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Building Stability in Latin American Financial Markets

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by Liliana Rojas-Suarez and Steven R. Weisbrod

I. Introduction

Two prominent characteristics of Latin American financial systems are that financial assets have short maturities and that funds flows through these systems are highly volatile. In this environment, small economic shocks often become amplified into large crises. For example, if problems in a banking system in the region emerge, investors' lack of confidence generates both significant withdrawals of private funds from banks and a reduction in the official sector's access to capital markets to a much greater extent than a similar crisis in an industrial country. Hence, authorities cannot raise the funds to resolve the banking crisis quickly, causing a further deterioration in investor confidence.

In addition, the volatility of financial flows may undermine economic policy objectives, such as the achievement of inflation rate and exchange rate targets. Volatility and short-term financial assets also affect long-run policy objectives: they make it difficult to finance long-term investment projects, which can severely impede economic development.

A number of policy tools have been proposed and applied to cope with the problems Latin American countries face as a result of the short-term maturity of financial assets and funds flow. Among these are policies designed to alleviate potential illiquidity problems in financial systems dominated by short-term securities. Prominent among these is placing high reserve requirements on bank deposits. A second set of policies, such as the encouragement of capital markets, seek to transform financial assets and liabilities from short-term into long-term maturities.

This paper argues that investor reluctance to make long-term commitments to Latin American financial markets results from experience: in the 1980s, while ex ante real interest rates on Latin American financial assets were usually high, ex post real interest rates were often highly negative. In the 1990s, policymakers, realizing that reforms designed to reduce the vulnerability of Latin American financial markets cannot succeed until investors gain confidence that the real value of their long-term investments is protected, instituted stabilization programs and structural reforms that have improved the environment in which financial markets operate. However, investors will remain skeptical of committing significant amounts of long-term funds to Latin American markets until they are assured that their contractual rights are protected. Reforms still necessary to provide these assurances include improving accounting and legal standards so that investors can evaluate borrowers' financial conditions. Financial crises, such as those currently occurring in several Latin American countries, provide opportunities to reform these standards. Based on a review of experiences in the region, this paper shows that, when these opportunities are taken, investor confidence in long-term markets is strengthened.

A necessary step in building confidence in the real value of long-term assets is that investors observe that short-term markets work efficiently. This requires the emergence of a banking system that is sound enough to withstand a financial crisis. When investors, motivated by concerns about the real value of long-term financial assets, decide to sell, they have two options. The first is to sell domestic securities and attempt to buy foreign securities. The second is to sell domestic securities and move into domestic bank deposits. If investors have enough confidence in the domestic bank system for the latter to occur, the damaging effects of capital flight can be avoided. The banks then have the option of supporting securities markets by purchasing securities or financing dealers and issuing bank deposits or by permitting the prices of securities to decline and replacing new securities issues with bank loans until firms regain access to long-term markets.

The paper is organized as follows. Section II indicates that, in the past, investors in Latin America have suffered real losses in their financial wealth. Consequently, Latin American institutional investors hold shorter term portfolios than those in industrial countries to provide an option to withdraw funds quickly during periods of economic uncertainty. It demonstrates that, as conventional wisdom would imply, this leads to higher volatility in financial markets -- particularly in the deposit market. This section argues that financial market volatility is related to remaining problems in accounting and legal systems in the region.

Thus, the stage is set for reform proposals, two of which will be discussed in Section III. One proposal to control the impact of short-term investment on the economy is to ensure that the financial system maintains a high degree of international liquidity. A common device to achieve liquidity is to impose reserve requirements on deposits and place the resulting funds in international liquid assets. This section evaluates the effectiveness of high reserve requirements in making financial systems more liquid. It concludes that, under certain circumstances, reserve requirements can provide a source of international liquidity that can be used to reduce the impact of volatile capital flows on the banking system and on the economy. However, even when effective, reserve requirements have a cost. They penalize strong banks that can maintain sufficiently liquid portfolios without reserve requirements. A second proposal, improved bank supervision, avoids this problem. If bank supervision can be made effective, the growth of loan portfolios at weak banks can be controlled without impinging on the growth rates of loan portfolios at strong banks.

An alternative solution to policies that force the financial system to be more liquid is to encourage capital markets as a source of long-term funds to the economy. If investors hold long-term assets, if markets dry up, they cannot easily flee in a crisis, and, if markets remain active, they suffer a capital loss. Section IV investigates the question of whether policies to encourage capital markets development in Argentina, Chile, Mexico, and Peru -- dollarization, indexation, and institutional development -- have been effective. It concludes that diverse capital markets can emerge only after investors have gained full trust in the banking system. As the Chilean experience indicates, investor confidence in long-term markets can be achieved once they have observed that a banking system can successfully weather a severe banking crisis.

Section V discusses whether the current state of development of capital markets in Latin America poses a threat to the profitability of banks in the region. The evidence shows that, in Latin America, these markets are not competitors to banks and therefore do not increase deposit costs or weaken the quality of bank balance sheets, as is the case in the U.S. Short-term capital markets in Latin America are limited to government securities and become quite illiquid when credit conditions are tight. Finally, Section VI concludes the paper.

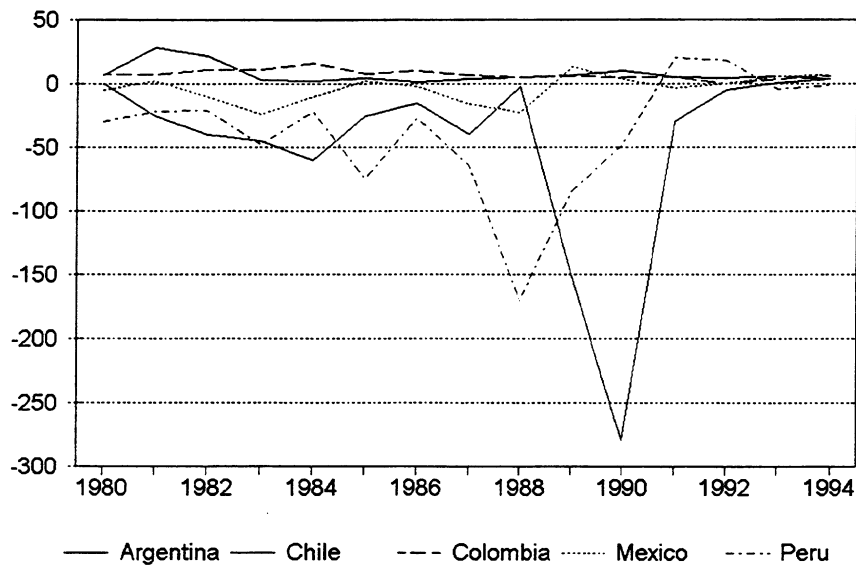
II. Understanding Financial Volatility in Latin America

It is a well-documented fact that Latin American financial markets are highly volatile.¹ Investors hold short-term assets and withdraw their funds from the market at the first sign of economic problems. Investor behavior thus often magnifies economic problems into economic crises. An important factor motivating investor behavior is that ex post returns on financial assets have often been highly negative in Latin America. Investors have reacted to this by holding short-term financial assets that provide them with the option of withdrawing capital quickly when economic uncertainty increases.²

In regard to ex post real interest rates, Charts 1a and 1b plot short-term bank time deposits rates for selected Latin American and industrial countries. The data indicate that, over the last decade and a half, ex post real returns have behaved radically different across the two sets of countries. In Latin America, they have often been highly negative whereas in industrial countries they have mostly been positive.

Chart 1a

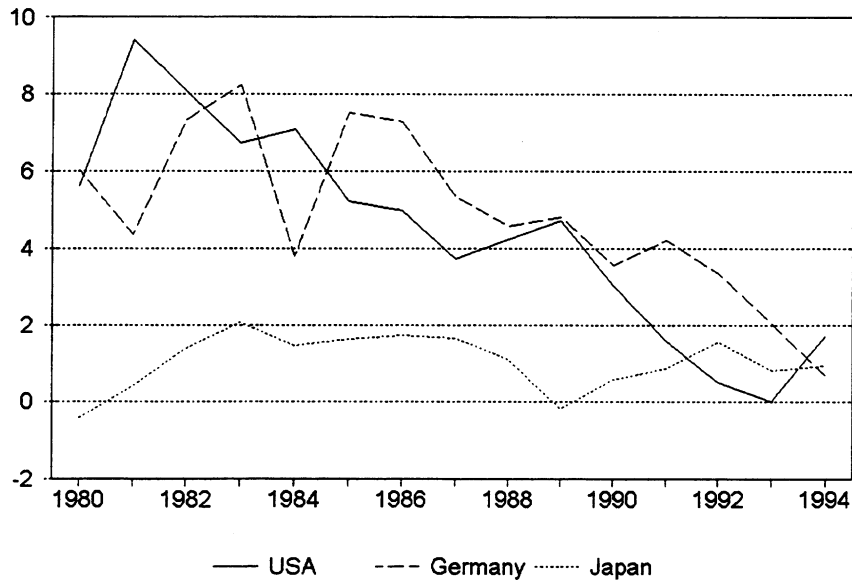
LATIN AMERICA Real Interest Rates in Percent



¹ See, for example, Rojas-Suarez and Weisbrod (1995a).

² As suggested in the introduction, policymakers have made substantial strides in making reforms that improved investor confidence in the 1990s.

Chart 1b
INDUSTRIAL COUNTRIES
 Real Interest Rates in Percent

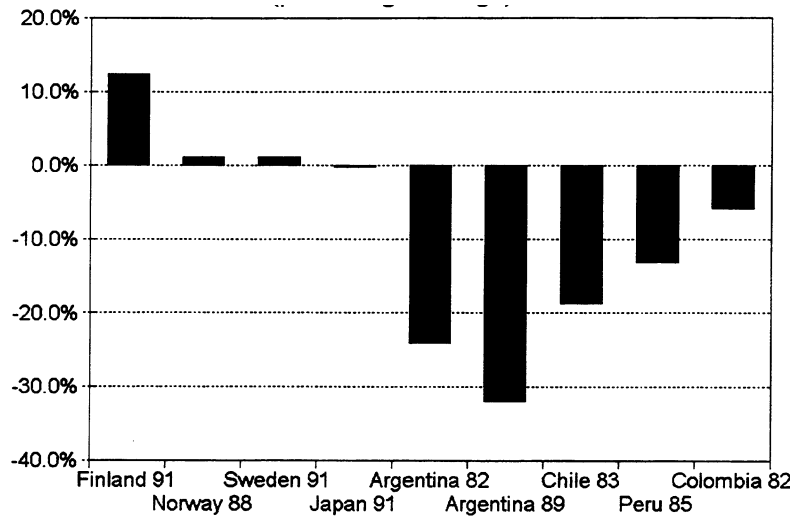


The asset portfolios of institutional savers in the region reflect investors' preference for short-term assets. With the exception of Chile, where pension and insurance funds account for 44 percent of institutional savings, in Latin America, depository institutions -- banks and savings institutions issuing deposit-like liabilities -- are the only major vehicles for domestic institutional savings. In contrast, in the United States, there is a wide diversity of financial institutions, and deposits make up less than one third of the liabilities of all financial institutions. Pension reserves, insurance reserves, and mutual fund shares make up the remaining two thirds of financial institution liabilities. The bulk of the assets held by these institutions are equities and long-term public and corporate bonds.

The U.S., and to a lesser extent the U.K., however, are fairly unique among countries in having such a diversified institutional structure. In contrast, in Germany and Japan, financial institutions are primarily depository institutions, as in Latin America. However, the depository institutions in these two countries are major issuers of longer term, non depository liabilities as well. For example, in Germany, 45 percent of the liabilities of depository institutions are long- and medium-term bonds. In Japan, 34 percent of the liabilities of the financial system are classified as insurance reserves, trust accounts, or bonds, despite the fact that depository institutions, including postal savings, account for 75 percent of financial assets of financial institutions. Thus, despite apparent institutional similarities between Latin American markets and markets in some industrial countries, the liabilities of Latin American financial institutions are much more short-term oriented.

That investors in Latin America have chosen the option of disinvesting quickly when uncertainty increases is demonstrated by examining investor reaction to banking crises in Latin America versus in industrial countries. In Latin America, when investors begin to perceive a deterioration in the asset portfolio of the banking system, they withdraw deposits; in contrast, in industrial countries experiencing banking crises, investors are willing to hold their deposits in banks, even though bank balance sheets have deteriorated. These facts are documented in Chart 2, which displays the change in deposits as a percent of GDP during the early stages of a banking crisis for Latin American markets and selected industrial markets. Whereas deposit to GDP ratios decline sharply in Latin America, they hardly change or even increase in several industrial countries.

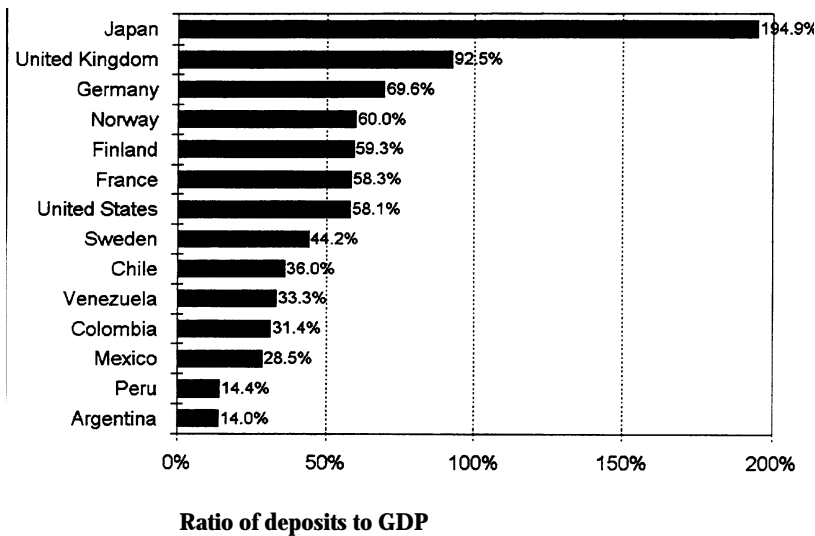
Chart 2
DEPOSITS TO GDP ON THE EVE OF CRISES
 (percentage change)



Note: Includes Deposit Banks only
 Source: IMF International Financial Statistics

The uncertainty surrounding ex post real returns also results in a low level of financial intermediation relative to GDP. As indicated in Chart 3, even though the liabilities of financial institutions are primarily deposits in Latin America, the percentage of deposits to GDP is substantially lower in the region than in selected industrial countries.

Chart 3
DEPOSITS IN THE BANKING SECTOR, 1993
 (Percent of GDP)



In spite of progress toward reforming financial systems, depositors in Latin America respond to economic uncertainty by withdrawing their funds partly because the legal and accounting frameworks governing financial markets provide investors with less protection than those in industrial countries, such as evaluation of borrower financial conditions and executing claims against borrowers in default. An example of the unreliability of accounting standards is presented in Table 1, which depicts loan loss reserve to loan ratios in several Latin American countries and the U.S. prior to banking crises. Latin American loan loss ratios were very similar to those for large banks in the United States, despite the fact that bank portfolios in Latin America proved to be far more vulnerable to a banking crises than large banks in the U. S. An example of the inadequacy of legal standards is illustrated by the fact that, in Mexico, movable property, such as inventory, cannot legally be used as collateral on short-term business loans. Hence, banks must charge for inventory

lending as it were an unsecured loan.

Table 1			
Loans Loss Reserves to Loans			
Dates	Country	Banking Segment	Loan Loss Reserves to Loans
1982	Chile	Domestic Private	4.17
1994	Argentina	Small Private	4.34
1994	Mexico	Government Assisted	4.39
1989	United States	Ten Largest	4.36

Legal and accounting shortcomings are sometimes exacerbated by policy uncertainties, which have, in the past, caused investors to suffer large losses in real wealth. Hence, building investor confidence in the region is not an easy task. It not only requires the implementation of stabilization policies and structural reforms that improve the functioning of financial markets, but also requires providing investors with reassurances that the direction of economic policies will not change if a sudden adverse shock occurs.

III. Dealing with Financial Market Volatility: Reserve Requirements vs. Supervision

Policymakers can attempt to deal with volatility by accepting the short-term nature of their financial systems and dealing with the consequences by attempting to make them more liquid, or they can attempt to increase the maturity of the liabilities of the financial system. This section discusses policies designed to increase banks' ability to meet sudden deposit outflows by increasing the liquidity of bank balance sheets. This can be done either by increasing reserve requirements on banks or by tightening bank supervision to make bank asset portfolios more liquid. The recent experiences of Argentina and Mexico in 1995 will be used to compare the effectiveness of these two alternative policies. The section concludes that imposing high reserve requirements on banks can be effective in dealing with bank runs but that they do not deal with the underlying causes of instability. Hence, they do not provide a long run solution to the problems created by volatility. Improved bank supervision, however, attacks the causes of lack of investor confidence, such as inadequate accounting and legal standards, and hence paves the way for the development of longer term financial markets, a subject treated in the next section.

1. Evaluating High Reserve Requirements

It has been argued that, in cases where the banking system is weak and reliable supervisory procedures are not in place, reserve requirements can play a role in providing a cushion to protect banks from sudden withdrawals of funds.³ Signals in the incapacity of borrowers to repay bank loans leads to large withdrawals of deposits in banking systems perceived to be weak. Ensuring the adequacy of available liquidity to meet these withdrawals may, therefore, contribute to financial stability. Reserve requirements can provide this liquidity, especially if the funds derived from reserve requirements are placed in US dollars. The recent episode of banking difficulties in Argentina provides an example of a country following this policy.⁴

Authorities in Argentina placed relatively high reserve requirements on their banks during the recent period of capital inflows (1991-1994). The funds generated by these reserve requirements were invested in foreign currency liquid assets, such as bank deposits in New York or US Treasury bills, either by the central bank or directly by the banks. A major objective of this policy was to provide a pool of liquid assets by which banks could meet sudden deposit withdrawals, thus minimizing the need to shrink the loan portfolio.

Evidence indicates reserve requirements played this role in Argentina during the banking crisis in early 1995. Before the crisis had begun, investors had identified groups of banks that were particularly weak relative to the system as a whole. Prominent among these was large banks owned by provinces and municipalities.⁵ As indicated in Table 2a, between November 1994 and March 1995, these banks lost 15 percent of their liabilities, after interest credited. Over 70 percent of this loss was financed by a decline in liquid assets, which fell by 68 percent. The central bank accommodated the decline in liquid assets by lowering reserve requirements on deposits. Thus, it can be argued that high reserve requirements permitted weak banks to withstand deposit withdrawals without liquidating large numbers of loans that would have forced borrowers into bankruptcy.

Table 2
Argentine Banks: Selected Balance Sheet Items
First Quarter, 1995

³ Reserve requirements invested in foreign assets can also be viewed as a macro economic tool to provide a pool of funds to protect the exchange rate in a period of capital flight.

⁴ Some theoretical reasons considerations for the use of such policies are contained in Fernandez and Guidotti (1994).

⁵ See Rojas-Suarez and Weisbrod (1995b).

2a. Large Provincial Banks		
	Nominal Growth, Net of Interest Credited (%)	Change in Item/Change in Liabilities (%)
Liabilities	-15.0	Na
Liquid Assets	-67.9	71.5
Loans	-6.7	35.2
2b. Large Private Banks		
Liabilities	-1.2	Na
Liquid Assets	-5.4	-65.5
Loans	-4.6	294.6

While reserve requirements in this particular incident served their designed purpose, it must be noted that reserve requirements can be evaded by the banks themselves, or they can be undermined by other policy objectives.⁶ In addition, as will be discussed further below, reserve requirements impose costs on banks and their customers if banks are forced to hold more liquid assets than they would desire in the absence of reserve requirements. As a result, banks have incentives to avoid reserve requirements by, for example, booking domestic business in off shore branches. This has been a common practice in Colombia and Costa Rica. Banks can also borrow and lend short-term funds in markets, such as mesa de dinero markets, that do not appear on their balance sheets and are, therefore, unconstrained by reserve requirements.

The intent of reserve requirement policy to provide international liquidity to the financial system can be undermined if the government or the central bank issues substantial amounts of short-term paper that is not held on the balance sheets of banks.⁷ If a loss of confidence in the domestic financial system causes investors holding this paper to attempt to flee the market at the same time bank depositors are leaving the banking system, international assets generated from placing reserve requirements on bank deposits may be inadequate to cover the demand for international reserve assets generated by the sale of government paper and the withdrawal of bank deposits.

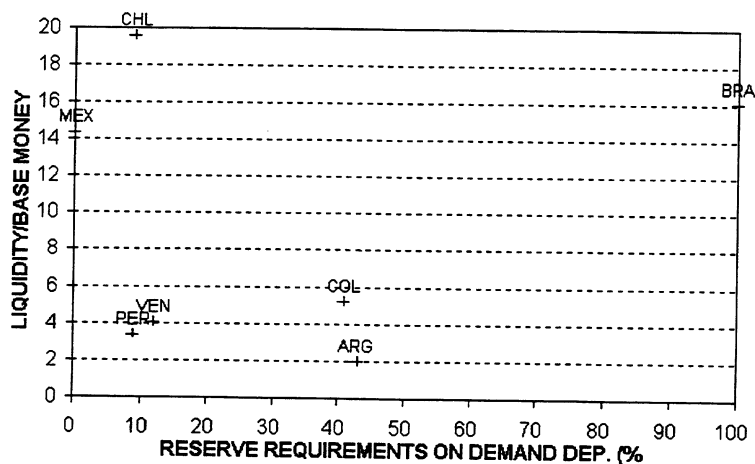
Since reserve requirements are part of the monetary base, countries imposing high reserve requirements on bank deposits should experience a low ratio of liquid financial assets to monetary base, unless non deposit securities make up substantial portion of liquid assets. As indicated in Chart 4, which plots the ratio of liquid assets to monetary base against reserve requirements on sight deposits for a group of Latin American countries, this seems to be the case in many Latin American countries. For example, based on the Chart, in 1994, the ratio of liquidity to monetary base was highest for two countries with very different reserve requirement policies: Chile, with very low reserve requirements, and Brazil, with one hundred percent reserve requirements. In both of these countries, governments and related parties are major issuers of short-term securities.

⁶ Further discussion of this issue is contained in Rojas-Suarez and Weisbrod (1995c).

⁷ In many Latin American countries where capital markets for private paper remain undeveloped, markets for short-term government paper flourish.

Chart 4

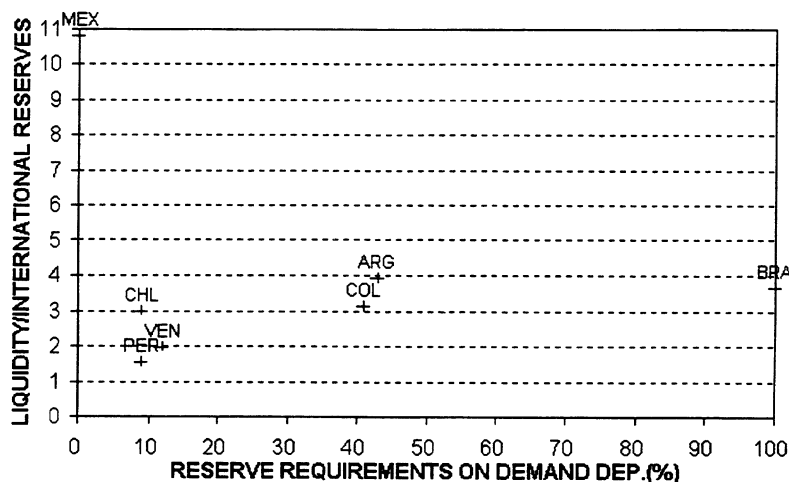
LIQUIDITY TO BASE MONEY VS RESERVE REQUIREMENTS ON DEMAND DEPOSITS, 1994



Even if bank deposits account for most liquid assets, reserve requirements cannot provide protection in a banking crisis unless the funds generated by the requirement are, in fact, invested in international reserve assets. This has not always been the case in Latin America since these funds are an attractive means of financing domestic projects cheaply. As indicated in Chart 5, which plots the ratio of liquidity to international reserves against reserve requirements on demand deposits for selected Latin American countries, there is no clear indication that high reserve requirements lead to low ratios of liquid assets to international reserves. While Mexico in 1994 fit the predicted pattern, there is no relationship for the rest of the countries. For example, Chile, with very low reserve requirements displays a similar ratio of liquidity to international reserves as Colombia, with high reserve requirements, and Brazil, with the highest reserve requirement ratio among countries in the sample.

Chart 5

LIQUIDITY TO INTERNATIONAL RESERVES VS RESERVE REQUIREMENTS ON DEM. DEP., 1994



2. Supervision as a Substitute for Reserve Requirements

Reserve requirements, even when effective in providing liquidity to banks, have another drawback that works against their role of stabilizing the domestic financial system: they are applied equally to weak and strong banks. A strong bank has a comparative advantage in maintaining liquidity by making sound credit judgments and ensuring that its borrowing customers remain liquid. Thus, by forcing a strong bank to hold more liquid assets than it needs, given the liquidity of its loan portfolio, a high reserve requirement policy taxes strong banks in favor of weak ones.

The negative impact of a high reserve requirement policy on strong banks is illustrated in the second panel of Table 2, which presents data on changes in the first quarter 1995 balance sheets of large private banks in Argentina, the strongest institutions in the financial system. During the crisis, these banks lost about 1.2 percent of their liabilities after interest credited, substantially less than the 15 percent lost by weak banks. Only 25 percent of this decline was covered by divestiture of liquid assets, which fell by about 5.4 percent, again, substantially less than the 68 percent decline at weak banks. Thus, these data suggest that strong banks did not need to hold as many liquid assets as weak banks to survive the crisis. A policy that forces both classes of banks to hold the same liquidity ratios, therefore, taxes strong banks, reducing their ability to expand their balance sheets.

A possible alternative for maintaining weak bank liquidity in a crisis without punishing strong banks with high reserve requirements is effective bank supervision aimed at controlling the growth of risky banks. One method of controlling the expansion of risky liabilities is enforcement of high capital to asset ratios, but without adequate supervision, this tool, like reserve requirements, may lose its effectiveness. The reason is that banks accumulate capital through retained earnings. A weak bank can create accounting earnings by capitalizing unpaid interest on non performing loans into new loans. Thus, it can generate retained earnings and high capital ratios, even though its loan portfolio is not earning cash flow.

Effective supervision can identify this practice and prevent capitalization of unpaid interest, which will reduce bank earnings. In addition, alert supervisors can force banks with non performing loans to increase their reserves for loan loss. Since these banks are not likely to have sufficient profits to place in the loan loss reserve account, they will be forced to transfer funds from the capital account, which reduces the capital to asset ratio and restrains credit growth.

Good supervision requires an intimate knowledge of how individual institutions operate. First, supervision can only be effective in an environment in which banks are required to report using uniform, detailed accounting standards. Second, supervisors must determine whether the behavior of a particular bank appears consistent with the accounting data it presents.⁸

There are three advantages to relying on supervisory techniques rather than reserve requirements to control the growth of risky credit. First, the problem of evasion inherent in a high reserve requirement policy is avoided. Second, supervisors can focus policy costs on weak banks, thus avoiding a tax on strong banks to maintain liquidity at the weak ones. Third, the development of sound banking practices is encouraged through improvements in accounting standards and managerial know how. Thus, building credible supervision can set the stage for eventual development of longer term financial markets.

That this can be an effective tool is demonstrated in Table 3, which presents growth rates in loan portfolios net of interest credited in Mexico during the first six months of 1995, the period immediately after the inception of severe banking problems in that country. The data discriminate between strong banks and banks that required capital infusions immediately before and during the crisis. If supervision is to be effective, supervisors must prevent weak banks from capitalizing interest payments on non performing loans into new loans. One measure of whether this was done during the first half of 1995 is to determine whether the rate of growth of loan portfolios at weak banks was below the rate of interest received on those loans. As indicated in the Table, loan portfolios, net of interest credited, declined by about 28 percent annualized at weak banks and by about 21 percent annualized at strong banks.⁹ This compares with positive growth rates in the loan portfolios net of interest credited of weak banks in 1994 equal to 21 percent and 10 percent at strong banks.

Annualized Loan Growth Rates at Mexican Banks Net of Interest Credited		
	1994	1995 first half
Strong Banks	10.0	-21.9
Weak Banks	26.5	-28.8

After the inception of the crisis, supervisors in Mexico were able to control the growth of loans at weak banks by enforcing capital-risk-weighted-asset standards, which were not rigorously enforced before the crisis. They did this by increasing loan loss requirements to non performing loans to 60 percent of non performing loans. This resulted in a decline in capital at banks with inadequate earnings to cover the necessary increase in reserves, which forced these banks to restrain the growth in risky assets.¹⁰

Thus, the Mexican experience demonstrates that, when supervision is effective, policymakers can restrain the growth of weak banks while permitting strong banks to expand their balance sheets. Hence, they need not rely on policies, such as reserve requirements,

⁹ A small portion of the decline at weak banks can be explained by loan sales to the deposit insurance agency.

¹⁰ It should be noted that, in contrast to Argentina, during the first 6 months of 1995, weak banks in Mexico experienced only minor losses in deposits. Since weak banks divested loans after interest credited and they did not face deposit withdrawals, they had spare cash to invest, which they placed in securities and liquid assets. This indicates that depositors maintained enough confidence in the banking system to prevent massive deposit withdrawals from weak banks. Mexico has a deposit insurance scheme, which might be one reason why confidence remained high. However, if investors did not believe that the banking system can survive the crisis, they would not have faith in the deposit insurance system.

that restrain the growth of both good and bad banks.

IV. **Dealing with Financial Market Volatility: Building Long-term Capital Markets**

The question has been raised in the debate over reducing the volatility of Latin American financial systems whether it is preferable to reduce the role of the banking system by fostering the development of long-term capital markets rather than to attempt to strengthen the banking system by improving supervision. This section investigates whether policies can be instituted to encourage the growth of capital markets and examines the preconditions for the development of these markets. As the analysis will demonstrate, it is unrealistic to view the development of capital markets as a substitute for the pursuit of policies that build a strong banking system because long-term capital markets cannot flourish until investors have confidence in the banking system.^{11 12}

The section first considers the current state of capital markets development in Latin America. It then discusses whether policy measures, such as dollarization, indexation, and pension fund reform, have been successful in developing capital markets. The Chilean experience is used to substantiate the conclusion that these policies cannot succeed unless investors first gain confidence in the short-term liabilities issued by banks.

1. **The State of Capital Market Development in Latin America**

Table 4 presents the composition of capital markets instruments traded in Argentina, Brazil, Chile, Colombia, Mexico, and Peru. A cursory view of this Table would suggest that a wide variety of capital markets instruments are already available in Latin America. However, it must be noted that, with the exception of Chile, virtually all fixed income and money market instruments traded are government and government-related paper.¹³

	Argentina	Brazil	Chile	Colombia	Mexico	Peru
Stocks	34.3	53.3	6.1	8.1	4.1	76.6
Money Market	0.3		40.6	74.2	64.2	23.4
Fixed Income	60.2		53.2	17.1	31.7	
Futures & Options	5.1	46.2				
Other		0.4	0.1	0.5		
Total	100.0	100.0	100.0	100.0	100.0	100.0
Note: Data for Brazil and Mexico correspond to November 1994. Data for Argentina are for the first nine Months of 1995.						

Thus, with the exception of Chile, equity markets are the only active capital markets available to private firms in Latin America. Table 5 presents the ratio of new equities issued in 1993 and 1994 relative to the growth in private domestic credit for seven Latin American countries. It indicates that only in Argentina and Chile were equity issues a significant portion of domestic credit raised. However, in Argentina, the high figure is the result of a major privatization of YPF, the formerly public petroleum, which must be considered an exceptional case, as privatization is a once and for all event. Hence, based on Tables 4 and 5, we can conclude that only in Chile are capital markets instruments a substantial source of funds for private borrowers, and only in this market are fixed income securities a major option for private borrowers.¹⁴

Argentina	46.2
Brazil	0.8
Chile	27.0
Colombia	0.2
Mexico	12.0

11 It must be noted that if investors gain faith in the banking system, the banking system itself can serve as the source of long-term credit, as the example of Germany suggests.

12 A similar conclusion has been reached by Blommestein and Spencer (1993) in the context of the transition economies.

13 In Argentina, which has a substantial percentage of trading in fixed income securities, a few private firms, such as utilities, natural resource companies, and banks, issue negotiable securities. However, trading in private bonds and negotiable instruments is negligible, less than one percent of Bolsa trades, and, therefore, trading in these markets is overwhelmingly in government paper.

14 When measured by market capitalization, equity markets appear larger than their banking systems in several Latin American countries. This is not because equity issuance plays a large role in private credit markets but because capital gains on outstanding equity have been large. Thus, it is more appropriate to measure the role of equity finance by considering the new issues market.

Peru	4.8
Venezuela	0.6
Note: Final date in 1994 varies depending on data availability	

2. Policies to Build Capital Markets in a Volatile Macroeconomic Environment

It has often been remarked that one of the reasons of the lack of development of corporate bond markets in Latin America is that the economic environment has been too unstable to write long-term debt contracts. The argument is that, although inflation in Latin America has been significantly reduced since the early 1990s, the experience over the last decade is that inflation in the region has often been highly variable.¹⁵ In this environment investors are unwilling to hold long-term nominal contracts.

It might seem that this problem could be overcome by issuing floating rate debt denominated in domestic currency, which would be domestic currency equivalent to a US dollar floating rate bond with an interest rate that floats, for example, at 50 basis point over 6 month LIBOR. If the inflation rate in domestic currency reaches hyperinflation levels, the real value of the principal of the bond will drop precipitously. The investor will be compensated by an increase in the bond's interest rate to hyperinflation levels. However, at this point, the bond effectively becomes a short-term instrument, since most of the real value of the principal is paid off in interest. Hence, issuing floating rate domestic currency debt is like issuing a short-term bond if high inflation ensues.

The problem described above could be overcome through indexation or dollarization. Indexation is the process by which the principal of debt contracts is indexed to a price index. Thus, when the inflation rate increases, the nominal value of the debt contract increases as well. In addition, the debt contract pays a real interest rate that is invariant to the inflation rate. In this way, the real value of the debt contract does not decline with the inflation rate.

A variant of indexation is dollarization. By denominating debt in US dollars, which, relative to many Latin American currencies, is a currency with low inflation risk, the borrower is not forced to liquidate the real value of his debt when domestic currency inflation increases dramatically.

Thus, if fear of high and variable inflation were the only factor in preventing the development of capital markets in Latin America, the remedies would seem to be relatively simple. Indeed casual consideration of Chile's experience in developing long-term capital markets would suggest that indexation is instrumental in creating conditions where these markets can flourish. However, Argentina has a highly developed system of dollarization and is yet to be successful at developing the depth of capital markets existing in Chile. For example, in Argentina, about 54 percent of bank deposits are dollar denominated, compared with 48 percent of bank deposits in Chile that are either indexed or dollar denominated. Also, it is interesting to note, that many of the long-term government bond issues traded on the Buenos Aires Bolsa are peso rather than dollar denominated.

In Peru, over 60 percent of bank deposits are denominated in U.S. dollars; yet, based on Tables 4 and 5, Peru has one of the least developed capital markets among major Latin American countries. Equities dominate securities trading to a much greater extent than in other Latin American countries (Table 4); yet, in 1994, new equity issues were less than 5 percent of the increase in private domestic credit (Table 5).

Another factor suggesting that establishing indexation is not the crucial element in the development of long-term capital markets is that, in the absence of official indexation, there does not appear to be any obstacle to firms issuing their own indexed contracts. After all, equity contracts are somewhat similar to indexed contracts in that the principal value of the contract represents the real expected present value of the future stream of dividends. Hence, the equity contract is a real, rather than nominal contract.

The major difference between issuing an indexed bond contract and issuing an equity contract is that investors have the right to seize the assets of the firm for non payment of interest under an indexed bond contract whereas they do not have this right under an equity contract.¹⁶ Thus, if legal proceedings for bankruptcy are underdeveloped, we would expect that equity would be the major form of securities contract issued by private firms. This is, in fact, what we find in Latin America, outside of Chile.

Equity contracts do not provide investors with rights to seize the firm since equity investors are technically owners. Therefore, investors will be more willing to hold equity contracts if they can actually exercise some control over management's decisions. Otherwise, management might make decisions that are more closely in line with their own interests rather than in stockholders' interests. This would seem to require an accounting system that provides reliable evidence of management's performance as well as institutional investors that can accumulate enough shares to force changes in management.

Because both of these factors are missing in most Latin American countries, it is not surprising that the major issuers of equity in the region are natural resource companies with real assets that have marketable values even when management behaves

¹⁵ Indeed, the recent increase in inflation in Mexico after the inception of financial difficulties in late 1994 reignited investor skepticism about the long-run economic stability of the region.

irresponsibly and regulated utilities that have easily identifiable sources of revenue.

Capital markets cannot develop, even when dollarization or indexation are prominent in the market, unless legal and accounting standards provide investors with a clear view of the economic value of the corporation and there are adequate institutional arrangements for investors to remove current management from power. Investors can only make the judgment that legal and accounting standards are adequate to support long-term investment if they first see the short-term financial market working efficiently for two reasons. First, they need to observe that borrowers can meet the exacting standards of competent bankers before they can be trusted with long-term funds. Second, they need to have faith in the quality of banks as a source of liquidity to long-term financial markets. The next subsection explores how these two conditions were created in Chile.

3. Creating Conditions in which Capital Markets Can Flourish: the Case of Chile

This subsection traces how investors in Chilean financial markets gained sufficient confidence in the financial system to hold long-term financial assets. The Chilean experience indicates that creating institutional investors through pension system reforms and indexation may be necessary conditions to establish long-term markets, but they are not sufficient conditions. As this case illustrates, even institutional investors with long-term pension liabilities will be reluctant to hold long-term indexed financial assets until they are convinced that banking institutions are sound.

In the early 1980s, Chile faced a banking crisis, which, during the process of restructuring, required aid to the banking system equal to over 20 percent of GDP. By the early 1990s, the success of the program was reflected in the fact that the banking system had paid back most of the funds required to restructure it, with the system's debt to public authorities falling to 5 percent of GDP.¹⁷ In resolving the banking crisis, the authorities faced a major problem in that 47 percent of the loans of the system were U.S. dollar denominated. Over 65 percent of the dollar-denominated loans had maturities greater than one year, which was and is exceptionally high in Latin America. Forty-two percent of the liabilities of the system were dollar denominated liabilities to foreign banks.

Because borrowers faced severe difficulties in repaying dollar denominated loans, one of the central features of the bank restructuring program was to relieve borrowers of foreign exchange risk by converting loans into Chilean pesos. At the same time, the authorities decided to reduce borrowers' loan and interest payments, which were inflated by the high nominal interest rates driven by increasing inflation, by effectively extending loan maturities.

If the central bank had merely relieved bank borrowers of currency risk, they would have transferred this risk to the banks, because bank assets would have been converted from dollars to pesos while bank liabilities remained in dollars. Therefore, the central bank devised a program that both relieved banks of currency risk, transferring it to the central bank, and reduced borrower payments by indexing the principal of the loans converted from dollars to pesos to an inflation index. To relieve banks of the risk of funding indexed peso assets with unindexed peso liabilities, the central bank lent indexed funds to the banks.

The banks' credit position vis-a-vis the central bank as a result of the restructuring program is presented in Table 6. Credit positions are stated in U.S. dollars, and they are divided between domestic private banks on the one hand, which were the most affected by the crisis, and the state bank and foreign owned banks on the other hand. As indicated in the Table, in 1985, domestic private banks were net borrowers of US\$5.1 billion in indexed pesos and net lenders of US\$3.1 billion in US dollars.

Table 6 indicates that, in 1985, private domestic banks were net borrowers from the central bank, with net liabilities equalling US\$2.8 billion. The state bank and foreign banks were net lenders to the central bank, equal to US\$0.9 billion. Hence, the banking system as a whole was a net borrower from the central bank of approximately US\$2 billion.

	1985			1986			1987		
	All Currencies	Indexed Pesos	Foreign Currency	All Currencies	Indexed Pesos	Foreign Currency	All Currencies	Indexed Pesos	Foreign Currency
Net Position									
Private Domestic Banks	-2.8	-	3.1	-	-5.7	3.1	-	-	2.0
State and Foreign Banks	0.9	-	1.4	1.1	-0.3	1.4	1.4	0.1	1.1
Memo: Gross Positions									
Private Domestic Banks									
Loans to Central Bank	4.6	1.8	2.7	5.7	2.6	2.8	4.9	2.7	2.1
Liabilities to Central Bank	-4.4	-	-	-	-3.7	-0.2	-	-	-0.2

¹⁷ Since the bank paid interest rates that were below market for the public funds used, the 5 percent figure is an underestimate of the true final cost of the restructuring effort.

Net Loans Sold to Central Bank	-3.0	-	0.6	-	-4.6	0.6	-	-	0.1
Net Position with Central Bank	-2.8	-	3.1	-	-5.7	3.1	-	-	2.0
State Bank									
Loans to Central Bank	1.3				0.4	0.6			0.5
Liabilities to Central Bank	-1.2	-	-	-	-0.8	-0.3	-	-	-0.2
Net Loans Sold to Central Bank	0.6				0.0	0.6			0.6
Net Position with Central Bank	0.7	-	1.0	0.6	-0.3	0.9	0.9	-	0.8
Foreign Banks									
Loans to Central Bank	0.5				0.5	0.2			0.1
Liabilities to Central Bank	-0.4	-	-	-	-0.3	-0.0	-	-	-0.0
Net Loans Sold to Central Bank	0.2	-	0.3	0.2	0.2	0.3	0.2	-	0.1
Net Position with Central Bank	0.2	-	0.4	0.5	0.5	0.5	0.5	0.1	0.2
Note: Total includes unindexed pesos									

Since the net liability of the banking system to the central bank was in indexed pesos, the pension system, which was established as a fully funded system in 1984, could have been a source of funding for the central bank to cover this liability. That is, the central bank could have issued US\$2 billion in indexed peso debt to the pension funds. However, in 1985, the pension funds only held about US\$300 million in central bank securities. The major asset of the pension funds at that time was bank deposits, which equalled almost US\$900 million.

Why were the pension funds willing to hold bank deposits in 1985 rather than central bank securities even though the central bank was, in fact, the guarantor of the banking system? The explanation advanced here is that pension funds were not yet willing to hold long-term securities – that is, they did not have enough faith in the financial system to go long. Instead, they held bank deposits, which, based on the composition of bank deposit liabilities at the time, mostly had maturities of between 90 days and one year. Thus, if the financial system were to deteriorate, the pension funds had the option of not renewing their relatively short-term bank deposits.

The 90 day to one year deposits issued by the banks were in indexed pesos. In 1985, these deposits paid an average real interest rate of over 8 percent, compared with an ex post real interest rate of about 3.5 percent on unindexed deposits of less than 90 days. Hence, in 1985, banks had to pay a substantial premium, even to get investors to commit funds with a maturity of about one year.

According to Table 6, by 1987, banks' net liability to the central bank increased to US\$2.9 billion from US\$2 billion in 1985. (Domestic private banks' net liability rose to US\$4.3 billion from \$2.8 billion, and other banks' net asset position increased to US\$1.4 billion from US\$0.9 billion.) Thus, these figures would seem to suggest that the condition of the domestic private banks had worsened between 1985 and 1987, but analysis of gross positions indicates otherwise.

As indicated in the memo item to Table 6, private domestic banks' gross liabilities to the central bank declined between 1985 and 1987 from US\$4.4 billion to US\$3.6 billion. The net liability to the central increased over the same period primarily because private banks' loans to the central bank in foreign currency declined from US\$2.7 billion to US\$2.1 billion. Private banks lent fewer foreign funds to the central bank because their own liabilities to foreigners declined between 1985 and 1987, indicating that banks were repaying their foreign liabilities. Hence, between 1985 and 1987, private domestic banks needed fewer central bank funds, and a higher percentage of these funds were provided by domestic investors.

Over this same period (1985 to 1987), pension funds' holdings of central bank securities increased to 28 percent of the net liability position of banks to the central bank (US\$800 million), compared to 15 percent of the net position in 1985. Thus, pension fund managers' confidence in the quality of the central bank's balance sheet and hence of the financial system was increasing. Also, it should be noted, that the premium on 90 day to one year deposits over short-term indexed deposits declined sharply. This confidence was well placed, as in 1988, the net borrowing position of the private domestic banks began to decline in real terms. By 1989, central bank securities represented about the same share of pension fund assets as bank deposits (approximately 40 percent each).

In the Chilean case, pension fund managers' willingness to invest in long-term assets was directly tied to the quality of the banking system because the major long-term financial instrument that they bought before the early 1990s was a liability of the central bank, which was exposed to bank risk. By 1993, the dominant asset on pension funds balance sheets was private securities, mostly corporate bonds, comprising 39 percent of the total. However, in 1993, pension funds still held 21 percent of their assets in bank deposits. This strongly suggests that the existence of a strong banking system increases pension funds' expected return to holding

relatively illiquid assets like corporate bonds. Fund managers can use liquid bank deposits as a safe place to hold funds when conditions in the corporate bond market are not favorable for investing. In turn, issuers of corporate bonds can borrow from banks when there is little institutional demand for their securities.

4. Building Credibility during Banking Crises: Argentina and Mexico in 1995

The Chilean experience indicates that building confidence in institutional savings requires time and that it is closely related to building confidence in the banking system. In Chile, resolving the banking crisis played an important role in confidence building. It also provided the impetus for spreading indexation. As part of its economic reforms, Mexico is attempting to convert its pension system from pay as you go to partially funded, along the lines of the Chilean system. This is taking place at the time when the authorities are completing a program of bank restructuring following the severe banking problems that emerged at the end of 1994. Thus, it is important to determine whether bank restructuring is creating greater confidence in banks. We consider this question for Argentina as well.

When Mexico began its bank restructuring program, it attempted to create the same program as Chile, but the circumstances were entirely different. Mexican authorities attempted to redenominate bank loans into indexed pesos and to encourage banks to issue indexed liabilities. This program, however, had limited success. The exchange rate risk faced by banks and their customers was much smaller than in the case of Chile. Hence, there was no reason to recycle dollar liabilities through the central bank, which in Chile effectively placed the central bank in the role of guarantor of the banking system.¹⁸ Therefore, one of the major tools by which the Chilean central bank encouraged indexation was not available to the Mexican central bank.

Also, there was very little incentive for large corporate borrowers to move to indexation. Deposit interest rates remained fairly low and ex post were negative in real terms for the first half of 1995. Hence, banks had room to keep real interest rates on loans negative as well. In addition, loans had very short-term maturities so converting principal to indexed pesos would have done little to reduce nominal loan payments.

As indicated in Section III, despite the limited success of the indexation program, Mexican authorities, through enforcing stringent provisioning on non performing loans, making strategic capital injections, and providing deposit insurance, were able to maintain depositor confidence in the banking system. Weak banks in Mexico suffered only small amounts of deposit withdrawals, after accounting for interest credited. These banks were able to prove their liquidity by reducing loan growth and purchasing securities and cash assets.

Thus, in the long-term, investors are likely to have gained confidence in Mexico's banks and the quality of its supervisory effort. This is, of course, a hopeful sign that pension funds will share this confidence and begin placing funds in the banking system. It remains to be seen, however whether the banking system will emerge from the current crisis in a strong enough position to handle a large increase in funds that might result from the establishment of funded pension plans at this time.

In Argentina, investor confidence in the banking system has improved by the shift in deposits from weak banks to strong banks, as indicated in Section III. As noted there, large private banks lost very few liabilities during the crisis and funded these withdrawals mostly through liquidating loans rather than by divesting cash assets, thus, giving investors confidence in their ability to manage liquidity of their borrowers. The system is consolidating around the strong banks, indicating that the system will emerge from the crisis on more solid footing.

5. Does Banking Structure Matter for the Development of Capital Markets?

It is sometimes argued that an important device for strengthening public confidence in banking system is to control entry. Arguments for stringent entry control are as follows. First, entry restrictions increase profits and therefore make it easier for banks to maintain high capital to a ratios, which increases the potential losses bank owners face if they mismanage the institution. Hence, the incentive for risk taking is reduced. Second, it is argued that the resulting higher interest rate spreads will slow the growth of credit to riskier borrowers.

The downside of such a policy is that it creates all the problems associated with lack of competition. In highly concentrated financial markets, loans tend to be directed to related companies. For example, in Chile in the early 1980s, losses were concentrated in the two largest banks. A major reason for this is that these banks made insider loans to closely connected corporations. Even if laws are passed to prevent cross ownership between banks and incumbent enterprises, when markets are small and highly concentrated, it is difficult to prevent such alliances from forming.

Indeed, building confidence in the banking system does not mean creating a monopoly few banks with close connections to major industrial firms. It means building a system in which public has confidence in bankers' judgments about the quality of bank borrowers and in regulators' judgments about the quality of banks. This does not imply restrictions on entry. In fact, new banks provide opportunities to expand loans to sectors of the economy that are not served by established institutions. However, the growth of the balance sheets of new entrants and the quality of their loan portfolios must be carefully monitored.

This brings up the question of the role of foreign banks in the market. Mexican authorities for example, have attempted, with

¹⁸ The Mexican central bank did shoulder the foreign exchange risk for banks, but this was handled through a small swap program, and the banks quickly paid off their dollar debts to the central bank.

some limited success, to increase the capitalization of their banks by permitting foreigners unrestricted access to the market. However, if foreign banks are permitted into a market during periods of economic growth, evidence indicates that they can play a stabilizing role if an unexpected disturbance in the financial sector were to occur. In Chile, for example, during the banking difficulties of the early 1980s, the credit problems of the foreign banks were less those of the two largest private domestic banks. Depositors placed their funds in these banks, which, in turn bought securities in the central bank to support the workout program that finally solved banking problems.

Recently, Argentina's foreign-owned banks played a major role in keeping deposits flowing out of the banking system as investors, even as depositors fled from some domestically owned banks. As in the case of Chile, this permits banks to provide funds to the central bank to aid in restructuring the system.

V. Do emerging capital markets affect bank spreads?

As discussed in Section IV, several Latin American countries, most prominently Mexico, have developed money markets in short-term government paper, even though capital markets in private securities remain underdeveloped (Table 4). In the U.S. it has been noted by many analysts, that the existence of highly liquid money markets has reduced bank profitability and increased bank risk. The argument is that open market paper with liquidity characteristics of bank deposits -- such as commercial paper for large investors and money market funds for small investors -- reduce bank net interest margins by increasing deposit costs. Banks attempt to restore profits through increased risk taking, which is not reflected in deposit costs because of deposit insurance.

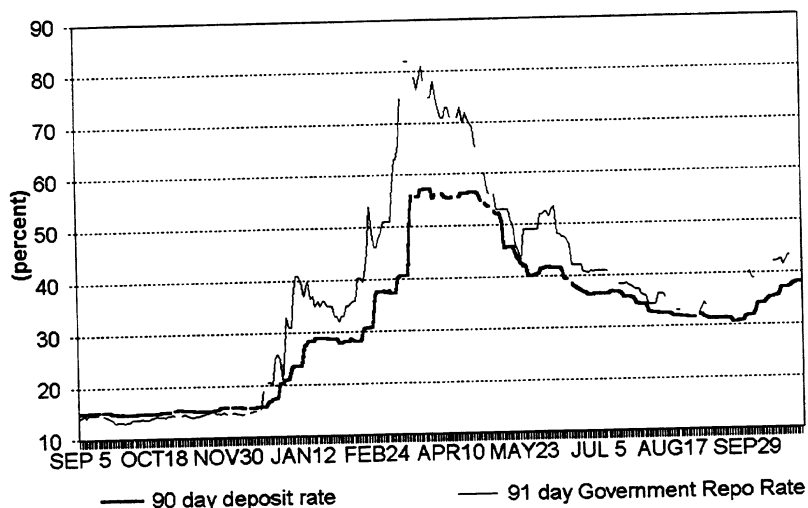
This raises the question of whether the existence short-term paper markets in Latin America reduce the quality of bank balance sheets and thereby retard the development of longer term capital markets. In evaluating this question, it must be noted that in Latin America there is almost no access to money markets by private borrowers. Hence, firms cannot use the commercial paper market as a substitute for bank loans. Thus, in Mexico, where a small commercial paper market exists, interest rates on commercial paper are substantially above wholesale deposit rates, indicating that banks feel no need to compete with this market for deposits. In contrast, in the U.S., commercial paper rates and large CD rates are equal.

However, Mexico and several other countries have active short-term government securities markets, which might provide competition for bank deposits. For example, instead of holding bank deposits, firms could hold government securities. To obtain cash, firms could sell government securities to other firms under repurchase agreements. However, for this to be a viable means for corporations both to hold liquid assets and obtain liquid funds, firms must be certain that the repurchase agreement market will be liquid enough to provide a reliable source of cash. They must also be certain that when they have exhausted the liquidity on their balance sheet, they can easily turn to other sources of short-term cash.

Several features of the money market in Mexico indicate that markets have not yet reached this state. As already indicated, the commercial paper market is not developed; hence, when firms exhaust their holdings of government securities to raise cash, they must turn to banks. It is not likely that the commercial paper market will develop until accounting, legal, and institutional arrangements improve. In short, they will not develop until the conditions for longer term securities markets develop as well.

It must also be noted that in a liquidity crunch, it becomes difficult to sell government securities under repurchase agreements to raise cash. The evidence for this is that, when short-term interest rates rise sharply, the interest rate on repurchase agreements rises much faster than interest rates on bank deposits. The reason for this is that lenders of cash (buyers of government securities under repurchase agreements) fear that borrowers will not have sufficient cash to buy back their securities. As shown in Chart 6, this was the case in Mexico in early 1995 when short-term interest rates increased sharply, following the inception of the financial crisis.

Chart 6
MEXICO: SHORT TERM INTEREST RATES
 (Sep. 5th, 1994 – current)



The above argument provides a plausible explanation to understand why deposit rates have remained low relative to repurchase agreement rates throughout the crisis in Mexico. Firms must stay on good terms with banks to have access to cash, which is rationed at below market interest rates. To obtain this access, they agree to supply cheap funds to banks when they have sufficient liquidity to hold deposits. In other words, the corporate loan and deposit market clears at a negotiated price rather than at a market price.

VI. **Concluding Remarks**

The financial systems of Latin America have often contributed to economic instability because the short-term nature of financial assets and liabilities in Latin America has made it easy for investors to withdraw funds in anticipation of a crisis. The act of withdrawing funds, however, can hasten the arrival of the crisis that investors wish to avoid by fleeing the market. This fact has led to policy recommendations to change the structure of the financial markets of the region to remove them as a source economic volatility. These policy recommendations fall into two general categories: those meant to increase the international liquidity of the system so that investors can withdraw their funds with minimal impact on the local economy and those meant to make it more difficult to withdraw funds in anticipation of a crisis. Policies designed to accomplish the latter are those that encourage the development of markets for long-term securities.

A frequently used policy to meet the first objective is placing reserve requirements on banks and investing the funds in liquid international assets. Evidence indicates that this policy can be effective as long as bank deposits are the major short-term financial asset in an economy. However, even when reserve requirements increase financial market liquidity, they have a cost: they tax strong banks at the expense of weak ones.

If bank supervision is competently performed, economies do not have to rely on reserve requirements to keep the banking system sufficiently liquid to meet depositor demands for funds withdrawal. Well-administered bank supervision can also encourage, rather than hinder, the growth of strong institutions relative to weak. To be effective, strong supervision must be accompanied by improvements in the accounting system so that regulators and investors can more precisely evaluate the quality of bank balance sheets. It must also be accompanied by legal reforms to clarify ownership of collateral in the case of loan defaults.

Creating an environment in which a strong banking system can flourish is a prerequisite for creating the conditions for the development of long-term capital markets. Investors are unwilling to place their money in long-term securities until they have learned that it is safe in short-term securities. In this regard, many of the policies recommended as aids to developing long-term capital markets -- indexation or dollarization of financial assets and establishment of funded pension plans to provide a market for long-term assets -- cannot support the development of capital markets if investors do not believe that the promises inherent in these policies can be kept. For example, dollarization has been extensively used in several markets in the region without resulting in the development of long-term capital markets for private securities.

References

Banco Central de la República Argentina, "Estados Contables de las Entidades Financieras", various

Banco Central de Chile, "Boletín Mensual", Santiago, Dec 1994.

Banco Central de Reserva del Perú, "Note Semanal", Lima, several issues.

Banco Central de Venezuela, "Boletín Mensual", Caracas, Aug. 1994

Banco Central do Brasil, "Boletim", Brasilia, Oct 1994.

Banco de la República, "Boletín Estadístico", Buenos Aires, Dec 1994

Banco de la República, "Revista del Banco de la República", Bogotá, several issues.

Banco de México, "Indicadores Económicos", México D.F. Feb. 1995.

Blommestein, Hans J. and Michael G. Spencer, "The Role of Financial Institutions in the Transition to a Market Economy", IMF Working Paper: 93/75 Oct. 1993.

Bloomberg Business News Data Base.

Bolsa de Bogotá, "Boletín Trimestral", Bogotá, Oct. 1994

Bolsa de Bogotá, "Boletín Mensual Estadístico", several issues.

Bolsa de Comercio de Buenos Aires, "La Bolsa", Buenos Aires, Oct. 1995

Bolsa de Sao Paulo, "BOVESPA", Sao Paulo, Dec. 1994.

Bolsa de Valores de Lima, "Informe Mensual", Lima, Dec. 1994

Comisión Bancaria y Valores, Boletín Estadístico de Banca Múltiple (Mexico), various issues 1994

Drees, Burkhard and Ceyla Pazarbasioglu, "The Nordic Banking Crisis: Pitfalls in Financial Liberalization?", IMF Working Paper: 95/61. June 1995.

Federal Reserve Bulletin, Federal Reserve Bulletin, July 1992

Fernandez, Roque B. and Pablo E. Guidotti, "Regulating the Banking Industry in Transition Economies: Exploring Interactions between Capital and Reserve Requirements," paper prepared for the conference on Economic Reforms: Latin America and the Transition Economies at Georgetown University, May 12-13, 1994, November 6, 1994.

IFC, Emerging Markets Data Base, Dec 1994.

International Monetary Fund, International Financial Statistics, various issues.

Rojas-Suarez, Liliana, and Steven R. Weisbrod, "Banking Crises in Latin America: Experiences and Issues," prepared for the Conference on Banking Crises in Latin America, Oct. 6-7 1995 (a)

Rojas-Suarez, Liliana, and Steven R. Weisbrod, "Achieving Stability in Latin American Financial Markets in the Presence of Volatile Capital Flows," IDB Working Paper No. 304, April, 1995(b).

Rojas-Suarez, Liliana and Steven R. Weisbrod, Financial Fragilities in Latin America, The 1980s and 1990s, Occasional Paper No. 132, IMF, October 1995 (c)

Sundararajan, V. and Tomas J.T. Balino, eds. Banking Crises: Cases and Issues, IMF, 1991

Superintendencia de Bancos e Instituciones

Financieras, Información Financiera (Chile), various issues.