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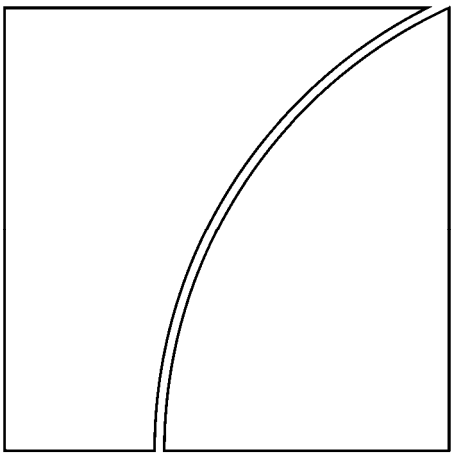

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Monetary and financial stability implications of capital flows in Latin America and the Caribbean

Monetary and Economic Department

November 2008

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Foreword

On 13 and 14 March 2008, the BIS, in collaboration with the Central Bank of Uruguay, hosted a meeting for senior central bankers in Punta del Este, Uruguay. Chaired by Már Gudmundsson, Deputy Head of the Monetary and Economic Department of the BIS, the meeting discussed the monetary and financial stability implications of capital flows in Latin America and the Caribbean (LAC) in recent years.

The meeting was the fifth of its kind since the BIS Representative Office for the Americas was opened in Mexico City in November 2002. This series of meetings provides an opportunity for regional central banks to discuss issues of common interest. While the focus has been on topics of relevance for the smaller economies in the region, a number of the larger central banks have occasionally been invited to participate to contribute their experiences. Given the interest in the topic of this year's meeting, we are publishing the background note prepared for the meeting in this *BIS Papers* series.

At the time of the meeting the financial turmoil in several major advanced economies was reaching a new peak, although still not the full-scale global financial crisis it became in the late summer and autumn of 2008. However, the expected economic downturn had not yet clearly manifested itself and there were still inflationary pressures at the global level, not least because of rising food and energy prices. With growth still robust in most of the region but uncertainty about prospects mounting, these conditions provided significant challenges for monetary policy. They also made the prospects for capital flows and the optimal policy response to them even more uncertain than usual. Challenging times can make for interesting discussions, and that was duly reflected in this excellent meeting.

We would like to thank all participants in the meeting for their valuable contributions to the discussions. We would also like to thank the Central Bank of Uruguay, and its dedicated staff, who made this meeting possible.

Már Gudmundsson
Deputy Head
Monetary and Economic Department

Gregor Heinrich
Chief Representative
Office for the Americas

Prologue

Central Bank participants at the BIS 2008 Open Economies Meeting in Punta del Este, Uruguay, discussed trends in capital flows since 2003 and their monetary and financial stability implications. Capital flows appear to be more benign today than in the past, partly because of a greater share of foreign direct investment and reduced reliance on foreign financing that has contributed to improvements in international investment positions (IIPs). Participants held the view that the economies in the region had become more resilient. For instance, although currency and maturity mismatches are still a concern in some countries, they appear to be less relevant today than in the past.

The recent shift in the global financial environment and its regional implications were also discussed. Notwithstanding continuing concerns about risks, the impact of the financial turmoil at the time of the meeting was still limited. Indeed, there was more concern with the risks of a global slowdown than with direct financial contagion. Looking forward, a key issue is how the transition away from the benign global financing environment that characterised the world economy in this decade will unfold. The effects on the region from the global financial turmoil and the associated downturn in economic activity in advanced economies will vary from country to country, and much will depend on specific developments, such as the evolution of commodity prices.

In terms of macroeconomic policies in the face of large foreign currency inflows, fiscal and prudential policies to enhance resilience were considered important. It was also believed that sovereign wealth funds could play a useful role. There was less consensus regarding capital controls. Although some argued that they could be effective in the short run, there could be costs in terms of financial market development. Views also diverged on the effectiveness of foreign exchange intervention.

Participating central banks agreed that securing financial stability in small open economies required the cooperation of monetary, fiscal and prudential authorities. However, participants expressed concern about possible contagion from the recent financial turmoil operating through foreign-owned banks. In some cases, there was concern that domestic banks with large foreign refinancing needs could also become vulnerable.

The document in this volume was written by Alejandro Jara and Camilo E Tovar with the technical advice of Ramon Moreno. We would like to thank all participants at the meeting for their comments and overall feedback. We are greatly indebted to Pablo Garcia-Luna and Rodrigo Mora for their excellent research assistance. Már Gudmundsson made detailed comments on the document. We hope this publication will be a useful contribution towards improving the understanding of the monetary and financial stability implications of capital flows in the region.

Alejandro Jara, Camilo Tovar and Ramon Moreno

Participants in the meeting

Argentina	Central Bank of Argentina
	Pedro Rabasa Deputy General Manager, Economics and Finance
Bahamas	Central Bank of the Bahamas
	Sharon Branch Senior Research Officer
Bolivia	Central Bank of Bolivia
	Rolando Marín Ibañez Director, Board of Directors
Brazil	Central Bank of Brazil
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Monetary and financial stability implications of capital flows in Latin America and the Caribbean[1]

Alejandro Jara and Camilo E Tovar[2]

Introduction

For small open economies, foreign capital is an important source of financing for economic growth. However, its benefits do not come without costs and risks. In the past, capital flows to Latin America and the Caribbean (LAC) economies led to sharp cycles and were blamed for feeding important macroeconomic and financial imbalances, making these economies vulnerable to adverse external shocks, including "sudden stops". As a result, capital surges were often seen as unsustainable processes.

Beginning in 2003, the region has witnessed a new phase of capital flows, characterised by the following features: i) large gross foreign direct investment (FDI) and portfolio inflows, both in terms of dollars and as a percentage of GDP; ii) incipient gross capital outflows in some countries; iii) a reduced reliance on external financing in net terms; iv) a reduction of external liabilities positions; and, finally v) improved net international positions. Behind these developments there has been a very benign external environment together with improved domestic policies. In contrast with the past, when capital flows were mainly financing current account deficits, today countries are accumulating international reserves, which is mainly associated with increased domestic savings.

These trends raise challenges for monetary and prudential policies. On the monetary side, the adoption of new monetary and exchange rate frameworks and the development of domestic financial markets across the region may have changed the monetary policy transmission mechanism (interest rate and exchange rate channels) and the links with global interest rates. On the financial stability side, currency and maturity mismatches have fallen, but attention has shifted to other aspects of financial stability, such as credit, liquidity and market risk as well as risks of international contagion. Furthermore, the deepening and development of financial markets have created new risks that now require an integrated supervisory framework. An important implication is that capital flows can lead to dual objectives (monetary and financial stability) which are not always aligned in the same direction. Thus important trade-offs may arise for policymakers, in particular if central banks rely on just a single instrument. This may call for active macroprudential policies.

This document examines the recent trends of capital flows in LAC since 2003 and discusses their implications for monetary and financial stability. Chapter 1 reports the main trends in gross and net capital flows, and in gross and net international investment positions. Chapter 2 discusses the implications for monetary and exchange rate policies, including the desirability and effects of sterilised foreign exchange interventions. It also discusses how

[1] This document employs the following convention: "Latin America" refers to the geographical area of South America plus Mexico, while references to "the Caribbean" and "Central America" are standard. The "region" is used to refer to the full hemisphere excluding Canada and the United States.

[2] BIS Representative Office for the Americas. We thank Már Gudmundsson, Gregor Heinrich, Herman Kamil, Ramon Moreno, Julio Santaella and Tito Nicias Teixeira for their detailed comments. Pablo Garcia-Luna and Rodrigo Mora provided excellent research assistance; and Alejandra Gonzalez provided editorial support.

other policy instruments, such as fiscal policy and stabilisation funds, might assist monetary policy in dealing with potential adverse macroeconomic consequences of strong capital inflows. Finally, Chapter 3 presents the implications for financial stability. In particular, it discusses the exposures to exchange rate, liquidity, credit and international contagion risk.

1. Capital flows in LAC: what is new?

This chapter analyses the recent dynamics in capital flows in LAC. It begins with an overview of the macroeconomic and financial integration environment under which these flows have taken place. It then looks at the recent trends in the size and composition of gross capital inflows and outflows. Next, it discusses the trends of net capital flows. This is followed by an analysis of the size and composition of gross and net IIPs. The chapter then turns to a discussion of the possible drivers of the observed trends. Finally, some implications of the current financial international environment are considered.

Macroeconomic environment

LAC has experienced an unprecedented cycle of economic growth with macroeconomic stability since 2003. Economic growth averaged 5.5% in 2007, compared to 1.5% during 1998–2002, while inflation has fallen and fiscal positions have improved.[3] Inflation has trended downwards, reaching a regional average of 6.2% in 2007, while fiscal deficits have fallen to 1.4% of GDP, down from 2.2% during 2003–05. This improvement in fiscal positions has been mainly associated with large primary surpluses, averaging 2.9% in 2007,[4] and improved public debt management, thus allowing a reduction of public and external debt ratios. Indeed, public debt in the region declined from 60% of GDP in 2003–06 to 49% in 2007, while external debt fell from 40% to 25% of GDP during the same period (Annex Graph A1 and Table A1).

This period of economic growth was supported by an exceptionally favourable external financing environment, as ample liquidity in global financial markets and investors' low risk aversion pushed sovereign spreads to historic lows. While there have been significant reversals since the summer of 2007, sovereign spreads have on balance still declined since 2003 (Graph 1, left-hand panel). Some economies in the region have also benefited during the past five years from terms of trade improvements, in particular exporters of minerals (Chile and Peru) and fuels (Bolivia, Colombia, Ecuador, Trinidad and Tobago and Venezuela). In contrast, the smaller economies of the Caribbean and Central America have seen their terms of trade deteriorate (Graph 1, right-hand panel).

Financial integration

Financial integration is a process by which financial markets and institutions become more tightly interlinked, leading to a situation where the law of one price would hold for financial assets, irrespective of location (Gudmundsson (2008)). Measuring the degree of integration is no easy task and has been approached in the literature from different perspectives, including legal or regulatory measures, price-based measures and quantity-based measures.

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[3] Nonetheless, some studies argue that when adjusted for cyclical factors fiscal positions have not improved that much. In particular, it has been argued there has been a substantial increase in government spending associated with the boom in commodity-related revenues (IMF (2007a)). Alternatively, it has been shown that in the region only Chile has a structural fiscal surplus (IADB (2008)).

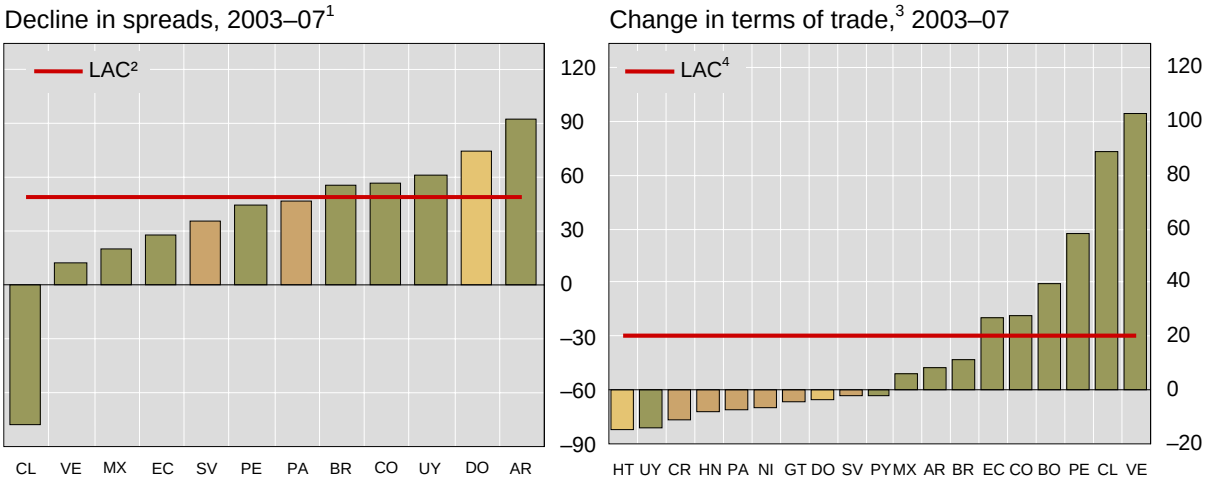
[4] Antigua and Barbuda, Bahamas, Guatemala, Honduras, St Vincent and the Grenadines and Venezuela are the only countries in the region registering negative primary balances.

Using such measures Garcia-Herrero and Wooldridge (2007) have concluded that the degree of financial integration across the world has increased over the past 15 years.

Graph 1

Sovereign spreads and terms of trade

In per cent



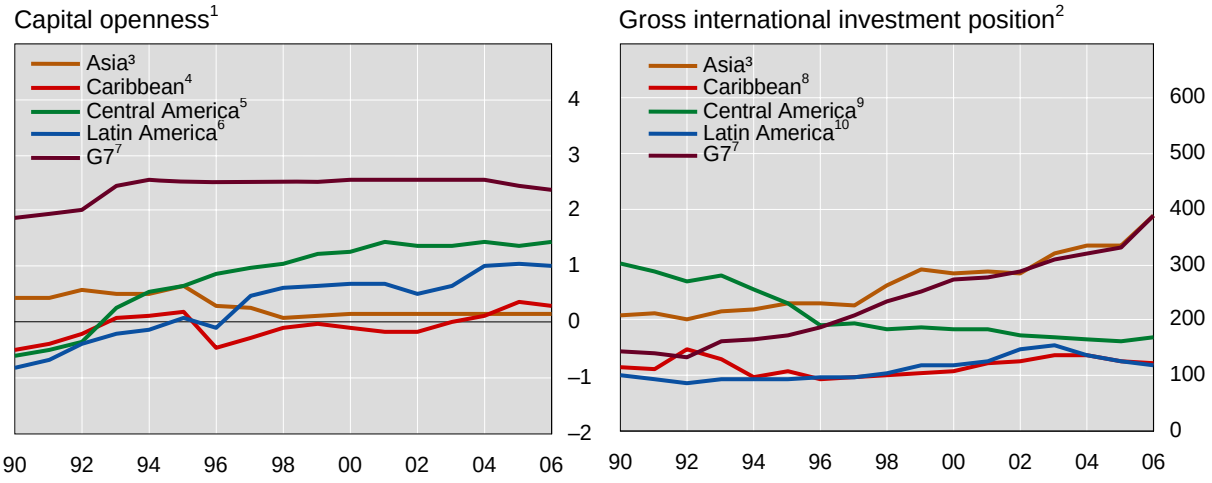
AR = Argentina; BO = Bolivia; BR = Brazil; CL = Chile; CO = Colombia; CR = Costa Rica; DO = Dominican Republic; EC = Ecuador; GT = Guatemala; HN = Honduras; HT = Haiti; MX = Mexico; NI = Nicaragua; PA = Panama; PE = Peru; PY = Paraguay; SV = El Salvador; UY = Uruguay, VE = Venezuela.

[1] Decline in the average December spreads of the JPMorgan EMBI Global index. [2] As defined by JP Morgan. [3] Terms of trade of goods. [4] Weighted average of listed countries based on 2000 GDP and PPP exchange rates.

Sources: ECLAC; JPMorgan Chase.

Graph 2

Measures of financial integration



[1] An increase indicates a higher level of openness to cross-border capital transactions; average of listed countries. [2] Foreign assets plus foreign liabilities, as a percentage of GDP. [3] China, India, Indonesia, Malaysia, the Philippines and Thailand. [4] Aruba, Barbados, Dominica, Grenada, Guyana, Haiti and Jamaica. [5] Belize, Guatemala, Honduras, Nicaragua and Panama. [6] Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Suriname and Venezuela. [7] Canada, France, Germany, Italy, Japan, the United Kingdom and the United States. [8] The Dominican Republic, Haiti, Jamaica, and Trinidad and Tobago. [9] Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. [10] Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru and Venezuela.

Sources: Chinn and Ito (2007); Lane and Milesi-Ferretti (2007); IMF; BIS staff calculations.

To evaluate the progress made by LAC countries, Graph 2 displays two indicators of financial integration: a "de jure" measure capturing legal restrictions (left-hand panel)[5] and a quantity-based or "de facto" measure, based on the ratio of the IIP (sum of external assets and liabilities) as a percentage of GDP (right-hand panel). As shown, with the exception of Central America, both measures support the conclusion that financial integration has increased in LAC.[6] Nevertheless, the region is far from reaching the levels of integration seen in the most developed economies, mainly those of the G7. The evidence is less conclusive regarding the relative progress made vis-à-vis other emerging markets, such as Asia. Indeed, while legal restrictions seem to be more prevalent in Asia, the quantity measure seems to indicate that Asia is more financially integrated with the rest of the world than LAC (Graph 2, right-hand panel).

Trends and composition of capital flows

Gross flows

Gross inflows to the region have increased rapidly since 2003, reaching an all-time high of $208 billion in 2007 (Annex Table A2). Inflows to Latin America accounted for the bulk of the increase: they grew by 334% during this period, reaching $194 billion in 2007. This is double the amount in 2006 and the highest level of inflows since 1990. To assess the impact of the recent global turmoil, higher-frequency data are required. Nonetheless, preliminary evidence for late 2007 and early 2008 indicates that while inflows have slowed, they have surged in some countries, in particular in Argentina ($19 billion), Brazil ($101 billion), Chile ($17 billion), Colombia ($12 billion) and Mexico ($47 billion). In the Caribbean, gross capital inflows more than doubled during the 2003–07 period, reaching $6.2 billion in 2007, while in Central America these flows grew by 86%, to $8.1 billion.

There is *more reliance on gross FDI inflows than on external portfolio investment* (Graphs 3 and 4 and Annex Table A2). After slowing in the first half of this decade, FDI has consistently increased, reaching an estimated $97 billion in 2007 (2.8% of the region's GDP), thus consolidating a trend that began in the early 1990s. FDI has played a more prominent role in the Caribbean, representing over 5.6% of GDP in 2007, followed by Central America (4.3% of GDP) and Latin America (2.7% of GDP). However, in this last case the FDI to GDP ratio has *declined*.

Portfolio flows are on average less relevant today than in the early 1990s in Central and Latin America, *but recently they have expanded significantly* (Graphs 3 and 4). Thus, in 2007 LAC's gross portfolio flows reached 24% of total inflows ($50 billion) vs 47% in 1990–97. However, in a few economies portfolio flows are still an important source of funding, including El Salvador (5.0% of GDP) and Barbados (4.6% of GDP). Brazil and Mexico alone accounted for 87.8% of all portfolio flows to the region in 2007.

Gross capital outflows have picked up sharply. In just a few years, *LAC went from having almost no capital outflows to about $109 billion in 2007* (Annex Table A3)*. However, in*

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[5] This financial openness variable is based on the IMF's classification of capital mobility restrictions (Chinn and Ito (2007)). It takes into account the presence of multiple exchange rates, restrictions on current and capital account transactions, and the requirement to surrender export proceeds. The index is then calculated as the first standardised principal component of these categorical measures. Therefore it takes on higher values the more open the country is to cross-border capital transactions. By construction, the mean of the index over the sample period is zero.

[6] Despite its relatively high openness in "de jure" terms, openness measured by the gross international investment positions in Central America has tended to decline. This is possibly explained by the fact that official flows played an important role in this part of the world during the 1980s; as official aid has receded, it would lead to a decline in the measured degree of openness.

Central America these outflows remain non-existent. Two elements of the composition of capital outflows are worth highlighting (Graphs 3 and 4). First, portfolio and other assets are the largest components.[7] Second, FDI outflows have been gaining importance in a few Latin American economies, which partly reflects increasing intraregional financial integration. This is noteworthy given the widespread increase in FDI inflows across the region. Within the region, Chile stands out as FDI and portfolio outflows have reached 2.1% and 9.0% of GDP, respectively. The portfolio outflows reflect the impact of regulatory changes which have allowed pension funds to invest abroad. Bolivia, Colombia and Peru have also seen an expansion in portfolio outflows. In the Caribbean, trends are dominated by Trinidad and Tobago. Here, other assets have reached an outstanding level of 5.5% of GDP and portfolio outflows 16% of GDP.

Net flows

Net capital flows to the region increased to $98.6 billion in 2007. This is up from an annual average of $53.1 billion in 1990–97 (Annex Table A4), but down as a percentage of GDP (to 2.9% from 3.3%). Thus, the region relies less on net external financing to support economic activity than it did in the past (Graph 4). By sub-regions, net capital flows increased during the past five years in Central America, reaching record levels in dollar terms, but remained quite stable as a percentage of GDP (around 5.7% on average in 2003–07). Notwithstanding a sustained increase in recent years, net flows to the Caribbean remain below the levels of the late 1990s both in absolute levels and in terms of output. Lastly, in Latin America, net capital flows traced a U-shaped behaviour. They fell in a sustained manner between 1998 and 2006, and increased sharply in 2007. Overall, most countries show positive net flows in recent years, with the important exceptions of Belize, Bolivia, Chile, Ecuador, Suriname and Venezuela. Net capital inflows in a number of smaller economies easily exceed 9% of GDP.[8] In addition, net flows have been dominated by the behaviour of private capital flows, highlighting the reduced relevance of official flows.

Gross and net IIPs

Increasing international financial integration has been associated with changes in the composition of cross-border holdings. Countries' portfolios are now such that fluctuations in exchange rates and asset prices cause very significant reallocations of wealth across countries.[9]

In the Caribbean, liability positions have declined sharply from 100% of GDP in 2003 to 55% of GDP in 2006, thus reducing its net debtor position to about 38% of GDP. In Latin America, the trend is similar, but the improvement has been less dramatic (Graph 5). Debt has also fallen in other regions, with the exception of Central America, where liabilities have been stable as a percentage of GDP.

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[7] For example, these assets include non-financial sector deposits in foreign entities and domestic financial sector foreign currency denominated assets held abroad.

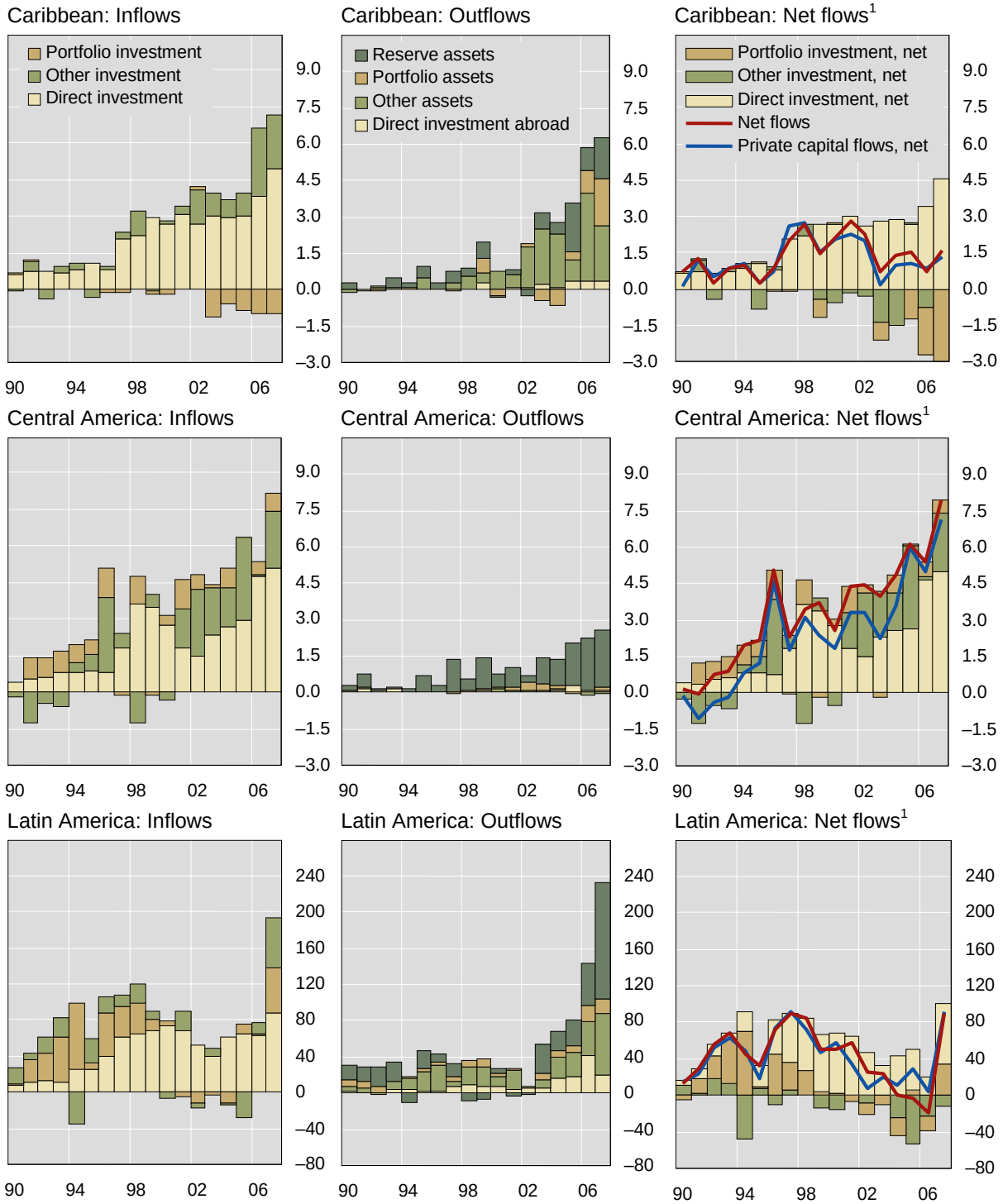
[8] For example, Antigua and Barbuda (16.5%), the Bahamas (17.9%), Dominica (9.7%), Grenada (16.9%), Nicaragua (12.6%), St Kitts and Nevis (30.2%), St Lucia (15.6%), St Vincent and the Grenadines (21.4%).

[9] See Lane and Milesi-Ferretti (2007) for a detailed discussion of IIPs.

Graph 3

Financial account: capital inflows and outflows

In billions of US dollars



The Caribbean includes Anguilla, Antigua and Barbuda, the Bahamas, Barbados, Dominica, the Dominican Republic, Grenada, Haiti, Jamaica, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, and Trinidad and Tobago; Central America includes Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama; Latin America includes Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Suriname, Uruguay and Venezuela.

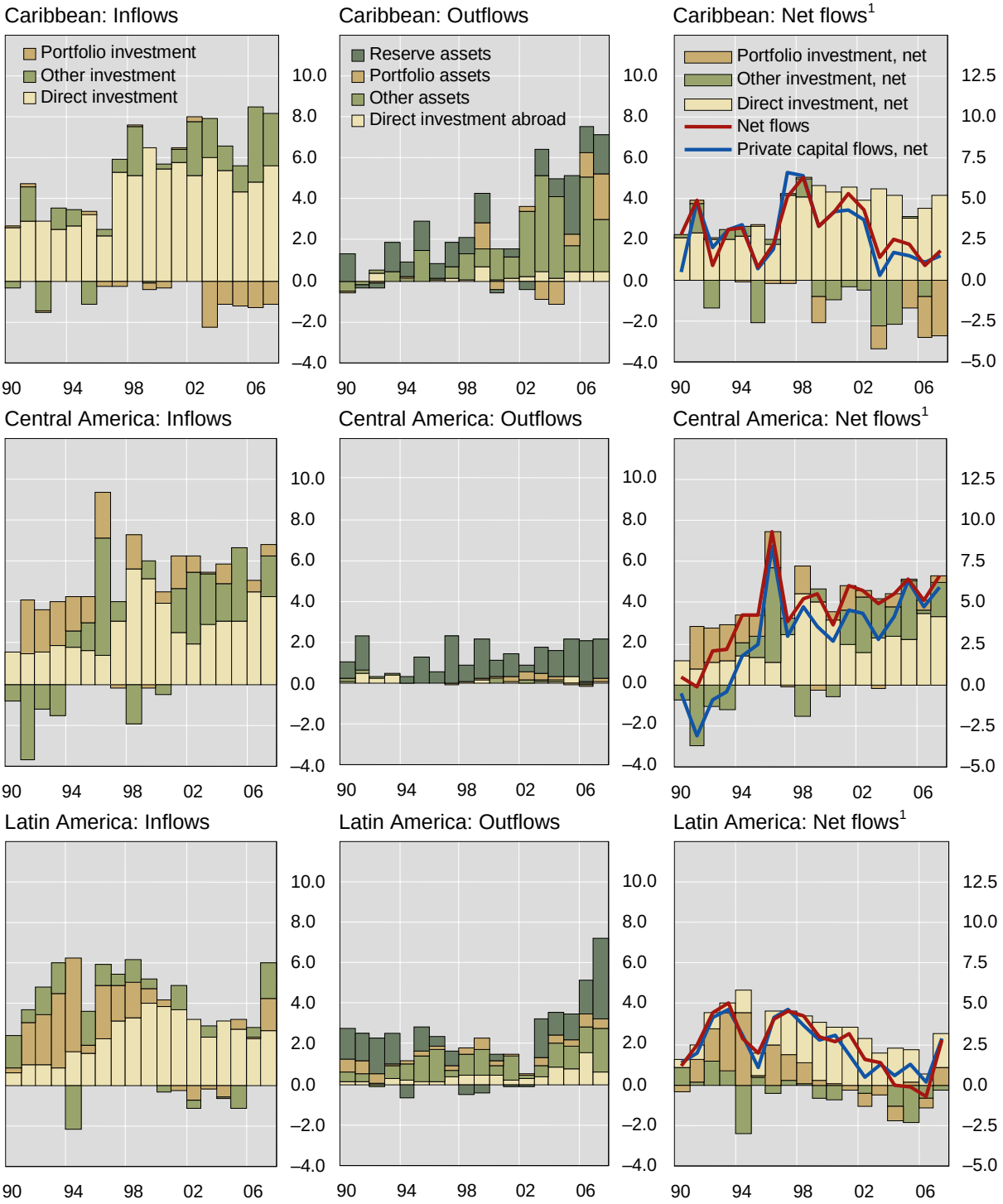
[1] A positive figure indicates a positive capital inflow to the region. Net flows are the total of the net figures of direct investment, portfolio investment and other investment.

Source: IMF, *World Economic Outlook*.

Graph 4

Financial account: capital inflows and outflows

As a percentage of regional GDP



The Caribbean includes Anguilla, Antigua and Barbuda, the Bahamas, Barbados, Dominica, the Dominican Republic, Grenada, Haiti, Jamaica, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, and Trinidad and Tobago; Central America includes Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama; Latin America includes Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Suriname, Uruguay and Venezuela.

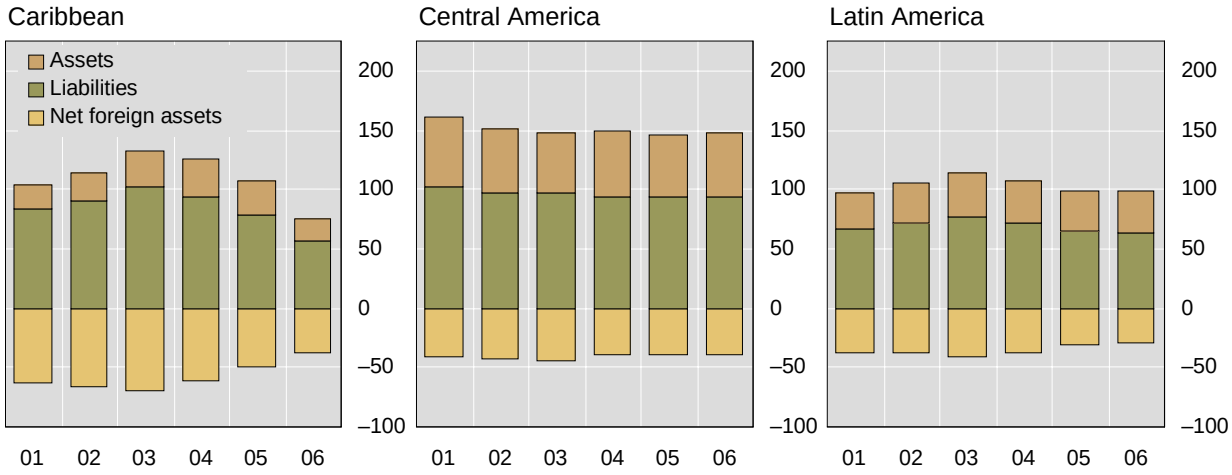
[1] A positive figure indicates a positive capital inflow to the region. Net flows are the total of the net figures of direct investment, portfolio investment and other investment.

Source: IMF, *World Economic Outlook.*

Graph 5

International investment position

As a percentage of regional GDP



The Caribbean includes Aruba, the Dominican Republic, Haiti, Jamaica, and Trinidad and Tobago; Central America includes Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama; Latin America includes Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Uruguay and Venezuela.

Sources: Lane and Milesi-Ferretti (2007); IMF; BIS staff calculations.

Cross-border asset holdings have increased rapidly in the region, much of it reflecting the accumulation of international reserves. Nonetheless, in Latin America, FDI assets abroad have more than doubled, while the stock of portfolio investment overseas has almost tripled, reaching $116 billion in 2006. However, as a percentage of GDP increases are less evident. In Central America asset holdings as a percentage of GDP have declined but portfolio holdings there still represent 13% of GDP.

Driving factors

The recent changes in the structure of flows and international investment positions across the region reflect both external (push) and domestic (pull) influences. Sometime after 2003, a benign ***external environment*** characterised by low real interest rates worldwide and decreased levels of risk aversion compressed sovereign spreads on the region's external debt to historically low levels (see Graph 1). In addition, high commodity prices have improved the terms of trade for the region and significantly increased export revenues.

On the other hand, ***domestic policies*** have also improved, and the marginal propensity to save out of increased income has risen. This is evident in the reduction of debt ratios, the unprecedented current account surpluses observed in some economies and the increased levels of international reserves. Although precise conditions vary in individual countries, policy changes include: the shift towards moderately countercyclical fiscal positions (achieved by saving a large part of increased revenues from growth and high commodity prices and generating significant primary surpluses); improvements in public debt management that have reduced currency and maturity mismatches; more credible monetary and exchange rate frameworks; and better supervisory frameworks.

The combination of favourable external conditions and improved domestic policies and their associated contribution towards an extended period of growth and economic and financial stability has increased the attractiveness of the region to foreign investors.

Net capital inflows, current account and international reserves

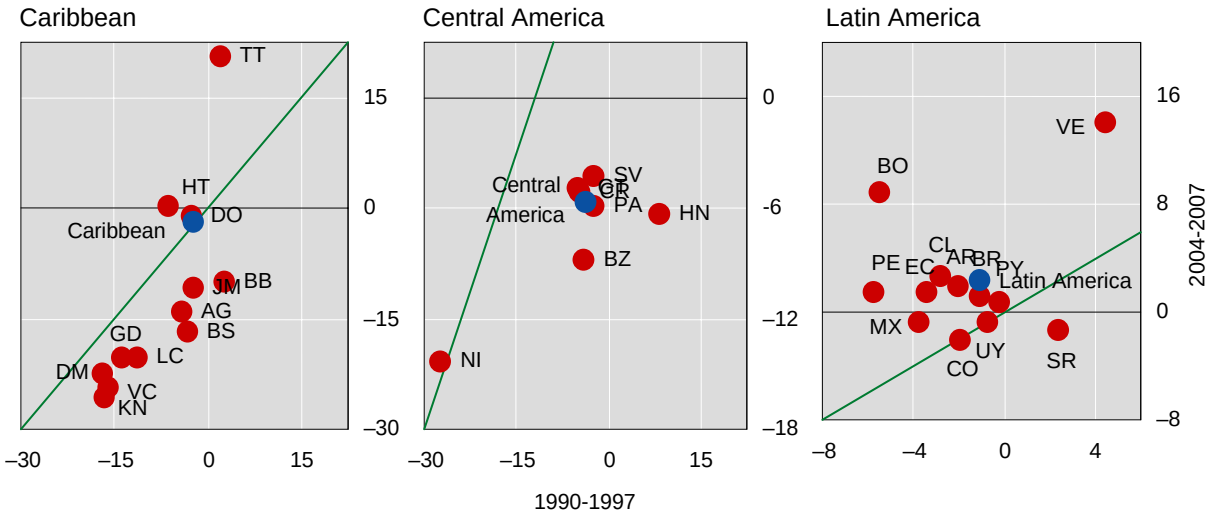
Net capital flows have two natural counterparts in the balance of payments: reserve accumulation and/or the financing of current account deficits. In the past, capital flows to LAC mainly financed current account deficits. However, in recent years LAC's current account balances turned to surpluses (Graph 6), which, along with capital inflows, resulted in surpluses in the *overall balance* (of payments) and large accumulation of international reserves. Between 2003 and 2006 the region accumulated over $116 billion in international reserves, equivalent to almost 3.9% of the region's GDP. Furthermore, in 2007 reserves in the region grew by a further $135 billion.

Current account surpluses have been concentrated in a few economies, mainly those of Latin America (Graph 6). LAC went from having an average deficit of $36 billion (2.2% of the region's GDP) in the 1990–97 period to a record surplus of $46 million (1.5% of GDP) in 2006. However, much of this outcome is due to Venezuela and, to a lesser extent, Brazil.[10]

Graph 6

Current account

As a percentage of GDP



Regional aggregates are weighted averages of listed countries based on 2000 GDP and PPP exchange rates. The Caribbean includes Antigua and Barbuda (AG), the Bahamas (BS), Barbados (BB), Dominica (DM), the Dominican Republic (DO), Grenada (GD), Haiti (HT), Jamaica (JM), St Kitts and Nevis (KN), St Lucia (LC), St Vincent and the Grenadines (VC), and Trinidad and Tobago (TT); Central America includes Belize (BZ), Costa Rica (CR), El Salvador (SV), Guatemala (GT), Honduras (HN), Nicaragua (NI) and Panama (PA); Latin America includes Argentina (AR), Bolivia (BO), Brazil (BR), Chile (CL), Colombia (CO), Ecuador (EC), Mexico (MX), Paraguay (PY), Peru (PE), Suriname (SR), Uruguay (UY) and Venezuela (VE).

Source: IMF, *World Economic Outlook*.

Current account surpluses can be explained by two main factors: i) rising terms of trade (associated with increases in commodity prices, particularly of oil and mining products); and ii) increased worker remittances. However, the importance of these variables varies across the region. Terms of trade have improved significantly in Latin American countries but have deteriorated in the Caribbean (with the exception of Trinidad and Tobago) and Central

[10] Venezuela alone registered between 2004 and 2007 an average current account surplus of $22.9 billion (14% of its own GDP). If Brazil, Mexico and Venezuela are excluded, Latin America's 2006 record surplus of $46 billion shrinks by more than half, to just $7 billion, and in 2007 to minus $2.8 billion.

America, resulting in current account deficits in these last two sub-regions (Graph 1 and Table A4). As for remittances (which are recorded as transfers on the current account), these have been larger in the economies closer to the United States, helping offset large trade deficits in the smaller economies of the region.[11]

The combination of current account surpluses and net capital inflows since 2003 has meant a large increase in net foreign currency inflows to the region that now rivals the explosion of foreign currency inflows observed in the 1990s (Graph 7). However, while in the past foreign currency inflows were entirely the result of capital inflows, this has changed as remittances now play a very prominent role.

Greater resilience to shocks?

The preceding discussion has highlighted three broad developments that increase the resilience of LAC to reversals in capital flows associated with global financial shocks.

First, the *shift in composition of inflows towards FDI*. As noted earlier, FDI has been the main source of capital inflows in the region. These flows are often thought to be more permanent and less prone to reversals than portfolio flows. The reason is that FDI tends to be driven mainly by changes in economic fundamentals, rather than by arbitrage factors. FDI inflows thus do not pose major monetary or financial stability concerns. For instance, it could be argued that appreciation driven by FDI inflows would simply reflect an equilibrium response of the economy to better fundamentals. Nevertheless, some (temporary) policy action may be required if FDI and remittances are large enough, in particular to dampen very sharp appreciation pressures.[12]

Second, *improved net balance sheet positions*. The decreased external liability positions, essentially driven by the reduction in government borrowing and the shift towards domestic currency financing (the latter associated with a rise of securities portfolio liabilities[13]), together with the increased external asset position in Latin America improves the net balance sheet position of these economies and reduces the chances of capital flight. Nonetheless, some underlying weaknesses and risks remain, such as liquidity risks.

Third, *reduced reliance on external financing in both the public and private sectors.* External financing needs have declined for those countries with current account surpluses. This has allowed them to reduce their external debt, thus lowering their vulnerability to adverse and costlier financing conditions.[14] In other words, *changes in risk perception that trigger increases in sovereign spreads will be less relevant than in the past.* In addition, the rapid development of local currency bond markets in the region has also reduced the need for external financing (BIS (2008a)).

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[11] A third of the total remittances to the region went to Mexico.

[12] However, there are a number of counterarguments to the view that FDI is a more stable source of inflows. First, FDI includes a number of arguably volatile components, including new equity, retained earnings, intra-firm debt and valuation adjustments (mainly associated with currency movements). Also, the distinction between FDI and portfolio flows in the balance of payments is arbitrary; foreign investment is considered as FDI if it exceeds 10% of a target firm's equity. FDI somewhat above the 10% threshold might behave very similarly to portfolio investment. Furthermore, a significant share of FDI is now concentrated on natural resource-intensive sectors, tying such FDI to volatile commodity prices.

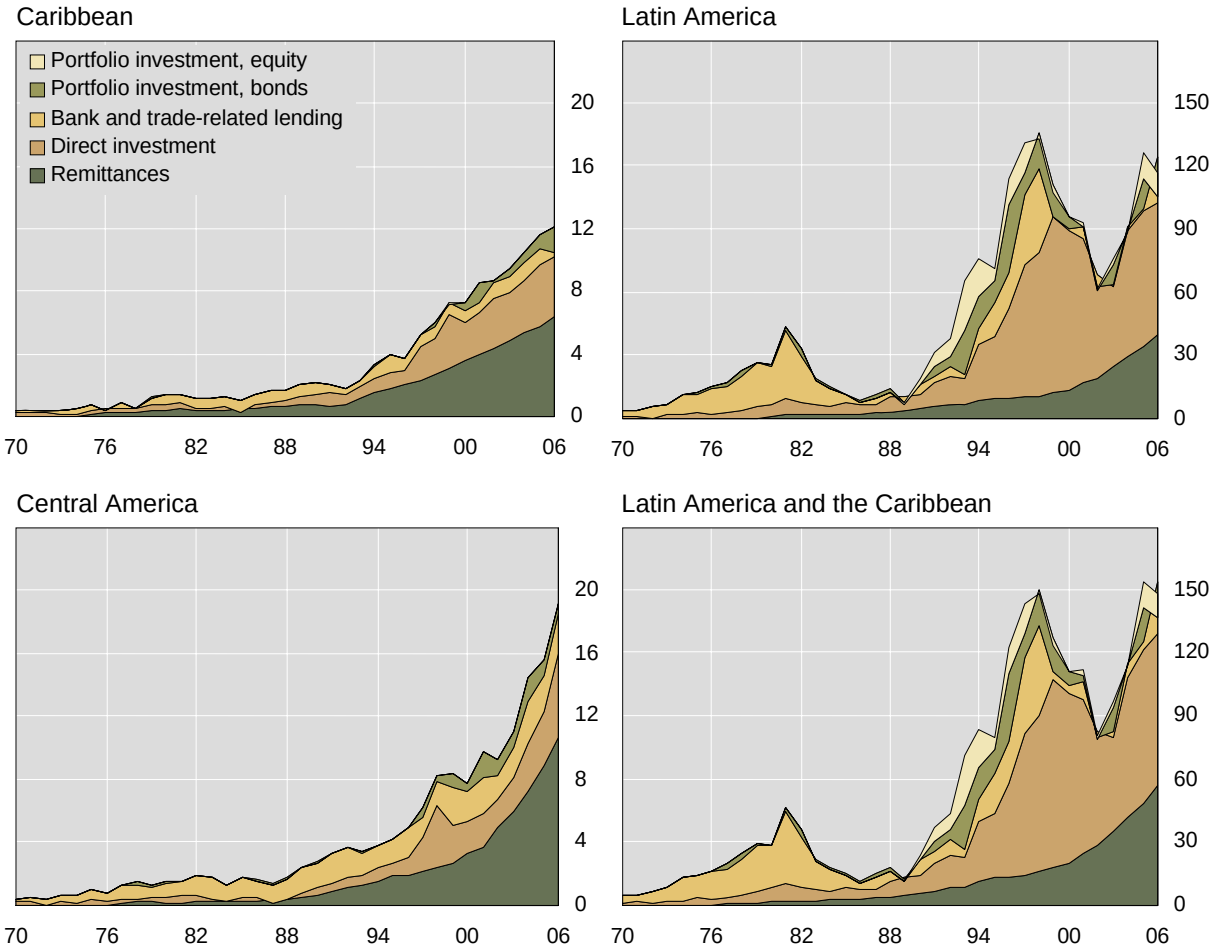
[13] Securities portfolio liabilities include investments in both the equity and bond markets of the region by international investment funds. The counterpart to this shift in assets and liabilities has been the boom in both domestic bond markets and stock markets (see BIS (2008a), Ocampo and Tovar (2008) and Ocampo (2007)).

[14] Nonetheless, a current account surplus does not imply that every sector of the economy necessarily becomes a net lender.

Graph 7

Net capital flows and remittances

In billions of US dollars



The Caribbean includes Antigua and Barbuda, Aruba, Bahamas, Barbados, Dominica, the Dominican Republic, Grenada, Haiti, Jamaica, the Netherlands Antilles, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, and Trinidad and Tobago; Central America includes Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama; Latin America includes Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Suriname, Uruguay and Venezuela; Latin America and the Caribbean includes the listed countries.

Source: World Bank, *World Development Indicators*.

As mentioned earlier, current account surpluses have been partly associated with terms-of-trade improvements, which are volatile. The sustainability of these favourable conditions remains uncertain. Some studies have shown that if the terms of trade prevailing in 2002 were in place today, Latin America would be exhibiting current account deficits of about 4% of GDP.[15]

Fourth, as a source of external financing and under normal circumstances, *remittances lend support to the stability of the economies in the region*. To some degree they may constitute a

[15] These figures highlight the relevance of the terms of trade in the recent juncture and the consequent concern about their sustainability, as studies report that once current account balances are adjusted by the gains in the terms of trade, surpluses become large deficits (see Calvo and Talvi (2007) and Ocampo (2007)).

more stable source of foreign currency inflows than commodity exports. However, it appears that they can also magnify external shocks. In the current juncture, a slowdown or recession of the US economy might affect the ability of emigrant workers to find jobs and, therefore, adversely affect the level of remittances. The evidence on the link between host country business cycles and remittances is mixed: while Vargas-Silva and Huang (2006) find evidence in favour, Roache and Gradzka (2007) do not. However, recent experience appears to support the view that there is a connection. In 2007, as the US economy slowed, growth in remittances to some countries in the region fell to their lowest rate since 2002.

Against such a positive background it is possible to cite three concerns:

First, *the large increase in portfolio flows during 2007*. Portfolio flows are often driven by arbitrage conditions or speculative factors rather than fundamentals, and are therefore subject to sudden reversals. To the extent that portfolio flows are more volatile than, say, FDI, their volatility could magnify a business cycle downturn. In fact, research has shown that such flows tend to be procyclical (Kaminsky et al (2004)). Procyclicality in portfolio flows would be particularly undesirable for many countries in the region whose access to international credit markets may be restricted during bad times.

Second, *a high vulnerability of the region to a slowdown in the US economy*. This can adversely affect the demand for exports, FDI inflows, commodity prices (in particular, if it affects growth in China), remittances to the region and, finally, tourism revenues, which are particularly relevant in the Caribbean.

Third, equally important is that in the face of global financial sector turbulence and a US slowdown, *market sentiment towards the region might have deteriorated*. Nonetheless, it is worth mentioning that this concern is alleviated by the strong capital inflows to some economies in the region observed in the last quarter of 2007 and early 2008 (eg Peru).

Finally, global inflationary pressures associated with commodity and food prices may create a challenging scenario for central banks in the region if confronted with increasing capital inflows. This is well illustrated by the Peruvian experience in the early part of 2008 (see Chapter 2).

2. Implications for monetary and exchange rate policies

Capital inflows pose significant challenges for monetary authorities. A key issue is that more open capital accounts impair the ability of monetary authorities to implement an independent (of external factors) monetary policy. For example, with rising inflation pressures many countries see a need to tighten monetary policy, particularly given concerns that very easy monetary conditions in this decade, supported by capital inflows, have contributed to booms in credit and asset prices. Such booms raise financial stability concerns, particularly in the event of a sudden reversal in inflows (see next chapter). However, raising domestic interest rates can attract more capital inflows and accentuate currency appreciation pressures, dampening competitiveness and growth. Indeed, some believe that monetary authorities have become less able to adjust policy effectively, or “lean against the wind”, to confront surges in capital that are associated with credit and asset price booms so that strengthened macroprudential policies might be required (White and Borio (2004)). One reason is that the transmission channels of monetary policy (eg the interest rate and exchange rate channels) and, therefore, the effectiveness and degree of autonomy of monetary policy when dealing with capital flows may have declined[16] as a result of increasing financial integration, greater

[16] See BIS (2008) and Tovar and Jeanneau (2008).

reliance on market-based instruments and changing structures of financial systems (including the banking intermediation of capital flows).

In dealing with these challenges policymakers have a number of options, which raise a number of questions discussed in this chapter: i) What is the appropriate monetary framework or exchange rate regime? ii) To what extent should central banks intervene in foreign exchange markets and how much should such interventions be sterilised? iii) Should other tools be used to contain the expansion of monetary aggregates (eg increased reserve requirements)?[17] iv) What role can fiscal policy play in counteracting the effects of such capital inflows? v) Can macroeconomic stabilisation funds help deal with inflows?[18] vi) Finally, should steps be taken to restrict capital flows, via capital controls (eg Argentina and Colombia) or other regulatory requirements (eg Colombia and Peru)?

Choice of exchange rate regime

Countries in the region have adopted a variety of monetary policy frameworks and alternative exchange rate regimes to handle the trade-offs associated with the "trilemma" or "impossible trinity" (see Table 1).[19] The choice of the exchange rate regime depends on many country-specific factors, and this is reflected in the fact that there is no single dominant exchange rate regime in the region. In the Caribbean pegged regimes are preferred in the smaller islands, while some of the larger ones have been moving towards more flexible regimes (a notable exception is Trinidad and Tobago). In Latin America there has been a shift towards formal ("de jure") floating regimes, but important exceptions remain, such as Argentina, Bolivia, Ecuador and Venezuela. Finally, in Central America chosen regimes range from floating (Guatemala) to fully dollarised ones (El Salvador). The wide spectrum of exchange rate arrangements in the region is summarised in Table 1.[20]

[17] For instance, in the Netherland Antilles the monetary policy instruments are aimed at influencing the liquidity positions of commercial banks and the capacity of local commercial banks to extend credit. In particular, the instruments employed are the reserve requirement (determined on a monthly basis), the policy on foreign positions (net negative foreign asset positions are not allowed) and the use of money market instruments (CDs, repos from two weeks up to two months and outright sales of government deposits).

[18] A stabilisation fund has been established in Trinidad and Tobago and is under consideration in Suriname.

[19] This is a principle which states that a country cannot simultaneously target or stabilise the exchange rate, conduct an independent monetary policy, and maintain an open capital account (see Obstfeld et al (2004) and Obstfeld and Rogoff (1995)).

[20] Some countries have sought to resolve the trilemma by restricting capital flows. However, this can distort the functioning of financial markets and impair their development.

Table 1

Monetary policy frameworks[1]

	Exchange rate anchor				Monetary aggregate	Inflation target	IMF or other monetary pro-gramme[3]
	Dollar-ised[2]	Currency board	Fixed pegs	Crawling pegs			
Caribbean							
Aruba			X				
Bahamas			X				
Barbados			X				
Dominican Republic							X
ECCU[4]		X					X[5]
Haiti	X				X		X
Jamaica					X		
Netherlands Antilles			X				
Trinidad and Tobago			X				
Central America							
Belize			X				
Costa Rica				X[6]			
El Salvador	X						
Guatemala						X	
Honduras			X				X
Nicaragua				X			
Panama	X						
Latin America							
Argentina			X				
Bolivia				X			
Brazil						X	
Chile						X	
Colombia						X	X
Ecuador	X						
Mexico						X	
Paraguay							X[7]
Peru						X	X
Suriname			X		X		
Uruguay					X[8]		
Venezuela			X				

[1] De facto clasification of exchange rate regimes and monetary policy framework. [2] Another currency is legal tender. [3] May imply floors for international reserves and ceilings for the central bank's net domestic assets, and consequently also indicative targets for reserve money. [4] Eastern Caribbean Currency Union: Anguilla, Antigua and Barbuda, Dominica, Grenada, Montserrat, St Kitts and Nevis, St Lucia, and St Vincent and the Grenadines. [5] Grenada has an IMF-supported or other monetary policy programme. [6] Crawling band. [7] It also uses various indicators for monetary policy or there is no relevant information available. [8] Gradually moving to an inflation target.

Source: IMF, *Annual Report on Exchange Arrangements and Exchange Restrictions*, 2007.

Exchange rate regimes have different implications for how capital inflows might affect the economy. Under pegged regimes, capital inflows may overheat the economy more directly than under flexible exchange rates. With a pegged exchange rate, incipient appreciation pressures lead to central bank intervention in the foreign exchange market to purchase the excess supply of foreign currency at the prevailing rate, thus increasing liquidity in the economy. This in turn would increase aggregate demand, resulting in domestic inflation and an appreciation of the real exchange rate.[21] In contrast, under a flexible exchange rate regime, the impact of capital inflows would tend to be reflected in an appreciation of the nominal and real exchange rates, dampening any expansionary stimulus of capital inflows. This has gained relevance as countries adopt inflation targeting (IT) regimes (see Table 1) with floating exchange rate arrangements. Despite this, growing appreciation pressures and concerns about excessive nominal exchange rate volatility, together with claims of significant exchange rate overvaluation, associated with the large flow of funds, have made evident a "fear of appreciation" among some central banks in the region. The main exceptions are Mexico and, to a lesser extent, Chile, where the improved fiscal position has supported the free float.

How much foreign exchange market intervention? [22]

In recent years countries in LAC have faced significant appreciation pressures, which have raised several concerns. These include: i) their adverse impact on the competitiveness of exports and the tradable goods sector; ii) the dampening effect on interest rate increases and upward pressures on non-tradable prices; and, finally, iii) the fact that appreciation pressures can easily reverse, putting upward pressure on interest rates.

In response to these concerns, several central banks in the region have responded by intervening in foreign exchange markets, which has resulted in heavy and persistent foreign reserve accumulation (Table 2).[23]

To assess the extent of central bank intervention we use a measure of central bank resistance to exchange market pressures (EMP) which captures whether excess demand for domestic currency (ie appreciation pressure) is met through exchange rate changes or reserve accumulation.[24] In particular, a resistance index is calculated, in which a higher value indicates greater resistance to EMP via reserve accumulation (left-hand panel in Graph 8). The following points may be highlighted. First, the Caribbean has maintained the highest resistance over an extended period, which is consistent with the prevalence of pegged regimes. Second, the resistance to EMP in Latin America has increased, so much so that the index has reached levels similar to those displayed in the Caribbean, where pegged regimes are dominant. Of course, this is an indication of "fear of floating". Finally, the index suggests that in the past three years Central America has shown less tolerance to exchange rate pressures. In fact, in 2007 the resistance index reached a maximum for the sample period.

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[21] More precisely, to avoid the appreciation of the nominal exchange rate, the central bank would likely be forced to intervene in the foreign exchange market to buy the excess supply of foreign currency at the prevailing rate, which would increase the money supply and therefore the liquidity in the economy.

[22] See Moreno(2005) and BIS (2005) for a more general discussion on the topic.

[23] Some central banks, such as in Mexico, have not used discretionary intervention but have resorted to other measures (see the discussion below). Chile was also an exception until recently (April 2008), when the Central Bank of Chile began to intervene in the foreign exchange market. The main objective of this policy is to increase the accumulation of international reserves.

[24] Excess demand can be met through several (not mutually exclusive) channels, mainly by allowing fluctuations in the exchange rate or adjustments in the international reserves. The EMP index is equal to the weighted sum of the nominal exchange rate change and the change in international reserves. The weights are equal to the inverse of the standard deviation of monthly changes (see Eichengreen et al (1996)). Due to data limitations, interest rates are not considered. See Chapter 3 in IMF (2007b) for a similar analysis applied to the global economy.

Table 2

Measures of reserves adequacy and interest rate differential

	Foreing exchange reserves[1]		Foreign exchange reserves as a percentage of:[2]						Nominal interest rate differential[5]	
			Short-term external debt[3]		Broad money[4]		Imports			
	2004	2007	2004	2007	2004	2007	2004	2007	2004	2007
LAC	**215.6**	**441.4**	**177.9**	**285.4**	**34.5**	**40.6**	**53.7**	**70.1**		
Caribbean	**8.3**	**14.1**	**88.7**	**236.0**	**48.2**	**66.4**	**43.4**	**57.8**		
Aruba	0.3	0.4	56.5	158.3	295.4	372.1	295.4	372.1	…	…
Bahamas	0.7	0.5	3.2	1.5	16.3	9.2	21.5	10.8	–0.8	–1.8
Barbados	0.6	0.8	40.0	85.3	24.5	27.4	31.4	35.9	–0.2	1.2
Dominican Republic	0.8	2.4	37.4	94.0	8.6	21.8	8.8	16.1	…	…
ECCU[6]	0.6	0.7	100.1	162.4	21.2	18.8	27.9	27.9	4.4	1.7
Haiti	0.1	0.4	242.8	335.1	7.1	19.2	7.4	19.9	…	…
Jamaica	1.8	1.8	155.6	172.4	57.0	44.9	35.3	23.5	14.1	8.2
Netherlands Antilles	0.4	0.7	2.3	3.3	415.0	661.0	415.0	661.0	2.5	1.1
Trinidad and Tobago	3.0	6.4	123.3	898.7	73.7	98.4	56.8	70.1	3.4	1.4
Central America	**10.3**	**15.9**	**223.4**	**205.1**	**61.7**	**59.6**	**27.6**	**27.3**		
Belize	0.0	0.1	1.8	4.9	7.2	13.9	6.2	12.0	1.9	–1.2
Costa Rica	1.9	4.1	105.2	121.3	23.2	31.4	20.6	29.3	…	…
El Salvador	1.7	2.1	119.9	206.0	192.9	180.6	24.0	21.0	…	…
Guatemala	3.4	4.1	287.7	219.1	35.8	28.8	41.7	33.0	…	…
Honduras	2.0	2.5	508.3	444.8	49.9	41.7	29.3	26.2	…	…
Nicaragua	0.7	1.1	466.9	317.9	39.8	52.5	23.5	23.9	…	…
Panama	0.6	1.9	6.3	9.8	5.4	11.7	14.4	25.6	…	…
Latin America	**197.0**	**411.4**	**178.4**	**290.4**	**32.9**	**39.1**	**55.2**	**72.4**		
Argentina	18.0	44.2	32.7	291.7	35.3	50.9	64.5	82.7	5.4	6.1
Bolivia	0.8	4.5	297.2	2,670	27.5	98.1	35.1	114.2	6.0	1.6
Brazil	52.5	179.4	129.4	311.5	33.2	51.7	65.5	114.3	15.8	7.1
Chile	15.5	16.7	134.2	93.2	34.4	22.4	52.2	31.0	2.0	1.4
Colombia	12.8	20.1	231.5	207.6	34.7	27.6	64.5	53.3	6.8	4.0
Ecuador	1.0	2.8	91.8	144.6	15.6	27.6	10.2	18.0	…	…
Mexico	62.8	86.3	252.4	296.3	16.7	15.3	29.1	28.1	5.5	2.8
Paraguay	1.0	2.4	152.6	282.3	55.6	78.1	29.4	31.6	…	…
Peru	12.2	26.9	211.8	379.4	71.3	106.2	96.9	115.0	2.1	0.6
Suriname	0.1	0.4	513.0	1,697	0.0	0.0	12.2	22.1	…	…
Uruguay	2.5	4.1	112.3	150.9	22.5	21.4	66.3	61.9	13.4	–0.2
Venezuela	17.9	23.7	386.9	397.5	81.4	30.4	83.0	47.1	11.6	4.5
Memo:										
LAC excluding Brazil and Mexico	*82.5*	*152.0*	*43.7*	*76.1*	*42.1*	*51.3*	*56.2*	*62.1*		

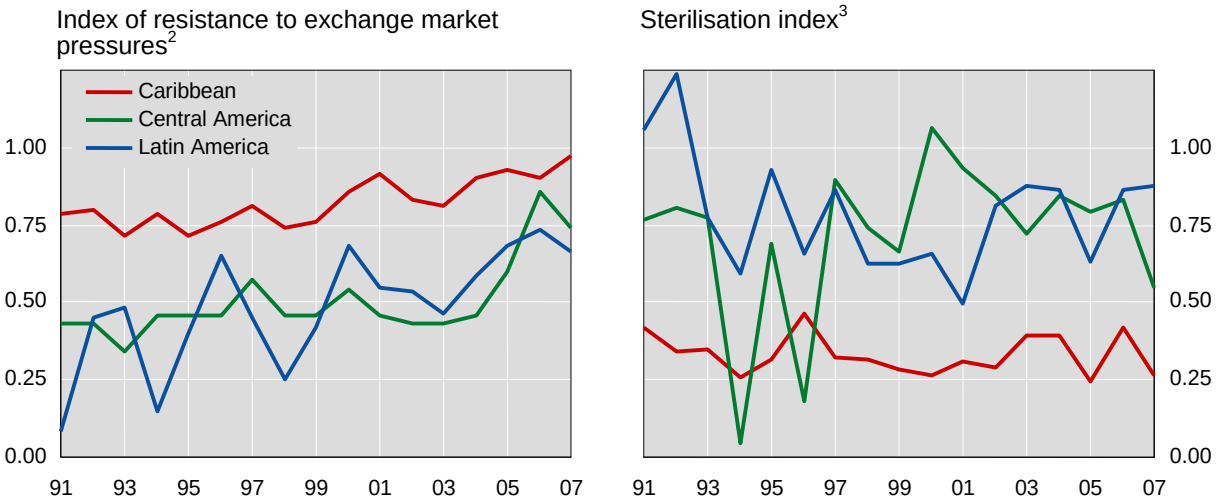
[1] In billions of US dollars. [2] Regional aggregates are weighted averages based on 2000 GDP and PPP exchange rates of the listed countries. [3] Defined as liabilities to BIS reporting banks and international bonds with maturity of less than one year; regional aggregates exclude Bolivia and Suriname; data for 2007 up to September. [4] IMF WEO definition. [5] In percentage points; latest data available, defined as the difference between the local and the US Treasury bill rate (line 60c IMF IFS); for Argentina, the local rates are the rates at issue of Lebac notes with a maturity of one year; for Chile, central bank issues with a maturity of two years; for Colombia, TES with a maturity of 182 days; for Peru, government bonds, secondary market; for Venezuela, LT with a maturity up to 91 days. [6] Anguilla, Antigua and Barbuda, Dominica, Grenada, Montserrat, St Kitts and Nevis, St Lucia, and St Vincent and the Grenadines, except for the calculation of the interest rate differential, which excludes Anguilla and Montserrat.

Sources: IMF; national data.

Overall, this measure of intervention suggests that LAC countries have been intervening heavily. At a country level, intervention in the foreign exchange market has been common in recent years in Argentina, Brazil, Colombia, Paraguay and Peru.

Graph 8

Resistance to exchange market pressures and sterilisation coefficient[1]



The Caribbean includes Anguilla, Antigua and Barbuda, Aruba, the Bahamas, Barbados, the Dominican Republic, Grenada, Haiti, Jamaica, the Netherlands Antilles, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, and Trinidad and Tobago; Central America includes Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama; Latin America includes Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Suriname, Uruguay and Venezuela.

[1] Unweighted averages of country-specific indices. [2] The index of resistance to exchange market pressures (EMP) is a ratio measuring the proportion of EMP that are resisted through intervention. For each country, the ratio of the changes in foreign reserves by the EMP index is standardized to create an index of the degree of resistance to changes in exchange rates with values between 0 and 1, where values closer to 1 imply a greater degree of resistance to exchange rate fluctuations. [3] The sterilisation index captures the extent to which monetary authorities are able to insulate domestic liquidity from foreign exchange market intervention. Specifically, it measures the degree to which the monetary authorities contracted domestic credit to offset the expansion of the monetary base associated with the accumulation of foreign reserves. A value of the index equal to (or above) unity implies full sterilisation, whereas a value of zero (or a negative value) represents no sterilisation.

Sources: IMF, *International Financial Statistics*; BIS staff calculations.

A common justification for foreign exchange intervention is that in an environment of volatile capital flows, exchange rate fluctuations tend to induce significant overvaluations in good times, downward overshooting in bad times, excess volatility in financial markets and distortions in a country's international specialisation pattern (Ocampo and Vos (2008)). Furthermore, in smaller economies exchange rate movements may be ineffective as shock absorbers or adjustment policy, given that they do not equilibrate the external trade or financial markets in these economies.[25] Some also argue that intervention in foreign exchange markets to restrict exchange rate fluctuations may not necessarily be part of countercyclical monetary policy measures, but rather an element of risk management in the context of incomplete markets that leads to excessive risk-taking. The preceding suggests a tension between the dual objectives of price and financial stability, and could imply incentives for the policymaker to avoid free floating.[26]

[25] For instance, increases in the relative price of tradable goods do not necessarily shift output to non-tradables. The reason is that there are only few tradable goods which are subject to capacity constrains, and domestic demand absorbs a very small proportion of production (Worrell (2003)).

[26] Countries also have an incentive to intervene more frequently in foreign exchange markets when (i) policy credibility is low (so that the pass-through from exchange rates to inflation is high); (ii) the financial system is

Against this, some argue that recent exchange rate appreciation pressures are the result of a normal equilibrium response to stronger fundamentals, which are also aligned with improved policy credibility. This last element is also relevant as it implies that agents should expect better policy reactions to different economic developments and shocks. In fact, a similar argument can be made regarding the development of domestic financial markets. As markets mature, an economy's ability to cope with shocks and other structural changes should improve. Also, there are those who argue that intervention in the foreign exchange market leads to one-sided bets, thus fuelling more capital inflows and more exchange rate pressures. Floating exchange regimes would be superior as they create two-sided bets, which endogenously trigger stabilising mechanisms to avoid the type of snowball effects on exchange rates or capital flows observed in the past. Intervention can also create the perception that the central bank is implicitly guaranteeing exchange rate stability, reducing the incentive to develop and use instruments for managing exchange rate risks. Finally, some believe that intervention is ineffective in influencing the exchange rate level, and that it can increase its volatility.

Foreign reserve holdings now exceed most rule-of-thumb measures of reserve adequacy, suggesting that self-insurance is not the only motive for reserve accumulation. A disadvantage of foreign exchange intervention is that the associated reserve accumulation can have significant carrying costs. Such costs can be illustrated by a simple measure: the spread between domestic and US Treasury bill rates times the total outstanding stock of foreign exchange reserves in domestic currency. A positive value suggests that central banks experience a loss if they give up high-yielding domestic securities (or borrow in domestic markets) to finance the acquisition of low-yielding US Treasury securities. This last measure does not account for the effects of exchange rate changes on the value of foreign reserves in the central bank balance sheet, nor for the lower spreads on the service costs of the stock of sovereign debt (Levy Yeyati (2008)), which can be significant. The evidence reported in Graph 9 indicates that the carry costs of reserves across the region declined between 2004 and 2007, with the exceptions of Argentina and Barbados. Nonetheless, significant costs remain in some countries. For instance, in Jamaica the carry costs of reserves in these illustrative calculations reached 1.7% of GDP. Also worth noting is the significant decline in the carry cost of reserves in Uruguay, which went from over 2.1% of GDP in 2004 to minus 0.02% of GDP in 2007. Such dynamics reflects the narrowing of interest rate differentials, appreciation trends and the rebound of the economy following the crisis.

Sterilisation

The immediate effect of foreign exchange market intervention is the creation of domestic liquidity (an increase in base money). Central banks have sought to "sterilise" these monetary effects of foreign exchange intervention through offsetting sales of government or central bank securities. To assess the extent of sterilisation, the monthly change of central banks' net domestic assets is regressed on its net foreign assets.[27] The estimated coefficient

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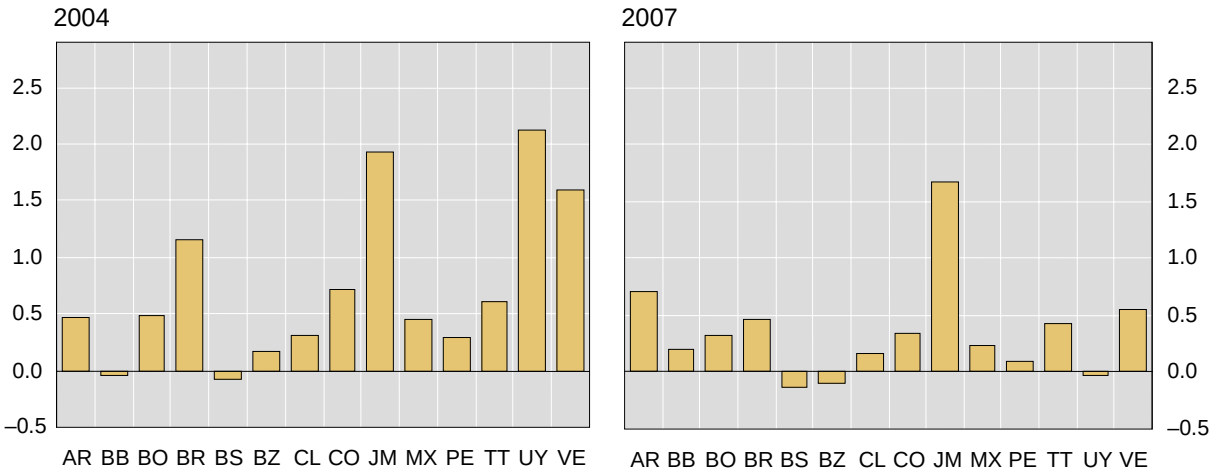
less developed (ie thin and characterised by lack of transparency, so that the perceived distortionary costs of intervention are lower and intervention is more effective); or (iii) the financial sector is weak and exposed to currency mismatches. Furthermore, if risks associated with financial integration have increased, foreign exchange accumulation may also reflect a self-insurance policy, say for instance against sudden stops. See Aizenman and Lee (2007) and Levy Yeyati (2008) for a discussion of the recent reserve surge in the stock of international reserves in developing countries.

[27] Formally, the sterilisation index is calculated by taking the estimated coefficient $\beta_{i,t}$ of the following regression: $\Delta NDA_{i,t,m} = \alpha_{i,t} + \beta_{i,t}\Delta NFA_{i,t,m} + u_{i,t,m}$, where ΔNDA is the monthly change in the net domestic assets

measures the extent to which a central bank is able to sterilise by contracting domestic credit to offset the expansion of the monetary base associated with the accumulation of foreign reserves. A value of the normalised coefficient equal to (or above) unity implies full sterilisation, whereas a value of zero (or a negative value) represents no sterilisation.[28]

Graph 9

Carry cost of international reserves[1]



AR = Argentina; BB = Barbados; BO = Bolivia; BR = Brazil; BS = Bahamas; BZ = Belize; CL = Chile; CO = Colombia; JM = Jamaica; MX = Mexico; PE = Peru; TT = Trinidad and Tobago; UY = Uruguay; VE = Venezuela.

[1] Defined as the difference in local currency returns of the foreign exchange reserves between the local and the US Treasury bill rate (line 60c, IMF IFS); as a percentage of GDP. For Argentina, the local rates are the rates at issue of Lebac notes with a maturity of one year; for Chile, central bank issues with a maturity of two years; for Colombia, TES with a maturity of 182 days; for Peru, government bonds, secondary market; for Venezuela, LT with a maturity up to 91 days.

Sources: IMF; national data.

The sterilisation coefficient is reported for the three regions in our sample in Graph 8 (right-hand panel), which shows the following: first, as would be expected of a region where pegged regimes are more widespread, in the Caribbean sterilised intervention is uncommon and sterilisation is found only in some of the larger islands.[29] Second, sterilisation of foreign exchange intervention is more widespread in Central and Latin America than in the Caribbean; however, the trend in recent years differs. In Latin America the sterilisation coefficient has increased, possibly reflecting greater pressures associated with exchange rate appreciation and the need to preserve room for manoeuvre for monetary policy to deal with domestic demand conditions. These results are in line with more formal analysis by Aizenman and Glick (2008), who argue that this is consistent with the potential inflationary impact of reserve flows. Furthermore, they also find sterilisation to depend on the composition of the balance of payments inflows. In particular, sterilisation is less responsive to FDI inflows than to the current account surplus or to non-FDI flows.

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of the central bank in country *i* and ΔNFA is the monthly change in the central bank's net foreign assets in month *m* of year *t*.

[28] Formally, the coefficient index is normalised so that the coefficient is mapped into a [0,1] index. Therefore negative coefficients are assigned a value of zero and coefficients exceeding the value of one receive a unitary value. Other values are mapped in equal brackets that increase by 0.2 units.

[29] Of course, the distinction between open market operations associated with the normal management of liquidity and those aiming at sterilising the intervention in foreign exchange markets is blurred.

Difficulties of sterilised intervention

A number of factors have a bearing on the effectiveness and sustainability of sterilised intervention in foreign exchange markets. The experience of China and other countries shows that sterilised intervention can have a lasting impact on the exchange rate in the presence of capital controls. However, whether sterilised intervention will work in the absence of such controls is highly contentious. While there is potentially no limit to a country's ability to accumulate reserves, especially if it is small, efforts to sterilise can adversely affect the central bank's profitability and measured capital.[30] Furthermore, large-scale and sustained sterilised foreign exchange intervention might have distortionary effects on the financial sector (Mohanty and Turner (2006)). Furthermore, if capital flows are the result of increased confidence in the economy, so that domestic assets are increasingly seen as good substitutes for foreign assets, then sterilised intervention is likely to be unsuccessful in dampening exchange rate fluctuations.

On balance, in some of the larger LAC economies where sterilised intervention has been carried out, there are capital controls in place (Brazil, Argentina) or measures to reduce capital flows have recently been introduced (Colombia and Peru).[31] In Colombia, the difficulty appears to have been that central bank intervention became increasingly ineffective as it was seen as running counter to a (tightening) monetary policy.[32] To deal with this the central bank in May 2007 imposed marginal reserve requirements on current and savings accounts, as well as on CDs of less than 18 months (27%, 17.5% and 5%, respectively).

In Peru, speculative inflows of capital (on average $500 million per day during the first half of January 2008) prompted the central bank to intervene in the market; it bought $3.27 billion to diminish the volatility and strong appreciation of the sol. Such interventions were sterilised by issuing CDs, which were then sold to foreign investors by domestic banks. In this manner, foreign investors were able to accumulate $2.4 billion of secure and high-yielding securities, well above the outstanding holding in December 2007 ($0.89 billion). In the midst of such speculative pressures, the central bank switched to instruments for long-term deposits that cannot be sold to foreign investors. Furthermore, reserve requirements on local and foreign currency deposits were put in place to reduce liquidity in the market. The central bank has indicated that these measures have been successful in reducing the amount of speculative inflows and that sterilisation measures have been equivalent to a 50 basis point increase in the reference rate. Therefore, by avoiding the need to raise interest rates, the central bank claims that it has increased its scope for independent monetary policy.

Effectiveness of capital controls

Maintaining an independent monetary policy is not straightforward in the face of large capital inflows. Furthermore, as discussed above, sterilised intervention can be costly and difficult to sustain. As a result, some countries have relied on controls on capital flows. After the crises of the late 1990s and early 2000s controls were slowly dismantled. However, they have made a comeback in some countries of the region, mainly in Argentina, Colombia and Venezuela. Brazil has also recently introduced a tax on foreign investments in fixed income.

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[30] As for intervention to prevent depreciation, it requires the sale of foreign reserves, which are limited.

[31] In Argentina sterilisation has been carried out through different mechanisms: i) anticipated cancellation of rediscounts granted during the 2001–02 crisis; ii) issuing non-monetary short- and medium-term debt (LEBAC and NOBAC); iii) net issues of reverse repos; iv) sale of sovereign bonds held in the central bank portfolio; and finally, v) changes in the minimum reserve requirements.

[32] See Kamil (2008) for a detailed study on how foreign exchange intervention in Colombia was effective in stemming currency appreciation when foreign currency purchases were done in a period of monetary easing, but became ineffective when incompatible with inflation targeting as the economy began overheating.

However, at the same time it has slowly lifted some restrictions (for instance, the financial transaction tax, which was eliminated in December 2007). In general, many economies in the region still rely on different types of controls, and in some cases these have been complemented with additional measures that set limits on derivative positions (for example in Colombia), which reflects the increased deepening and sophistication of financial markets in the region, and the potential complexity in assessing the effects of controls.

Controls on capital inflows come in different flavours: exchange controls or quantitative restrictions,[33] dual or multiple exchange rate arrangements (eg Suriname), and taxes on financial inflows (Argentina and Colombia). This last type of restrictions raises transaction costs by imposing a requirement to deposit a portion of the foreign currency transaction at the central bank, earning an interest rate (which could be zero) determined by the authorities, for a specific period of time. The deposit can be withdrawn at maturity payable in domestic or foreign currency. This scheme was employed in Chile and Colombia during the 1990s and now by Argentina and Colombia. It targets short-term capital inflows. The objective is to reduce the degree of exchange rate appreciation by reducing the volume of capital inflows, shifting the term structure towards a longer maturity and enhancing monetary control.[34]

The effectiveness of such controls continues to be the subject of debate in academic and policy circles. Although there is disagreement on whether such controls are able to reduce the overall volume of capital inflows, it appears to be accepted that such controls affect the term structure of external debt, by shifting it towards longer-term flows.[35] However, more recent evidence has highlighted that these measures create significant economic distortions. For instance, it has been shown that they make capital costlier for smaller firms, reduce market discipline and lower international trade (Forbes (2007a,b)). Another cost that has become more relevant in recent years is that such controls could delay and distort the development of domestic financial markets.

Support from other policies

The possible shortcomings of sterilisation policies and capital controls discussed above raise the question of whether other policy tools (such as fiscal policy, stabilisation funds or prudential policies) could support monetary policy in dealing with capital flows.

Fiscal policy and stabilisation funds

Fiscal policy may constitute an effective complementary policy to dampen liquidity and curb demand pressures in the context of large macroeconomic shocks, such as those triggered by large capital inflows, thus helping monetary policy sterilise these flows. Fiscal policies can do this by acting countercyclically, ie by authorities running fiscal surpluses in good times (when foreign currency inflows are large), and deficits in bad times (when foreign currency inflows decline or reverse).[36] However, it has potential drawbacks. One is that countercyclical policy may be difficult to implement when non-inflationary financing is difficult to find, thus inducing

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[33] These restrictions are sometimes presented as prudential regulations. An example is the limits on the share of foreign currency liabilities of domestic commercial banks in their total liabilities.

[34] Edwards (2005) analyses an important complementary question: whether increased capital mobility heightens macroeconomic vulnerability. He finds no evidence that countries with higher capital mobility tend to have a higher incidence of crises, or tend to face a higher probability of crises than countries with lower capital mobility.

[35] For the Chilean experience, see De Gregorio et al (2000), Le Fort and Lehmann (2003) and Forbes (2007a). For the Colombian experience, see Cárdenas and Barrera (1997) and Ocampo and Tovar (2003).

[36] However, as mentioned in Chapter 1, some studies have warned that fiscal positions in the region may not be that solid once cyclical adjustments are made (IMF (2007a), IADB (2008)).

a procyclical policy bias (see Kaminsky et al (2004)). Furthermore, due to the normal political economy process, fiscal policy (ie reducing expenditures, increasing taxes, or both) may take time to materialise, thus limiting its impact in a context of large inflows, which often requires a swift response. Equally important, its effectiveness may depend on whether expenditure cuts to dampen aggregate demand target the correct sector. For instance, if government expenditure is weighted more towards non-tradable goods, then a cut in government spending may be more effective in alleviating pressures on the real exchange rate than heavier taxation on the private sector. Fiscal policy can also be destabilising, as it may accelerate a reversal of capital flows, in particular if it is perceived to be unsustainable. Recent improvement in fiscal positions and improved debt management practices, together with the declining debt ratios across the region (see Chapter 1), may contribute to making capital flows more sustainable, and in particular reduce the probability of sudden reversals.

Many countries in the region have received large revenues associated with high commodity prices. Such revenues may fuel the economy with additional liquidity and reinforce appreciation pressures associated with large foreign currency inflows. To offset these effects, countries have employed alternative fiscal policies: i) fiscal rules aimed at protecting the government from spending the revenues of commodity booms (eg Chile); and/or ii) macroeconomic stabilisation funds. A problem with both these alternatives is that they have to be set well in advance. Nonetheless, stabilisation funds can facilitate the conduct of monetary policy by investing highly volatile commodity export revenues abroad. These funds, now commonly referred to as sovereign wealth funds (SWFs) are also part of the broader process of accumulation of foreign assets seen in recent years in emerging markets (including those of LAC). In particular, they play a large role in the new trends in capital outflows from these economies.[37] A question of interest is whether foreign asset acquisition by official or quasi-government entities has different implications from reserve accumulation by the central bank in terms of the impact on the exchange rate, possible macroeconomic imbalances, financial market distortions and fiscal costs.

Prudential measures

Sudden reversals in capital inflows have often imposed large costs on the region. Some believe these costs could be alleviated by macro- and microprudential policies that could help avoid the build-up of financial imbalances (eg unsustainable credit or asset price booms),[38] and also strengthen the financial system to withstand any unwinding of balance sheet positions. In a setting of low inflation and large capital inflows that trigger a rapid expansion of credit, authorities may be unable to justify interest rate increases. If financial imbalances build up and inflation picks up, monetary authorities will then face the reversal of capital flows in a very awkward position, as any interest rate hike will necessarily have financial stability implications (see Chapter 3 for a complementary discussion).

Financial integration and monetary policy transmission

An important question is whether increasing financial integration has weakened the interest rate channel of monetary policy transmission in small open economies.[39] Gudmundsson

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[37] A key characteristic of SWFs is that they are run autonomously from traditional reserve management by central banks and/or finance ministries. Although an exact and universally agreed definition of SWFs is unavailable, they are considered dedicated government-owned investment vehicles, funded by foreign exchange surpluses, which manage those assets separately from official reserves and invest them with a buy and hold perspective (Griffith-Jones and Ocampo (2008)).

[38] See Borio (2003) for definitions, comparisons and contrasts between macro- and microprudential regulatory and supervisory arrangements.

[39] For a recent overview of the transmission mechanism of monetary policy, see BIS (2008b).

(2008) has explored the relative influence of global interest rates on domestic long-term policy rates for a number of industrial small open economies, finding evidence of a close and strengthening relationship between domestic and US long rates. As a result, the study concludes that the interest rate channel might be getting weaker with financial integration.[40] The main implication would be that the exchange rate would be the main channel to deliver the inflation target and to provide some short-run stabilisation.

However, in the case of LAC, financial sector deepening and improved operating procedures may have strengthened the interest rate channel and made aggregate spending more sensitive to interest rates, although the situation varies from country to country.[41] However, financial intermediation remains low in many of the smaller economies of the region as important segments of the population lack access to financial services. This might have reduced the direct impact of financial intermediation on aggregate spending. Also, the impact of monetary policy on investment in such economies is uncertain. On the one hand, large firms are more likely to access financing through international markets at rates that are more favourable than those available in domestic markets. On the other hand, the lack of available financing for small and medium-sized enterprises in domestic markets remains a major constraint, forcing such firms to finance investment through their own resources. Nonetheless, the impact of interest rates on aggregate spending is likely to be more significant in the larger economies of the region where financial markets are more developed (see BIS (2008a)). In fact, the recent upsurge in credit growth in relatively new market segments, such as credit card and mortgage lending, might have increased the responsiveness of aggregate demand to interest rates.

Financial and structural reforms (including the opening of the economy to trade and financial flows) and the changes in the degree of dollarisation may also have altered the exchange rate channel, and therefore the manner in which capital inflows and reversals affect the economy. The evidence suggests that the decline in exchange rate pass-through to inflation together with a decline in currency mismatches (see Chapter 3) have weakened the exchange rate channel.

Overall, the increasing importance of the interest rate channel and the weakening of the exchange rate channel would suggest that the region is still not fully financially integrated with the rest of the world.

Have monetary policy measures been effective?

How effective has monetary policy been in dealing with the current cycle of capital flows? Has monetary policy been tight or loose in recent years? What have been the outcomes in terms of liquidity creation and credit expansion?

Interest rates in the region have declined considerably during this decade (Graph 10). However, it was not until 2002–03 that the region actually began to see easy monetary conditions, as reflected in negative real interest rates observed across the region until 2006. From mid-2005 central banks across the region began to tighten policy rates. Today, inflationary pressures are pushing real interest rates down, a trend that has been facilitated by the external environment, which has led many central banks in the region to lower their policy rates.

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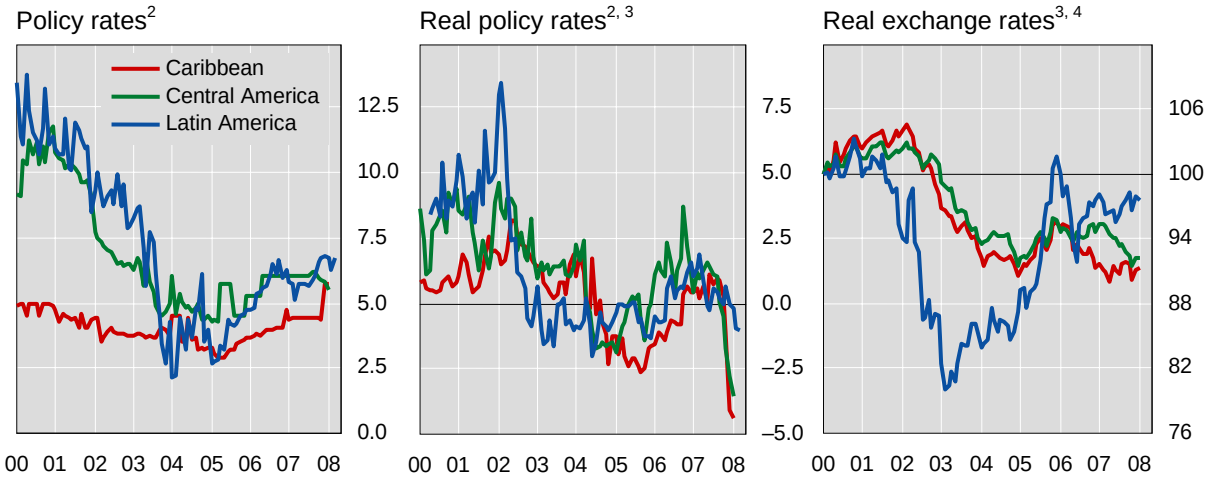
[40] The study recognises possible limitations associated with the fact that strong co-movements in interest rates may reflect factors others than financial globalisation, such as common shocks.

[41] For instance, Uruguay has recently changed (September 2007) its monetary policy framework. It shifted from one based on monetary aggregates to one based on interest rates (Tasa de referencia de política monetaria, TPM). For this purpose it set an interest rate corridor and new credit and lending facilities were created. The central bank also adopted some changes in reserve requirements, which are now mandatory on a monthly basis. Such changes aim at strengthening the interest rate channel (see BIS (2008b) and Tovar and Jeanneau (2008)).

Graph 10

Monetary conditions[1]

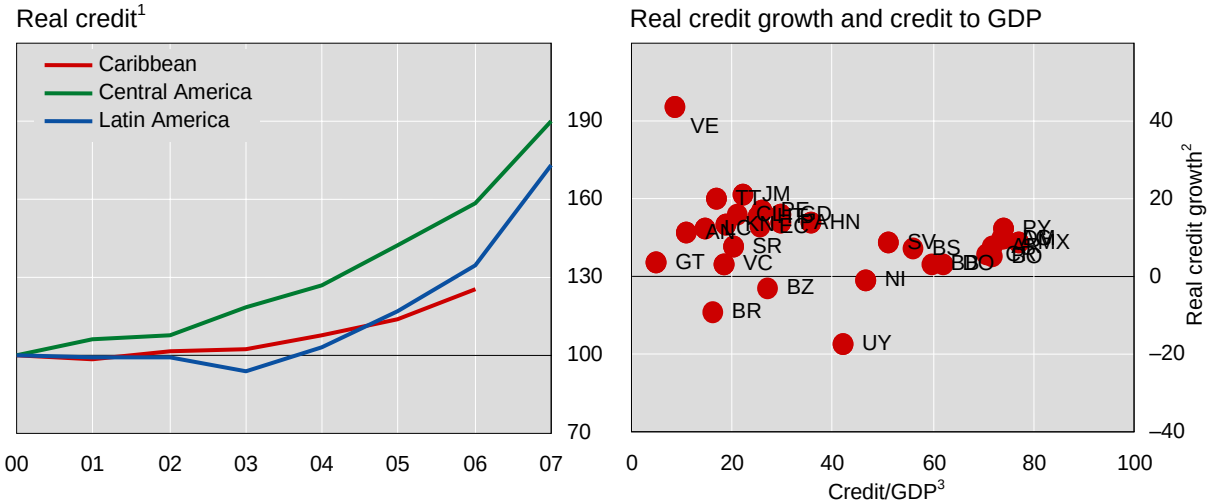


[1] Median of the economies in each group. [2] In per cent. Monetary policy rates; where not available, money market or deposit rates. The Caribbean includes Aruba, the Bahamas, Barbados, the Dominican Republic, Haiti, Jamaica, the Netherlands Antilles, and Trinidad and Tobago; Central America includes Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama; Latin America includes Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Suriname, Uruguay and Venezuela. [3] In terms of consumer prices. [4] January 2000 = 100; an increase indicates an appreciation. The Caribbean includes Antigua and Barbuda, the Bahamas, Dominica, the Dominican Republic, Grenada, the Netherlands Antilles, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, and Trinidad and Tobago; Central America includes Costa Rica, Belize and Nicaragua; Latin America includes Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Uruguay and Venezuela.

Sources: IMF; BIS; national data.

Graph 11

Private credit



The Caribbean includes Anguilla (AI), Antigua and Barbuda (AG), Aruba (AR), the Bahamas (BS), Barbados (BB), Dominica (DM), the Dominican Republic (DO), Grenada (GD), Haiti (HT), Jamaica (JM), the Netherlands Antilles (AN), St Kitts and Nevis (KN), St Lucia (LC), St Vincent and the Grenadines (VC) and Trinidad and Tobago (TT); Central America includes Belize (BZ), Costa Rica (CR), El Salvador (SV), Guatemala (GT), Honduras (HN), Nicaragua (NI) and Panama (PA); Latin America includes Argentina (AR), Bolivia (BO), Brazil (BR), Chile (CL), Colombia (CO), Ecuador (EC), Mexico (MX), Paraguay (PY), Peru (PE), Suriname (SR), Uruguay (UY) and Venezuela (VE).

[1] Deflated by consumer prices; 2000 = 100. Median of the economies in each group. [2] Average annual growth from 2004 to 2007 or latest available, in per cent. [3] In 2003, in per cent.

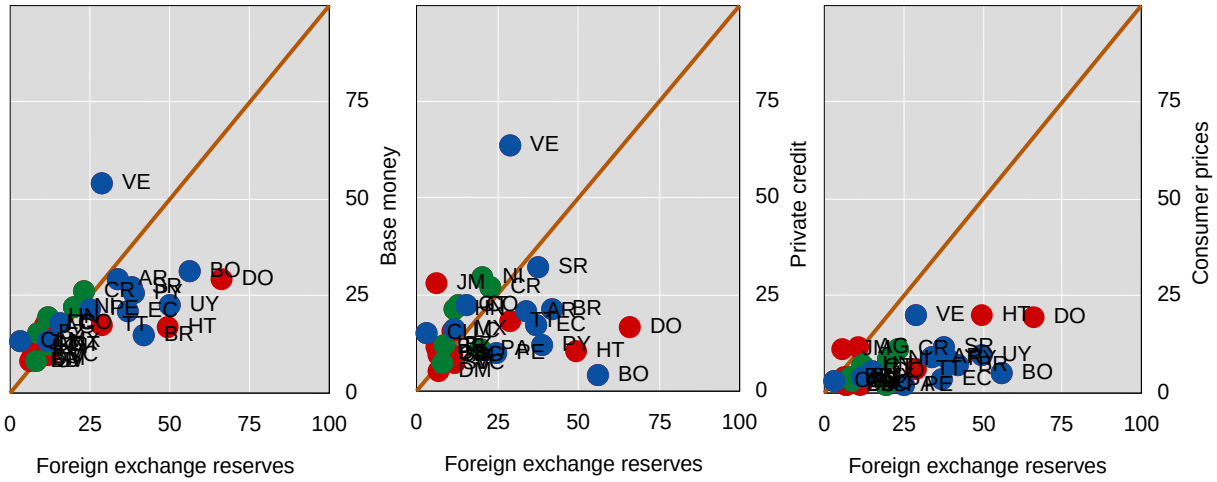
Sources: IMF; national data.

Rapid credit growth across the region, particularly since 2002/03, reinforces the impression of easy monetary conditions (Graph 11 and Chapter 3). In part this reflects structural factors like financial deepening, as credit/GDP ratios have in some cases been quite low. Indeed, as shown in the right-hand side panel of Graph 11, the pickup of credit has been faster in those countries with lower credit to GDP ratios. Short-run factors have also boosted credit growth, including strong economic performance and efforts to contain appreciation pressures. Indeed, by contributing to disinflation and lowering aggregate demand, real exchange rate appreciation may have provided room to lower policy rates or adopt other easing measures. Furthermore, appreciation pressures may have been associated with lower interest rates, thus tending to dampen capital flows.

Another question of interest is whether sterilisation and the other complementary measures discussed above were effective in curbing the liquidity associated with foreign currency inflows. At least for the region, the rapid reserve accumulation has not been associated with rapid base money growth or inflation (Graph 12). However, evidence is mixed as to the effects on private credit growth. These correlations need to be interpreted with caution, as inflationary pressures are known to have been associated with other sources such as commodity and food price inflation.

Graph 12

Foreign reserve accumulation and monetary outcomes[1]



The Caribbean includes Antigua and Barbuda (AG), the Bahamas (BS), Barbados (BB), Dominica (DM), the Dominican Republic (DO), Grenada (GD), Haiti (HT), Jamaica (JM), St Kitts and Nevis (KN), St Lucia (LC), St Vincent and the Grenadines (VC) and Trinidad and Tobago (TT); Central America includes Belize (BZ), Costa Rica (CR), El Salvador (SV), Guatemala (GT), Honduras (HN), Nicaragua (NI) and Panama (PA); Latin America includes Argentina (AR), Bolivia (BO), Brazil (BR), Chile (CL), Colombia (CO), Ecuador (EC), Mexico (MX), Paraguay (PY), Peru (PE), Suriname (SR), Uruguay (UY) and Venezuela (VE).

1 Average growth from 2003 to 2007 or latest available, in per cent.

Sources: IMF; national data.

3. Implications for financial stability

The main issue addressed in this chapter is whether the region is better placed to avoid the build-up of financial imbalances, and related financial stability concerns, usually associated with the surge in foreign capital.

Chapter 1 argued that trends in gross inflows and outflows can change different risk exposures within the economy. For example, the surge of capital flows can increase the vulnerability to exchange rate risk if recipients of foreign capital are unable to reduce their currency mismatches. Liquidity concerns may also arise if the share of gross short-term flows increases and short-term assets do not follow the same pace. In addition, bank-related inflows may increase credit risk exposure, as they tend to be associated with consumption

and credit booms. A different dimension, particularly relevant for small open economies such as those in LAC, is the risk of international financial contagion, especially when countries are exposed to common lender effects.[42]

Despite the progress made in terms of the macroeconomic and regulatory framework, financial stability implications of capital inflows are still a major concern for LAC economies, as their financial markets remain underdeveloped, banking systems are vulnerable and financial dollarisation remains high (BIS (2007b)). Moreover, financial and real shocks can be sizeable, as the region has historically been characterised by high macroeconomic volatility.

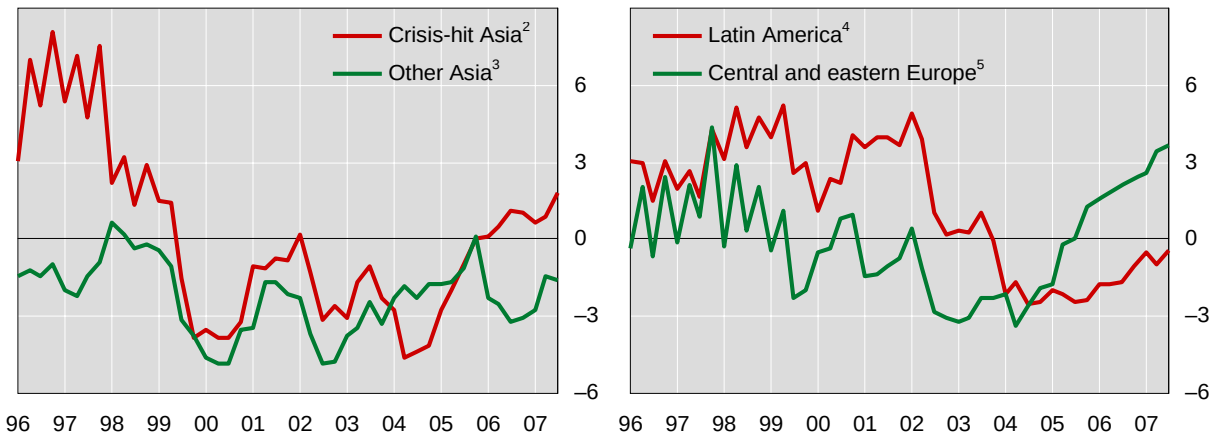
In this context, some key questions include: i) How has the recent surge of capital inflows affected the financial vulnerabilities of financial systems? ii) What are the main exposures to financial risks that can be associated with capital flows? iii) How resilient is the domestic financial sector to capital inflow reversals? iv) What are the alternatives to reduce the risks of contagion and the exposures to common lender and/or changes in investor sentiment? and, finally, v) What are the supervisory and/or prudential regulatory reforms that are needed to deal with the volatility inherent to capital flows?

External vulnerability

A main concern associated with the surge of capital inflows is the capacity of each country to deal with capital flow reversals. This can depend on several factors, such as the degree of real exchange rate misalignment; the dependence on foreign savings, the level and growth of foreign debt, the capacity to generate foreign currency revenues, and the ability to pay short-term debt. Graph 13 presents an index that takes into consideration such variables (see Hawkins and Klau (2000)).[43] It shows that the external vulnerability of a selected number of Latin American countries is low compared to other emerging economies (right-hand panel), even though it has increased over the past years.

Graph 13

External vulnerability indices[1]



[1] An increase in the index (expressed as a weighted average, based on 2000 GDP and PPP exchange rates of the economies in each group) implies an increase in risk. [2] Indonesia, Korea, Malaysia, the Philippines and Thailand. [3] China, Hong Kong SAR, India, Singapore and Taiwan (China). [4] Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. [5] The Czech Republic, Hungary, Poland, Russia and Turkey.

Sources: IMF; national data; BIS; BIS calculations.

[42] Capital inflows can also affect financial stability in small economies through their impact on the volatility of local financial markets, such as the exchange market, stock markets, money markets, etc.

[43] The index incorporates the real effective exchange rate, the current account balance, export growth and three indicators pertaining to external debt (the ratio of international bond and bank debt as a percentage of GDP – level and change in the debt indicator – and short term debt as a percentage of foreign reserves).

The factors that have helped reduce the region's external vulnerability are reductions in current account deficits during the first half of the decade, and concomitant reductions in external debt, in terms of both total external debt as a percentage of GDP and short-term debt as a percentage of total reserves.

Despite the improvement, external vulnerability remains a concern for those countries running significant current account deficits (eg Colombia and the Dominican Republic). Such deficits can become unsustainable under stress situations, which could force a correction in real exchange rates

External liquidity risk

A component of the external vulnerability index that is of particular interest is the ratio of short-term debt to total reserves, an indicator of external liquidity risk. An increase in short-term debt can create rollover or refinancing risk. During episodes of financial stress, agents within the economy (most importantly the government, banks and the corporate sector) owing large amounts of short-term foreign currency debt may find it difficult to refinance their obligations, or may be able to do so at very high interest rate levels, threatening their repayment ability.

As shown in Table 3, external liquidity risk appears less relevant in the present setting of large international reserve accumulation. Short-term debt as percentage of total reserves has decreased during the past years in almost all countries in Latin America. An important exception is Chile, apparently reflecting the perception that an episode of financial stress which would require much higher reserves is now extremely unlikely. Also, Chilean institutional investors hold significant positions in liquid foreign assets (such as portfolio investment), which could help stabilise the country's liquidity position during a period of stress.

Currency mismatches and risk exposures

The degree of balance sheet and income exposures to foreign exchange rate fluctuations (currency mismatches) can pose a serious threat to financial stability.[44] When different agents are engaged in unhedged foreign currency borrowing, and their revenues are mainly denominated in local currency, a sharp devaluation can increase significantly their debt burdens.

Aggregate currency mismatches are often an underlying feature of external debt crises in countries highly dependent on foreign capital. At the sectoral level, mismatches have often been linked with banking crises. The reasons vary. In some cases banks have used deposits to speculate in the foreign exchange market, or have maintained currency mismatches in their balance sheets. In other cases, bank borrowers have maintained large currency mismatches, impairing their ability to service their bank debt in the event of a depreciation.

Aggregate currency mismatches

Measuring currency mismatches is not an easy task. One aggregate measure is the ratio of foreign currency debt as a percentage of total debt to the share of exports to GDP (Goldstein and Turner (2004)). A large ratio implies that foreign currency debt is high relative to the foreign currency earnings available to service it.

[44] See a complementary discussion in Jeanneau and Tovar (2008b) and BIS (2007b).

Table 3

Short-term external debt[1]

As a percentage of foreign reserves[2]

	1992–95	1996–99	2000–03	2004	2005	2006	2007[5]
Latin America and the Caribbean[2]	**144.0**	**111.6**	**107.4**	**84.4**	**59.2**	**49.3**	**41.1**
Caribbean[2]	**102.1**	**124.4**	**201.3**	**168.0**	**55.4**	**92.0**	**81.2**
Aruba	64.6	331.8	55.2	177.0	113.0	288.3	73.5
Bahamas[3]	...	...	...	...	...	...	...
Barbados	640.0	233.8	162.9	250.1	111.6	464.1	126.5
Dominican Republic	84.8	144.7	330.4	267.1	63.3	79.4	104.6
ECCU[4]	55.6	193.9	182.8	151.7	114.4	197.9	230.6
Haiti	30.0	24.9	122.7	41.2	18.2	44.1	36.5
Jamaica	52.6	92.3	64.3	64.3	21.1	50.2	54.7
Netherlands Antilles[3]	...	...	...	...	...	...	...
Trinidad and Tobago	126.2	88.3	93.7	81.1	53.7	35.2	11.2
Central America[2]	**118.0**	**75.2**	**62.6**	**55.2**	**53.7**	**54.4**	**49.7**
Belize[3]	...	...	...	...	...	...	...
Costa Rica	217.0	71.5	97.8	95.0	64.1	91.9	87.3
El Salvador	32.9	61.2	70.9	83.4	111.0	66.2	43.8
Guatemala	61.9	99.3	57.9	34.8	30.5	45.4	45.9
Honduras	122.6	78.6	27.2	19.7	18.8	21.1	22.4
Nicaragua	305.8	21.5	32.3	21.4	26.8	21.7	33.5
Panama[3]	...	...	...	...	...	...	...
Latin America[2]	**146.0**	**112.7**	**106.8**	**83.4**	**59.5**	**48.0**	**39.8**
Argentina	155.1	175.5	213.5	305.4	38.5	44.4	36.9
Bolivia	79.3	95.7	95.0	33.6	14.6	4.8	4.2
Brazil	92.2	112.8	109.1	77.3	85.5	54.2	35.5
Chile	53.7	55.4	68.3	74.5	74.5	75.3	111.1
Colombia	57.5	79.0	49.5	43.2	40.4	38.9	49.1
Ecuador	126.3	143.3	207.8	108.9	117.3	129.0	65.2
Mexico	276.9	120.7	89.2	39.6	39.7	41.7	35.8
Paraguay	63.5	77.6	86.5	65.5	49.1	49.9	40.2
Peru	50.1	70.3	83.3	47.2	55.1	43.7	29.7
Suriname	184.8	105.6	40.5	19.5	13.0	6.3	6.7
Uruguay	287.7	220.1	252.0	89.0	79.5	86.2	77.0
Venezuela	59.7	53.0	52.1	25.8	28.7	16.0	28.8

[1] Defined as liabilities to BIS reporting banks and international bonds with maturity up to one year. [2] Weighted average based on 2000 GDP and PPP exchange rates of the countries shown. [3] The ratios for these countries are more than a thousand. [4] Dominica, Grenada, St Lucia, and St Vincent and the Grenadines. [5] Data up to September 2007.

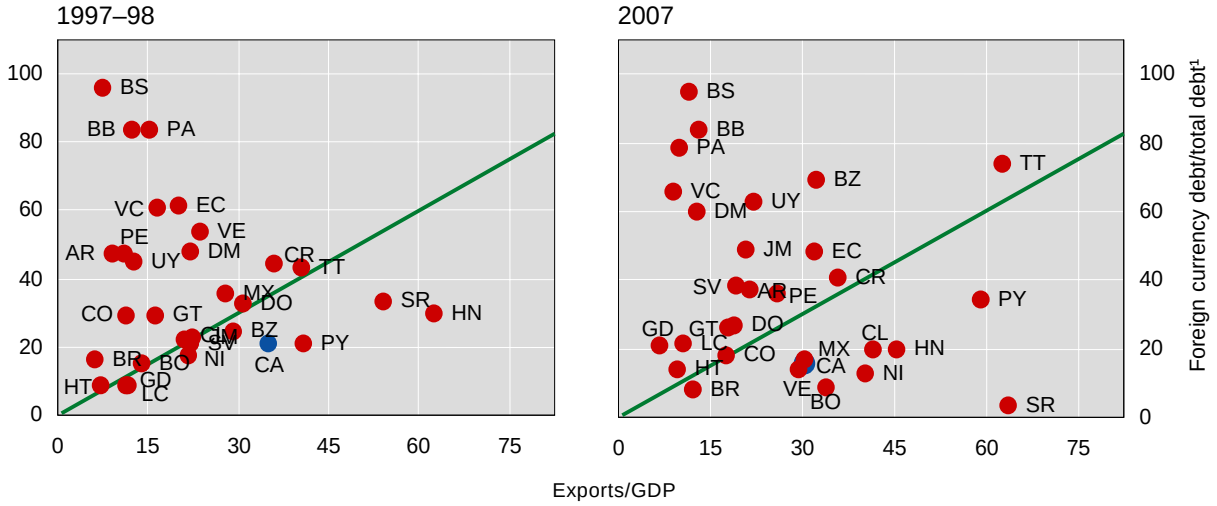
Sources: BIS; IMF.

Graph 14 shows this measure of currency mismatches for LAC countries for two different sample periods: 1997–98 and 2007. Although most countries lie above the 45º line, on average there has been an improvement in the currency mismatch positions, as countries have generally moved to the right of the 45º line over the period.[45] Such improvement has been quite visible in Argentina, Brazil, Colombia, Peru and Venezuela. This can be explained by the combination of export growth and reduction in foreign currency denominated liabilities. In contrast, currency mismatches have increased in countries like Grenada and St Vincent as their export base has declined.

Graph 14

Indicator of currency mismatch

In per cent



AR = Argentina; BB = Barbados; BO = Bolivia; BR = Brazil; BS = Bahamas; BZ = Belize; CA = Canada; CL = Chile; CO = Colombia; CR = Costa Rica; DM = Dominica; DO = Dominican Republic; EC = Ecuador; GD = Grenada; GT = Guatemala; HN = Honduras; HT = Haiti; JM = Jamaica; LC = St Lucia; MX = Mexico; NI = Nicaragua; PA = Panama; PE = Peru; PY = Paraguay; SR = Suriname; TT = Trinidad and Tobago; UY = Uruguay; VC = St Vincent and the Grenadines; VE = Venezuela.

[1] Data for foreign currency debt and total debt up to September 2007.

Sources: IMF; BIS.

While lower foreign currency denominated liabilities in a number of countries have reduced their vulnerability to external shocks (Chapter 1) and improved financial stability, some concerns regarding currency mismatches remain. One is that lower mismatches reflect reductions in external borrowing due to higher fiscal balances and improved public debt management in several countries. However, for some economies this improvement might not be sustained over the medium to long term as better fiscal positions mainly reflect terms-of-trade gains.

Measuring mismatches at an aggregate level also has several drawbacks. On the one hand, it ignores hedging positions and, on the other hand, it can hide potential mismatches at the sectoral level.

[45] In this figure, a threshold of unity is used to separate the more vulnerable countries.

Table 4

External positions of banks

As a percentage of total assets

	1990–2007[1]	1990–97	1998–2005	2005	2006	2007
Latin America and the Caribbean[2]	**–6.4**	**–9.9**	**–3.9**	**–1.6**	**–1.7**	**–2.4**
Caribbean[3]	**2.6**	**2.0**	**2.1**	**5.8**	**7.5**	**8.6**
Aruba	4.8	5.9	4.7	2.6	1.2	0.5
Bahamas	–1.6	–2.7	–0.7	–0.6	–0.7	–0.5
Barbados	–3.2	–4.0	–2.7	–2.3	–0.5	…
Dominican Republic	1.9	1.1	0.6	9.8	10.5	10.0
ECCU[4]	3.0	0.6	4.7	9.7	7.5	5.0
Haiti	10.2	11.0	9.0	7.2	10.9	12.3
Jamaica	1.3	0.3	2.4	1.4	0.7	…
Netherlands Antilles	3.5	1.2	5.2	9.1	7.3	…
Trinidad and Tobago	3.7	4.7	1.6	2.0	11.5	…
Central America[3]	**–1.9**	**–1.1**	**–3.0**	**–0.6**	**–0.7**	**–1.3**
Belize	1.4	–2.8	4.4	7.1	4.2	7.9
Costa Rica	–0.6	2.3	–3.3	1.8	1.0	–4.2
El Salvador	–0.8	3.6	–5.0	–5.2	–3.7	1.3
Guatemala	–10.1	–12.2	–9.6	–3.9	–2.9	–5.1
Honduras	2.2	0.0	4.8	4.8	1.7	0.2
Nicaragua	1.5	5.1	0.4	–2.7	–8.7	–8.9
Panama	5.9	6.7	4.5	5.5	7.6	8.8
Latin America[3]	**–6.8**	**–10.7**	**–4.2**	**–1.8**	**–2.0**	**–2.7**
Argentina	–7.9	–8.9	–8.2	–4.3	–3.1	–1.4
Bolivia	0.1	–7.4	5.0	11.7	11.9	8.8
Brazil	–5.9	–6.5	–6.2	–2.1	–1.7	–2.5
Chile	–5.9	–11.6	–1.3	–3.5	–1.7	–0.8
Colombia	–7.6	–12.1	–5.2	–0.2	1.0	0.0
Ecuador	1.2	–10.6	8.7	18.6	17.4	19.6
Mexico	–12.6	–22.4	–4.2	–4.7	–7.2	–6.6
Paraguay	8.2	4.5	12.4	12.1	9.4	3.9
Peru	0.9	4.7	–1.9	0.2	2.8	–7.8
Suriname	15.2	8.9	18.3	30.5	27.9	28.0
Uruguay	4.3	2.2	4.8	16.8	17.3	…
Venezuela	4.8	4.9	4.9	4.2	4.7	3.2
Emerging markets[5]	**3.0**	**3.3**	**3.1**	**3.0**	**2.9**	**1.1**
Asia[6]	**1.4**	**–0.3**	**2.8**	**3.6**	**3.8**	**2.6**
Central Europe[7]	**4.3**	**5.6**	**3.2**	**5.8**	**3.4**	**–1.5**
Middle East[8]	**10.0**	**13.4**	**6.9**	**7.9**	**10.0**	**7.9**
Other emerging[9]	**1.6**	**4.6**	**1.2**	**–3.0**	**–4.9**	**–7.1**
Memo:						
Canada	*–1.8*	*–3.6*	*–0.5*	*0.3*	*0.4*	*0.4*
United States	*–1.6*	*–1.3*	*–1.5*	*–3.4*	*–3.9*	*–2.4*

[1] Average for the period or up to the latest available. [2] Includes listed countries for the Caribbean, Central America and Latin America. [3] Weighted average based on 2000 GDP and PPP exchange rates of the countries shown. [4] Anguilla, Antigua and Barbuda, Dominica, Grenada, Montserrat, St Kitts and Nevis, St Lucia, and St Vincent and the Grenadines. [5] Asia, the Caribbean, Central America, Central Europe, Latin America, Middle East and Other emerging. [6] China, Hong Kong SAR, Indonesia, Korea, Malaysia, the Philippines and Thailand. [7] The Czech Republic, Hungary and Poland. [8] Bahrain, Egypt, Iran, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia, Syria and the United Arab Emirates. [9] Russia, South Africa and Turkey.

Source: IMF IFS.

Banking currency mismatches

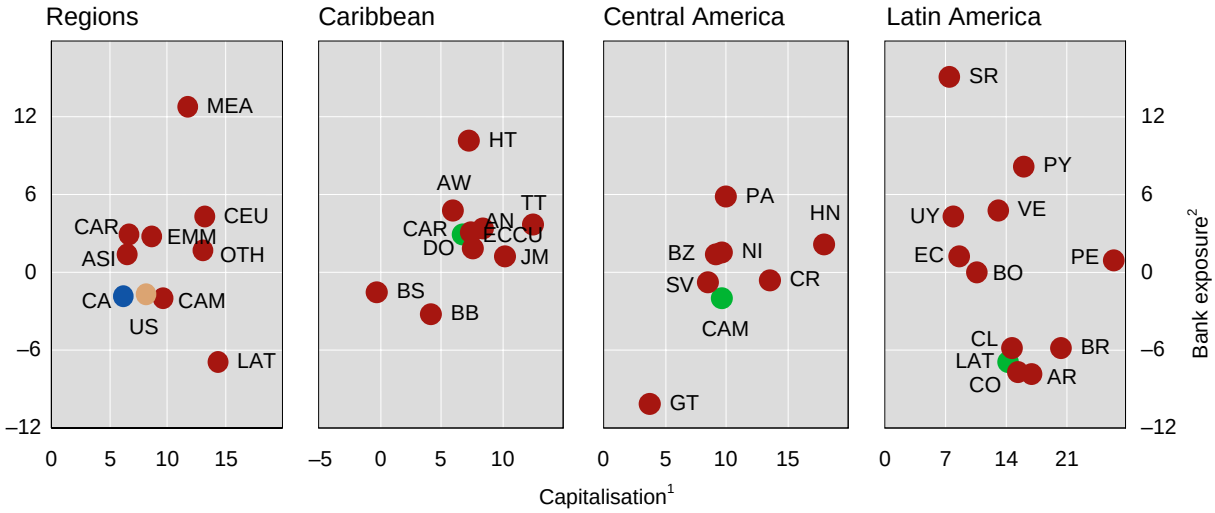
Currency mismatches in the banking sector have been an important source of financial vulnerability during financial crises (Chile in the 1980s and Mexico in the 1990s). Banking systems' direct exposures to currency risk can be approximated by the ratio of assets minus liabilities in foreign currency to total assets, as shown in Table 4. Several features stand out from this regional comparison. In 2007, almost half of the LAC countries had smaller foreign assets than liabilities. The largest mismatches were found in Brazil, Costa Rica, Guatemala, Mexico and Nicaragua. Nonetheless, the banking system's foreign currency exposures have declined in a number of economies (eg Argentina, Guatemala and Mexico), suggesting that financial stability has improved in those countries.

Direct bank exposures can hide risks faced by banks' borrowers. Therefore, foreign currency risk may still be a concern even if the banking system's balance sheet shows no currency mismatch. For instance, borrowers (non-financial firms and households) may face currency mismatches, and this may expose the banking system to credit risk during periods of stress. In the Caribbean (with the exceptions of Bahamas and Barbados) and in countries like Ecuador and Uruguay, the banking system holds more foreign assets than liabilities (see Table 4).[46]

Graph 15

Banks' FX exposure and capitalisation[1]

1990–2007



See Table 3 for included countries in the Caribbean (CAR), Central America (CAM), Latin America (LAT), emerging markets (EMM), Asia (ASI), Central Europe (CEU), Middle East (MEA) and Other (OTH). Canada (CA) and the United States (US) are included for comparison. The Caribbean includes Aruba (AW), the Bahamas (BS), Barbados (BB), the Dominican Republic (DO), the Eastern Caribbean Currency Union (ECCU), Haiti (HT), Jamaica (JM), the Netherlands Antilles (AN) and Trinidad and Tobago (TT); Central America includes Belize (BZ), Costa Rica (CR), El Salvador (SV), Guatemala (GT), Honduras (HN), Nicaragua (NI) and Panama (PA); Latin America includes Argentina (AR), Bolivia (BO), Brazil (BR), Chile (CL), Colombia (CO), Ecuador (EC), Mexico (MX), Paraguay (PY), Peru (PE), Suriname (SR), Uruguay (UY) and Venezuela (VE).

[1] Capital as a percentage of total assets. [2] External positions of banks as a percentage of total assets.

Source: IMF IFS.

From a prudential perspective, it may be desirable to maintain low levels of currency mismatches. However, some banks, in particular those engaged in treasury activities, might choose to be more exposed to foreign exchange fluctuations, but at the cost of holding

[46] For countries with pegged regimes the main source of vulnerability is the degree of sustainability of the fixed exchange rate regime.

higher capital as a cushion for potential losses. This seems to be the case for the Caribbean and Central America, but not in Latin America, as their banking systems are relatively more engaged in the traditional lending-deposit business (Graph 15).

Therefore, a comprehensive analysis of the exchange rate risk should take into account not only direct effects, but also indirect effects of currency exposures. Unfortunately, data availability is often a limitation for this sort of analysis in many LAC economies.

Capital inflows and credit booms

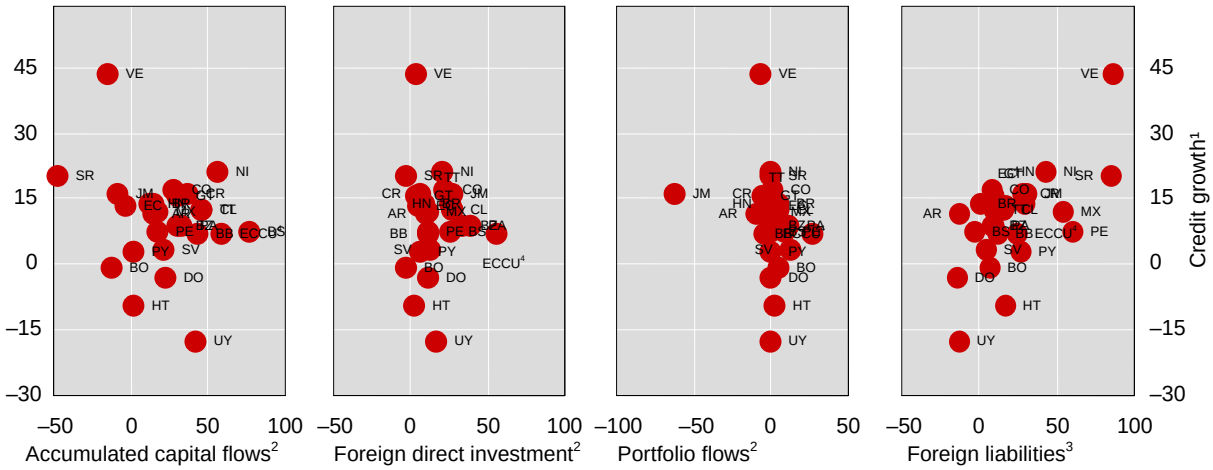
To the extent that capital inflows are associated with an increase in bank lending, bank financing conditions tend to improve. However, this poses a major financial stability concern, as it could increase bank vulnerability to sudden stops in foreign capital and a concomitant credit crunch. Also, if banks have access to inexpensive foreign funding, they may be willing to reduce their credit standards, in particular when competition among local banks is high.

In order to asses the relationship between different measures of capital inflows and bank credit growth, Graph 16 displays the accumulated bank lending growth over the 2003–06 period against the accumulated total capital flows, foreign direct investment, portfolio investment and banks' foreign liabilities.

Graph 16

Bank credit growth determinants[1]

2003–2006



AR = Argentina, BB = Barbados, BO = Bolivia, BR = Brazil, BS = Bahamas, BZ = Belize, CL = Chile, CO = Colombia, CR = Costa Rica, DO = Dominican Republic, EC = Ecuador, ECCU[4] = Eastern Caribbean Currency Union, GT = Guatemala, HN = Honduras, HT = Haiti, JM = Jamaica, MX = Mexico, NI = Nicaragua, PA = Panama, PE = Peru, PY = Paraguay, SR = Suriname, SV = El Salvador, TT = Trinidad and Tobago, UY = Uruguay, VE = Venezuela.

[1] Average growth for the period of bank credit to the private sector deflated by consumer prices, in per cent. [2] Accumulated flows as a percentage of GDP. [3] Average growth for the period of banks' foreign liabilities in US dollars, in per cent. [4] Includes only Antigua and Barbuda, Dominica, Grenada, St Kitts and Nevis, St Lucia, and St. Vincent and the Grenadines.

Source: IMF.

There is a positive correlation between credit growth and direct foreign borrowing by banks, but no relation is found with other components of capital flows. In addition, Table 5 shows that bank loans have grown significantly over the past few years, particularly in Central and Latin America, where the simple average growth in bank lending to the private sector was above 11.3% for the period 2003–07 in Latin American countries, and above 12.4% in Central America (although much more moderate than was observed in the early 1990s). In the Caribbean the pattern is more erratic, although the Bahamas and Trinidad and Tobago have experienced sustained double digit annual lending growth rates over the past few years.

Table 5

Real bank credit to the private sector[1]

	1991–97[2]	1998–2004[2]	2005	2006	2007
LAC[3]	**94.9**	**–2.0**	**15.5**	**23.9**	**25.3**
Caribbean[3]	**5.9**	**4.5**	**7.9**	**8.4**	**8.8**
Aruba	5.7	5.6	5.8	0.5	–1.5
Bahamas	9.2	6.1	12.9	14.3	7.9
Barbados	2.6	5.2	12.8	6.8	…
Dominican Republic	13.0	4.9	6.1	4.1	21.1
ECCU[3, 4]	8.7	4.0	7.7	14.3	4.0
Haiti	0.9	–4.0	6.2	–8.3	–1.3
Jamaica	–6.6	8.1	2.6	16.6	…
Netherlands Antilles	2.9	2.7	–2.8	27.8	…
Trinidad and Tobago	3.5	5.1	20.0	14.2	…
Central America[3]	**31.8**	**9.2**	**12.5**	**13.5**	**18.1**
Belize	7.9	10.0	1.5	9.2	13.1
Costa Rica	9.7	18.9	16.6	17.0	28.3
El Salvador	17.4	3.7	3.3	4.6	3.3
Guatemala	9.5	7.4	16.6	11.5	19.8
Honduras	0.9	7.5	7.6	23.7	25.2
Nicaragua	297.8	15.9	22.4	22.3	20.4
Panama	17.4	5.6	11.7	11.2	14.2
Latin America[3]	**100.3**	**–2.7**	**15.8**	**24.8**	**26.1**
Argentina	2.1	–9.6	22.0	25.2	28.2
Bolivia	20.3	–0.3	–2.1	1.5	0.9
Brazil	256.2	–1.5	12.4	21.5	33.8
Chile	12.2	7.3	13.3	12.8	17.5
Colombia	9.4	–1.2	6.3	34.3	18.0
Ecuador	–8.6	–33.1	20.7	14.1	11.4
Mexico	12.5	–3.5	13.5	27.6	14.0
Paraguay	13.9	–6.0	8.5	–1.2	31.4
Peru	20.7	–1.0	14.8	4.3	29.5
Suriname	–36.6	12.5	14.5	16.3	29.0
Uruguay	–0.5	4.2	–8.4	3.8	…
Venezuela	–1.8	2.9	53.5	53.9	54.8

[1] Annual changes of banks' domestic credit to the private sector (line l22c+d), deflated by CPI inflation; in per cent. [2] Annual averages. [3] Weighted average based on 2000 GDP and PPP exchange rates of the countries shown. [4] Anguilla, Antigua and Barbuda, Dominica, Grenada, Montserrat, St Kitts and Nevis, St Lucia, and St Vincent and the Grenadines.

Source: IMF IFS.

The relatively weak correlation between capital inflows and banks' credit growth seems to differ from previous experiences of capital inflows in emerging market countries, and may be interpreted as being broadly consistent with financial stability. In fact, the current period of strong credit growth is possibly explained in part by financial deepening related to improvements in regulation and financial infrastructure, the emergence of new financing alternatives such as local currency bond markets and the securitisation of assets,[47] and the increasing presence of foreign banks across the region (see discussion below), which has facilitated credit growth into new sectors by improving risk management practices. Cyclical factors have also played a role, including low interest rates, robust GDP growth and falling or low unemployment.

Nonetheless, some central banks, in particular those under an IT framework, may be facing a potential trade-off between price stability and financial stability. Indeed, as central banks threatened by inflationary pressures raise interest rates the financial position of bank borrowers may be impaired. This is a particular concern in underdeveloped financial systems such as those in LAC countries, where borrowers rely heavily on short-term loans from the banking system. Tighter monetary policy also raises domestic interest rates relative to those abroad, creating incentives for banks to borrow from abroad and possibly increasing the financial vulnerability of the banking system.

Cross-border bank lending

The breakdown of cross-border lending by recipient sector (bank and non-bank) has proved to be useful for financial analysis purposes, mainly because cross-border flows intermediated by banks can be more sensitive to financial conditions and react more abruptly during financial crises. Graph 17 shows this breakdown for LAC (Asia is included for comparison). It shows that cross-border bank lending to Latin America has increased in recent years, reversing the fall observed between the late 1990s and mid-2000s. Also, cross-border bank lending to Central and Latin American economies is channelled mostly through the non-bank rather than the bank sector. In fact, in these regions the share of non-bank cross-border lending averaged 82% and 68% during 2004–07, respectively.

Furthermore, in the past few years much of the increase in cross-border lending in those two sub-regions reflects increased access to direct external funding by the corporate sector. Cross-border lending to banks has also grown, especially in the Latin American region, but more moderately. In contrast, in the Caribbean (and also in Asia) most of the cross-border bank lending is intermediated by banks (the latter totals around $285 billion, or about 83% of total cross-border loans).

In this setting, Central and Latin America are more exposed to cross-border bank lending shocks to the corporate sector. As explained above, the impact could be particularly severe in the presence of currency mismatches in the corporate sector, as happened in Chile during the early 1980s. As for the Caribbean, exposure to liquidity shocks is more likely, as cross-border interbank lending represents mainly short-term debt, which directly affects liquidity in the financial system (Moreno and von Kleist (2008)). For example, one aspect of the data worth highlighting is the Asian experience, which suggests that cross-border interbank lending can be reduced sharply during a period of crisis (Graph 17, left-hand panel). This also occurred in several Caribbean countries during the late 1990s (eg Trinidad and Tobago's bank-related share of cross-border to total lending went from more than 25% in 1995 to less than 10% in 1999). Nevertheless, the aggregate picture for the Caribbean is

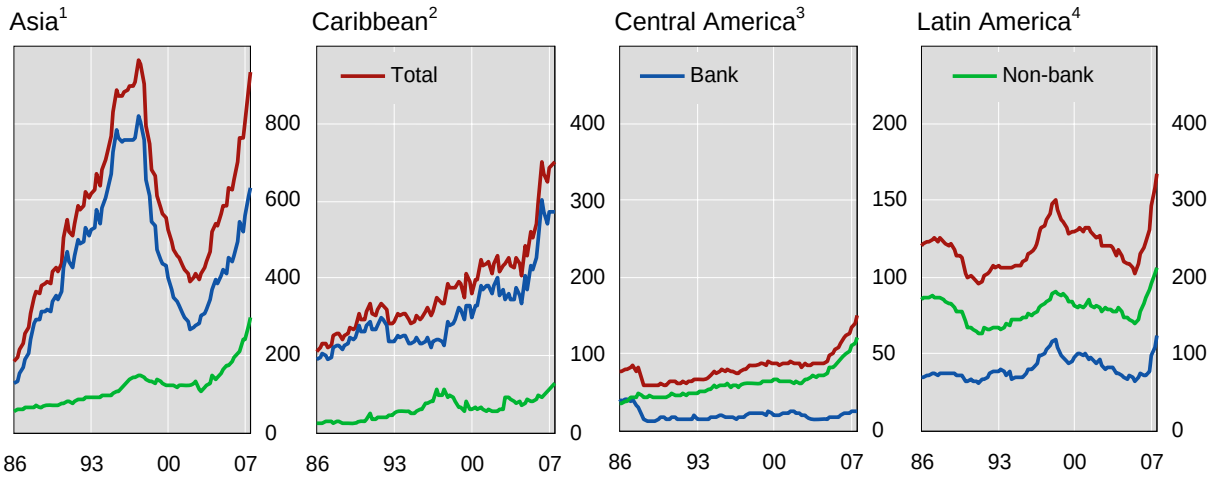
[47] For an overview of new financing trends see BIS (2008a) and for one on securitisation in Latin America see Scatigna and Tovar (2007).

more benign than the Asian experience.[48] Overall, a factor that should be taken into account to reduce external vulnerabilities is the availability of foreign currency to cover short-term external debt.

Graph 17

Cross-border bank lending by sector

In billions of US dollars



[1] China, Hong Kong SAR, India, Indonesia, Malaysia, the Philippines, Korea, Taiwan (China) and Thailand. [2] Aruba, the Bahamas, Barbados, Dominica, the Dominican Republic, Grenada, Haiti, Jamaica, the Netherlands Antilles, St Lucia, St Vincent and the Grenadines, and Trinidad and Tobago. [3] Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. [4] Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Suriname, Uruguay and Venezuela.

Source: BIS, locational banking statistics.

The behaviour of international bank claims

Foreign claims by BIS reporting banks can be classified as international and local, the latter being local currency assets of subsidiaries or branches of foreign banks in the domestic market. Graph 18 shows international and local claims of BIS reporting banks, and the ratio of local and international claims in LAC. As shown, in recent years, local claims have become increasingly important, highlighting the growing presence of foreign banks in the emerging economies.[49] Also, banking flows to Latin America appear to have been unaffected by the Asian crisis. In fact, international and local claims on Latin America grew steadily during the late 1990s. However, in 2002 international claims to Latin America fell by almost $50 billion. Local claims experienced a parallel decline, indicating a more severe contraction in reporting bank activity than is suggested by international data alone. Also, the ratio of local to foreign claims is higher in Latin America (and also in Asia). The pattern in Central America and the Caribbean is different, as claims by BIS reporting banks are mainly international claims. In 2007, the ratio of local claims to foreign claims was approximately 20% in Central America, 12% in the Caribbean, and 65% in Latin America.

In Latin America and Central America there has been a persistent increase in the ratio of local to foreign claims. From the financial stability point of view, this relative increase in local

[48] This can be explained by the fact that the regional dynamics is distorted by the behaviour of the series in the Netherlands Antilles.

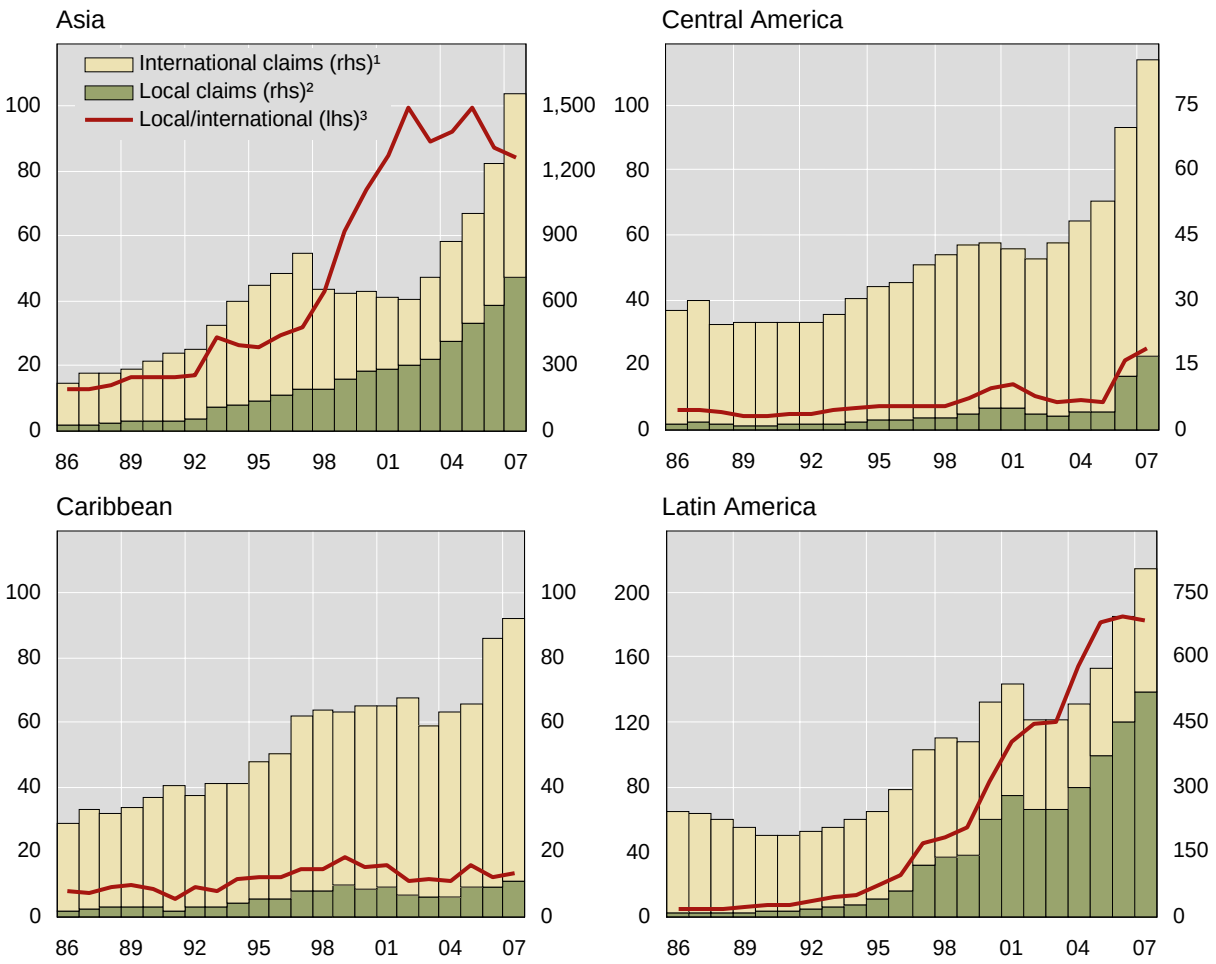
[49] For an overview of the transformation of the banking system see BIS (2007a).

claims can be interpreted as beneficial since it involves credit in local rather than foreign currency, which could reduce currency mismatches (Moreno and von Kleist (2008)). In the Caribbean countries, the picture is quite different. In this sub-region, foreign bank activity is basically offshore, reflecting the role of this sub-region as a financial centre.

Graph 18

Claims of BIS reporting banks

By residency of immediate borrower, in billions of US dollars



Asia includes China, Hong Kong SAR, India, Indonesia, Malaysia, the Philippines, Korea, Taiwan (China) and Thailand; the Caribbean includes Aruba, the Bahamas, Barbados, Dominica, the Dominican Republic, Grenada, Haiti, Jamaica, the Netherlands Antilles, St Lucia, St Vincent and the Grenadines, and Trinidad and Tobago; Central America includes Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama; Latin America includes Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Suriname, Uruguay and Venezuela.

[1] Cross-border claims in all currencies. [2] Claims on local residents denominated in local currencies and booked by reporting banks' local affiliates. [3] In per cent.

Source: BIS, consolidated banking statistics.

Overall, the expansion in international claims by BIS reporting banks is a global phenomenon. In Central America and the Caribbean, international claims are most important in countries like the Bahamas, the Netherlands Antilles and Panama, while in Latin America they are more spread out.

Creditor concentration and common lender effects

Financial contagion can arise from high creditor concentration and common lender effects (Rigobon (1999)). The reasons for the spillover could be associated with common lender needs to rebalance portfolios, or with the exposure to the country experiencing difficulties due to increased risk aversion.

Table 6 reports the main creditor countries for the LAC region: the United Kingdom, the United States, Germany and Spain. This last country concentrates about 36% of total bank claims to Latin America. In fact, such claims have been growing in most countries in this sub-region, notably in Venezuela (63.7%), Chile (55.3%) and Mexico (43.6%). In addition, Table 7 reports a measure of the extent to which emerging market economies have common lenders in the LAC region.[50] This is an index of relative fund competition in third markets by two emerging market economies. The index is designed to lie between 0 and 1, with a value of 1 indicating countries that share the same set of common creditors. For each country, the average index of similarity with each sub-region is shown. Pairs of countries with an index above the threshold P*=0.75 are identified. An index value above 0.75 suggests potential vulnerabilities associated with common lender effects. There are a number of examples of this in Latin American economies. Argentina, for example, has a bilateral index above 0.75 with three countries (Colombia, Mexico and Uruguay), while Brazil has a bilateral index above this threshold with Paraguay and Uruguay. Central America and the Caribbean show a relatively low index of credit linkage, with the exception of Barbados.

Supervisory issues

A well regulated banking system can help to reduce some of the financial vulnerabilities associated with capital inflows. In fact, a sound supervisory and regulatory framework creates an environment for banks that makes them resilient to shocks, even under high financial pressures.

How sound is banking supervision in LAC? How prepared are these countries to meet the challenges of increasing globalisation and volatility? What are the main supervisory improvements made recently? More specifically, what has been done in areas such as capital adequacy, asset classification and provisioning? Is the regulation able to prevent the use of money laundering? Is the region able to deal with the increase and complexity of market and operational risks?[51]

Recently, the performance of LAC's banking systems has improved due to the favourable macrofinancial environment (economic growth, inflation and interest rates), allowing higher capital adequacy ratios and profitability, and the overall general perception of financial strength (see Annex Tables A11–A14). However, the surge of new financial instruments has made it much easier to transfer risk across the financial system, making the potential for financial distress more difficult to assess. Under these circumstances, a broader (macroprudential) view may improve the assessment of financial stability implications of capital inflows (see also Chapter 2). Indeed, coordination among local supervisors, regulators and monetary, fiscal and financial authorities in general is desirable in order to better assess financial risks.

Also, a strengthening in transparency is needed in order to better identify vulnerabilities associated with capital flows. Supervisors and central banks aiming to reduce financial instability may try to construct simple vulnerability indicators and more sophisticated stress tests, and communicate their results to the public (eg through financial stability reports).

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[50] See Van Rijckeghem and Weder (1999).

[51] See a complementary discussion in BIS (2007a).

Table 6

Consolidated foreign claims of reporting banks

As a percentage of total foreign claims[1]

	Germany		Spain		United Kingdom		United States	
	2003	**2007**[2]	**2003**	**2007**[2]	**2003**	**2007**[2]	**2003**	**2007**[2]
Latin America and the Caribbean	**8.1**	**5**	**28.4**	**31.4**	**8.3**	**10.8**	**22.9**	**19.8**
Caribbean	**10.3**	**8.1**	**9.3**	**3.3**	**5.2**	**6.1**	**17.4**	**18.9**
Aruba	18.5	2.5	0.0	5.3	1.6	10.5	0.0	0.0
Bahamas	16.7	9.0	1.6	1.2	11.9	6.1	6.3	6.0
Barbados	2.5	3.6	0.0	0.1	2.7	27.6	8.4	5.3
Dominican Republic	9.0	6.0	22.3	7.2	1.0	7.9	20.4	27.8
ECCU[3]	2.4	1.1	0.1	0.1	0.2	1.9	1.1	0.0
Haiti	0.0	0.0	1.3	1.0	27.0	3.9	29.2	39.0
Jamaica	6.1	5.4	0.0	0.1	0.8	2.9	16.6	11.7
Netherlands Antilles	20.9	9.2	2.0	2.7	11.0	4.1	7.9	3.0
Trinidad and Tobago	23.1	26.3	1.2	0.8	4.6	1.1	18.3	9.6
Central America	**13.0**	**3.5**	**4.9**	**1.2**	**5.2**	**15.7**	**31.9**	**37.2**
Belize	0.3	3.2	0.3	0.9	1.3	5.8	0.8	1.0
Costa Rica	7.2	2.6	7.4	1.5	1.9	14.9	20.7	22.8
El Salvador	12.0	2.6	4.5	0.2	1.6	22.9	45.8	41.1
Guatemala	11.0	4.6	4.6	1.0	8.5	4.3	46.4	56.5
Honduras	23.1	0.6	5.4	0.6	9.8	42.0	32.5	38.3
Nicaragua	25.1	0.6	4.3	1.6	0.6	4.9	19.2	48.7
Panama	11.3	8.6	2.7	2.7	6.3	11.9	5.1	5.5
Latin America	**7.8**	**4.2**	**29.9**	**33.6**	**8.6**	**10.7**	**22.7**	**19.1**
Argentina	9.3	9.5	32.1	31.0	7.3	11.4	18.2	18.2
Bolivia	3.2	9.4	41.0	25.9	3.2	7.4	29.9	5.3
Brazil	9.8	3.9	16.7	19.7	9.3	14.3	21.4	16.1
Chile	10.3	6.7	49.2	55.3	3.4	3.2	17.4	12.4
Colombia	11.1	5.5	34.0	38.4	6.7	5.0	20.1	26.6
Ecuador	15.8	6.3	13.9	10.8	14.2	11.8	30.4	29.9
Mexico	3.1	2.0	41.2	43.6	10.4	10.8	29.7	25.8
Paraguay	6.7	3.2	18.5	23.0	6.5	10.5	18.2	10.1
Peru	8.2	3.7	29.1	35.8	2.9	2.7	16.1	12.2
Suriname	0.0	0.0	25.9	0.0	3.4	12.1	0.0	6.1
Uruguay	5.9	7.1	16.7	20.1	6.5	7.9	32.8	18.2
Venezuela	9.3	3.5	42.7	63.7	6.3	4.0	12.0	8.7
Developing countries[4]	**15.6**	**9.7**	**10.6**	**7.6**	**12.4**	**15.7**	**15.2**	**12.3**
Asia and Pacific	**11.9**	**8.0**	**0.2**	**0.3**	**18.6**	**23.1**	**17.0**	**17.8**
Europe	**29.6**	**14.3**	**0.4**	**0.5**	**4.5**	**4.0**	**5.7**	**4.4**
Africa and Middle East	**17.4**	**11.2**	**1.2**	**0.9**	**23.3**	**39.4**	**7.8**	**7.5**
Memo:								
Canada	*7.9*	*7.8*	*0.3*	*0.5*	*27.6*	*28.9*	*29.0*	*28.5*
United States	*13.5*	*13.2*	*0.8*	*2.1*	*17.6*	*21.4*	…	…

[1] Cross-border claims in all currencies plus claims on local residents denominated in local currencies and booked by reporting banks' local affiliates. [2] Data up to September 2007. [3] Includes only Dominica, Grenada, St Lucia, and St Vincent and the Grenadines. [4] BIS definition.

Source: BIS.

Table 7

Common lender index (2007 Q2)

	Caribbean		Central America		Latin America		Other	
	Average	**Above P***	**Average**	**Above P***	**Average**	**Above P***	**Average**	**Above P***
Caribbean								
Aruba	0.53	BB	0.28		0.36		0.37	
Bahamas	0.40		0.36	BZ	0.36		0.40	
Barbados	2.22	AW,DO, HT,JM, TT	1.55	BZ,CR, SV,HN, NI	0.80	BO,EC, PY	0.67	JO,LB,LY,OM, SY
Dominican Republic	0.57	BB	0.49		0.50		0.39	
Haiti	1.59	BB	0.51		0.28		0.28	
Jamaica	0.54	BB	0.30		0.26		0.25	
Netherlands Antilles	0.34		0.27		0.38		0.51	
Trinidad and Tobago	0.57	BB	0.32		0.30		0.35	
Central America								
Belize	0.86	BS,BB	0.31		0.29		0.39	
Costa Rica	0.59	BB	0.47	SV	0.38		0.39	
El Salvador	0.49	BB	0.51	CR	0.32		0.35	
Guatemala	0.34		0.47	NI	0.30		0.29	
Honduras	0.37	BB	0.42		0.26		0.34	
Nicaragua	0.58	BB	0.44	GT	0.26		0.25	
Panama	0.35		0.27		0.41		0.50	TH
Latin America								
Argentina	0.39		0.36		0.72	CO,MX, UY	0.51	
Bolivia	0.79	BB	0.28		0.61		0.50	
Brazil	0.38		0.32		0.64	PY,UY	0.46	
Chile	0.28		0.21		0.66	MX,PE, VE	0.30	
Colombia	0.33		0.34		0.70	AR,MX	0.39	
Ecuador	0.46	BB	0.51		0.55		0.52	
Mexico	0.31		0.32		0.69	AR,CL, CO	0.30	
Paraguay	0.44	BB	0.34		0.68	BR	0.40	
Peru	0.41		0.30		0.62	CL	0.31	
Uruguay	0.40		0.33		0.67	AR,BR	0.52	
Venezuela	0.25		0.20		0.63	CL	0.32	

P*= 0.75. AR = Argentina; AW = Aruba; BB = Barbados; BO = Bolivia; BR = Brazil; BS = Bahamas; BZ = Belize; CL = Chile; CO = Colombia; CR = Costa Rica; DO = Dominican Republic; EC = Ecuador; GT = Guatemala; HN = Honduras; HT = Haiti; JM = Jamaica; JO = Jordan; LB = Lebanon; LY = Libya; MX = Mexico; NI = Nicaragua; OM = Oman; PE = Peru; PY = Paraguay; SV = El Salvador; TH = Thailand; TT = Trinidad and Tobago; UY = Uruguay; VE = Venezuela.

Source: BIS, consolidated banking statistics.

Additionally, the increasing importance of cross-border banking requires closer cooperation among home and host country supervisors. This may be particularly important for small countries hosting large global banks. In countries with rapid credit growth and substantial foreign bank activity, for example, host authorities may be concerned about possible domestic asset price boom-bust cycles or about more general demand and external balance pressures, which may be difficult to address with the available macroeconomic policy tools.

It is also important to keep in mind that in those economies where regulation does not encompass a lender of last resort, it may be difficult to deal with banks facing liquidity problems in foreign currency. This may be particularly important for those countries where cross-border bank lending has been intermediated mainly by the banking system, and where important bank mismatches are still in place. However, evidence in Graph 17 would suggest that this is, on average, of little concern.

Finally, and despite the improvements made in financial regulation, supervision and macroeconomic stability during the 1990s, the region still faces important challenges. In particular, it remains to be seen how resilient banking systems are to changes in investor sentiment and growing risks associated with temporary credit booms and short-term foreign capital inflows. Therefore, in order to maintain the health of the financial sector, it is important to continuously improve banking supervision and the regulatory framework, as well to pursue sound macroeconomic policies.

Annex

Table A1

Growth and inflation[1]

	Real GDP			Consumer prices		
	1998–2002	**2003–07**	**2007**	**1998–2002**	**2003–07**	**2007**
LAC[2]	**1.5**	**4.0**	**5.5**	**9.3**	**7.5**	**6.2**
Caribbean[3]	**4.2**	**4.5**	**5.3**	**6.2**	**11.8**	**9.0**
Aruba[4]	…	2.5	2.5	…	3.3	3.6
Bahamas	3.2	2.4	3.1	1.8	2.1	2.6
Barbados	0.9	3.3	4.2	1.2	4.0	5.7
Dominican Republic	6.4	5.4	8.1	7.4	17.2	8.9
ECCU[5]	2.4	3.7	4.0	1.7	2.8	4.7
Haiti	0.9	0.7	3.2	11.3	17.7	7.9
Jamaica	0.6	1.6	1.4	7.3	11.7	16.8
Netherlands Antilles[6]	…	1.6	2.0	…	2.5	2.4
Trinidad and Tobago	7.0	9.4	5.5	4.4	6.1	7.6
Central America[3]	**3.4**	**4.7**	**6.2**	**6.1**	**6.9**	**8.6**
Belize	7.1	5.0	2.2	0.7	3.1	3.0
Costa Rica	4.5	5.8	6.8	10.7	11.2	10.8
El Salvador	2.7	3.1	4.7	2.3	4.1	4.9
Guatemala	3.4	4.0	5.7	6.5	7.4	8.7
Honduras	2.6	5.5	6.3	10.7	7.7	8.9
Nicaragua	3.7	3.4	3.8	4.0	9.3	16.9
Panama	3.4	6.7	10.3	1.1	2.5	6.4
Latin America[3]	**1.4**	**3.9**	**5.5**	**9.5**	**7.4**	**6.1**
Argentina	–3.1	5.5	8.7	7.5	13.6	8.5
Bolivia	2.4	3.7	4.2	2.9	5.4	11.7
Brazil	1.7	3.6	5.4	7.4	7.1	4.5
Chile	2.6	4.5	5.1	3.4	3.4	7.8
Colombia	0.5	4.9	7.5	9.9	5.7	5.7
Ecuador	1.6	4.6	1.9	45.4	4.4	3.3
Mexico	3.2	2.9	3.3	10.0	4.3	3.8
Paraguay	–0.4	3.3	4.9	10.3	9.2	5.9
Peru	1.7	6.2	9.0	3.0	2.3	3.9
Suriname	2.0	5.3	5.5	49.2	13.2	8.4
Uruguay	–2.8	3.9	6.9	9.5	10.6	8.5
Venezuela	–1.5	5.1	8.4	21.4	21.9	22.5
Memo:						
Canada	*3.9*	*2.7*	*2.7*	*2.3*	*2.0*	*2.2*
United States	*2.9*	*2.9*	*2.2*	*2.4*	*2.8*	*2.9*

[1] Annual changes, in per cent. [2] The listed countries of the Caribbean, Central America and Latin America. [3] Weighted average based on 2000 GDP and PPP exchange rates of the countries shown. [4] Latest data refer to 2006. Not included in the regional aggregates. [5] Antigua and Barbuda, Dominica, Grenada, St Kitts and Nevis, St Lucia, and St Vincent and the Grenadines. [6] Not included in the regional aggregates.

Sources: IMF; © Consensus Economics; national data.

Table A2

Capital inflows

In billions of US dollars

	1990–97[1]	1998–2003[1]	2004	2005	2006	2007
LAC[2]						
Direct investment	26.2	66.3	66.0	70.1	70.5	97.5
Portfolio investment	34.2	5.7	–11.3	11.0	2.5	50.0
Other investment	11.0	9.4	0.6	–23.1	15.1	60.8
Caribbean[3]						
Direct investment	0.9	2.8	3.0	3.0	3.8	4.9
Portfolio investment	0.0	–0.2	–0.6	–0.8	–1.0	–1.0
Other investment	0.1	0.6	0.7	0.9	2.8	2.2
Central America[4]						
Direct investment	0.8	2.6	2.7	2.9	4.7	5.1
Portfolio investment	0.6	0.5	0.9	0.0	0.6	0.7
Other investment	0.3	0.9	1.6	3.4	0.1	2.3
Latin America[5]						
Direct investment	24.4	60.9	60.4	64.2	62.0	87.4
Portfolio investment	33.6	5.3	–11.6	11.8	3.0	50.3
Other investment	10.6	7.9	–1.7	–27.5	12.3	56.3
LAC excl Brazil, Mexico and Venezuela						
Direct investment	11.9	20.9	23.5	31.6	33.1	39.4
Portfolio investment	9.9	–0.8	–6.5	1.9	6.4	4.9
Other investment	10.8	12.4	12.8	2.2	–4.9	20.6

[1] Annual average. [2] Includes the listed countries for the Caribbean, Central America and Latin America. [3] Antigua and Barbuda, the Bahamas, Barbados, Dominica, the Dominican Republic, Grenada, Haiti, Jamaica, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, and Trinidad and Tobago. [4] Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. [5] Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Suriname, Uruguay and Venezuela.

Source: IMF, *World Economic Outlook*.

Table A3

Capital outflows

In billions of US dollars

	1990–97[1]	1998–2003[1]	2004	2005	2006	2007
LAC[2]						
Direct investment	2.9	6.7	17.2	18.8	42.8	20.5
Portfolio investment	4.5	4.9	6.6	7.2	19.1	18.6
Other investment	10.7	15.3	25.3	27.4	39.3	70.5
Change in reserves	14.0	3.9	22.5	33.2	49.5	132.6
Caribbean[3]						
Direct investment	0.0	0.1	0.1	0.3	0.4	0.4
Portfolio investment	0.0	0.0	–0.6	0.4	0.9	1.9
Other investment	0.1	1.0	2.2	0.9	3.6	2.3
Change in reserves	0.3	0.3	0.5	2.0	1.0	1.7
Central America[4]						
Direct investment	0.1	0.0	0.1	0.3	0.1	0.1
Portfolio investment	0.0	0.1	0.1	–0.1	–0.1	0.2
Other investment	0.0	0.1	0.1	0.0	–0.1	–0.1
Change in reserves	0.4	0.7	1.1	1.7	2.2	2.4
Latin America[5]						
Direct investment	2.9	6.5	17.0	18.2	42.3	20.0
Portfolio investment	4.6	4.8	7.1	6.9	18.2	16.5
Other investment	10.6	14.2	23.1	26.6	35.8	68.3
Change in reserves	13.3	2.9	20.9	29.5	46.3	128.6
LAC excl Brazil, Mexico and Venezuela						
Direct investment	1.6	3.5	2.3	8.7	6.7	5.5
Portfolio investment	3.8	5.4	7.1	6.4	16.7	18.2
Other investment	5.2	8.4	7.8	2.7	12.5	15.1
Change in reserves	7.7	–1.1	12.9	19.7	13.6	32.4

[1] Annual average. [2] Includes the listed countries for the Caribbean, Central America and Latin America. [3] Antigua and Barbuda, the Bahamas, Barbados, Dominica, the Dominican Republic, Grenada, Haiti, Jamaica, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, and Trinidad and Tobago. [4] Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. [5] Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Suriname, Uruguay and Venezuela.

Source: IMF, *World Economic Outlook*.

Table A4

Balance of payments

In billions of US dollars

	1990–97[1]	1998–2003[1]	2004	2005	2006	2007
LAC[2]						
Current account balance	–36.0	–42.8	20.9	35.1	45.6	16.7
Capital account balance	0.5	2.3	1.2	2.3	4.2	2.9
Financial account balance	39.1	50.5	–16.4	–28.6	–62.4	–34.0
Direct investment, net	23.2	59.6	48.8	51.3	27.8	77.0
Portfolio investment, net	29.6	0.7	–18.0	3.8	–16.6	31.4
Other investment, net	0.2	–5.9	–24.8	–50.5	–24.1	–9.7
Change in reserves[3]	–14.0	–3.9	–22.5	–33.2	–49.5	–132.6
Errors and omissions	–3.7	–10.1	–5.7	–8.8	12.6	14.4
Caribbean[4]						
Current account balance	–0.7	–1.8	1.1	0.3	–0.5	–2.1
Capital account balance	0.1	1.0	0.0	0.1	–0.8	–0.4
Financial account balance	0.6	1.7	0.9	–0.5	–0.3	–0.2
Direct investment, net	0.9	2.6	2.9	2.7	3.4	4.5
Portfolio investment, net	0.0	–0.2	0.0	–1.2	–2.0	–3.0
Other investment, net	0.0	–0.4	–1.5	0.1	–0.8	0.0
Change in reserves[3]	–0.3	–0.3	–0.5	–2.0	–1.0	–1.7
Errors and omissions	0.0	–0.9	–2.0	0.1	1.5	2.7
Central America[5]						
Current account balance	–1.7	–3.9	–5.1	–4.9	–5.1	–8.0
Capital account balance	0.0	1.0	0.7	1.4	2.2	1.8
Financial account balance	1.3	3.0	3.8	4.4	3.3	5.6
Direct investment, net	0.8	2.6	2.6	2.6	4.7	5.0
Portfolio investment, net	0.6	0.4	0.7	0.1	0.6	0.6
Other investment, net	0.2	0.8	1.5	3.5	0.2	2.4
Change in reserves[3]	–0.4	–0.7	–1.1	–1.7	–2.2	–2.4
Errors and omissions	0.5	–0.1	0.6	–0.9	–0.3	0.7
Latin America[6]						
Current account balance	–33.5	–37.0	24.9	39.7	51.2	26.8
Capital account balance	0.5	0.4	0.5	0.8	2.7	1.6
Financial account balance	37.3	45.8	–21.0	–32.6	–65.3	–39.4
Direct investment, net	21.5	54.4	43.4	46.0	19.7	67.4
Portfolio investment, net	29.0	0.6	–18.7	5.0	–15.2	33.8
Other investment, net	0.0	–6.3	–24.8	–54.0	–23.5	–12.1
Change in reserves[3]	–13.3	–2.9	–20.9	–29.5	–46.3	–128.6
Errors and omissions	–4.2	–9.1	–4.4	–7.9	11.4	11.1
Memo:						
LAC excl Brazil, Mexico and Venezuela						
Current account balance	–15.6	–14.8	0.3	0.6	7.0	–2.8
Capital account balance	0.4	2.0	0.8	1.6	3.3	2.2
Financial account balance	14.4	16.4	–0.4	–1.7	–14.9	–6.3
Direct investment, net	10.3	17.4	21.2	23.0	26.4	33.9
Portfolio investment, net	6.1	–6.1	–13.6	–4.5	–10.3	–13.3
Other investment, net	5.6	4.0	4.9	–0.5	–17.4	5.5
Change in reserves[3]	–7.7	1.1	–12.9	–19.7	–13.6	–32.4
Errors and omissions	0.9	–3.6	–0.7	–0.5	4.6	6.8

[1] Annual average. [2] Includes the listed countries for the Caribbean, Central America and Latin America. [3] A negative figure indicates an increase. [4] Antigua and Barbuda, the Bahamas, Barbados, Dominica, the Dominican Republic, Grenada, Haiti, Jamaica, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, and Trinidad and Tobago. [5] Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. [6] Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Suriname, Uruguay and Venezuela.

Source: IMF, *World Economic Outlook*.

Table A5

Capital inflows

As a percentage of regional GDP

	1990–97[1]	1998–2003[1]	2004	2005	2006	2007
LAC[2]						
Direct investment	1.5	3.5	3.2	2.8	2.4	2.8
Portfolio investment	2.2	0.3	–0.5	0.4	0.1	1.4
Other investment	0.7	0.5	0.0	–0.9	0.5	1.8
Caribbean[3]						
Direct investment	3.0	5.7	5.4	4.3	4.8	5.6
Portfolio investment	0.0	–0.4	–1.1	–1.2	–1.3	–1.1
Other investment	0.2	1.3	1.2	1.3	3.6	2.5
Central America[4]						
Direct investment	1.8	3.7	3.1	3.1	4.5	4.3
Portfolio investment	1.5	0.8	1.0	0.0	0.5	0.6
Other investment	0.2	1.1	1.8	3.6	0.1	2.0
Latin America[5]						
Direct investment	1.5	3.4	3.1	2.7	2.2	2.7
Portfolio investment	2.2	0.3	–0.6	0.5	0.1	1.6
Other investment	0.8	0.4	–0.1	–1.2	0.4	1.7
LAC excl Brazil, Mexico and Venezuela						
Direct investment	2.1	3.4	3.8	4.3	3.9	3.9
Portfolio investment	1.8	–0.2	–1.0	0.3	0.7	0.5
Other investment	1.9	1.9	2.1	0.3	–0.6	2.1

[1] Annual average. [2] Includes the listed countries for the Caribbean, Central America and Latin America. [3] Antigua and Barbuda, the Bahamas, Barbados, Dominica, the Dominican Republic, Grenada, Haiti, Jamaica, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, and Trinidad and Tobago. [4] Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. [5] Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Suriname, Uruguay and Venezuela.

Source: IMF, *World Economic Outlook*.

Table A6

Capital outflows

As a percentage of regional GDP

	1990–97[1]	1998–2003[1]	2004	2005	2006	2007
LAC[2]						
Direct investment	0.2	0.4	0.8	0.7	1.4	0.6
Portfolio investment	0.3	0.3	0.3	0.3	0.6	0.5
Other investment	0.6	0.8	1.2	1.1	1.3	2.0
Change in reserves	1.0	0.2	1.1	1.3	1.7	3.8
Caribbean[3]						
Direct investment	0.1	0.3	0.1	0.5	0.5	0.4
Portfolio investment	0.0	0.0	–1.2	0.5	1.2	2.2
Other investment	0.3	2.1	4.0	1.3	4.6	2.6
Change in reserves	0.8	0.6	0.9	2.8	1.3	1.9
Central America[4]						
Direct investment	0.1	0.0	0.1	0.3	0.1	0.1
Portfolio investment	0.0	0.2	0.1	–0.1	0.0	0.1
Other investment	0.0	0.1	0.1	0.0	–0.1	0.0
Change in reserves	0.9	1.0	1.2	1.8	2.0	2.0
Latin America[5]						
Direct investment	0.2	0.4	0.9	0.8	1.5	0.6
Portfolio investment	0.3	0.3	0.4	0.3	0.7	0.5
Other investment	0.7	0.8	1.2	1.1	1.3	2.1
Change in reserves	1.0	0.2	1.1	1.2	1.7	4.0
LAC excl Brazil, Mexico and Venezuela						
Direct investment	0.3	0.6	0.4	1.2	0.8	0.5
Portfolio investment	0.8	0.9	1.2	0.9	1.9	1.8
Other investment	0.9	1.4	1.3	0.4	1.5	1.5
Change in reserves	1.5	–0.2	2.1	2.7	1.6	3.2

[1] Annual average. [2] Includes the listed countries for the Caribbean, Central America and Latin America. [3] Antigua and Barbuda, the Bahamas, Barbados, Dominica, the Dominican Republic, Grenada, Haiti, Jamaica, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, and Trinidad and Tobago. [4] Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. [5] Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Suriname, Uruguay and Venezuela.

Source: IMF, *World Economic Outlook*.

Table A7

Balance of payments

As a percentage of regional GDP

	1990–97[1]	1998–2003[1]	2004	2005	2006	2007
LAC[2]						
Current account balance	–2.2	–2.2	1.0	1.4	1.5	0.5
Capital account balance	0.0	0.1	0.1	0.1	0.1	0.1
Financial account balance	2.3	2.6	–0.8	–1.1	–2.1	–1.0
Direct investment, net	1.4	3.1	2.3	2.0	0.9	2.2
Portfolio investment, net	1.8	0.0	–0.9	0.2	–0.6	0.9
Other investment, net	0.1	–0.3	–1.2	–2.0	–0.8	–0.3
Change in reserves[3]	–1.0	–0.2	–1.1	–1.3	–1.7	–3.8
Errors and omissions	–0.2	–0.5	–0.3	–0.3	0.4	0.4
Caribbean[4]						
Current account balance	–2.1	–3.8	2.0	0.5	–0.6	–2.4
Capital account balance	0.2	2.0	0.0	0.1	–1.0	–0.5
Financial account balance	2.1	3.6	1.6	–0.7	–0.4	–0.2
Direct investment, net	3.0	5.4	5.2	3.8	4.4	5.2
Portfolio investment, net	0.0	–0.5	0.0	–1.7	–2.5	–3.4
Other investment, net	–0.1	–0.8	–2.7	0.1	–1.0	0.0
Change in reserves[3]	–0.8	–0.6	–0.9	–2.8	–1.3	–1.9
Errors and omissions	–0.2	–1.7	–3.6	0.1	1.9	3.1
Central America[5]						
Current account balance	–4.0	–5.4	–5.9	–5.1	–4.8	–6.7
Capital account balance	0.1	1.4	0.8	1.4	2.0	1.5
Financial account balance	2.4	4.2	4.3	4.6	3.1	4.7
Direct investment, net	1.7	3.6	3.0	2.7	4.4	4.2
Portfolio investment, net	1.5	0.6	0.8	0.1	0.6	0.5
Other investment, net	0.1	1.0	1.8	3.6	0.2	2.0
Change in reserves[3]	–0.9	–1.0	–1.2	–1.8	–2.0	–2.0
Errors and omissions	1.4	–0.1	0.7	–1.0	–0.3	0.6
Latin America[6]						
Current account balance	–2.1	–2.0	1.3	1.7	1.8	0.8
Capital account balance	0.0	0.0	0.0	0.0	0.1	0.0
Financial account balance	2.3	2.5	–1.1	–1.4	–2.4	–1.2
Direct investment, net	1.3	3.0	2.2	1.9	0.7	2.1
Portfolio investment, net	1.9	0.0	–1.0	0.2	–0.5	1.0
Other investment, net	0.1	–0.4	–1.3	–2.3	–0.8	–0.4
Change in reserves[3]	–1.0	–0.2	–1.1	–1.2	–1.7	–4.0
Errors and omissions	–0.2	–0.5	–0.2	–0.3	0.4	0.3
Memo:						
LAC excl Brazil, Mexico and Venezuela						
Current account balance	–2.6	–2.2	0.0	0.1	0.8	–0.3
Capital account balance	0.1	0.3	0.1	0.2	0.4	0.2
Financial account balance	2.3	2.5	–0.1	–0.2	–1.7	–0.6
Direct investment, net	1.8	2.8	3.4	3.1	3.1	3.4
Portfolio investment, net	1.0	–1.1	–2.2	–0.6	–1.2	–1.3
Other investment, net	1.0	0.6	0.8	–0.1	–2.0	0.6
Change in reserves[3]	–1.5	0.2	–2.1	–2.7	–1.6	–3.2
Errors and omissions	0.2	–0.6	–0.1	–0.1	0.5	0.7

[1] Annual average. [2] Includes the listed countries for the Caribbean, Central America and Latin America. [3] A negative figure indicates an increase. [4] Antigua and Barbuda, the Bahamas, Barbados, Dominica, the Dominican Republic, Grenada, Haiti, Jamaica, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, and Trinidad and Tobago. [5] Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. [6] Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Suriname, Uruguay and Venezuela.

Source: IMF, *World Economic Outlook*.

Table A8

Foreign direct investment

In billions of US dollars

	1990–97[1]		1998–2004[1]		2005		2006	
	Inward	**Outward**	**Inward**	**Outward**	**Inward**	**Outward**	**Inward**	**Outward**
Caribbean[2]	**2.4**	**2.8**	**14.8**	**17.2**	**7.2**	**15.5**	**14.4**	**5.5**
Antigua and Barbuda	0.0	0.0	0.1	0.0	0.1	0.0	0.2	0.0
Aruba	0.1	0.1	0.1	0.0	0.1	0.0	0.3	0.0
Bahamas	0.1	0.0	0.2	0.0	0.6	0.0	0.7	0.0
British Virgin Islands	0.7	2.0	7.5	13.3	–8.0	8.2	6.5	3.0
Cayman Islands	0.7	0.7	4.2	3.7	10.9	6.8	2.9	1.9
Dominican Republic	0.2	0.0	0.9	0.0	1.0	0.0	1.2	0.0
Jamaica	0.2	0.1	0.5	0.1	0.7	0.1	0.9	0.1
St Kitts and Nevis	0.0	0.0	0.1	0.0	0.1	0.0	0.2	0.0
St Lucia	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0
Trinidad and Tobago	0.4	0.0	0.8	0.1	0.9	0.3	0.8	0.4
Others[3]	0.1	0.0	0.3	0.0	0.6	0.1	0.6	0.1
Central America[2]	**0.9**	**0.7**	**2.5**	**1.5**	**3.4**	**1.8**	**5.3**	**1.2**
Belize	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0
Costa Rica	0.3	0.0	0.6	0.0	0.9	0.0	1.5	0.1
El Salvador	0.0	0.0	0.4	0.0	0.5	0.2	0.2	–0.1
Guatemala	0.1	0.0	0.3	0.1	0.2	0.0	0.4	0.0
Honduras	0.1	0.0	0.2	0.0	0.4	0.0	0.4	0.0
Nicaragua	0.1	0.0	0.2	0.0	0.2	0.0	0.3	0.0
Panama	0.4	0.7	0.7	1.3	1.0	1.6	2.6	1.1
Latin America[2]	**25.6**	**3.5**	**62.4**	**8.5**	**64.5**	**18.4**	**63.6**	**42.5**
Argentina	4.6	1.2	7.5	0.8	5.0	1.2	4.8	2.0
Bolivia	0.3	0.0	0.6	0.0	–0.2	0.0	0.2	0.0
Brazil	5.2	0.6	22.5	2.4	15.1	2.5	18.8	28.2
Chile	2.6	0.7	5.2	1.9	7.0	2.2	8.0	2.9
Colombia	1.7	0.2	2.3	0.5	10.3	4.7	6.3	1.1
Ecuador	0.4	0.0	1.1	0.0	1.6	0.0	2.1	0.0
Mexico	7.3	0.4	18.4	2.1	19.7	6.5	19.0	5.8
Paraguay	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0
Peru	1.5	0.0	1.5	0.0	2.6	0.2	3.5	0.4
Uruguay	0.1	0.0	0.3	0.0	0.8	0.0	1.4	0.0
Venezuela	1.7	0.4	2.9	0.8	2.6	1.2	–0.5	2.1
Emerging market economies[4]	**95.5**	**41.1**	**216.3**	**77.7**	**314.3**	**115.9**	**379.1**	**174.4**
Asia[5]	**54.5**	**31.9**	**105.9**	**47.3**	**166.2**	**63.1**	**198.2**	**104.5**
Central Europe[6]	**6.2**	**2.2**	**15.6**	**1.1**	**28.9**	**5.3**	**26.6**	**8.8**
Middle East[7]	**2.3**	**0.0**	**5.5**	**0.5**	**34.9**	**12.4**	**48.5**	**13.3**
Others[8]	**3.4**	**2.3**	**9.5**	**6.2**	**40.9**	**16.0**	**66.8**	**26.3**
Memo:								
Canada	*7.3*	*9.7*	*24.5*	*32.2*	*28.9*	*33.5*	*69.0*	*45.2*
United States	*54.1*	*66.1*	*170.7*	*161.5*	*101.0*	*–27.7*	*175.4*	*216.6*

[1] Annual average. [2] Includes the countries shown in the region. [3] Anguilla, Barbados, Cuba, Dominica, Grenada, Guadeloupe, Haiti, Martinique, Montserrat, the Netherlands Antilles, Puerto Rico, S Vincent and the Grenadines, and the Turks and Caicos Islands. [4] UNCTAD definition of Developing Economies. [5] China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, the Philippines, Taiwan (China) and Thailand. [6] The Czech Republic, Hungary and Poland. [7] Bahrain, Egypt, Iran, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia, Syria, the United Arab Emirates and Yemen. [8] Russia, Saudi Arabia, South Africa and Turkey.

Source: UNCTAD.

Table A9

Portfolio investment assets in Latin America and the Caribbean[1]

In billions of US dollars

	Debt			Equity			Total		
	2001	**2004**	**2006**	**2001**	**2004**	**2006**	**2001**	**2004**	**2006**
Caribbean	**47.8**	**73.4**	**98.5**	**25.6**	**43.5**	**77.4**	**72.4**	**116.8**	**175.4**
Aruba	0.3	2.0	2.0	0.0	0.0	0.0	0.3	2.0	2.0
Bahamas	2.3	6.8	5.5	4.1	7.5	8.0	6.4	14.3	13.4
Barbados	0.1	0.4	0.5	0.0	0.1	0.1	0.2	0.5	0.6
Dominican Republic	0.3	0.8	2.1	0.0	0.0	0.0	0.3	0.8	2.1
ECCU[2]	0.4	0.0	0.3	0.7	0.3	1.0	0.2	0.2	0.8
Haiti	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Jamaica	0.6	0.7	1.5	0.0	0.0	0.0	0.6	0.7	1.5
Netherlands Antilles	43.2	61.3	85.1	20.5	35.6	68.3	63.7	96.9	153.4
Trinidad and Tobago	0.6	1.4	1.5	0.2	0.0	0.0	0.7	1.4	1.5
Central America	**4.4**	**9.1**	**11.7**	**8.3**	**21.4**	**25.7**	**12.7**	**30.5**	**37.3**
Belize	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1
Costa Rica	0.2	0.3	0.8	0.0	0.0	0.0	0.2	0.3	0.8
El Salvador	0.1	0.9	2.0	0.0	0.0	0.0	0.1	0.9	2.0
Guatemala	0.1	0.3	0.4	0.0	0.0	0.0	0.1	0.3	0.4
Honduras	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1
Nicaragua	0.0	0.1	0.4	0.0	0.0	0.0	0.0	0.1	0.4
Panama	3.9	7.4	8.0	8.2	21.3	25.6	12.1	28.8	33.6
Latin America	**118.2**	**163.5**	**188.9**	**81.0**	**128.8**	**274.9**	**199.2**	**292.3**	**463.8**
Argentina	20.6	23.1	28.8	2.6	2.0	3.4	23.1	25.1	32.2
Bolivia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brazil	34.9	48.9	57.4	32.7	67.0	147.8	67.5	115.8	205.2
Chile	4.7	10.6	10.3	2.9	4.0	7.7	7.6	14.6	18.0
Colombia	5.2	7.5	11.0	0.3	0.4	1.3	5.5	7.9	12.4
Ecuador	1.3	2.1	1.7	0.0	0.0	0.0	1.3	2.2	1.7
Mexico	40.2	49.4	52.3	40.1	52.8	111.3	80.3	102.1	163.5
Paraguay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peru	1.9	5.8	7.8	0.9	1.8	2.2	2.8	7.6	10.0
Suriname	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Uruguay	1.3	2.4	4.6	0.0	0.0	0.0	1.3	2.4	4.6
Venezuela	8.2	13.7	15.1	1.6	0.8	1.1	9.8	14.5	16.2
Asia[3]	**63.7**	**90.0**	**141.2**	**228.1**	**441.7**	**920.3**	**291.8**	**531.7**	**1,061.5**
Central Europe[4]	**21.7**	**73.5**	**102.7**	**8.3**	**27.6**	**47.1**	**30.0**	**101.1**	**149.8**
Middle East[5]	**2.9**	**4.3**	**27.2**	**0.9**	**2.3**	**8.9**	**3.8**	**6.7**	**36.1**
Others[6]	**32.2**	**59.5**	**90.9**	**25.4**	**74.8**	**201.2**	**57.5**	**134.3**	**292.1**
Total	**605.4**	**1,112.0**	**1,533.7**	**572.9**	**1,121.9**	**2,163.2**	**1,178.3**	**2,234.0**	**3,696.9**
Memo:									
Canada	*202.7*	*287.5*	*318.7*	*94.4*	*199.2*	*357.3*	*297.1*	*486.7*	*676.1*
United States	*1,056.8*	*1,728.9*	*2,270.3*	*932.9*	*1,346.2*	*1,860.7*	*1,989.7*	*3,075.1*	*4,131.0*

[1] Assets held by Australia, Canada, the euro 15, Japan, Switzerland and the United States. [2] Anguilla, Antigua and Barbuda, Dominica, Grenada, Montserrat, St Kitts and Nevis, St Lucia, and St Vincent and the Grenadines. [3] China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan (China) and Thailand. [4] The Czech Republic, Hungary and Poland. [5] Bahrain, Egypt, Iran, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia, Syria, the United Arab Emirates and Yemen. [6] Russia, Turkey and South Africa.

Source: IMF, *Coordinated Portfolio Investment Survey*.

Table A10

Portfolio investment assets held by Latin American and Caribbean countries[1]

In millions of US dollars

	Debt			Equity			Total		
	2001	**2004**	**2006**	**2001**	**2004**	**2006**	**2001**	**2004**	**2006**
Caribbean	**254**	**538**	**1,363**	**2,263**	**3,345**	**2,819**	**2,517**	**3,884**	**4,182**
Aruba	7	100	157	114	69	1	122	169	157
Bahamas	74	188	359	1,181	3,075	2,603	1,256	3,263	2,962
Barbados	4	27	13	83	1	3	87	28	16
Dominican Republic	68	7	5	0	0	2	68	7	7
ECCU[2]	13	22	24	5	9	16	18	32	43
Haiti	0	0	0	0	0	0	0	0	0
Jamaica	3	3	29	16	0	28	18	3	57
Netherlands Antilles				279	191	154	363	351	710
Trinidad and Tobago	0	30	218	585	0	12	585	30	230
Central America	**1,111**	**729**	**510**	**222**	**706**	**958**	**1,333**	**1,435**	**1,467**
Belize	19	58	3	1	3	3	19	61	6
Costa Rica	153	129	79	1	486	655	154	615	734
El Salvador	28	74	61	0	1	0	28	75	61
Guatemala	160	196	237	87	1	3	247	197	240
Honduras	16	5	35	0	84	108	16	89	143
Nicaragua	9	23	20	3	22	32	12	45	52
Panama	726	243	75	131	109	156	857	353	232
Latin America	**10,610**	**10,744**	**10,197**	**1,783**	**1,301**	**5,693**	**12,393**	**12,045**	**15,890**
Argentina	492	748	300	155	37	161	647	785	462
Bolivia	0	0	0	96	4	0	96	4	0
Brazil	5,937	7,300	6,508	893	822	3,196	6,830	8,122	9,704
Chile	187	227	366	206	57	1,659	393	284	2,026
Colombia	713	508	512	35	85	181	747	593	693
Ecuador	35	44	98	33	11	15	67	55	113
Mexico	2,154	1,468	2,098	86	151	300	2,240	1,619	2,398
Paraguay	0	0	0	9	5	15	9	5	15
Peru	95	55	151	177	0	73	272	55	224
Suriname	0	0	0	0	0	9	0	0	9
Uruguay	421	34	11	56	87	77	477	121	87
Venezuela	576	359	152	38	43	7	614	402	158
Memo:									
Asia[3, 4]	*0*	*1*	*1*	*3*	*3*	*14*	*3*	*4*	*15*
United States[4]	*125*	*204*	*310*	*28*	*37*	*75*	*153*	*241*	*385*

[1] Assets held by Argentina, Aruba, the Bahamas, Barbados, Bermuda, Brazil, Chile, Colombia, Costa Rica, Mexico, the Netherlands Antilles, Panama, Uruguay and Venezuela. [2] Anguilla, Antigua and Barbuda, Dominica, Grenada, Montserrat, St Kitts and Nevis, St Lucia, and St Vincent and the Grenadines. [3] China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, the Philippines, Taiwan (China) and Thailand. [4] In billions of US dollars.

Source: IMF, *Coordinated Portfolio Investment Survey*.

Table A11

Return on average assets (ROAA)

	In per cent					
	1998	**2000**	**2002**	**2004**	**2006**	**2007**
Caribbean[1]	**2.1**	**2.0**	**2.3**	**3.0**	**1.7**	**2.9**
Aruba	2.4	2.0	2.6	1.3	1.7	…
Bahamas	3.7	4.3	1.3	2.3	2.1	4.4
Barbados	1.5	1.4	11.8	1.1	1.6	…
Dominican Republic	1.8	–0.4	1.9	4.8	1.2	2.1
ECCB	1.5	1.1	1.3	1.5	1.8	3.2
Haiti	1.0	0.8	0.0	0.5	1.2	1.4
Jamaica	1.8	3.4	2.3	2.5	2.2	2.8
Netherlands Antilles	0.2	1.7	0.6	1.8	1.6	…
Trinidad and Tobago	2.1	2.7	3.2	3.3	2.2	3.4
Central America[1]	**1.0**	**1.4**	**0.8**	**1.5**	**1.9**	**1.4**
Belize	2.5	2.1	3.3	3.4	3.2	…
Costa Rica	0.7	2.4	2.1	2.4	2.0	1.2
El Salvador	0.1	0.0	1.3	0.7	1.2	0.9
Guatemala	1.5	1.9	2.2	1.0	1.3	1.4
Honduras	1.4	0.9	–1.4	–3.2	1.9	1.7
Nicaragua	1.9	1.0	1.0	1.3	2.3	…
Panama	1.3	0.5	–3.4	3.6	1.7	1.6
Latin America[1]	**0.7**	**–0.7**	**–3.2**	**–0.6**	**1.8**	**1.5**
Argentina	–0.4	–0.5	–23.4	–0.5	1.9	1.5
Bolivia	0.9	–0.7	–0.7	0.3	1.1	2.1
Brazil	1.4	1.7	3.1	2.3	2.2	2.3
Chile	1.1	1.0	1.3	0.8	1.2	0.8
Colombia	–2.7	–2.0	1.4	2.6	2.1	2.5
Ecuador	1.6	–16.6	–9.6	–37.0	1.3	0.8
Mexico	–0.7	0.7	1.4	0.1	1.6	1.8
Paraguay	4.9	1.1	0.2	1.3	2.6	2.7
Peru	0.4	0.4	1.0	3.4	2.1	2.6
Suriname	0.8	0.9	0.8	1.1	2.0	…
Uruguay	1.3	1.3	–11.0	–1.5	1.1	–3.6
Venezuela	4.7	2.1	7.2	5.7	2.7	2.9

The banks included are those for which data are available.

[1] Simple average of the countries shown.

Source: Fitch Bankscope.

Table A12

Return on average equity (ROAE)

	In per cent					
	1998	**2000**	**2002**	**2004**	**2006**	**2007**
Caribbean[1]	**25.2**	**22.9**	**16.8**	**20.4**	**17.6**	**22.8**
Aruba	18.7	11.2	19.8	12.3	14.2	…
Bahamas	22.0	22.0	12.5	12.1	19.2	21.1
Barbados	13.5	24.3	35.4	13.3	15.9	…
Dominican Republic	14.6	25.7	16.8	27.6	9.1	22.9
ECCB	16.2	9.8	12.5	14.2	21.5	24.5
Haiti	14.8	12.7	4.2	8.9	21.3	19.7
Jamaica	64.4	32.8	15.2	13.3	15.2	24.8
Netherlands Antilles	11.0	22.3	14.6	25.6	23.1	…
Trinidad and Tobago	28.8	26.3	24.7	27.2	18.6	23.9
Central America[1]	**10.7**	**10.9**	**18.3**	**15.1**	**17.6**	**13.3**
Belize	24.9	21.7	41.0	28.4	23.0	…
Costa Rica	–5.7	12.0	14.0	14.0	13.5	11.3
El Salvador	–35.3	–0.7	12.1	7.8	11.5	7.1
Guatemala	16.5	21.0	21.7	8.8	15.1	16.0
Honduras	15.2	7.4	7.9	13.0	19.4	16.8
Nicaragua	17.2	8.6	7.6	11.7	25.3	…
Panama	76.4	5.5	114.9	30.6	15.4	15.5
Latin America[1]	**6.1**	**6.9**	**–2.5**	**9.4**	**17.3**	**15.5**
Argentina	–0.9	–1.0	–56.1	–0.5	12.2	14.4
Bolivia	8.7	–8.3	–4.5	2.3	12.3	17.7
Brazil	8.2	10.1	12.9	12.9	18.3	18.8
Chile	8.0	5.5	14.2	10.4	10.9	8.3
Colombia	1.8	4.6	6.5	18.7	17.2	19.2
Ecuador	–12.4	11.6	14.0	14.8	11.4	7.6
Mexico	1.5	3.5	16.9	7.6	11.5	20.1
Paraguay	23.9	6.1	5.8	13.7	24.1	22.0
Peru	5.3	4.0	9.3	12.5	23.4	28.2
Suriname	15.5	16.5	18.3	25.3	34.9	…
Uruguay	13.6	11.3	–43.3	–14.9	4.9	–21.7
Venezuela	37.4	11.5	24.0	30.8	26.5	35.5

The banks included are those for which data are available.

[1] Simple average of the countries shown.

Source: Fitch Bankscope.

Table A13

Total capital ratio

	In per cent					
	1998	**2000**	**2002**	**2004**	**2006**	**2007**
Caribbean[1]	**14.5**	**14.6**	**23.2**	**19.0**	**14.4**	**13.1**
Aruba	1.3	…	15.6	13.0	...	...
Bahamas	12.1	15.9	…	10.2	13.7	...
Barbados	16.0	18.4	19.2	18.0	16.2	...
Dominican Republic	11.7	11.8	11.9	12.7	12.4	11.7
ECCU	10.3	9.4	12.5	12.6	14.2	...
Haiti	…	…	…	…	...	...
Jamaica	16.8	35.8	29.0	19.1	17.3	14.5
Netherlands Antilles	…	…	…	10.0	8.1	...
Trinidad and Tobago	18.8	20.8	20.3	18.7	19.2	...
Central America[1]	**14.5**	**14.6**	**23.2**	**19.0**	**14.9**	**16.1**
Belize	…	…	…	…	...	...
Costa Rica	12.2	12.9	23.2	19.9	15.3	...
El Salvador	13.8	15.4	15.7	19.1	13.6	14.4
Guatemala	…	…	13.9	13.1	14.8	...
Honduras	…	13.9	13.0	15.2	14.5	...
Nicaragua	…	…	35.2	14.1	...	...
Panama	16.3	13.9	16.6	20.4	16.2	17.7
Latin America[1]	**20.0**	**31.0**	**31.2**	**28.2**	**13.7**	**18.4**
Argentina	15.2	8.7	…	24.6	17.3	...
Bolivia	10.6	13.4	11.9	…	...	...
Brazil	26.5	25.1	27.5	28.2	17.7	20.1
Chile	10.9	18.4	29.9	44.0	11.4	25.4
Colombia	11.8	12.1	11.0	11.9	11.1	12.7
Ecuador	23.4	28.3	20.9	12.1	13.1	...
Mexico	17.9	17.3	16.8	17.6	16.1	21.3
Paraguay	…	…	…	…	...	...
Peru	10.1	12.6	11.1	13.8	11.6	...
Suriname	9.0	4.8	3.5	5.8	11.8	...
Uruguay	…	…	…	…	...	...
Venezuela	18.4	54.2	54.4	29.6	13.1	12.4

The banks included are those for which data are available.

[1] Simple average of the countries shown.

Source: Fitch Bankscope.

Table A14

Moody's bank financial strength by country[1]

	1998		2000		2002		2004		2008	
	N	**BFS**	**N**	**BFS**	**N**	**BFS**	**N**	**BFS**	**N**	**BFS**
Caribbean[1]	**...**	**...**	**...**	**...**	**1**	**33.3**	**2**	**12.8**	**1**	**41.7**
Aruba	...	...	...	...	...	...	...	...	...	...
Bahamas	...	...	...	...	...	...	...	...	...	...
Barbados	...	...	...	...	...	...	...	...	...	...
Dominican Republic	...	...	...	...	1	33.3	1	8.3	...	...
ECCB	...	...	...	...	...	...	...	...	...	...
Haiti	...	...	...	...	...	...	...	...	...	...
Jamaica	...	...	...	...	...	...	...	...	...	...
Netherlands Antilles	...	...	...	...	...	...	...	...	...	...
Trinidad and Tobago	...	...	...	...	...	...	1	33.3	1	41.7
Central America[1]	**2**	**25.0**	**2**	**25.0**	**2**	**25.0**	**2**	**27.4**	**3**	**29.9**
Belize	...	...	...	...	...	...	...	...	...	...
Costa Rica	...	...	...	...	...	...	...	...	...	...
El Salvador	...	...	...	...	...	...	...	...	...	...
Guatemala	...	...	...	...	...	...	1	25.0	1	25.0
Honduras	...	...	...	...	...	...	...	...	...	...
Nicaragua	...	...	...	...	...	...	...	...	...	...
Panama	2	25.0	2	25.0	2	25.0	1	33.3	2	41.7
Latin America[1]	**69**	**28.6**	**68**	**25.4**	**63**	**25.2**	**64**	**26.6**	**89**	**32.4**
Argentina	9	27.8	10	25.0	9	0.0	9	0.0	20	22.1
Bolivia	...	...	1	0.0	1	8.3	5	0.0	6	16.7
Brazil	23	32.6	21	31.3	20	24.8	22	24.3	32	34.6
Chile	10	50.8	10	48.3	8	52.2	6	57.5	4	62.5
Colombia	5	41.7	5	23.3	5	23.8	4	24.4	2	33.3
Ecuador	2	25.0	2	4.2	1	8.3	...	...	...	...
Mexico	8	15.6	7	16.7	8	38.8	7	41.5	15	32.8
Paraguay	...	...	...	...	...	...	...	...	...	...
Peru	4	31.3	4	20.8	4	23.1	2	25.0	1	33.3
Suriname	...	...	...	...	...	...	...	...	...	...
Uruguay	2	29.2	2	29.2	2	0.0	5	0.0	7	15.5
Venezuela	6	27.8	6	22.2	5	14.7	4	8.3	2	16.7

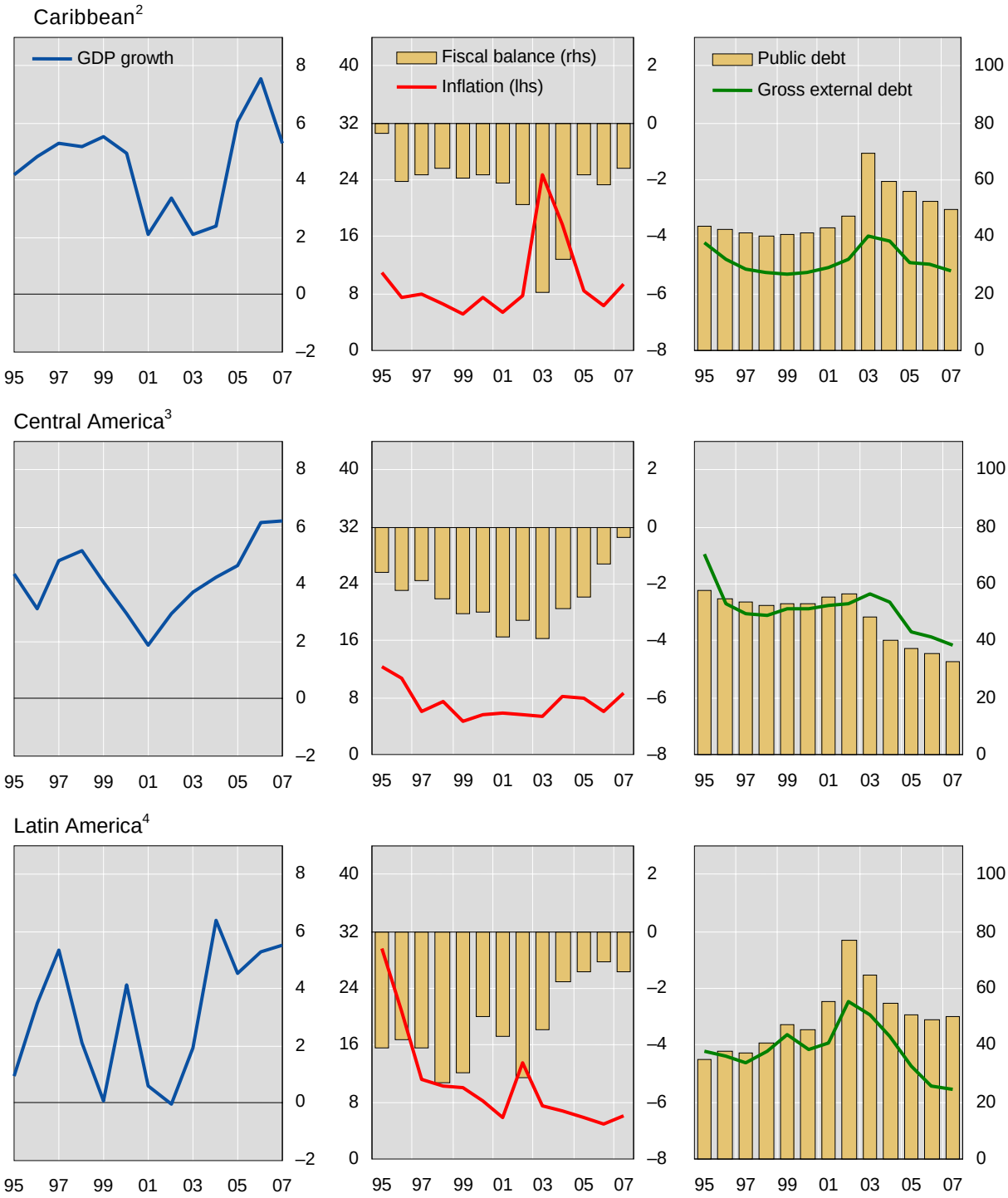
Figures in the table refer to December of the corresponding year; for 2008, to February. Regional sample size (N) and bank financial strength (BFS) are respectively the sum and the weighted average based on 2000 GDP and PPP exchange rates.

[1] Country BFS constructed according to a numerical scale assigned to Moody's weighted average bank ratings by country. "0" indicates the lowest possible average rating and "100" indicates the highest possible average rating.

Sources: Fitch Bankscope; Moody's Investors Service.

Graph A1

Economic indicators[1]



[1] Inflation and GDP growth in per cent; fiscal balance, public debt and gross external debt as a percentage of GDP; regional aggregates are weighted averages based on 2000 GDP and PPP exchange rates. [2] Antigua and Barbuda, Aruba, the Bahamas, Barbados, Dominica, the Dominican Republic, Grenada, Haiti, Jamaica, the Netherlands Antilles, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, and Trinidad and Tobago. [3] Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. [4] Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Suriname, Uruguay and Venezuela.

Sources: IMF; national data.

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