123	11,665	50,970	.91	.58	.34	9,147	17,069	.43
South Dakota	21109	.93	.60	.49	5,772	8,477	91,619	.77	1.00	.76	53,615	10,848	3.07
Wyoming	9154	.91	.45	.30	1,125	4,819	7,536	.80	.48	.46	1,331	3,844	.28

Sources: See Data Appendix.

CHILEAN BANKING LEGISLATION

GENERAL INDEX

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II ORGANIC LAW OF THE SUPERINTENDENCY OF BANKS AND FINANCIAL INSTITUTIONS D.L. N° 1,097

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I. GENERAL LAW OF BANKS

Decree with Force of Law N° 252

(Including the modifications introduced by
Law N° 18,576 from November 27, 1986 and
Law N° 18,707 from May 19, 1988.)

TEXT OF THE GENERAL LAW OF BANKS

Num. 252.- Santiago, March 30, 1960.- By the faculties given to me in articles 202 and 207, N° 6 in law N° 13,305, from April 6, 1959, I dictate the following

DECREE LAW:

The text of the General Laws of Banks with the modifications made to this date and the ones introduced by this decree law, will be as follows:

TITLE I

Concerning the Superintendence of Banks (abolished)[1]

TITLE II

Concerning Fiscal Oversight

Article 19.- The institutions subject to Fiscal oversight by the Superintendence must keep their books, forms, mail, documents and file cards for a period of ten years. The Superintendent may authorize the elimination of part of this file before this period or ask to keep some documents for a longer period. He may also authorize the institutions to keep microfiches or microfilms of these documents instead of the originals.

The ten year period will be counted from the date of the last record done on the document or the date it was issued, whichever

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[1]Translator's note: This Title was changed in 1975 into the "Organic law of the Superintendence of Banks and Financial Institutions". See Part II, Title I.

is relevant.

By no means can an institution destroy books or instruments that have direct or indirect relation with a pending business or litigation.

The Superintendent may authorize the banks to return canceled checks to depositors.

Article 20.- Any deposit or investment received by the banks is subject to bank confidentiality. Accordingly, no information relative to these operations can be provided by the banks unless requested by a customer or someone authorized by him or his legal representative. Breakers of the above rule will be sentenced to minor imprisonment with minimum to medium degree.

Other operations are confidential and banks can only reveal them to those who show legitimate interest provided that such revelation will not adversely affect the client. However, in order to evaluate its financial position, the bank can give detailed information of its operations to specialized firms. These specialized firms, which must be approved and registered by the Superintendence, are subject to the confidentiality rules established above.

In any event, the banks can reveal their operations, in global terms, for statistical purposes or when it is on behalf of the public interest, provided that it is approved by the Superintendence.

The civil and military justice, when conducting an investigation, can request information relative to specific operations that are closely related to the issues being investigated, including investments, deposits and other operations carried out by any of the parties involved in the trial if necessary.

TITLE III

Concerning penalties

Article 26.- The directors and managers of a financial institution, that have knowingly made a false declaration about the property and the capital of their financial institution, or have approved or presented a false balance sheet, or have disguised the institution's financial situation, especially the sums given in advance to directors or employees, will be punished with minor imprisonment reclusion on its medium and maximum degree and with a fine of one thousand to ten thousand tributary units.[2]

If the financial institution goes into bankruptcy, the people that have committed the above actions may be considered responsible of fraudulent bankruptcy.

Article 26 bis.- The directors, managers, public officials, employees or external auditors of financial institutions that alter data or information on the balances, books, accounts, correspondence or any other document, or that hide or destroy these documents, in order to hinder, mislead, or elude the inspection that the Superintendence has to do according to the law, will be subject to minor imprisonment of a medium to maximum degree.

The same penalty will be applied if, with the same purposes, the above officials provide, sign, or present those elements altered or disfigured. This disposition does not exclude the application of the rules included in articles 14 to 17 of the Penal Code (Codigo Penal).

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[2]Translator's note: This is between 30,000 and 300,000 dollars, approximately.

TITLE IV

Concerning the creation of banking companies

Article 27.- Banking enterprises must be established as stock companies in accordance with the current law.

The prospectus that has to precede the formation of the company will be reviewed by the Superintendent and can be rejected without given a reason. The same review process will be applied prior to transforming a financial company into a banking enterprise.

Once the prospectus is accepted, the organizers will get a temporary certificate that will allow them to do what ever is necessary in order to obtain the authorization, establishment and functioning of the company. The company will be considered to have juridical personality once the certificate is issued. It will not be possible to request authorization for the incorporation of the company after ten months from the date that the certificate is issued.

The organizers of a banking enterprise must give a warranty equivalent to ten percent of the company's capital by means of a deposit to the order of the Superintendent in any institution controlled by the Superintendence of Banks and Financial Institutions.

The organizers must deposit the funds received for the subscription of shares in any of the institutions controlled by the Superintendence in the name of the banking enterprise that is in formation. These funds can only be withdrawn after the authorization for the existence of the company is issued and after the board of directors takes up its duties.

The organizers can not receive any kind of compensation for their work on this matter.

Article 28.- Once the authorization for incorporation is requested and the authorized copy of the public document that contains the statute is attached, together with the certificate referred to in the last article, the Superintendent will check the company's capital. Once approved, he will issue a resolution that validates the incorporation of the company and approves its statutes.

The Superintendence will issue a certificate that certifies the incorporation and contains a statute summary. The certificate will be registered in the Commerce Registry (Registro de Comercio) correspondent to the domicile of the corporation and will be published in the Official Journal (Diario Oficial) within sixty days from the date of the approval of the resolution. The same must be done with the revision introduced to the statutes or with resolutions that will result in the dissolution of the company.

Once the procedures referred to in the last clause are completed, the Superintendent will determine whether the banking enterprise is ready to begin operating and, if that is the case, he will give the authorization to start and specify a time period to begin operations.

This authorization will entitle the company to start its operations, conferring the rights and imposing the obligations established in this law.

Article 29.- If foreign banks wish to establish branches in the country, they will need a temporary certificate described in article 27.

To obtain a definitive authorization, they should enclose all the documents required by law and regulations in order to establish an agency of a foreign stock company.

The Superintendent will inspect the statutes of the company in order to establish if they are consistent with the Chilean legislation and he will also investigate, by all reasonable methods, whether the company is of sufficiently high quality that

the authorization to operate can be granted without risk.

The resolution that approves the establishment of the branch, together with a summary of the statutes certificated by the Superintendence, will be recorded and published according to the last article. The same procedure will taken with modifications of the home office statutes and with capital increments or other modifications of the Chilean agency. Similarly, the same procedure will be taken for resolutions that approve the early end or the annulment of the authorization.

Upon verification that the branch's capital is located in the country and that the branch is ready to start up, the Superintendent will give the branch the authorization to operate.

Article 30.- The foreign banks that operate in Chile will have the same rights as the national banks of the same category and will have to follow the same laws and rules, unless there is a contrary legal provision.

The capital and reserves assigned to the branch in the country will have to be located within the country and converted to national currency according to the norms of decree law N° 600, 1974, Foreign Investment Law (Estatuto de Inversionistas). Increments of capital or reserves that do not arise from the capitalization of other reserves, will have the same treatment that the initial capital and reserves have.

No foreign bank can invoke its own country's laws when conducting operations in Chile.

Any dispute of any type will be resolved by Chilean courts in accordance with Chilean laws.

Chilean creditors and foreign creditors with residence in Chile will have prior claim on the assets of the bank in this country.

Article 31.- Banking companies must be open to the public during well-publicized hours. No banking enterprise can start,

suspend or finish its operations without an authorization of the Superintendent.

No national bank can open or close any office inside or outside the country, nor can any foreign bank residing in Chile open or close any office inside the country, without an authorization of the Superintendent.

The disposition of the preceding clause will not be applied to the Central Bank of Chile (Banco Central de Chile).

Article 31 bis.- Branches opened outside the country by the banking companies established in Chile will be inspected by the Superintendence and will be regulated by the following dispositions:

1) With the purpose of applying Chilean law, it will be necessary to assign bank capital to each branch. That capital will be deducted from the paid capital and reserves of the chilean home office. This assignation and its modifications will need the approval of the Superintendency.

2) The dispositions in articles 19; 81; 83; N°8; and 84, N°5 and N°6 will be applicable. In no case can arbitrage operations of foreign money be performed.

3) It will be acceptable to give credit to Chileans with residence or household in Chile, subject to the constraints described in article 84, N°s 1, 2 and 4 and to the norms in article 85. Nevertheless, those norms will not be applicable for loans made to the home office.

4) For the purpose of the operations between the overseas branch and the home office, both will be considered independent agents.

Article 32.- It will be the Superintendent's duty to set the office hours of the Central Bank of Chile (Banco Central de Chile), State Bank of Chile (Banco del Estado de Chile) and commercial banks, these office hours must be the same among institutions in

the same location. This will be done by publishing a resolution in the "Diario Oficial".

Throughout the country the banking institutions mentioned in the last clause will have to be open, Monday through Friday. However it will be the Superintendent who determine the exact office hours.

The Superintendent can also authorize the banking companies, without the limitations and formalities indicated, to provide some services besides the obligatory days and hours of attention to the public.

Article 33.- The Central Bank of Chile (Banco Central de Chile), the State Bank of Chile (Banco del Estado de Chile) and the commercial banks will not receive the public on Saturday and December 31. However, this does not mean that these days will be considered holidays for legal purposes, except when paying and protesting bills of exchange (letras de cambio).

Article 34.- A natural or juridical person that has not been authorized by law cannot offer services that are commonly offered by banks. In particular, taking money from the public, whether in the form of deposits or mutual founds, is prohibited.

Neither can any person display in the office, in any language, expressions indicating that a company is a bank, a banking company or a financial company, nor can he use letterheads, posters, titles, forms, receipts, or any other paper that contains names or any word that indicate that it is a banking business. It is also forbidden to use those expressions when advertising through the newspaper or any other advertizing medium.

It will be assumed that a natural or juridical person has violated what is said in this article if he has an office that, in any way, invites the public to bring any kind of money or which is advertised anywhere with the same purpose.

The infractions to this article will be punished with minor imprisonment in its medium to maximum degree. In this case the Superintendence will have to release the documents to the National Defense Council (Consejo de Defensa del Estado), to begin the pertinent actions, without impeding public action to denounce the offense.

In any event, if as a consequence of these illegal activities the public suffers any loss, those responsible will be punished as authors of fraud.

If the Superintendent decides that there is an infraction to this article, the Superintendence will have the same inspection faculties as those contained in its organic law concerning the regulated institutions, and can apply article 17 of that law.

Any public or private organization that is aware of a violation to this article can report it to the Superintendency.

Article 35.- The Superintendent can authorize foreign banks not established in Chile to have a business agent represent them. The Superintendence will have the same powers of inspection over this business agent as it has over banks. The representative of a foreign bank can not do any banking business. The authorization can be revoked at any time if the business agent does not comply with the banking law or if the presence of the agent is deemed unnecessary.

Article 36.- All banking companies have to maintain a sight deposit in the Central Bank of Chile, under the control of the Superintendent, equal to one one-thousandth of the average of their assets, as a guaranty of the fulfillment of the present law. The amount of the deposit will be adjusted every year during January and will be determined as established in article 7 of the Decree Law N°1097 [3], over the average of the previous year's assets.

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[3] The "Organic Law of the Superintendence of Banks and Financial Institutions".

This stipulation will not apply to the Central Bank of Chile (Banco Central de Chile).

Article 37.- If a company has not paid the fees established in article 7, or any fine, the Superintendent will add the amount to the deposit referred to in the last article. The affected company can not resist this measure with any judicial proceeding.

Article 38.- If the guaranty referred in Article 36 is less that the sum determined in that article, the Superintendent will require the company to fulfill it in ten days. If the company does not do so the Superintendent can revoke the company's authorization to operate.

Article 39.- The Superintendent will cancel the guaranty once the banking company, with the authorization required in Article 31, has finished its operations, provided that the company has paid the entire amount of any imposed fines and of the contribution ordered in Article 7, has established its own solvency, and has paid its creditors.

TITLE V

Concerning the administration of the banking companies

Article 40.- The board of directors and the administration of the banking companies will operate according to the legal statutes of each bank and subject to the norms given by the Superintendent.

Article 41.- All elections of directors will be published in a local newspaper and the Superintendency must be notified. An authorized copy of the public document will be sent to the Superintendency. The public document comes from the minutes of the meeting where the management was elected, and it is witnessed

by the Property Notary (Notario de Hacienda) of the department.

The nominations of manager and sub-manager must also be made into a public document.

Article 42.- Any vacancies in the board of directors will be filled by substitutes, if any. Otherwise, the board will choose the replacements in the first meeting they have, and they will be in office until the next stockholders commission, where the definitive designation will be made. The director designated in the meeting will only stay in charge until he completes the replaced director's period.

The board of directors, with the Superintendent's approval, can have one or two vacancies until the next meeting, if there is no replacement.

If for any reason the meeting where the directors are elected does not take place on time, the functions of the outgoing directors will be extended until they elect a replacement. The board of directors must invoke a meeting, as soon as possible, to make the appointments.

Article 43.- The board of directors has to meet at least once a month an all the measures taken and recorded in the respective minutes.

Article 44.- The manager, or who ever is in his place, should inform the board, in each meeting, about all the credits given since the last meeting, with the proper justification and any information that the board requests.

At the same time, he should also inform the board about any acquisition or sale of business property or real estate, shares and bearer securities.

Article 45.- The banks should inform the Superintendency every time they extend a credit to a natural or juridical person, if

those credits exceed the five percent of the paid capital and reserves.

The Superintendency, using general rules, will determine how and when this obligations to inform should be fulfilled.

Article 45 bis.- Whoever gets credit from credit institutions, either public or private, with false or uncompleted data about his identity, activities, general balance sheet or proprietorship, and who then causes damage to the institution, will be given the minor imprisonment penalty in its medium to maximum degree.

Article 46.- The Superintendent or a representative designated by him can be called to resolve any administrative problem that arises in the stockholder's meeting, whether in relation to assigned powers or any other matter that could affect the legality of the meeting. Use of the superintendent does not prejudice the right to bring similar action to the provincial courts.

Whichever is the decision of the justice, it will not change the validity of the agreements adopted with the concurrence of the directors elected in the meeting, neither will it change the validity of actions taken as a result of those agreements.

Article 47.- The foreign banking companies do not need to have a board of directors for the administration of their businesses inside the country, but they should have an authorized agent to represent them with all the legal powers.

The responsibilities and penalties that affect the board of directors or the directors of the banking companies can be made effective to attorneys of the foreign banks' branches.

The foreign banking companies can undertake normal transactions in Chile, as long as they operate within the law and do not jeopardize the safety of businesses.

The net profit remittances obtained by the foreign banking companies will be made with the authorization of the

Superintendency subject to the decree law N° 600, 1974, The foreign Investment Law (Estatuto del Inversionista), and to other dispositions that govern remittances.

TITLE VI

Concerning the trust commissions
(Not Translated)

TITLE VII

Concerning the forced liquidation and losses of the banking companies
(abolished, see Title XV)

TITLE VIII

General rules applicable to commercial banks

Article 62.- We will understand that a commercial bank is any institution that does business receiving money as a deposit and giving it as a loan, whether in the form of a mutual, a discounted document or in any other way.

Article 63.- The banks are governed direct by the present law and, as a subvention, by the dispositions applicable to the operating stock companies as long as they can be reconciled and do not go against these stipulations.

The norms contemplated in the stock companies law about the following matters, will not applied to the banks:

a) There must be an agreement in the stockholders' commission, concerning loan guarantees or common and other securities;

b) The right to retire stockholders in advance; and,

c) Balance sheet consolidation.

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Article 64.- The statutes of a bank should contain the following dispositions, in addition to the ones required for the stock companies:

1) The name of the bank, where it is not necessary to say that this is a stock company.

2) The city of the Republic where the branch or main office will be open, and what will be its business address, without affecting the branches or agencies established according to the law . The board of directors and the general management of the company must work in that city.

3) The number of directors of the bank and the names of the members of the provisional board of directors that have been designated by the stockholders.

4) The name and address of the provisional manager and of the sub-manager that will replace him in case of absence or incapacity.

Article 65.- The commercial banks will be subjected to the following dispositions:

1) The shares can only be issued in the stockholders' names (i.e., they cannot be of bearer form).

2) The stockholders' contribution can only be in cash, that is, in legal Chilean money. This rule will not be applied in the case of merger of banks nor in the case of the acquisition of assets and liabilities from one bank to another.

In this case, the capitalization of money credits owed by the same banking company will be considered cash contributions, provided that the Superintendency approves each operation.

3) They cannot issue industry shares, service remuneration shares, nor shares with privilege or preference. However, they can issue distinct series of shares.

4) The number of shares that each stockholder can vote for will not be established, unless the law imposes it or authorizes it.

The banks will not have to publish their balance sheets and profit and loss statements again once they are audited in the term noted by the stock companies' law if they have already done it; but in this case they will have to indicate in the notices calling for the stockholders' meeting the name of the newspaper where the balance sheets were published and the date of publication.

5) In the Stockholders' Meeting (Junta de Accionistas) elections, each stockholder will have one vote for each share that he owns or represents and he can accumulate his votes in favor of one person or distribute them in a way he thinks is convenient. The people that get more votes will be elected until the number of people needed is completed.

6) The bank should have at least five stockholders at the time of its establishment.

7) The board of directors of the commercial banks will have nine members, on which eight will be elected by the stockholders; the stockholders can also designate two substitutes. The terms of the directors will last three years and directors can be reelected.

There will also be a director elected by the workers of the company, and a substitute, all of these in compliance with the second and third clause of the 3rd article of decree law N° 818, 1974.

The banks can contemplate in its statutes a board of directors with odd number of directors, not less than five nor more than eleven, as long as it is approved by the Superintendency, taking into consideration the size and importance of the company and its stock composition.

8) Any person that has been convicted or is in process for an offence punishable with principal penalty or temporary or perpetual suspension or disqualification for the performance of public duties cannot be a director.

Any person that has gone bankrupt and has not legally cleared this situation will not be eligible to be a member of the board of directors.

9) No special requirement referring to nationality or profession can be established for the election of a director.

10) The duty of a member of the board of directors of a commercial bank is incompatible with a parliamentary duty or duty as director or employee of any financial institution, and with duty as an employee appointed by the President of the Republic (Presidente de la Republica). The duty of director of a commercial bank is also incompatible with the one of employee of any of the companies referred to in number 17) in this article. These incompatibilities will not affect the people that work in high, junior or special schools.

Likewise, the duty of director of a bank is incompatible with the one of managing director or administrator of more than six companies, whether these are commercial, agricultural or mining.

11) Spouses or close relatives cannot be directors either.

12) A person cannot at the same time be director and an employee of the same bank. This disposition does not contradict the fact that a director can perform as a transitory manager for not more than ninety days.

This incompatibility does not apply for the director that represent the workers; he cannot be a union leader or a representative of labor of the same bank.

13) The stockholders can be represented in the meetings by other stockholders through a power of attorney addressed to the association. The text of these letters will be determined by the Superintendency.

They also can be represented by a non stockholder person; but in this case the command will come from a power of attorney that has to be signed in front of a notary or by a public document.

The powers of attorney that do not designate the name of the representative by the own hand of the constituent, will be understood as given to the directors, and will be distributed among the actual directors elected by the stockholders, by equal parts in relation to the number of shares that those powers represent.

The Superintendency can determine how the powers will be qualified, before the celebration of a Stockholders' Meeting. In this case only the powers qualified in this way can be presented to the meeting.

14) Members of the board of directors that miss, without permission, sessions of the board will be discharged for that reason.

15) The requirements, incapacities, incompatibilities, prohibitions and penalties that this law establishes for the directors will be applied in the same way to the advisors that the banks designate for their branches or offices.

16) The managers, sub-managers or general attorneys of a bank cannot be on the board of directors of a stock company.

17) The National Government (Fisco), the Services (Servicios), National Government Institutions (Instituciones Fiscales), Semipublic Companies (Semifiscal), Independent Organizations (Organismos Autonomos), State Companies (Empresas del Estado) and in general all the public services created by law, cannot be stockholders of a commercial bank; neither can the companies, societies or public or private entities where the State or its companies, societies or centralized or decentralized institutions have a non-minority capital contribution, representation or participation.

18) Because the public interest demands it, nobody can acquire, directly or through third parties, shares of a bank that, by themselves or added to the ones they already have, represent more than 10 percent of its capital, without having obtained previous authorization by the Superintendency. The banks will not register these shares in the Stockholder Registry (Registro de Accionistas), unless the resolution is favorable.

The Superintendency can only disallow the authorization, by a well-founded resolution, in one of the following circumstances:

a) When the acquirer has a non-discharged bankruptcy;

b) When the acquirer has been convicted or is in process of conviction for a property or public offence related to the administration of a financial institution;

c) When the acquirer is insolvent;

d) When the acquirer has protested documents, not cleared up, in the last five years in a considerable number or quantity;

e) When the acquirer has been in the last 15 years, director or manager, or principal stockholder, directly or through third parties, of a banking entity that has been declared in forced liquidation or has submitted to temporary administration in which the National Government (Fisco) or the Central Bank of Chile (Banco Central de Chile) has had a considerable loss. An acquirer will not be considered for participation, in these cases, for a period less than one year.

In the case of a juridical person, the preceding circumstances will be considered with regard to the members and main stockholders or to its administrators that were either members or principal stockholders during the two years before the acquisition of the shares.

The Superintendency must make its decisions within a maximum term of 15 working days from the day in which the necessary documents for the resolution of the case were enclosed.

TITLE IX

Concerning the capital, reserves and dividends of the commercial bank

Article 66.- The amount of the paid capital and reserves of a bank cannot be less than 400,000 Unidades de Fomento (UF)[2].

If the paid capital and reserves should be reduced to a quantity lower than the minimum, the bank will have to replenish it in one year, a term that can be extended by the Superintendent for one more year. If the quantity is not replenished on time, the authorization will be revoked.

Article 67.- At the time of the execution of the public document, the capital of the bank should be totally subscribed and paid, at least the minimum referred to in the last article.

If the bank is established with a capital superior to the minimum, the excess should be paid in one year (maximum), from the date of the decree that authorizes the existence and approves the bank's existence.

Article 68.- (ABOLISHED)

Article 69.- The commercial banks can increase their capital any time, through statute revisions. The shares emitted should be totally subscribed and paid in the term fixed in the decree in which the Superintendent approves the proposed reform.

Article 70.- Only with the authorization of the Superintendent can a commercial bank agree to a capital reduction. By no means

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[2]Translator's note: the "United de Fomento" is denominated in chilean pesos and evolves every day according to the inflation rate observed in the previous month. Its current value (june 26, 1989) is c$ 4,839.55 (approx. US$ 16.5).

will the bank be authorized to reduce the capital to a quantity less than the legal minimum.

Article 71.- It is forbidden for the commercial banks to announce in any way their authorized or subscribed capital without indicating, at the same time, the amount of paid capital. Likewise, it is forbidden for the branches of foreign banks to announce in any way the quantity of the capital and reserves of the mother banking institution, without indicating, the quantity of the capital and reserves assigned to the Chilean branch.

Article 72.- The reserve funds will come from the resources of the liquid earnings, with the excess that the bank gets from selling shares at a price greater than their nominal value, or with the other fees that can be used according to the law.

Article 73.- All commercial banks must maintain a fund called "legal reserve fund" (fondo de reserva legal), which will be 25 percent of the paid capital. To create this fund the bank will use at least 10 percent of its liquid profits.

The banks can, according to the law or its statutes, create other reserve funds.

Article 74.- The terms "reserve funds" (fondos de reserva) or "reserves" (reservas) used by this law refer to all the funds that have to do with the last article.

Article 75.- The Ordinary Stockholder Meeting (Junta Ordinaria de Accionistas), if proposed by the board of directors of the company, can agree to pay, at the end of each accounting period, the dividends that come from the liquid earnings, after putting in the legal reserve the required amount or paying other fees authorized by the law.

If a part of the capital or of the company's fund for legal reserve is lost, the dividends cannot be paid until the loss is repaired.

Dividends charged to the earnings of the period or to reserve funds also cannot be paid, if by doing so the bank infringes on the margin of credit noted in article 84 or to the proportion determined in article 81, unless those are obligatory dividends determined by the law.

The obligation to pay dividends (as recorded in the stock company's law) can stop being applied in a determined period, only with the agreement of the Stockholders' Meeting with the approval of two thirds of the shares issued with the right to vote.

Article 76.- The banks cannot pay provisional dividends.

Article 77.- The directors or managers of a bank that suggest to payment of dividends violating the norms in this title will be responsible for the return of the dividends paid in those circumstances.

TITLE X

Concerning the required reserves and the maximum limit of deposits and liabilities of the commercial banks

Article 78.- All commercial banks and the State Bank of Chile (Banco del Estado de Chile) should maintain as a reserve:

1) For their sight deposits at sight, 10 percent.

2) for their time deposits, 4 percent.

For this purpose sight deposits or liabilities will be those whose payment can be legally required in a period less than thirty days. The ones that can be paid in thirty or more days will be consider time deposits or liabilities.

The reserve ratios for the deposits, established in numbers 1) and 2) of this article, can be modified by the Central Bank of Chile (Banco Central de Chile) according to the authority conferred by its organic law. By no means can the Central Bank fix rates lower than the ones established in those numbers.

Article 79.- The reserve should be constituted by legal bills and coins in the country, that are available as vault cash or as sight deposits in the Central Bank of Chile. The guarantee deposit referred to in article 36 will be considered as part of the reserve. By no means will gold Chilean coins constitute a part of the reserve.

The legal bills and coins of the respective country and the deposits of its foreign exchange in the Central Bank of Chile will also serve as reserves for the deposits and liabilities in foreign money.

For the purposes of this article, the Superintendency will fix periodically the equivalence of the foreign exchange into domestic currency.

Article 80.- The reserve that the institutions controlled by the Superintendency should maintain will be calculated monthly or biweekly, according to what the Central Bank of Chile decides. The Central Bank can also decide whether this requirement is fulfilled in relation to the average deposits and liabilities of the preceding month or the preceding two weeks. For that purpose the biweekly periods will go from the 1st to the 15th and from the 16th to the last day of the calendar month.

The institutions that do not maintain the obligatory reserve will incur a penalty of an equivalent percentage of a twelfth of the variation experienced by the Consumer Price Index during the twelve or six months prior to the month preceding the month in which the infraction was made, depending on whether the reserve is monthly or biweekly. The fine will be calculated over the average

deficit of the month or two weeks in which the deficit occurs. The referred percentage can by no means be lower than four or two percent, depending on whether the reserve is monthly or biweekly. If the deficit is repeated, the corresponding fine will be applied with a 50 percent surcharge in the months or two-weeks periods that follow the first infraction.

If the shortfall of reserves is because of a bank closing and is not longer than fifteen days from the discontinuation date, the Superintendent can reduce or return the fine.

Article 80 bis.- To the extent that a bank's demand liabilities -including checking accounts, the rest of deposits and liabilities at sight that a bank receives, and the amounts allocated to pay demand liabilities that are incurred as part of the bank's financial operations- exceed its paid capital and reserves by two and a half times, this excess must be maintained as vault cash or in a technical reserve consisting of deposits in the Central Bank of Chile or in documents emitted by this institution or Treasury Services (Servicio de Tesorerias), that will mature in no more than 90 days. The documents in the Central Bank of Chile will be redeemed by the Central Bank for the value of the principal plus interests and readjustments calculated to the date of the redemption when the bank with title requires these founds for any of the anticipated situations in the paragraphs 2nd and 3rd of title XV.

For the purpose of this article:

a) Demand deposits and liabilities are those in which payment can be legally required unconditionally, immediately or in less than 30 days as well as time deposits and liabilities that are within ten days of maturity.

b) The loans received by the bank from others will always be considered conditional obligations.

The deposits and liabilities affected by this article's norms that exceed the amount indicated in the first clause will not be

subjected to the reserve obligation foreseen in the article 78; neither will the quantities that the bank maintains in the Central Bank of Chile for required reserves help to establish the technical reserve.

The titles to the technical reserve will not be susceptible of lien. Neither the deposits that the bank has made in the Central bank of Chile nor the documents that the bank acquired in meeting the requirements of this article can be seized or made the object of precautionary measures.

If a bank has a deficit during the fulfillment of any of the liabilities contemplated in this article, the manager should inform the Superintendent the working day following the one in which the deficit happened, and also indicate the measures he will take to adjust them. The bank, in this case, will incur a fine that will be calculated applying to each daily deficit the maximum conventional interest rate for non readjustable operations, while the deficit is maintained. If the deficit does not last more than three working days and as long as the institution has not incurred some other deficit in the same calendar month, the Superintendent can decide not to apply the fine.

If the deficit lasts more than fifteen days, the board of directors must present recapitalization proposal as foreseen in article 119, without affecting the Superintendent's authority to designate a provisional administrator for the company or to decide on its liquidation.

Article 81.- The deposits and liabilities of a commercial bank with third parties cannot exceed twenty times its paid capital and reserves. The infraction to this rule will be punished with a fine equivalent to two per thousand over the excess of the deposits and liabilities for each day that it is maintained.

The proportion to referred in the first clause can be decreased by the Superintendent, with the approval of the President (Presidente de la Republica), by as much as fifty percent.

Article 82.- The Superintendent can dictate the norms by which the banking companies will be ruled to meet the obligations referred to in this Title.

TITLE XI

Concerning commercial bank operations

Article 83.- Commercial banks can perform the following operations:

1) Receive deposits and make demand deposit contracts. The liabilities can be documented through the acceptance of bills of exchange, the subscription of promissory notes or mutual contracts.

1 bis) Emit bonds without special guaranty.

2) Make loans with or without guaranty.

3) Discount bills of exchange, drafts, promissory notes and other documents that represent payment bills.

3 bis) Issue letters of credit that correspond to loans given in virtue of the Title XII of this law.

4) Acquire, cede and transfer commercial goods, subject to the norms governing the Central Bank in its Organic Law .

4 bis) Subject to the general norms given by the Superintendency, the banks can give credits that are protected by real securities. Those credits will be extended by public documents with order clause, of which just one authorized copy will be given to the creditor, and it will be transferable by attached endorsement, as a note or in the dorsum of the document, indicating the name of the assignee. For information, the assignment should be noted in the border on the mortgage inscription.

The constituent will only be responsible for the existence of the credit.

The banks and the financing associations can be assignees of these credits and also other entities regulated by special laws

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that allow them this kind of investment as long as the Superintendency accepts this as a general norm. Unless the assignee is a bank or a financing company, the credit should remain in the constituent financial institution, and the financial institution can perceive and raise the lien.

5) Make recoveries, payments and transference of funds.

6) Make international trade operations with legal arrangements.

7) Emit letters of credit, with a duration of no longer than one year.

8) Guarantee letters of exchange and give common bail subject to the norms and limitations given by the Central Bank .

9) Issue bills, drafts, and pay orders against its own offices or correspondents.

10) Issue a slip (boleta) or guaranty deposit that will not be attachable by thirds not belonging to the contract.

11) Receive valuables and goods in custody, in the conditions that the bank establishes, and rent security boxes for the deposit of valuables and goods.

11 bis) Form subsidiary companies within the country to perform the following operations, provided that the Superintendency, through general resolution, decides that these operations complement the banks' operations:

a) The intermediation of stock shares as agents, stock brokers or mutual fund administrators. The companies that perform the operations referred to in this letter will be ruled by the laws applied to those matters and controlled by the Superintendency of Stocks and Insurance (Superintendencia de Valores y Seguros).

b) The performance of financial services. The subsidiary companies can neither acquire shares nor participate in other associations, unless the investment is required for the development of its operations and unless it does not exceed 5 percent of the paid capital of the association in which the investment was made.

12) Accept and execute trust commissions, according to the Title VI of this law.

12 bis) Serve as financial agents of institutions and national, foreign or international companies, for the placement of resources in the country.

13) Acquire, conserve and sell (alienate), subject to the Central Bank's norms, internal debt bonds and any other kind of representative document of the liabilities of the State or its institutions. The banks can acquire, conserve or sell (alienate) gold in the form of coins or bouillon, within the general margin established in the 2nd clause of this article.

14) Acquire, conserve and sell (alienate) bonds or rent liabilities of international institutions with which the State of Chile (Estado de Chile) maintains contact.

15) Acquire, conserve and sell (alienate) bearers securities of fixed payment, including letters of credit issued by other banks, as well as take responsibility for the issue and the guarantee of the placement and the services of those bearer securities. These operations will be ruled by the credit margins noted in the article 84.

15 bis) The banks can acquire foreign banks shares, subject to the norms contained in article 83 bis. They can also, with the authorization of the Superintendency, be a stockholder or have participation in associations that have as their only purpose the provision of services to their associates to facilitate their operations.

16) Acquire, conserve, build and sell (alienate) real estate needed for its operation or the operation of the attached services. The bank can rent the unused part of the buildings or the real estate that is required for future expansion.

17) Acquire, conserve and sell (alienate) the corporate equipment needed for its service or to maintain its investments.

The set of investments of the bank in the kind of assets referred to in the N°s 11 bis, 15 bis, 16 and 17 cannot exceed the

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total of the paid capital and reserves.

The bank that acquires more assets than what was established in the last clause, will have to pay a fine of 10 percent on the excess of the investment for each calendar month that the excess is maintained.

Article 83 bis.- The investment of the banks incorporated in Chile in shares of banks incorporated overseas will require the authorization of the Superintendency and of the Central Bank of Chile and will be ruled by the following norms:

a) A banks incorporated in Chile can only invest 20 percent of its paid capital and reserves in any bank already established overseas or in whose formation the Chilean bank has participated.

b) The amount of deposits, loans and other amounts due that the Chilean stockholder banks keep in a foreign bank cannot exceed the 25 percent of the paid capital and reserves of the foreign bank. In any case, the stockholder bank cannot take responsibility for guarantees or bails, or guarantee in any other way the liabilities of the foreign bank.

c) The banks that operate in Chile and that are not stockholders of a bank incorporated overseas that has stock participation in one or more Chilean banks, cannot keep in that bank an amount of deposits, loans and other amounts due that exceeds the 25 percent of its paid capital and reserves. In any case, the banks that operate in Chile cannot maintain deposits, loans, and other amounts due in the total of foreign banks that have stock participation in banks incorporated in the country for an amount greater than 50 percent its own paid capital and reserves.

d) The stockholder bank must give the Superintendency information about the foreign bank periodically or in the opportunities in which the Superintendency requires it. The preceding requirement does not affect the bank's obligation to fulfill the articles 9th and 10th of the law N° 18,045.

e) The stockholder bank must obtain the necessary guarantee to prevent the foreign bank from giving credits to debtors related directly or indirectly with the property or negotiation of the stockholder bank, and also from giving guarantees for credits contracted with thirds.

f) Without affecting the penalties contemplated in the article 19 of the decree law N° 1,097, the failure to fulfill any of the preceding norms by the stockholder bank or the foreign bank will give the Superintendent the right to force the stockholder bank to sell (alienate) all the foreign bank shares that it has, in the period determined by the Superintendent.

g) What was said in the letters b) and c), does not affect the limitations contained in the article 84.

Article 84.- All banks will be subject to the following limitations:

1) They can not give credits, directly or indirectly, to a single natural or juridical person, by an amount that exceeds 5 percent of their paid capital and reserves. This limit will be raised to 10 percent, if the excess corresponds to credits given in foreign money for exports.

However, the bank can give those credits up to 25 percent of its paid capital and reserves, if what exceeds the 5 percent belongs to credits insured by guarantee over corporate equipment with a value equal to or higher than that excess. Nevertheless, it will also be taken into consideration the guarantees constituted by pledge of bill of exchange, promissory note or other documents, that have the following characteristics:

a) That represent credits that correspond to the prices that will be payable over time for exported goods, and

b) That have been issued or accepted by a bank or a national or international financial institution and, in any case, that represent from them an unconditional obligation of payment.

The following will also constitute guaranteed documents:

a) The documents issued by the Central Bank of Chile or by the State and its organizations, excluding its companies;

b) The financial instruments offered to the public that are classified in either category A or B by the Risk Classifying Committee (Comision Clasificadora de Riesgos), established in the decree law N° 3,500, of 1980. However, the instruments issued by the same bank that are used by it as guarantee will only be useful for the purpose of this article if they were issued at least thirty days before the concession of the credit or renewal, and;

c) The bills of shipping, provided that the bank has authorization to dispose freely of the imported merchandise.

Being a question of credits in foreign money for exports, the guaranteed limit can be as much as 30 percent of the paid capital and bank's reserves.

The Superintendent should establish norms about the valorization of the guaranties for the purpose of this article.

The loans that a bank gives to another financial institution subject to this law cannot exceed 30 percent of the paid capital and reserves of the creditor bank.

If a bank gives more credit than was established in this number, it will incur in a fine equivalent to 10 percent of the amount of the excess.

2) They cannot give credits to natural or juridical persons associated directly or indirectly with the property or business of the bank with better terms, such as for duration, interest rate or guaranties, than the credits conceded to third parties in similar operations. The total amount of credits given to a group of people associated with the bank must be adjusted to the limits established for a single debtor in the last number. In any case, the total of these credits given by a bank cannot be greater than its paid capital and reserves.

The Superintendency should determine, through general norms, the natural or juridical persons that should be considered entitled to the property or business of the bank.

In the same way, the Superintendency will dictate norms to establish if some specific natural or juridical persons compose the same group of entitled persons, taking especially into account that between them one or more of the following occur:

a) Business, capital or administrative relations, that allow one or more of them to influence significantly and permanently the other's decisions;

b) Well-founded presumptions that the credits given to one of them will be used in favor of the other, and

c) Well-founded presumptions that many people maintain some kind of relationship that actually serves as an economic interest unit.

The fact that a company established overseas is debtor of a bank, having among its members or stockholders other companies or whose shares are to the bearer, will cause it to be included for the purposes of this number.

A natural person will not be considered to be closely linked to the bank if he owns less than 1 percent of the bank's shares, nor if he just owes the bank less than 3,000 UF's.

The financial statements of the banking institutions will indicate in separate headings the set of related credits referred to in this number.

Any infraction to what was said in this number will be punished with a fine of 20 percent of the given credit.

3) They cannot give, directly or indirectly, any credit to enable a person to pay the bank for shares that he issued. If this disposition is violated the bank will have to pay a fine equivalent to the credit.

4) The total amount of credits that the banks can give to their workers cannot exceed 1.5 percent of the paid capital and company's reserves, individually it cannot exceed 10 percent of that limit.

Nevertheless, the banks can give to their workers, without being subject to the limits of the last clause, loans with mortgage

guarantee for them to get a house for personal use. With respect to the same person, this authorization can be practiced just once while the person is still a worker at that bank.

A banking company cannot give, directly or indirectly, credits to a director, or to any person that is employed by the bank as a general attorney. Neither can a bank give credit to the spouse or to the children under patriae potestas of those persons, nor to the societies in which any of these people participate. For the application of this stipulation, the Superintendency can exclude, through general norms, societies in which no more than a certain percentage of those people participate.

The people that start working in a bank cannot assume their functions until their credit situation with the company is adjusted to the norms of this stipulation.

The banks that violate the norms in this number or allow its violation will have to pay a fine equivalent to the value of the credit or the excess, whichever applies.

5) They can only buy the goods authorized in this law.

This limitation will not be applied:

a) When the bank receives goods in payment of expired debts and only if the value of these goods is not greater than 20 percent of its paid capital and reserves. If a person entitled to the property or business of the bank gives goods in payment, this person must first get the authorization of the Superintendency.

b) When the bank acquires goods in an official auction in payment of expired debts previously contracted in its favor.

In these cases, the bank has to sell (alienate) the goods in a one year term from the acquisition date. With regard to the acquisition of shares, these have to be sold in a formal secondary market, in a maximum of six months from the acquisition date. However, the Superintendency can authorize that the sale (alienation)_ is made in public bidding.

Nevertheless, the Superintendency, through general norms, can establish that, in justified cases, the bank may have an additional

extension of up to eighteen month for the sale (alienation) of the goods. It will be a requirement, to enjoy this extension, to deduct the value of the goods from the accounting books.

The violation of the prohibition established in this number will be punished with a fine equivalent to the value of the acquired goods. The bank that does not sell (alienate) those goods in the term and in the specified way will be punished with a fine equivalent to the 10% of the value of the acquisition made up to date in accordance to the norms established by the Superintendency, for each calendar month that the goods are not sold.

6) They cannot compromise their responsibility by third-party liabilities, unless it is a case established in this law or in the norms about the intermediation of documents.

They cannot mortgage or give as a pledge their physical goods, except for those that were acquired payable on term and, in that case, only to ensure the payment of the unpaid settlement of the price. This prohibition will not be applied to gold coins or gold bouillon.

The violation of what was said in this number will produce an absolute nullity of the act, without prejudice of the general pecuniary penalties.

Article 85.- To determine the limit of the credit that one person can get according to article 84, N°s 1 and 4, the following rules will be applied:

a) Those credits obtained by the collective companies or limited co-partnerships where a debtor is a general partner or by the companies of any nature in which the debtor has more than 50 percent of the capital or the profits will be considered obligation of that debtor.

b) If the participation in a company is greater than 2 percent but does not exceed the 50 percent of the capital or the profits, the inclusion will be done pro rata of that participation. The Superintendency, through general norms, can exclude from this

obligation the companies that, because of their large number of members or stockholders or other factors, can be presumed to have no significant influence in the decisions.

c) In the case of multiple number of debtors with a single obligation, each will be considered jointly liable, unless it is evident that the liability is joint.

TITLE XII

Concerning mortgages

(Not Translated)

TITLE XIII

Concerning the development banks

(abolished)

TITLE XIV

Concerning the Financial Companies

(Not Translated)

TITLE XV

Concerning the measures to regularize a bank's situation and its forced liquidation

First Paragraph

Concerning Preventive Capitalization

Article 116.- When something occurs in a bank that affects its financial situation and that the board of directors does not normalize in 30 days, then from the date of the presentation of the corresponding financial state, the bank's administration will proceed as laid out in this article.

The board of directors must call a Stockholders' Meeting within the fifth working day of the expiration of the term noted

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in the previous clause. The meeting should be held within the following thirty working days, and the stockholders will have to determine the capital increase necessary for the bank's normal performance. The meeting will note the term, form, conditions methods and amount of the shares that will be issued, and must have prior approval of the Superintendency. Rejection of the conditions for calling the meeting must be for a good reason.

If the Stockholders' Meeting rejects the capital increase as proposed or, if it is approved, and it is not completed in the established amount of time or if the Superintendency does not approve the meeting's conditions proposed by the board of directors, the bank can not increase the global amount of its investments nor can it make investments of any kind, except in documents given out by the Central Bank of Chile.

It will be presumed that there have been some acts that put the financial situation of a bank in danger when:

a) The deposits and obligations exceed by 20 times the paid capital and reserves to the first of January of the corresponding year, after making the respective monetary correction for the intervening period and after deducting the losses for which no provisions have been made. The losses for which no provision have been made are the ones that the Superintendency has declared to be so, in a general manner, for the financial institutions. This presumption will not be applied if the excess has been due to a simple increase in deposits and liabilities, in which case the bank will be subject to the fine indicated in Article 81;

b) Non-provisioned losses that appear from two consecutive financial states are such that if the proportional increase of those losses is maintained in the following six months, the deposits and obligations of a bank would exceed 20 times the bank's paid capital and reserves, as defined in letter a).

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Second Paragraph

Concerning the Insolvency and the Recapitalization Proposal

Article 117.- A bank can only be declared in bankruptcy when it is in voluntary liquidation.

Article 118.- If a bank stops paying an obligation, the manager will immediately inform the Superintendent, who has to determine whether the institution's solvency will survive and, otherwise, to take the corresponding measures according to the law. This rule does not prejudice the right of the affected creditor to go directly to the Superintendency.

Article 119.- When a bank faces solvency problems that prevent it from paying its obligations on time, the board of directors must present recapitalization proposal to its creditors, with the exception of preferential creditors and those who hold deposits, liabilities or other obligations at sight that are referred in Article 80 bis.

It will be presumed, in any case, that a bank has solvency problems that prevent it from paying its obligations on time when:

a) The value of its assets minus loan loss provisions, deducting the losses not provisioned, and subtracting its demand deposits, will be equal to or less than 40 percent of the bank's paid capital and reserves to January 1st of the corresponding year plus the respective monetary correction of the intervening period.

It will be the Superintendent's task to establish, through general guidelines, the disposition and characteristics of the assets and liabilities that must be considered for this calculation. For the identification of the non-provisioned losses that must be deducted from the bank's capital, the last part of the letter a) of the Article 116 will be used;

b) There is a repeated violation of the financial administration guidelines imposed by the Central Bank of Chile for emergency loans of more than 15 days or for the renewal of those already given. In these cases, it will be presumed that the financial institution has a permanent liquidity problem.

There will be a repeated violation when the financial administration guidelines imposed by the Central Bank of Chile, in the cases noted in this letter, are violated twice with the same loan.

Article 120.- the recapitalization proposals can deal with:

1) The total or partial capitalization of the credits;

2) The extension of repayment maturities;

3) Write downs of part of the debt;

4) Any other legal mechanism relative to the payment of the debts.

The recapitalization proposals must be the same for all the creditors for whom it will be applied and the approved proposal cannot contain, in any case, different norms for different credits.

The financial institution will present the propositions to the creditors and will maintain in all its offices a list of those who have to decide on the propositions. The list will contain the value of each credit balance, taking into account the settlement of the principal plus interests and readjustments. The list can only be shown to the creditors with the right to vote on the capitalization proposals. In the Official Newspaper (Diario Oficial) and in a newspaper of national circulation of the next working day there will be published advertisements indicating the circumstances surrounding the recapitalization proposal, the date of the presentation, a copy of the proposal, and a reference to the creditors' list.

Once the proposal is published the Central Bank of Chile, after being asked by the financial institution and after being given a favorable report from the Superintendency on the proposals,

will surrender the amounts necessary for the payment of the deposits and obligations not considered in the recapitalization proposals, to the extent that the institution's available funds are not enough for that matter.

From the date of the presentation of the recapitalization proposals and while the creditors do not make any decision about the proposals, the institution will not be required to repay deposits and other obligations that are not noted in Article 80 bis, second clause, letter a).

The deposits and liabilities on credit referred to in the same disposition will be considered as sight obligations when their expiration takes place within the ten days after the date the bank presents the recapitalization proposals. In any case, if at the moment of proposing the agreement to the creditors, the bank has not complete the obligations imposed in the first clause of this article, it will just be paid the deposits and other obligations referred to in the second clause, letter a), of Article 80 bis, whose expiration has taken place within the ten days following the date of failure to fulfill those obligations. The Superintendency will determine that date.

The sight deposits that the bank receives in the period indicated in the fifth clause will not be affected by the suspension of payment and should be kept in a separate account.

Article 121.- The creditors whose credits appear in the list referred to in the previous article will have the right to vote concerning the agreement, as will those whose credits are recognized by the entity before the initiation of the vote. Any disagreement caused by the inclusion of non-creditors in the list or by the omission of those that were qualified as creditors, or in relation to the amount of the credit, will be resolved by the Superintendency no later than the second day preceding the termination of the voting period.

For information purposes only, all creditors residing in a foreign country, besides being included in the list, will be notified by telex, cable or any other equivalent means, addressed to the domicile registered in the institution.

Within the fifteen days term from the date of the publication in the Official Newspaper referred to in the previous article, the creditors will have the right to vote about the recapitalization proposal, for which purpose they must vote in the bank's offices expressly indicated for that matter. The voting must be made in the presence of and under the scrutiny practiced by a public notary or other legal official. The recapitalization proposal will be accepted if it is approved by creditors that represent the majority of the total liabilities with the right to vote, whit the estimation of the value of the liabilities in accordance with the preceding article.

The Superintendency will dictate the norms by which the vote will be governed and will resolve administratively any matter that comes out while the discussion, voting, acceptance or rejection is taking place.

The resolutions dictated by the Superintendency in virtue of this article can not be overruled by any other authority, provided that the resolutions are in relation to the validity of the recapitalization agreement.

The norms of the Bankruptcy Law (Ley de Quiebras) are not applicable to the agreements that this article deals with.

Article 122.- In the situations foreseen in of this paragraph, the board of directors will take bids on the mortgage portfolio of credits subject to Title XII, proceeding separately with respect to the mortgagee record of credits for housing which corresponds to other different purposes. Other public or private institutions can participate in the bidding, as long as they agree to pay the letters of credit corresponding to the respective portfolio, with all of this subject to a balance of those credits and obligations.

If the offers received are equivalent to or higher than the amounts agreed to pay to the rest of the creditors in the recapitalization agreement, the board of directors will transfer the respective assets to the acquiring institution. In that case, the value of the letters of credit will be reduced to the percentage offered and the acquiring institution will be forced to pay up to that amount. This acquisition will be recorded on the Official Newspaper. The institution will start to reseal the representative mortgage titles, with the corresponding percentage reduction, when they are presented for collection.

The bidding should be called so as to be completed no more than 90 days after the recapitalization agreement and, if none of the offers received is equal to or higher than the amount offered, the board of directors must reject it. If there is no offer, a new bidding will be called so that it is completed within the 90 days after the first one.

If the first bidding is rejected because of the reasons indicated in the previous clause or if in the second bidding there are no bidders or if those that bid do not offer them the amount offered in the recapitalization agreement, the stipulation of the referred agreement would be applicable to the holders of the letters of credit emitted in relation with the corresponding assets.

The payment of the letters of credit to the creditors will be suspended until the mortgage portfolio is transferred or those creditors agree to the terms of the recapitalization or to the results of the liquidation. The money received from the mortgage debtors in this period will must be given to the bank acquiring the assets.

Article 123.- When the mortgage credits of Title XII are transferred, in compliance with the dispositions of this Title, the acquiring bank will take charge of the total or partial payment of the letters of credit, all this subject to a balance of those

credits and obligations. The rest of the creditors of the bank, in liquidation or not, can not be opposed to this transfer. The acquirer will have all the rights, guaranties and privileges inherent or attached to the acquired credits.

The transfer will consist of a public document, complemented by a list of the ceded credits, which must be made official. The list will contain the debtors' names and the original amounts of the credits and the data of the mortgage inscriptions.

The Conservators of Real Estate (Conservadores de Bienes Raices) must note the transfer of these credits in the margin of the respective mortgage documents, as required by the ceder or the acquirer, in order to document the change.

For information purposes only, the bank will publish in the Official Newspaper and in a newspaper of national circulation an advertisement, to inform about the transfer of the mortgage record to another company, indicating the date of the contract and the Notary where the transfer was done.

The Notary and the Conservators of Real Estate can only charge the corresponding fixed rate for the proceedings referred in this article, without proportional overcharge.

Article 124.- In case the recapitalization agreement is approved and the institution, in virtue of the agreement stipulations, has to give out shares in payment to the creditors, the board of directors, as the representative of the stockholders, will give out the shares whose summary will be inscribed and published in accordance with Article 28.

The issued shares will be given to the creditors pro rata for the capitalized part of their credits.

When the shares are issued, the stockholders' commission will be called to elect a new board of directors.

Article 125.- For the matter of the capitalization of credits noted in this title, the limitations and prohibitions about the

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acquisition of shares contained in this or other legal texts do not apply.

The shares acquired in virtue of the authorization contained in this article must be sold (alienated) within a three year's term, from the date of the capitalization. If the holders of these shares are the National Government (Fisco) or the Central Bank of Chile, those shares will not have the right to vote in the directors' election, unless they have been already sold (alienated).

Article 126.- Any bank that considers itself affected by any resolution of the Superintendency concerning its financial situation or solvency problems, in accordance with the general or specific norms contained in the fourth clause of the article 116 and the second clause of the article 119, can ask the Superintendency for reconsideration of that resolution, attaching evidence to justify the reconsideration.

The reconsideration will refer to the general quality of the bank's assets and must be done within five working days from the date of its announcement. The Superintendency must decide about the reconsideration within fifteen days from the date at which all evidence is presented.

In order to reject the reconsideration, partially or totally, the Superintendency must proceed with the approval of the Executive Committee of the Central Bank of Chile (Comite Ejecutivo del Banco Central de Chile).

During the period on which the reconsideration request has not been resolved, the thirty-day term established in the first clause of Article 116 will be suspended.

Third Paragraph

Concerning the forced liquidation

Article 127.- If the Superintendent decides that a bank does not have the necessary solvency to continue in operation, or that the security of its depositors or other creditors requires its liquidation, or if the recapitalization proposals have been rejected, it will proceed to revoke the authorization for the existence of the affected company and it will be declared in forced liquidation, following a favorable decision of the Executive Committee of the Central Bank of Chile.

The resolution dictated by the Superintendent for the forced liquidation will also contain the designation of the liquidator, unless the Superintendent assumes the liquidation. The Superintendency should based its findings of lack of solvency or security of the depositors or creditors on data coming from financial statements and other information available to the Superintendency.

Article 128.- When the Superintendent is put in charge of the forced liquidation of a bank, he can delegate all or some of his powers to one or more representatives.

The liquidator will have a three year position and will have the powers, duties and responsibilities that the law establishes for the stock company liquidators. The term of the liquidation can be renewed for successive periods of no longer than a year by resolution of the Superintendent. In the case of a renewal the liquidator must previously publish a statement concerning the progress of the liquidation in a newspaper of national circulation.

Article 129.- Once the forced liquidation of a bank is declared, the checking deposits and the other deposits at sight

that it has received, the obligations at sight that it has contracted in its financial operations and the time deposits and liabilities referred to in the second clause, letter a), of Article 80 bis, will be paid from the funds in the bank's cashbox or deposited in the Central Bank of Chile or invested in documents of technical reserve referred to in Article 80 bis. These norms take precedence over the procedures of payment and the limitations that rule the process of forced liquidation. For the matters contemplated in this article, it is presumed that all the funds in the cashbox of the institution will be used for the payments that this article deal with.

If these funds are not enough, the liquidator will have to proceed with as much diligence and urgency as possible to make these payments and, for that purpose, he can sell (alienate) the rest of the bank's assets. The Central Bank of Chile will have to give him the necessary funds to pay creditors the obligations noted in this article. For this purpose the Central Bank of Chile can, at its own discretion, acquire some of the bank's assets or give the liquidator loans. The loans that the Central Bank of Chile gives in order to fulfill this obligation, or the one noted in the article 120, will have preference over any other creditor.

The liquidator can transfer the checking accounts and other deposits at sight to another bank, which will be put in charge of the operation of those accounts and of the payment of the deposits as a legal successor.

If, after the date the recapitalization proposal are made or the forced liquidation is announced, a creditor of the bank for obligations not considered in Article 80 bis has received the payment or a partial or total compensation for those credit balances, the creditor will lose the right to get paid for the sight balances until agreement is obtained for the payment or compensation.

Article 130.- The liquidator is especially forced to:

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a) Make a detailed list of all the creditors not included in the previous article, indicating the amount and nature of the credit balances that they have, which will be kept in all the offices of the institution and can only be shown to those that are creditors of the liquidation.

Ads will be published in the Official Newspaper and in a newspaper of national circulation, calling on the depositors and other creditors to go to the bank to recognize their credits. The content of the list can be reclaimed within 30 days of publication in the Official Newspaper in front of the Civil Judge of Letters (Juez de Letras en lo Civil) that has jurisdiction over the address or the bank in liquidation.

The definitive list will constitute the recognition of the creditors with the right to collect the corresponding assessments.

b) Make an annual report concerning the bank's management to the stockholders and creditors of the bank and give the final financial statement as established in the Stock Companies Law.

For the purpose of the distribution of founds for the liquidation creditors, the amount due that appears in the list referred to in letter a) will be augmented as follows:

1) Those accounts in which there was a readjustment or interest, or both, will continue to draw the readjustments and interest according to what was agreed upon.

2) Those that do not draw readjustments nor interest or stop drawing them because the term is finished, will get current interest rates for non-readjustable operations.

Article 131.- The liquidator should proceed with the mortgage credits subjected to the Title XII as contemplated in articles 122 and 123.

The bidding that is needed should be called so it can be resolved within 90 days following the date in which the company's liquidation starts. If the received offers imply that the acquiring party is responsible for the payment of the letters of

credit for an amount less than 90% of its nominal value, the liquidator should call the holders of those letters to a vote to determine if they accept the purchase offer or if they wish to wait for the results of the liquidation. The offer will be accepted if it has the favorable votes of the creditors that represent the absolute majority of the non-redeemed value of the letters of credit. For this purpose, the liquidator will publish notices in the Official Newspaper and in a national circulation newspaper, in conformity with Article 121, third, fourth and fifth clauses.

If in the corresponding bidding nobody shows up, a new one will be called to take place within the 90 days from when the first one took place. In this bidding the norms noted in the previous clause will be applied.

Article 132.- Once the forced liquidation of a bank is announced by the Superintendency, actions currently undertaken by the bank will be frozen and prior obligations of the bank remain in force.

Article 133.- The order to liquidate a bank will produce the immediate liquidity of all the existing credits against the bank, without prejudice of the particular rules established in article 131 for the letters of credits.

While there are available funds, the liquidator can, after putting aside the resources for the liquidation expenses, make payments to the preferred creditors and distribute the rest among the common creditors, proportionally to the amount of their credits.

If for any reason the bank's obligations can not be paid, they will be covered pro rata, without prejudice of the legal preferences.

When a creditor is at the same time a debtor of the bank, compensation will take place at the same time as the respective fund distribution up to the amount of credit, provided that the

other legal requisites are fulfilled. Other compensation will not take place during the liquidation process.

The Superintendent will turn over the liquidation to the stockholders when all the credits from the depositors and other creditors are paid and once the liquidation expenses are covered.

Article 134.- In the resolution ordering the forced liquidation of a bank, the Superintendent can authorize the company to continue the operation of its checking accounts or the receipt of other deposits at sight. These founds will be kept in a separate account and will not be subject to the limitations imposed in the previous article.

Article 135.- When a bank that is in liquidation has sold (alienated) all of its assets or a substantial part of them to another financial institution, that transference can be done through the notarization of a public document in which the transferred goods are indicated globally, by their amount and lot, depending on the balance used in the banks. The same notary will officially record the inventory of those goods. In that case, the delivery of the goods and the corresponding guaranties and additional concessions, will operate legally and will not require endorsement, notification or inscription. Nevertheless, the transfer of the ownership of real state and of motorized vehicles requires an inscription. The assignee can have the rights of the constituent, without having to prove the transfer, only if it invoke a title on the name of the constituent entity that has subscribe the public document referred in this clause.

If credits guarantied with a mortgage are ceded, the Real Estate Conservators (Conservadores de Bienes Raices) will have to note of transference of these credits on the margin of the respective mortgage inscriptions, on the request of the constituent and acquirer, with the only purpose being that of updating the official recording where the list of credits appears.

For the purpose of this article, the substantial part of the assets of a bank is that which corresponds to at least a third the accounting value of the bank's assets.

For information purposes, only, the bank publish information about the transference in the Official Newspaper and in a newspaper of national circulation indicating the date of the document and the Notary's office where it was done.

Article 136.- The dispositions of this Title will not be applicable if a financial institution has temporarily suspended its operations or the payment of its obligations because of a legal employees' strike or some other major reason that prevents it from functioning properly.

Fourth Paragraph

Concerning the Capitalization of a Bank by the Financial System

Article 137.- If a bank is in any of the situations described in articles 116 or 119 or is subjected to temporary administration, it can arrange a loan for a two years' term with another bank. In case of a creditors' meeting, the loan will be paid after the guarantied credits have been paid.

The conditions of these loans should be determined in a Stockholders' Meeting of both institutions and have the authorization of the Superintendency.

No bank can concede credits of this nature for an amount greater than 25 percent of its paid capital and reserves.

This loan will be computed as the capital of the borrowing company for the purpose of the margins established by law. The lending institution can impose upon the debtor company the obligations, limitations and prohibitions referred to in the letter d) of the Article 17 of the law N° 18,045.

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The loan referred to above can only be paid if the debtor company is duly capitalized according to this law without the noted loan.

If the loan is not paid within the two-year term, it can be used for the following purposes:

a) To be previously capitalized in case that a merger occurs between the borrowing company and the lending institution.

b) To retire a capital increase authorized by the lending institution, but only if the issued shares are subscribed to by a third party. The conditions for financing the shares will be decided between the bank that capitalizes the credit and its subscribers. These shares cannot be paid on credit by the persons entitled, directly or indirectly, to the property or activities of the bank that capitalizes the credit.

c) To subscribe and pay an increase in the bank's capital. In that case, the shares should be sold (alienated) in a secondary formal market within 180 days of the date of the capitalization, unless they were distributed between the stockholders according to the general norms. If there is no bidder in the first auction, the auction should be repeated each calendar month.

The share purchasers must fulfill the terms of Article 65, N° 18. The stockholder's meeting necessary to fulfill what was established in this article must have the quorum noted in Article 61 of Law N° 18,046.

These loans cannot be made by the Bank of the State of Chile (Banco del Estado de Chile), the banks under provincial administration or the banks that have common stockholders that, directly or indirectly, control the majority of the shares.

Fifth Paragraph

Crimes related to the Forced Liquidation

Article 138.- When a bank is declared in forced liquidation, it is consider fraud:

1) If the bank had recognized nonexistent debts.

2) If it had sold (alienated) property to the prejudice of its creditors.

3) If the bank had employed in its business activities the goods received in the payment of a custody deposit or of a trust commission.

4) If on the knowledge of the declaration of the forced liquidation of the bank and without the authorization of the liquidator, its administrators had taken any act of administration or disposition of goods in prejudice to the creditors.

5) If within the 15 days before the declaration of forced liquidation, the bank had paid a creditor in prejudice to others anticipating the expiration of an obligation.

6) If the books or documents of the bank or other supporting papers had been hidden, altered, falsified, or made useless.

7) If within the 60 days prior to the declaration of the forced liquidation date, the bank had paid interest on deposits on credit or savings accounts with rates considerably higher than the average in force in similar institutions, or if it had sold some of its assets at prices obviously lower than the market price, or used other harmful methods in order to get funds.

8) If within a year prior to the date of the declaration of the forced liquidation, the bank had infringed many times on the credit margins referred to in Article 84, N°s 1,2 and 4 or those margins that govern the concession of guaranties and bails, or had done any act with the purpose of making more difficult, misleading or evading the inspection of the Superintendency, aside from those

noted in Article 26 bis.

9) If contracts or other kinds of agreements had been signed in prejudice to the bank's proprietorship, with natural or juridical persons referred to in Article 84, N° 2.

10) If during the 90 days prior to the declaration of the forced liquidation, the bank had incurred a deficit in meeting the obligations imposed by Article 80 bis.

11) In general, whenever the bank had undertaken an operation fraudulently that diminished its assets or increased its liabilities.

The crime of fraud established in this article is one that will be prosecuted publicly.

Article 139.- The directors, managers or other people that have participated in the direction or administration of the bank will be considered authors of the crime referred to in the previous article and they will get the minor imprisonment penalty in its medium to maximum degree when, in the performance of their jobs, they had executed any of the acts or had incurred any of the omissions previously noted, or when they had authorized those acts or omissions, without prejudice to the civil responsibility that can affect them.

What was said in the previous clause does not exclude the application of the rules in Articles 14 to 17 of the Penal Code.

If the acts committed by the people indicated in this article have a penalty higher than what was contemplated in the article, the highest penalty assigned will be applied.

Article 140.- When any of the presumptions established in article 138 can be formed, the Superintendency, or the National Defense Council upon the Superintendency's request, will inform the criminal judge of the declaration of forced liquidation and the circumstances that could constitute the crime. With this evidence, the judge will start to draw up an indictment in order

to investigate whether the administrators of the company or any other person are responsible for the referred crime.

The Superintendency or the National Defence Council will appear as part of the trial with the corresponding rights of litigants, without need of formalizing the charge. In that sense, they will ask for the evidence needed for the liquidation proceedings and for the arrest of the responsible parties, when this measure applies. At any time, they can, as well, look at documents of the trial.

Sixth Paragraph

Concerning the Government's guarantee

Article 141.- The Government's guarantees are given to the obligations coming from deposits and liabilities, through savings accounts or bearer documents, issued by banks and financial companies. That guarantee will apply only to natural persons and will cover 90 percent of the amount of the obligation.

The set of deposits and liabilities protected by this guarantee that a creditor has in a financial company will be considered as a single obligation for the purpose of this paragraph.

Article 142.- No one can be the beneficiary of this guarantee in the same institution or in all the financial system for obligations greater than 120 UF's in each calendar year.[3]

Article 143.- If the document where the deposit or liability subjected to guaranty is in the name of more than one natural person, the payment of the guarantee will be understand as made to

[3]Translator's note: 120 UF's are about US$ 2,000.

each person in proportion to the total number of persons, independently of any agreement between them. Any juridical person that appears in a document is excluded from the guarantee.

When a guaranteed obligation appears in a document, it will be presumed that the endorsements were done later than the date of the suspension of payments by the financial institution and that the guaranteed person is the first beneficiary, unless the endorsee has registered the endorsement in the respective institution.

Article 144.- If the payment of an obligation on credit has to be done in the system foreseen in the article 80 bis, that obligation will not be considered for the purposes of this paragraph.

Article 145.- The guarantee and the obligations that comprise the guarantee will be put in force by resolution of the Superintendency when a recapitalization agreement is approved according to the 2nd paragraph of this Title or a financial institution is declared in forced liquidation. In the first case, the payment will be done by the Superintendency and in the second case by the liquidator.

Article 146.- The scope of the guarantee comprises all the obligations referred to in article 141 that have been contracted by the financial institution, but only in the percentage noted in that article and with the limitation established by article 142.

Article 147.- Payments of the guarantee will take into consideration the amount of the original capital obligation or the last renewal and the readjustments and interest that accrued since the payment date.

Article 148.- It will be a condition that, in order to receive the payment of the guaranty, its beneficiary renounce any claims on the remainder of the obligation or the part of it that originated with the payment. If the beneficiary rejects the payment of the guarantee, he will still have his rights to recover the balance in the recapitalization pact or in the liquidation, respectively.

Article 149.- Once the guarantee is paid, the Government will be replaced only by the operation of law over the rights of the beneficiary's guarantee, in the part that has accompanied that payment.

Article 150.- The beneficiary of a guarantee, who at the same time is a debtor of the financial institution, will be charged the amount of the debt, unless he is properly warned or gives warning about the amount of his guarantee.

II. ORGANIC LAW OF THE SUPERINTENDENCY OF BANKS AND FINANCIAL INSTITUTIONS

Decree Law N° 1,097

(Including the modifications introduced by the laws N°s 18,576, of November 27 of 1986 and 18,707, of May 19 of 1988).

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ADOPTED TEXT OF THE DECREE LAW N° 1,097, OF 1975

Creating the Superintendency of Banks and Financial Institutions and describing its functions

(Published in the "Official Newspaper" N° 29,213, of July 25 of 1975)

Num. 1,097.- Santiago, July 16 of 1975.- Given: what was established in the decree laws N°s 1 and 128, of 1973, and 527, of 1974, and keeping in mind:

1st That the national interest require a proper vigilance and control over the financial institutions that in the turnover of their business utilize mainly public resources;

2nd That this work, so far done by the Superintendency of Banks for banking companies should be extended to other financial companies, arises as a consequence of the development of the capital market, and

3rd That in virtue of that, it is necessary to rename the Superintendency of Banks, as the Superintendency of Banks and Financial Institutions, and give it a new juridical organization, that allows it to perform in a more efficient and agile way and while, at the same time, it reconciles the functions of the Superintendency with the creation of the Monetary Board (Consejo Monetario) and the structure of the Central Bank (Banco Central).

The "Junta de Gobierno de la Republica de Chile" has agreed to dictate the following

DECREE LAW

The Superintendency of Banks will be called from now on Superintendency of Banks and Financial Institutions and will be ruled by the following dispositions:

TITLE I

Concerning the Superintendency of Banks and Financial Institutions

Article 1st- The Superintendency of Banks and Financial Institutions is an independent institution with juridical personality of unlimited duration, that will be ruled by the present law and will be related to the Government through the Treasury Department (Ministerio de Hacienda).

Its location will be in the city of Santiago and in spite of its character of public law institution, it will not be considered a member of the National Organic Administration (Administracion Organica del Estado). The special or general norms dictated or that are dictated for the public sector will not be applied to it and, as a consequence, the Superintendency and its personnel will be ruled by the norms of the private sector, without prejudice of what is established in article 5.

Article 2nd- The Superintendency of Banks and Financial Institution is concerned with the inspection of the Central Bank, the State Bank (Banco del Estado), banking companies of any kind, and financial companies when their control is not given by law to another institution.

The Superintendency will be in charge of the inspection of the companies on which the settlement is the emission of credit cards or the operation of any other similar system.

The people who perform that function on a regular basis and who evade the Superintendency's inspection will be punished as established in article 34 of the General Law of Banks.

The Superintendency will also be in charge of the exclusive inspection of the societies referred to in the numbers 11 bis, letter b), and 15 bis of the article 83 of the General Law of

Banks, even for the registration of the stocks emitted by the societies and it will be allowed to dictate the general norms that will have to be followed in their operations, depending on the settlement.

Article 3rd- An employee with the title of Superintendent of Banks and Financial Institutions will be the head of the Superintendency. The Superintendent will be designated by the President and will be considered official head for legal purposes.

The prohibitions and incompatibilities that affect the members of the Executive Board of the Central Bank (Comite Ejecutivo del Banco Central) will also affect the Superintendent. He will not be allowed to ask for credit from the inspected entities, except for what corresponds to him as a member of a social security found.

Article 4th- The Superintendent will be replaced by the Intendent in case of vacancy, absence or incapacity. If there are many Intendents, the replacement will be done in the precedence order that the Superintendent decides.

The prohibitions, disabilities and incompatibilities established in the previous article for the Superintendent will also affect the Intendents.

Article 5th- The personnel of the Superintendency will be elected by the Superintendent who will designate one or more Intendents and the employees, inspectors, special agents and other people that, by his judgement, he needs to use and he will determine their obligations and duties.

The Superintendent can formalize contracts for rendering services on fee for the execution of specific labors. These contractors will not have, in any case, the juridical quality of employees nor of contributors of the pension fund of the personnel.

The Superintendent will have a very wide freedom to designate and remove personnel, with complete independence of any other

authority. For these effects, and especially for those of termination of the working contract, all the Superintendency personnel are the exclusive reliability of the Superintendent.

The President (Presidente de la Republica), within the next 4 months, will dictate the rest of the labor rules that the personnel is subjected to.

What ever is not foreseen in this decree law or in the Statute of the Personnel (Estatuto del Personal) referred to in the previous clause will be ruled by the Administrative Statute (Estatuto Administrativo) as a supplemental legislation.

Article 6th- The personnel of the Superintendency can not ask for credits in the banking and financial companies subjected to its inspection nor get goods from those companies without previous written permission of the Superintendent. The personnel can not receive money or goods, as a present or as anything, directly or indirectly from those companies or from the bosses or employees.

Whoever violates the prohibition established in this article as well as everybody else involved will be subjected to the fines that the law advises for bribery.

Article 7th- It is forbidden to any employee, representative, agent or a person that works in the Superintendency to revel any detail of the emitted reports, or to give to strangers any information about business or any situation that he learns about while he was working in the Superintendency. If this prohibition is violated, he will incur the fine noted in articles 246 and 247 of the Penal Code (Codigo Penal).

Article 8th- The resources for the functioning of the Superintendency will come from the inspected institutions.

The fee that corresponds to each institution will be paid every semester and it will be one six thousandth of the average of

its assets in the previous semester, depending on how they appear in the balance and the general balance sheet that this organizations presents.[4]

The calculation of the fee that each institution has to pay, will not include as part of its assets the goods and items that have to be excluded in the opinion of the Superintendent.

The fee has to be paid within the ten days following the requirement.

Article 9th- The Superintendent will put together the funds with which the inspected institutions should contribute to maintain the Superintendency and will deposit them in the State Bank (Banco del Estado). From that account he will draw the money he needs for the proper functioning of the Superintendency.

Article 10.- The Superintendent will have the legal, judicial and extrajudicial representation of the Superintendency and can execute the acts and formalize the contracts necessary or convenient for the fulfillment of its purposes and, within those faculties, freely make the acquisition and the sale (alienation) of the Superintendency's property.

However, for the acquisition and sale (alienation) of real estate, the approval of the President of the Monetary Board (Presidente del Consejo Monetario) will be needed.

The Superintendent can delegate some of his powers to the Intendents or other employees of the Superintendency and for special cases he can delegate to third parties.

The Superintendent has to report and can charge for the crimes that he finds out while acting as an inspector in any of the companies under his vigilance. In addition, he can ask for the

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[4] The transitory article of the Law N° 18,707 establishes the following:

Transitory article. The modification of the second clause of article 8 of the D.L. 1,097 of 1975 that contains the article 2nd will rule from January 1st of 1989.

intervention of the National Defence Council (Consejo de Defensa del Estado) for the exercise and maintenance of the penal and civil actions that proceed. In these cases he will not have to give warning.

Article 11.- The Superintendency will be submissive to the inspection of the General National Comptroller (Contraloria General de la Republica) exclusively in what concerns the examination of the expense account.

TITLE II

Concerning Fiscal Oversight

Article 12.- It will be the Superintendent's responsibility to ensure that the inspected institutions fulfill the laws, regulations, statutes and other dispositions that rule these institutions and to make the best possible inspection over all their operations and businesses.

The inspection responsibilities also include the application or interpretation of the laws, regulations, and other norms that rule the monitored companies.

For the indicated matters, the Superintendent can control without any restriction and in any way, all the businesses, goods, books, accounts, archives, documents, and correspondence of those institutions and ask the managers and personnel about all the facts and explanations that he thinks are necessary for his information about an institution's situation, its resources, the way its businesses are administrated, the performance of its official representative, the degree of security and prudence used to invest its funds and in general, any other thing that should be explained.

He can also give instructions and adopt measures to correct the deficiencies that he observes and, in general, those he thinks are necessary to protect the depositors or other creditors and the

public interest.

Within his powers, the Superintendent can ask for a rectification or correction of the accounting value of the investments of the inspected institutions when he decides that this value is not the real one. Concerning the resolutions dictated in virtue of this clause, the Superintendent can enforce them within 10 days after they are communicated, applying the procedure established in article 21 for other matters. However, for the purpose of the application of the system for the monetary correction of the Rent Interest Law (Ley de Impuestos a la Renta) the standard valorization will be considered as indicated in article 41 of the mentioned law; nevertheless, the director of the Internal Revenue Service (Servicio de Impuestos Internos) can establish that the value determined by the Superintendent should be used.

The Superintendent can exercise the powers given by this law from the beginning of the organization of an inspected institution until its liquidation is over.

Article 13.- For the purpose indicated in the previous article, the Superintendent, personally or through his inspectors or special agents, will visit the institutions under his supervision as often as he wishes.

The Superintendent will also visit periodically the Mint of Chile (Casa de Moneda de Chile) and will check the material use for the printing of the bills and the coining of money of the Central Bank and its printing, circulation and custody.

In the inspections that the Superintendency makes, the Superintendency can integrate its own personnel with the personnel of the visited company.

Article 13 bis.- In spite of what was established in article 7 and without prejudice to the rules about banking secret contained in article 20 of the General Law of Banks (Ley General de Bancos),

the Superintendency should give information about the inspected entities to the Treasury Minister (Ministro de Hacienda), to the Monetary Board (Consejo Monetario) and to the Executive Committee of the Central Bank of Chile (Comite Ejecutivo del Banco Central de Chile).

The Superintendency will also let the public know, at least three times a year, information about the placements, investments and other assets of the inspected institutions and their classification and evaluation according to the pace of their recovery, and it is necessary that this information is given for all the monitored entities. It can also, through general character instructions, require that those companies give to the public permanent or occasional information about the same matters.

With the sole purpose of allowing a regular evaluation of the financial institutions by specialized firms that demonstrate a genuine interest, the Superintendency should let them know about the list of debtors of the bank, the settlement of the bank's obligations and the guaranties that they constitute. The previous actions will only proceed when the Superintendency has approved the inscription of the specialized firms in a special record that will be opened for the matters contemplated in this clause and in the second clause of article 20 of the General Law of Banks. The Superintendency will also maintain permanent and updated information about this matter to be used by the financial institutions under its supervision. The persons that get this information can not reveal its content to third parties and, if so, they will incur the penalty of minor imprisonment in its minimum and medium degree.

Without prejudice to the previous paragraph, the Superintendency should ask the banks to make available for the public a list that contains information about the debtors that owe the banks 3% or more of the paid capital and reserves, according to the general norms that dictate the Executive Committee of the Central Bank of Chile.

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In any case, the banks and financial institutions should fulfill the obligation established in article 9 of the law N° 18,045 about Stock Markets (Mercado de Valores), regardless of whether its shares are or are not registered in the Stock Records (Registro de Valores). In case that this obligation is not fulfilled, the Superintendency can provide that information.

Article 14.- The Superintendent will fix general rules concerning the presentation of balances and other balance sheets of the inspected institutions and the way in which they should take their accounting, making sure that the application of those norms helps to show the real situation of the company.

Article 15.- The Superintendent can ask the institutions under his supervision for any information, document or book that, in his judgment, is necessary for the inspection or statistics.

He has to ask for the presentation of statements about the situation of its business, at least four times a year. When soliciting the general balance sheets, the Superintendent will determine the date to which they will refer; this date will be prior to the date of that notification. The notification should also include the term within which the document must be presented. The statement will be published within the ten days following its delivery, in one of the newspapers of the city where the institution has its central office.

Within the 30 days after to the receipt of the statements, the Superintendent will publish in the Official Newspaper (Diario Oficial) a summary showing the situation of each of the institutions under his supervision and a summary for each group of institutions.

Together with the publication of the general balance sheets referred to in this article, the Superintendency can ask that the inspected institutions publish the data that, in his judgement, are necessary for the public's information. The distributed norms

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about this matter should be of general application.

The Balance Sheet of the institutions inspected by the Superintendency should be reported by an external auditor company. In the institutions it will not be necessary that the stockholders designate account inspectors. The auditors will send copies of their report with all the annexes to the Superintendency and the financial institution will publish it together with the balance.

The Superintendency can require, any number of times, at any time in the year, from the inspected institution, balance sheets referring to certain dates of the calendar year, which have to be informed by the external auditors that the Superintendency designates.

These balances will be made according to the general or particular norms that the Superintendent notes, especially with respect to the allowances or punishments that he thinks are the correct ones and that will produce real effects for the application of the dispositions that rule the inspected institutions.

Article 16.- The manager of an inspected institution or the person in charge will inform the board of directors or the corresponding directive body in the next meeting, about all communication received from the Superintendent and a testimony will be left in the minutes of the meeting.

In case that the Superintendent asks for it, the communication will be inserted completely in the minutes.

Article 17.- The Superintendent and his inspectors, representatives or special agents will have the authority to call any person to testify, under oath, about any fact that might be relevant for the elucidation of any operation of the inspected institution or the behavior of its personnel.

Article 18.- Without prejudice to the authority that this law gives to the Superintendency, this institution will have, with

respect to the inspected institutions, the same authority that the laws give to the Superintendency of Stocks and Securities (Superintendencia de Valores y Seguros).

The Superintendency will have, with respect to the external auditors with which the inspected institutions make contracts, the same authority that the Organic Law of the Superintendency of Stocks and Securities and the Stock Companies Law (Ley de Sociedades Anonimas) confer over them to those oversight institutions.

TITLE III

Concerning penalties

Article 19.- The institutions under the inspection of the Superintendency that incur any violation of the law that rules them, their organic laws, their statutes, or the orders legally given by the Superintendent, that do not have noted a special sanction, can be warned, censured or convicted with a fine up to an equivalent to five thousand UF's[5]. In the case of repeated violations of the same kind, a fine up to five times the normal maximum amount can be applied.

In the same way, the Superintendency can warn, censure or the directors, managers and personnel in general that are responsible for the violations up to an amount equivalent to one thousand UF's. The fine will be communicated to the infringer and to the general manager of the company.

Likewise, the board of directors must communicate in the next Stockholders Meeting about the penalties against the company or its personnel.

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[5] Translator's note: A UF is approximately 16.5 dollars.

Article 19 bis.- When an inspected institution presents a state of financial instability or deficient administration, the Superintendent can impose totally or partially and for the maximum term of six months, renewable once for the same period, one or more of the following prohibitions:

1) The granting of new credits to any natural or juridical person entitled, directly or through third parties, to the property or negotiation of the institution.

2) The renewal any credit for more than thirty days.

3) The raising or limiting of the guarantees of outstanding credits.

4) The acquisition or sale (alienation) of intangible assets or corporate property that correspond to the institution's capital assets or to its financial investments.

5) The sale (alienation) of documents from loans and discounts.

6) The granting of credits without guarantee.

7) The formalization of certain events, contracts or conventions or the renewal of those in force with the people noted in N° 1.

8) The granting of new loans or acquisition of financial investments if the growth of the loans and financial investments, compared with the previous month, is greater than the change in the value of the UF in the same period.[6]

9) The granting of new powers that permit any of the events noted in the previous numbers.

It will be presumed, in any case, that a company has financial instability or deficient administration when:

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[6]Translator's note: The daily value of the UF is based on the previous month's consumer price index and serves as a unit of constant purchasing power.

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a) It is in any of the circumstances described in articles 116 or 119,[7] that put its financial situation into jeopardy or that permit the estimation of solvency problems.

b) Three or more financial statements show losses that on average exceed 10 percent of the initial paid capital and reserves during the same calendar year.

c) It has asked for urgent financing from the Central Bank of Chile in three or more months of the same calendar year.

d) It has paid to the public interest rates that exceeds by 20 percent or more the average of the financial institutions of the same kind, in three or more months of the same calendar year.

e) It has conferred credits to people related, directly or through third parties, to the property or management of the company, giving better terms, interest rates, or guarantees, than those given to others in similar operations, or when it has given credit to the related people for an amount greater than its paid capital and reserves.

f) It has formalized contracts for rendering services or acquisitions or sale (alienation) of assets of any kind with persons related, directly or through third parties, with its property or management, and that had been objected to by the Superintendency, either prior or after its formalization.

g) The external auditors of the company have doubts about the administration or the stability of the company.

Without prejudice of what is established in article 20, the directors, managers, administrators or representatives will be punished with minor imprisonment in its maximum degree if they decide, execute, or ask somebody to execute any of the forbidden acts of this article without a written authorization from the Superintendency.

During the time period referred to in this article, the renewal or resignation of the directors of the institution or the

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[7] This reference is understood with reference to articles 116 or 119 of the General Law of Banks.

resignation or expiration of the contracts of its managers, administrators or representatives will not have any effect if those events were not authorized by the Superintendent.

If during that same period a Stockholder Meeting is called in order to increase the capital of the institution, merge it or sell its assets, the Superintendent can modify the length of the notification term and the number of notices that have to be published announcing the meeting.

Article 20.- The directors, administrators, managers, representatives or employees of an inspected institution that approves or executes operations that are not authorized by law, by statutes or by the norms dictated by the Superintendency, will be liable with his own goods and assets for the losses that those operations cause to the company.

Article 21.- All the fines that the law establishes and that the Superintendency applies will be imposed administratively by the Superintendent to the infractor and will have to be paid within 10 days from the time that the resolution is communicated. The people affected can appeal in front of the Court of Appeals that corresponds to the company's address unless it has an office in Santiago, in which case the Court of Appeals of Santiago will be applicable. The appeal should be made within ten days from the payment of the fine, only if that payment has been made within the initial 10-day term. The Court will have access to the Superintendent for six days and, once having given notice to the accused, the Court will pronounce judgment within 30 days, without further recourse.

It will also be possible to appeal, subject to the same procedure, the resolutions of the Superintendency that impose the prohibitions or limitations contained in article 19 bis; that designate a temporary administrator, or renew that designation; or that revoke the authorization for the institution's existence or

that call for the forced liquidation of the institution. In these cases the appeals should be presented within the 10 days following the date of the communication of the resolution and should be agreed to by the majority of the directors of the affected company, even if their functions have been suspended or terminated because of the appealed resolution. The effects of the resolution will not be suspended because the appeal is presented nor can the Court resolve any measure with that purpose while the appeal is pending.

Article 21 bis.- The fines that the Superintendency applies will expire in a 3 year term from the date the act is over or the sanctioned omission is over.

This term will be 6 years if there was fraud in the act and this will be presumed when false declaration was given to the Superintendency concerning the committed act.

The time given for the application of the fines will be suspended when the Superintendency starts the investigation that determines the respective fine.

Article 22.- The product of the fines applied to the institutions inspected by the Superintendency will be of fiscal benefit. The Superintendent will discharge periodically in the National Government Treasury (Tesoreria Fiscal) the fines not appealed and those in which the affected had lost the appeal by executorship judgment (sentencia ejecutoriada). While the claim is pending, the amounts collected by fines will be kept in a special account in the State Bank (Banco del Estado), from which the Superintendency will draw to make the corresponding devolution in case that the appeal is accepted.

Article 23.- If an inspected institution has incurred repeated infractions or fines, failed to fulfill the orders legally given by the Superintendent or had a role in any serious event that put the economy's economic stability in danger, the Superintendent can

designate a representative inspector who will have the rights noted for that effect and, especially, the Superintendent will also delegate the right of suspending any agreement of the board of directors or of the attorneys of the institution.

Under the same circumstances, the Superintendent can, with the agreement of the Executive Committee of the Central Bank of Chile , designate a temporary administrator to the institution, who will have all the authority that the law and the statutes give to the board of directors and to the manager, regardless of whether the Superintendent has or has not designated the representative inspector.

The designation of the representative inspector and the temporary administrator can not be longer than one year, without prejudice, the appointments can be renewed by well-founded decisions as many times as the Superintendent thinks is needed.

The temporary administrator will have the duties and will be subjected to the responsibilities of the stock company's directors.

By well-founded resolution in situations that occur before the designation of the temporary administrator and only within the first year of this administration, the Superintendent can suspend the application of the margins foreseen in the General Law of Banks to the financial institution where that measure was applied or to those that had give them credits. However, the Superintendent can not suspend the obligations that Article 80 bis of the General Law of Banks establishes.

Article 23 bis.- In the case that the Superintendent has designated a temporary administrator or liquidator for an inspected institution, he can hire professionals to take charge of the initiation of the judicial actions that will try to find the penal and civil responsibilities of the administrators, executives and other people that, in any position, have been involved in the respective company. Likewise, he can hire professionals to defend in court the people that participated or have participated in the

temporary administration or liquidation of the company, if necessary.

III. APPENDIX

Including:
The articles of the Law N° 18,576, published in the Official Newspaper of November 27 of 1986, not included in the adopted texts of the General Law of Banks and of the Organic Law of the Superintendency of Banks and Financial Institutions

The adopted text of the Law N° 18,401, about regulation of audited entities, buying shares of those entities and the issue of preferred shares by the financial institutions that maintain sales contracts with the Central Bank of Chile.
(Not Translated)

PERMANENT ARTICLES NOT INCLUDED IN THE ADOPTED TEXT

Article 3rd- Add to the article 18 of the decree law N° 1,078, of 1975, the following N° 9:

"9.- To dictate the norms that will direct those companies which line of business consist in the emission of credit cards or in the operation of any other similar system and that are under the inspection of the Superintendency of Banks and Financial Institutions".

Article 4th- The following legal dispositions are abolished: article 2nd, second clause, article 7th, second and third clause, article 24, 25, 26 and 27 and temporary article of the decree law N° 1,097, of 1975; article 78, first clause, N° 3, Title VII, and, in the article 113, the reference to the article 44, all of them from the General Law of Banks (Ley General de Bancos), contained in the decree with force of law N° 252, of 1960; article 11 of the decree law N° 2,099, of 1978; article 3rd of the decree law N° 749, of 1974; article 8th of the decree law N° 818, of 1974; article 8th of the decree law N° 1,638, of 1976; article 16 of the decree law N° 231, of 1973; decree law N° 1,683, of 1977; law N° 18,080 and article 84 of the law N° 18,382, which text was incorporated to the article 84, N° 4, of the General Law of Banks.

Article 5th- The article 80 bis and the 2nd paragraph of the Title XV of the General Law of Banks, will rule since january 1st of 1987.

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TEMPORARY ARTICLES

Article 1st- The government guaranty is given, from january 1st of 1987 until december 31 of 1988, to the liabilities coming from deposits and long term obligations through saving accounts and documents issued by the banking companies and financial institutions established as stock companies in Chile.

The guaranty referred to in the previous clause will be applied to both the existing liabilities on January 1st of 1987, and those incurred afterwards up later on. The liabilities whose expiration date falls after December 31 of 1988 will only have the government guaranty until the indicated date.

The guaranty established in this article will cover up to 90 percent of the value of the covered obligation during the first semester of 1987; 80 percent of the value, during the second semester of 1987; 70 percent of the same value, during the first semester of 1988, and 60 percent during the second semester of 1988.

The financial institutions that had the recognition of the Government guaranty in virtue of what was established in the law N° 18,519, as long as that guaranty is in force to December 31 of 1986, will still be protected by the guaranty until the March 1987 publication that is noted in the 9th clause takes place. In any case, during that period, that guaranty will rule the norms noted in the preceding clauses.

All the financial institutions contained in the first clause that intend to obtain the Government guaranty or wish to continue under the protection of that guaranty according to this law, will have to ask the Superintendency of Banks and Financial Institutions, during the first 10 days of February of 1987, for the recognition of that guaranty. The Superintendency will make its decision by consulting the Executive Committee of the Central Bank of Chile, taking into account the capital commitment ratio that determines the financial status for each petitioner

institution as of December 31 of 1986.

The term capital commitment ratio will be understand to mean the quotient between the asset losses, not counting the provisions and the profits of the accounting period, minus the beneficial improvement proposed by the administration of the entity for the next six months, that has been approved by the Superintendency, all that divided by the paid capital and reserves. A beneficial improvement for this purposes will include, among others, an improvement coming from an increase in the entity's capital and the demonstration renewed caution with respect to its loan portfolio. In any case, the guaranty will not be recognized for financial institutions whose capital commitment ratio as of December 31 of 1986 is greater than 0.35.

The Superintendency will also measure in July 31 of 1987 and in January 31 of 1988, according to the financial status and other information required, from June 31 and December 31 of 1987, respectively, the capital commitment ratio of those financial institutions for which their guaranty has been recognized, and will verify the fulfillment of the foreseen beneficial improvements. On those dates the institutions not protected by the guaranty can request it. In any event, the guaranty will not be given or renewed to those financial institutions whose capital commitment ratio is greater than 0.35 on June 30 of 1987 or greater than 0.20 on December 31 of 1987, nor to those that have not correctly placed the beneficial improvement program on course.

The financial institutions that obtain the guaranty can resign from it by giving notice 30 days in advance.

In all the cases in which certain institutions start being protected by the guaranty or finish being protected, the Superintendency will have to publish in the Official Newspaper a list of them. This publication will be done within the first five days of the months of March of 1987, August of 1987 and February of 1988. In the case that an institution resigns from the guaranty the publication should be done the day that the resignation takes

effect.

From the date of the respective publication, the new deposits and other liabilities received by the institution which has resigned or has been excluded, will not enjoy that guaranty. On the other hand, the deposits and long term liabilities in force at the time of the publication will remain protected by the guaranty until the next expiration date. The long term saving accounts will also be covered until the date on which the next year's readjustment is paid.

The institutions that have obtained or obtain the recognition of the Government guaranty (garantia del Estado) and while at guaranty is maintained, will pay a commission to the government of 0.0625 percent annually on the proportion of its deposits and other liabilities covered by the guaranty, considering the average daily settlement maintained in the previous month. While the guaranty is still in effect, the commission will be paid in advance on the first day of each month. The Central Bank of Chile, as a fiscal agent, will collect this commission. The corresponding amounts will go into the National General Income (Rentas Generales de la Nacion).

Other matters will be governed by the dispositions of the articles 144, 145 and 147 to 150 of the General Law of Banks.

Article 2nd- During the first three years the article 80 bis of the General Law of Banks will be in force, the Central Bank of Chile will make loans to the banks so that they follow the laws established in that article. Those loans will be conferred to each bank in proportion to the deposits and liabilities referred to in article 80 bis that exceed the limit contemplated in the same article, with the percentage fixed by the Central Bank of Chile and being equal for the entire banking industry. This financing should be decreasing in each semester with respect the previous semester and cannot be less than 90 percent during the first semester in which this system is applicable.

During the same term, the Central Bank will have to pay interest to the banks for the amount that they maintain in deposits, until they complete the amount of the loans that have been given for that purpose, at a similar interest rate as the one charged by Central Bank on the loans referred to in this article.

Article 3rd- The banks will have to adjust to the margins that article 84, N° 2, of the General Law of Banks notes, within the term that expires on December 31 of 1990.

The Superintendency will establish, through general norms, the maximum amounts that the concentration of credits to related persons can reach, during the period referred to in this article.

Article 4th- The change in the procedure that is established in article 21 of the decree law N° 1,097, of 1975, will only apply to the claims that are established subsequently to the publication of this law.

Article 5th- The saving and credit unions that, at the date of operation of this law, are under the inspection of the Superintendency of Banks and Financial Institutions, will remain subject to its oversight while they have deposits or other liabilities that they have received from the public or its members. The dispositions of the decree law N° 1,097, of 1975 will be applicable to these unions.

Without prejudice to the previous paragraph, the modification, dissolution and liquidation of these unions will be subject to the General Law of Unions (Ley General de Cooperativas) and the authorities referred to in that law will be exclusively involved in those acts.

Article 6th- The incompatibility contemplated in the second clause of the article 65, N° 10 of the General Law of Banks, will apply to the members of the board of directors of the banks in

operation at the date of the publication of this law until the next Stockholders' Meeting where the general election of the board of directors will be held.

ADOPTED TEXT OF THE LAW N° 18,401

REGULATE THE SITUATION OF THE INSPECTED FINANCIAL INSTITUTIONS

(Not Translated)

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