

# Financial Regulation and Supervision

Financial markets in Latin America and the Caribbean have changed rapidly and dramatically in recent years. Most interest rates have been liberalized, restrictions to capital mobility reduced, and prudential and regulatory practices adopted. Many countries have privatized at least some aspects of public banking, strengthened their supervisory agencies, and adopted capital adequacy standards in line with the Basel Accords (see Table 5.1).<sup>1</sup>

Such developments have the potential to improve the performance of economies, since regulations that distort financial market prices can reduce the relative size of the financial sector and curtail economic growth and stability.<sup>2</sup> There are several ways that the regulatory framework can alter the functioning of financial sectors. Interest rate controls, for example, can reduce the flow of savings to the financial sector and hence reduce the amount of funds available for lending and investment. Restrictions on competition can induce efficiency losses in the intermediation process and reduce overall welfare.<sup>3</sup> Credit targeting practices can have adverse effects on the efficiency of resource allocation by ignoring the risks associated with the targeted sectors and the economies of scale that can result from efficient evaluation, ordering and monitoring of projects. Inadequate protection of creditors can reduce the advantages of using collateral in financial contracts, shut down credit markets, and impose restrictions on investment. Finally, prudential regulation is important to ensure a stable financial system where there is a steady flow of resources towards efficient and promising economic sectors.

This chapter discusses major features of regulation of financial markets in Latin America, presents empirical evidence on regulations in countries in the region, and examines possible alternatives to enhance financial sec-

tor performance. Despite the evolution of financial market regulation in the 1990s, there are still several areas where intervention constrains efficient risk management and pushes credit out of potentially attractive investment opportunities. This chapter shows that the lack of creditor protection in Latin America poses significant challenges to the development of financial markets.

## Recent Trends in Latin America

Figure 5.1 plots an average reform index that incorporates advances in interest rate deregulation, the evolution of reserve requirements, and the adoption of capital adequacy ratios. The index shows just how rapidly financial reforms were implemented in Latin America in the 1990s. Liberalization has been associated with a substantial expansion of the region's financial sector: private credit as a proportion of GDP went from nearly 30 percent of GDP at the start of the decade to 40 percent in 1998. The reforms can be expected to contribute to financial sector development for several reasons. Eliminating caps on deposit interest rates can raise deposits. Eliminating or reducing credit targeting policies, caps on loan interest rates, reserve requirements, and other impositions on financial sector activities may improve credit allocation by financial intermediaries by allowing them to properly price and administer their risks. Caps on lending interest rates as well as credit targeting policies can push lending away from profitable opportuni-

<sup>1</sup> However, loan ranking and provisioning criteria remain nonstandardized, and forward-looking ratings are still not common.

<sup>2</sup> See MacKinnon (1973).

<sup>3</sup> See Caprio, Atiyas and Hanson (1994).

Table 5.1 Financial Liberalization in Latin America

	Major interest rate liberalization <sup>1</sup>	Major privatization <sup>2</sup>	Adoption of capital adequacy ratios <sup>2</sup>	Reserve requirements <sup>3</sup> (%)	
				1990	2000
Argentina	1989	1995	1991	24	4
Belize	1995	na	1996	13	13
Bolivia	1990	na	1995	25	9
Brazil	1989	1997	1995	15	12
Chile	1985	1987	1989	6	5
Colombia	1992	1993	1992	38	8
Costa Rica	1995	na	1995	43	18
Dominican Republic	1999	na	1998	37	30
Ecuador	1994	na	1995	20	7
El Salvador	1990	1991	1993	33	33
Guatemala	1995	na	1995	27	18
Haiti	Before 1985	na	1998	46	27
Honduras	1990	na	1998	9	22
Jamaica	1998	na	1997	38	25
Mexico	1988	1992	1994	5	7
Nicaragua	1990	1999	1999	57	17
Panama	Before 1985	na	1998	0	0
Paraguay	1990	na	1991	33	26
Peru	1991	1993	1993	31	26
Trinidad & Tobago	Before 1985	na	1994	14	15
Uruguay	1985	na	1992	45	22
Venezuela	1989	1996	1993	18	29

Sources: <sup>1</sup> EIU, various issues, and IDB; <sup>2</sup> EIU, various issues; <sup>3</sup> IFS-IMF. Reserves/Deposits.

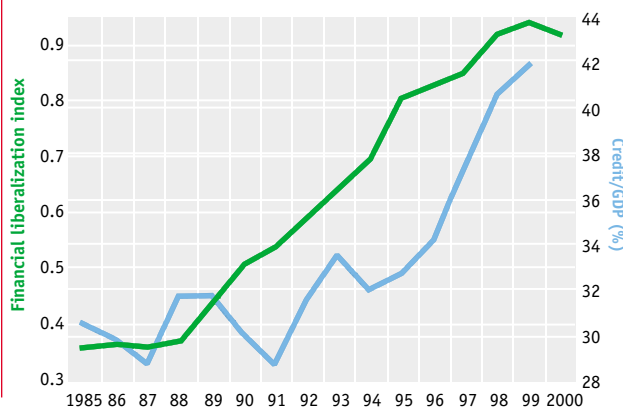
ties in economically viable sectors and toward politically attractive ones.

It has long been recognized that highly intervened financial systems can distort the allocation of credit and lead to underinvestment.<sup>4</sup> More recent empirical evidence supports these findings. Financial liberalization reduces credit constraints at the firm level<sup>5</sup> and increases the efficiency of investment.<sup>6</sup> In short, empirical evidence suggests that financial liberalization generates the necessary incentives for credit expansion and can have an impact on economic performance by improving the allocation of credit.

Econometric results presented in Appendix Table 5.1 confirm the positive influence of financial reform on credit expansion for 18 Latin American countries over 1985-99. The size of the financial sector as measured by the ratio of private credit to GDP is significantly related to the financial liberalization index constructed after controlling for other relevant factors.

While these findings suggest that financial reform has in fact had a significant impact on the development of Latin American financial sectors, there still are several issues that need to be addressed. Financial lib-

Figure 5.1 Financial Liberalization Index and Private Credit/GDP in Latin America



Source: World Bank (2000) for Credit/GDP and Table 5.1 for financial liberalization index.

<sup>4</sup> See McKinnon (1973) and Shaw (1973).

<sup>5</sup> See Laeven (2000).

<sup>6</sup> See Wurgler (2000) and Galindo, Schiantarelli and Weiss (2001).

Table 5.2 Government Interference in Financial Contracts

Authorities have intervened in the following aspects of financial contracts:								
	Currency denomination of loans	Loan terms	Capital amortization schemes	Interest payment schemes	Maximum level of interest rates on loans	Maximum level of overdue interest rates	Mandatory investments different from reserve requirements	Minimum ratios of targeted credit
Argentina								
Belize	✓							
Bolivia				✓				
Brazil	✓	✓			✓	✓		✓
Chile				✓	✓			
Colombia		✓	✓	✓	✓	✓	✓	✓
Costa Rica		✓		✓	✓	✓		
Dominican Republic		✓		✓	✓	✓		
Ecuador		✓	✓	✓	✓	✓	✓	
El Salvador		✓		✓	✓	✓	✓	
Guatemala	✓	✓	✓	✓	✓	✓	✓	
Honduras		✓		✓	✓	✓		
Jamaica				✓	✓			
Mexico		✓	✓	✓	✓		✓	✓
Nicaragua				✓	✓		✓	
Panama				✓	✓			
Paraguay				✓	✓	✓		
Peru				✓	✓	✓		
Trinidad & Tobago				✓	✓			✓
Uruguay			✓	✓				
Venezuela		✓		✓	✓		✓	✓

Source: Felaban/IDB survey.

eralization has not always promoted financial stability. Several countries—including Argentina, Brazil, Colombia, Ecuador, Mexico, Paraguay and Venezuela—went through costly financial crises during the 1990s that cost between 2 and 20 percent of GDP.<sup>7</sup>

The section that follows describes additional reforms and specific areas that deserve particular attention in order to increase financial development and stability throughout the region.

## Government Intervention in Financial Contracts

Latin American governments traditionally have used bank ownership as a principal means of intervention in the banking sector. This has been deleterious to financial

development, as have other forms of government intervention. However, government intervention need not be detrimental. For example, prudential regulation and supervision—which have been strengthened in most countries of the region in the last decade—can support financial development.

Governments throughout Latin America have a tendency to intervene in the relationship between banks and their customers. This is surprising, since the wave of financial reforms of the last decade was oriented towards allowing more freedom to financial markets in order to improve the allocation of financial services and stimulate financial development. A survey conducted recently by the Inter-American Development Bank and the Latin American Federation of Banks (Felaban) reports many

<sup>7</sup> See Caprio and Klingebiel (1999).

instances of intervention in clauses of financial contracts over the past five years. The survey also documents the existence of mandatory investments in particular areas and credit targeting policies (see Table 5.2).

In Colombia and Ecuador, the government has intervened in all of the clauses of financial contracts in one way or another. And in Brazil, Colombia, Mexico, Trinidad and Tobago and Venezuela, there are still some credit targeting policies, particularly for the agricultural sectors and for lower income housing. Mandatory investments, on the other hand, tend to be directed toward the purchase of specific types of government bonds. The extent to which government intervention affects financial development is difficult to assess from an empirical standpoint given the scarcity of cross-country data and data over time. However, it is worthwhile noting that the groups of countries that have more than two restrictions (as reported in Table 5.2) on average have ratios of private credit to GDP (32 percent) much lower than those with fewer restrictions (45 percent). Clearly, allowing banks to choose where to allocate funds and to design optimal contracts from a financial point of view increases funding opportunities and reduces underinvestment.

## The Role of Creditor Rights in Financial Markets

The rights of creditors regarding assets pledged as collateral have a major role in explaining the breadth of financial markets and the variety of responses of credit markets to shocks.<sup>8</sup> The protection of creditor rights stimulates both lenders and borrowers to subscribe to financial contracts and to abide by their clauses, an essential ingredient of financial development.

A credit contract involves three players: the creditor, the debtor, and the institutions that guarantee that each of the parties will live up to its responsibilities. If institutions are inadequate, it is likely that the benefits from reneging on the debt contract will be so pronounced that the contract will not be honored. Hence, the ability of these institutions to ensure that the best interests of the players coincide with the clauses of the debt contract can promote financial security. The nature of the rules and regulations that govern financial markets can influence the degree to which credit is available

and can also explain why credit markets in different countries respond in such varied ways to similar types of shocks.

Advocates of regulations that support the rights of creditors claim that if the right to repossess collateral in case of debtor default is not strictly protected, the use of collateral will lose its important role in solving the information asymmetries that can lead to credit rationing and underinvestment.<sup>9</sup>

Theoretical findings regarding the role of collateral in mitigating asymmetric information problems are based on the presumption that collateral can be repossessed by the creditor in case of default. That is, it is presumed that a third party stands ready to protect and enforce the creditor's rights over the collateral stipulated in the debt contract. The right to repossess collateral and the feasibility of doing so act as a threat to ensure compliance by borrowers. This threat can be sufficient to reconcile the borrower's incentives with the clauses of the contract. If lenders feel that regulations do not protect them, and that they run the risk of not being able to take control of assets pledged as collateral, they are likely to prefer not to extend credit. The implicit bankruptcy risk will severely reduce their expected earnings, and the credit-rationing outcome will resurface. Therefore, countries with more creditor protection can be expected to enjoy deeper debt markets, since they can take advantage of additional noninterest clauses such as collateral to mitigate problems from information asymmetries.

Testing the validity of this view of collateral requires establishing just how difficult it can be for a creditor to repossess that collateral. By providing valu-

<sup>8</sup> See La Porta et al. (1997, 1998), Padilla and Requejo (2000), and Galindo and Micco (2001). The latter develop a model in which the asymmetry of responses of credit markets to shocks is linked to the institutional setup. The estimates use a panel of over 50 countries with information from 1990 to 1999.

<sup>9</sup> Coco (2000) explains that collateral can solve problems derived from asymmetries in the valuation of projects, uncertainty about the quality of projects and the riskiness of borrowers, and problems related to the cost of monitoring or supervising the borrower's behavior. If not addressed, these problems can lead to partial or complete credit rationing. Collateral requirements can solve or at least mitigate the impact of these issues on the expansion of credit. Collateral helps reduce asymmetric valuation problems (that is, the conflict that arises when borrowers and lenders disagree about the true value of the project); reduces credit rationing, since pledging collateral can convey information about borrowers and about the projects to be financed; and alleviates moral hazard problems by adding a potential cost to borrowers if they do not make their best effort to succeed.

Table 5.3 Creditor Protection in Latin America

Country	No automatic stay on assets	Secured creditors paid first	Restrictions for going into reorganization	Management does not stay during reorganization
Argentina		✓		
Belize	✓		✓	
Bolivia			✓	✓
Brazil	✓			
Chile			✓	
Colombia				
Costa Rica	✓			
Dominican Republic	✓			
Ecuador			✓	
El Salvador	✓		✓	✓
Guatemala	✓		✓	
Haiti	✓		✓	
Honduras			✓	
Jamaica			✓	✓
Mexico				
Nicaragua			✓	✓
Panama	✓		✓	✓
Paraguay				
Peru				
Trinidad & Tobago	✓	✓	✓	
Uruguay	✓			
Venezuela			✓	

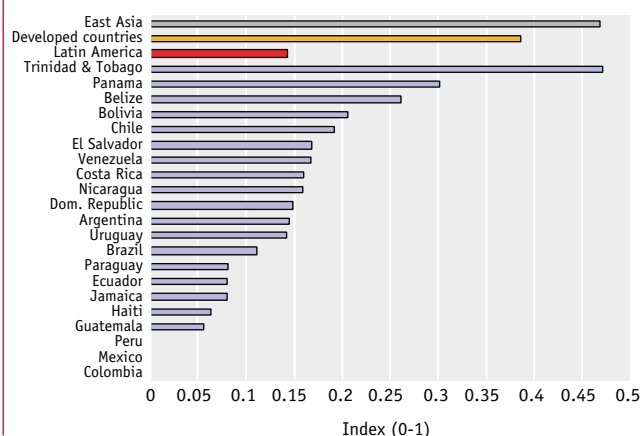
Notes: ✓ means creditors are protected by law.  
Source: Galindo and Micco (2001).

able data on the state of creditor rights regulations around the world, recent studies by La Porta et al. (1997 and 1998) have given new impetus to the empirical discussion of the importance of regulations regarding the rights of creditors to the assets of borrowers. The studies construct an index that summarizes regulations on creditor rights to control collateral in case firms file for reorganization or bankruptcy. The studies examine if (i) regulations do not impose an automatic stay on assets in case of reorganization; (ii) secured creditors have the right to be paid first in case of bankruptcy; (iii) firms must consult with creditors before filing for reorganization; and (iv) creditors can force removal of the firm's management during reorganization. A positive response to each of the four elements of the index is interpreted as a country providing sufficient protection of creditors' rights. The studies go beyond collateral repossession, since they focus also on total asset

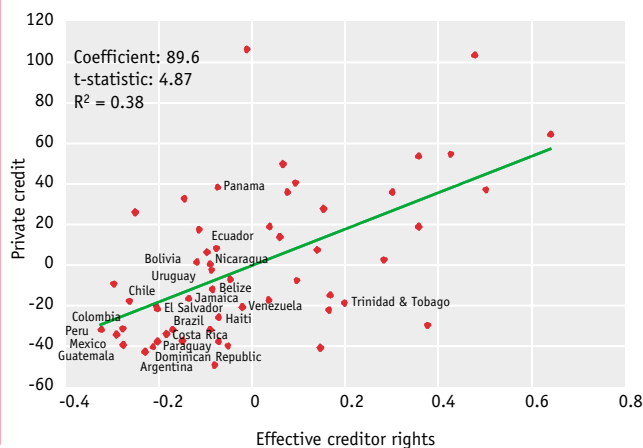
liquidation in case of bankruptcy. Galindo and Micco (2001) extend the coverage of the La Porta et al. studies by including most of the Latin American and Caribbean countries (see Table 5.3).<sup>10</sup>

Based on this methodology, it is only fair to say that creditor protection in Latin America is extremely weak. Moreover, if one takes into account that law enforcement in general is also weak in the region, and therefore creditors may not be protected independent of what is written in bankruptcy law procedures, *effective* creditor rights protection is even lower. Figure 5.2 plots the values of this index for the Latin American countries. Higher values imply higher effective protection.

<sup>10</sup> La Porta et al. (1997 and 1998) originally covered only eight Latin American countries.

**Figure 5.2** Effective Protection of Creditor Rights

Sources: Galindo and Micco (2001) and La Porta et al. (1997, 1998).

**Figure 5.3** Private Credit and Effective Creditor Rights

Notes: Figures adjusted by GDP growth, government deficit, inflation and income per capita (log).

Sources: La Porta et al. (1997, 1998) and Galindo and Micco (2001).

The measure of creditor rights developed by La Porta et al. has been used in several studies to examine the impact of regulations on the size of credit markets and to explore the determinants of creditor rights. (The conclusion regarding the latter point is that legal systems based on French traditions—as are the Latin American countries—tend to grant less protection to creditors and more to debtors than do systems based on the Anglo-Saxon legal tradition.) Empirical evidence suggests that creditor protection can have a significant impact on the development of financial markets.<sup>11</sup> Figure 5.3 shows that after controlling for inflation, past economic growth, the size of the economy, and fiscal imbalances,

there is a strong correlation between creditor protection measures and financial sector development. Appendix Table 5.2 reports econometric findings.

Countries with more creditor protection and with better law enforcement tend to have deeper credit markets than those with less credit protection. Using the findings of Galindo and Micco (2001), it can be inferred that if Latin American countries were to increase their average effective protection to the level of developed countries, the size of their financial markets could increase on average by nearly 15 percentage points. In other words, if creditor protection were enhanced, the average size of credit markets would increase by nearly a half, from 35 percent of GDP to nearly 50 percent. In countries with limited law enforcement, such as Colombia, Guatemala, Haiti, Mexico, Paraguay and Venezuela, increasing effective creditor rights could triple the size of their credit markets.

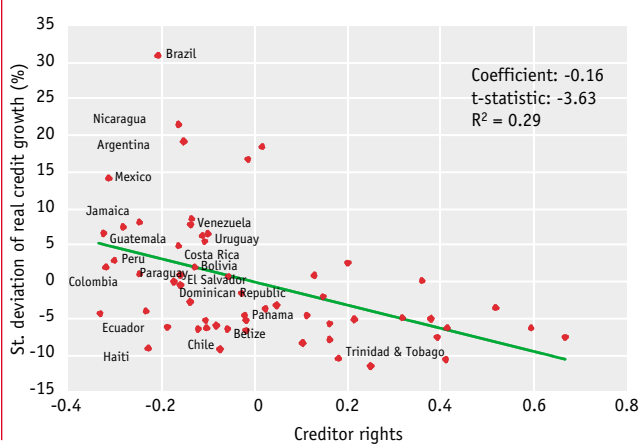
Creditor protection can also reduce the impact of adverse shocks on the credit cycle. The extent to which credit contracts during these episodes will depend on regulations regarding the repossession of collateral. If creditors cannot recover pledged assets when borrowers default, the increased credit risk in a recession will be exacerbated. In such cases, the credit market overreacts to the exogenous shock and credit is strongly contracted. Galindo and Micco (2001) find a strong correlation between the volatility of credit and the effective protection of creditor rights (see Figure 5.4).

The main intuition driving these results is that weak creditor protection can exacerbate the increase in credit risk that comes naturally in recessions. When economies are hit by adverse shocks and creditors are not protected, lenders will disproportionately reduce their lending, since their chances of recovering their loans or the collateral that guarantees them is slim in the face of such shocks as a recession, a decline in the terms of trade, or a reversal of international capital flows.

To test the validity of this proposition, a panel of information was estimated for 55 countries over 1990-99. The results reported in Appendix Table 5.3 suggest that better creditor protection reduces the impact of aggregate shocks on credit markets.

<sup>11</sup> La Porta et al. (1997 and 1998), Padilla and Requejo (2000), and Galindo and Micco (2001) show that creditor protection can impact the size of financial markets, the level of interest rates, and the level of non-performing loans.

**Figure 5.4** Volatility of Real Credit and Effective Creditor Rights



Notes: Figures adjusted by standard deviation of real GDP growth.  
Sources: Galindo and Micco (2001).

The discussion above refers to creditor rights—that is, to the ability of banks to take over the assets of debtors if they default. This, however, is not the only channel through which regulation, or the lack of it, affects how collateral can reduce problems associated with information asymmetries. Regulation also addresses limits on assets that may be used as collateral, or the mechanisms to register collateral or monitor an asset pledged as collateral. To ensure deeper financial markets, regulation should be directed toward expanding the family of assets that can be pledged as a credit guarantee.<sup>12</sup> In many Latin American countries, there are limits on the types of assets that can be pledged.<sup>13</sup> In Argentina, Brazil, Ecuador, El Salvador, Mexico, Nicaragua, Peru and Venezuela, family-owned properties cannot be pledged as collateral. There are also difficulties in pledging moving assets. In Uruguay, for example, if a bank lends against a number of heads of cattle, it must identify each animal by specific brand, making monitoring expensive. In contrast, in the United States and Canada, loans can be based on a floating security interest in terms of the collateralized asset. Finally, many countries do not allow for a “continuing security interest,” meaning that if the asset pledged as collateral is sold, the creditors cannot attach the proceeds.

Registries that keep track of assets pledged as collateral are also underdeveloped in the region. Ensuring that there are no superior claims on an asset pledged as collateral requires access to some type of legal registry. Yet, in some Latin American countries the process of reg-

istering collateral is extremely difficult. In Uruguay, for example, assets are classified by date of pledge, hence in order to know if an asset was previously used as collateral it is necessary to know when it was used, which clearly undermines the use of the registry. Similarly, in Bolivia, where assets are classified chronologically, the whole file has to be searched in order to determine if a particular asset has ever been pledged. Finally, permission is often required to search the registries, which makes the process more complex and prone to corrupt practices. Fortunately, most countries have developed instruments that substitute the use of tangible assets as collateral and that ease these procedures.<sup>14</sup>

In addition to rules and regulations regarding assets pledged as collateral, there are other rules that constrain the expansion of credit. Restrictions on registering businesses have a particularly negative effect on small and medium-size enterprises. Banking institutions typically lend only to officially registered firms, so constraints to formalizing businesses can reduce the volume of credit granted. And the cost of credit for businesses outside that formal structure is much more expensive.<sup>15</sup>

## Prudential Regulations

Prudential regulations and the supervision of banks are important tools to alleviate adverse selection and moral hazard in the banking business. The increased integration of financial markets requires standardized methods to promote international financial stability.

Capital adequacy requirements have been among the most debated regulations. Regardless of the theoretical debate, most countries around the world, and certainly the Latin American countries, have adopted Basel Accord types of regulation. It is widely accepted that capital serves as a buffer against losses and fail-

<sup>12</sup> Regulations governing collateral use can also have an impact on poverty reduction. De Soto (2000) argues that current regulations impede the poorest from pledging their assets as guarantees for financing productive activities, severely restricting the productivity of their capital.

<sup>13</sup> According to the IDB/Felaban survey, as reported in Galindo (2001).

<sup>14</sup> Except for El Salvador, Mexico, Nicaragua, Dominican Republic and Uruguay, all countries rely on repo operations, securitizations, warrants, and the like for credit contracts.

<sup>15</sup> In his classic work on informality in Peru, De Soto (1989) found that the nominal rate of interest of loans to informal firms was nearly five times that of loans to formally registered enterprises.

Table 5.4 Capital Stringency

	The minimum capital-asset ratio requirement is in line with the Basel guidelines	The minimum ratio varies as a function of the market risk	The market value of loan losses not realized in accounting books is deducted	Unrealized losses in securities portfolios are deducted	Unrealized foreign exchange losses are deducted	Capital stringency index = sum of all columns
Argentina	✓	✓	✓	✓	✓	5
Mexico	✓	✓	✓	✓	✓	5
Bolivia	✓		✓	✓	✓	4
Colombia	✓		✓	✓	✓	4
Jamaica	✓		✓	✓	✓	4
Peru	✓		✓	✓	✓	4
Chile	✓			✓	✓	3
Trinidad & Tobago	✓		✓		✓	3
Brazil	✓	✓				2
Guatemala	✓				✓	2
Panama	✓				✓	2
Honduras	✓					1
El Salvador	✓					1
Venezuela	✓					1
Latin American average						2.9
Developed country average						4.3

Sources: Barth, Caprio and Levine (2001b) and Banco de la República de Colombia.

ure. Even more, in the presence of a deposit insurance scheme that can lead to moral hazard behavior, the fact that the capital of bank owners is at risk reduces their incentive to shift towards excessive risk taking. The main drawback of compulsory capital requirements, however, is that they do not necessarily mimic the risk implied in the bank's asset structure, and hence are not a real buffer, given a bank's particular exposure to risk. The question is whether compulsory capital requirements reduce risk-taking incentives. Some argue that they can increase credit rationing,<sup>16</sup> increase the cost of capital,<sup>17</sup> and reduce economic growth. Others argue that capital adequacy ratios can promote stability by controlling the risk of the bank's portfolio,<sup>18</sup> and encourage a flow of financial resources from savers to investors.

The stringency of capital requirements varies widely across Latin America. Table 5.4 shows that even while many countries have adopted capital adequacy ratios in the Basel spirit, many of the other prudential regulations that ensure effective capital adequacy ratios are

still not in place. While Argentina, Mexico and Peru require banks to adjust the minimum capital adequacy ratio according to risk and limit the type of funds that can be used to initially capitalize a bank, others (Honduras and El Salvador) are less rigorous. For example, they do not require banks to deduct market value losses from capital before calculating the minimum capital adequacy ratio. However, all of the countries do require their banks to have the minimum capital-asset ratio requirement risk weighted in line with the Basel guidelines.

The last column of Table 5.4 reports a capital stringency index as constructed by Barth, Caprio and Levine (2001b), which adds the elements of each of the other columns. The index allows for comparison between Latin American countries and the rest of the world and measures the quality of capital adequacy regulations. The

<sup>16</sup> See Thakor (1996).

<sup>17</sup> See Gorton and Winton (1999).

<sup>18</sup> See Gjerde and Semmen (1995).

average capital adequacy index for Latin America is lower than that of the developed countries; the latter are in general more rigorous with capital standards than the former. However, there is a wide variance within Latin America. Guatemala, Venezuela, Panama, Honduras and El Salvador, in particular, have extremely relaxed capital adequacy regulations, while Argentina, Mexico, Jamaica and Bolivia are nearly as or even more stringent than the average of the developed countries.

A very relevant feature of prudential regulation is the quality of the capital itself in terms of serving as a buffer against shocks and avoiding insolvency problems. Unfortunately, cross-country information regarding the quality of capital is scarce. Also important in prudential regulation is the strategy followed by each country to classify non-performing loans and to provision them. The degree of stringency in these areas varies across countries. While Brazil, Chile, Mexico and El Salvador classify loans as doubtful earlier than others do, Argentina, Bolivia and Trinidad and Tobago provision higher percentages of loans at an earlier stage. What is important to note is that no matter what policy is followed, what really matters is the quality of loan classification. Very few countries, for example, use forward-looking methods to classify their loans and restrict loan classification to arrears.<sup>19</sup>

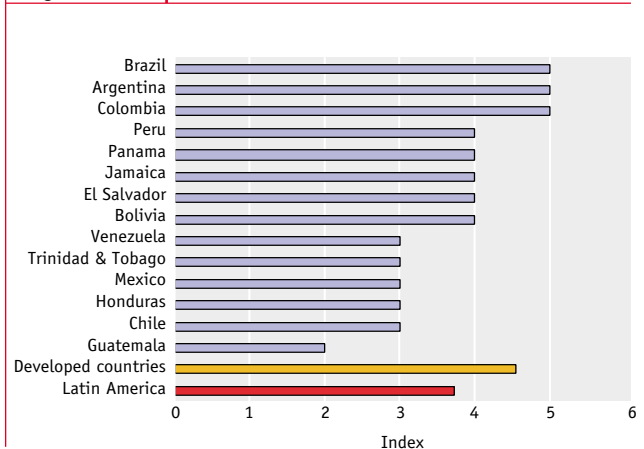
Unfortunately, information on the role of external agents or on the accountability of auditors in classifying loans is unavailable.

## Regulations that Facilitate Private Monitoring

Although private monitoring can be costly, it can be an important complement to public monitoring. Certain regulations that stimulate private sector monitoring are crucial for the health of the financial system (see Barth, Caprio and Levine, 2001a). These primarily include rules and regulations regarding transparency of bank activities, disclosure of information, and accountability of banking managers. In addition, external-rating agencies can play a key role in stimulating private monitoring by supplying information to depositors on the quality of financial institutions.

There are wide disparities in Latin American countries regarding rules and regulations that support pri-

**Figure 5.5** Ease of Private Monitoring



Sources: Barth, Caprio and Levine (2001a) and Banco de la República de Colombia.

private monitoring. The 13 Latin American economies surveyed by Barth, Caprio and Levine (2001a) require their banks to have an external audit by a licensed auditor. However, while in eight countries banks must disclose off-balance sheet items to the public (Bolivia, Brazil, Chile, El Salvador, Honduras, Jamaica, Panama and Peru), only two of them (Argentina and Bolivia) require disclosure of risk management procedures. The 10 biggest banks are rated by international credit rating agencies only in Argentina, Brazil and El Salvador.

A synthetic way to measure the level of public disclosure of information by country is to use a private monitoring index similar to that constructed by Barth, Caprio and Levine (2001a). It is plotted for the Latin American countries in Figure 5.5.<sup>20</sup> The figure shows that Argentina and Brazil have high levels of private monitoring. On the other extreme is Guatemala (among others), where none of the top 10 banks are rated by international agencies, and where banks are not obliged to report consolidated balances. The average level of private supervision in the region is lower than that of the developed countries. Empirical evidence suggests

<sup>19</sup> The only countries that use forward-looking methods to classify loans are Argentina, Chile, Nicaragua, Uruguay and Venezuela.

<sup>20</sup> The index is constructed by adding 1 if external audits by certified auditors are a compulsory obligation for banks, if the top 10 banks are rated by international credit rating agencies, if financial institutions are required to produce consolidated accounts covering all bank and any non-bank financial subsidiaries, if directors are legally liable if information disclosed is erroneous or misleading, if off-balance sheets are disclosed to the public, and if banks must disclose their risk management procedures to the public. Higher values indicate that private monitoring is easier.

that private sector monitoring is important to financial sector development and stability. Improvement in this area could foster financial development in Guatemala, Chile, Honduras, Mexico, Trinidad and Tobago and Venezuela.

## Conclusions

Regulations governing financial systems in Latin America and the Caribbean advanced significantly in the 1990s. Many countries liberalized interest rates and adopted policies to promote healthy competition in the financial system. As a result, financial sectors expanded rapidly during these years. However, there remain several legal issues that constrain financial development. Governments continue to regulate many elements of financial contracts in several countries, impeding the proper use of financial technological advances that would oth-

erwise facilitate management and expansion of possible investments. In many countries, there are institutional restrictions that impede the use of collateral. Creditors are left unprotected, virtually neutralizing the positive consequences of pledging collateral even if regulations to facilitate its use were in place.

Most countries have adopted or are in the process of adopting prudential regulations that can increase the stability of financial systems. However, further effort is needed to reduce moral hazard practices and to identify and provision for risks. In the same spirit, many countries have adopted international auditing and disclosure standards that enhance private monitoring and increase the efficiency of prudential regulations and supervision. Yet, some countries lag behind in implementing important disclosure measures and should be encouraged to promote a transparent and more efficient financial system.

Appendix Table 5.1 **Financial Development and Reform: Regression Results**

	Dependent variable: private credit/GDP	
	OLS	Fixed effects
Constant	22.290 (7.28)***	27.830 (12.35)***
Financial liberalization index (0-1)	10.930 (2.83)***	6.00 (2.05)***
Inflation	-0.015 (-1.86)*	-0.001 (-2.24)***
GDP growth <sup>1</sup>	0.670 (1.94)**	-0.050 (-0.18)***
R <sup>2</sup>	0.06	0.62
No. of observations	250	250
No. of countries	26	26

<sup>1</sup> Refers to the moving average of the past five years.

Notes: OLS = Ordinary least squares. t-statistics in parentheses.

\* Significant at the 10% level.

\*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

Appendix Table 5.3 **Credit Growth, External Shocks and Creditor Protection: Regression Results**

Explanatory variables	Dependent variable: real private credit (change, logs)	
	Reg. 1	Reg. 2
Foreign shock	6.440 (3.30)***	6.840 (3.15)***
Foreign shock times credit index	-6.160 (-2.92)***	-7.370 (-3.20)***
Inflation (change logs)		-0.100 (-2.00)***
Government surplus/GDP		0.006 (3.68)***
Constant	0.030 (3.00)***	0.050 (5.00)***
R <sup>2</sup>	0.02	0.09
F test (whole regression)	7.07	9.06
Prob > F	0.00	0.00
No. of observations	568	421

Notes: t-statistics in parentheses.

\* Significant at the 10% level.

\*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

Appendix Table 5.2 **Credit Depth and Creditor Protection: Regression Results**

Explanatory variables	Dependent variable: private credit/GDP	
	Reg. 1	Reg. 2
GDP growth	-0.029 (-1.381)	-0.028 (-1.217)
Per capita GDP (log)	0.076 (3.45)***	0.111 (5.55)***
Inflation	0.000 (-0.208)	0.000 (-0.759)
Government surplus/GDP	0.013 (1.75)*	0.012 (1.50)
Effective creditor rights index		0.479 (2.90)***
Rule of law index	0.694 (4.39)***	
Creditor rights index	0.184 (1.75)*	
Constant	-0.766 (-3.51)***	-0.803 (-3.72)***
R <sup>2</sup>	0.55	0.46
F test (whole regression)	12.06	10.03
Prob > F	0.00	0.00
F test (creditor rights + rule of law)	10.84	
Prob > F	0	
No. of observations	55	55

Notes: t-statistics in parentheses.

\* Significant at the 10% level. \*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

