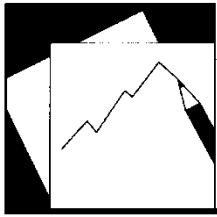


# Working Paper

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# IMF Working Paper

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## Building Blocks for Effective Macprudential Policies in Latin America: Institutional Considerations

*Luis I. Jácome, Erlend W. Nier, and Patrick Imam*

## **IMF Working Paper**

Monetary and Capital Markets Department

### **Building Blocks for Effective Macprudential Policies in Latin America: Institutional Considerations**

**Prepared by Luis I. Jácome, Erlend W. Nier, and Patrick Imam<sup>1</sup>**

Authorized for distribution by Karl Habermeier

July 2012

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#### **Abstract**

An increasing number of countries—including in Latin America—are reforming their financial stability frameworks in the aftermath of the financial crisis, in order to establish a stronger macroprudential policy function. This paper analyzes existing arrangements for financial stability in Latin America and examines key issues to consider when designing the institutional foundations for effective macroprudential policies. The paper focuses primarily on eight Latin American countries, where the institutional arrangements for monetary and financial policies can be classified in two distinct groups: the “Pacific” model that includes Chile, Colombia, Peru, Costa Rica, and Mexico, and the “Atlantic” model, comprising Argentina, Brazil, and Uruguay.

JEL Classification Numbers: E58,E61,G28

Keywords: Macrorprudential policy, financial stability, systemic crises, central banks, banking supervision.

Author’s E-Mail Address: [ljacome@imf.org](mailto:ljacome@imf.org), [enier@imf.org](mailto:enier@imf.org), [pimam@imf.org](mailto:pimam@imf.org)

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<sup>1</sup> We are grateful to Pablo García, Jacek Osinski, Robert Rennhack, Camilo Tovar, and Mercedes Vera for providing useful comments, and to Simon Townsend for valuable research assistance. The paper also benefited from comments by seminar participants at the IMF’s Western Hemisphere Department, the Inter-American Development Bank, and the World Bank. Errors and omissions are the authors’ own responsibility.

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## I. INTRODUCTION

Policy makers and academics alike have come to the conclusion that at least the magnitude of the recent crisis could have been smaller if the buildup of systemic risk—in motion for several years—had been contained. In response, an increasing number of countries, including countries in the European Union as well as the United States, are reforming their financial stability framework in the aftermath of the financial crisis. As monitoring and preventing systemic risk requires a broad change in the way financial surveillance is conducted, these reforms involve revisiting the institutional foundations for monetary and financial policies. In particular, reforms seek to establish an effective macroprudential policy framework to contain the build-up of systemic risk. In this paper, we follow the definition of macroprudential policy laid out in IMF (2011a), namely, a policy that uses primarily prudential tools to limit systemic or system-wide financial risk.<sup>2</sup>

Latin America has also started to reinforce the institutional underpinnings to prevent financial crises. Indeed, as a region, Latin America has been prone to large and recurrent financial crises for a long time. While most countries have made substantial progress over the last decade to increase the soundness of their financial systems and their resilience to real and financial shocks, more might be needed in light of the lessons from the recent crisis in many advanced economies. Chile, Mexico, and Uruguay have recently created financial stability councils with the explicit mandate of monitoring systemic risks and recommending the use of macroprudential policy tools to mitigate those risks. A number of these and other countries in the region had already been using macroprudential policies although they often lacked a well-designed institutional setup.

This paper assesses the existing institutional arrangements for financial stability in Latin America and identifies the key issues that these countries could take into consideration when building the institutional foundations for an effective implementation of macroprudential policies. The discussion draws on the conceptual analysis laid out in Nier and others (2011), but it also factors into the analysis important institutional specificities and circumstances of this region. The study focuses primarily on eight Latin American countries, where the institutional arrangements for monetary and financial policies can be classified in two distinct groups. The “Pacific” model that includes Chile, Colombia, and Peru, as well as Costa Rica and Mexico, and the “Atlantic” model, comprising Argentina, Brazil, and Uruguay.

The paper is organized as follows: In the next section we briefly review the progress achieved by the Latin American countries to strengthen their financial systems and identify key prevailing macro-financial vulnerabilities; section III analyzes the institutional arrangements for financial stability currently in place in our sample of countries, including

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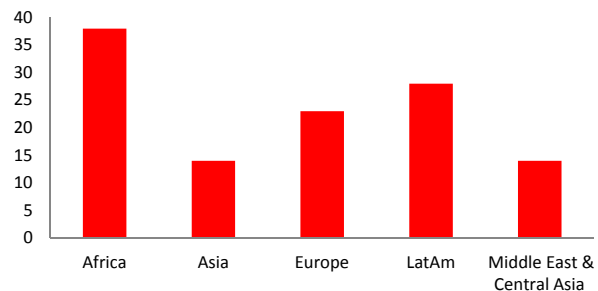
<sup>2</sup> Systemic risk has been defined as the risk of disruptions in the provision of key financial services that can have serious consequences for the real economy (IMF, FSB, BIS, 2009).

recent reforms. We conclude the paper by discussing the way forward and possible avenues for enhancing the effectiveness of macroprudential policies.

## II. THE CASE FOR MACROPRUDENTIAL POLICY IN LATIN AMERICA

Latin America has a history of recurrent banking crises. During 1970 to 2007, as many as 28 systemic banking crises occurred in the region and no large country remained immune to this disease.<sup>3</sup> In some countries banking crises occurred more than once, with Argentina leading this group with four episodes (1981, 1989, 1995, and 2002), and many countries suffering banking crises twice.<sup>4</sup> In half of these events, a currency crisis also took place, and in nine of them a sovereign debt crisis occurred as well. From a worldwide perspective, Latin America is a region particularly prone to banking crises, only surpassed by Africa when measured in absolute numbers (Figure 1), and the region most affected on a crisis per country basis.

Figure 1. Systemic Banking Crises Worldwide  
(Number of crises by region, 1970–2007)



Source: Laeven and Valencia (2008)

The cost of systemic banking crises was high. They were conducive to economic recession and even prolonged economic contraction. They also tended to lead to higher inflation.<sup>5</sup> In the short run, banking crises were often accompanied by large currency depreciations—that fueled inflation—in particular when the central bank injected money on large scale in an effort to contain and manage the crises.<sup>6</sup> Moreover, a number of crises countries introduced administrative measures—like controls on capital outflows in Argentina (2002) and Venezuela (1994), and a freeze of bank deposits, in Argentina (2002), Ecuador (1999), and Uruguay (2002)—to prevent a financial meltdown. These decisions inflicted lasting adverse effects on bank depositors’ confidence. From a fiscal perspective, the costs of large banking

<sup>3</sup> We borrow the definition of systemic financial crises from Laeven and Valencia (2008). They characterize systemic crises when three out of the following six conditions were met in a crises event: extensive liquidity support; bank restructuring cost above a given threshold; significant bank nationalizations; significant guarantees put in place; significant asset purchases; and deposit freezes and bank holidays. Details for each of these conditions are found in that paper.

<sup>4</sup> Cases in point are Bolivia (1986, 1994); Brazil (1990, 1994); Chile (1976, 1982); Colombia (1982, 1998); Costa Rica (1987, 1994); Ecuador (1982, 1999); Mexico (1982, 1995); Nicaragua (1990, 2000); and Uruguay (1982, 2002).

<sup>5</sup> See Kaminsky and Reinhart (1999) and Jácome (2008).

<sup>6</sup> Jácome and others (2011) provide empirical support to this statement using a sample of banking crises in Latin America.

crises in Latin America typically exceeded 10 percent of GDP and, in some cases; even 30 percent of GDP, like in Argentina, Chile, and Uruguay in the early-1980s (Laeven and Valencia, 2008).

#### A. Latin America has Made Significant Strides to Preserve Financial Stability

Following recurrent banking crises, the Latin American countries improved financial regulation and supervision. Because of the large toll inflicted by banking crises, most countries enacted new legislation to upgrade prudential supervision and regulations. The increase in risk-weighted-capital asset ratios beyond the 8 percent required by the Basel I Accord and the implementation of the Core Principles for Effective Banking Supervision are two milestones towards these efforts (Appendix III). In particular, some countries also started to gradually introduce the provisions contained in the Basel II Accord, thereby moving from a practice of supervision based on compliance-checking towards the implementation of risk-oriented procedures.

**Table 1. Financial Safety Nets**  
(Selected Latin American countries)

	Lender-of-last-resort (maximum amount of the loan and term of the loan)*/	Deposit insurance (coverage and type of premium) **/	Bank resolution (nature of the transaction) ***/
Argentina	100% of capital 180 days renewable	USD 8,000 Risk based	4
Brazil	Not specified 360 days	USD 34,500 Not risk based	1 and 2
Chile	Not specified 90 days renewable	USD 5,000 No premium	1
Colombia	Not established 30 days, renewable up to 180 days	USD 9,900 Risk based	1, 2, 3, and 4
Costa Rica	50% of liquid assets 30 days renewable once up to 1 year	Does not exist. Public banks have full guarantee	1
Mexico	Not established by law	USD 132,900 Risk based	1, 3, and 4
Peru	100% of capital 30 days renewable	USD 28,900 Risk based	2, 3, and 4
Uruguay	150% of capital Up to 180 days	USD 5,000 For. Curr. USD 25,600 Dom. Curr. Risk based	4

Source: Central banks' websites for legislation and Bolzico and others (2010) for financial safety nets.

\*/ Expressed in terms of the borrowing institution.

\*\*/ The deposit insurance coverage is expressed at the January 2010 exchange rate.

\*\*\*/ 1: Intervention or nationalization; 2: Mergers and acquisitions; 3: Bridge bank; 4: Purchase and assumption operations.

They also modernized the legislation required to cope with bank failures, and strengthened financial safety nets. In addition to the standard central bank role as lender-of-last-resort,

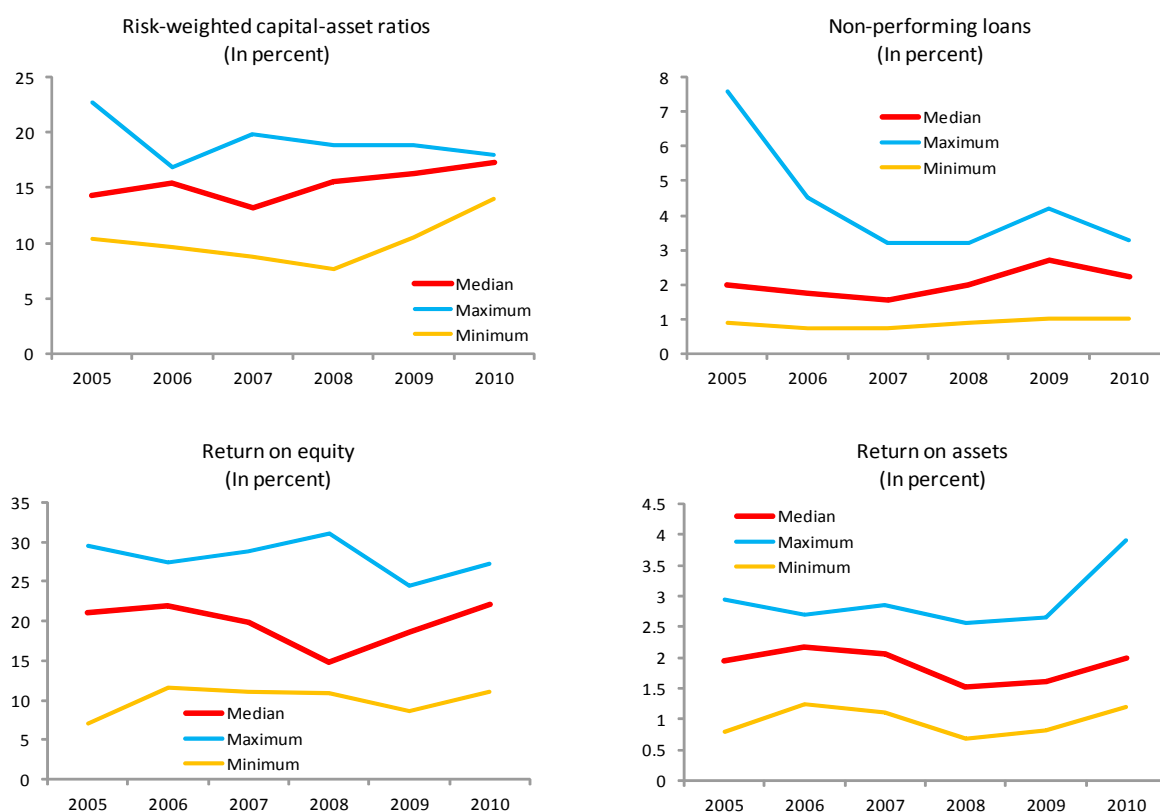


most of the 8 countries in our sample have in place deposit insurance mechanisms and bank resolution provisions as a way of preventing a disorderly bank failure (Table 1).

Except for Chile and Costa Rica—that have country-specific deposit guarantees—all other countries offer deposit insurance, with coverage varying across countries and ranging up to more than 12 times per capita GDP in Mexico. These schemes are financed in most cases with risk-based premium paid by depository institutions. As for bank resolution, some countries are better equipped than others, but the majority has introduced legislation to execute purchase and assumption operations.

With better prudential regulation and supervision, financial systems in Latin America exhibited sound financial indicators as of end-2010 and were able to weather the stresses brought on by the global financial crisis relatively well.

**Figure 2. Key Financial Soundness Indicators**  
(Eight Latin American Countries, 2005–2010)



Source: IMF's Western Hemisphere Department.

Financial institutions in Latin America were not exposed to toxic assets—like banks in the advanced countries were. As a result, despite the adverse effects produced by the liquidity crunch brought on by the Lehman collapse and the economic downturn in the industrial world, financial soundness indicators deteriorated only modestly (Figure 2). Key financial

soundness indicators have further improved since then. The median risk-weighted-capital-asset ratio for the eight countries in the sample currently stands at more than 15 percent and in no country is this ratio below 10 percent.<sup>7</sup> Similarly, the ratio of median nonperforming loans is slowly declining again after two-year deterioration. In turn, banks' profitability has recovered although at an uneven pace across countries.

Favorable terms of trade preceding the Lehman's collapse played a key role. Since most countries in the sample are primarily commodity exporters, they were able to build up international reserves as commodity prices soared. The previous accumulation of reserves not only discouraged attacks on the currency as the crisis escalated, but also allowed most countries to intervene in the foreign exchange market to moderate depreciation trends. In some countries, like Brazil, trade diversification also played an important role in mitigating the adverse effects of the recession in the industrial world.

This positive outcome was also possible thanks to central banks' effective policy reaction and because of the countries' stronger macroeconomic policies more generally. Central banks in Latin America reacted swiftly to the changing external environment, initially tightening monetary policy during the supply shock—to hold inflation expectations anchored—and later reversing this policy stance as Lehman collapsed and the advanced economies entered into recession.<sup>8</sup> Some central banks also implemented unconventional monetary measures to support counter cyclical fiscal policies, which sought to moderate economic slowdown and recession trends.

The central banks' response policy would not have been so effective without the support of stronger macroeconomic policies that were adopted over previous years and helped to absorb the negative impact of the external shocks. These policies encompassed primarily the maintaining of only moderate fiscal and external deficits, the lowering of external debt, as well as strengthened policy buffers, such as enhanced international reserves, coupled with flexible exchange rate regimes.<sup>9</sup>

Thus, Latin America has successfully weathered the world financial turmoil due in part to strong macroeconomic and financial foundations. In addition, the financial crisis hit the region immediately after a prolonged period of favorable external conditions, which allowed

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<sup>7</sup> In the LA6 countries (Brazil, Chile, Colombia, Mexico, Peru, and Uruguay), banks' capital not only exceed Basel III requirements, but in many instances satisfy the required conservation and countercyclical buffers (Terrier and others, 2011).

<sup>8</sup> See Jara and others (2009) and Canales and others (2010), for an analysis of how major central banks in Latin America weathered the global crisis.

<sup>9</sup> Stockpiling international reserves was critical as it provided central banks with firepower to deter speculative attacks against domestic currencies and to moderate the effects of capital flows' volatility. In turn, exchange rate flexibility avoided the traumatic abandonment of fixed parities observed in the past.

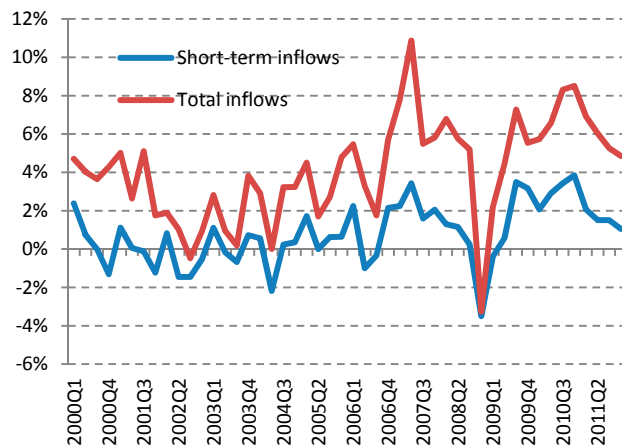
Latin America to accumulate macroeconomic buffers, including lower debt/GDP ratios and significantly higher international reserves. With banks on sounder financial footing than in the past, the impact of the external financial shock was short-lived for emerging markets in the region as the existing macroeconomic buffers accumulated over the booming years could cushion the negative impact of the shock.

## B. Important Vulnerabilities Remain

Despite the recent experience, there is no room for complacency. While emerging market countries in the region have made strides to overcome the previous macroeconomic volatility and built up buffers, important vulnerabilities remain that may play a destabilizing role in case the countries are hit by sufficiently large and prolonged shocks. In particular:

- Latin America has a history of sudden capital outflows, which also occurred during the recent world crisis. Capital flows have historically been volatile in this region, including in the 2000s (Figure 3). The pace of inflows accelerated, in particular since 2007, except for the abrupt decline in late-2008 in the aftermath of Lehman's collapse.<sup>10</sup> Short-term inflows picked up to 4 percent of GDP by end 2010 and total inflows to more than 8 percent of GDP by the same date. The experience from other countries suggests that large portions of capital inflows are often allocated into non-tradable sectors, such as real state, which—in connection with large credit expansion—can feed assets' bubbles and pose a potential vulnerability for the financial system and the economy at large.<sup>11</sup>

Figure 3. Capital Inflows as Percent of GDP  
(Selected Latin American Countries; Quarterly, 2000–2011)



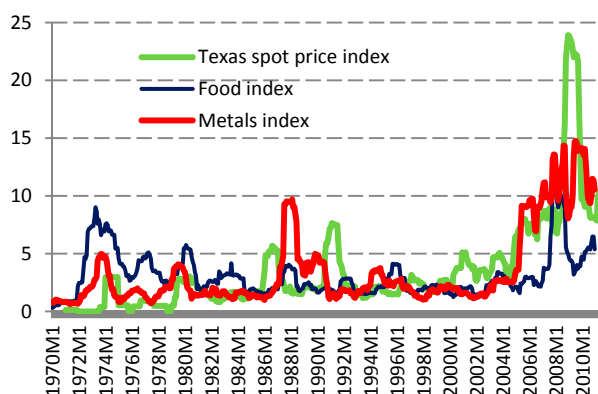
<sup>10</sup> Following the Argentinean and Uruguayan crises, capital flows to Latin America resumed due to the improved environment of macroeconomic stability and because of the encouraging growth prospects. Capital inflows have concentrated on emerging markets as they are more financially integrated to the rest of the world than the developing countries are, except for some countries like Argentina, Ecuador, and Venezuela that have inhibited foreign investment.

<sup>11</sup> Some economies in Latin America may not be able to absorb productively large amounts of capital inflows, not only because of their size, but also because of the lack of solid institutional underpinnings, which discourage long-term investment.

Moreover, it is well known that short-term inflows can quickly turn into outflows and induce exchange rate instability and large nominal depreciations of domestic currencies. As currencies depreciate interest rates increase in defense of the currency, this can together have a damaging effect on financial institutions' balance sheets, thereby amplifying financial distress.<sup>12</sup> Against this background, Latin America resisted well the brief periods of capital outflows in the last quarter of 2008 and in 2011. However, it is unclear how damaging a more prolonged period of outflows would be, in particular, if it happens in tandem with a large adverse real shock—as in the late-1990s, for example.

- Most countries in the region are primarily commodity exporters and, hence, are exposed to terms of trade shocks and the adverse effects of a large volatility of commodity prices. In particular, the volatility of oil and metal prices—and also of food—has increased significantly during the last decade, hitting record highs in the recent past (Figure 4). Commodity dependence is more acute in South America, where exports have a share in total exports of 30 percent or more.<sup>13</sup> With such a large relative importance, terms of trade shocks generally take a high toll on the countries' external accounts—and in some countries also on the public finances—and indirectly on the financial system, as economic activity decelerates and even contracts, and banks' loans are less likely to be repaid.<sup>14</sup> While, today, commodity prices are high, a large correction is conceivable as they are at a high level compared to historical data.<sup>15</sup> Most countries enjoy solid macroeconomic fundamentals, high international reserves, and flexible

Figure 4. Volatility of Commodity Prices  
(12m standard deviation. 1971–2011)



<sup>12</sup> The adverse effects of sudden stops and reversals of capital flows have been vastly documented in the literature. See, for example, Calvo (1998), Chang and Velasco (2001), and Calvo and others (2004).

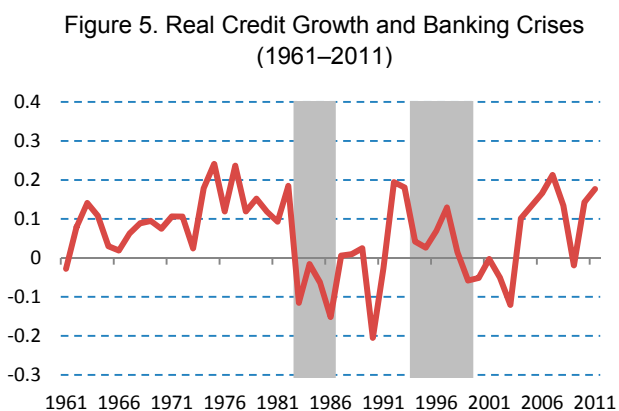
<sup>13</sup> In Argentina and Brazil, commodities have a share in total exports of more than 30 and 40 percent respectively (see IMF, 2011b). In general, the supply of commodity exports is heterogeneous, based on agriculture products and minerals.

<sup>14</sup> The share of natural resources in total revenue has increased over the past decade in all major countries in the region but in Mexico. The increase has been fuelled largely by the higher prices of natural resources, but increased tax rates and higher output also explain such rise.

<sup>15</sup> See IMF (2011b).

exchange rates, making them better equipped to resist the adverse effects of terms of trade shocks.<sup>16</sup> However, the downside risks are still potentially severe if the shock is prolonged and hit countries in combination with a financial shock.

- Real credit is currently growing at a rapid pace—after a short interruption in 2009. Credit growth has recovered since the early years of the 2000s and is surging since the middle of the decade (Figure 5). Real credit was growing at a fast pace (about 20 percent y/o/y in Brazil Colombia and more than 15 percent y/o/y in Chile and Peru) by late 2011. Such a dynamic credit expansion is likely to lay the ground for the buildup of systemic risks that may threaten financial stability.<sup>17</sup> Latin America shows a record of boom and bust cycles, which turned into financial and currency crises, like in the early to mid-1980s and the mid to late-1990s. But even if crises do not materialize, smoothing out the credit cycle is warranted because the procyclical behavior of financial markets tends to amplify economic cycles and their adverse consequences on investment and employment.<sup>18</sup>
- Latin American is also vulnerable to additional factors that are idiosyncratic to specific countries. For instance, some countries have been hit frequently by natural disasters, which not only destroyed parts of the countries' infrastructure but also agriculture production, thereby adversely impacting financial systems' loans.<sup>19</sup> Costa Rica and Mexico are also exposed to the variations in the U.S. economic cycle,



<sup>16</sup> See Canales-Kriljenko and others (2010).

<sup>17</sup> The surge in real credit growth, in countries where capitals can move quickly and freely, may lead market participants to engage in risky transactions that often jeopardize the stability of financial systems and national economies as a whole. Even if rapid credit growth starts from a low base, it could still pose a vulnerability as verified in light of the experience of several Eastern European countries, which went through a prolonged phase of dynamic credit expansion and eventually suffered severe financial problems, despite having started from a low level of financial deepening.

<sup>18</sup> See Claessens and others (2011) for empirical evidence.

<sup>19</sup> Whether floods or hurricanes the impact of natural disasters took a high toll on the affected countries. Cases in point are Hurricane Mitch in 1998 that destroyed much of Honduras and which hit financial institutions' balance sheets, and the floods induced by El Niño in the late 1990s, which severely affected Ecuador—triggering a systemic banking crisis—and also hit badly Colombia and Peru.

which not only alter trade and financial flows but also undermine the volume of remittances, a key source of external financing (for Mexico),<sup>20</sup> and the revenues from tourism.

In sum, Latin America has reduced macroeconomic vulnerabilities but they can still play a destabilizing role. Macroeconomic volatility decreased during the past decade, but it is relatively high in absolute terms. Also, while foreign direct investment has grown strongly, Latin America still receives large short-term capital inflows, which are prone to sudden stops and reversals. In addition, most of the large countries in the region continue to rely on the export of commodities as a source of growth, which makes these economies vulnerable to large changes in terms of trade.

Financial systems also exhibit vulnerabilities that pose system wide risks. These weaknesses reside largely in the banking system, the dominant institutions in most financial systems in the region. Key vulnerabilities are the following:

- Financial dollarization is high in several countries. Despite having achieved macroeconomic stability, countries like Costa Rica, Peru, and Uruguay—and others not included in the sample, like Bolivia and Nicaragua—retain a high share of dollar liabilities of about 50 percent or more.<sup>21</sup> While these countries have reduced financial dollarization as a result of a prolonged period of low inflation, this progress is still unstable as dollarization tends to rise during periods of stress, as happened at the peak of the crisis in late 2008. Financial dollarization heightens countries exposure to the effects of currency depreciations, which may happen, for instance, as a result of sudden capital outflows, thereby undermining the balance sheet of unhedged individuals and corporations and, eventually, of financial institutions. Thus, financial dollarization can potentially amplify financial stress.<sup>22</sup> Financial dollarization also restricts the government's and central bank's ability to confront banking crises as depositors are more willing to shift to foreign currency assets as a means of protecting their savings against inflation. This implies that a run on local currency deposits may also put pressure on the exchange rate. To mitigate the vulnerability induced by financial dollarization countries opted to accumulate large international reserves as they provide some cushion during periods of financial stress.

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<sup>20</sup> In the Central American countries, like in Honduras and El Salvador, remittances account for about 20 percent of GDP.

<sup>21</sup> Even compared to other emerging markets, the level of dollarization in these countries is still very high (Garcia-Escribano and Sosa, 2011).

<sup>22</sup> See Ingves and Moretti (2003) for a general discussion of the limitations imposed by financial dollarization in managing banking crises, and Jácome (2004), for a specific description of how dollarization affected the unfolding of the late 1990s systemic crisis in Ecuador.

- In virtually all countries in the sample, there are systemically important financial institutions (SIFIs). The banking system is dominated typically by two or three banks, which may, as a result, be too-important-to-fail (see Table 2). These banks are so central to the economy—not only due to their large size but also because they typically are interconnected with other institutions through the interbank market—that their failure would inevitably lead the government or the central bank to bail out depositors, thereby creating moral hazard and an enhanced fiscal contingency.<sup>23</sup> Moreover, bailing out one of these large institutions may involve injecting central bank money on a large scale, which may fuel further macroeconomic instability and potentially trigger currency crises, as has been observed repeatedly in the past.<sup>24</sup>
- The presence of large public banks in several countries is an additional potential vulnerability. Public banks have more than 40 percent market share in countries like Brazil, Costa Rica, and Uruguay, but are also important in Argentina, Chile, and Mexico. Public banks can play a positive role during periods of financial turmoil as they become “safe havens” for depositors—because of the implicit guarantee that public banks enjoy—and because governments can use them to maintain a countercyclical stance during periods of credit contraction—as observed in several countries in the region during the recent crisis, most notably in Brazil. However, public banks also represent a fiscal contingency since these banks may be prone to engage in risky activities to exploit implicit guarantees. The government may then be forced to restore capital losses associated with risky operations if the bank fails in the midst of a systemic crisis.<sup>25</sup>
- Cross-border interconnectedness is a vulnerability that applies to some countries in our sample. For instance, Uruguay is strongly interconnected with Argentina and while the main sources of funding are Uruguayan banks and local depositors, nonresident deposits from Argentina are currently estimated at one-fifth of total deposits. The behavior of these deposits hinges on Argentina’s economic and political performance, and, hence, the Uruguayan banking system is exposed to this external source of volatility. Costa Rica is also exposed to cross-border interconnectedness with respect to other Central American countries, where several large financial groups have a regional presence, such as Citi and HSBC from outside the region and Lafise and Continental groups from inside the region.

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<sup>23</sup> Because of the implicit government guarantee, SIFIs also engender an uneven level playing field, as they encourage depositors to prefer them over smaller financial institutions.

<sup>24</sup> For empirical evidence, see Jácome and others (2011).

<sup>25</sup> This happened recently in Germany during the financial crisis, as some of the Landesbanken were bailed out by their owners—the federal states.

**Table 2. Relative Importance of Top Banks in 8 Countries in Latin America**

(By percentage share of total deposits and short-term funding, as of 2010)

	Argentina	Brazil	Chile	Colombia	Costa Rica	Mexico	Peru	Uruguay
First	23.69	23.46	21.64	19.35	20.86	20.79	24.5	42.59
Second	8.82	19.54	20.88	13.65	20.22	20.4	21.7	17.82
Third	8.47	15.88	18.55	12.42	7.28	8.81	16.3	4.84

Source: Bankscope.

In addition to these vulnerabilities, others may emerge in the future as financial deepening increases and financial transactions become more sophisticated. For instance, the development of the financial system is likely to lead banks to rely less on deposits as a source of funding (see Appendix III) and more on other sources, including wholesale funding. This is already observed in a number of countries in Latin America, where wholesale funding is an increasingly important source of financing, even if it is still low in absolute terms.<sup>26</sup> As the financial system develops, and nonbank financial institutions, like mutual funds, gain in importance, some financial institutions may well become more heavily dependent on wholesale funding. As seen in the recent crisis, dependence on wholesale funding can pose a major systemic risk because this source of funding can quickly dry up during periods of financial stress. In addition, sophisticated financial instruments, such as derivative instruments, are likely to become more important. Both Brazil and Mexico already confronted problems with complex derivatives during 2008, in particular in the foreign exchange market, which were not adequately regulated. All these developments will need to be closely monitored in future to ensure that they do not pose new sets of risks.

### C. Mapping Macro-financial Vulnerabilities and Macroprudential Policies

Countries in Latin America have for quite some time used a number of macroprudential tools without having in place a macroprudential framework, and often without an explicit objective to prevent the buildup of systemic risks. With a history of recurrent financial crises that arose in the context of pronounced boom-and-bust cycles, several countries in the region began to recognize that relying on traditional financial regulations missed a key dimension of financial stability, namely the two-way effect between macroeconomic performance and the stability of financial institutions. Thus, they introduced various instruments which are now considered of macroprudential nature, although some of them were used in the past with monetary policy purposes—most typically reserve requirements (RRs).

For instance, due to widespread exchange rate volatility, and often because of financial dollarization, most countries discouraged currency mismatches. Central banks imposed

<sup>26</sup> See IMF (2011b).



limitations to banks' foreign exchange net open positions (see Table 3). This instrument has been used since long before the 2000s, initially to tame speculation in the foreign exchange market and, later, to prevent exchange rate risks in financial institutions' balance sheet. Also, some countries (Peru and Uruguay, for example) have sought to moderate foreign currency-induced credit risks in the financial system—which may occur as a result of the negative impact of large depreciations on unhedged bank borrowers. To this end, these countries have discouraged the provision of foreign currency loans to borrowers featuring revenues in domestic currency. For instance, Peru, has imposed an additional capital requirement of 2.5 percent of the estimated foreign exchange exposure. And more recently, Brazil and Mexico have imposed limitations on derivative positions.

In addition, limits on interbank exposures have been introduced in many countries in order to reduce the potential for contagion risks. Indeed, several episodes of financial crisis in the region illustrate domino effects that were triggered by the failure of a large bank, notably Venezuela in the mid-1990s and Ecuador in 1999.<sup>27</sup> In a region where financial crises have been recurrent, many times induced not only by exogenous shocks but also by idiosyncratic bank failures, limiting interbank exposures is warranted. Thus, most countries in the sample have resorted to the use of this policy instrument to reduce the chances that individual failures are propagated across the system.

**Table 3. Macroprudential Policy Tools in Selected Latin American Countries**

	Limits on net open positions, currency mismatches	Limits on interbank exposures	Caps on loan to value or debt to income ratios	Countercyclical dynamic provisions
Argentina	✓		✓	
Brazil	✓		✓ <sup>a</sup>	
Chile	✓	✓	✓	✓ <sup>b</sup>
Colombia	✓	✓	✓	✓
Costa Rica	✓	✓	✓	
Mexico	✓	✓		✓ <sup>b</sup>
Peru	✓	✓	✓	✓
Uruguay	✓	✓		✓

Sources: IMF/MCM survey (December 2010) and unofficial answers from central banks.

<sup>a</sup> Caps on loan-to-value ratios were eliminated in December 2011. <sup>b</sup> Based on expected loan losses.

The vast majority of countries in the sample have also used macroprudential tools to tackle systemic risks in the “time dimension”, notably to avoid the potential adverse effects of rapid credit growth. Caps on loan-to-value or debt-to-income ratios have recently been recently

<sup>27</sup> In Venezuela, the closure of Banco Latino spread a systemic crisis that engulfed a large proportion of the financial system (see de Krivoy, 2000). Similarly, in Ecuador, the rapid financial deterioration of Banco del Progreso fostered a bank holiday and a subsequent freeze of deposits system wide (see Jácome, 2004).

introduced under different modalities in most sample countries to minimize the likely accumulation of financial vulnerabilities during economic boom periods.<sup>28</sup> Most of these limitations have been imposed on credits in the housing market, but also on consumer credit, in particular, to contain the rapid expansion of credit card and auto loans (Brazil).<sup>29</sup> These policy tools are reminiscent in some ways of the “old” caps on credit imposed by central banks, which were used in Latin America as a direct monetary policy instrument to control the money supply and inflation. Some countries in the sample, namely Brazil, Peru, and Uruguay, have also used RRs on bank deposits as an instrument to constrain credit growth. Recent empirical research suggests that this tool has been fairly effective, exercising a measurable, if transitory effect in taming credit growth (Tovar and others, 2012).

The use of counter-cyclical dynamic provisioning is more common in Latin America than in any other region of the world. Colombia, Peru, and Uruguay have established this macroprudential tool as a means of building up buffers to absorb increases in loan losses during economic downturns.<sup>30</sup> Using dynamic provisioning to tame the procyclicality of credit is warranted in Latin America as their economies are highly volatile and because financial crises in this region were often preceded by episodes of credit booms. The way provisioning operates and the modalities in which those resources are drawn vary across this group of countries.<sup>31</sup>

Despite the large concentration in the banking industry in most countries, less emphasis has been placed in addressing the vulnerabilities associated with the existence of SIFIs. No specific provisions have been enacted to strengthen the capital position of SIFIs to reduce the likelihood of failure of these institutions, given their large degree of interconnection with other financial intermediaries and because of the difficulty of executing cost-effective bank resolution. SIFIs not only represent a large fiscal contingency but also inflate the costs of a financial crisis in case of failure.

In addition, the likelihood of an increasing role of wholesale funding warrants a close monitoring of systemic liquidity and the introduction of buffers that may help to curb credit expansion fueled by short-term and sometimes volatile wholesale funding. Latin America has not established additional liquidity buffers for macroprudential policy purposes, except for Colombia.<sup>32</sup> This may be explained because, as opposed to other regions, Latin America has

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<sup>28</sup> These tools were introduced in all sample countries except Mexico and Uruguay.

<sup>29</sup> Brazil also imposed additional capital requirements to tame excessive consumer credit growth. Caps on loan-to-value ratios for the purchase of cars were eliminated in December 2011.

<sup>30</sup> Although not included in the sample, Bolivia also introduced counter-cyclical dynamic provisioning in 2008.

<sup>31</sup> See Terrier and others (2011). Lim and others (2011) found that dynamic provisioning was effective in containing leverage and credit growth.

<sup>32</sup> Colombia introduced in 2009 a liquidity risk management system (Sistema de Administración de Riesgo de Liquidez) applicable to most financial intermediaries (see Terrier and others, 2011).

a tradition of using large RRs on deposit institutions—mostly unremunerated—except in Mexico.<sup>33</sup> RRs were used as a monetary policy instrument to control the money supply until financial liberalization gained traction in the 1990s and indirect monetary policy instruments—such as open market operations—became the preferred tools of monetary operations. Since then, RRs have sometimes been used as buffers to withstand a possible run on bank deposits. More recently, in the wake of the supply shock in 2008 and as inflation accelerated and central banks elevated interest rates, countries like Peru and Colombia also raised RRs' rates—under different modalities—to discourage capital inflows attracted by higher interest rates. Then, following the Lehman fallout, the increase in RRs was reversed as liquidity tightened worldwide.<sup>34</sup>

### **III. THE EXISTING INSTITUTIONAL ARRANGEMENTS FOR FINANCIAL STABILITY IN LATIN AMERICA**

Like in several advanced countries, Latin America has started to build the blocks for an effective framework for macroprudential oversight. This section reviews briefly the current institutional underpinnings of financial stability frameworks in our sample of countries and discusses recent legal amendments aimed at monitoring systemic risks. It then characterizes the main models identified in Latin America based on the five key dimensions proposed in Nier and others (2011).

#### **A. The Current State of Play**

The institutional foundations for financial stability in Latin America have deep historical roots. Despite the numerous financial crises that battered this region, the integration or separation of responsibilities between central banking and financial regulation and supervision has remained unchanged since the time when the respective agencies were created in the 1920s and 30s.<sup>35</sup> This is in contrast to the experience in Asia and Europe, where several countries reformed their institutional framework for financial stability during the last 20 years—mostly as a result of systemic crises—including the institutional integration or separation of banking regulation and central banking.

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<sup>33</sup> The rates of RRs vary across countries and depending on a number of factors. Typically, the rates of RRs are higher for demand deposits—the reserve rate was as high as 42 percent in Brazil by end-2010—and lower for time deposits—for instance, 4.5 percent for deposits at less than or equal to 18 months in Colombia at the same date. Also, in various countries, RRs are differentiated by currency (domestic or foreign). For example, the rate was 19 percent and 20 percent for deposits in local and foreign currency, respectively, in Argentina in 2010 and, in Peru, foreign currency deposits were subject to a surcharge of 30 percent as a marginal RR.

<sup>34</sup> See a discussion of how some of the countries in the sample have managed RRs during the recent world crisis in IMF (2010).

<sup>35</sup> In most Latin American countries, central banks and banking supervision agencies were created during the 1920s and 1930s.

Yet, the crises did encourage the adoption of far reaching reforms in Latin America with the aim of strengthening prudential regulation and financial oversight, including through more independent powers and legal protection for regulators. In addition, new central bank laws were enacted in all countries in our sample, except for Brazil, to grant central banks a broad autonomy—and to hold them accountable—for achieving the primary objective of preserving price stability.<sup>36</sup>

### Legal foundations

Against this background of reforms, financial stability is often not an explicit objective either for central banks or for financial supervision agencies in Latin America. In practice, preserving financial stability is only an implicit objective that tends not to have firm foundations either in central bank laws or the financial supervision legislation (Appendix I). In Argentina, Brazil, and Uruguay central banks are in charge of financial supervision and regulation, although the objective of preserving price stability has priority. In other countries, there is a clear demarcation of the role of the central bank and the financial supervision authority, as the former focuses on price stability whereas the latter has a consumer protection responsibility.

In many countries, the mandate and powers of central banks and supervisory agencies are prescribed in the Constitution, which restricts possible changes in the existing institutional arrangement for financial stability. For instance, central banks' mandate in Chile, Colombia, Mexico, and Peru—preserving price or monetary stability—is established at a constitutional level. Similarly, in Peru, the mandate of the Superintendence of Banks, Pension Funds, and Insurances, of keeping deposits safe, is specified in the Constitution. In addition, in some countries, the law of the central bank has a higher rank than other pieces of legislation, which sometimes imply that a qualified majority in the Legislature is required to approve amendments.

Therefore, reforming the financial stability framework in some countries is constrained by the relevant constitutional provisions. For instance, the central bank's role in macroprudential policy may be restricted when its autonomy and mandate are enshrined in the Constitution. A case in point is Chile, where the central bank is not a member of the new MoF-chaired financial stability committee, in order to preserve its constitutional autonomy. Similarly, the use of some macroprudential instruments would be constrained in Peru to the extent that they may be perceived by the supervisory authority as putting at risk the integrity of bank deposits—which goes against the constitutional mandate of consumer protection. For

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<sup>36</sup> As a result, countries like Chile and Peru rank among the most *de jure* independent central banks in the emerging markets' world (Canales and others, 2010). The enhanced independence of Latin American central banks played a key role in defeating inflation in a region with a history of high inflation (Jácome and Vázquez, 2008).

instance, while in a period of economic downturn, a rise of loan-to-value ratios is valid as a countercyclical policy, it may face the opposition of the banking supervision authority that sees that such policy as elevating the risk to bank depositors.

### **Current institutional arrangements for financial stability**

Depending on the institutional structure and its degree of integration, we distinguish two main types of financial stability frameworks in Latin America. First, the “Pacific” model (Colombia, Chile, and Peru, which have the same historical root,<sup>37</sup> as well as Costa Rica and Mexico), where supervision and regulation are organized along financial industries.<sup>38</sup> And, second, the “Atlantic” model (Argentina, Brazil, and Uruguay), which is a variation of the twin-peaks model.<sup>39</sup>

In the Pacific model financial supervision and most regulations are performed by separated agencies other than the central bank, leaving the latter exclusively in charge of monetary policy and without specific regulatory powers. The level of integration of financial regulation and supervision responsibilities into the various agencies varies across countries (Table 4). Yet, in many cases, the central bank is empowered to issue specific financial regulations; for instance, approving license and registration of financial institutions and regulating their foreign currency positions. In addition, central banks are invariably in charge of RRs.

The main characteristic of the Atlantic model is that banking supervision and regulation is conducted under the roof of the central bank. Surveillance of other areas of the financial system, such as insurance and securities markets, is typically performed by one or more other agencies, except in Uruguay where all financial regulation and supervision is fully integrated at the central bank (see Table 4).

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<sup>37</sup> They were all created along the lines recommended by the Kemmerer mission that visited these countries (plus Bolivia and Ecuador) in the 1920s and the early 1930s (see Eichengreen, 1994). The Kemmerer mission envisaged the creation of a central bank with the monopoly of issuing money and an office in charge of governing the functions of commercial banks assigned to the Ministry of Finance.

<sup>38</sup> Other countries in Latin America could also be clustered in these two groups. For instance, the institutional arrangement in Paraguay also belongs to the Atlantic model, whereas arrangements in Bolivia, Ecuador, and Venezuela fit into the Pacific model. In the Dominican Republic and Guatemala there is also a separation between the central bank and the banking supervision authority, but they both report to a monetary board, which in its own has monetary and bank regulation powers. The regulation and supervision of insurances and securities is in charge of different institutions in each of these two countries.

<sup>39</sup> For a description of this model and a discussion of its variations, see Nier, 2009.

**Table 4. Authority for Supervision of Banks, Insurances, and Securities**  
(Selected Latin American Countries)

	Banks	Insurances	Securities
Argentina	CB	I	S
Brazil	CB	I	S
Chile	B	SI	SI
Colombia	B	B	B
Costa Rica	B	I	S
Mexico	B	I	B
Peru	B	B	S
Uruguay	CB	CB	CB

Source: How Countries Supervise their Banks, Insurers, and Securities Markets 2011, Central Banking Publications.

CB: Central bank, B: Banking Authority, I: Insurance Supervisor, S: Securities Regulator, SI: Securities and Insurance Supervisor.

Until recently, none of these two models have explicitly incorporated a mandate for preserving systemic financial stability, but some countries have introduced new legislation to strengthen the institutional underpinnings for the implementation of macroprudential policies. By issuing an executive decree, Chile, Mexico, and Uruguay created financial stability committees with macroprudential responsibilities and, implicitly or explicitly, also with crises management powers (see Box 1). In turn, by means of an internal regulation, the Central Bank of Brazil (BCB) created in 2011 a financial stability committee within the BCB, comprised by all the members of its Board.

### **Box 1. The New Financial Stability Committees in Chile, Mexico, and Uruguay**

There is increasing interest in Latin America as to how to design an effective macroprudential policy framework. Following the global crisis, some decisions have already been taken in that direction. Chile, Mexico, and Uruguay have already made progress towards improving financial stability frameworks, laying the ground for the implementation of macroprudential policies. Chile created the Financial Stability Council in 2011, Mexico the Financial System Stability Council in 2010, and Uruguay the Financial Stability Committee in 2011. These new institutional arrangements have a number of common features:

- They all have a mandate to prevent the buildup of systemic risks and, if necessary, recommend the implementation of macroprudential policies to the relevant agencies. They don't have decision powers and are not held accountable—although, in Mexico, the Council is required to prepare and publish a report assessing financial stability and the measures taken to this end.
- The three institutional arrangements are vested with powers to obtain information from all financial industries and their participating institutions and to play a coordinating role to secure the consistency of financial stability efforts.
- The financial stability committees in Mexico and Uruguay have explicit powers to manage financial crises. In Chile, the crisis management powers reside with the individual institutions and the Council operates as coordinating device. Crisis management is explicitly mentioned as a key consideration for establishing the Council.
- In all three countries the committee is presided by the Minister of Finance (MoF) and the other members are the heads of the financial supervisory agencies and the central bank (except in Chile, where the governor is invited to participate but is not formally a member of the Council). Thus, to a great extent, they mirror the structure of the Financial Stability Oversight Council (FSOC) in the United States. The Financial System Stability Council in Mexico is comprised of another eight members, including: the head of the National Commission of Banks and Securities; the National Commission of Insurances; National Commission for the Savings for Retirement; the Executive Secretary of the Institute of Banks Saving Protection; the Undersecretary of Finance; and the Governor of the Bank of Mexico and two Deputy Governors. The Financial Stability Committee in Uruguay also comprises the Governor of the Central Bank of Uruguay; the Superintendent of Financial Services; and the President of the Corporation for the Protection of Banks Savings. In turn, the Financial Stability Council in Chile comprises the head of the Superintendence of Securities and Insurances; the Superintendence of Banks and Financial Institutions; and the Superintendence of Pensions. The Governor of the Central Bank of Chile (BCC) is not formally a member of the Council because this was seen to conflict with the independence and mandate of the BCC as sanctioned in the Constitution.

Some of these committees have additional specific responsibilities. For instance, recommending criteria for the determination of the budget of the supervisory agencies in Chile, and coordinating with other international institutions on issues of financial stability in Uruguay. The three committees are required to meet regularly, at least every month in Chile, at least quarterly in Mexico, and at least once a year in Uruguay.

### **B. Characterizing Financial Stability Arrangements in Latin America**

To characterize further these models we follow the criteria laid out in Nier and others (2011) and apply them not only to the long-standing institutional setup for financial stability but also to the stability committees recently created in a number of countries (Box 1). In addition to the degree of institutional integration discussed above, we characterize in Table 5 the

institutional setup in the sample of countries—classified under the Atlantic and the Pacific models—according to the following four dimensions:

- We identify the agency that is, in principle, responsible for taking macroprudential actions, as ownership determines the agency that is eventually accountable for limiting systemic risk.
- We also pinpoint the role of the government in those policy decisions. This matters, in particular, if the MoF chairs the financial stability committee. Having the MoF as part of that committee is important to obtain the government's support for needed legal changes and because tax-payers money is at stake in the event of a crisis. However, a leading role is not advisable because the nature of macroprudential regulation is often needed when the economy and the provision of credit are growing strongly, which makes the MoF less keen to push for measures that involve a deceleration of economic activity, in particular, during electoral periods.
- We also stress the separation between policy-decision making and control over instruments of macroprudential policy across the sample of countries. This is relevant because the more separation exists the weaker the enforcement of policy decisions tends to be. Also, because such separation makes more difficult to hold decision-making agencies accountable.
- In addition, we ascertain whether or not a separate coordinating body exists. Depending on the level of institutional integration different agencies are in charge of macroprudential policies and, hence, a coordinating body is necessary to secure the flow of relevant data and information, to have an effective process of monitoring systemic risk, and to favor a consistent policy response to address systemic risks.



**Table 5. Institutional Models for Financial Stability in Latin America**  
(Selected sample of countries)

	<b>Pacific model</b>		<b>Atlantic model</b>	
Institutional integration	No integration	No integration	Full	Partial
What agency takes decisions	Central bank & supervisory agencies	Central bank & supervisory agencies	Only the central bank	Mostly the central bank. The National Monetary Council*
Role of the government	Active Partial*	Active* No	Active	No Active*
Separation of policy decisions/control over instruments	Yes* No	Yes* No	No	No Yes*
Formal separate coordinating body	Yes	For sharing information only	Partial (coordinates with the government)	No Yes*
Countries	Chile, Costa Rica*, Mexico	Colombia* Peru	Uruguay	Argentina, Brazil*

Sources: Information from Appendix II and authors' analysis.

### The Pacific model

In the Pacific model, both the central bank and the financial supervision agency take regulatory decisions that fall in the domain of macroprudential policy (see Appendix II). In addition, the financial supervision authority adopts policies of microprudential nature. Despite the progress achieved with the creation of financial stability committees in Chile and Mexico, it is still unclear what their specific policy tasks and responsibilities are which may in turn pose problems for establishing accountability. In addition, it is often unclear which institution—the central bank or the committee—is charged with monitoring systemic risks. The Pacific model also faces the problem of how to achieve coordination for the use of tools that are closely related to monetary policy, such as reserves requirements legally assigned to the central bank and other macroprudential instruments that often are a responsibility of the supervision authority elsewhere.

With several agencies responsible for executing macroprudential policies, it is also difficult to have an effective accountability mechanism. Only Mexico has a specific legal provision that holds accountable the Financial System Stability Council in the sense that it requires it to provide an annual report on the stability of the financial system and decisions adopted by the Council. In Chile, the financial stability committee does not have any reporting requirements and the same holds true in Colombia, Costa Rica, and Peru, where no institution is legally assigned a macroprudential policy function. In addition, in all the countries in the Pacific model the governor of the central bank cannot be held accountable for financial stability because this responsibility is beyond the scope of their mandate. At best, financial stability reports—issued in Chile, Colombia, Mexico, and Peru—might include analyses of financial stability. Annual reports prepared by financial supervision institutions may also incorporate financial stability analyses.

The role of the government varies across countries. In Chile and Mexico, following the creation of the financial stability committees, the government plays a key role in macroprudential policy since the MoF chairs the committees although, as noted, the committee has only recommending powers.<sup>40</sup> In Colombia, the government also plays an important role as the MoF is in charge of financial sector regulation and the Financial Superintendence legally reports to the MoF.<sup>41</sup> In turn, in Costa Rica, the MoF has potentially some influence in the adoption of macroprudential policies given that the MoF is a member of the National Council of Financial System Supervision (CONASSIF), an entity in charge of coordinating and integrating financial system regulation.<sup>42</sup> In Peru on the other hand the government plays no role on financial stability.

In most countries in the Pacific model there is no separation between the agency that takes decisions and the implementing institution. Despite the creation of the financial stability committees in Chile and Mexico, the central bank and the supervisory agencies hold the final decision on macroprudential policies because they preserve their autonomy enshrined in their laws. Colombia has a unique arrangement—compared to other countries—because the MoF is in command of financial regulation, and delegates to the Superintendence of Banks and the Bank of the Republic the implementation of financial stability measures, *de facto* including macroprudential policies. A further exception is Costa Rica, where the CONASSIF is empowered to adopt some financial stability measures and the supervisory agencies—not formally represented in the CONASSIF—and the central bank execute those decisions. The institutional separation in Peru ensures that each institution has control over the policy instruments that the law assigns to them (see Appendix II).

The lack of institutional integration in the Pacific model may impede the effectiveness of monitoring and mitigating systemic risks. Separation of central banking and regulatory functions makes it more difficult to share information and to design and implement a consistent macroprudential policy. In our sample of countries, with the powers for decisions on macroprudential policies residing in more than one institution, the degree of coordination varies across countries. The financial stability council established in Chile and Mexico helps to mitigate these weaknesses as they have powers to coordinate financial stability efforts. In turn, Costa Rica has a formal committee that was created to coordinate financial sector

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<sup>40</sup> As mentioned before, the role of the government in these committees is partly explained because such arrangements have also crises management responsibilities.

<sup>41</sup> In other countries in the region, like Ecuador and Guatemala, the government plays a key role since it *de jure* controls the central bank board by directly appointing most of its members. In the latter, even the private sector, including the financial system, is directly represented in the Monetary Board, which takes decisions that are implemented by the central bank and the banking supervisory agency.

<sup>42</sup> The CONASSIFF is comprised by the Governor of the Central Bank of Costa Rica, the MoF, and five external members appointed by the central bank Board.

policies in general—although coordinating macroprudential policy is beyond its mandate.<sup>43</sup> Peru has an informal coordinating committee, but it mainly exercises a role in fostering the exchange of information about monetary, financial, and government policies, whereas in Colombia a formal coordination committee exists, but it primarily serves to exchange financial sector information and is not vested with decision or recommending powers.<sup>44</sup>

On the other hand, the institutional separation that characterizes the Pacific models also has strengths. For instance, each institution remains focused on observing its own mandate, namely preserving price stability and the soundness of individual financial institutions, which, in turn facilitates keeping each institution accountable for monetary and prudential policies. In addition, the lack of institutional integration avoids having a single dominant institution that concentrates broad powers, which can be vulnerable to political hazards in countries with a tradition of weak political institutions.

### **The Atlantic model**

With closer institutional integration between the central bank and the supervisory agencies, many of the weaknesses featuring the previous model are likely to be mitigated under the Atlantic model. In particular, with the central bank in command of banking regulation, the main industry of the financial system, systemic risks can be better monitored and mitigated based upon an enhanced access to the relevant data and information. On the other hand, the closer integration concentrates significant power and calls for introducing compensating mechanisms—as discussed in the next section. At the country level, several distortions exist as discussed below.

In the Atlantic model, the central bank is implicitly in charge of executing macroprudential policies, although the precise institutional setup varies for each country as noted before. All these countries have a financial stability mandate (see Appendix I), but Brazil has a number of specificities that are worth describing (see also Box 2). These include the existence of the National Monetary Council (CMN), which is vested with broad powers, including potential decisions of macroprudential policy nature, following recommendations from the BCB and the Securities Commission (CVM). The BCB also houses the financial stability committee (COMEF), which is in charge of monitoring systemic risks associated with the banking system and elevating for the CMN consideration the approval of macroprudential policies aimed at tackling those risks. Systemic risks emerging in the securities market or in other financial industries are legally out of the scope of the COMEF.

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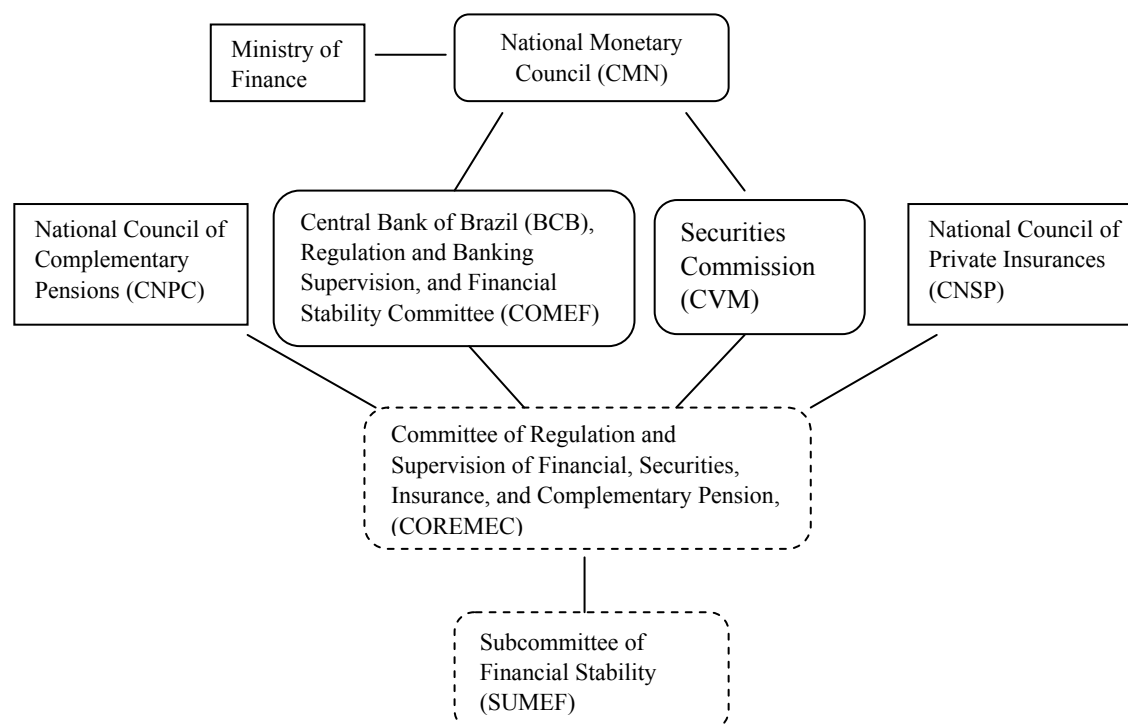
<sup>43</sup> In Dominican Republic and Guatemala, the Monetary Board—which is the board of the central bank and the banking supervisory agency—could also play a coordinating responsibility for macroprudential policies.

<sup>44</sup> The Coordinating Committee for the Surveillance of the Financial System was created in 2003. It is chaired by the MoF and comprised by the heads of the supervisory agency and the deposit insurance institution.

## Box 2. Institutional Arrangement for Financial Stability in Brazil

There is no explicit financial stability or macroprudential policy mandate assigned to any institution in Brazil. Implicitly, the CMN, the BCB, and the CVM play a role on financial stability. The CMN issues regulations and provide guidelines to be implemented by the BCB and the CVM in their role of monitoring, controlling and regulating financial institutions and securities markets. The BCB is in charge of identifying banks' systemic risks and assessing their potential impact. To this end, the BCB issued an internal regulation on May 2011 to establish a COMEF within the central bank, which is comprised by all the members of the BCB's Board and meets every other month.

Brazil has a version of the “twin peaks” model for financial stability. While banking supervision is conducted by the BCB, different agencies conduct the surveillance of other financial institutions. In addition to the CVM, the National Council of Private Insurances regulates and monitors insurance companies whereas the Management Council of Complementary Pensions rules the functioning of private pension funds. There is also a deposit insurance institution—the Credit Guarantee Fund (FGC). All financial institutions as well as savings and loan associations are members of the FGC. Yet, there is no single institution empowered to coordinate financial stability. The CMN coordinates policies that regulate banks and securities markets, but does not coordinate directly policies for insurance companies and pension funds. With the aim of having in place an institutional arrangement with a comprehensive view of all groups of financial institutions, the Committee of Regulation and Supervision of Financial, Securities, Insurance, and Complementary Pension (COREMEC) was created via a Presidential Decree in 2006. It was assigned the role of promoting coordination and improving the functioning of the entities responsible for regulating and supervising financial institutions. The COREMEC has a purely advisory role, based on the information received from the four agencies in charge of the surveillance of banks, securities, insurance, and pensions. It does not have a direct link with the CVM. In September 2010, the COREMEC established the Subcommittee to Monitor the Stability of the Financial System (SUMEF). In practice, SUMEF promotes the sharing of information among the institutions represented in COREMEC and is a forum to coordinate and discuss financial stability. SUMEF has no decision or recommending powers and has no access to the CMN either.



Accountability requirements for macroprudential policies are not explicitly defined, even in Uruguay where a financial stability committee was recently established. In practice, however, since the Board of the central bank in all three countries is held accountable for its mandate and functions, it could *de facto* report about the measures adopted to preserve financial stability over the course of a given period. This alternative may face some complication in Brazil because the CMN is empowered to take macroprudential decisions but has no accountability requirements, whereas the BCB monitors the emergence and escalation of systemic risks in the banking system—via its financial stability committee—and executes macroprudential policy decisions.

In two of the three countries with the Atlantic model, the government plays an active role in macroprudential policy. In particular, in Brazil, the government has the majority of members and chairs the CMN. In Uruguay the government holds a minority representation in the financial stability committee that is again chaired by the MoF. The latter can be explained because of the crisis management responsibility assigned to that committee. In Argentina, the government has no representation on the central bank Board, which is empowered to take a wide range of prudential decisions applicable to banks and could potentially issue macroprudential regulations. In practice, however, the government has proved to exercise influence over the central board, which has eventually implied a high turnover of central bank governors.<sup>45</sup>

In principle, under the Atlantic model there is no separation between policy-making and implementation. In Uruguay, since the Financial Stability Committee has only recommending powers, the central bank issues regulation and executes macroprudential policy. The Central Bank of the Republic of Argentina (BCRA) enjoys both decision making and execution powers and, hence, would be in a position to issue regulations and implement macroprudential policies, although it does not monitor or mitigate risks in the securities market. However, in Brazil there is a separation between agencies that adopt and implement macroprudential decisions. This is because the CMN is empowered to decide and regulate, policy implementation is a responsibility of the BCB and the CVM.

Given the integration of agencies in the Atlantic model, coordination is not a major problem. In Uruguay there is no coordination problem as all regulation and supervision is done under one roof—at the central bank Argentina has potential problems given that some areas of the financial system are outside the purview of the central bank (insurance and securities) and since there is no formal coordination mechanism that takes in these areas. In Brazil, the COREMEC plays such a coordinating role.

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<sup>45</sup> For instance, since 2000, there have been seven governors of the central bank.

#### IV. THE WAY FORWARD

Establishing a well-functioning institutional framework for macroprudential policy is desirable in all countries because the sources and level of systemic risk are likely to evolve with time. Experience shows that financial sector risks interact strongly with macroeconomic developments. Moreover, the experience in advanced countries has been that the distribution of risks can shift quickly, not least in response to existing and static regulatory constraints.

A strong framework is needed to (i) achieve effective identification, analysis, and monitoring of systemic risk; (ii) ensure timely and effective use of macroprudential policy tools, by creating appropriate mandates and assuring strong powers and accountability; and (iii) ensure effective coordination in risk assessments and mitigation, so as to reduce gaps and overlaps, while preserving the autonomy of separate policy functions.

At the same time, the establishment of a strong macroprudential policy function needs to work within the existing institutional environment and take key aspects of the structure as given. In our sample of countries the Pacific model (Chile, Colombia, Costa Rica, Mexico, Peru) and the Atlantic model (Argentina, Brazil, Uruguay) present different starting points for the development of a strengthened macroprudential policy function, suggesting a different set of priorities in advancing the institutional foundations for macroprudential policy.

##### A. The Pacific Model

The institutional separation that characterizes the Pacific model poses challenges for the successful identification and mitigation of systemic risk. This is because the relevant information, expertise and regulatory powers are distributed across agencies rather than available to one organization (Nier and others, 2011). Moreover, accountability for the success of macroprudential policy is harder to establish when success depends on the cooperation of several agencies. This institutional structure finally confronts additional difficulties in devising arrangements that ensure cooperation while respecting the operational autonomy of the separate agencies.

The response to these challenges that is emerging across the region is the setting up of dedicated financial stability councils that bring together all relevant agencies, including the central bank, the prudential regulator of banks, potentially separate insurance and securities regulators, the deposit insurance institution (when it exists) and, typically, the government (MoF). While these arrangements are likely to be useful in fostering the exchange of information and facilitating cooperation in risk mitigation, a number of issues deserve closer consideration.

One issue of concern is that, in some cases, the council is given a *function*, to promote financial stability, which is not matched with adequate formal decision-making *powers*. A lack of legal powers makes it harder to hold the council formally accountable for the maintenance of financial stability. As a result, de facto, responsibility remains distributed

across agencies, potentially resulting in insufficiently forceful action relative to what is required in the circumstances.

In order to address this, it will be useful, if possible, to introduce formal powers of direction as regards specific macroprudential tools, such as the dynamic capital buffer introduced under Basel III. These would complement current powers to issue nonbinding recommendations to constituent agencies. To strengthen the force of such recommendations and to ensure follow-up, recommendations should be public and subject to a comply-and-explain mechanism. Careful design of the council's powers is particularly important where the primary objective of the regulatory agency is the protection of consumers (depositors) since this can result in conflicts with the objective of the council. In particular, such conflicts may strengthen the case for assigning to the council direct control over specific and well-designed macroprudential tools.

Such a framework can then form the basis for a more clearly articulated accountability framework, allowing the council to set out the deliberations that led to a particular action or recommendation in the context of its assessment of the level and source of systemic risks. These deliberations are usefully contained in a public record of the meetings of the council, which can also create transparency as to the votes cast by members of the council on major policy decisions. Communications around specific actions can be supplemented by formal and regular (perhaps annual) reports on the risks assessments and activities of the council that could be issued to parliament and the public at large. These reports should be prepared in coordination with central banks' financial stability reports. In particular, an annual report of the council can draw upon the risk assessments prepared in the central bank's financial stability report, even if the financial stability report as such can usefully remain an independent publication of the central bank.

A second important issue is the appropriate role of the government. Participation of the government on macroprudential councils is useful, so as to ensure the cooperation of the government when successful mitigation of systemic risk requires a change in the law, e.g. to expand the regulatory powers of prudential agencies, or when it requires a change in specific taxes or subsidies that foster the build-up of systemic risk. The government may also claim a part on this council because macroprudential policy is aimed at preventing crisis that in the end may still need to be paid for with government—tax payers—resources.

However, a leading role of the government can pose risks, since macroprudential policy is subject to important political economy challenges that favor inaction or insufficiently forceful action in good times when risks are building up. A leading role of the government on the macroprudential council may also come to undermine the operational autonomy of constituent agencies or be seen to have the potential to reduce the independence of these agencies, including the central bank (as in Chile).

These difficulties can be mitigated when chairmanship of the council is given to the central bank, rather than the treasury, as is the case in a number of countries outside of the region, such as in Australia and the United Kingdom (Nier and others, 2011). An alternative to chairmanship of the central bank is a strong representation and concomitant strong voting powers on the council, as in Mexico, where the central bank has 3 seats on a 10-strong committee. A leading role of the central bank is useful not only to counter the adverse political economy of macroprudential policy. It also harnesses the central bank's expertise in systemic risk assessment as well as its strong incentives as the lender of last resort to promote financial stability and the mitigation of systemic risks.

## **B. The Atlantic Model**

In countries where the starting point is the Atlantic model—institutional integration between central bank and prudential regulatory and supervisory functions under one roof—there is room for clarifying the legal mandates for macroprudential policy. It is also desirable to establish dedicated accountability frameworks that should be distinct from those established for monetary policy, clarifying that the objective of monetary policy is price stability while the objective of macroprudential policy is financial stability. Where the mandate and its key objectives are not clearly defined it is difficult to assign strong regulatory powers, and to design a framework to hold the policymaker accountable for policy decisions taken.

It would therefore seem desirable to introduce the pursuit of financial stability as the main objective of the central bank's actions in supervision and regulation. In case the main objective of the central bank as an organization is set out in the constitution, care needs to be taken to define the objective in a way that does not conflict with the main organizational objective. It will often be possible, however, to establish in law the separate objectives of both the monetary policy function and the macroprudential policy function in a manner that is consistent with the existing and overarching objectives of the central bank (such as maintaining value of the national currency, monetary stability, etc.).

Making the objectives associated with each function (monetary and macroprudential policy) explicit in legislation is desirable to achieve greater clarity as to what these functions are meant to achieve. Importantly, however, the introduction of a financial stability objective to guide the central bank in its supervisory and regulatory actions need not imply the introduction of additional objectives in the field of monetary policy. Rather, in view of difficulties arising from “dual objectives” for monetary policy, it may be desirable for the central bank law to clarify that the main objective of monetary policy remains the pursuit of price stability, while the primary objective of macroprudential policy is financial stability.<sup>46</sup>

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<sup>46</sup> The cost of a financial stability objective for monetary policy is that the central bank may be asked to pursue an expansionary monetary policy in the name of financial stability even when this is likely to stoke inflationary pressure. See Jacome and others (2011) for a discussion of such costs in the context of Latin America.



Whether or not it makes sense to add financial stability as a secondary objective for monetary policy is not straightforward to answer but need not depend strongly on whether or not supervision and regulation has been provided a statutory objective to maintain financial stability. If anything, the stronger the institutional foundation for macroprudential policy, the less need may arise for monetary policy to “lend a hand” to maintain financial stability.

A clear delineation of the respective primary objectives of the two policy fields can also help in developing strong, but separate accountability frameworks for both monetary and regulatory policy. As set out in IMF (2011a), because macroprudential policy manages a tail-risk, rather than a continuously observable outcome such as inflation, accountability frameworks for macroprudential policy will need to be different to some extent from those developed for monetary policy. Nonetheless, a number of key elements can be “borrowed” from those frameworks, including communication of the key deliberations that led to particular policy decisions, as well as regular reports issued to parliament and the public that assess the key sources of systemic risk, evaluate the effectiveness of past actions taken to manage systemic risks and outline the policy agenda to deal with new or remaining risks. A good vehicle to lay out this analysis and to better explain macroprudential authorities’ decisions is a (remodeled) financial stability report which is already prepared by the central banks in the Atlantic model countries. This can be complemented by the publication of records of meetings of the policy-making body within the central bank structure.

Indeed, the setting up of a financial stability committee within the central bank structure that is distinct from the rate setting committee or the full Board of the central bank can help clarify further the distinct roles of the central bank in maintaining price and financial stability.<sup>47</sup> In addition, where the central bank does not have regulatory control over all relevant financial institutions and markets, such as when there are separate insurance and securities regulators, as in Argentina and Brazil, the separate agencies can be admitted as members of such a committee. This can help establish regular access to information on nonbank financial institutions and markets. It can also help risk mitigation, allowing the authorities to develop a coherent macroprudential strategy that extends to nonbank-financial institutions as necessary, for example, when there are signs that the provision of credit or the distribution of risks has shifted to nonbank institutions or markets. Participation of the government on a financial stability committee is useful. However, just as discussed for the Pacific model, a strong or leading role of the government on such a committee (as in Uruguay and Brazil) poses risks since it can come to undermine the independence of the central bank.

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<sup>47</sup> See, for example, the arrangement in the new U.K. model.

### **C. Articulating the Macroprudential Mandate**

Independent of the precise institutional structure, it is important for the macroprudential policy maker to be given well-articulated objectives and tasks (Nier, 2011). Where objectives and tasks are set out in more precise terms, this will make it easier to hold the policy-maker accountable for the independent pursuit of these objectives. Matching objectives and tasks is particularly important in Latin America, where policy makers typically decide on powers that are specifically established in the law, in line with the judiciary's interpretation of the civil law tradition in this region.<sup>48</sup> Thus, since maintaining financial stability has more than one dimension, it will be useful to clarify that the policymaker is charged with mitigating both structural risks from the failure of individual systemic institutions and conjunctural risk from excessive fluctuations in the volume of credit and the level of leverage. The council can then also be given specific powers in the pursuit of these objectives. For example, the council can be charged with decisions on which individual institutions are individually systemic, as in the United States, where the FSOC designates such institutions, and what specific additional measures should be applied to these institutions. It can also be given the power to oversee the imposition of tools designed to tame credit booms and increase resilience to future busts, based on an assessment of the build-up of risks in aggregate or in particular sectors of the economy. For example, the council can be empowered to set and recalibrate the dynamic capital buffer introduced as part of Basel III, or to adjust risk-weights to address the build-up of risks in particular sectors.

### **D. Strengthening the Macroprudential Policy Process**

Whatever the precise mandate and composition of the council, it is important to ensure that the policy process is well structured and focused. A first useful step is to determine and publish a regular meeting schedule for the main policy meetings. A quarterly frequency of these meetings (as in Mexico) is likely to be appropriate in many countries. A second step is to introduce a structured sequence of preparatory meetings ahead of the main policy meeting. This is useful to prepare decisions and helps focus the main meeting on options for policy actions. For example, in the United Kingdom, this process involves a pre-FPC meeting where the committee receives a well-structured and comprehensive set of conjunctural briefings by the staff of a range of relevant departments, which is followed by a meeting on key issues that merit a more in-depth discussion. These meetings then lead into the main policy meeting in which policy options are evaluated and actions taken. Finally, it is useful for the chair of the committee to hold a press conference soon after the main policy meeting, to explain the main policy actions taken, even if a more formal record of the meeting, as well as any formal recommendations or regulations are issued only after some delay.

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<sup>48</sup> In Latin America, typically the judiciary has a predisposition to accuse with criminal charges to central bankers and supervisory authorities that took decisions during banking crises episodes. Prosecution of these authorities in Bolivia, Brazil, Chile, Ecuador, and Paraguay are just few cases in point.

## Appendix I. Central Bank and Banking Regulation Institution Mandates

	<b>Argentina</b>	<b>Brazil</b>	<b>Chile</b>	<b>Colombia</b>
Legal mandate for the central bank	Maintain monetary stability, financial stability, employment, and economic development with social equity.	Formulate monetary and credit policy to achieve economic and social progress for the country (Law 4595/64). Ensure the stability of the purchasing power of the currency and the soundness and efficiency of the financial system (approved by the Board of the BCB).	Preserve the stability of the currency and the normal functioning of internal and external payments.	Preserve the purchasing capacity of the currency.
Mandate for the banking supervision agency	BCRA is in charge of banking supervision (see the mandate above).	The BCB is in charge of banking supervision (see the mandate above).	Supervise banks and other financial institutions with the aim of protecting depositors.	Preserve public confidence and financial stability, maintaining the integrity, efficiency and transparency of the stock market and other financial assets, and ensure respect for consumer rights and the proper financial service.
	<b>Costa Rica</b>	<b>Mexico</b>	<b>Peru</b>	<b>Uruguay</b>
Legal mandate for the central bank	Maintain the domestic and external stability of the national currency and to ensure its convertibility. Secondary objectives: (i) promote the orderly development of the economy with the aim of achieving full use of the nation's productive resources, preventing or moderating inflationary or deflationary tendencies as may arise in money and credit markets; (ii) ensure the proper use of the nation's international monetary reserves; (iii) promote the efficiency of the domestic and external payments; and (iv) promote a stable, efficient, and competitive financial system. General Superintendence of Financial Entities.	Seek the stability of the purchasing power of the currency. Also, promote the sound development of the financial system and a proper functioning of payment systems.	To preserve monetary stability.	Preserve price stability to contribute to growth and employment. Regulate the functioning and supervise payments and financial systems, fostering its soundness, solvency, efficiency, and development.
Mandate for the banking supervision agency	Preserve the stability, strength, and efficient functioning of the national financial system.	Preserve the stability and the integrity of the financial system and promote its efficiency and inclusive development.	Protect depositors, insured, and pensioners.	The Central Bank of Uruguay (BCU) is in charge of banking supervision (see the mandate above).

Source: Central banks' legislation and institutions' websites.

**Appendix II. Institution Responsible for Establishing Some Key Macroprudential Measures  
(Selected Latin American Countries)**

	<b>Argentina</b>	<b>Brazil</b>	<b>Chile</b>	<b>Colombia</b>
Dynamic provisioning for the financial system	BCRA	CMN regulates and the BCB implements.	The Superintendence of Banks	Financial Superintendence
Exceptional capital requirements (buffers) for the financial system	BCRA	The CMN regulates and the BCB implements.	The Superintendence of Banks in coordination with the BCC in the of M&A	Financial Superintendence
Exceptional capital requirements SIFIs	BCRA	The CMN regulates and the BCB implements.	The Superintendence of Banks	Not defined.
Limits on the loan to value ratio in the financial system.	BCRA	The CMN regulates and the BCB implements.	The Superintendence of Banks and BCC (covered bonds and other specific mortgage products)	Ministry of Finance
Limits on financial institutions exposures on the interbank market	BCRA	The CMN regulates and the BCB implements.	BCC	Ministry of Finance
Reserve requirements	BCRA	BCB	BCC	Bank of the Republic
	<b>Costa Rica</b>	<b>Mexico</b>	<b>Peru</b>	<b>Uruguay</b>
Dynamic provisioning for the financial system	General Superintendence of Financial Entities (SUGEF) for approval of the CONASSIF.	National Commission of Banks and Securities (CNBV)	Superintendence of Banks, Pension Funds, and Insurances	BCU
Exceptional capital requirements (buffers) for the financial system	The BCCR reviews minimum capital annually. In addition, the various supervisory agencies can also submit it for the approval of CONASSIF.	CNBV	Superintendence of Banks, Pension Funds, and Insurances	BCU
Exceptional capital requirements for specific institutions (too big to fail)	Supervisory agencies for the approval of CONASSIF.	CNBV	Superintendence of Banks, Pension Funds, and Insurances	BCU
Limits on the loan to value ratio in the financial system.	Supervisory agencies for the approval of CONASSIF.	CNBV/Bank of Mexico	Superintendence of Banks, Pension Funds, and Insurances	BCU
Limits on financial institutions exposures on the interbank market	Supervisory agencies for the approval of CONASSIF.	CNBV	Superintendence of Banks, Pension Funds, and Insurances	BCU
Reserve requirements	Central Bank of Costa Rica	Bank of Mexico	Central Reserve Bank of Peru	BCU

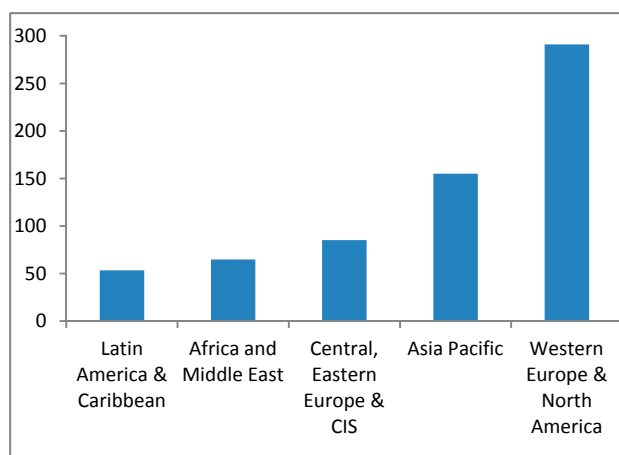
Source: Central banks' legislation and answers to unofficial survey to central banks

### Appendix III. Characterizing the Latin American Banking System

#### Financial system dominated by banks

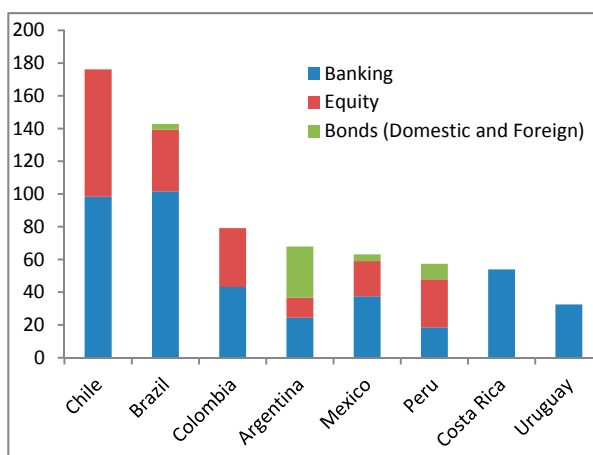
The banking system in the Latin American countries is dominated by banks (see Figure 6). Relative to other emerging market regions, the Latin American countries have relatively underdeveloped capital markets. Only Brazil and Chile have a fairly well developed financial market (mainly in the form of equity), with the remainder of the region lacking it (see Figure 7). One factor underlying this is the persistence of macroeconomic instability—in comparison to East Asia—that led to recurrent macroeconomic and financial crises. Another is that Latin American countries have had a low savings record, which is typically the main engine of growth of the financial system. The financial system therefore remains dominated by banks.

Figure 6. Banking Assets by Region, 2009  
(As a share of GDP)



Source: Fitch (20)

Figure 7. Banking and Nonbanking System in Latin America, 2008 (As a share of GDP)

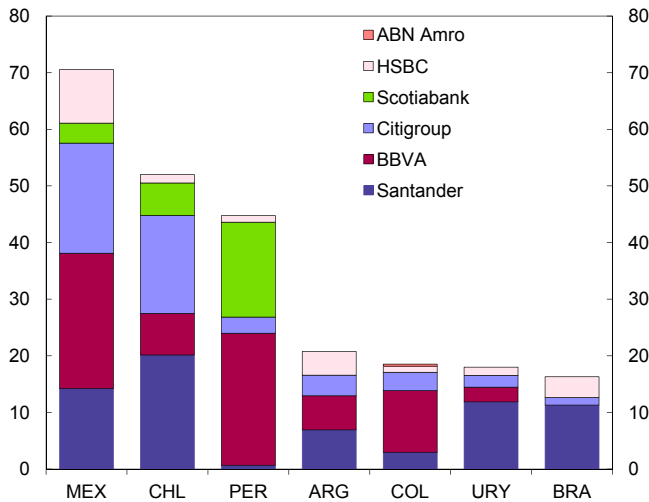


Sources: WDI and World Federation of Exchanges

#### Foreign banks' lending is high

In the Latin American countries, most lending is disbursed through local subsidiaries of foreign banks, with the Spanish banks playing a predominant role (see Figure 8). This share (20 percent) varies by country, reaching 70 per cent in the case of Mexico. The mean share of foreign banks is higher still in Eastern Europe (60 percent), but lower in East Asia (10 percent) and Middle-East and Africa (less than 10 percent) (see Figure 9).

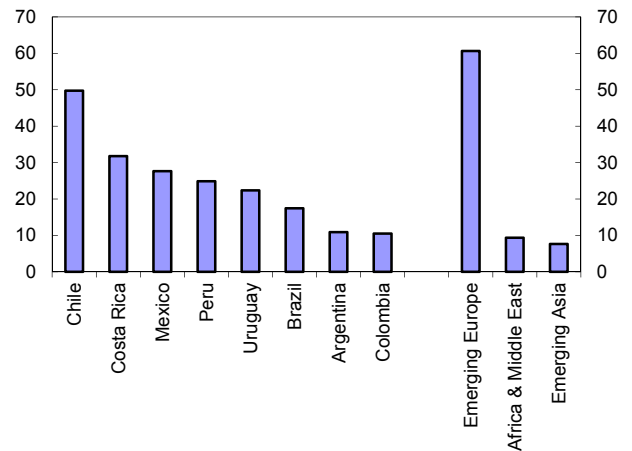
Figure 8. Share of Banking Assets Held in Subsidiaries or Branches of Global Foreign Banks<sup>1/</sup>  
(in percent of total banking system assets, end-2008)



Sources: National authorities; Bankscope; and IMF staff calculations.

1/ Included in the calculations are the six main foreign banks with global presence. In some countries, the actual share of foreign bank ownership of assets could be higher due to the presence of other international or regional banks.

Figure 9: Foreign Banks' Lending, 2008<sup>1/</sup>  
(as a share of GDP)



Sources: Bank for International Settlements; and IMF staff calculations.

1/ Includes cross-border lending and lending by foreign-owned local affiliates in each country.

Note: Regional data correspond to the median across countries.

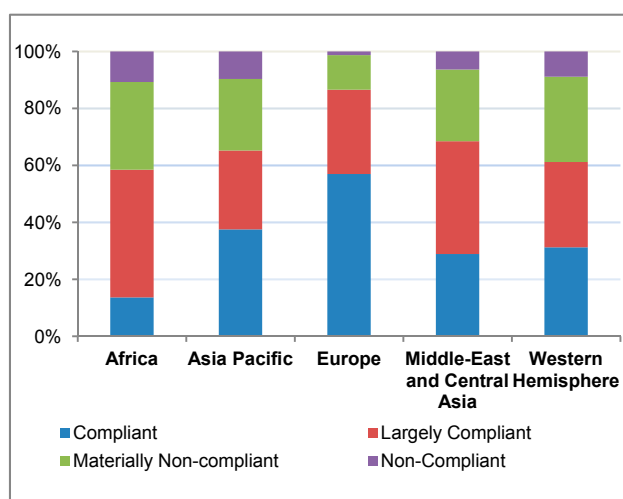
Prior to the crisis, the presence of foreign banks was seen as a blessing, providing an element of stabilization (see Galindo and others, 2010). When emerging markets were the sources of crises, foreign banks had a stabilizing role on these economies. With the ongoing global crisis, however, foreign banks may have become transmitters of foreign shocks to the domestic economy, rather than absorbers of local shocks. In mitigation, foreign banks' are mostly financed through domestic deposits (they tend to be subsidiaries), suggesting that they may be quite isolated from events happening at the parent company.

### The banking system relies mainly on deposits

The banking system in Latin American countries funds itself mainly through deposits (see Figure 10). Unlike the parent Spanish or American banks, the subsidiaries of foreign banks and the local banks finance themselves almost exclusively out of deposits, creating a banking system that is relatively robust to temporary liquidity dry ups. This is reflected in the very high Deposit-to-Loan ratios for instance, and the limited cross-border lending to banks (see Figure 11).

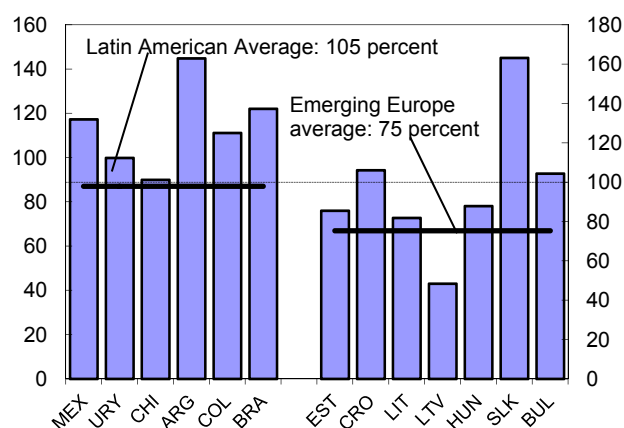
While the availability of wholesale funding is still quite limited, it has recently been growing.

Figure 10. Deposits and Credits  
(In percent of GDP)



Sources: IMF, International Financial Statistics.

Figure 11. Deposit-to-Loan Ratios in Foreign-Owned  
Local Affiliates, 2007<sup>1/</sup>  
(In percent)



Source: Adler and Cerutti (2009).

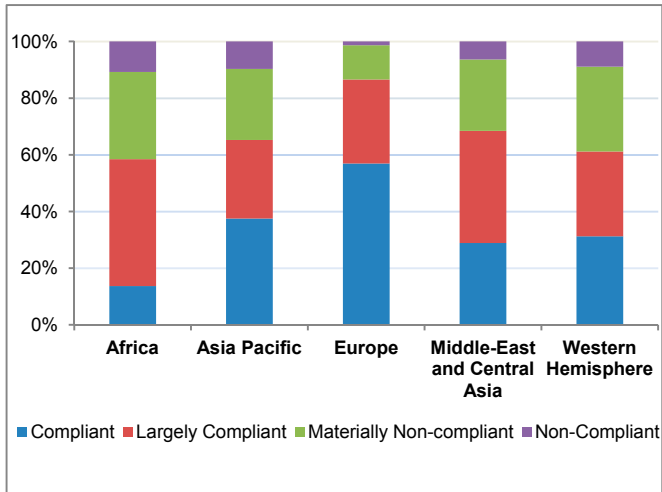
1/ The deposit-to-loan ratio for each local affiliate is calculated as the sum of demand, time, saving, and foreign currency deposits as a share of their loans to the private sector. For each country, the value reported corresponds to the weighted average of foreign affiliates' deposit-to-loan ratios, using their loan portfolio as weights.

## Compliance with Basel Core Principles

Compliance with Basel Core Principles has improved in the last decade, even if weaknesses persist in certain areas. Judging by the compliance of the 25 Basel Core Principles (BCPs), Latin America as a whole still ranks among the weaker regions (see Figure 12). Though there is heterogeneity within each region, with different countries having various compliance rates, it is clear from the graph below that the Western Hemisphere (which includes the United States and Canada) is compliant or largely compliant on over 60 percent of BCP principles, putting it between Africa and the Asia-Pacific region.<sup>49</sup> While the BCPs are imperfect proxies for how well a financial system is supervised, the results do suggest that the region as a whole has room to improve the regulatory and supervisory environment (see Figure 13). As measured by less than 40 percent of Western Hemisphere countries, the biggest lacunas, complying or largely complying too are principles 6 (prudent and appropriate minimum capital adequacy requirements), 12 (banks have in place systems that accurately measure, monitor and adequately control market risks), 13 (banks have in place a comprehensive risk management process), and 20 (banking group on a consolidated basis).

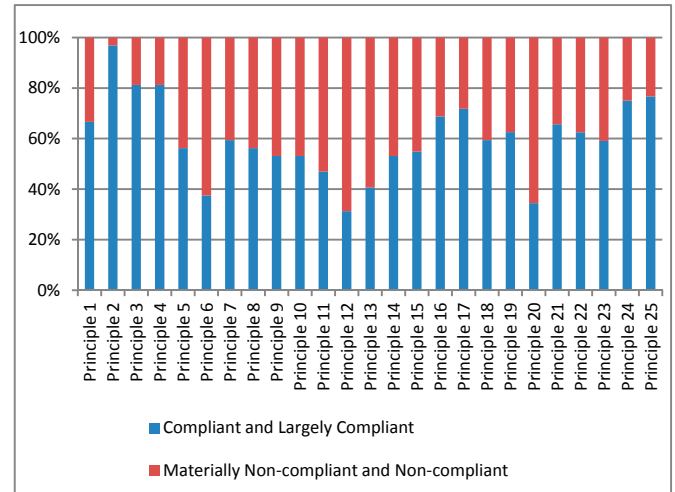
<sup>49</sup> Data on the BCP is confidential and only available at the aggregate level. It is based on the findings of the Financial Sector Assessment Program (FSAP), and therefore does not necessarily reflect the reforms undertaken since the last FSAP update.

Figure 12. Basel Core Principle Compliance Rate by Region



Source: International Monetary Fund, 2011.

Figure 13. List of Compliance of Basel Core Principles for Western Hemisphere Countries



Source: International Monetary Fund, 2010.



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