

## macroeconomía del desarrollo

# **F**inancial Regulation and Supervision in Emerging Markets: The Experience of Latin America since the Tequila Crisis

Barbara Stallings and Rogerio Studart



NACIONES UNIDAS



Economic Development Division

Santiago, Chile. December 2001

This paper was prepared by Barbara Stallings, Director of the Economic Development Division, and Rogerio Studart, Economic Affairs Officer, Economic Commission for Latin America and the Caribbean (ECLAC).

The views expressed in this document, which has been reproduced without formal editing, are those of the authors and do not necessarily reflect the views of the Organization.

---

United Nations Publication

LC/L.1670-P

ISBN: 92-1-121340-1

ISSN: 1680-8843

Copyright © United Nations, December 2001. All rights reserved

Sales No.: E.01.II.G.205

Printed in United Nations, Santiago, Chile

---

Applications for the right to reproduce this work are welcomed and should be sent to the Secretary of the Publications Board, United Nations Headquarters, New York, N.Y. 10017, U.S.A. Member States and their governmental institutions may reproduce this work without prior authorization, but are requested to mention the source and inform the United Nations of such reproduction.

## Contents

---

<b>Summary</b> .....	5
<b>I. Introduction</b> .....	7
<b>II. The Financial Sector in Latin America in the 1990s</b> .....	9
A. Liberalisation, crises, and rescue: some stylised facts .....	9
B. Characteristics of the financial sector .....	10
C. Regulation and supervision: the state of the art .....	13
D. Basle II and the International Monetary Fund (IMF) .....	
Financial Sector Assessment Programs.....	16
<b>III. Regulation and Supervision after the Tequila crisis: .....</b>	
<b>Argentina, Brazil, Chile and Mexico</b> .....	19
A. Financial structure and changes before the Tequila crisis... 19	
B. The Tequila crisis and its effects on the stability of the.....	
banking system .....	21
C. Regulatory changes after the Tequila crisis .....	23
<b>IV. Conclusions: Policy Lessons from the Latin .....</b>	
<b>American Experience</b> .....	27
<b>References</b> .....	31
<b>Appendix</b> .....	33
<b>Serie Macroeconomía del desarrollo, issues published</b> .....	39

## Tables

Table 1	Loans as a share of GDP .....	11
Table 2	Foreign bank assets as a share of total bank assets .....	11
Table 3	Some indicators of concentration in the banking sector .....	12
Table 4	Outstanding amounts of debt securities issued in domestic markets .....	12
Table 5	Bank regulation: Some selected indicators .....	13
Table 6	Bank supervision: Some selected indicators .....	16

## Figures

Figure 1	Overall regulation index (ORI) .....	14
Figure 2	Overall supervision index (OSI) .....	17

---

## Summary

---

The financial crisis of 1994-1995 sounded a wake-up call to Latin America, indicating that regulation and supervision needed to be strengthened substantially. Since then, important steps have been taken to set rules and ensure their implementation, but financial regulation and supervision do not take place in a vacuum. On the one hand, they must be consistent with domestic macroeconomic policies, and they need a supportive macroeconomic environment in which to operate. On the other hand, they have to take into account the new international rules being proposed by multilateral agencies. And, of course, all of this must be done in the context of scarce resources, especially trained personnel.

This paper looks at these problems both from the viewpoint of the Latin American region as a whole and four individual country case studies (Argentina, Brazil, Chile and Mexico). We conclude that there has been considerable improvement in the banking regulation and supervision since 1994-1995, but that macroeconomic turbulence continues to pose challenges to the stability of the banking sector.



## I. Introduction

---

The increasing integration of international financial markets poses new challenges to domestic financial markets everywhere, but especially in developing countries. The financial crises of 1994-1995 and 1997-1998 sounded wake-up calls to Latin America and East Asia, respectively, indicating that regulation and supervision needed to be strengthened substantially. Since then, important steps have been taken to set rules and ensure their implementation, but financial regulation and supervision do not take place in a vacuum. On the one hand, they must be consistent with domestic macroeconomic policies, and they need a supportive macroeconomic environment in which to operate. On the other hand, they have to take into account the new international rules being proposed by the Bank for International Settlements (BIS), the International Monetary Fund (IMF), and others. And, of course, all of this must be done in the context of scarce resources, especially trained personnel.

This paper looks at these issues from the viewpoint of Latin America, although many of the same problems and attempts at solutions can be found in other developing regions as well.<sup>1</sup> We begin with a brief look at the changing structure of the financial sector as a whole, with particular emphasis on changes among actors. Despite these changes, however, banks continue to dominate the sector and so we focus heavily on them in the analysis. In this context, we turn to the regulatory and supervisory systems *per se*, the changes that

---

<sup>1</sup> See, for example, discussion of these topics in Asia in Masuyama *et al.* (1999) and Economic and Social Commission for Asia and the Pacific (ESCAP) (1999, 2000).

have been made since the Mexican crisis in 1994-1995, and the challenges they are facing from the new international guidelines. We then move to cases studies of four of the most important countries in the region: Argentina, Brazil, Chile, and Mexico. Through examination of the experiences of the four, we can get a better idea of how the changes came about and the way in which individual country characteristics affect the operation of the financial systems. We conclude with a discussion of policy lessons that can be drawn from the Latin American experience.

Certainly we are not the first to discuss these topics. On the contrary, over the last few years, there has been a virtual explosion of research on the financial sector in developing countries, including issues of regulation and supervision.<sup>2</sup> We draw on this literature where relevant, both in its theoretical and empirical dimensions, and bring it to bear on the issues under consideration.

---

<sup>2</sup> See, for example, Demirgüç-Kunt and Maksimovic (1998); Norton and Aguirre (1998); Santos (1998); Beck, Demirguc-Kunt and Levine (1999); United Nations (1999); Aguirre (2000); Barth, Caprio Jr. and Levine (2000, 2001a, 2001b); Barth, Nolle and Rice (2000); Beck, Demirgüç-Kunt, Levine and Maksimovic (2000); Caprio and Honohan (2000); Levine (2000); World Bank (2000, 2001); Bank of International Settlements (BIS) (2001).



## **II. The Financial Sector in Latin America in the 1990s**

---

The financial sector in Latin America has undergone major changes in the recent past. Beginning with financial liberalisation and passing through crises, rescues, and restructuring, the sector now has quite different characteristics than it did at the onset of the debt crisis in the early 1980s. Among the key changes have been a generalised improvement in prudential regulation and supervision and a more stable macroeconomic environment in which to operate. This section provides a brief overview of the region as a whole, demonstrating both the similarities and the remaining differences among countries. It also looks ahead to how the new system may be affected by changes currently underway at the international level.

### **A. Liberalisation, crises, and rescue: some stylised facts**

The essential background for understanding current developments in the financial sector in Latin America is the financial liberalisation process, both domestic and international, that took place in the 1980s and 1990s in most countries. Chile was an important exception, where both liberalisation and crisis preceded those of its neighbours by at least a decade.

Moving from highly repressed systems, where governments set interest rates, directed credit, and held a large share of bank deposits as required reserves, countries freed commercial banks to make their

own decisions on borrowers, loan volume, and prices. At approximately the same time, capital account liberalisation enabled local banks to engage in transactions in foreign currencies and allowed foreign institutions to enter local markets. Frequently such changes were made without having in place an adequate regulatory and supervisory system, which compounded problems for bankers without sufficient experience in credit analysis of local borrowers, much less the complexities of international financial markets.

The typical results were credit booms, mismatches between maturities and currencies, and eventually banking crises. As seen in the emblematic Chilean case, the errors by the domestic actors themselves could provide the basis for such a crisis; if combined with external shocks, the situation could become far more serious (see Held and Jiménez, 2001). Government rescues tended to follow a standard package. In the first instance, they involved takeover of non-performing loans, recapitalisation of banks, and liquidations and mergers, usually involving foreign institutions. Later, in an attempt to prevent future crises, regulation and supervision were stepped up, greater information and transparency were required, and deposit insurance was sometimes put in place. In the process, the characteristics of the sector changed significantly.<sup>3</sup>

## **B. Characteristics of the financial sector**

The financial sector in Latin American countries remains bank based, but it has undergone a number of important changes in recent years:

First, the size and depth of the financial sector has increased, especially during the 1990s. In part, at least, this is the result of the dramatic decline in inflation throughout the region, such that in most countries prices are now rising only at single-digit rates compared to the three or four-digit rates often found in the 1980s. Thus, individuals, households, and firms are more willing to hold money and other financial assets, providing the necessary prerequisite for the development of robust financial systems. Better institutions have complemented the behaviour of individual agents. Table 1 gives an idea of the extent of the trend toward financial deepening for the four largest markets. Using total lending as a share of GDP and lending to the private sector as a share of GDP in the 1990s as indicators, it shows that both increased on a steady basis throughout the decade (with the exception of the second indicator in the case of Mexico). The biggest gains were clearly in Chile, which also had the highest growth rates, but more information would be needed to determine the direction of causation.

Second, the existing banks have been allowed to enter new activities, resulting in the formation of so-called universal banks. In general, this has been a result of deregulation of banking activities, which expanded bank operations into securities trading, insurance and real estate activities as well as allowing banks to own non-financial firms. This is a trend that has moved in tandem with events in mature economies,<sup>4</sup> but unlike some of the latter, securities markets in developing economies are still very underdeveloped and shallow, and therefore most bank portfolio diversification has been into short term securities, insurance, and real estate activities.

Third, foreign institutions have become increasingly significant actors in the financial sector. As can be seen in table 2, foreign assets as a share of total assets have risen substantially in all seven Latin American countries with data available (Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela); the increase for Mexico would be much greater if the recent sale of the country's largest bank were included in the table. It is interesting to note that similar trends were found in Eastern Europe but not in Asia.

---

<sup>3</sup> This has become a common approach in the management of financial crises in both developed and (more often) developing economies in the 1990s. See Fischer (2001).

<sup>4</sup> On these trends see Feeney (1994), Blommestein (1995), Fornari and Levy (1999) and Bank of International Settlements (BIS) (2001).

**Table 1**  
**LOANS AS A SHARE OF GDP**

Country	1990-94	1994-97	1997-2000
Argentina			
Total loans	n.a.	25	32
Loans to private sector	18	19	23
Brazil			
Total loans	37	39	42
Loans to private sector	28	28	29
Chile			
Total loans	45	53	68
Loans to private sector	19	32	44
Mexico			
Total loans	30	32	35
Loans to private sector	27	25	16

**Source:** Authors' elaboration, based on International Monetary Fund (IMF) data.

**Table 2**  
**FOREIGN BANK ASSETS AS A SHARE OF TOTAL BANK ASSETS**

	1994	1999	2000
Czech Republic	5.8	49.3	66
Hungary	19.8	56.6	62
Poland	2.1	52.8	70
Turkey	2.7	1.7	n.a.
Argentina	17.9	48.6	49
Brazil	8.4	16.8	23
Chile	16.3	53.6	54
Colombia	6.2	17.8	26
Mexico	1.0	18.8	24
Peru	6.7	33.4	40
Venezuela	0.3	41.9	42
Korea	0.8	4.3	3
Malaysia	6.8	11.5	18
Thailand	0.5	5.6	12

**Source:** International Monetary Fund (IMF) (2000: 153) for 1994 and 1999; Bank for International Settlements (BIS) (2001a: 25) for 2000.

Fourth, there has been a decrease in the number of banks –especially in Latin America and in Asia– as a result of the processes of mergers and acquisitions, including privatisations (see table 3). What is somewhat surprising is that this process has not resulted in a significant increase in concentration. Indeed, in Asia and Eastern Europe, there appears to have been a decrease in concentration. In Latin America, the share of the largest three and ten banks both rose, but not by a very large amount.

Fifth, there has been some diversification with respect to the development of capital markets. This development has multiple causes: (a) the increase in portfolio flows to the region, up until 1998; (b) the privatisation of social security and the deregulation of private institutional investors, which led to an increase of investments in securities; and (c) the virtuous circle created by the process of stabilisation and securities market expansion in some economies in the region. Table 4 presents one indicator of this trend: the volume of debt securities issued in domestic markets (both in absolute amounts and as a share of the total) between 1989 and 2000. While it indicates that such issues in Latin America nearly tripled during the period, the vast majority of the increase was due to a single country (Brazil) and the region's share of total issues barely budged.

**Table 3**  
**SOME INDICATORS OF CONCENTRATION IN THE BANKING SECTOR**

*(Share in total deposits)*

	1994	1994			2000	2000		
	Number of Banks	Largest 3 Banks	Largest 10 Banks	HH Index	Number of Banks	Largest 3 Banks	Largest 10 Banks	HH Index
<b>Asia</b>								
Republic of Korea	30	52.8	86.9	1263.6	13	43.5	77.7	899.7
Malaysia	25	44.7	78.3	918.9	10	43.4	82.2	1005.1
Philippines	41	39.0	80.3	819.7	27	39.6	73.3	789.9
Thailand	15	47.5	83.5	1031.7	13	41.7	79.4	854.4
<b>Latin America</b>								
Argentina	206	39.1	73.1	756.9	113	39.8	80.7	865.7
Brazil	245	49.9	78.8	1220.9	193	55.2	85.6	1278.6
Chile	37	39.5	79.1	830.4	29	39.5	82.0	857.9
Mexico	36	48.3	80.8	1005.4	23	56.3	94.5	1360.5
Venezuela	43	43.9	78.6	979.2	42	46.7	75.7	923.1
<b>Central Europe</b>								
Czech Republic	55	72.0	97.0	2101.5	42	69.7	90.3	1757.8
Hungary	40	57.9	84.7	1578.8	39	51.5	80.7	1241.8
Poland	82	52.8	86.7	1263.6	77	43.5	77.7	899.7
Turkey	72	40.7	79.1	957.2	79	35.9	72.0	710.2

Source: International Monetary Fund (IMF) (2001:11).

**Table 4**  
**OUTSTANDING AMOUNTS OF DEBT SECURITIES ISSUED IN DOMESTIC MARKETS**

*(US\$ billions and %)*

	US\$ billions				% of total			
	1989	1993	1997	2000	1989	1993	1997	2000
United States	6 682.8	9 226.7	1 2059	14 545.9	47.6	44.9	47.4	48.9
Japan	2 626.7	4 010.1	4 399.3	6 072.3	18.7	19.5	17.3	20.4
France	557.6	995.7	1 102.5	1 068.1	4.0	4.8	4.3	3.6
Germany	668.4	1 458.4	1 732.1	1 711.6	4.8	7.1	6.8	5.8
UK	332.9	446.1	777.7	895.9	2.4	2.2	3.1	3.0
Latin America	172.1	296.7	490.6	482.8	1.2	1.4	1.9	1.6
Argentina	113.5	39	70.1	85.2	0.8	0.2	0.3	0.3
Brazil	0.0	189.9	344.5	292.5		0.9	1.4	1.0
Chile	7.5	19.2	36.5	34.2	0.1	0.1	0.1	0.1
Mexico	51.1	47.9	37.6	67.3	0.4	0.2	0.1	0.2
Memo:								
All issuers	14 042.0	2 0565.0	25 464.0	29 733.0	100	100	100	100
OECD	13 559.0	1 9967.0	24 452.0	28 580.0	96.6	97.1	96.0	96.1

Source: Authors' elaboration, based on Bank for International Settlements (BIS) data.

All five trends have implications for regulatory and supervisory functions. Larger institutions, a greater mix of activities, and a bigger foreign presence can all complicate the tasks of regulators and supervisors. It means that they must be better trained to understand the new complexities they face, and in some cases they will need greater support from their respective governments to deal with lack of cooperation from their supervisees. At the same time, the new circumstances may also offer advantages, if the banks see it as in their collective interest to

improve their image and if foreign supervisory institutions provide useful support. Insofar as the local financial sector becomes more sophisticated, there will also be the need for coordination between the regulators of the various components. We move now to look at how well equipped the various countries of the region are to deal with these challenges.

### C. Regulation and supervision: the state of the art

Drawing on an important new data bank created by the World Bank,<sup>5</sup> we can sketch out the current situation with respect to regulation and supervision of the banking sector in many Latin American countries. Unfortunately, this data base represents a single point in time (circa 1999), so we must rely on qualitative studies of the region itself to identify changes and tendencies. In general, these sources point to substantial improvements, although with important differences remaining across countries.

Table 5 provides a set of indicators on banking regulation in seven Latin American countries, plus the United States as a benchmark. The most widely known indicator is the minimum capital asset ratio requirement, currently set at 8% by the BIS through the so-called Basle I agreement. While the United States sets its minimum at the 8% level, as do Chile and Mexico, the other Latin American countries have higher ratios with Brazil and Argentina at the top of the list with 11 and 11.5%, respectively. A similar situation is found with the actual risk adjusted ratio. With the exception of Bolivia, all Latin American countries maintain higher ratios than the 12% found in the United States. Again, Argentina and Brazil have the highest ratios.<sup>6</sup>

**Table 5**  
**BANK REGULATION: SOME SELECTED INDICATORS**

	Argentina	Brazil	Bolivia	Chile	Mexico	Peru	Venezuela	United States
Minimum capital-asset ratio requirement (%)	11.5	11.0	10.0	8.0	8.0	9.1	10.0	8.0
Actual risk-adjusted capital ratio (%)	16.4	15.8	11.4	12.3	13.0	12.7	14.0	12.0
Capital stringency index	6.0	3.0	5.0	3.0	4.0	5.0	2.0	4.0
Capital regulation index	8.0	6.0	8.0	5.0	7.0	6.0	2.0	6.0
Overall bank activities and ownership restrictiveness index	1.8	2.5	3.0	2.8	3.0	2.0	2.5	3.0

**Source:** Barth, Caprio, and Levine (2001a); for the definition of the indexes, see Appendix.

Several indexes are also presented in table 5. The “capital stringency index” includes adherence to the BIS guidelines, but also various measures of the degree to which leverage potential is limited (for precise definitions, see Appendix). With a range from 1 to 6, where 6 is the most stringent and the U.S. benchmark is at 4, only Argentina among the Latin American countries has a score of 6, followed by Bolivia and Peru; Venezuela lags with a score of 2. The “capital regulation index” combines the previous index with one measuring the type of assets that can count toward the capital asset ratio, with a range of 1 to 9. On this indicator, Argentina and Bolivia represent the highest degree of stringency, followed by Mexico, with Venezuela again at the rear. The fifth indicator deals with types of activities

<sup>5</sup> See Barth, Caprio, and Levine (2001a) for a description of the data base, which was constructed from a survey of bank regulators and supervisors in 107 countries. A companion paper (Barth, Caprio, and Levine, 2001b) presents a preliminary analysis of the data, which questions the relevance of the regulatory and supervisory guidelines stressed in this chapter. We believe that the conclusions reached by the authors owe to the failure to distinguish between developing and developed countries, whose experiences have been quite different with respect to the behavior of the financial sector. We intend to test this hypothesis in future research.

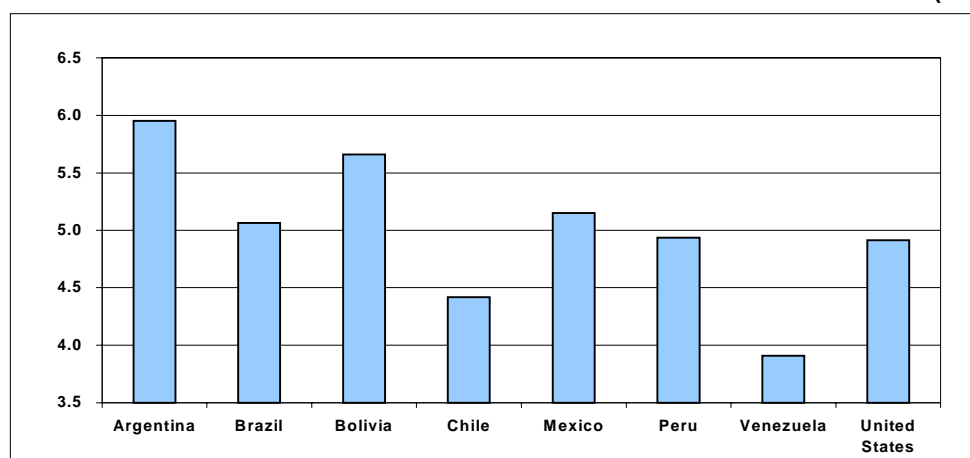
<sup>6</sup> The Economic Commission for Latin America and the Caribbean (ECLAC) has often advocated that developing countries should maintain ratios above the international norm, given the extremely high cost of banking crises. See, for example, ECLAC (2000).

that banks can engage in and restrictions on who can own a bank. This qualitative index ranges from 1 to 4, with the United States at 3. Unlike other indicators, Argentina allows the greatest freedom to banks, while Mexico and Bolivia are the most restrictive.

It is clear from the data presented in table 5 that regulation has many dimensions, with some countries being stricter on some than on others. Nonetheless, there is some tendency for a cross-country pattern to emerge. As a way of measuring this tendency, we have constructed an additional index (the Overall Regulation Index, (ORI)), by dividing the values in each row of table 4 by the average of that row and then summing them up by country. Figure 1 presents the result of these calculations.

The figure shows that Argentine regulation is the most strict, followed by Bolivia; Venezuela is the least restrictive. Nonetheless, it is important to note that the United States has a lower level of restrictions than do many Latin American countries. Likewise, Chile, which is commonly regarded as having the best regulatory and supervisory system in Latin America (Held and Jiménez, 2001) does not rank highly on the overall index. It is possible to hypothesize that some kind of inverted U-shaped relationship is involved, whereby banks become more self-regulating after some level of development (and/or some minimal level of experience) is attained.

Figure 1  
OVERALL REGULATION INDEX (ORI)



Source: Authors' elaboration, based on table 5.

Table 6 uses the same data source to examine trends with respect to bank supervision. While more attention is typically devoted to the topic of regulation, the best regulations are of little use if they are not enforced. Whether this be self-supervision (as implied by the inverted U-shaped relationship just mentioned) or supervision carried out by a government body, the point is that provision for the implementation of regulations must be separately analysed.

The number of professional supervisors per bank varies widely, from 0.1 in the United States to 11.5 in Mexico, but there seems to be only a very weak relationship between the number of supervisors and their attributes as measured by the "official supervisory index". The latter indicator is the summation of 16 measures of supervisory power to deal with abnormal situations encountered and the degree of discretion supervisors have under such circumstances. The less the discretion and the greater the power, the higher the index. With the United States at 14, only Brazil has a higher ranking, while Bolivia and Mexico are the lowest. A subset of the 16 items on the supervisory power index is found in the "index of forbearance discretion". Argentine supervisors have the least discretion, while Chilean and Venezuelan supervisors have the most. The United States is in the middle.

Table 6

**BANK SUPERVISION: SOME SELECTED INDICATORS**

	Argentina	Brazil	Bolivia	Chile	Mexico	Peru	Venezuela	United States
Professional bank supervisors per institution	2.4	4.0	6.0	3.0	11.5	3.6	1.0	0.1
Official supervisory index	12.0	15.0	11.0	13.0	10.	14.0	14.0	14.0
Prompt corrective action index	n.a.	6.0	n.a.	3.0	3.0	4.0	5.0	5.0
Restructuring power index	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Declaring insolvent power index	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Forbearance discretion index	3.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0
Supervisor tenure index	6.2	15.0	6.0	n.a.	n.a.	13.5	n.a.	7.0
Likelihood supervisor moves into banking index	3.0	2.0	3.0	3.0	1.0	3.0	3.0	1.0
Percentage of top ten banks rated by international credit rating agencies	100	100	20.0	50.0	n.a.	50.0	40.0	100
Private monitoring index	8.0	8.0	7.0	8.0	6.0	8.0	6.0	8.0

**Source:** Barth, Caprio, and Levine (2001a); for the definition of the indexes, see Appendix.

The last two items in table 6 deal with what the World Bank calls private monitoring. The index on this topic measures whether an external audit is required, the percent of the ten largest banks that are rated by international rating agencies, the degree of accounting disclosure and director liability, and the lack of an explicit deposit insurance scheme. On a scale of 1 to 8, the United States, Argentina, Chile and Peru score 8, while Mexico and Venezuela are lowest at 6. The percentage of top banks rated by international agencies shows the United States, Argentina, and Brazil at 100%, while the other countries in our sample are between 20% and 50%.

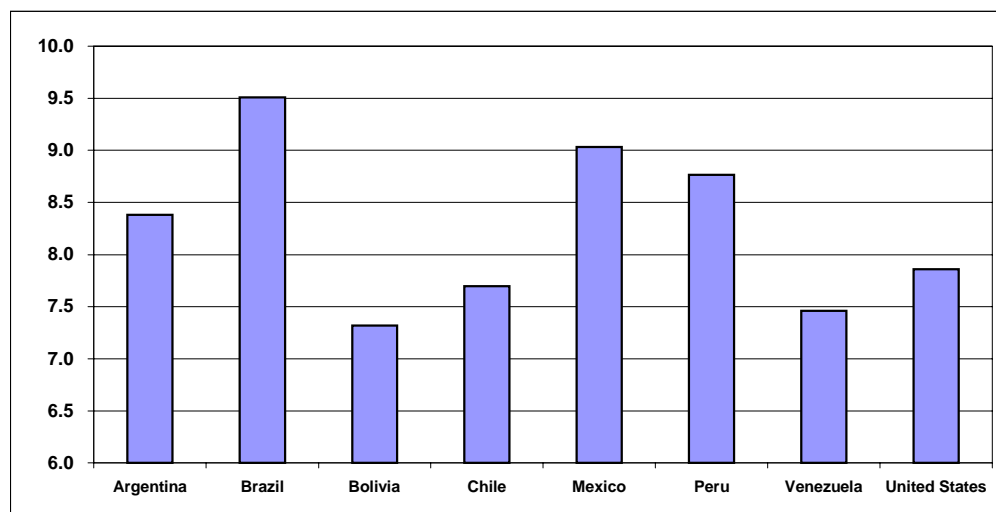
In order to present a clear view of the degree of supervision in each economy, we have created a Overall Supervision Index (OSI), following the same methodology used to construct the ORI.<sup>7</sup> Figure 2 presents the values for OSI across the countries in our sample. Argentina, Brazil and Mexico have the highest ratings (the strictest supervisory standards), with Venezuela at the low end, along with Bolivia (which, paradoxically, has a comparatively high ORI). Again, as with the overall index on regulation, the United States and Chile rank lower than the highest ranking countries in Latin America.

The data presented in tables 5 and 6 and in figures 1 and 2 have at least two important problems. First, they represent only a single point in time and, second, they are overview measures that summarise a large amount of information in a single number. To get a better idea of some of the details as well as the changes in the regulatory and supervisory systems in recent years, we have to turn to studies of the region per se.

In one of the most important studies, Aguirre (2000) stresses that significant changes have been made in banking legislation in almost all of the 17 countries he surveyed. In general, he says, these changes have come about as a result of crises or serious problems in the respective banking systems. The author identifies key changes as less public sector ownership, greater foreign participation, broader scope for banking activities, and improvements in supervisory and regulatory authority. With respect to the latter, he focuses mainly on institutional aspects, such as the agency that performs supervision and the scope of the mandate of such institutions (only banks, or also insurance and securities). He finds a wide difference across countries, but admits that the literature is not conclusive on the relative merits of different systems.

<sup>7</sup> In order to make all variables more compatible, we have reversed the values of the variable "Likelihood Supervisors Moves in Banking", since the higher the probability of that occurring, the more easily supervisors can be captured by supervised banks and thus the less rigid the supervision will be.

Figure 2  
OVERALL SUPERVISION INDEX (OSI)



Source: Authors' elaboration, based on table 6.

Another study, by Livacic and Sáez (2000), focuses specifically on supervision. Again noting the improvements during the 1990s, the authors emphasise the gap between the rules on the books and the ability of supervisors to enforce them. Examples include loans to “related” clients and the treatment of overdue loans on banks’ books. They suggest various remedies, including the need for more resources (financial and human) and greater autonomy for supervisors.

#### D. Basle II and the International Monetary Fund (IMF) Financial Sector Assessment Programs

The previous section provides evidence that bank regulation and supervision in Latin America have improved in recent years. A good deal of the change has been a response to events in individual countries or, to some extent, in the region more broadly (especially the Mexican crisis of 1994-1995). Nonetheless, developments at the international level have also played a role. In particular, the BIS and the Basle Committee on Banking Supervision have been influential in putting these issues onto the agenda and homogenizing standards for developed and developing countries alike. In the current period, however, international standards themselves are in a state of flux, and the proposed changes pose new challenges to developing country institutions. In particular, the Basle Committee has presented a new scheme to replace the previous one based on the 8% minimum capital asset ratio, while the IMF has taken the lead in proposing a long list of codes and standards (ROSCs) with respect to the financial sector.

The Basle Capital Adequacy Accord (Basle I), introduced in 1988, was a milestone in banking regulation. The 8 percent minimum capital requirement for internationally active banks, which was adopted by over 100 countries (including most in Latin America), clearly improved financial stability. Nonetheless, criticisms began to emerge that the approach was too rigid and simplistic and that it did not correspond to actual levels of risk. Developing countries were especially concerned that the rules provided incentives for short-term over long-term lending.

Basle II was meant to correct the problems identified by introducing more complex alternatives for determining risk, including the use of models developed by individual banks. Experts studying the potential impact on developing countries feared that the new approach could



have a negative impact on those economies through two channels. First, the new risk categories would likely lead to a significant decline in lending to developing countries or greatly increase the cost. Second, the new system would be inherently pro-cyclical, increasing the frequency of crises that are known to have an especially negative impact on the developing world. In part because of these criticisms, the implementation of Basle II has been postponed to allow further study (Griffith-Jones and Spratt, 2001).

In a parallel initiative, the IMF and World Bank introduced some 40 standards and codes that also aim to increase financial stability by offering policy benchmarks. These have been incorporated into the IMF's surveillance of member countries' economies through the Financial Sector Assessment Programs. While agreeing that the measures could be helpful, developing country representatives have expressed concern that they have no say in determining the standards and that implementing all of them would be an extremely expensive undertaking. At the same time, they fear that not being able (or willing) to comply would further reduce their chances for obtaining finance. (For a discussion of the codes and standards from a developing country perspective, see *IMF Survey*, April 2, 2001.)



### **III. Regulation and Supervision after the Tequila crisis: Argentina, Brazil, Chile and Mexico**

---

The previous examination of regional trends in the financial sector generally, and regulation and supervision more specifically, has provided an idea of the direction of changes and some notion of the causes. We believe it is useful, however, to look more in detail at the experiences of some individual countries to deepen our understanding of the reform process as well as the problems that still remain.

The four countries that have been selected –Argentina, Brazil, Chile, and Mexico– have much in common but nonetheless illustrate important differences in timing, operational characteristics, and the macroeconomic environment in which the financial sector operates. These case studies will be helpful in suggesting policy recommendations to improve the functioning of the systems.

#### **A. Financial structure and changes before the Tequila crisis**

Departing from highly repressed financial systems, all four economies went through a process of financial liberalisation at some point between the 1970s and the 1990s. This resulted in changes in the way banks operated and eventually in banking crises. Chile was the

first to embark on the liberalisation process, beginning shortly after the military coup in 1974.<sup>8</sup> Changes included freeing of interest rates, eliminating directed credit, reducing reserve requirements, and relaxing regulation and supervision more generally. As in the other three cases, it was followed by a rapid increase in lending and a banking crisis (1981-1984). The process was then halted as the crisis forced the authorities to implement a thorough restructuring (through partial nationalisation and recapitalisation) of the banking sector, initiated by the intervention of 21 financial institutions, including the two largest banks in the country (Banco de Santiago and Banco de Chile). Later, 14 of these institutions were liquidated while the rest were rehabilitated and privatised.

Soon after the crisis, policy makers introduced changes in regulation and supervision that built on the lessons drawn from the previous experience. The crisis thus marked the beginning of a thorough revision of the regulation and supervision of the banking sector, which established a modern system of prudential regulation and increased supervisory capacity by the state. A new banking law was promulgated in 1986, encompassing a lower debt-to-capital ratio and reserve requirements related to bank's leverage position, mandatory information disclosure to the public, a partial public guarantee of deposits, and a strict separation between the core business of banks and their subsidiaries. External financial liberalisation was implemented gradually, as firms were initially allowed to issue bonds and shares in external markets; later, institutional investors (banks, pension fund managers, and insurance companies) were allowed to hold external assets and capital controls were gradually eased. In 1997, further changes included adoption of the Basle Committee's 8% rule.

The other three countries began the liberalisation process a decade or more later, as part of a broader economic reform package typical of the region (see Stallings and Peres, 2000). The measures introduced were similar to those in Chile, but of course each country has individual characteristics that have distinguished it from the others.

After a long period recovering from the 1982 banking crisis, Mexico embarked on an ambitious new process of financial liberalisation in 1988 that included reprivatization of the previously nationalised banks and liberalisation of interest rates. The response of the banking system was almost immediate: there was a rapid growth of deposits and lending (around 30% per year in real terms from 1989 to 1994). But, as admitted by most analysts, the first years of privatisation was also characterised by "reckless –sometimes fraudulent– lending as a result of poor supervision and underdeveloped regulations. Poor credit analysis procedures and few internal controls characterised the sector during this time. Banks put themselves in a precarious position as their lending outpaced their deposits, and they funded the shortfall through interbank borrowing –mainly from foreign banks" (The Economist Intelligence Unit (EIU), 2001: 7).<sup>9</sup> This conjunction of factors led to a rapid rise of past due loans, and the drying up of liquidity in the inter-bank market. In this context, a significant number of banks faced severe difficulties, which would be further aggravated by the 1994-1995 crisis.

---

<sup>8</sup> See Held and Jiménez (2001), and Gallego and Loayza (2001), for reviews of the recent history of development of the Chilean financial sector.

<sup>9</sup> It is interesting to note that the growth of non-performing loans had little to do with GDP performance. GDP growth did slow considerably (from 5.1 percent in 1990 to 2.0 percent in 1993), but the decline was gradual. Furthermore in 1994 the economy picked up again to 4.4 percent real GDP growth. Despite this growth performance, non-performing loans increased from around 2% in 1990 to almost 9% in 1994, prior to the Mexican peso crisis (McQuerry, 1999). The lack of a relation between growth and non-performing loans seems to indicate that the deterioration of banks' portfolios was determined by reckless lending.

Argentina also began financial liberalisation in the late 1980s.<sup>10</sup> In this case, liberalisation –which lifted most of the controls on domestic and foreign operations of the domestic financial system that had been imposed during the period of high inflation and external constraints–<sup>11</sup> took place in the context of the new stabilisation program (Plan de Convertibilidad). Another important difference in the Argentine case, in relation to Chile, was the external and domestic macroeconomic environment in which such reforms took place. Two important factors should be stressed: (i) the international scenario of the early 1990s, marked by rising liquidity, declining international interest rates, and the exceptional performance of the U.S. economy, led to a surge of optimism in the Argentine financial markets, and (ii) price stability and a fixed exchange rate regime abruptly reduced both inflation and exchange rate risks. These domestic and external factors created a fertile environment for the rapid growth of financial activity, but also to increasing maturity and exchange rate mismatches.

The Argentine financial sector had an impressive recovery until 1994; the levels of deposits and loans increased rapidly, while peso and dollar lending rates fell significantly. These results were a mix of several important features: (i) a process of monetisation –which normally follows price stability– led to a rapid growth of deposits in the banking sector; (ii) an increase of foreign capital inflows, which increased confidence in the Convertibility Plan, raised banks' propensity to make dollar denominated loans and borrowers' willingness to borrow in dollars (and produced a slightly lower interest rate in dollars), thus leading to a rapid process of dollarisation of both liabilities and assets of the banking sector, and (iii) an increase of competition among banks and the improvement of overall confidence reduced banks' liquidity preference, resulting in a rapid expansion of credit. In the case of domestic banks, this increased liquidity pushed them into being less careful in their lending strategies and thus deteriorated portfolio quality.

Brazil also went through significant liberalizing bank reforms before 1994, although beginning from a stronger initial position than the other countries. Three important regulatory shifts marked the development of Brazil's financial system in the early 1990s: external liberalisation and the banking reform in 1988, plus acceptance of the Basle capital adequacy ratios in 1994. The Brazilian reform had immediate consequences. From 1989, there was a sharp reduction in the number of commercial banks, investment banks, and finance companies, most of which became universal banks, institutions that dominate Brazil's financial system today.<sup>12</sup> An important step in the process of liberalizing Brazil's financial system had to do with opening the Brazilian market to the expansion of existing foreign financial institutions and the entry of new ones (especially banks and investment banks), which happened after 1994. This is perhaps the most important result of the new regulatory framework that emerged after the Mexican crisis.

## **B. The Tequila crisis and its effects on the stability of the banking system**

Not surprisingly, Mexico's banking system was severely damaged by the Tequila crisis that originated in that country. The levels of exchange rate mismatching were not significant, because Mexican regulation limits banks' foreign exchange exposure. However, leverage and levels of past due loans had grown very rapidly in the period prior to the crisis, leading to a very fragile banking

---

<sup>10</sup> Argentina had an aborted attempt at financial liberalization in the late 1970s, but it was reversed as part of the overall abandonment of reforms at that time. For an analysis of this earlier attempt, see Studart and Hermann (2001: 34-38).

<sup>11</sup> See Studart and Hermann (2001: 38-39) for a list of the main regulatory changes in 1989.

<sup>12</sup> These changes should not overestimate the importance of the reform, whose real significance lies in the fact that it consolidated a trend already in course during the 1980s: the overwhelming dominance of universal banks. That is, Brazil's financial structure is a credit-based market, dominated by a small number of financial conglomerates comprising a commercial bank and few non-monetary institutions, all of which operate with a very short-term time horizon.

sector. The devaluation was followed by a plunge of economic activity, and thus a further deterioration of the asset quality of most banks (McQuerry, 1999: 16-17). As an immediate response to the crisis, 15 banks were taken over by the authorities, which also sponsored a long and deep process of restructuring through mergers and acquisitions and reprivatization (Yacamán, 2001: 102-05). Despite this long and costly process of restructuring, the banking system has yet to recover from the 1994 crisis: the relation between credit to the private sector as a percentage of GDP declined almost steadily from 1994 onwards.

As the other country in the region that was particularly affected by the Tequila crisis, the Argentine banking system was also hit hard. The currency board system in Argentina meant that domestic monetary authorities had no other instrument to face potential capital outflows but to allow domestic rates to rise in 1995. This rise in interest rates provoked an increase of arrears and defaults, and reduced the confidence of depositors, leading to significant withdrawals of deposits.<sup>13</sup> Even though the Convertibility Plan had been successful for almost six years, depositors expressed their fears of a devaluation by withdrawing dollar deposits rapidly. Thus, in addition to a liquidity problem, banks had to face an increased exchange rate mismatching.

The combination of deteriorating quality of assets and loss of deposits pointed to the vulnerable side of the seemingly solid Argentinean system. In order to avoid an open banking crisis, the Argentine Central Bank (Banco Central de la República Argentina (BCRA)) began injecting liquidity through its discount window, backed by the sale of dollar denominated bonds –which in turn led to an increasing exchange rate exposure of the government– and by reducing reserve requirement for banks. Despite these steps by the BCRA, the accumulated losses corresponded to 12% of the banking sector's net worth by the first semester of 1995. As is well documented, the crisis was only reversed by decisive support from the IMF and World Bank. But the solution to the crisis also involved a significant fiscal adjustment, which led to a GDP contraction of 4.6% in 1995. For our purposes here, the crisis exposed the fragility of the domestic banking sector, which in turn prompted a set of regulatory and supervisory reforms and an acceleration of the internationalisation of the Argentine banking sector from 1995 onwards.

Unlike Argentina, the causes of the 1995 banking crisis in Brazil preceded the Tequila crisis, even though the latter deepened the problems within the banking sector. The fundamental reasons are associated with the abrupt adjustment that the banks had to undertake due to the success of the 1994 stabilisation program (Plano Real). During the 1980s, banks earned substantial profits from inflationary gains associated with the peculiar role of double intermediary of the public debt that the Brazilian banks enjoyed during the long period of high inflation and indexation.<sup>14</sup> The abrupt decline of these gains, and the high fixed costs in Brazil's banking sector, led private banks to initially expand credit –basically through consumer and commercial loans– which allowed the boom in the demand for consumer goods following the 1994 stabilisation program.<sup>15</sup> The rapid and sometimes careless expansion of credit, the high interest rate policy, and the rising unemployment provoked a rise of non-performing loans and arrears.

The monetary authorities tried to restrict this expansion by setting very high levels of reserve requirements, which nonetheless failed to constrain the expansion of credit. In addition, interest rates were maintained at high levels, which created an increasingly dangerous mix of credit expansion and high lending rates. The public banks faced additional problems due to their limited capacity to restructure their portfolios (dominated by state government debt) and their high

---

<sup>13</sup> By May 1995, the loss of deposits had reached US\$ 8.4 billion, around 19% of the total deposits of the banking system (Lopetegui, 1996: 14).

<sup>14</sup> On this, see Studart and Hermann (2001).

<sup>15</sup> Domestic demand increased rapidly in the aftermath of the monetary reform. The reasons behind the consumption boom were threefold: the slight increase of real income created by the abrupt decline of the inflation tax, the rise of minimum wage during the monetary reform, and the rapid expansion of consumer and commercial credit, mainly coming from private banks.

operational costs (in view of the job stability of many of their employees). The Tequila crisis was “the last straw” in a process of increasing bank problems, as the response of the monetary authorities to the reversal of capital flows was an abrupt increase of interest rates. Consequently, the Brazilian banking system went through severe difficulties in the aftermath of the Real Plan, which prompted a series of Central Bank interventions meant to avoid systemic risk and to restructure the banking system.

Chile was less vulnerable for two reasons. First, its macro economy was not affected by the Tequila crisis as much as the other economies, due to its lower levels of external debt, strong trade balance, and sound domestic fundamentals (e.g., high growth and fiscal balance). Second, as explained above, the Chilean banking system had long been going through major changes in supervision, regulation and structure. As a matter of fact, from 1991 onwards, bank activity started expanding at a rate which was slightly higher than that of GDP, such that the relation between loans and GDP expanded uninterruptedly from 45% in 1991 to 66.5% in 1999 –much higher than the peak achieved in 1984. Other indicators also point to an improvement in the efficiency and further consolidation of the banking sector (Ahumada and Marshall, 2001: 46-7). In addition, lending rates and spreads decreased substantially, an indication that perceived default risk declined with the process of expansion of lending.

### **C. Regulatory changes after the Tequila crisis**

The Tequila crisis unveiled the strengths and vulnerabilities of the banking systems of the four countries. The speed and depth of the changes in regulation and supervision were directly related to how profoundly the banking sectors were affected by the impact of the crisis and how rapidly domestic authorities managed to reestablish “normal functioning” of the existing institutions and markets. Thus, Chile’s situation –with almost no impact on the banking sector– stands out as completely different from the other three cases and shows the importance of its earlier steps in cleaning up the banking sector and establishing a modern regulatory and supervisory system.

In Argentina, after the 1995, given the intrinsic characteristics of its monetary and exchange rate regime,<sup>16</sup> it became clear that: (i) its banking sector was highly vulnerable to changes in domestic interest rates, exchange rates, and depositor confidence; (ii) domestic banks were more vulnerable than the foreign owned ones, and (iii) since the capacity of the monetary authorities to intervene in periods of crisis was very limited under the Convertibility Plan, some additional mechanisms were needed to increase systemic liquidity (especially for dollar deposits). In order to overcome these weaknesses, an initial set of measures was introduced to restructure the sector by injecting more capital, promoting mergers and acquisitions, and creating incentives to the expansion of foreign banks.

Among the most important regulatory changes in Argentina after 1995, five should be emphasised:

First, the “fondo fiduciario de capitalización bancaria”, created in March 1995, represented a full restructuring program supported by funds of the BCRA and aimed at capitalizing and strengthening the banking sector through incentives for the acquisition of banks in trouble by those with a more solid market position.

---

<sup>16</sup> That is, one which external shocks leading to real exchange rate disalignment (such as the 1999 devaluation of the Brazilian Real) and/or capital outflows could only be faced by abrupt rises of interest rates and/or output contraction.

Second, the “fondo de garantía de depósitos”, introduced in May 1995, was a deposit insurance scheme funded by private funds that aimed at avoiding “bank runs”. It was a measure to increase depositor confidence and the safety nets of the banking sector.

Third, a new system of reserve requirements was introduced in order to reduce leverage and improve safety. This new system widened the scope of the previously existing policy to encompass all bank liabilities, rather than just sight and saving deposits as was the case earlier.<sup>17</sup>

Fourth, the “programa contingente de pases”, created in December 1996, was an innovative mechanism to increase the systemic liquidity of the banking sector by establishing contracts between the BCRA and international banks in which the former acquired the right to sell, in dollars, to the latter dollar denominated government bonds and mortgage based securities. This meant that the participating banks (19 in 1999) provided a short term overdraft line that, in effect, gives the BCRA a lender-of-last resort facility in times of crisis.

Finally, measures were introduced to stimulate the continued process of mergers and acquisitions and to expand the share of foreign banks in the domestic market.

The results of these policies were quite positive in many respects. In the second half of the 1990s, private bank provisions in relation to total credit increased substantially; liquidity within the banking sector rose, and the capital adequacy ratio was maintained at levels far beyond those established by the Basle I guidelines. In addition foreign banks more than doubled their share of the market between 1994 and 1999. In sum, the banking sector became more solid, which partly explains why its ability to deal with the emerging market crises that characterised the late 1990s – the Asian crisis (October 1997), the Russian crisis (August 1998), and the Brazilian crisis (January 1999) – was far superior to what was observed after the Mexican crisis.

Brazil also took important steps concerning changing the regulation and supervision of its banking system, but, as mentioned above, these were not prompted by the Tequila crisis itself. During the first three years of the successful stabilisation program, 40 banks (of the 271 that existed in July 1994) were intervened by the Central Bank: 29 were liquidated, 4 failed, 6 were placed under temporary administration, and 1 continued to operate. A further 32 banks went through restructuring that resulted in mergers and acquisitions, some of them with government support through the bank restructuring program (PROER), which included fiscal incentives for banks to acquire other financial institutions and promotion of mergers (among domestic banks) and acquisitions (by foreign banks).

Another program (PROES), introduced in 1997, was directed to the restructuring of the public financial institutions.<sup>18</sup> This facility was created by the Central Bank to provide bridge loans to federal and state banks to speed up their restructuring and in some cases their privatisation or liquidation. In the process of restructuring, foreign banks were allowed to enter the economy. The number and participation of foreign banks have increased significantly after 1995, representing a competitive challenge to Brazilian banks. Nevertheless their entry has not changed fundamentally the way the domestic banking sector acts: credit rationing is still a reality, spreads are significantly higher than those found in developed and even most in developing economies, and foreign players tend to concentrate their portfolio in public debt.

In addition to the thorough restructuring of the banking sector, a series of complementary regulatory measures were also decreed in late 1995. These included the establishment of a deposit

---

<sup>17</sup> This led to a substantial increase of required reserves from 10.8% of total deposit in 1994 to 15.8% in 1995.

<sup>18</sup> The public banks in Brazil suffered significant losses with the decline of inflation. First, they were by far the greatest suppliers of loans in the system (over 75% in the 1990s) when inflation gains ceased. Second, the increase of interest rates and the expansion of primary deficits increased state and municipal debts substantially after 1992, and public banks are the main financiers of such debts in Brazil.



insurance fund guaranteeing up to R\$ 20 000 per depositor, and increased capital requirements for establishing new banks. Separately, new Central Bank regulations aimed to promote accountability and avoid bailouts by insuring that the shareholders of institutions sold or transferred were liable for any previous wrongdoing.

Perhaps the most significant of these additional measures was the law giving the Central Bank authorisation to preventatively restructure financial institutions that were not meeting system requirements or were demonstrating financial problems. While a form of this law had existed previously, and the Central Bank was authorised to place banks under one of three forms of special regime (temporary system of special administration, intervention, or extra judicial liquidation), these laws lacked a preventative character. Now the Central Bank was empowered to prescribe preventative remedies (e.g., increased capitalisation, transfer of stockholder control, or mergers and acquisitions) for faltering banks, and certain assets of failing banks could now be confiscated. As a result, 205 financial institutions have been taken over or intervened in one form or another by the Central Bank since the start of the Real Plan; some 25% of those institutions were banks. Overall, 92% of these financial institutions were closed, and 65% of the intervened banks were closed since mid-1994. The number of banks in operation also fell since the Real Plan began, after having risen sharply since the 1988 Constitution established universal banking in Brazil. The number of banks in operation more than doubled (120%) between year end 1988 and 1993. However, in the three-year period between year-end 1994 and 1997, the number fell 12% from 246 to 219 (Stuart and Hermann, 2001).<sup>19</sup>

Despite their more general economic problems in the late 1990s and early 2000s, the financial systems in Argentina and Brazil have performed relatively well as a result of the aggressive clean up measures introduced in the late 1990s. Mexico, by contrast, has remained in constant banking difficulties since 1995 and is still involved in a costly process of restructuring its banking system. Like in Brazil's PROER, this has been done through mergers and acquisitions, very often through an increase of foreign participation in the domestic sector (McQuerry, 1999). Only in December 1998 was financial legislation approved by the Congress and then implemented. In addition to the introduction of a new program of refinancing of bank rescue debt and of asset recovery and stricter limits for bailout burden, important changes in prudential regulation were introduced.

Chief among these changes were: (i) a new deposit insurance scheme, which replaced the previous system, ended the de facto unlimited deposit insurance and increased the oversight of the deposit insurance operation; (ii) new and stricter accounting standards, which increased the transparency of credit operations both for supervisors and the public, imposed stricter standards for handling past-due loans and substantially increased loan-loss provisions; (iii) a series of measures aimed at improving lending practices and new laws on credit transactions, aimed to speed the process of foreclosing on assets and allow for a wider range of property to be used as collateral, and (iv) stricter rules on capital quality.<sup>20</sup> In addition, in order to reduce possible future increases of exchange rate mismatching, the Bank of Mexico established ceilings on foreign currency liabilities (according to their capital) and imposed compulsory liquidity coefficients in foreign currency according to both the size and the maturity of these liabilities (Yacamán, 2001: 109). Despite these changes, and despite the economic growth achieved after the Tequila crisis, banking activity declined from 1994 to 1996. Only in 1996 did overall lending start growing again, whereas lending to the private sector only began to rise in 2000.

<sup>19</sup> Interestingly, the number of banks had remained relatively stable during the "lost decade" of the eighties, ranging from 108 and 116 institutions in operation between 1980 and 1987.

<sup>20</sup> For detailed analysis of these changes, see The Economist Intelligence Unit (EIU) (2001: 9-10).



## **IV. Conclusions: Policy Lessons from the Latin American Experience**

---

As we have seen, Chile implemented legislation to strengthen the prudential regulation and supervision of its banking system in the mid-1980s, and its banking sector was little affected by the Tequila crisis. It is important to stress, however, that the resilience of Chile's banking sector was not only due to the adequacy of its prudential regulation and supervision. Also important were its low degree of external vulnerability and its sound macroeconomic fundamentals. Together, the three factors provided stability to Chile's externally open banking system, such that the growth rate, interest rate and exchange rate were not significantly affected. Having survived the crisis with few scratches, the Chilean banking sector (as well as its institutional investors and financial markets) could prosper with the productive sector in the second half of the 1990s in a virtuous circle that characterises the relationship between financial development and productive development (Beck *et al*, 2000).

Argentina, Brazil and Mexico, by contrast, are good examples of the challenges arising from the Tequila crisis in countries where the banking system was already under strain. They also illustrate new approaches to regulation and supervision in Latin American countries. Nonetheless, it would be inaccurate to attribute the banking problems in these economies mainly to the 1994-1995 crisis. Prior to the crisis,

these economies had already gone through important bouts of financial liberalisation and had observed a rapid growth of lending by domestic banks. A mixture of macroeconomic developments and microeconomic bank restructuring led to highly leveraged banks and increased vulnerability. The crisis hit these economies after a period of significant rise in loan volume, and thus of high indebtedness of both private sector and government. The result in each case was a serious deterioration of bank portfolios that had negative repercussions in the rest of the economy as well.

After the Tequila crisis, a two-stage response was followed by these economies. The first was related to the restructuring of the banking sector, with the measures proportional to the effects of the crisis on the stability and functioning of the sector. The second was related to the improvement in regulation and supervision, as well as the safety nets, that guarantee the sector stability.

In the first stage, a deep process of policy induced restructuring of the system took place, basically through privatisation, mergers, and acquisitions of banks –often promoted by the government– leading to a rapid change in the bank ownership structure. These changes made only superficial alterations to the functioning of the sector (except for the growing role of foreign actors), but they increased the solidity of the banks, making them less vulnerable to the crises that characterised the second half of the 1990s. Argentina and Brazil implemented such changes in 1995 and 1995-1996, respectively, and went onto the second stage, while Mexico is still in the first stage, only beginning to emerge from a painful process of restructuring.

The second stage was introduced by Argentina right after the crisis, and in Brazil following the 1999 devaluation of the Real. Argentina rapidly enhanced prudential regulation, expanded the safety net for the banking sector, and allowed further concentration and the expansion of foreign banks. This was an explicit policy, due to the belief that an expanding foreign participation in the sector would make it more competitive and less vulnerable to exchange and interest rate shocks. Brazil, like Chile, relied more heavily on strengthening domestic capacity for regulation and supervision.

Despite their advances, both the Argentine and the Brazilian systems still have important shortcomings. First, both are highly vulnerable to changes in the macroeconomic environment, especially to changes in borrowing rates and economic cycles. As mentioned before, this is a structural problem related to bank-based financial systems, where banks tend to be highly leveraged even in periods of low growth. Such a feature becomes even more a source of potential vulnerability in a context of high macroeconomic instability and interest rate volatility. Second, both banking systems have increased their liquidity preference, which means that, even in the context of a macroeconomic environment better than the current one, credit rationing will continue to be one of the most important financial constraints to economic recovery in these economies. Third, Argentina has an additional problem in that its banking system is highly dependent on the maintenance of the current exchange rate system; a devaluation would certainly result in a simultaneous deterioration of its assets and liabilities and possible deposit drains.

The general Latin American experience with banking regulation and supervision, and especially the more detailed examination of the Argentine, Brazilian, Chilean and Mexican cases, provides the basis for suggesting several policy lessons for developing countries:

1. It is clear that much remains to be done in the specific areas of regulation and supervision. Some countries are more advanced than others, but all can do more in terms of institutional development in the supervisory area, greater transparency of regulations, and so on. Nonetheless, it is important to ponder the apparent relationship that emerged whereby the tightest regulations are not necessarily found in the best performing banking systems. This may mean that strict regulations are important as the banking system begins to develop, but it may be possible to

relax them somewhat in the longer run, if and when banks begin to take greater responsibility for their own behaviour.

**2.** Even those countries that have made substantial progress in the regulatory and supervisory sphere cannot assume that this is sufficient. Even the best regulatory and supervisory systems assume a relatively stable macroeconomic environment. In a situation of strong volatility, whether domestic or international, or both, the financial system will become increasingly fragile. Thus, regulation of the financial sector must go hand in hand with adequate fiscal, monetary, and exchange rate policies as well as with measures to prevent external shocks from ravaging local economies.

**3.** There are other problems in the financial sector that have little to do with regulation and supervision –or may even involve tradeoffs with the latter. That is, the main function of the financial sector is to support the development of the local economy. This involves the providing of credit in such volume that production and consumption can grow at an appropriate rate. If regulations are too tight, then this may make banks prefer to hold only the safest assets, whether government bonds or loans to the largest and lowest risk customers in the private sector. Consideration must be given to these aspects of the financial system and balance them with the obvious need to make the system a safer one.

**4.** Finally, a sound domestic regulatory and supervisory system in developing countries must be complemented by a supportive international environment. This includes adequate macroeconomic coordination in industrial countries as well as appropriate regulation of the financial systems in those economies. It also means that any new international regulations must consider the implications for developing countries. It must be recognised that the impact on the financial sector of industrial and developing countries is not the same, and both must be taken into account.



## References

---

- Aguirre, E. (2000), "Basic Reforms of the Banking Systems in Latin America", Financial Restructuring Operations Division, World Bank, mimeo.
- Ahumada, A. and J. Marshall (2001), "The banking industry in Chile: competition, consolidation and systemic stability," in Bank for International Settlements (BIS), (2001b).
- Barth, J. R., G. Caprio Jr. and R. Levine (2001a), "The Regulation and Supervision of Banks around the World: A New Data Base", ([www.worldbank.org](http://www.worldbank.org)).
- \_\_\_ (2001b). "Bank Regulation and Supervision: What Works Best", ([www.worldbank.org](http://www.worldbank.org)).
- \_\_\_ (2000), *Banking Systems Around the Globe*, Milken Institute, July 24.
- Barth, J. R., D. E. Nolle and T. N. Rice (2000), "Commercial Banking Structure, Regulation, and Performance: An International Comparison," in Dimitri B. Papadimitriou, ed., *Modernizing Financial Systems*, St. Martin's Press, New York.
- Beck, T., A. Demirgüç-Kunt and R. Levine (1999), "A New Database on Financial Development and Structure", Policy Research Working Paper 2146, World Bank, Washington, D.C.
- Beck, T., A. Demirgüç-Kunt, R. Levine and V. Maksimovic (2000), "Financial Structure and Economic Development: Firm, Industry and Country Evidence", World Bank, Washington, D.C., mimeo.
- BIS (Bank of International Settlements) (2001a), "Group of Ten - Consolidation in the Financial Sector" ([www.bis.org](http://www.bis.org)).
- \_\_\_ (2001b), "The Banking Industry in the Emerging Market Economies: Competition, Consolidation and Systemic Stability," Monetary and Economic Department, Paper No. 4 ([www.bis.org](http://www.bis.org)).
- Blommestein, H.J. (1995), "Structural Changes in Financial Markets: Overview of Trends and Prospects", in Organization for Economic Cooperation and Development (OECD), *The New Financial Landscape*, Paris.

- Caprio, G. Jr. and P. Honohan (2000), "Reducing the Cost of Bank Crises: Is Basel Enough?" World Bank, Washington, D.C., mimeo.
- Demirgüç-Kunt, A. and V. Maksimovic (1998), "Law, Finance and Firm Growth," *Journal of Finance* 53.
- Dowers, K., F. Gomez-Acebo and P. Masci (2000), "Making capital markets viable in Latin America," *Infrastructure and Financial Markets Review*, vol. 6, No. 3.
- ECLAC (Economic Commission for Latin America and the Caribbean) (2000), *Growth with Stability: Financing for Development in the New International Context*, Santiago, Chile.
- \_\_\_ (2001), *Economic Survey of Latin America and the Caribbean 1999-2000*, Santiago, Chile.
- EIU (The Economist Intelligence Unit) (2001), *Country Finance: Mexico*, April 2001.
- ESCAP (Economic and Social Commission for Asia and the Pacific) (1999), *Economic and Social Survey of Asia and the Pacific, 1998*, Bangkok.
- \_\_\_ (2000), *Economic and Social Survey of Asia and the Pacific, 1999*, Bangkok.
- Feeney, P. W. (1994), *Securitization: Redefining the Bank*, St. Martin's Press, New York.
- Fischer, S. (2001), "Financial Crisis Management" (www.imf.org).
- Fornari, F. and Levy, A. (1999), "Global liquidity in the 1990s: geographical and long run determinants", Bank for International Settlements (BIS), Conference Papers No. 8 (www.bis.org).
- Gallego, F. and N. Loayza (2001), "Financial Structure In Chile: Macroeconomic Developments and Microeconomic Effects" (www.worldbank.org.).
- Griffith-Jones, S. and S. Spratt (2001), "Will the proposed new Basel Capital Accord have a net negative effect on developing countries?", paper presented at UNU/WIDER project meeting on Capital Flows to Developing Countries since the Asian Crisis: How to Manage their Volatility, Helsinki, October.
- Held, G. and L.F. Jiménez (2001), "Liberalización financiera, crisis y reforma del sistema bancario chileno: 1974-1999", in R. Ffrench-Davis and B. Stallings, eds., *Reformas, crecimiento y políticas sociales en Chile desde 1973*, CEPAL/LOM Ediciones, Santiago.
- IMF (International Monetary Fund) (2000), *International Capital Markets Developments, Prospects, and Key Policy Issues* (by staff team led by Donald J. Mathieson and Gary J. Schinasi), Washington, D.C.
- \_\_\_ (2001), *International Capital Markets Developments, Prospects, and Key Policy Issues* (by staff team led by Donald J. Mathieson and Gary J. Schinasi), Washington, D.C.
- Levine, R. (2000), "Bank-based or Market-based Financial Systems: Which is Better?" Carlson School of Management, mimeo.
- Livacic, E. and S. Sáez (2000), "La supervisión bancaria en América Latina en los noventa", Serie Temas de Coyuntura, No. 10, Comisión Económica para América Latina y el Caribe (CEPAL), Santiago, Chile.
- Lopetegui, G. E. (1996), "Regulación y Supervisión de Liquidez," Banco Central de la República Argentina, Nota Técnica, N° 3.
- Masuyama, S., D. Vandenbrink, and S. Y. Chia, eds. (2000), *East Asia's Financial Systems: Evolution and Crisis*, Nomura Research Institute and Institute of Southeast Asian Studies, Singapore.
- McQuerry, E. (1999), "The Banking Sector Rescue in Mexico," *Economic Review*, Third Quarter, Federal Reserve Bank of Atlanta.
- Norton, J. and E. Aguirre, eds. (1998), *Sistemas bancarios latinoamericanos: reformas recientes y perspectivas*, SELA/Agencia Española de Cooperación Internacional, Caracas.
- Santos, J.A.C. (1998), "Banking and Commerce: How Does the United States Compare to Other Countries?" *Economic Review*, Fourth Quarter, Federal Reserve Bank of Cleveland.
- Stallings, B. and W. Peres (2000), *Growth, Employment, and Equity: The Impact of the Economic Reforms in Latin America and the Caribbean*, Brookings Institution, Washington, D.C.
- Stuart, R. (2001), "Integrating Uneven Partners: the Destabilizing Effects of Financial Internationalization of Latin America," Paper presented at the International Seminar on Dollarization, Kalamazoo College, Kalamazoo, Michigan.
- Stuart, R. and J. Hermann (2001), "Sistemas financeiros no Mercosul: Perspectivas a partir das Reformas dos anos 1990", Texto para Discussão 799, Instituto de Pesquisa Econômica Aplicada (IPEA), Brasília.
- United Nations (1999), *World Economic and Social Survey*, New York.
- World Bank (2001a), *Finance for Growth: Policy Choices in a Volatile World*, Washington, D.C.
- \_\_\_ (2001b), *Global Development Finance*, World Bank, Washington, D.C.
- Yacamán, J. M. (2001), "Competition and consolidation in the Mexican banking industry after the 1995", in Bank for International Settlements (BIS), (2001b).



## **Appendix**

---



The following are definitions of the indexes used in the paper. They were originally created by Barth, Caprio and Levine (2001a) from their data on bank regulation and supervision in 107 countries.

### **Overall Capital Stringency:**

This measure intends to evaluate whether there are explicit regulatory requirements regarding the amount of capital that a bank must have relative to various guidelines. To some degree it captures whether or not regulatory capital is solely an accounting concept or at least partially a market value concept. It is a composite index of five others: (i) the conformity of the minimum required capital-to-asset ratio to the Basle guidelines; (ii) whether the minimum ratio varies with market risk; (iii) whether market value of loan losses is deducted from reported accounting capital; (iv) whether unrealised losses in the securities portfolio are deducted from reported accounting capital, and (v) if unrealised foreign exchange losses are deducted from reported accounting capital. A value of 1 is assigned to each of the above questions if the answer is yes and a 0 otherwise and, in addition, a value of 1 is added if the fraction of revaluation gains that is allowed to count as regulatory capital is less than 0.75 (otherwise, a value of 0 is assigned). It ranges in value from 0 to 6, with higher values indicating greater stringency.

### **Capital Regulation Index (CRI):**

The CRI is the sum of two measures of capital stringency: the overall capital stringency (as already defined) and the initial capital stringency (ICS), which measures whether the source of funds counted as regulatory capital can include assets other than cash or government securities and borrowed funds as well as whether the sources are verified by the regulatory or supervisory authorities. The last index represents the sum of the following indexes: (i) whether initial and subsequent infusions of regulatory capital include assets other than cash or government securities; (ii) whether the initial infusion of capital is based on borrowed funds; (iii) whether the sources of funds that count as regulatory capital are verified by the regulatory or supervisory authorities. A value of 1 is assigned for negative answers to questions (i) and (ii) (otherwise, values of 0 is assigned). A value of 1 is assigned to a positive response of question (iii). This means that ICS may range from a low of 0 to a high of 3, with a higher value indicating greater stringency, and CRI can vary from 0 to 9, with a higher value indicating greater stringency.

### **Overall Bank Activities and Ownership Restrictiveness:**

This variable measures the overall degree to which banks are permitted to engage in securities, insurance and real estate activities as well as to own nonfinancial firms. It ranges in value from 1 to 4. The lowest value indicates that no restrictions are placed on this type of diversification by banks, whereas the highest value indicates that such diversification is prohibited.

### **Official Supervisory Power:**

This index measures the authority of the supervisory authorities to take specific actions to prevent and correct problems. It is based upon yes or no responses to 16 questions. A value of 1 is assigned to a “yes” answer, 0 to a “no” answer, so that the index varies from 0 to 16, with a higher value indicating more power.

- (1) Can supervisors meet with any external auditors to discuss their reports without bank approval?
- (2) Are auditors legally required to report any misconduct by managers or directors to the supervisory authorities?

- (3) Can the supervisory authorities take legal action against external auditors for negligence?
- (4) Can the supervisory authorities force a bank to change its internal organisational structure?
- (5) Can the deposit insurance agency take legal action against bank directors or officers?
- (6) Are off-balance sheet items disclosed to the supervisory authorities?
- (7) Does failure to abide by a cease-desist type order lead to the automatic imposition of civil and penal sanctions on the directors and managers of a bank?
- (8) Can the supervisory authorities order a bank's directors/managers to provide provisions to cover actual or potential losses?
- (9) Can the supervisory authorities suspend the directors' decision to distribute dividends?
- (10) Can the supervisory authorities suspend the directors' decision to distribute bonuses?
- (11) Can the supervisory authorities suspend the directors' decision to distribute management fees?
- (12) Can the supervisory authorities supercede shareholder rights and declare a bank insolvent?
- (13) Can the supervisory authorities suspend some or all ownership rights of a problem bank?
- (14) Regarding bank restructuring and reorganisation, can the supervisory authorities supercede shareholder rights?
- (15) Regarding bank restructuring and reorganisation, can the supervisory authorities remove and replace management?
- (16) Regarding bank restructuring and reorganisation, can the supervisory authorities remove and replace directors?

### **Prompt Corrective Action:**

This index determines whether a law establishes predetermined levels of bank solvency deterioration which forces automatic enforcement actions such as intervention. If this is indeed the case, a value of 1 is assigned; 0 otherwise; then it is multiplied by the value of answers (4), (7), (8), (9), (10) and (11) as described in the Official Supervisory Power. It may range from 0 to 6, with a higher value indicating greater promptness in responding to problems.

### **Restructuring Power:**

This index establishes whether the supervisory authorities have the power to restructure and reorganise a troubled bank. It is the sum of (14), (15) and (16) as described above. It may range in value from a low of 0 to a high of 3, with a higher value indicating more power.

### **Declaring Insolvency Power:**

This index shows whether the supervisory authorities have the power to declare a deeply troubled bank insolvent. It is the sum of (12) and (13) as described above. It may range in value from 0 to 2, with a higher value indicating greater power.

### **Supervisory Forbearance Discretion:**

This index captures the degree of discretion of supervisory authorities to engage in forbearance when confronted with violations of laws or regulations or with other imprudent behaviour on the part of banks. It is a sum of the following answers (yes = 1 ; no = 0); it may therefore range in value from 0 to 4, with a higher value indicating less discretion.

- (1) Regarding bank restructuring and reorganisation, can the supervisory authorities or any other government agency refrain from imposing certain prudential regulations?

- (2) Are there predetermined levels of solvency deterioration that force automatic actions, such as intervention?
- (3) Must infractions of any prudential regulations be reported?
- (4) With respect to (3), are there any mandatory actions to be taken in these cases?

### **Private Monitoring Index:**

This index captures the extent to which market or private “supervision” exists in different countries. The private monitoring index is the sum of (1), (2), (3), and (4). In addition, three other measures are included in the index based on ‘yes or no’ answers. Specifically, a 1 is assigned if off-balance sheet items are disclosed to the public, if banks must disclose risk management procedures to the public, and if subordinated debt is allowable (required) as a part of regulatory capital. This index therefore ranges from 0 to 7, with higher values indicating more private oversight.

- (1) Is an external audit of the financial statements of a bank required and, if so, must it be done by a licensed or certified auditor? Such an audit would presumably indicate the presence or absence of an independent assessment of the accuracy of financial information released to the public. If both factors exist a 1 is assigned; 0 otherwise;
- (2) What percentage of the top 10 banks are rated by international credit rating agencies? The greater the percentage, the more the public may be aware of the overall condition of the banking industry as viewed by an independent third party. If the percentage is 100, a 1 is assigned; 0 otherwise.
- (3) Does the income statement include accrued or unpaid interest or principal on nonperforming loans, and are banks required to produce consolidated financial statements, including nonbank financial affiliates or subsidiaries? The release of this type of information or its absence affects the ability of private agents to monitor and hence influence bank behaviour. Also, are bank directors legally liable if information disclosed is erroneous or misleading? If all three factors exist, a 1 is assigned; 0 otherwise;
- (4) Is there an explicit deposit insurance scheme, and were depositors wholly compensated the last time a bank failed? A negative response would indicate more private monitoring. If both answers are no, a 1 is assigned; 0 otherwise.





Serie

## macroeconomía del desarrollo

### Issues published

1. The Impact of Structural Reforms on Growth in Latin America and the Caribbean: An Empirical Estimation, Hubert Escaith and Samuel Morley (LC/L.1446-P), N° de venta E.00.II.G.123 (US\$ 10.00), 2000. [www](#)
2. Modernización económica y empleo en América Latina. Propuestas para un desarrollo incluyente, Tilman Atenburg, Regine Qualmann y Jürgen Weller (LC/L.1512-P), N° de venta S.01.II.G.55 (US\$ 10.00), 2001. [www](#)
3. Exportaciones de manufacturas de América Latina: ¿Desarme unilateral o integración regional?, José Miguel Benavente, (LC/L.11523-P), N° de venta S.01.II.G.66 (US\$ 10.00), 2001. [www](#)
4. Globalization and Liberalization: The Impact on Developing Countries, Barbara Stallings, (LC/L.1571-P), N° de venta E.01.II.G.114 (US\$ 10.00), 2001. [www](#)
5. Job Creation in Latin America in the 1990s: The Foundation for Social Policy, Barbara Stallings and Jürgen Weller (LC/L.1572-P), N° de venta E.01.II.G.115 (US\$ 10.00), 2001. [www](#)
6. Procesos de exclusión e inclusión laboral: la expansión del empleo en el sector terciario, Jürgen Weller, (LC/L.1649-P), N° de venta S.01.II.G.187 (US\$ 10.00), 2001. [www](#)
7. Tributación ambiental, macroeconomía y medio ambiente en América Latina: aspectos conceptuales y el caso de Brasil, Ronaldo Seroa da Motta, (LC/L.1650-P), N° de venta S.01.II.G.188 (US\$ 10.00), 2001. [www](#)
8. Long Run Economic Development in Latin America in a Comparative Perspective: Proximate and Ultimate Causes, André A. Hofman, (LC/L.1665-P), N° de venta S.01.II.G.199 (US\$ 10.00), 2001. [www](#)
9. Financial Regulation and Supervision in Emerging Markets: The Experience of Latin America since the Tequila Crisis, Barbara Stallings and Rogerio Studart, (LC/L.1670-P N° de venta E.01.II.G.205 (US\$ 10.00), 2001. [www](#)

- 
- Readers wishing to obtain the above publications can do so by writing to the following address: ECLAC, Economic Development Division, Casilla 179-D, Santiago, Chile. Some issues may not be available.
  - Publications available for sale should be ordered from the Distribution Unit, ECLAC, Casilla 179-D, Santiago, Chile, Fax (562) 210 2069, [publications@eclac.cl](mailto:publications@eclac.cl).
  - [www](http://www.eclac.cl): These publications are also available on the Internet: <http://www.eclac.cl>.

Name: .....

Activity: .....

Address: .....

Postal code, city, country: .....

Tel.: ..... Fax: .....

E-Mail: .....