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This April 2008 issue of the *Regional Economic Outlook: Western Hemisphere*—which updates the issues covered more extensively in the November 2007 issue—was prepared by a team led by Robert Rennhack and Vikram Haksar and under the direction of Caroline Atkinson and Anoop Singh. The team included Rita Babihuga, Jingqing Chai, Ana Corbacho, Roberto Garcia-Saltos, Priyadarshani Joshi, and Herman Kamil. Specific contributions were made by Andreas Bauer, Ravi Balakrishnan, Tamim Bayoumi, Christina Daseking, Katja Funke, Cleary Haines, Andreas Jobst, Padamja Khandelwal, Daniel Leigh, Rituraj Mathur, Evridiki Tsounta, and Nancy Wagner. Thomas Duffy, Priyadarshani Joshi, Genevieve Lindow, Joan McLeod-Tillman, and Carolina Worthington provided research and production assistance.

Executive Summary

Overview. The Western Hemisphere region has enjoyed four years of strong growth through 2007, which has lifted incomes, created employment, and reduced poverty. The Latin American and Caribbean (LAC) region, in particular, has reaped the benefits of stronger macroeconomic positions and improved credibility of policy frameworks. Countries have also been buoyed by the exceptionally strong global economy of recent years, some especially by the boom in commodity prices, and rising foreign direct investment (FDI). However, the global expansion is losing momentum in the face of the recent financial disturbances. This update to the *Regional Economic Outlook: Western Hemisphere* discusses the shocks to the U.S. economy, how the LAC region is placed to address these, and their impact on the outlook (Chapter 1).

Housing risks and financial market dislocation in the United States have weakened the global growth outlook. The reversal of the U.S. housing boom and stresses at the core of the financial system have eroded U.S. growth prospects in 2008. A modest recovery is expected in 2009 as ongoing policy stimulus takes hold, and balance sheet problems in the financial system are gradually resolved. The U.S. slowdown is also expected to slow growth in Canada.

Despite the global financial shock, LAC financial markets have held up well so far. The shock to housing markets and financial sectors in industrialized countries has thus far had less impact on LAC financial markets and external funding than in past episodes of global financial stress. Domestic money and bond markets remain generally stable. However, external funding conditions have tightened, especially for the LAC corporate sector, though less as compared with other emerging markets. Developments here are discussed in Chapter 2.

LAC prospects have also been supported by strong commodity prices. The commodity boom of recent years has boosted growth and strengthened fiscal and external positions across the region. Commodity prices are projected to decline somewhat, in line with indicators in futures markets, though levels will remain elevated by historical standards. Combined with strong import growth, external current account surpluses in the region are expected to shrink.

Growth in the LAC region is nevertheless expected to slow given the weaker external conditions. In the baseline scenario, LAC growth is projected to slow gradually from 5.6 percent in 2007 to 4.4 percent in 2008 and 3.6 percent in 2009. This reflects the impact of weaker external demand and financial conditions, and moderating commodity prices and remittances.

Inflation pressures remain a concern for monetary policymakers. Strong demand combined with exogenous external shocks, especially to food and fuel prices, have put upward pressure on inflation. This has posed risks for one of the region's most important macroeconomic accomplishments in the past decade—the sustained decline in inflation to the single-digit range. High food prices have also had a disproportionate impact on the poor—governments have sought to mitigate these effects. These issues are analyzed in more depth in Chapter 3.

Rising public spending has been eroding fiscal balances. A substantial strengthening of primary fiscal balances has been a key achievement for the region in the past few years. However, in many cases the strength of fiscal positions is dependent on the continued buoyancy of commodity prices. Moreover, spending has surged in recent years, lowering primary surpluses.

The balance of risks for growth is tilted to the downside, reflecting the uncertainty over the global growth and commodity price outlook. The financial shocks currently playing out in the United States and global economy introduce a particularly high degree of uncertainty for growth and financial stability prospects across the world. The outlook for commodities also remains a key unknown, and an unwinding of recent price increases would be an important downside risk for the LAC region. Model-based scenario analysis undertaken by the IMF staff suggests a downward tilt to the balance of risks for the region's growth outlook. At the same time, inflation risks remain a concern given the region's strong growth momentum, especially if growth turns out to be stronger than in the baseline.

Navigating this period of financial turbulence and heightened uncertainty is the key near-term policy challenge. The region is facing the current situation from a far stronger position than in the past, especially given flexible exchange rate regimes. However, balancing the expected growth slowdown against ongoing inflation pressures will require careful policy management:

- *Monetary policy.* This has been oriented toward containing continued pressures on headline inflation and inflation expectations. The moderation of domestic demand and tighter financial conditions seen in the baseline scenario should reduce overheating pressures and may ease the task for policymakers. Flexible exchange rates would be the first shock absorber in the event of a weaker external environment than envisaged in the baseline.
- *Fiscal policy.* Compared with the past, there is less need for countries to reduce spending in the face of a cyclical slowdown in revenues, and many have room to allow automatic stabilizers to operate. But analytical work undertaken by the IMF staff cautions against discretionary fiscal stimulus in many countries. In the LAC region, increases in public spending could undermine policy credibility and ultimately have a negative impact on growth as risk premia rise and investment falls.
- *Financial sector policies.* Supervisory authorities are continuing their close monitoring of financial sector risks, as well as maintaining a close dialogue with regulators in other countries, given the international nature of the current shocks.
- *Social policies.* Addressing the impact of higher food prices on the poor is an important policy concern. Well-targeted cash transfers present an effective policy tool in this regard. However, administrative measures to reduce the pass-through of high food prices risk creating fiscal and quasi-fiscal costs and distorting economic incentives and efficiency.

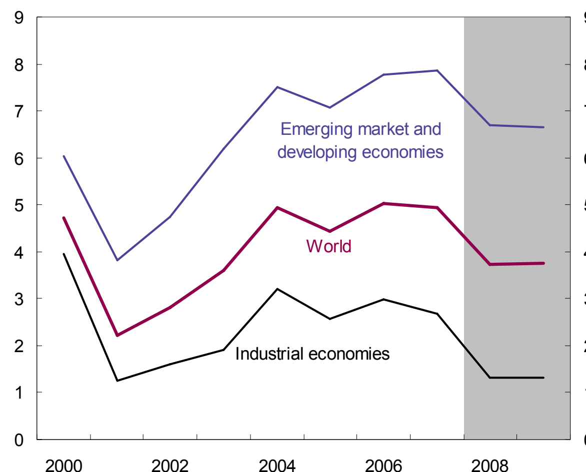
I. Overview: Navigating Financial Turbulence

Financial sector shocks are expected to slow down the U.S. economy, despite substantial policy stimulus in the pipeline. This is projected to slow global growth to 3.7 percent in 2008 from 4.9 percent in 2007. The overall balance of risks to the short-term global outlook is tilted to the downside. Growth in the Latin American and Caribbean (LAC) region has been very buoyant in recent years, partly reflecting the commodity boom. But strong domestic demand coupled with supply shocks have created inflation pressures. The regional outlook is now being clouded by the stresses in global financial markets and the marked downturn projected for the United States. This chapter discusses (1) the U.S. financial shock and weaker outlook, (2) the transmission of global shocks to the LAC region through financial markets, commodity prices, and capital flows, (3) the risks for the LAC growth outlook balanced against ongoing inflation pressures, and (4) policy options for managing these risks in the LAC region.

1. U.S. and Global Outlook: Financial Shocks Weakening Prospects

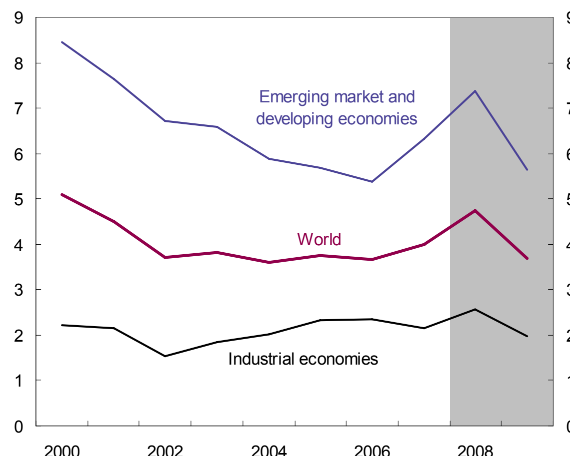
The global slowdown is largely attributable to developments in the advanced economies and, in particular, the United States, where the housing downturn sparked the current global financial turmoil. The U.S. economy is expected to slow substantially this year, with Q4/Q4 growth of –0.7 percent in 2008 bringing annual average growth down to just 0.5 percent, from 2.2 percent the year before. Emerging market and developing economies, led by China and India, will not be immune to a global slowdown but should continue to grow relatively robustly on the strength of internal demand.

World and Regional GDP Growth
(Year-on-year percent change)



Source: *World Economic Outlook* (WEO), April 2008.

World and Regional Inflation
(Year-on-year percent change)



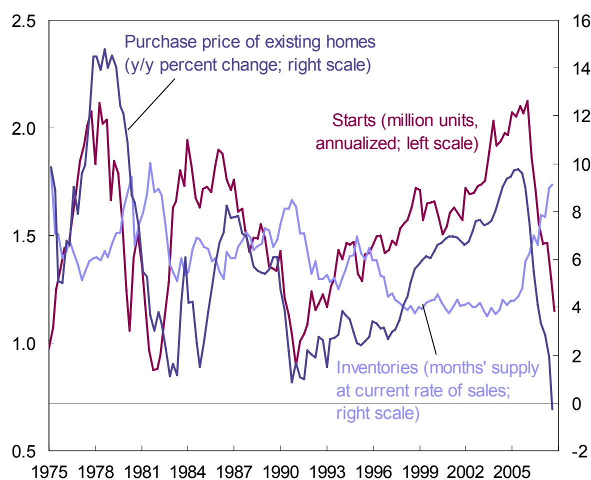
Source: WEO.

Inflation has risen worldwide reflecting, in part, strong emerging market demand that has driven up world food and energy prices. The United States, the euro area, and some emerging markets are also seeing a pickup in core inflation. The slowing of global economic activity is expected to ease price pressures somewhat, notwithstanding the past six months' substantial monetary easing in the United States and some other countries.

Housing Weakness in the United States and Financial Turbulence

Near-term prospects for the U.S. housing sector remain dim. Residential investment has already declined for eight quarters—the longest downturn since the mid-1970s—and is likely to remain depressed for several more quarters. Housing starts have more than halved from an annualized 2.3 million in January 2006—the highest rate in 33 years—to about 1 million two years later. However, inventories of new homes for sale have risen to close to 10 months' supply, a level not seen since 1981. With this substantial overhang, prices are now falling in nominal terms on a national basis, and further declines of 10–20 percent (depending on the index being used) are widely expected over the next two years.

Indicators of U.S. Housing Supply and Demand



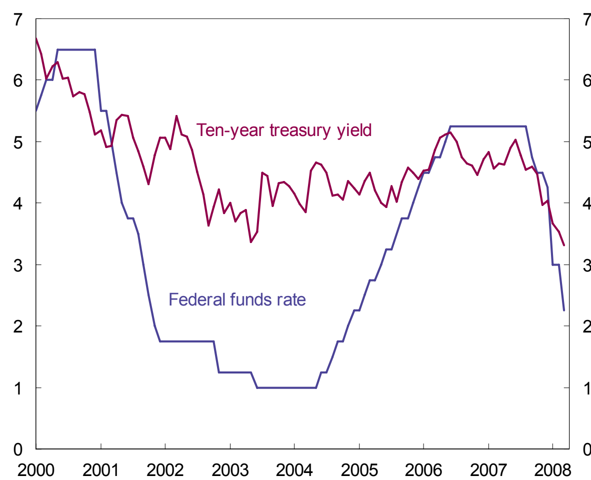
Source: Haver Analytics.

The financial sector remains strained in the wake of the mortgage crisis, with concerns shifting from liquidity to credit risks. The IMF's April 2008 *Global Financial Stability Report* points to substantial credit-related write-downs in banks and other nonbank intermediaries. These write-downs relate to the subprime mortgage market but also to additional market segments—including prime mortgages, commercial property, leveraged loans, and household credit. In response to this, U.S. and European banks have moved rapidly to acknowledge losses and raise capital. However, surveys find that banks are also responding to balance sheet pressures by rapidly tightening loan standards, which, together with rising spreads on a range of securities, is counteracting the support to activity from monetary and future fiscal policy easing (Box 1.1).

Policy Response in the United States

The U.S. Federal Reserve has been easing aggressively in response to growth risks and financial market strains. The target for the federal funds rate has been cut by a cumulative 300 basis points since last September. The Federal Reserve has also taken additional steps to support liquidity in financial markets, including for investment banks, which previously did not have access to emergency funds. Extraordinary measures helped to contain the fallout from the failure of an important investment bank, Bear Stearns, in early March, although the situation remains volatile.

U.S. Short-Term and Long-Term Interest Rates



Source: Haver Analytics.

The Federal Reserve's actions have been complemented by a US$170 billion (1¼ percent of GDP) fiscal stimulus package comprising mainly individual tax rebates (which will start to be sent out in May), corporate investment tax breaks, and support for the housing market through increased loan and portfolio limits for the government-sponsored housing agencies. The package appears to be appropriately sized and reasonably well

Box 1.1. United States: State of Play in Financial Turmoil

Financial sector difficulties in the United States and around the world have been headline news for a while now. What has surprised many, however, is how problems in the U.S. subprime mortgage market, a relatively small segment of the U.S. mortgage market (about 10 percent of the total) have spread. Spillovers from subprime turbulence have affected other major financial markets, and led to the near-collapse of Bear Stearns, one of the major U.S. investment banks. This box looks at how the crisis has spread, its effect on financial conditions in the United States, and the likely impact on the U.S. outlook.

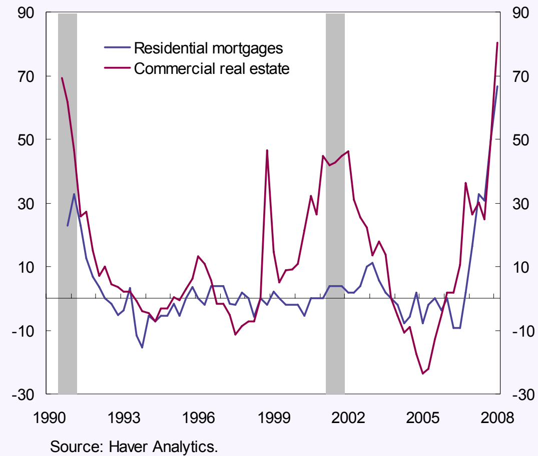
Loan delinquencies have risen. Delinquencies are up not just on subprime adjustable-rate mortgages (ARMs), but also increasingly on prime ARMs. With foreclosures spiking up and house prices falling, indices tracking the value of securitized mortgage instruments (so-called ABX indices) on recent loan vintages have dropped in value by up to 80 percent on lower-rated tranches. Prices of other types of securitized assets have also fallen rapidly, and issuance in most such markets has collapsed. This has led to significant write-downs for U.S. and European banks, although the latest estimates suggest that banks have recognized a large part of the potential losses associated with these exposures.

Pressure on bank capital has been further increased. Banks have been forced to bring loans made through nonbank subsidiaries—such as the conduits used for asset-backed commercial paper—onto their balance sheets. Additional strains have arisen as borrowers have activated previously agreed lines of credit in response to market uncertainty. This has been reflected in an increase in credit default swap (CDS) spreads for banks.

Weaker institutions have experienced liquidity problems. With investors shunning securitized paper and mounting losses on securitized instruments and associated margin calls, lenders started avoiding exposed institutions despite Federal Reserve initiatives to provide liquidity to markets. This process led in early March to the near-collapse of Bear Stearns, an important U.S. investment bank. The New York Federal Reserve brokered a rescue of Bear Stearns, which was acquired by JPMorgan Chase for a fraction of its earlier value. To ensure orderly market conditions, the Federal Reserve also launched a new facility that further widened accepted collateral to include high-quality mortgage-backed securities and broadened access to such funding to investment banks.

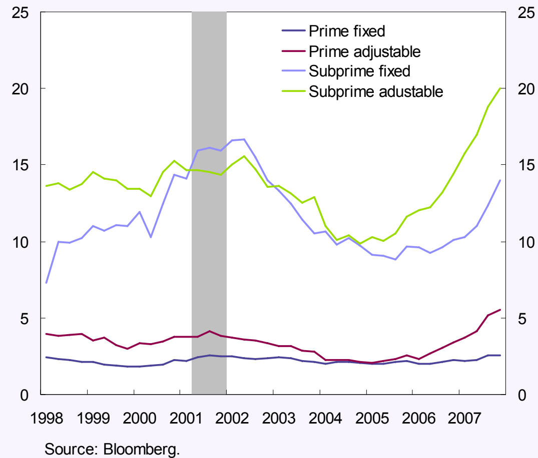
Note: This box was prepared by Ravi Balakrishnan.

Net Percentage of Banks Tightening Lending Standards



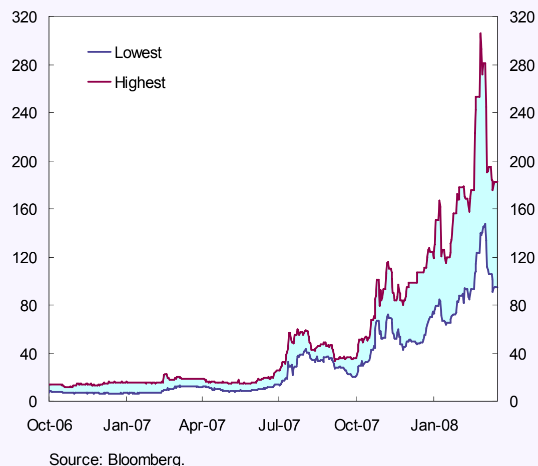
Source: Haver Analytics.

Delinquency Rates for Mortgages
(In percent of outstanding loans)



Source: Bloomberg.

U.S. Commercial Bank CDS Spreads
(For five major banks; in basis points)



Source: Bloomberg.

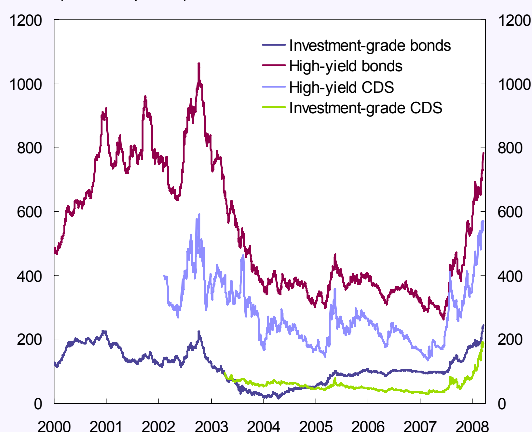
Box 1.1 *(concluded)*

As strains on bank capital mount, bank-lending standards are becoming more stringent. The latest senior loan officers' survey suggests that lending standards are being tightened across all types of loans, from residential mortgages to commercial and industrial clients. Exacerbating existing housing difficulties, spreads on prime jumbo loans have widened by over 100 basis points and demand for real estate and residential mortgage loans has fallen.

Global corporate credit and interbank markets have also been affected. Corporate bond (and CDS) spreads have risen considerably, although the high-yield spread is still below that associated with past recessions. Spreads have widened despite strong corporate balance sheets, as reflected in delinquencies remaining at near-record lows, suggesting the prevalence of increasing risk aversion and concerns that balance sheets could quickly deteriorate. On the money market side, the three-month LIBOR and spreads of Eurodollar deposits over U.S. treasury bonds have remained volatile and well above historical norms, consistent with continuing concerns regarding liquidity and credit risk.

Overall, U.S. financial conditions have worsened considerably in the past six months. This is despite the 300-basis-point reduction in the target federal funds rate and the real effective depreciation of the dollar, as loan standards have tightened considerably, bond spreads have risen, equity prices have declined, and interbank spreads remain modestly elevated. This will weigh on growth in the next few quarters. The recovery is also likely to prove protracted. Despite some of the major U.S. banks having already received significant capital injections, resolving housing sector balance sheet problems will take time and lead to a slow pickup in credit growth (see Chapter 2 of the April 2008 *World Economic Outlook*). Risks remain modestly to the downside; if the effects of the ongoing credit crunch are strong, corporate defaults will pick up, putting further pressure on banks' balance sheets and strong downward pressure on activity.

Corporate Bond and Credit Default Swap Spreads
(In basis points)



Sources: Bloomberg; Merrill Lynch; JPMorgan; and IMF staff calculations.

Short-Term Interest Rate Spreads
(In basis points)

Sources: Bloomberg; and IMF staff calculations.

targeted, while its temporary nature limits the implications for long-term fiscal sustainability.

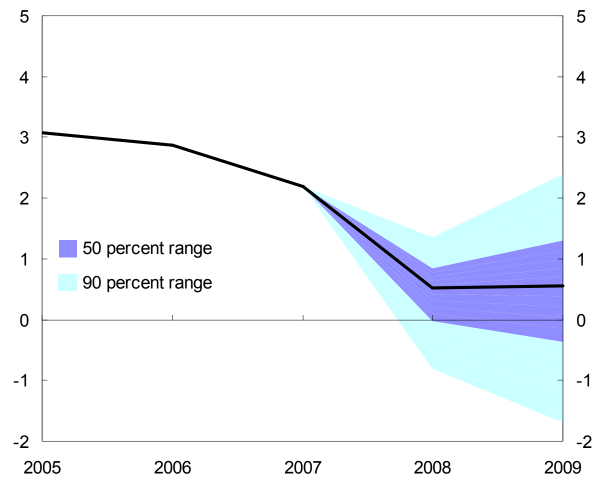
U.S. Slowdown and Risks Tilted Down

The most likely outcome is that the United States will experience a downturn during much of 2008. In the baseline scenario, consumption, until now the main engine of the economy, slows sharply, reflecting the various strains on consumers. Residential investment is also projected to exert a substantial drag on the economy, and business investment decelerates as a result of the tighter financial conditions and falling activity. One bright spot is likely to be net exports, which are projected to benefit from less domestic demand, the dollar's depreciation, and continued strong growth abroad, particularly in the emerging economies.

Beginning in 2009, the economy is expected to pick up gradually, supported by recent monetary and fiscal policy measures, with Q4/Q4 growth of 1.6 percent pulling annual average growth slightly upward to 0.6 percent. With the pace of the recovery being slowed by continuing housing and financial market strains, the output gap is expected to continue to widen through the end of 2009.

The balance of risks around the baseline growth outlook remains tilted to the downside. While there is certainly upside potential, including from a more robust performance of exports, there remains a concern that the strains facing the financial system may turn out to be even larger than anticipated. If losses mount further, banks could be forced to shrink their balance sheets faster and longer than assumed, restricting credit availability to both household and corporate sectors and worsening the downturn. U.S. banks have started raising capital, including through infusions from sovereign wealth funds, which provides some relief, but more will likely be needed.

U.S. Growth Forecast: Balance of Risks
(Year-on-year percent change)

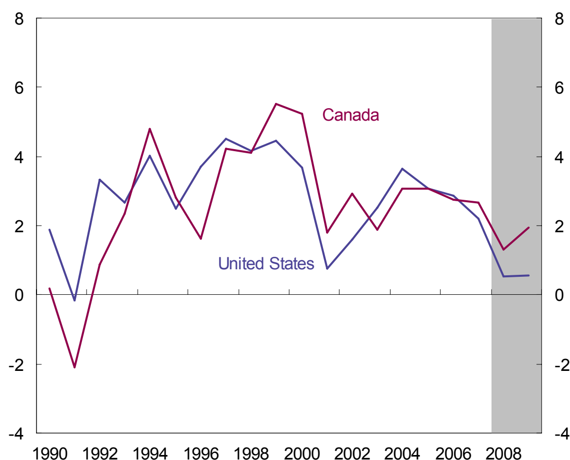


Source: IMF staff calculations.

U.S. Outlook Weighing on Canada

After years of strong economic performance underpinned by sound monetary and fiscal policies, Canada's growth is expected to slow this year as the downdraft from the U.S. economy outweighs solid domestic demand supported by strong commodity prices. Indeed, slumping real net exports pulled real GDP growth down to 0.8 percent (annualized) in the fourth quarter of 2007 despite buoyant domestic spending. A sharp spike in cross-border shopping by Canadians in the United States contributed to the weaker external picture. This was a response to the Canadian dollar reaching parity with the U.S. dollar, which made price comparisons easier and also put downward pressure on consumer-price inflation. Growing global financial strains are also increasing uncertainties about the proposed workout to unfreeze Canada's asset-backed commercial paper market, which stalled last year. Overall, growth is projected to decelerate to 1.3 percent in 2008 and pick up only slowly to 1.9 percent in 2009.

Real GDP Growth in the United States and Canada
(In percent change)



Sources: Haver Analytics; and IMF staff calculations.

One element supporting Canada's growth, despite the U.S. weakness, is the continued strength in global commodity markets, driven in part by still relatively robust demand forecast for emerging markets. A key uncertainty in the projection remains the future path of domestic demand as weaker net exports slow incomes. With core inflation at its lowest level in two years and inflation risks largely on the downside, the Bank of Canada has responded to the weaker outlook by cutting the policy interest rate by 100 basis points in three consecutive steps since December, and has adopted an easing bias going forward. Significant tax relief announced in late October 2007 is also providing a timely fiscal stimulus of ¾ percent of GDP in 2008. These measures are expected to support domestic demand growth. However, domestic demand could be undermined if financial conditions or global commodity prices weaken without an offsetting depreciation in the exchange rate. At the same time, given its strong policy framework, flexible labor markets, and the authorities' focus on structural reform—including developing measures to boost competition—the economy should be well poised to ride through these cyclical challenges.

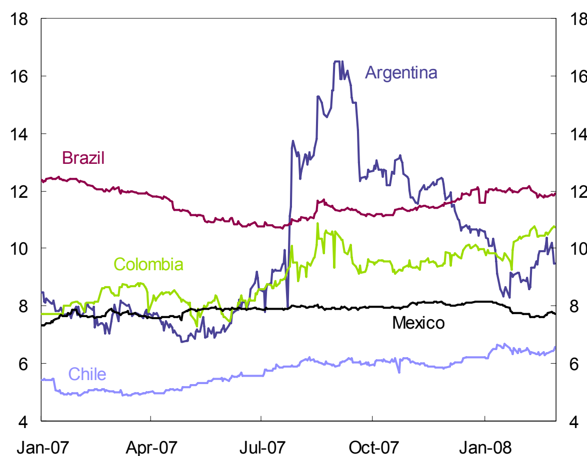
2. Transmission of Global Shocks to the LAC Region

Financial Markets Generally Resilient; Some Strains Emerging

LAC domestic money and bond markets have generally remained stable since the onset of the global financial turmoil. However, external credit spreads have widened, overseas corporate financing has paused, and stock markets have retreated. While domestic financing remained buoyant last year, the significant uncertainty about the global financial outlook is a key risk for the LAC region, which is discussed further in Chapter 2.

Banking systems and money markets in the LAC region have avoided disruptions despite the stress in global financial markets. Most recently available data show that domestic credit also remained buoyant. This partly reflects healthy bank balance sheets and profits following a period of steady expansion. Moreover, LAC banks' reliance on domestic funding to expand their balance sheets has helped to insulate them from external financing shocks. As reported in Chapter 2, LAC banks do not have significant exposure to subprime or other structured credit products. Also, local market government bond yields and swap rates have generally remained steady.

Local Currency Interest Rates
(In percent; one-year swap)

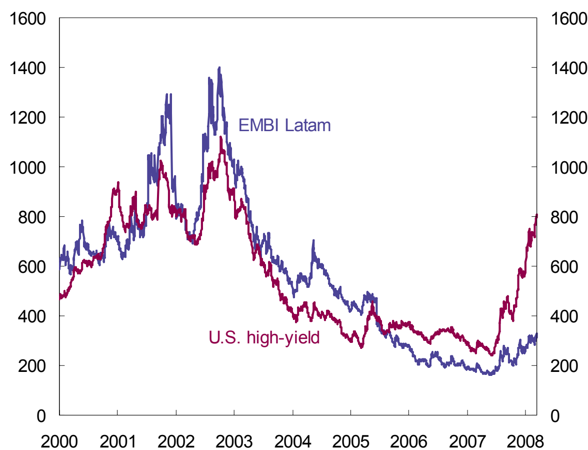


Sources: Bloomberg; and JPMorgan.

Tightened External Financing Conditions

Spreads on Latin American external sovereign debt have risen since the second half of last year. But in previous periods of financial stress, LAC-EMBI and U.S. high-yield bond spreads moved more closely together. Since August 2007, LAC-EMBI spreads have risen by about 100 basis points, while U.S. high-yield spreads have increased almost 500 basis points. In large part, this divergence is due to the region's stronger fiscal positions, improved structure of public debt, and substantial buildup of international reserves.

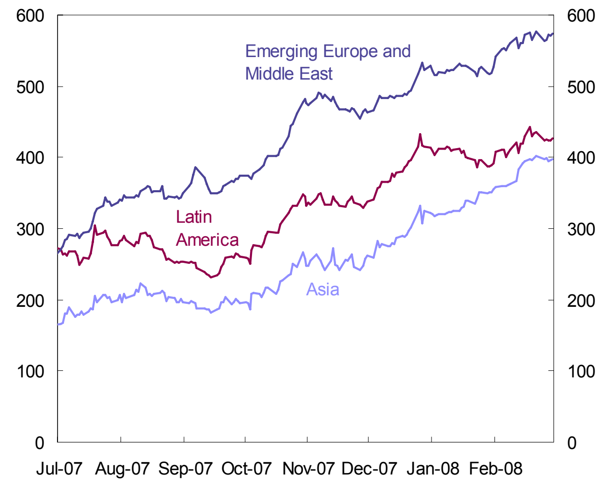
Emerging Market Sovereign and U.S. High-Yield Spreads
(In basis points)



Sources: Bloomberg; and Datastream.

The corporate sector has also faced higher external spreads since August 2007, though these have risen somewhat less in the LAC region compared with other emerging market regions. This comes against a background of rapid growth in LAC corporate sector access to international capital markets. External bond, loan, and equity issues have provided almost 15 percent of LAC corporations' net funding from the formal financial sector over the past three years. Since the onset of the global credit market dislocations, external spreads on corporate bonds issued in the LAC region have risen by 150–250 basis points. In a sign of increased risk differentiation, spreads have risen more for lower-rated LAC companies than for blue chips.

Corporate Spreads
(In basis points)

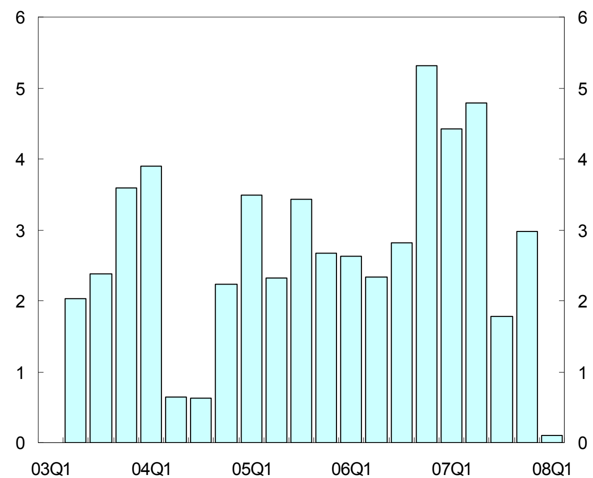


Source: Credit-Suisse.

Corporate External Finance Flows Down

Cross-border corporate debt issuance in the region was scaled back in the face of tighter global financial conditions in the second half of 2007, and has come to a near halt so far this year, in line with the experience in other emerging-market regions.

External Bond Issuance
(In billions of U.S. dollars)



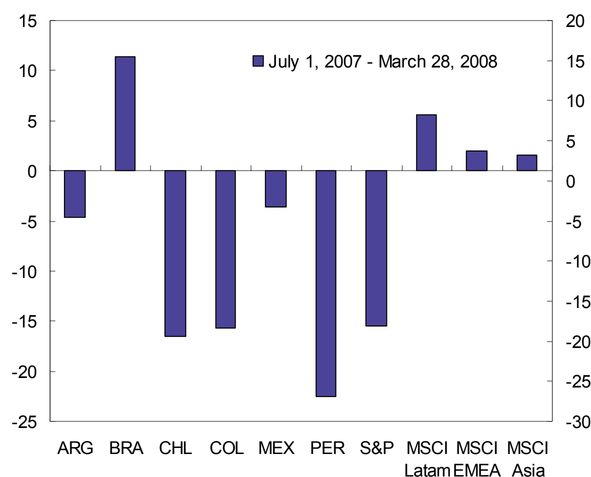
Source: Dealogic database.

During 2007, strong demand for emerging market equities led to a marked increase in new equity financing by Latin corporates. In Brazil alone, over 100 firms launched new initial public

offerings (IPOs) in 2007, targeted at both local and international investors, raising US$47 billion in new capital. However, primary issuance in the equity market has also fallen sharply this year as market conditions have deteriorated.

The MSCI[1] equity index for the LAC region has increased since June 2007, and in fact been somewhat stronger than for other emerging market regions. However, this largely reflects the strength of Brazilian blue-chip equities last year. Reflecting the general global sell-off, especially since early this year, equity markets in many other LAC countries have retreated. This will likely contribute to a somewhat higher marginal cost of capital for new investment, and will dampen incentives for new equity issuance. Risks here are highlighted by evidence that the co-movement of LAC equities with those in the United States tends to increase during periods of market stress in the United States (Chapter 2, Box 2.3). Nonetheless, LAC corporates remain liquid, with key blue chips in commodity sectors, in particular, still facing a strong outlook.

Stock Prices
(In percent change; local currency) 1/



Source: Bloomberg.
1/ Individual country data are based on movements in major local stock exchanges.

[1] Morgan Stanley Capital International index.

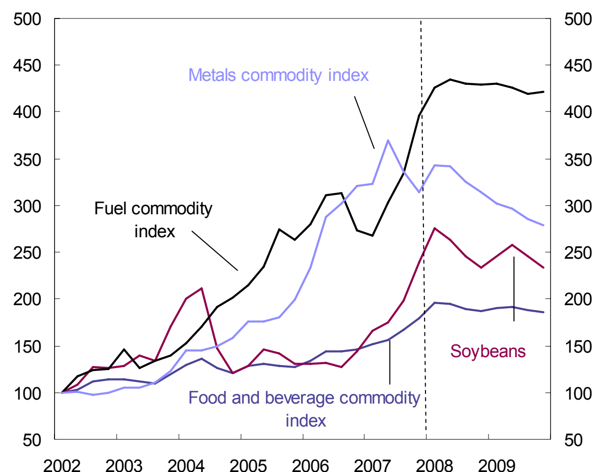
LAC Supported by Commodities and Capital Flows

The sustained boom in commodity prices has supported exports, income, and growth in much of the region and led to increased FDI. However, with imports now rising very rapidly and an expected flattening in commodity prices, the region's external current account is expected to move from a small surplus in 2007 to a small deficit in 2008, the first since 2003. Combined with somewhat less buoyant net capital inflows, reserve accumulation is projected to moderate.

Commodity Boom: Differential Effects

The commodity price boom of the last four years has been a major contributor to the turnaround in the growth and external performance of many countries in the LAC region. International prices for the LAC region's main commodity exports have in aggregate risen by 150 percent since 2003. With strong increases in crude oil, copper, and soy prices, by 2007 the value of commodity exports

Commodity Price Developments
(2002Q1 = 100)



Sources: WEO; and IMF staff calculations.

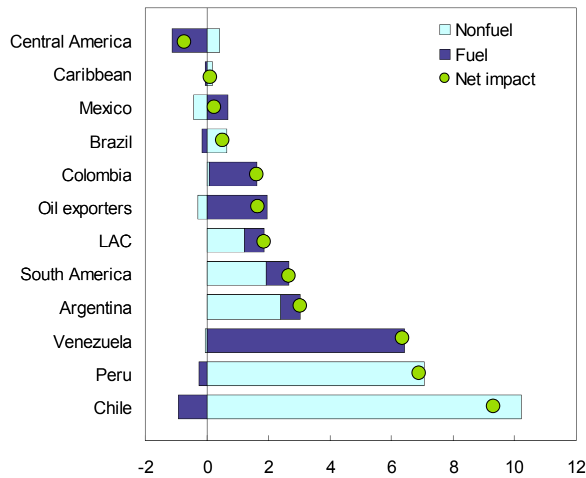
for the LAC-6[2] plus Venezuela is projected to have reached almost 10 percent of GDP (7 percent in 2003) and over 40 percent of export receipts (35 percent in 2003).

[2] The LAC-6 include Argentina, Brazil, Chile, Colombia, Mexico, and Peru.

The boom in commodity prices has not yielded terms of trade gains for many other countries in the region. Several countries, particularly in Central America and the Caribbean, have seen substantial increases in oil import bills, and are not major exporters of other commodities. Moreover, the recent increases in food prices have also contributed to weaker trade balances and higher inflation, especially in some of the smaller and lower-income countries in the region, with potential adverse impact on the poorest (Box 1.2).

Impact of Commodity Price Movements on Trade Balances

(In percent of 2007 GDP)1/

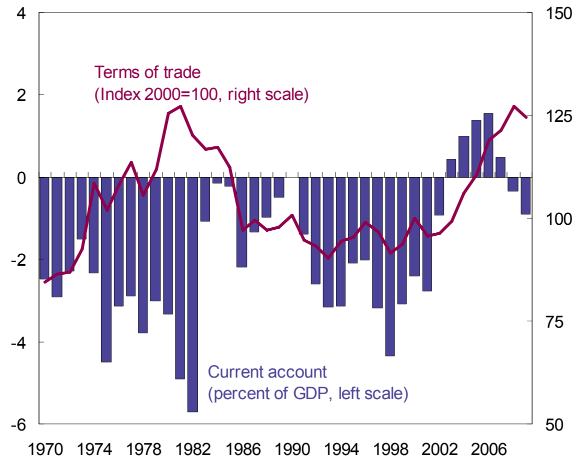


Sources: WEO; and IMF staff estimates.
1/ First-round impact of change in commodity price movement since 2005 on trade balances in 2007.

Current Accounts Weakening with Strong Import Growth

The region's external current account, while still in surplus, began to weaken last year as described in the November 2007 *Regional Economic Outlook: Western Hemisphere*. A further deterioration is projected in 2008–09. This reflects mainly strong growth of imports (with domestic demand stronger than external), especially in Argentina, Brazil, Colombia, and Venezuela. Higher dividend and profit repatriation from resource-intensive sectors is also playing a part. There continues to be great variation across countries' external current account balances. Most commodity-exporting countries of South America are running strong surpluses, while Colombia, countries in Central America, and, to a lesser extent, Mexico are running deficits. However, the trend toward weaker current accounts is shared by most countries in the region.

Current Account Balance and Terms of Trade



Source: WEO.

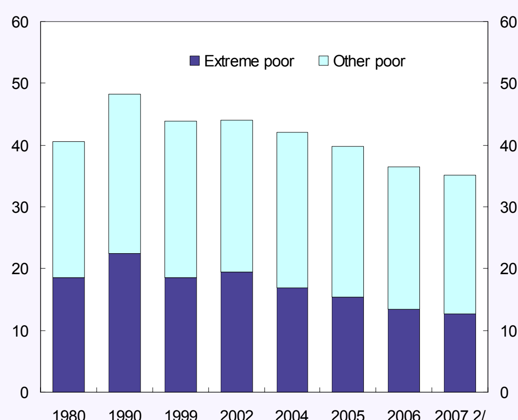
Moreover, terms of trade changes are expected to make a negative contribution to the trade balance in 2009, reversing the pattern of strong support from commodities in recent years. After the sizable increases through early this year, commodity prices for fuels, metals, and agricultural products are now expected to flatten out—albeit at high levels—on average in 2008 before declining modestly in 2009 (discussed in the April 2008 *World Economic Outlook*).

A key issue for the region is whether commodity prices may weaken relative to the baseline in the event of a further deterioration in the global growth environment and some associated reduced demand for raw materials, especially from emerging Asia. Box 1.3 describes the importance of commodity exports for the LAC region, and provides some evidence that points to rising investment demand for commodities as financial assets. Downside risks to the growth outlook from lower commodity prices are explored later in this chapter.

Box 1.2. Poverty and Inequality Trends in the LAC Region

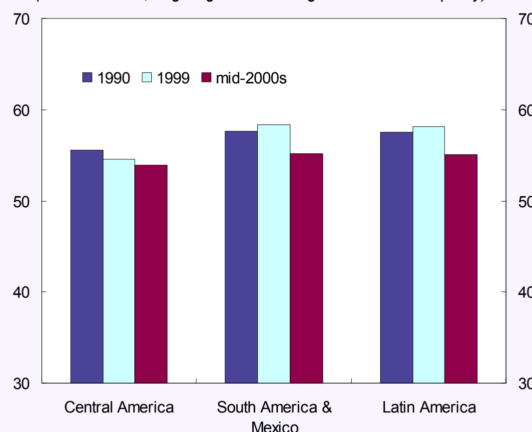
The current expansion has had an important impact on social indicators, with marked reductions in poverty and moderate improvements in inequality. According to the UN Economic Commission for Latin America and the Caribbean (ECLAC), the average Latin American poverty rate fell from 44 percent in 2002 to just below 36 percent in 2006, and is projected to have declined further to 35 percent of the overall population in 2007. This reduction includes a dramatic fall in the percentage of extreme poor, from 19.4 percent in 2002 to a projected 12.7 percent in 2007. In absolute terms, the number of poor has fallen from a high of 221 million to a projected 190 million in 2007. There has also been some reduction in inequality—for countries with the latest available data, eight out of nine countries have shown a decline in inequality since the beginning of the decade. These social improvements can be partly attributed to robust growth, sustained macroeconomic stability, improved poverty targeting through conditional cash transfer and other social assistance programs, reductions in unemployment rates, and, potentially, remittance flows (see the November 2007 *Regional Economic Outlook: Western Hemisphere*).

Latin American Poverty Rates, 1980 - 2007 1/



Source: ECLAC (2007).
1/ Population-weighted average for 19 countries.
2/ Estimates.

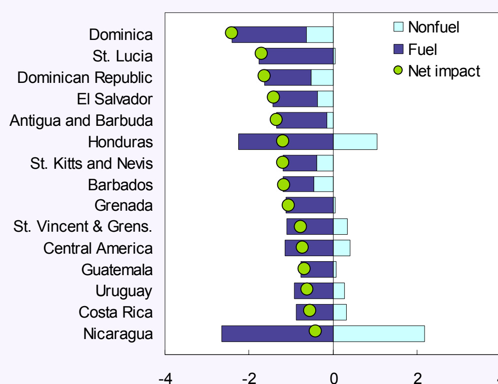
Latin American Income Inequality
(Gini coefficient; larger figures indicate greater income inequality) 1/



Source: ECLAC (2007).
1/ Population-weighted averages. 1990 = available observation closest to 1990; 1999 = available observation closest to 1999; mid-2000s = most recent available observation.

Nonetheless, the sharp increases in commodity prices in recent years have had adverse impacts on some small and low-income countries in the region. These countries tend to be relatively large net fuel importers; the main commodity exporters include the larger and richer countries in the region. As such, the increase in commodity prices, especially for fuels, has worsened the terms of trade and trade balances in small and low-income countries that are not energy exporters, adversely affecting real incomes. Separately, higher food prices appear to have had a bigger impact on inflation in low-income countries, including when compared with the average for the LAC region. This reflects the high weights for food items in these countries' household consumption baskets. Moreover, higher food prices have likely had a detrimental impact on the lowest-income groups in most countries across the region (with the possible exception of the poor working in the agricultural sector, who could benefit from higher prices for their produce), reflecting the higher share of food items in the consumption baskets for the poorest groups that is typically observed in household survey data.

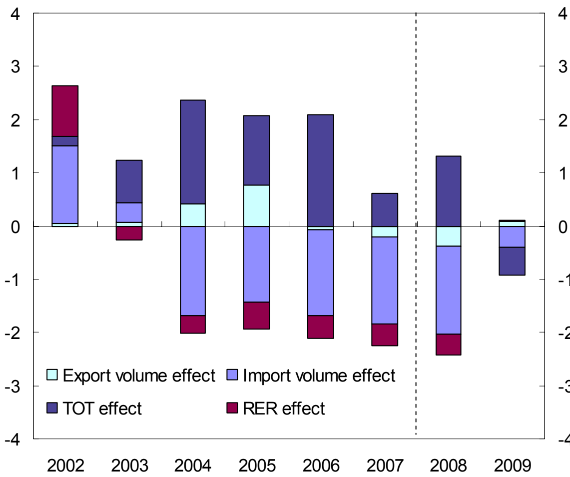
Deterioration in Trade Balance in Countries Adversely Affected by Commodity Price Movements
(In percent of 2007 GDP)1/



Sources: WEO; and IMF staff estimates.
1/ First-round impact of change in commodity price movement since 2005 on trade balances in 2007.

Note: This box was prepared by Vikram Haksar and Priyadarshani Joshi.

Contribution to Changes in Trade Balance to GDP Ratios 1/
(Percentage points; average per year)

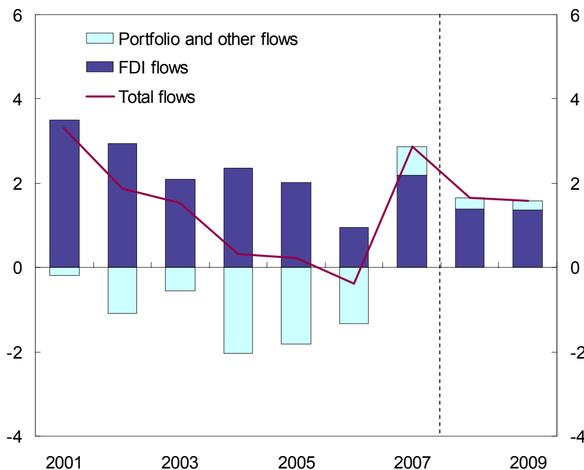


Sources: WEO; and IMF staff calculations.
1/ A positive export effect indicates an improvement in the trade balance due to export volume growth above real GDP growth. A positive import effect indicates an improvement in the trade balance due to import volume growth below real GDP growth. The terms of trade (TOT) and real exchange rate (RER) effects are the contributions from changes in terms of trade and bilateral real exchange rates (based on GDP deflators) with the United States.

Strong Capital Flows Expected to Moderate

Net capital flows into the region were strong in 2007. FDI increased, buoyed by investment in natural resource sectors, while there was also a striking turnaround in net portfolio and other capital flows, reflecting in part incentives for carry trades.

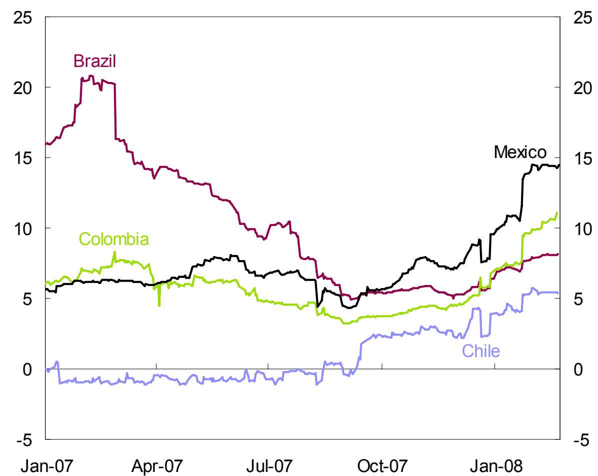
Net Capital Inflows
(In percent of GDP)



Source: WEO.

The August 2007 turbulence in global markets diminished these incentives. But since then, with the Federal Reserve lowering interest rates, interest differentials have widened in favor of the LAC region. As a result, exchange market pressures for appreciation have picked up since late last year in several countries, especially Brazil, Chile, Colombia, and Peru. This has led to continued reserve buildup as some countries, such as Brazil and Peru, intervened to smooth exchange rate moves.

Latin America: Carry-to-Risk Ratio 1/



Sources: Bloomberg.
1/ Defined as the overnight interbank interest rate differential relative to the one-week LIBOR rate, normalized by the unconditional standard deviation of nominal exchange rate (w.r.t. U.S. dollar) changes over a 90-day moving average window.

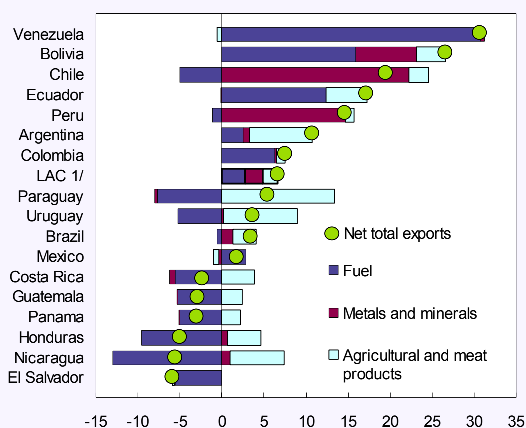
FDI and other capital flows may be somewhat reduced as external financial conditions tighten and risk aversion increases. With the expected weakening of the external current account and moderating capital flows, the pace of accumulation of net international reserves is expected to slow. Reserves are projected to reach almost US$500 billion (12½ percent of GDP) by end-2008.

Nominal effective exchange rates fell in many countries, partly in line with the broader weakness of the U.S. dollar. However, currencies appreciated in effective terms in a number of other countries, including those that have also been among the prime beneficiaries of the

Box 1.3. The Global Surge in Commodity Prices: Implications for Latin America

Commodity prices have buoyed many countries in Latin America. Global commodity price increases have contributed to the strong growth and external performance of many Latin American countries. The LAC region as a whole is a net commodity exporter of fuels, metals and minerals, and agricultural products, and most countries produce a variety of primary commodity products. However, higher commodity prices (especially for fuels) have adversely affected the external balances of net-commodity-importer countries—most of them from Central America.

Net Commodity Exports by Country, 2006
(In percent of GDP)



Sources: WEO; United Nations Commodity Trade Statistics (UNCOMTRADE) database; and IMF staff estimates.
1/ Aggregate for 17 countries.

Main Commodities Exported by the Largest Latin American Countries
(In percent of total commodity exports, 2003-06 average)

	ARG	BRA	CHL	COL	MEX	PER	VEN
Petroleum products	21	14	3	47	88	9	96
Copper	4	1	75	0	3	25	0
Soy products	37	22	0	0	0	0	0
Gold	1	1	2	7	1	29	0
Coal	0	0	0	22	0	0	1
Iron	0	16	1	0	0	2	0
Fish products	2	0	11	1	1	15	0
Coffee	0	5	0	13	1	3	0
Zinc	0	0	0	0	1	10	0
Sugar	0	8	0	3	0	0	0
Wheat	6	0	0	0	0	0	0
Other	28	32	7	8	5	7	3
Total commodity exports (in percent of) 1/							
Exports	59	42	58	53	15	69	86
GDP	13	6	20	9	4	14	31

20 percent or more
10 to 20 percent
5 to 10 percent
Less than 5 percent

Sources: WEO; UNCOMTRADE database; and IMF staff calculations.
1/ Commodity exports do not include natural-resources-based manufacturing exports.

Increased demand from China and other fast-growing economies in Asia is an important factor in the current boom in commodity prices. The emergence of China's industrial base, with a more resource-intensive pattern of production, has turned it into a key source of demand for commodities produced by the LAC region. In addition, the rapid urbanization in China and other Asian countries, coupled with rising living standards, is fueling demand for protein-rich foods (such as meat), which require large quantities of grain to produce (see the April 2008 *World Economic Outlook*). China's role in commodity price developments, however, is not so much due to its share in total global demand for commodities as to its high incremental rate of growth. In 2006 China accounted for only 7.5 percent of global demand for oil. But it was responsible for about *half* of the increase in global oil demand that year (compared with 20 percent for the United States). China has been a key source of marginal demand for several other items exported by Latin American economies. In 2007, China's shares in the growth of global demand for copper (the main commodity export of Chile), iron ore (a key export of Brazil), and coal (exported by Colombia) are estimated to have been 68, 70, and 82 percent, respectively. The importance of China for Latin America is further highlighted by the fact that more than 50 percent of Latin America's exports of soybeans and 25 percent of iron exports went to China in 2006.

Other supply factors have also pressured food prices. Weather-related supply disruptions, low inventory levels, and legislation giving incentives for biofuel production in the United States have also created upward pressure on agricultural commodity prices, especially those of grains and edible oils. Efforts in the United States to develop biofuels as an alternative energy source have significantly increased demand and pushed up the price of corn, the main crop used for the production of ethanol and biodiesel in the United States. Substitution of land under cultivation from soybeans to

Note: This box was prepared by Priyadarshani Joshi and Herman Kamil.

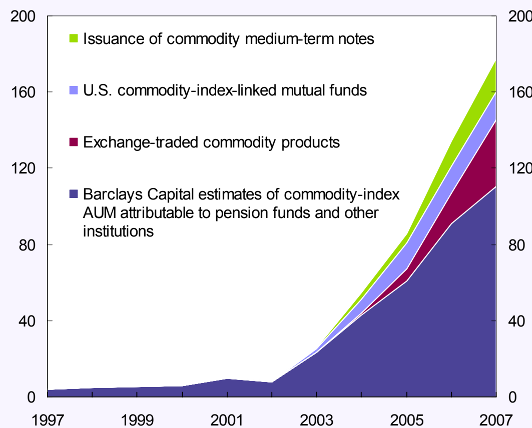
corn in the United States has led to increases for other soft grain prices in 2007, especially wheat and soy products mainly produced by Argentina and Brazil, which are substitutes in some uses for corn. Inventory-to-use ratios (corn and wheat) are at historically low levels, further pushing up prices.

Higher oil prices have also cascaded into higher prices in food commodity markets. The rising price of energy is in itself a reason why agricultural production has become more expensive. Higher fuel costs have in turn encouraged the interest in biofuels, driving up the price of corn and feed for livestock. This has then led to further price increases in meat and dairy products.

Apart from real demand and supply fundamentals, financial factors could also be affecting commodity prices. The combination of U.S. currency depreciation and falling short-term real interest rates has pushed up commodity prices through a number of channels. Among others, as most commodities are priced in U.S. dollars, the weakening of the U.S. currency has pushed up prices in dollar terms, as exporters seek to preserve the real value of their export income.[1] Moreover, lower interest rates reduce inventory costs, leading to higher demand for storable commodities.

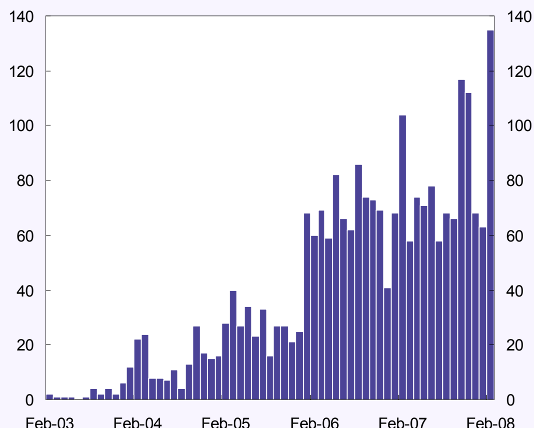
Several traded commodities have increasingly been behaving as financial assets. Soaring commodity prices have led to increased interest from investors seeking alternatives to stocks and bonds in an environment of low returns on traditional assets. As a result, levels of actively traded commodity contracts and funds held by investors reached all-time highs (U.S. Commodity Futures Trading Commission, 2008). In turn, these increasing investments in commodities have contributed to speculative demand pressures and short-term volatility in commodity markets, especially in the first three months of 2008. Other commodities, such as gold, have been buoyed by the perception that they are a safe haven from turmoil in other asset classes and a good hedge against inflation.

Commodity Investments Assets Under Management (AUM)
(In billions of U.S. dollars)



Source: Barclays Capital.

Total Number of Newly Launched Commodity-Linked Medium-Term Notes and Exchange-Traded Products

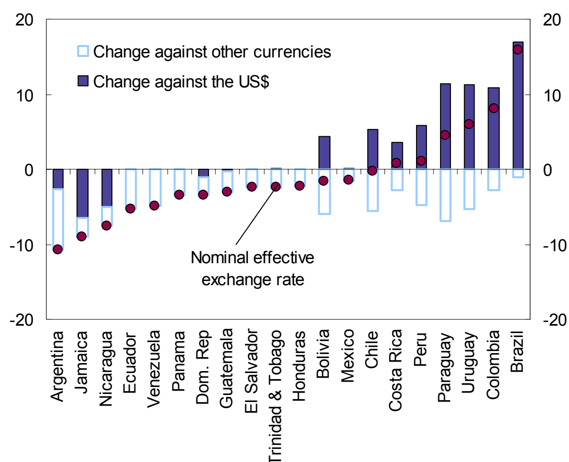


Source: Barclays Capital.

[1] For example, IMF staff estimates suggest that a 1 percent dollar depreciation increases dollar-denominated oil prices by 1 percent, depending on the underlying model (see April 2008 *World Economic Outlook*).

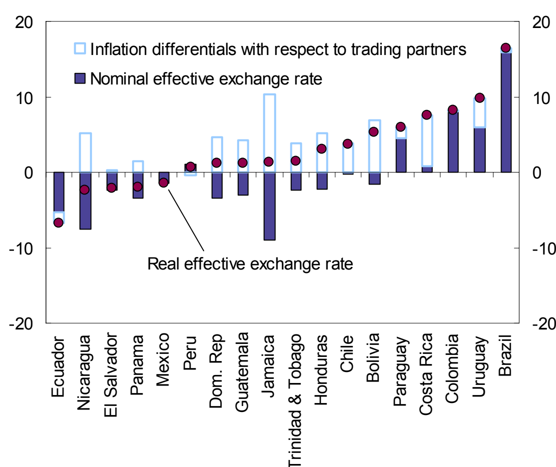
commodity boom. Meanwhile, inflation differentials with trading partners have remained positive for many countries in the region. Combined with strong terms of trade gains, real exchange rates have tended to appreciate in several countries across the region—including Brazil and Colombia—during 2007 and so far in 2008. IMF staff analysis suggests that the level of real exchange rates in most countries in the region remains broadly consistent with developments in the terms of trade, relative productivity growth, and net foreign asset positions.

Movements in Nominal Effective Exchange Rate
(In percent) 1/



Sources: IMF, *Information Notice System*; and IMF staff estimates.
1/ 12-month percentage changes through end-December 2007. An increase in the exchange rate denotes an appreciation.

Nominal and Real Effective Exchange Rates, and Inflation Differentials 1/
(In percent)



Sources: IMF, *Information Notice System*; and IMF staff estimates.
1/ 12-month percentage changes through end-December 2007. An increase in the exchange rate denotes an appreciation.

3. LAC Outlook and Risks

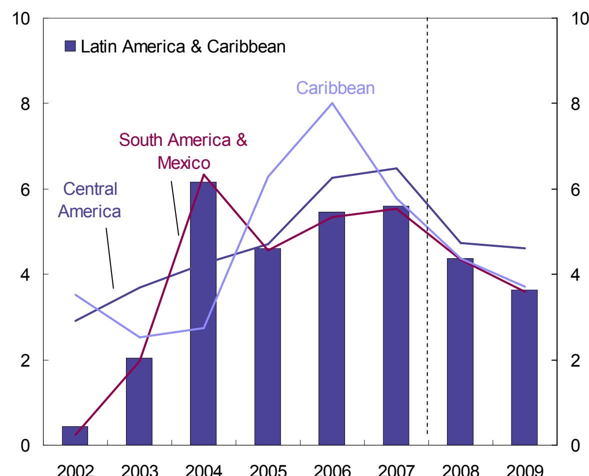
Growth Expected to Moderate

Growth in the region is expected to moderate from 5.6 percent in 2007 to 4.4 percent in 2008 and 3.6 percent in 2009, reflecting the weaker global outlook and tighter financial conditions.

Consumption and Investment Have Driven Growth

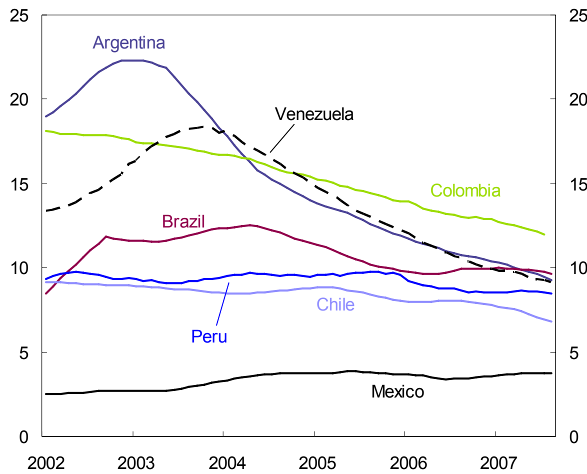
Growth in 2007 remained at a historically high level in the LAC region, reaching 5.6 percent. The expansion during 2003–07 was driven particularly by private consumption growth, powering the region's best four-year performance since the 1970s. Buoyant consumption reflected sustained gains in real household incomes with falling unemployment and rising real wages (partly reflecting terms of trade and productivity gains). Rapid credit growth—as real interest rates have fallen and access to credit increased—has also supported private consumption demand. Rising household incomes have also contributed to the important reduction in poverty rates seen in this period across the region.

Real GDP Growth
(Annual percent change)



Source: WEO.

Unemployment
(In percent) 1/



Source: Emerging Markets Economic Data (EMED).
1/ 12-month or 4-quarter rolling averages.

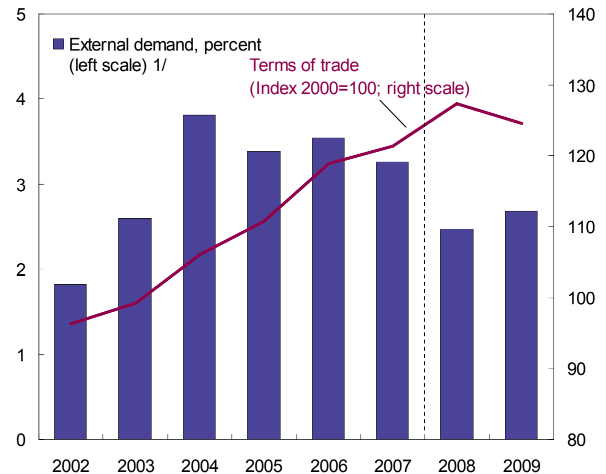
Soaring international prices for commodities and high corporate profits have also boosted domestic investment and attracted FDI into rural and resource-intensive sectors (the latter represented almost a half of total net private capital inflows into the LAC-6 countries in 2007). Moreover, the general trend toward lower real interest rates and strengthened confidence has supported strong investment growth in most countries.

Growth Slowing

In the baseline scenario, economic growth in the region is expected to decelerate to 4.4 percent in 2008 and 3.6 percent in 2009, in line with the projected weaker global demand conditions, particularly in the United States. However, strong growth momentum in the region carrying over from 2007 means that the effects of the U.S. slowdown are likely to be felt only later this year.

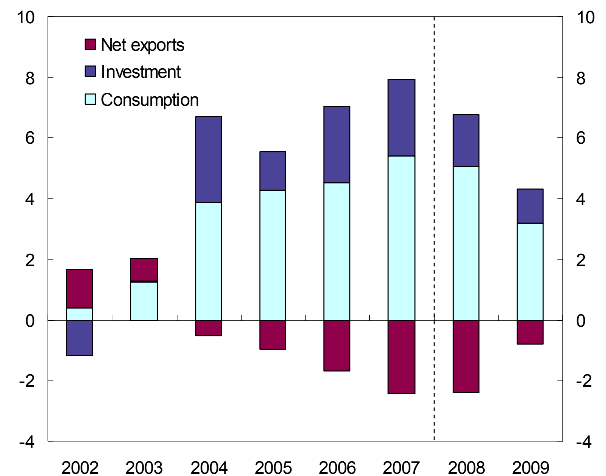
Tighter international financial conditions, combined with the lagged effects of monetary tightening in the region, are expected over time to have an impact on credit conditions in LAC countries. Commodity price growth is expected to slow gradually as global economic conditions weaken, which is likely to restrain consumption growth. Greater uncertainty about the outlook, combined with a somewhat higher cost of capital, will likely dampen previously buoyant investment. Imports, while slowing with weaker demand, are expected to outpace exports, so net export growth is expected to stay negative.

External Demand Growth and Terms of Trade



Sources: WEO; and IMF, *Direction of Trade Statistics*.
1/ Growth in real GDP, weighted by trade shares with respect to LA6.

Contributions to Growth
(In percent; per year)



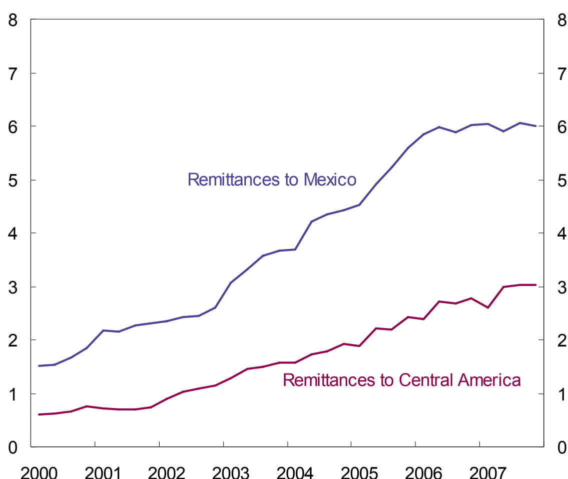
Source: IMF staff estimates.

Remittances are also likely to slow, which would weaken regional growth prospects. Indeed, many countries in the region receive large remittances from the United States, whose economic downturn is already beginning to slow these flows. Anecdotal evidence suggests that many migrants are employed in the contracting U.S. construction sector. This creates risks particularly for Central

American countries, for which remittance flows amounted to almost 10 percent of GDP in 2007.

The Caribbean region is also exposed to a U.S. slowdown through the likely impact on tourism. However, the current relative strength of the euro versus the dollar could support some substitution toward tourist arrivals from Europe (Box 1.4 discusses the Caribbean outlook in greater depth).

Remittances
(In billions of U.S. dollars)



Sources: Haver Analytics; national authorities; IMF, *International Financial Statistics;* and IMF staff calculations.

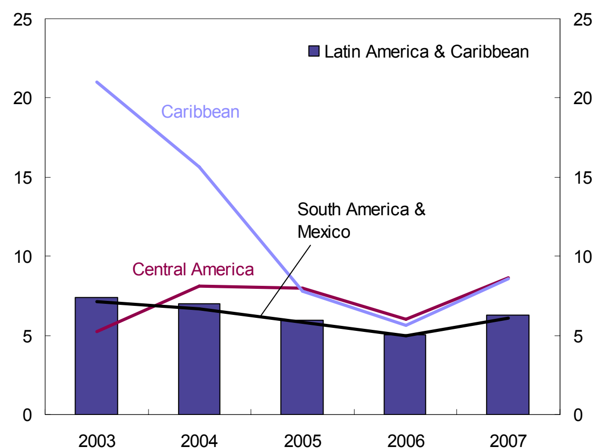
Inflation a Concern

Inflation in the region rose to 6 percent in 2007 and is projected to remain broadly unchanged at this level in 2008, reflecting still relatively strong demand and continued high prices for food and fuels. Chapter 3 discusses sources of inflation pressure in the region.

Factors Explaining Higher Inflation

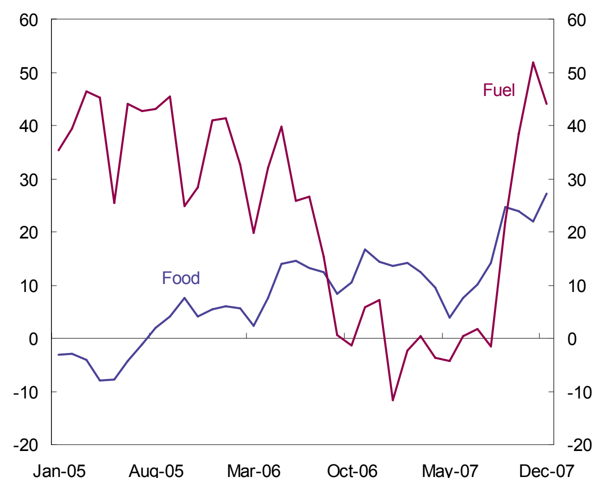
During 2007, inflation rates rose across the LAC region while reaching double digits in Bolivia, Costa Rica, and Nicaragua (inflation remained at over 22 percent in Venezuela). In Colombia, Chile, and Peru (and, to a lesser extent, Mexico), inflation was above the central banks' targets. Brazilian inflation remained within the target range, but increased by almost 1½ percentage points relative to the level in 2006. In Argentina, while measured inflation has fallen, most private sector analysts believe that actual inflation is considerably higher than reflected in official data.

Inflation
(In percent; annual end-of-period)



Source: WEO.

World Food and Fuel Indices
(In 12-month percentage change)



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

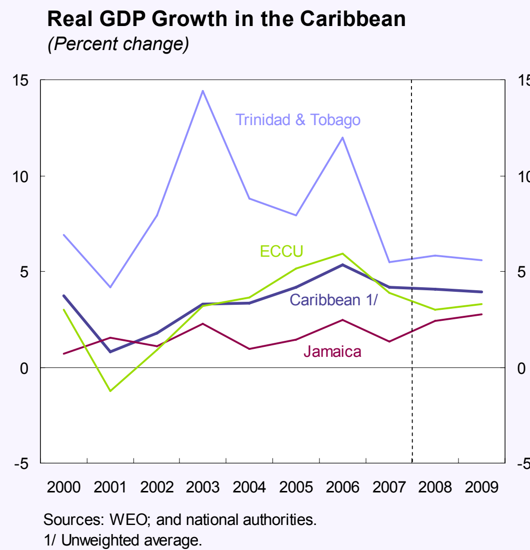
Strong domestic economic activity has added to demand pressures, while the emergence of positive output gaps in many countries, especially in 2007, points to relatively limited spare capacity. Rising international prices of food and fuels have also attracted considerable attention as determinants of inflation pressures. In contrast with past episodes of surges in commodity prices, the current increase in food prices seems to be driven in part by strong demand for commodities

Box 1.4. Macroeconomic Overview of the Caribbean Region

Caribbean macroeconomic performance was mixed in 2007. Regional economic growth remained robust, with the economy expanding by 4.2 percent. However, average inflation picked up and despite strong growth, limited progress was made toward further fiscal consolidation, leaving public sector debt ratios very high. Risks remain pronounced, with current account deficits (in percent of GDP) mostly in the double digits and the region remaining highly dependent on external financing.

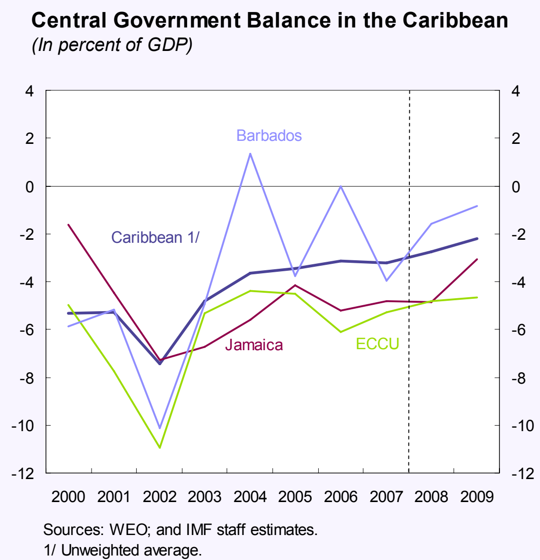
Following a sharp downturn in the wake of September 11, 2001, economic growth in the Caribbean region rebounded and has been particularly buoyant in recent years. Regional growth averaged 4¾ percent in 2006–07, the fastest pace in more than two decades, underpinned by a favorable external environment, private construction, preparations for the Cricket World Cup, and energy exports (in Trinidad and Tobago). Looking ahead, activity is expected to moderate, in tandem with the slowdown in the global economy, and the central forecast of 4 percent is subject to significant downside risks because turbulence in the global economy could dampen tourism demand and domestic activity.

Real GDP Growth in the Caribbean
(Percent change)



Sources: WEO; and national authorities.
1/ Unweighted average.

Central Government Balance in the Caribbean
(In percent of GDP)



Sources: WEO; and IMF staff estimates.
1/ Unweighted average.

Budget deficits have been reduced. After a period of fiscal consolidation, helped by reforms and strong economic activity, budget deficits have been hovering around 3–4 percent of GDP in recent years, with little improvement in 2007. The earlier successes at fiscal consolidation, together with debt restructurings in some countries (Belize, Dominica, and Grenada), lowered the regional public debt ratio by about 12 percent of GDP during 2002–07. Nevertheless, the average ratio remains above 80 percent of GDP, and at more than 100 percent of GDP for the Eastern Caribbean Currency Union (ECCU). The region continues to stress its commitment to reducing debt levels further over the medium term.

External Current Account
(In percent of GDP)

	Avg. 95-04	2005	2006	Est. 2007	Proj. 2008	Proj. 2009
The Caribbean 1/	-3.4	0.0	-0.8	-2.5	-2.6	-2.3
The Bahamas	-10.1	-14.3	-25.3	-21.9	-18.5	-13.8
Barbados	-4.0	-12.5	-8.1	-6.8	-7.5	-7.5
Belize	-11.5	-14.4	-2.2	-4.0	-4.0	-4.3
Dominican Republic	-0.9	-1.4	-3.5	-5.6	-4.6	-3.9
ECCU economies	-16.8	-22.2	-30.7	-36.4	-32.3	-28.4
Guyana	-12.0	-14.8	-19.4	-18.2	-16.6	-15.8
Haiti	-1.0	2.6	-0.4	0.2	-1.3	-2.5
Jamaica	-5.9	-11.2	-11.5	-14.5	-13.6	-11.9
Trinidad & Tobago	2.2	23.7	25.6	20.2	14.9	12.5

Sources: WEO; and national authorities.

1/ Dollar-weighted GDP.

However, external current account balances remained volatile in 2007. Deficits widened in many countries, including Jamaica and the ECCU countries, driven in part by imports related to hotel construction and rising energy costs. These deficits have been largely financed by FDI, but their magnitude underscores the risks faced by the region and its dependence on capital flows. Trinidad and Tobago, as the only major oil exporter in the region, has maintained large current account surpluses.

Note: This box was prepared by Nancy Wagner.

from emerging economies, notably in Asia. As discussed in Box 1.2, rising food prices raise special social challenges. Higher food prices typically have a bigger impact on the poor (although the rural poor could benefit from rising relative prices for their agricultural production).

Estimated Output Gaps, 2001-07

	Average		
	2001-04	2005-06	2007
Argentina	-3.7	1.5	2.7
Brazil	…	-0.5	0.2
Chile	1.7	0.5	0.4
Colombia	-4.0	0.5	2.4
Mexico	0.1	-0.3	0.2
Peru	-1.0	-0.8	1.1

Sources: WEO; and IMF staff estimates.

The analysis in Chapter 3 shows that, for most countries in the region, external food and fuel inflation typically account for about 30 percent of fluctuations in domestic headline inflation, though there is considerable cross-country variation. The results also suggest that excess demand pressures explain an important part of recent price pressures. Moreover, there is clear evidence of second-round effects of external and domestic shocks on underlying and expected inflation.

Continued high international fuel and food prices, as well as still-buoyant domestic demand conditions, are expected to contribute to keeping inflation in the LAC region at the relatively high level of 6 percent in 2008. Also, inflation expectations are trending upward in many countries, illustrated by survey data on inflation projections for end-2008 in a number of countries across the region.

Policy Responses

In response to these inflation pressures, many central banks have tightened monetary policy. For example, central banks in Chile, Colombia, the Dominican Republic, Guatemala, Jamaica, Peru, and Trinidad and Tobago have all raised policy interest rates in recent months, while Brazil ended the easing cycle that had started in September 2005.

Monetary Policy Stance in Selected Inflation-Targeting Countries

	Annual Inflation		Policy Rate		
	Observed		Level as of	Changes	
	Mar. 2008	Target	Mar. 2008	2006	2007
Brazil 1/	4.6	4.5 ± 2	11¼	(-) 4¾	(-) 2
Chile	8.5	3 ± 1	6¼	(+) ¾	(+) ¾
Colombia	5.9	4 ± 0.5	9¾	(+) 1¼	(+) 2¼
Mexico 1/	3.7	3	7½	(-) 1¼	(+) ½
Peru	5.5	2 ± 1	5¼	(+) 1¼	(+) ½

Source: Central banks' inflation reports.

1/ Inflation data refer to February 2008.

Some governments have also used administrative and tax policy instruments to try to contain food and fuel prices. In some cases, these measures could provide effective relief to the poor, though others risk introducing distortions and inefficiencies. Box 1.5 discusses policy options for addressing the social impact of high food prices, and the associated policy trade-offs.

Primary Fiscal Surpluses Shrinking

Primary and structural fiscal balances weakened in 2007, reflecting the impact of rapid spending growth. Fiscal balances are expected to weaken further in 2008 as revenues moderate in line with slowing economies, but spending continues to increase. Lower commodity prices are a key risk.

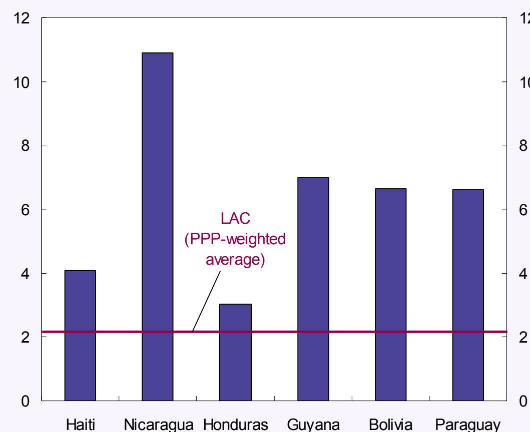
Strengthening fiscal policy by reducing public sector debt levels has been a key part of the economic strategy of authorities across the region. This has yielded important dividends, with substantial reductions in net debt levels and risk premia across most countries in the LAC region.

However, primary fiscal balances in the region are expected to fall to 2.4 percent in 2008—down from the historical peaks of about 3.5 percent of GDP in 2005–06—with gross public debt declining only slightly to 48 percent of GDP. The main factor behind the projected deterioration in the average primary balance for the region is continued rapid growth in real primary spending, based on the available budget plans.

Box 1.5. Policies Concerning the Social Impact of Food Inflation

Higher world food prices have adversely affected the poor across the region. While the surge in global food prices has encouraged exports in a number of countries in the region, low-income households (with the possible exception of some poor agricultural producers) have been affected adversely by rising food prices, because they typically devote a larger income share to food consumption.

Contribution of Food Inflation to Headline Inflation in Low-Income Countries, 2007
(In percentage points)1/



Sources: National authorities; and Haver Analytics.
1/ Contribution of food prices to headline inflation in six lowest-income countries in the LAC region (i.e., food inflation multiplied by CPI weight).

This gives rise to the question of how countries can respond to this difficult situation. Many countries have sought to preserve fiscal sustainability and to control inflation, which disproportionately hurts the poor. Policymakers in several countries have also adopted selective measures to help vulnerable households cope with higher food prices. These steps have ranged from liberalizing food imports (Guyana, Mexico, and Uruguay) and changing VAT rates and exemptions (Venezuela, Uruguay), to seeking agreements with the private sector to limit price increases for staple food items and restricting exports (Argentina).

In the medium term, a positive output response will be key to helping moderate price increases. Governments can be supportive by addressing bottlenecks and institutional weaknesses, including through investments in rural infrastructure, agricultural extension programs, and measures to facilitate access to financing (e.g., through strengthening property rights and registration, improving debtor information, and reducing transaction costs). Resort to policies that may put a positive supply response at risk, such as export taxes or administrative price controls, should be avoided.

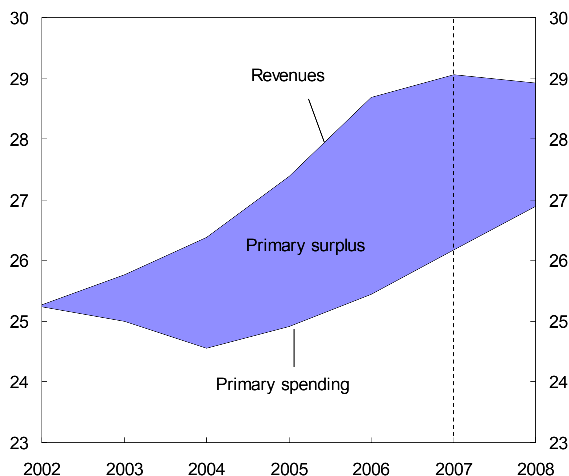
In the near term, targeted cash or in-kind transfers to compensate real-income losses from higher food prices stand out as the most efficient short-term response to protect the most vulnerable population. Where transfer schemes are nonexistent, resources for school feeding programs can be supplemented, or user fees reduced for public services that cater mostly to affected poor households (e.g., public education and public health services). These measures are cost-effective, and donors may be most willing to fund them through additional aid in the case of low-income countries.

Adjustments to tax rates and tariffs are less efficient because they are hard to direct to just the poor, and entail fiscal risks that call for caution. They may also complicate revenue administration and are less likely to attract additional donor funding. However, in the absence of targeted instruments, some selective measures might be considered. If still in place, nontariff restrictions to imports could be lifted, and import tariffs on basic foodstuffs could be reduced, especially if part of a broader trade reform that enhances overall economic efficiency. There can also be a case for exempting basic food items from indirect taxes. Still, if used, selective measures should be periodically reassessed as more efficient and targeted social safety nets are developed, and any fiscal cost should be offset and fully disclosed.

Note: This box was prepared by Katja Funke and Andreas Bauer.

Downside risks to growth and commodity prices highlight the importance of the analysis of structural fiscal balances, as undertaken in the November 2007 *Regional Economic Outlook: Western Hemisphere.*[3] This analysis considers the impact on headline primary balances of a return to a neutral position in the economic cycle (i.e., growth in line with the long-term trend), and of a possible reduction of commodity prices to a lower medium-term level. The latter is especially important for commodity-exporting countries, where increases in commodity-related revenues have played an important role in the recent rise of government revenues.

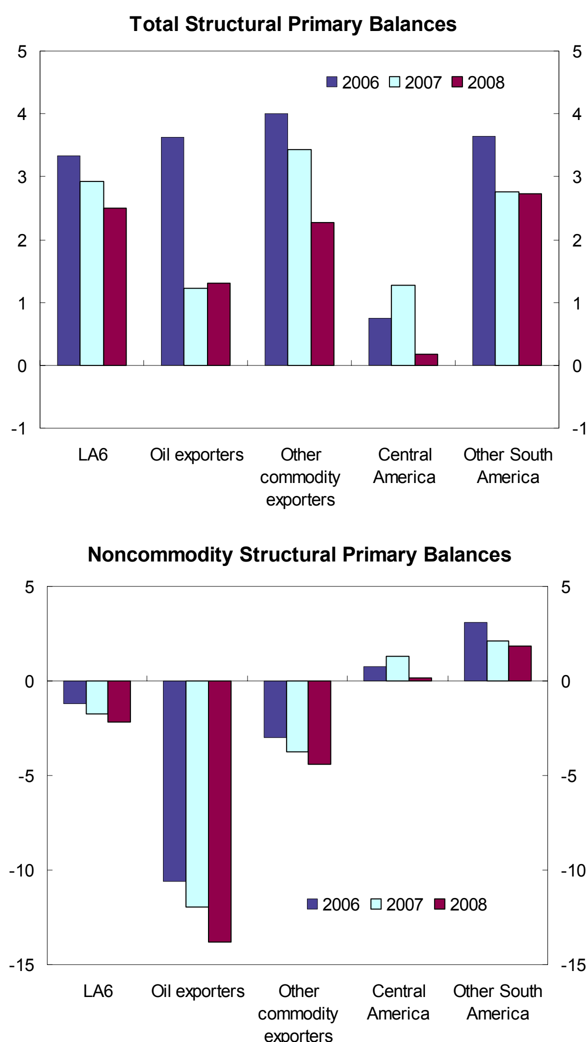
Total Revenues and Primary Spending
(In percent of GDP)1/



Source: IMF staff estimates.
1/ Unweighted averages for 17 countries.

An extension of this analysis to revised fiscal outturns for 2007 and budget plans for 2008 presents a mixed picture for estimates of the underlying structural primary balances for many of the economies in the region, particularly oil and other commodity exporters. Estimated structural primary balances across most countries in the region, while still in surplus, weakened during 2006–07. Analysis based on available budget plans indicates that further declines in structural balances could be expected in 2008, especially reflecting the projected continued growth in primary spending. The large noncommodity structural primary deficits for commodity exporters highlight their vulnerability if commodity prices were to fall sharply.

Structural Primary Balances
(In percent of GDP) 1/



Sources: IMF staff calculations based on data from national authorities; UNCOMTRADE database; and WEO.
1/ Conventional structural balance estimates are presented here (as computed in Chapter 4 of the November 2007 *Regional Economic Outlook: Western Hemisphere*). LA6 include Argentina, Brazil, Chile, Colombia, Mexico, and Peru. "Oil exporters" includes Ecuador, Mexico, Trinidad & Tobago, and Venezuela. "Other commodity exporters" includes Bolivia, Chile, Colombia, and Peru. Central America includes Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama. "Other South America" includes Argentina, Brazil, Paraguay, and Uruguay.

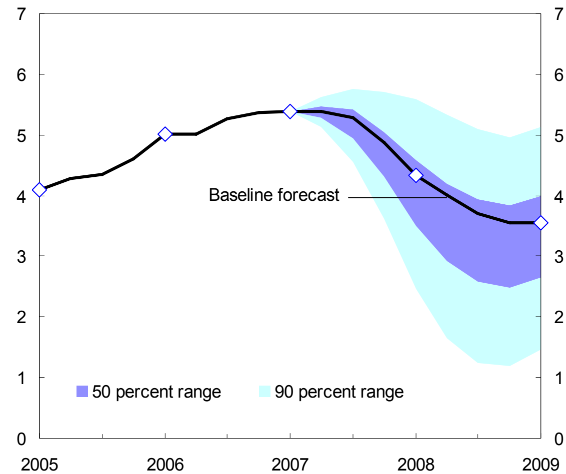
[3] The analysis discussed in this section is based on a sample of the 17 largest LAC economies. See Vladkova-Hollar and Zettelmeyer (2008), and the November 2007 *Regional Economic Outlook: Western Hemisphere* for details. The structural primary balances discussed here are "conventional" estimates as described in Chapter 4 of the previously cited REO.

Balance of Risks Tilted Down

To assess the likely effects of a global slowdown and tightening financial conditions on the LAC region, we use a regional economic model for the LAC-6, which include the major economies in the region.[4] The model captures the effects of trade and financial linkages with the United States and the rest of the world, as well as the effect of global demand on world commodity prices. It is used to assess the potential impact of alternative scenarios on the Latin American growth outlook. In the forecasting exercise, future paths of some variables are taken as given and the model generates "conditional forecasts" of the remaining variables. These scenarios are discussed subsequently in more detail and are combined to assess the balance of risks represented in the fan chart for LAC growth prospects.[5]

As noted in the April 2008 *World Economic Outlook*, the balance of risks for the global economy is weighted to the downside. Consistent with this, three key risks for the LAC outlook are considered: (1) tighter global credit market conditions, (2) lower commodity prices, and (3) weaker external demand. The fan chart analysis suggests a 20 percent probability of growth slowing to 3 percent in 2008 and 2009, the average growth rate for the region over the previous 10 years. The analysis also shows that growth could slow markedly, especially in the first half of 2009, if commodity prices and global growth weaken more than currently envisaged. But the probability of a full-fledged recession in the LAC region, with annual average growth falling below 1 percent, remains extremely low.

LA6 Growth Forecast: Balance of Risks
(Annual average growth rates; in percent)



Source: IMF Western Hemisphere Department Regional Economic model.

While the risks to growth are tilted to the downside, the analysis indicates that there remains about a 15 percent probability that growth could be about 1 percent stronger than projected in the baseline, or 4½ percent on average during 2009. This reflects the possibility that ongoing policy stimulus in the United States could have a stronger-than-expected effect, driving higher global demand than assumed in the baseline. Inflation risks could reemerge in such an upside scenario, underscoring the challenge for policy management in the current context.

Most strikingly, the scenario analysis in the model reveals the dependence of LAC growth on continued high levels of commodity prices. Indeed, a general rule of thumb derived from this analysis is that a 10 percent reduction in world commodity prices relative to the baseline, on average during 2008, would reduce LAC growth by about ½ percentage point relative to the baseline in 2008.

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[4] The LAC-6 together accounted for 83 percent of the LAC region's GDP in 2007.

[5] See Österholm and Zettelmeyer (2007), and the April 2007 *Regional Economic Outlook: Western Hemisphere* for methodological details. Since April 2007, the LAC growth outlook has been presented explicitly in the form of a probabilistic "fan chart." The objective of the fan chart is to convey a clear view of the IMF staff's assessment of economic prospects and judgment with regard to the balance of risks. The fan chart results from combining the forecasts of the baseline scenario and the three alternative scenarios discussed in the text.

Risk Scenarios

Given the uncertainties facing the LAC region as discussed above, we model three alternative scenarios to inform our view on the outlook and balance of risks.

Moderate downside. On balance, the most likely alternative scenario for the region involves a moderate worsening of commodity prices and external financial conditions relative to the baseline. Here, commodity price growth is assumed to grow by about 10 percent on average in 2008, the same average growth as in 2007.[6]

As lower commodity prices are associated with lower fiscal revenues and weaker financial conditions, the model predicts that LAC-EMBI spreads would rise to about 500–600 basis points during 2008–09, compared with about 250 basis points in the baseline, contributing to slower regional growth.[7]

Combining these factors, the model-based forecasts suggest Latin American GDP growth in 2008 would be 3¼ percent, about 1 percentage point below the baseline, but still somewhat above its average over the past 10 years.

Severe downside. This scenario analyzes the effects of a sharper external demand slowdown than envisaged in the baseline, consistent with a global recession (defined in terms of world growth below 3 percent). Commodity prices are assumed to fall back to 2006 average levels—implying a drop of over 35 percent year-on-year by end-2008—broadly consistent with the experience of past global downturns.

While this severe downside is less likely, it highlights the risk that weaker global demand could trigger a sharp adjustment in commodity prices, which are an important support for LAC growth. Under this scenario, the model predicts that LAC growth would drop to about 2¼ percent in 2008, about 2 percentage points below the baseline, and to 0.6 percent on average during 2009, before turning around by the end of the year.

Upside. Given the possibility that U.S. policy stimulus will deliver stronger-than-expected external demand, an upside scenario of stronger growth for the LAC region is also examined. With stronger external demand, commodity prices grow about 8 percent faster in 2009 relative to the baseline. The combination of strong external demand and higher commodity prices leads to forecast growth in the LAC region of almost 5 percent in 2008, about ½ percentage point above the baseline. Given the existing overheating pressures and strong growth momentum, the more gradual moderation in domestic demand implied in this scenario would increase inflation risks relative to the baseline.

4. Options for Managing the Global Shock

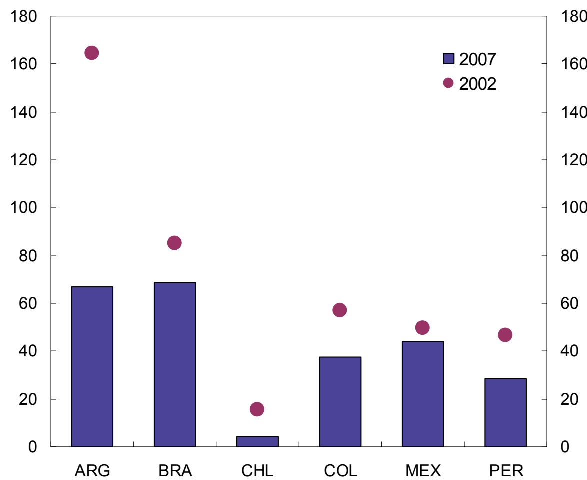
The current challenging global environment is the first major test for the region's strengthened policy frameworks. The region is better placed than in the past to absorb the slowdown foreseen in global growth. However, striking the right policy balance between mitigating downside growth risks and containing ongoing inflation pressures will be the challenge.

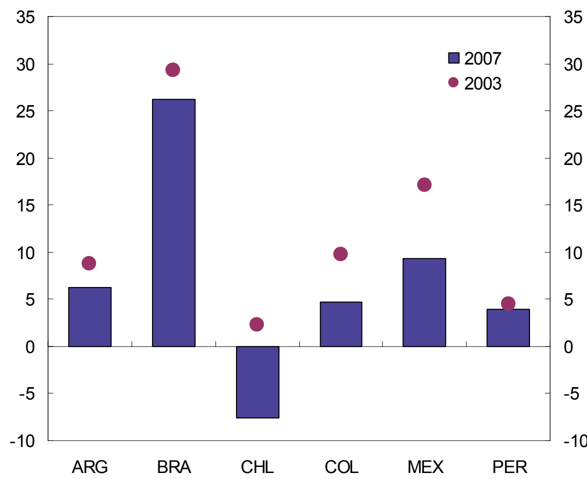
Reduced Vulnerabilities

The region has entered the period of global financial turbulence from a position of reduced vulnerabilities. Several countries have received investment-grade ratings on their external sovereign debt, including most recently Peru, which was upgraded by Fitch. This provides some room for a policy response to limit the impact of an external shock in the event that the outlook weakens further. Several key features stand out:

[6] This implies a slowdown during 2008 given that commodity price growth was about 30 percent year-on-year during the first quarter of 2008.

[7] EMBI spreads are used in the model as a proxy for overall financial conditions facing the LAC region. Although, in the recent episode, external corporate spreads have risen more than for EMBI, the assumption holds reasonably well for the longer time horizon over which the model is estimated.





- The move to greater exchange rate flexibility in many economies is a marked change from the past, and provides a key shock absorber.
- Public debt ratios have been reduced substantially, as have gross public sector financing needs.
- International reserves have increased to comfortable levels in many countries in the region, averaging 180 percent of short-term debt by residual maturity at end-2007 (as documented in the November 2007 *Regional Economic Outlook: Western Hemisphere*).
- Available indicators of financial soundness—albeit backward-looking—show that the region's banks are in a generally strong position. Data through September 2007 showed high levels of profitability and liquidity, while capitalization levels remained solid.

Policy Options

Despite these major improvements, policymakers still face important constraints and risks. Public debt ratios, while much improved, need to be reduced further over the medium term for most countries. In several cases, underlying fiscal balances have been weakening since 2006 with rapid expenditure growth. At the same time, upside risks to inflation from strong domestic demand momentum and higher international commodity prices are testing the credibility of monetary policy.

Monetary and Exchange Rate Policy

Monetary policy in many countries has been geared toward containing inflation in the recent context of historically rapid growth and high commodity prices. Higher inflation, reflecting continued food and energy price pressures and strong demand in some countries, appears to have had some initial impact on inflation expectations. The moderation of domestic demand projected in the baseline scenario should reduce overheating and may ease the task of monetary policymakers.

If the external environment deteriorates more sharply than envisaged in the baseline, flexible exchange rates will serve as the first shock absorber. Some depreciation of exchange rates would help offset the impact of weaker external demand and lower global commodity prices.

Fiscal Policy

The appropriate response of fiscal policy in the LAC region to a global slowdown is more constrained. While public debt and gross public financing requirements have come down in key regional economies, fiscal positions could erode in many countries as growth slows, with large downside risks arising from the possibility of substantially weaker commodity prices.

To assess the trade-offs and constraints on possible fiscal policy responses to a fall in external demand, the IMF staff used illustrative simulations from the Global Integrated Monetary and Fiscal (GIMF) model for a LAC country with a sustainable fiscal profile and a credible anti-inflationary monetary policy (Box 1.6).

The results suggest that there could be some room to maintain public spending even if revenues weaken with slower growth. This contrasts with past episodes, when fiscal strains have often pushed governments to undertake procyclical spending cuts. Now, primary balances could be allowed to weaken somewhat in response to less buoyant revenue growth, without seeking an offsetting reduction in spending.

However, the analysis cautions against a discretionary countercyclical increase in public spending. This would only be effective in providing short-run stimulus if it is widely believed that fiscal policy responds symmetrically—that is, tightening in upturns as well as loosening during downturns. As described earlier, however, public expenditures in most countries, rather than being restrained in the past two years of strong economic expansion, have grown rapidly, adding to demand pressures. In light of these trends, any further discretionary spending increase would likely be perceived as permanent and would undermine the credibility of fiscal policy. In such a situation, risk premia could increase, adversely affecting medium-term growth.

Financial Sector Policy

Financial systems in the LAC region have been relatively less affected by the global stresses. However, risks could arise, including from potentially disruptive movements in the yield curve across countries. Credit quality may also weaken, given the rapid lending growth in recent years. The significant presence of global banks in the region could also present some challenges if conditions in their home markets pressure these banks to consolidate their global operations.

Supervisory authorities are monitoring these developments carefully while maintaining a close dialogue with regulators in other countries, given the international nature of the current financial shocks. It will also be important to ensure that disclosure and reporting frameworks function as effectively as possible.

Social Policy

The key near-term social policy challenge is containing inflation to mitigate the impact on the most vulnerable. Rising inflation tends to disproportionately affect the poor, and this impact is potentially more adverse in the case of food inflation, given that food tends to account for a larger share of consumption baskets of the poor.

Administrative measures to reduce the pass-through of commodity prices, including for food, create fiscal and quasi-fiscal costs and distort economic incentives and efficiency. Therefore, well-targeted cash transfers would be a more effective policy instrument to protect the most vulnerable from rising inflation. Consideration could also be given to lowering import tariffs and other barriers for food imports, as well as potentially adjusting the structure of indirect taxes on food items consumed by the poor. However, such measures need to be carefully designed to ensure they can be absorbed by the budget and are well targeted.

Box 1.6. The Scope for a Countercyclical Fiscal Policy in Latin America

Can countercyclical fiscal policy help an economy adjust to an adverse external shock? This issue arises with the prospect of slower global economic growth resulting from a U.S. slowdown. There is no consensus in the literature regarding the effectiveness of fiscal policy as a countercyclical tool. A number of recent studies suggest that fiscal stimulus can, if implemented in a timely, temporary, and targeted manner, help a country such as the United States to stabilize output under stress. However, there is the question of whether these findings would apply to countries, like those in Latin America, with histories, instead, of fiscal difficulties that make it difficult to establish a credible fiscal policy. In such countries, fiscal expansions could drive up domestic interest rates and choke off growth.

This box uses the IMF's Global Integrated Monetary and Fiscal model (GIMF) to analyze this issue.[1] For this analysis, the model is calibrated to contain two regions: (1) a small open economy with a credible policy framework, public debt of 35–40 percent of GDP, inflation of about 5 percent a year, and a moderate degree of openness to foreign trade; and (2) the rest of the world. In line with a number of empirical studies, the model features endogenous risk premia that rise nonlinearly with the level of the current account deficit and with the government debt–to-GDP ratio.

Assumptions for baseline scenario:

- ***Growth***. Real GDP in the rest of the world contracts (relative to its trend path) by 1 percent in the first year, followed by a gradual recovery. The source of the contraction is assumed to be an exogenous decline in consumption and investment.
- ***Monetary policy***. Interest rates in the rest of the world are assumed to decline as monetary policy responds to the fall in demand. In the small open economy, monetary policy is assumed to be conducted in a credible inflation-targeting framework, where the central bank adjusts the nominal interest rate as needed to keep expected inflation in line with its target.
- ***Fiscal policy***. The baseline scenario also builds an automatic fiscal stabilizer (the automatic changes in the fiscal balance caused by changes in growth). It is assumed that the elasticity of the fiscal balance with respect to the output gap due to automatic stabilizers is 0.28—the level of revenues as a share of GDP in the small open economy.

Baseline outlook. Under these assumptions, domestic GDP would contract by 0.2 percent (relative to its trend path) in the first year after the external shock, followed by a recovery. This short-run spillover effect is primarily due to the trade channel, and its size therefore depends on the openness of the economy (in the case of this representative economy, the export-to-GDP ratio is assumed to be 0.2). Inflation falls relative to the baseline, which allows the central bank to lower its policy interest rate and helps dampen the effects of the external shock. The real exchange rate would appreciate, as interest rates fall more in the rest of the world, while the external current account deficit would widen. The fiscal balance would be allowed to expand as expenditures were maintained while revenues declined with slower growth.

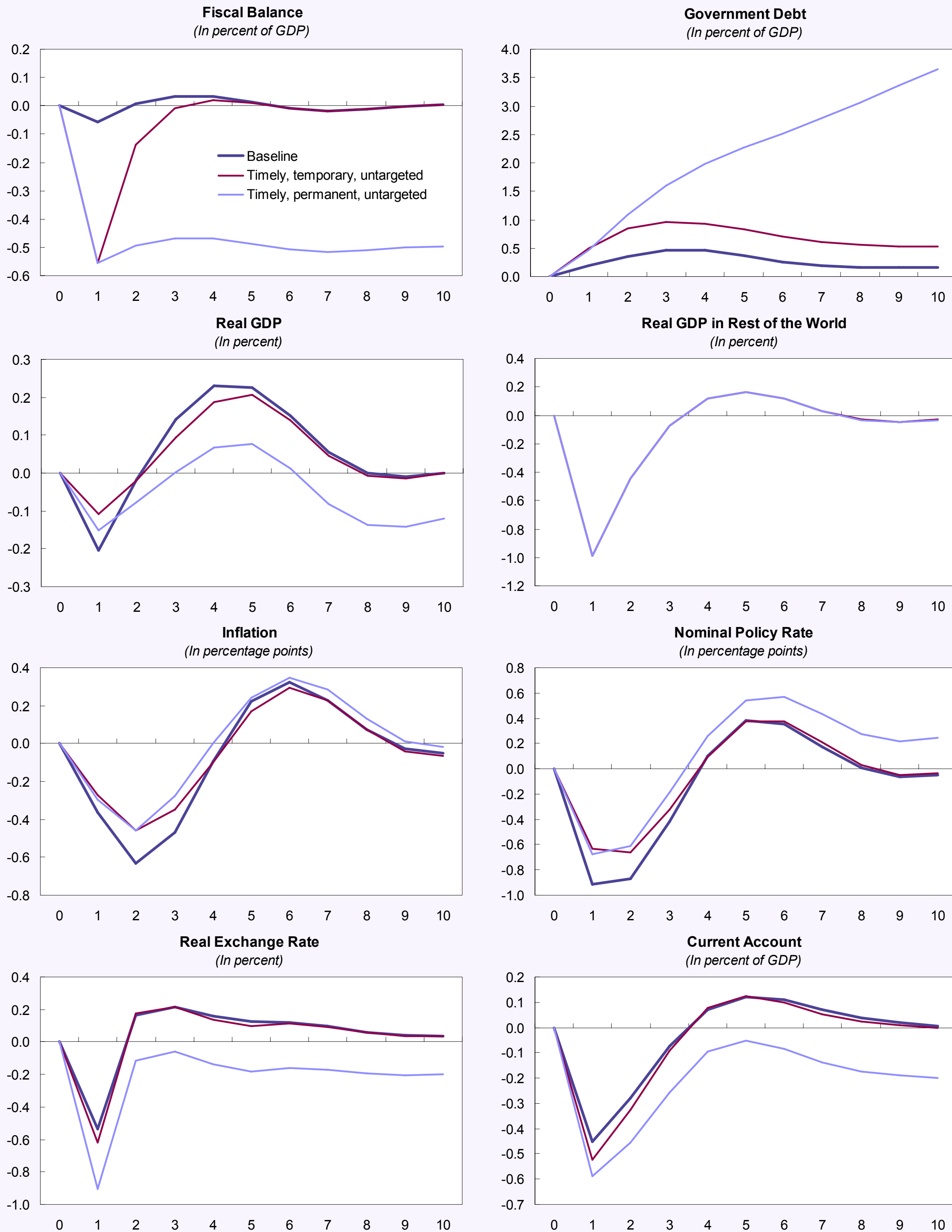
Two scenarios are compared to look at the scope for a discretionary countercyclical fiscal policy in the context of concerns about credibility. The first involves a temporary rise in spending and the other a permanent rise in spending. We use this distinction, because—in countries with weak fiscal credibility—a spending increase would be perceived as permanent, even if the government announced that a countercyclical package was temporary. The results of the two scenarios are as follows.

Note: This box was prepared by Daniel Leigh.

[1] GIMF is an open-economy New Keynesian overlapping generations model with nominal and real rigidities that permit it to make empirically plausible predictions regarding the dynamic effects of fiscal and monetary policy. For a description of the structure of the model, see Kumhof and Laxton (2007). For an application of the model to Colombia, see Leigh (2008).

Box 1.6 *(concluded)*

External Demand Shock and Fiscal Stimulus



Source: IMF staff calculations.

- ***Temporary countercyclical fiscal stimulus***. The additional stimulus loosens the ratio of fiscal balance to GDP by 0.5 percentage point through an increase in debt-financed transfers to all households. It is assumed that the private sector believes the stimulus will be withdrawn over the following two years. The immediate effect is to limit the fall in domestic output to 0.1 percent relative to the baseline—about half of the decline with the automatic stabilizer alone. With a smaller moderation in domestic demand, inflation and interest rates decline by less than in the baseline scenario, and the real exchange rate appreciates more. The smaller decline in interest rates implies that private investment is stimulated less in this scenario than in the baseline, in which there is less fiscal stimulus but more monetary policy easing. At the same time, part of the effect on private spending translates into greater demand for imports, and the current account balance deteriorates by more (right panels of figure). This type of stimulus could be more effective if the government could target it to liquidity-constrained households.

- ***A permanent countercyclical fiscal stimulus***. In this scenario, the additional discretionary stimulus provides 0.5 percentage point of GDP of debt-financed transfers to all households, but it is assumed that the fiscal loosening is permanent (left panels of figure). While the measure still helps to alleviate the slowdown in the short run, the permanent loosening is associated with medium-term increases in public debt and the current account deficit that in turn crowd out private activity through higher risk premia and interest rates and the prospect of increases in distortionary taxes in the future. This leads to negative output effects after five years, and the anticipation of this medium-term decline reduces the short-run output effect of the stimulus to just 0.05 percentage point relative to the baseline.

In summary, this analysis suggests there is scope for countercyclical fiscal policy through automatic revenue stabilizers, but it also underscores the importance of credibility. A government may announce a temporary stimulus package, but if its credibility is low, the private sector will regard the stimulus as permanent, leading to slower growth in the medium term. A discretionary countercyclical fiscal policy is less likely to be effective in countries with higher public debt and higher risk premia. In addition, the success of fiscal policy in enhancing macroeconomic stability depends on the type of shock, and here this simulation looked only at the effects of a fall in external demand that does not create a trade-off between stabilizing output and controlling inflation. An adverse supply shock would raise domestic inflation while slowing aggregate demand and, in such a case, discretionary fiscal stimulus could exacerbate inflation pressures.

II. Latin American Linkages to Global Financial Market Turbulence

Resilience So Far, but Global Context Weak

As described in Chapter 1, the region's financial markets have so far been much less affected by the global turmoil originating in the United States than in past periods of crisis. This partly reflects the much-reduced reliance on U.S. capital inflows. More importantly, the strengthening of monetary and fiscal policies and public debt management in recent years, together with the adoption of more flexible exchange rate regimes in much of the region, have also helped to build resilience.

Nonetheless, there is a risk that the weakened financial conditions in the United States could have a significant impact on equity prices and ultimately on the cost of capital more broadly in the Latin American and Caribbean (LAC) region, particularly if there is a protracted global credit crunch (Box 2.1). This chapter examines the region's linkages to global financial markets through the banking system as well as corporate financing more generally, and discusses potential vulnerabilities going forward. Box 2.2 focuses on recent developments in the Caribbean.[8]

Potential Pressure Points on the Region's Banks

Money markets in the LAC region have largely avoided disruptions since mid-2007. Interbank markets have been relatively stable, as three-month interbank rates have held steady in Brazil, Chile, Colombia, and Mexico, and have declined somewhat in Argentina. Yields on domestic short-term government securities have also been fairly stable in Brazil, Chile, and Mexico, while rising somewhat in Colombia, reflecting a tightening of monetary policy. The relative calm has been helped by the moderate rise in spreads on external sovereign bonds.

The region's banking systems have so far remained largely immune to the financial stresses in the United States. According to recent financial stability reports, the domestic banking systems in most of the largest economies in the region remained profitable and well capitalized, with relatively low levels of nonperforming loans (figure on p. 31). Stress tests conducted by central banks of the four larger economies suggest that the banking systems in those countries appear to be well buffered from market risks arising from volatility in yields on their investments (a large share being government securities). The region's banks have been insulated in part by their reliance on local deposit growth and issuance of subordinated debt and other domestic borrowings to fund the recent expansion of credit across the region. With the exception of offshore centers (Panama), most regional banking systems had less than 10 percent of total liabilities funded by nonresidents at end-September 2007, compared, for example, with nearly 50 percent in some central and eastern European countries.

Another strength has come from the limited role that structured financial products play in the region's financial activity and low direct exposure to subprime-related structured credit products.[9] Regional authorities and market participants note that this low exposure may reflect the relatively high returns to domestic banking operations in the region, which may have reduced incentives to search for yield in foreign-structured credit products.

[8] Given the focus on the possible effects of global financial conditions, this chapter does not examine the effects of a more generalized economic slowdown and credit tightening in advanced economies. Such a real slowdown would likely have an adverse impact on bank balance sheets beyond the direct market impact of spillovers from global financial conditions.

[9] There may be some indirect exposure to structured credit products through foreign investments of bank clients, but this is difficult to gauge.

Box 2.1. Financial Flows from the United States to Latin America

This box documents the financial exposure of U.S. investors to the Latin American region, and highlights the fact that tighter U.S. financial conditions can have significant spillovers to domestic financial conditions in Latin America. The share of Latin American assets in U.S. investors' portfolios has dropped since the Asian crisis, while the degree of home bias of U.S. investors has increased (measured by the ratio ω_{us} / ω_m in the first table).

Portfolio Characteristics of U.S. Investors' Holdings of Foreign Assets 1/

	2006			1997		
	ω_{us}	ω_m	ω_{us} / ω_m	ω_{us}	ω_m	ω_{us} / ω_m
Latin America	0.59	2.48	0.24	0.80	2.26	0.36
Argentina	0.03	0.15	0.17	0.17	0.31	0.56
Brazil	0.25	1.19	0.21	0.23	1.12	0.21
Chile	0.03	0.16	0.18	0.04	0.18	0.20
Colombia	0.01	0.09	0.15	0.02	0.06	0.34
Mexico	0.25	0.63	0.40	0.29	0.48	0.60
Peru	0.01	0.06	0.15	0.02	0.03	0.49
Venezuela	0.01	0.21	0.07	0.04	0.08	0.45
Emerging Asia	1.18	8.83	0.13	0.47	4.28	0.11
Industrial countries	8.81	46.94	0.19	5.78	45.67	0.13

Sources: Treasury International Capital System; World Federation of Exchanges; Bank for International Settlements; and IMF staff calculations.

1/ ω_{us}, ω_m refer to the weight (in percent) in U.S. investors' and world market portfolios.

U.S. Investors' Holdings of Foreign Securities, 2006
(In percent of market capitalization)

Country or Region	Equities	Domestic and International Long-Term Debt Securities
Latin America	15.1	4.2
Argentina	5.4	6.6
Brazil	15.3	2.3
Chile	3.1	16.2
Colombia	1.7	8.4
Mexico	24.6	5.9
Peru	1.8	16.0
Venezuela	7.9	2.2
Emerging Asia	7.0	1.0
Industrial countries	13.8	2.5

Sources: Treasury International Capital System; World Federation of Exchanges; Bank for International Settlements; and IMF staff calculations.

However, an international capital asset pricing model suggests that U.S. investors are less underweight in Latin American assets than in assets from other regions. While Latin America accounts for less than 1 percent of U.S. investors' total portfolios, the absolute size of these portfolios means that U.S. investors are systemically important in at least some Latin American securities markets. Indeed, U.S. investors have significant direct holdings in equity markets in Brazil and Mexico, and bond markets in Chile and Peru. Indirect exposure of U.S. investors through derivative instruments is also large in some markets, though harder to measure.

To analyze the causes and impact of financial flows from the United States, vector autoregressions (VARs) were estimated for Brazil, Chile, Colombia, and Mexico. Similar research typically seeks to explain the causes/effects of financial flows as a function of U.S. interest rates and industrial production, and macroeconomic and financial variables for the country concerned (short-term interest rates, industrial production, the dividend yield, and equity returns). The analysis here adds U.S. equity and bond flows and the VIX measure of risk aversion.[1] The results suggest that U.S. portfolio flows to Latin America are driven partly by U.S. financial conditions, or "push factors," as well as domestic fundamentals, or "pull factors." For most countries (except Chile), the VIX is the most important variable. Turning to the impact on domestic financial conditions in Latin America of U.S. financial conditions and flows, the VAR results suggest that shocks to flows do not have much of an effect. Rather, it is found that shocks to the VIX are important in explaining the equity-dividend yield and equity-return movements (except Chile), and that VIX increases are associated with significant drops in equity returns and persistent increases in the equity-dividend yield. The results suggest that U.S. financial conditions, especially measures of risk aversion like the VIX, could affect domestic financial conditions (i.e., equity returns and short-term interest rates) in Latin America. Moreover, the much smaller effect of U.S. financial conditions on Chile presented in this box suggests that a long track record of macroeconomic stability can help dampen the impact of changes in risk sentiment on domestic macroeconomic and financial conditions.

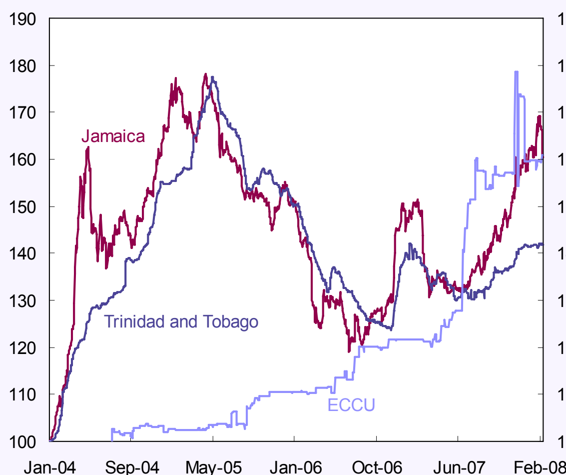
Note: This box was prepared by Ravi Balakrishnan and is based on Balakrishnan and Goncalves (forthcoming).

[1]A Choleski decomposition is used to identify the VAR and various robustness checks are performed (e.g., using different variables, for example the U.S. high-yield spread instead of the VIX; and excluding certain variables).

Box 2.2. Financial Linkages in the Caribbean

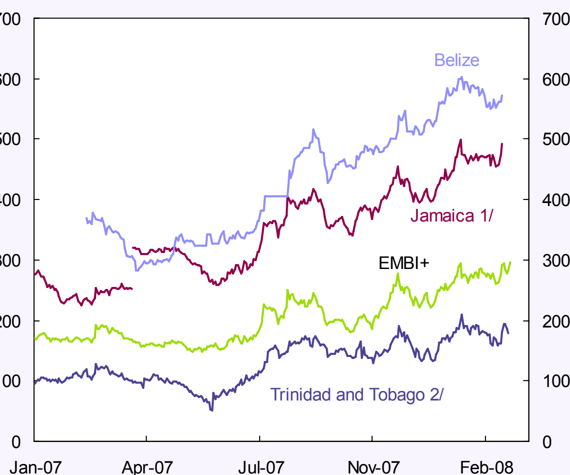
Caribbean stock exchanges and bond and interbank markets saw little impact from the recent financial turmoil, reflecting limited direct exposure to structured credit products and low levels of financial integration. Sovereign spreads, however, have risen for some internationally traded bonds (Belize and Jamaica, in particular), consistent with a general repricing of risk. In Jamaica, higher emerging-market debt spreads reduced the local currency yield premium on domestic debt (compared with Jamaica's Eurobonds), encouraging a portfolio shift by domestic institutions, resulting in reserve losses.

Caribbean Stock Market Indices
(January 2004 = 100)



Sources: Bloomberg; ECSE authorities; and JPMorgan.

Caribbean Spreads
(In basis points)1/



Sources: Bloomberg; ECSE authorities; and JPMorgan.
1/ A structural break in the Jamaica series in April 2007.
2/ Trinidad and Tobago sovereign bond spread.

Banks have relied on strong domestic deposit growth to finance private credit—rather than increase in net foreign liabilities—limiting their vulnerability to deteriorating global financial conditions. However, given that foreign banks account for almost 60 percent of assets in the Caribbean banking system, the risk of curtailed lending by stressed parent banks spilling over into domestic credit conditions needs to be monitored closely.

Contributions to Private Sector Credit Growth, 2005-07
(In percent) 1/

	Private Sector Credit Growth, Total	Of which: Contributions from			
		Private deposits	Net foreign liabilities	Net liabilities to public sector	Other
ECCU	14.9	12.4	-0.3	-1.2	3.9
Bahamas, The	13.8	9.0	0.2	-0.5	4.8
Barbados	14.2	21.1	1.6	-1.1	-7.3
Jamaica	22.9	21.6	-0.5	-6.5	8.3
Trinidad and Tobago	21.5	23.8	-4.7	-1.6	3.9

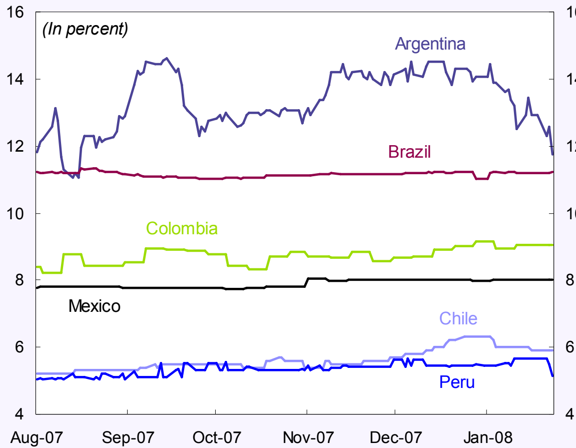
Source: IMF, *International Financial Statistics*.
1/ Computed as simple average over the period. Data for 2007 are for end-November, except for the ECCU (end-December).

Potential risks could also arise from large foreign asset positions of some banks in the region and from reduced FDI. Gross foreign assets are a significant component of banks' portfolios in the region, accounting, for example, for one-fifth of banking system assets in Jamaica, and one-third in the ECCU. Thus, should the current problems in selected products spread more widely to other asset classes, the balance sheets of Caribbean banks as well as other regional financial institutions could weaken. Finally, Caribbean countries are recipients of sizable FDI inflows, including into the dominant tourism sector. A disruption of these flows could harm economic activity and Caribbean banks' balance sheets.

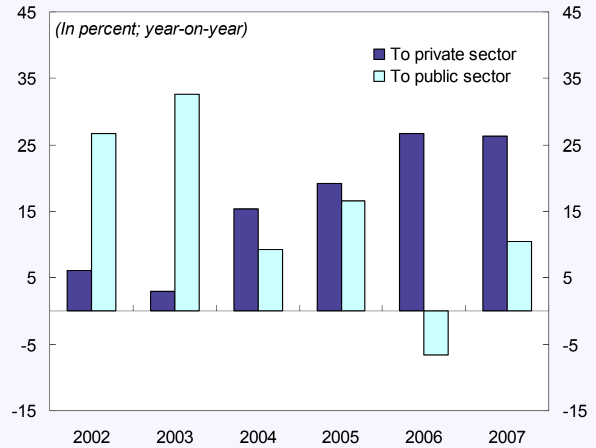
Note: This box was prepared by Christina Daseking and Padamja Khandelwal.

Recent Developments in Banking Systems of Selected Countries

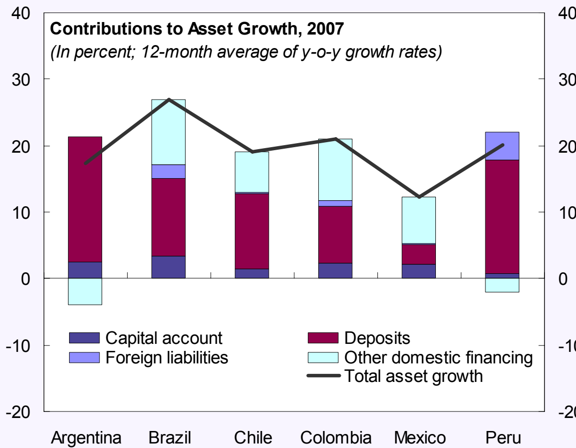
Interbank rates have remained stable.



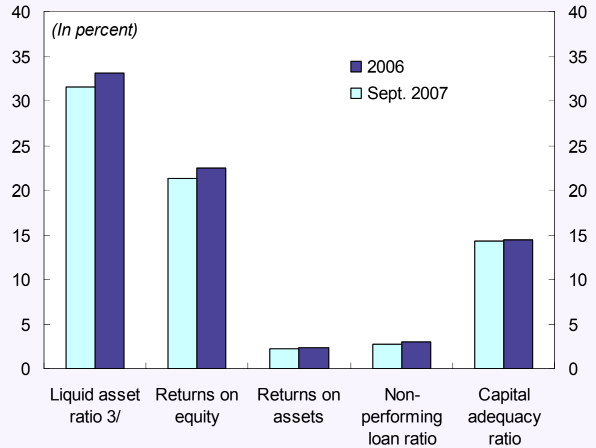
Credit to the private sector has been growing rapidly. . .1/



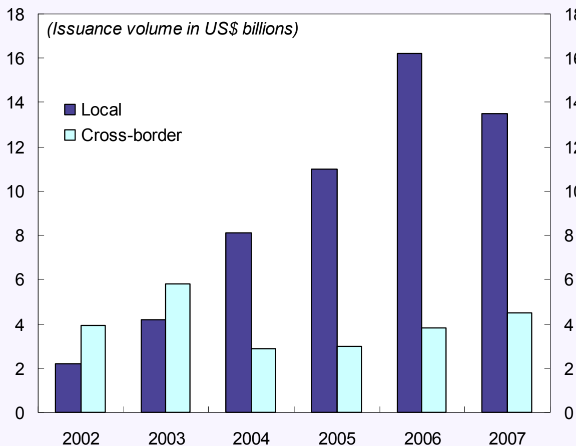
. . . funded largely from domestic sources.



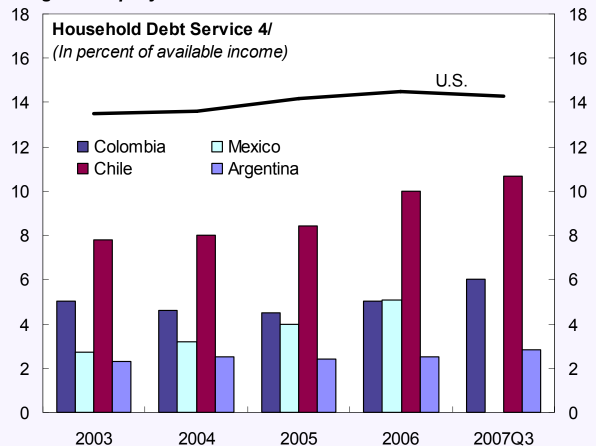
Banking system financial conditions have held up well.2/



The level of structured finance is still very small.



Household debt burden has risen, as consumer credit has grown rapidly.

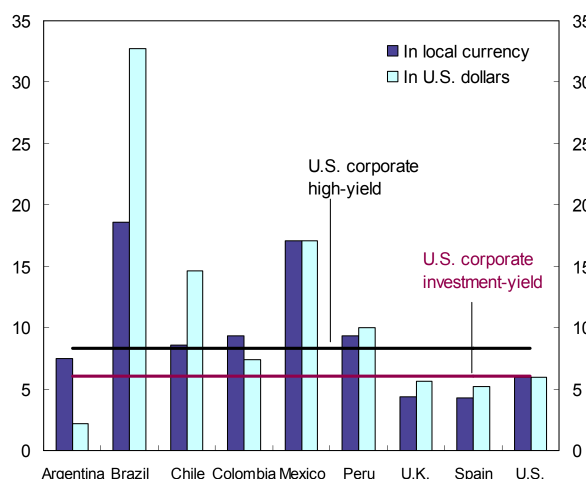


Sources: IMF, *International Finance Statistics;* Bloomberg; national authorities; Fitch Ratings; and IMF staff estimates.
1/ As of November or December for 2007 in the 20 largest LAC countries.
2/ Unweighted average of Argentina, Brazil, Chile, Colombia, Mexico, and Peru. June 2007 for Mexico.
3/ Liquid assets to short-term liabilities for Peru. Aggregate does not include Chile.
4/ Interest payments only for Colombia and Argentina.

In addition, regulatory frameworks in several countries strictly limit bank exposure to external assets, especially complex derivatives and structured finance products.[10] And the fact that domestic capital markets and securitization are still at an early stage of development in the LAC region has contained the risk of exposure to structured finance products in home markets.

Latin American Banks' Gross Interest Income, 2006

(In percent of average earning assets)

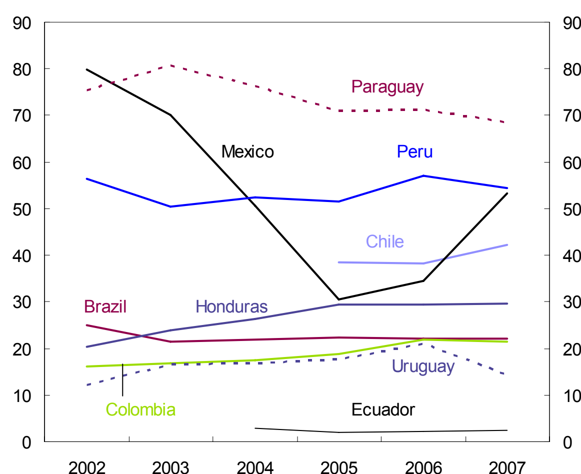


Sources: Bankscope database; Bloomberg; and IMF staff calculations.

Another channel through which global credit conditions could affect the region's banking systems is the behavior of global banks—which have significant operations in the LAC region. CDS-based default risk premia for the major international banks operating in the region have increased sharply—rising from below 20 basis points in the first half of 2007 to the range of 110–175 basis points by March 2008. To the extent that these banks were to come under capital and/or liquidity pressure in their home markets, they could seek to scale back lending and withdraw liquidity from their operations in the LAC region. However, as of late 2007, there were no clear signs that foreign-owned banks were cutting back their lending in the region. Credit extended by foreign-owned banks remained strong, for example, in countries with significant presence of international banks, such as Chile, Mexico, Peru, and Paraguay, where major international banks accounted for more than 40 percent of total banking system credit.

Credit by Foreign-Owned Banks

(In percent of total credit; end-year) 1/



Sources: National authorities; and IMF staff estimates.
1/ For 2007, rates are based on latest available data (November or December for most).

The latest provisional BIS data also indicate that international banks' claims on the region increased up to the third quarter of 2007. Compared with other emerging markets, a relatively large share of international banks' claims on the region is in the local claims of their local offices, which have been shown to be more stable than direct cross-border claims (Herrero and Pería, 2007). Moreover, these local subsidiaries have been largely funded locally, are highly profitable, and contribute substantially to overall group income in many cases. Nonetheless, while there is no sign yet of significant pressure from global banks, this channel should be closely monitored to help assess the risk to the region's banking system from ongoing credit tightening in the mature markets.

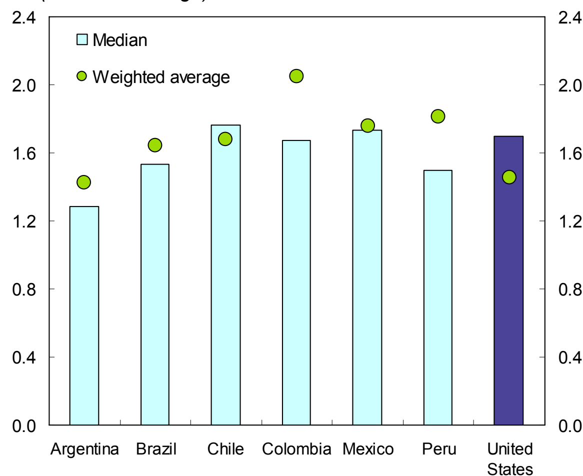
[10] Private pension funds in the region are subject to prudential limits on the share of their portfolio that can be invested in foreign assets and on the quality of these assets.

Tightening of Market Financing Conditions for Corporate Sector

As in other regions, most LAC corporations rely on retained earnings for the main source of their funding. A 2006 World Bank survey of firms around the world shows that internal sources account for over 60 percent of the funding for LAC corporate investments and working capital, followed by bank lending.

Available data on publicly listed firms in the six largest Latin American countries show that liquidity indicators (such as the ratio of current assets to current liabilities and the interest coverage ratio) have improved, rising to levels considered adequate for withstanding funding difficulties in the short run. For example, the weighted average current assets of publicly listed firms exceed their current liabilities by a margin of 50–100 percent, suggesting relatively good standing in meeting short-term debt obligations. However, there may be risks of funding difficulties in smaller and less profitable firms, as the median values of liquidity indicators are considerably lower for some countries.

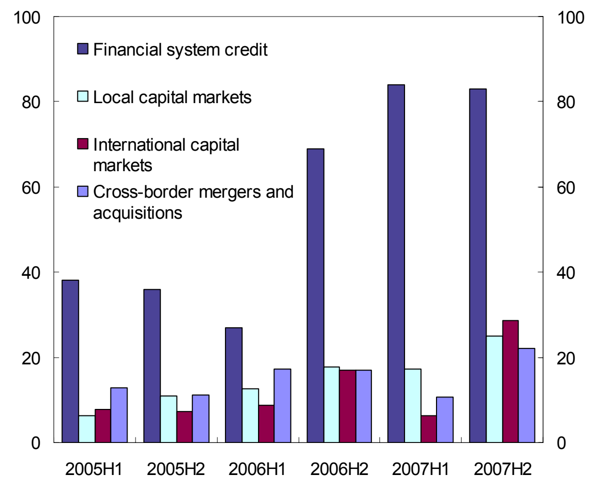
Corporate Current Assets to Current Liabilities Ratio
(2005-07 average)1/



Sources: Economatica database; and IMF staff calculations.
1/ Publicly listed nonfinancial firms for which data are available.

In addition to internally generated funds, the region's corporations also rely on credit from domestic financial institutions to fund their new investments and working capital. Nonetheless, the region's corporate sector is exposed to changes in conditions of cross-border capital market funding, a growing feature of LAC corporate finance along with the fast-growing local capital markets. Combining financial system credit data and data on market issuance[11] yields a picture of net financing (i.e., gross credit/issuance net of repayments) for the region's private corporations. It shows that the strong growth in domestic financial system credit in recent years has contributed most to net financing in the past two years, with the rest coming roughly equally from local securities issuance and international securities and syndicated loan placements. International placements accounted for almost 25 percent of net new financing for the corporate sector in the second half of 2007, reflecting several large syndicated loans contracted in the third quarter. If cross-border mergers and acquisitions were to be included, the dependence on external finance would be even higher. As a result, tighter credit conditions globally could, over time, have an adverse impact on the financing of the region's private sector.

Nonfinancial Corporate Net Financing
(In billions of U.S. dollars)



Sources: Dealogic database; national authorities; and IMF staff calculations.

[11] Data on local and international capital-market transactions reported here are compiled from the Dealogic database.

Bond Financing

Since the onset of the global financial turmoil, external spreads on corporate bond issues in the LAC region have risen, by 120–250 basis points in Argentina, Brazil, Chile, Colombia, and Mexico. The increases generally are less than those in the United States and other emerging market regions. There is also some evidence of risk differentiation facing the LAC corporate sector. Spreads have risen by almost 400 basis points for lower-rated LAC companies, while spreads paid by blue-chip firms have generally experienced moderate increases. At the same time, the volume of cross-border debt issuance by the region's corporations fell sharply during the second half of 2007, coming to a virtual halt in early 2008 (figure on p. 37).

Local bond markets in Brazil and Mexico, and, to a lesser extent, in Chile, Colombia, and Peru, have also been playing a growing role as a source of corporate finance in recent years. While there is some evidence that higher domestic bond issuance has offset the cutback in external access in early 2008, this reflects activity by a few large firms, including debentures issued possibly on behalf of some local banks. In recent months, smaller issuers have largely retreated from the local markets.

Equity Financing

Equity market capitalization in the region—although relatively low by international standards—picked up in the past few years as share prices rose. Financing through local equity markets increased strongly during the first half of 2007, as a number of firms issued initial public offerings (IPOs) locally but targeted at domestic, regional, and international markets simultaneously. However, since mid-2007 equity prices in the region have generally retreated, reflecting the global sell-off in stocks, and the volume of equity issuance has fallen sharply so far in 2008. Equity price volatility has also picked up. Indeed, the relative riskiness (or "beta") of the region's equity-market index has risen to post-Asian-crisis levels, with a 10 percent drop in global equity returns correlated with a 16 percent decline in LAC equity returns at end-February 2008. Moreover, stock markets in Latin America appear to be more responsive to falling equity prices in the United States than to rising equity prices (Box 2.3). This points to an additional possible downside risk to share prices in the region. If the spillovers from the United States lead to further increases in equity volatilities or external spreads, the region could face a higher cost of capital. Greater equity price volatility has the potential of raising the rate of return required for investors to hold LAC equities, while widening external spreads could exert upward pressure on the overall cost of corporate debt.

Conclusions

In sum, although the region has been somewhat affected by tightening financial conditions in the global economy, the impact has so far been muted compared with past periods of stress. On the positive side, the effects have been limited by relative strength in the region's banking sectors, which are fairly liquid, profitable, and well capitalized. Domestic deposit growth and local market borrowing have been important sources of funding for banks to expand their balance sheets, and firms have increasingly sought finance from both local and international capital markets.

Nonetheless, external financial conditions are beginning to show some signs of tightening, including particularly for corporate sector debt issuance, while equity flows have also slowed. These pressures on the cost of capital could be exacerbated by further equity price declines. Moreover, while the domestic banking systems and capital markets have deepened in recent years, the region's financial systems are still relatively shallow compared with those of advanced countries, making them more sensitive to protracted credit turmoil in advanced countries.

Enhanced cooperation between supervisory authorities in the region and their counterparts in the home countries of their main foreign bank subsidiaries will be important. This will facilitate a greater understanding of the overall position of the international banking groups and also will allow

Box 2.3. Stock Market Linkages Between Latin America and the United States During 'Tail Events'

Asset prices in Latin America have been closely linked to those in the United States for some time, but it is important to know whether the region's financial markets react more sharply to global developments during turbulent than in tranquil times. January's steep equity market sell-off was a stark reminder of the exposure of the region's financial markets to extreme financial events originating in the rest of the world.

In this analysis, we test whether the joint co-movement between equity returns in Latin American and U.S. equity markets during turbulent periods (so-called tail events) is different from that in tranquil periods between January 2003 and February 2008.[1] We find that the degree of financial contagion between equity markets in the United States and Latin America appears to be greater during periods of financial turmoil, i.e., when equity prices are falling dramatically. The results also suggest that estimating the correlation of stock returns using traditional linear analysis masks the asymmetric nature of shock transmission across markets, understating the potential for downward movements in LAC equity returns in response to a continued global sell-off.[2]

In addition, we obtain the following results:

- Latin American stock markets are more responsive to falling equity prices in the United States than to rising equity prices. This is shown in the first figure, where the probability of joint co-movement across markets (ranging from 0 to 1) increases substantially as we move from positive to negative returns. In most countries, the highest probability of co-movement is observed at the lowest percentiles (or "downside tail") of the distribution, corresponding to periods of extreme negative returns.
- Conventional correlation measures tend to understate the high cross-border linkages between Latin American and U.S. stock markets during periods of large declines in equity prices. As shown in the first figure, the linear correlation coefficient (the black horizontal line in the figure) of Latin American equity prices with respect to U.S. equity prices is typically below the degree of stock market dependence observed in the downside tail of the distribution, especially in Mexico, Chile, and Peru.
- Over the entire sample period, stock markets in Chile, Mexico, and Brazil have been the most sensitive to downturns in the United States. Stock market returns in Peru and Colombia, on the other hand, have been the least susceptible to negative shocks in the United States on average between 2003 and 2008. At the lowest percentiles of the return distribution (corresponding to "downside tail events"), the likelihood of joint co-movement ranged between 0.3 and 0.5 for Colombia and Peru, compared with close to 0.9 for Chile and Mexico.
- In Colombia, the occurrence of very large negative returns has become much more synchronized with those in the United States since mid-2006. As shown in the second figure, in the lowest first and second percentiles of the return distribution (i.e., during times of unusually large, negative returns), Colombian equity prices have become much more responsive to events in the United States.
- Peru's and Brazil's stock markets, on the other hand, have exhibited much lower "tail dependence" since early 2007, as measured by the declining probability of large negative equity price movements in the United States being transmitted to these countries' stock markets.

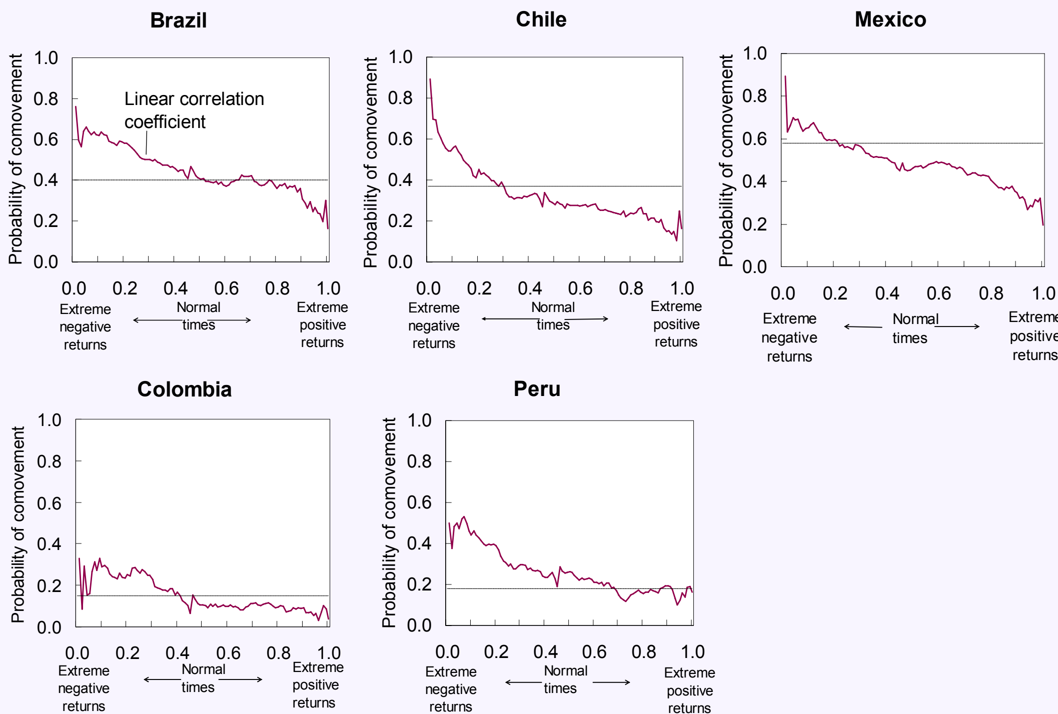
Note: This box was prepared by Andreas Jobst and Herman Kamil.

[1] The analysis uses multivariate extreme value theory (EVT) to quantify the joint (asymptotic tail) behavior of extreme realizations (or "co-exceedances") of returns across different markets (Coles, Heffernan, and Tawn, 1999). Our measure of the probability of co-movement is based on the percentile-based dependence of extreme realizations that exceed a large optimal threshold value. Optimal threshold values are different for the negative and positive tails of the return distribution, and vary across countries as described in Jobst (2007).

[2] This result is consistent with the analysis in Chan-Lau, Mathieson, and Yao (2004) of stock market contagion across several emerging markets between 1987 and 2001. The authors find that reliance on simple correlations as a measure of contagion could be misleading.

Box 2.3 *(concluded)*

Latin American Stock Markets' Dependence on the United States, 2003-08 1/

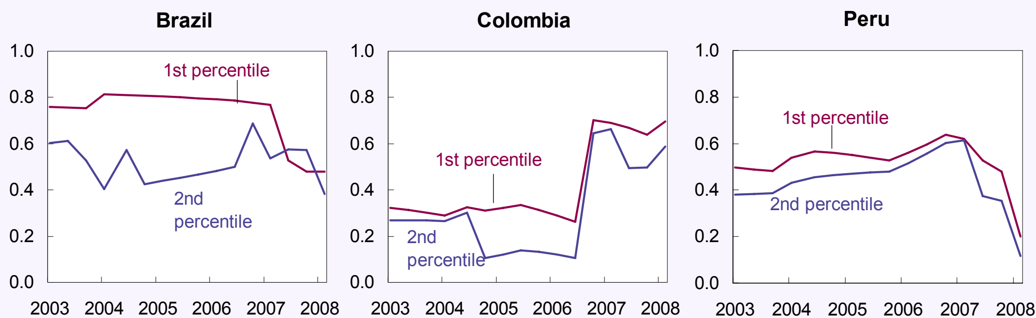


Sources: Bloomberg; and IMF staff calculations.

1/ The nonlinear dependence measure is calculated over the entire sample period using daily log returns of the country-specific MSCI Equity Index and the U.S. S&P500 index. The sample period is 1/2/2003- 2/29/2008, with 1,349 observations. It is estimated on 100 percentile intervals using the delta method for estimating the statistical significance of an adapted chi-square measure as in Jobst (2007).

Probability of Co-movement with the United States During Periods of Extreme Negative Returns

(Time-varying measure of dependence, 2003–08)1/

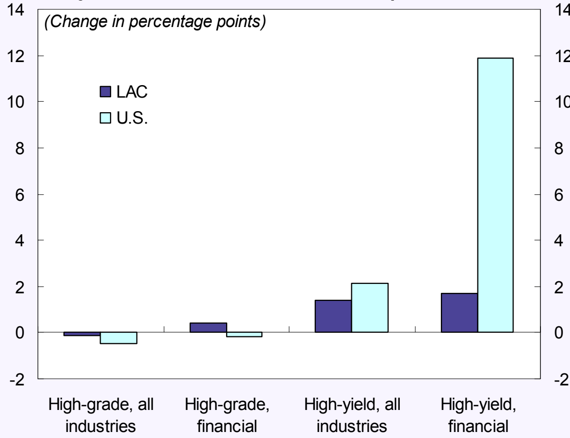


Sources: Bloomberg; and IMF staff calculations.

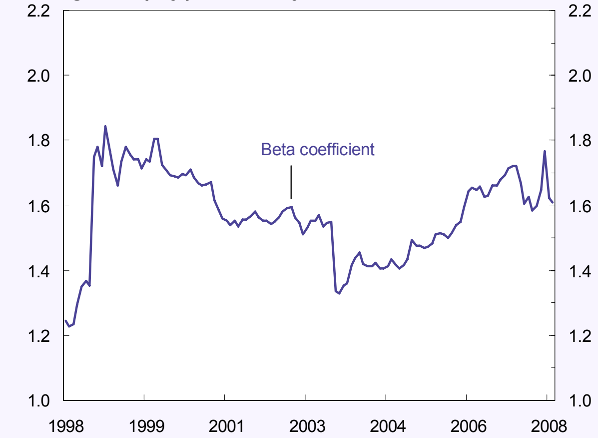
1/ The nonlinear dependence measure is calculated over one-year rolling windows using daily log returns of the country-specific MSCI Equity index and the U.S. S&P500 index. The sample period is 1/2/2003-2/29/2008, with 1,349 observations. The charts plot the time-varying measure of dependence at the most extreme percentiles of jointly negative realizations of equity prices.

Recent Trends in Private Corporate Financing in the Region

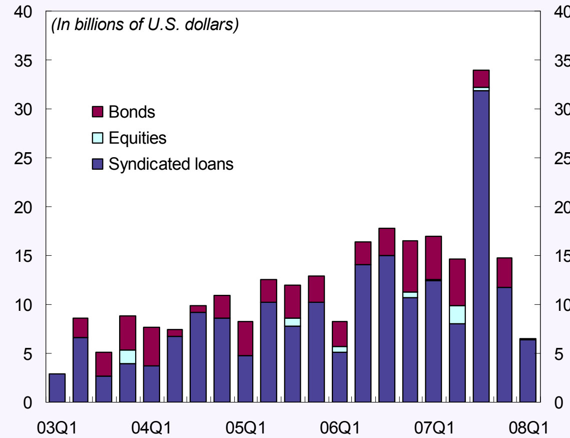
Yield for lower-grade LAC corporates rose since last July, but less than for their U.S. counterparts. . .



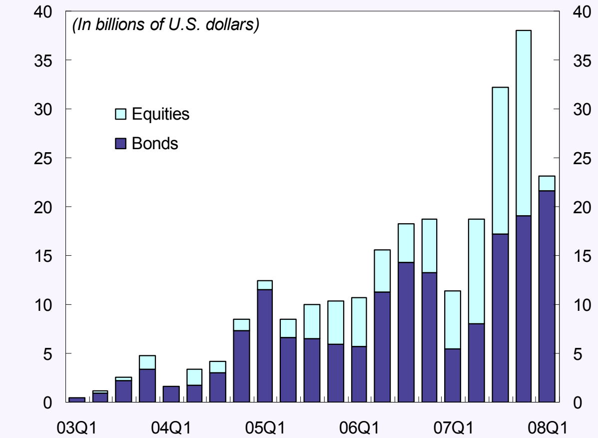
. . . and LAC equity price volatility jumped relative to global equity price volatility.1/



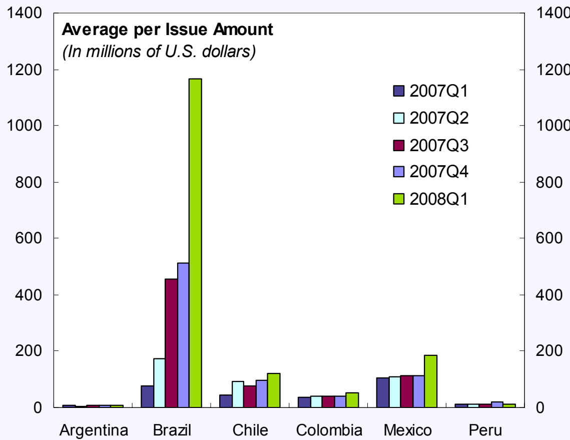
While private cross-border issuance has slowed. . .



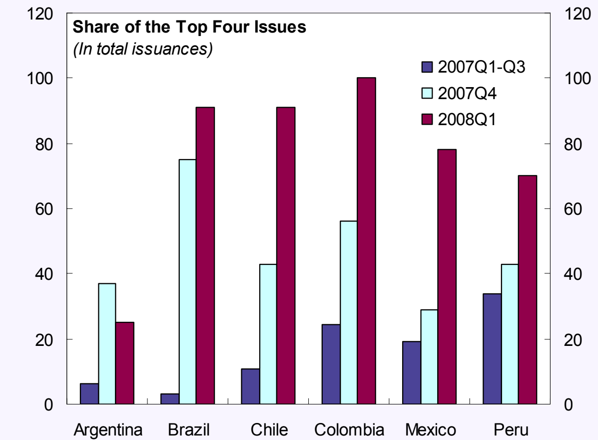
. . . domestic private bond issuance has been strong. . .



. . . but driven by a few Brazilian bond issues. . .



. . . and smaller issuers have largely opted out.



Sources: Credit-Suisse; Datastream; Dealogic database; and IMF staff calculations.

1/ The Beta coefficient is estimated by regressing the historical returns of the dollar MSCI LAC index against the historical returns of the dollar MSCI world index, using a 60-month rolling window.

supervisors in Latin America to react quickly should foreign parents start to come under greater financial stress. Well-functioning disclosure and reporting frameworks are also vital. The recent experience of industrial countries shows how uncertainty can have a pervasive effect on the workings of even the highly developed and liquid capital markets. Both foreign and domestic investors need reliable information about the health of the region's financial institutions to make good judgments about asset allocation, particularly in periods of stress.

III. World Commodity Prices and LAC Inflation

Inflation Is Rising Across the LAC Region

As discussed in Chapter 1, the recent surge in inflation poses a risk for what is perhaps the region's most important macroeconomic accomplishment in the past decade—the sustained decline in inflation to the single-digit range. For the region as a whole, headline inflation in 2007 increased by over 1 percentage point to 6.3 percent, and is expected to remain above 6 percent in 2008. And while underlying inflation remains contained on average, the downward trend of the past five years has been reversed. Although the rise in inflation was widespread across the region, there has been large variation in actual inflation rates both in Latin America and in the Caribbean (Box 3.1).

Rising domestic food prices, reflecting both sharp increases in world commodity prices and some local supply disruptions, have been widely viewed as a key element in the uptick in inflation. Indeed, consumer food inflation across the region has gone up considerably, from 6 percent at end-2006, to over 10 percent by the end of 2007. But, as a number of central banks in the region have noted, demand pressures are also an important factor contributing to inflation. Four years of strong economic growth have left many economies in the region operating at or above capacity. Finally, policy reactions and credibility can have a big impact on containing inflationary expectations and limiting the second-round effects of a one-off shock to prices.

This chapter examines how much of the rise in inflation can be attributed to external factors and how much other factors are at play. The empirical analysis, based on data for the past decade in most cases, aims to separate the inflationary impact of rising global commodity prices from those of strong economic growth and other variables, including inflation inertia and policy variables. It then looks at spillovers of external prices and economic growth onto underlying inflation and inflation expectations. The analysis is based on the experience in five Central American

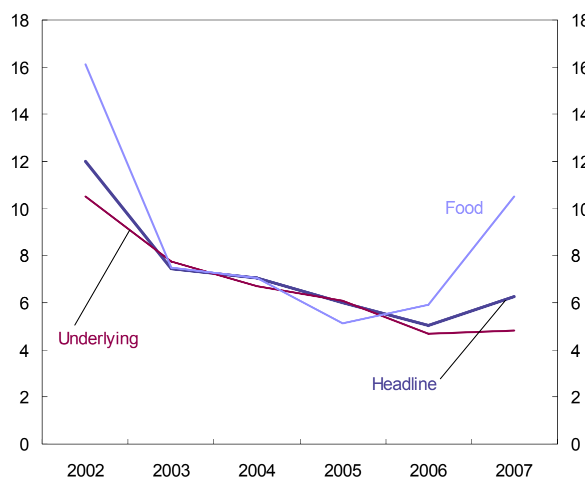
Headline Inflation
(In percent) 1/

	2007	Increase from 2006
Below 5 percent		
Brazil	4.5	1.3
Ecuador	2.9	0.1
El Salvador	4.9	0.0
Mexico	3.8	-0.3
Peru	3.9	2.8
Between 5 and 10 percent		
Argentina 2/	8.5	-1.4
Chile	7.8	5.3
Colombia	5.7	1.2
Guatemala	8.7	3.0
Honduras	8.9	3.6
Panama	6.4	4.2
Paraguay	6.0	-6.5
Uruguay	8.5	2.1
Above 10 percent		
Bolivia	11.7	6.8
Costa Rica	10.8	1.4
Nicaragua	16.9	7.4
Venezuela	22.5	5.5
Latin America and the Caribbean 3/	**6.3**	**1.2**

Sources: National authorities; and Haver Analytics.

1/ End-of-period rates, i.e., December-on-December.
2/ Based on official data. Private sector estimates are considerably higher.
3/ PPP-weighted average.

Inflation in Latin America
(In annual percent change) 1/



Source: WEO.
1/ PPP-weighted average.

Box 3.1. Inflation Pressures in the Caribbean

Inflation in the Caribbean increased to 9 percent at end-2007, from 6 percent in 2006. There was, however, significant variability across countries, with 2007 inflation as low as 2.1 percent in St. Kitts and Nevis and as high as 17 percent in Jamaica. In most cases, the currencies of Caribbean countries are pegged to the U.S. dollar, and the price pressures have been driven in large part by developments in the external environment, including rising world food and fuel prices, and exchange rate depreciation vis-à-vis currencies other than the U.S. dollar. Domestic demand pressures have been significant mainly in Trinidad and Tobago.

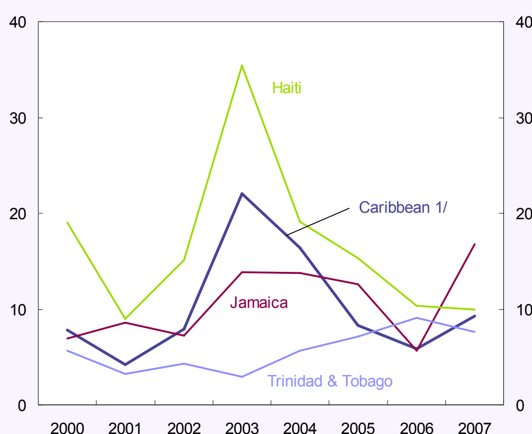
- Both fixed and flexible exchange rate countries have seen inflation rise as a result of currency movements. For those with fixed exchange rate regimes, the depreciation of the U.S. dollar against major currencies has affected the cost of non-U.S. imports. For Jamaica, where a flexible exchange-rate regime is in place, interest rates were reduced aggressively in 2006, and the weakening external environment has put pressures on the Jamaican dollar, whose pace of depreciation vis-à-vis the U.S. dollar picked up sharply during the second half of 2007.

- High fuel prices are also causing inflation pressures in some countries, while the pass-through has been limited in others. For example, global increases in fuel prices are fully passed through to consumers in Dominica and Jamaica. The latter has seen the fuel component of its CPI increase by 27 percent since the end of 2006. On the other hand, IMF staff calculations suggest that pass-through coefficients are low among several ECCU countries, and consumer fuel prices remained unchanged in Trinidad and Tobago.

- Caribbean prices have risen most strongly for tradables, especially food.

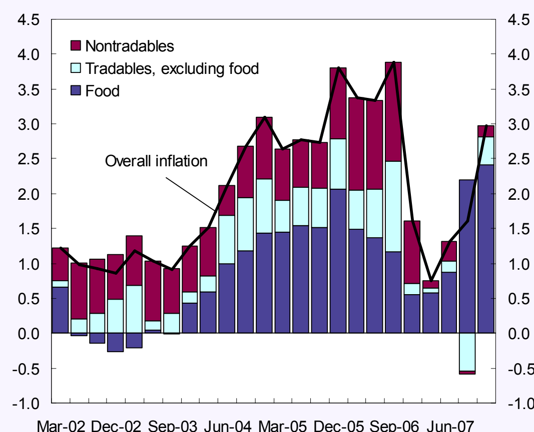
- Idiosyncratic factors are, nevertheless, also at play. The tripling of inflation in Jamaica in 2007 partly reflects supply disruptions due to Hurricane Dean and flooding from heavy rains. The introduction in 2007 of the VAT in Antigua and Barbuda and in St. Vincent and the Grenadines also had one-off effects on those countries' CPI level. Inflation pressures in Trinidad and Tobago, a major energy exporter, stem from demand increases associated with rapid growth in public spending.

Inflation in the Caribbean
(In annual percent change)



Source: WEO.
1/ PPP-weighted average. Includes Antigua and Barbuda, The Bahamas, Barbados, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, and Trinidad and Tobago.

ECCU: Contribution to Overall Inflation, 2002–07
(In percent)1/



Sources: Eastern Caribbean Central Bank (ECCB); and IMF staff calculations.
1/ Tradables in the ECCU comprise food, alcoholic drinks and tobacco, fuels, clothing and footwear, and household and furniture equipment; nontradables include medical care and expenses, education, personal services, housing and utilities, transportation and communication, and miscellaneous.

Note: This box was prepared by Evridiki Tsounta and Christina Daseking.

countries and five major economies that have inflation-targeting regimes.[12]

The results show that world commodity price shocks typically have a noticeable impact on inflation across the region. Based on historical relationships, changes in world commodity prices have explained about 30 percent of the changes in headline inflation. If past relationships hold, the run-up in world food and fuel prices in 2007, of nearly 30 and 50 percent, respectively, would have raised headline inflation by 1–1½ percentage points on average in these countries. There is also evidence that commodity price increases tend to affect underlying and expected inflation.

But the analysis shows that domestic factors have typically been the main drivers of inflation. And, interestingly, there appears to be a divergence across groups of countries, depending on the policy regime. In the inflation-targeting countries, inflation appears to converge more rapidly to trend after a shock. This suggests that there is a payoff to credible inflation targets. And in these countries, where inflation has also generally been more contained, the analysis suggests that policy variables—the policy interest rate and the exchange rate—have a bigger impact on changes in inflation than in the other countries. Finally, in several countries, the econometric evidence indicates that excess demand also puts independent upward pressure on consumer prices.

Analysis of Factors Driving Inflation

To disentangle the impact on inflation of different external and domestic factors, we estimated a vector autoregressive (VAR) model.[13] The approach captures the underlying interaction of consumer prices with different domestic factors and external commodity food and fuel prices. In particular, it can help capture both the direct effects of higher costs of food and fuel commodities and the indirect effects coming from the fact that fuel and food are inputs in the production of other goods.

The model used monthly data on changes in world fuel and food commodity prices (in U.S. dollars); a measure of real economic activity (GDP or industrial production); nominal effective exchange rates; monetary aggregates in Central America and policy interest rates in the inflation-targeting countries (in levels); and headline and underlying inflation (headline net of consumer food and fuel inflation). The sample covers 1996–2007 for Central America, and the inflation-targeting period for the rest of the countries (except for Brazil, where the sample covers 2002–07).[14]

In addition to looking at the relative contributions from commodity prices and other factors, we analyzed the response of inflation to unexpected and one-off shocks. We focused in particular on shocks to three variables: world food inflation, world fuel inflation, and growth in domestic economic activity. The resulting impulse responses illustrate how inflation has reacted to these shocks, tracing out not only their direct effect but also the indirect effects through their feedback on other endogenous variables included in the model, such as policy interest rates and exchange rates.

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[12] The countries included are Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua in Central America; and Brazil, Chile, Colombia, Mexico, and Peru among the inflation-targeting countries.

[13] These models have been widely used in the literature to analyze the response of inflation to commodity price shocks and exchange rate fluctuations. Several recent studies have focused particularly on oil shocks (see, for instance, De Gregorio, Landerretche, and Neilson, 2007; Pincheira and Garcia, 2007; Blanchard and Galí, 2007; and Mishkin and Schmidt-Hebbel, 2007). However, given the more recent nature of the boom in world food prices, few studies have looked at this issue in detail. IMF (2007) included VAR analysis for some countries.

[14] Many of these countries have gone through periods of very different economic structures and policy regimes. To select the appropriate sample, we estimated rolling structural break point Chow tests. These tests indicated a structural break in Brazil following 2002, but no breaks for the period covered in the other countries.

Overall Inflation

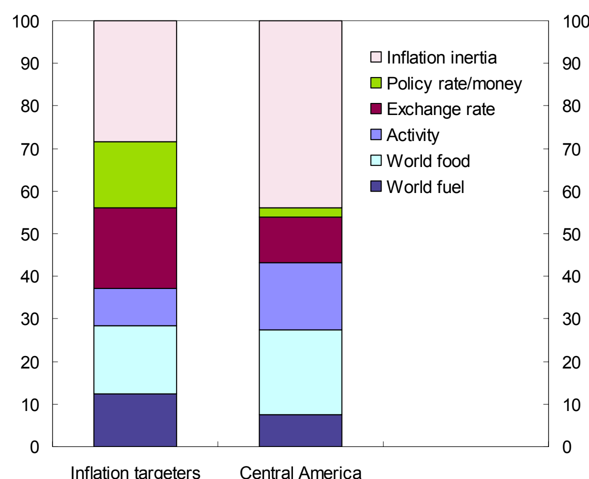
External Commodity Shocks Matter

The results suggest that higher global commodity prices indeed have an impact on headline inflation.

- Changes in world commodity prices typically explain about 30 percent of the variation in headline inflation, with world food prices playing a much larger role than world fuel prices.
- World food commodity price shocks have a positive and significant impact on headline inflation in all 10 countries. These results suggest that the 30 percent run-up in world food prices since 2006 would have raised annual headline inflation rates by an average of 1 percentage point, based on past relationships. This seems consistent with the fact that inflation in the region increased by only 1.2 percentage points since 2006, even when inflation in commodity prices more than doubled. In general, the Central American countries experienced a stronger pass-through from food commodity prices than the inflation-targeting countries. The results also suggest that following the occurrence of the shock, headline inflation rises to a peak within six months. However, it takes one to two years for the impact to fully dissipate.
- World fuel price shocks have had statistically significant but smaller effects than those of world food prices. The results suggest that the 50 percent run-up in world fuel prices since 2006 would have raised headline inflation rates in the region by about 0.3 percentage point.

Clearly, pass-through from international to domestic prices is less than full, and there are several explanations for this (Box 3.2).

Contribution to Variation in Inflation
(After 24 months; in percent)



Source: IMF staff estimates.

Response of Headline Inflation to Different Shocks
(Largest impact within 12 months in percentage points) 1/

	World		
	Fuel	Food	Activity
Inflation-targeting countries			
Brazil	0.7 **	2.1 **	0.6 ***
Chile	0.6 ***	0.6 ***	0.1 *
Colombia	0.3 ***	0.4 **	0.1 ***
Mexico	-0.1	0.4 **	0.2 ***
Peru	0.3 ***	0.7 ***	0.0
Central America			
Costa Rica	0.2 **	0.6 ***	-0.2 ***
El Salvador	0.3 **	1.2 ***	0.3 *
Guatemala	0.3 ***	0.7 ***	-0.6 ***
Honduras	0.5 ***	1.3 ***	-0.7 ***
Nicaragua	-0.5 **	0.9 **	1.4 ***
Memorandum items			
Average	0.3	0.9	0.1
Inflation targeters	0.4	0.8	0.2
Central America	0.2	0.9	0.0

Source: IMF staff estimates.

1/ Size of the shock: 50 percentage points in fuel; 30 in food; and 5 in activity.
*** Indicates significance at the 95 percent level; ** at 90 percent; and * at 75 percent.

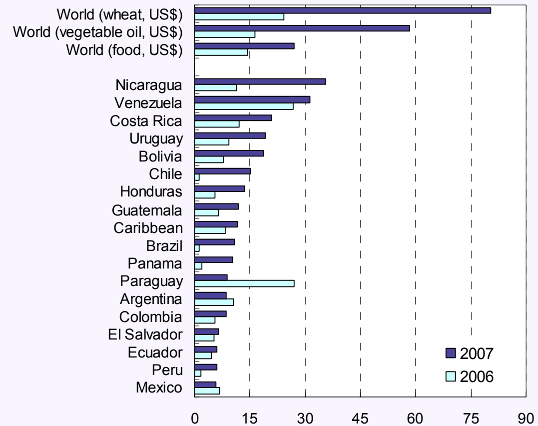
Domestic Factors Are Also Important

The econometric analysis indicates that commodity price shocks are far from explaining all the variation in inflation. Indeed, domestic factors appear to be more important in driving inflation pressures.

Box 3.2. Effects of Commodity Prices on Consumer Prices

Buoyant growth in emerging Asia, as well as geopolitical factors, has led to rapid increases in the world price of fuel and food, especially in 2007. During 2007, the IMF's index of world food commodity prices, on average, soared by 30 percent, after growing by less than 15 percent in 2006. The increase in some commodities important in Latin America, such as wheat and vegetable oils, was even more striking. In the case of fuels, world prices rose by 45 percent in the year to end-2007. Still, the increase in the domestic fuel and food price subcomponents of the CPI has been much smaller than the increase in world commodity prices.

Food Inflation in Latin America
(In percent; end-of-period)



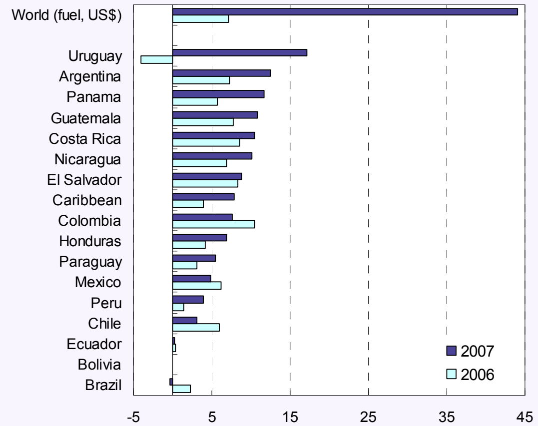
Sources: National authorities; WEO; and Haver Analytics.

The pass-through from world prices to domestic prices is smaller and more complex than might be immediately apparent for several reasons:

- First, the impact of rising world food and fuel prices on domestic consumer prices is limited by the weight of world commodities in domestic consumption baskets. In Brazil, for example, about 35 percent of the consumer food basket is composed of items whose prices are strongly linked to the international market. Since food has a total weight of less than 22 percent in the consumption basket, a 10 percentage point increase in world food commodity prices would lead to an increase in headline inflation of only 0.7 percentage point.

- Other factors can also drive consumer and world commodity prices further apart. Commodities are only one input in the production structure of firms selling domestic food and fuel products.[1] If local costs are large, even a substantial increase in the price of an imported factor of production may have little impact on prices.[2] Thus, changes in the input cost of commodities can be absorbed by several margins that are country- and sector-specific. In addition, government tax and regulatory policies can create a wedge between international and domestic prices. Finally, other domestic factors can amplify or mitigate the impact of rising commodity prices. For instance, exchange rate appreciation or monetary tightening would buffer the pass-through from external factors, while poor weather conditions, as many countries have recently experienced, would go in the opposite direction.

Fuel Inflation in Latin America
(In percent; end-of-period)1/



Sources: National authorities; WEO; and Haver Analytics.
1/ The composition of the fuel index varies considerably, including only gasoline and energy products in some countries, and transportation and other services in others.

Note: This box was prepared by Ana Corbacho.

[1]For example, grains make up less than 5 percent of the cost of a loaf of bread.

[2]Goldberg and Verboven (2001), Hellerstein (2006), and Nakamura (2008) document the role of local costs.

- Headline inflation is affected by economic activity. The effects are positive in all the inflation-targeting countries (except Peru), and in Nicaragua and El Salvador.
- The model also looked at the impact of policy factors on inflation. Here there are differences between inflation targeters and other countries in the sample. Exchange rates explain more of the variation in headline inflation in the inflation-targeting countries, in line with the more flexible exchange rate regimes. Similarly, policy interest rates play a much more prominent role. And in the inflation-targeting countries inflation inertia is considerably less than in Central America, suggesting that credible inflation targets may help contain the impact of inflationary shocks, promoting more rapid convergence to trend.

In sum, the results suggest that commodity prices, particularly food shocks, have an important impact on inflation, although domestic factors, notably including monetary policy regimes, are typically more important. The overall size of the response of inflation to different types of shocks differs across countries for a number of reasons, including economic and consumption structures as well as policy reactions (Box 3.3).

Spillover to Underlying and Expected Inflation

There is evidence that changes in international commodity prices typically also feed through into underlying inflation. The spillover from international fuel shocks is significant and positive in most countries, with the impact on underlying inflation being almost as large as the impact on headline inflation. The spillover from world food prices to underlying inflation is not as strong, with the average impact being about one-third that on headline inflation. The more prominent spillover from world fuel shocks probably reflects the fact that fuels are used as an input into the domestic production of a broader set of goods than are world food items.

As long as inflation expectations are well anchored, policymakers may not want to react to external commodity shocks that lead to a temporary rise in headline inflation. However, inflation expectations seem to have been affected by the recent rise in headline inflation, at least for the 12-month-ahead horizon. Since mid-2007, inflation expectations for end-2008 have deteriorated throughout the region, although the most recent surveys for February 2008 show some moderation in a few countries.

Response of Underlying Inflation to Different Shocks
(Largest impact within 12 months; in percentage points)1/

	World	
	Fuel	Food
Inflation-targeting countries		
Brazil	0.6 **	1.2 **
Chile	0.1 *	0.4 ***
Colombia	0.2 **	0.3 **
Mexico	0.1 ***	-0.1 *
Peru	0.5 ***	-0.2 *
Central America		
Costa Rica	0.1 *	0.3 **
El Salvador	0.2 ***	0.2 **
Guatemala	-0.2 ***	-0.1 *
Honduras	-0.2 **	0.2 **
Nicaragua	0.6 ***	0.5 ***
Memorandum items		
Average	0.2	0.3
Inflation targeters	0.3	0.3
Central America	0.1	0.2

Source: IMF staff estimates.

1/ Size of the shock: 50 percentage points in fuel; 30 in food; and 5 in activity.
*** Indicates significance at the 95 percent level; ** at 90 percent; and * at 75 percent.

Inflation Expectations for End-2008
(In percent)

	Jun-07	Sep-07	Dec-07	Jan-08	Feb-08
Bolivia	7.2	11.4	14.0	12.5	12.9
Brazil	3.9	4.1	4.1	4.3	4.4
Chile	3.0	3.3	3.6	4.0	3.8
Colombia	...	...	4.5	4.7	4.9
Costa Rica	7.6	7.6	8.8	9.4	9.4
Guatemala	6.5	6.8	7.6	7.9	7.9
Honduras	...	7.2	8.2	8.2	9.6
Mexico	3.6	3.5	3.9	3.9	3.8
Paraguay	8.5	7.5	9.9	9.4	8.5
Peru	...	1.8	2.8	3.0	3.6
Uruguay	6.4	6.7	7.0	6.5	6.4

Sources: IDB REVELA database; and Banco de Guatemala.

Box 3.3. What Might Account for the Different Inflation Impact Across Countries?

In most countries in the region, rising world food prices have a significant impact on inflation, while the impact of world fuel shocks has been more heterogeneous. Still, domestic factors, including monetary policy regimes, explain the bulk of the variation in inflation. The overall magnitude of the response of inflation to different types of shocks differs across countries for a number of reasons.

- *Consumption baskets*. The varying composition of the CPI basket helps explain cross-country differences. In particular, the composition of the fuel CPI index is very country specific, with some countries including transportation and other services, and others considering only gasoline and energy products.
- *Energy intensity*. As economies become less dependent on energy, and as fuels represent a smaller proportion of total costs, the effect of a shock to fuel prices on inflation is expected to be smaller. For instance, Mwase and Meredith (forthcoming) present evidence that oil intensity is decreasing in most countries in the region.
- *Regulatory and tax regimes*. Countries have implemented institutional or de facto fuel price stabilization mechanisms such as countercyclical taxes, stabilization funds, or countercyclical administration of fuel reserves. In these cases, consumer fuel prices would not reflect the volatility of international fuel prices. Countries have also taken direct policy actions to mitigate the impact of rising world food prices, which have ranged from changes in taxes to restrictions on exports and price increases.
- *Reaction of monetary authorities*. When a central bank is expected to fight shocks aggressively, inflation is likely to respond less to large swings in world commodity prices. Consistent with this, Mishkin and Schmidt-Hebbel (2007) suggest that the impact of oil shocks on inflation has fallen after inflation targeting.
- *Low-inflation environment*. When inflation is low, price changes are less frequent. Pass-through tends to be higher in countries with high inflation. Also, as inflation expectations draw closer to the inflation objective, incentives for price changes in response to supply shocks are also smaller.
- *Flexible exchange rates*. Flexible exchange rates may help absorb external shocks without large domestic impact, particularly in a low-inflation environment, as recent studies have shown.[1]

Composition of Food and Fuel Index in the CPI, 2007
(In percent)

	Food		Fuel	
	Weight	Composition	Weight	Composition
Inflation-targeting countries				
Brazil	21.7	Food and beverages	5.0	Fuels
Chile	27.2	Food	12.2	Transportation (incl. public and private transportation)
Colombia	29.5	Food	1.1	Fuels
Mexico	22.7	Food	3.8	Fuels
Peru	47.5	Food and beverages	2.5	Gasoline and lubricating oils
Central America				
Costa Rica	18.6	Food and non-alcoholic beverages	18.2	Fuels, public transportation, airfares, and vehicle maintenance
El Salvador	33.5	Food	10.3	Transportation
Guatemala	38.8	Food and non-alcoholic beverages	10.9	Fuels, transportation, airfares, and communications
Honduras	31.8	Food and non-alcoholic beverages	28.3	Fuels, transportation, rents, water, electricity, and gas
Nicaragua	41.8	Food and some non-alcoholic beverages	10.5	Fuels, transportation, communications, water, and, electricity

Sources: National authorities; and Haver Analytics.

Note: This box was prepared by Ana Corbacho.

[1] See, for instance, Taylor (2000), Choudhri and Hakura (2006), Gagnon and Ihrig (2001), and Hooker (2002).

For the inflation-targeting countries, where a longer time series of inflation expectations is available, we also estimated the response of expected inflation to a shock in actual headline inflation. The results suggest that an increase of 1 percentage point in headline inflation would tend to be associated with an increase of expected inflation of about 0.1 to 0.3 percentage point, at least for the 12-month-ahead horizon.

Response of Expected Inflation to a Shock in Actual Headline Inflation
(Largest impact within 12 months; in percentage points)1/

Brazil	0.3 ***
Chile	0.1 ***
Colombia	0.1 ***
Mexico	0.1 ***

Source: IMF staff estimates.

1/ Size of the shock: 1 percentage point in actual headline inflation.
*** Indicates significance at the 99 percent level.

Conclusions

Shocks to world fuel and food commodity prices have had a noticeable effect on headline inflation in the region in the past and may be spilling over to underlying and expected inflation. For most countries, external food inflation has played a more prominent role than rising world prices of fuel, reflecting, among other factors, the higher share of food in the consumption basket as well as active policies to smooth the impact of rising international fuel prices. The estimated spillover to underlying and expected inflation indicates there is a risk that these commodity shocks could exacerbate inflation pressures. In several countries, there is also evidence that excess demand has put upward pressure on consumer prices.

However, a key finding from the analysis is that policy regimes can have an important impact on inflation, even when shocks may originate from external commodity prices. And the role of inertia, in particular when inflation is higher, illustrates the benefits of safeguarding the much-improved inflation performance across the region in recent years.

Nevertheless, governments in many countries are struggling with how to react to substantial increases in food prices in recent months. The results support the view that, at least based on past experience, the rise in prices on commodity markets, driven by global forces, explains only a part of this increase. For a number of countries, weather-related shocks have also affected domestic food supplies and pushed up prices. It is also possible, however, that the speed and direction of the recent sharp changes in world food prices have altered the pass-through in a way that the model cannot yet capture.

Global trends—such as strong demand growth in emerging economies and the increasing use of biofuels—suggest that international pressures on food and energy are likely to remain. Futures markets certainly show continued high prices. Although in the short run producers may absorb higher input costs from commodities by compressing margins, they are more likely to adjust consumer prices when faced with persistently higher commodity prices. Inflation dynamics in the region could in this case be further affected if commodity price shocks do not abate, with inflation staying higher for longer following an upward price shock.

How should monetary policy respond? The food price pressures from supply shocks should prove temporary, provided policymakers react to mitigate second-round effects. The empirical analysis and these considerations suggest that monetary policy should seek to contain inflation pressures arising from higher world food and fuel prices. Allowing the exchange rate to appreciate in line with market forces would help ease inflation pressures. Of course, the appropriate policy response will depend, among other factors, on the track record of policy management, the intensity of second-round effects, the seriousness of balance sheet and other vulnerabilities, and the scale of external linkages.

Main Economic Indicators

	Output Growth (annual rate in percent)						Inflation (e.o.p. rate in percent) 1/						External Current Account (in percent of GDP)					
	1995-2004 Avg.	2005	2006	2007 Est.	2008 Proj.	2009 Proj.	1995-2004 Avg.	2005	2006	2007 Est.	2008 Proj.	2009 Proj.	1995-2004 Avg.	2005	2006	2007 Est.	2008 Proj.	2009 Proj.
North America 2/	**3.1**	**3.1**	**3.0**	**2.3**	**0.7**	**0.8**	**3.4**	**3.3**	**2.6**	**4.0**	**2.1**	**2.2**	**-3.0**	**-5.1**	**-5.2**	**-4.5**	**-3.8**	**-3.7**
United States	3.1	3.1	2.9	2.2	0.5	0.6	2.5	3.4	2.6	4.1	2.0	2.1	-3.3	-6.1	-6.2	-5.3	-4.3	-4.2
Canada	3.3	3.1	2.8	2.7	1.3	1.9	1.9	2.2	1.3	2.5	1.8	2.0	0.8	2.0	1.6	0.9	-0.9	-1.2
Mexico	2.7	2.8	4.8	3.3	2.0	2.3	15.5	3.3	4.1	3.8	3.5	3.0	-2.0	-0.7	-0.3	-0.8	-1.0	-1.6
South America 2/	**2.4**	**5.2**	**5.6**	**6.4**	**5.2**	**4.1**	**10.4**	**6.8**	**5.3**	**6.9**	**7.3**	**7.3**	**-1.5**	**2.8**	**2.8**	**1.5**	**0.3**	**-0.3**
Argentina	1.3	9.2	8.5	8.7	7.0	4.5	4.9	12.3	9.8	8.5	9.0	9.0	-0.5	2.0	2.5	1.1	0.4	-0.5
Bolivia	3.3	4.0	4.6	4.2	4.7	5.0	5.0	4.9	4.9	11.7	16.0	14.0	-3.8	6.5	11.7	13.3	12.3	8.6
Brazil	2.5	3.2	3.8	5.4	4.8	3.7	8.6	5.7	3.1	4.5	4.5	4.5	-2.4	1.6	1.3	0.3	-0.7	-0.9
Chile	4.8	5.7	4.0	5.0	4.5	4.5	4.2	3.7	2.6	7.8	4.2	3.0	-1.8	1.1	3.6	3.7	-0.5	-1.3
Colombia	2.2	4.7	6.8	7.0	4.6	4.5	12.0	4.9	4.5	5.7	5.0	4.0	-2.4	-1.5	-2.1	-3.8	-4.9	-4.3
Ecuador	2.8	6.0	3.9	1.9	2.9	4.1	31.4	3.1	2.9	2.9	3.3	3.3	-1.8	0.8	3.6	3.3	5.2	3.9
Paraguay	1.5	2.9	4.3	6.4	4.0	4.5	8.9	9.9	12.5	6.0	5.0	3.0	-1.7	0.6	-1.2	1.5	1.0	0.4
Peru	3.6	6.7	7.6	9.0	7.0	6.0	4.9	1.2	1.1	3.9	3.5	2.5	-3.7	1.4	2.8	1.6	-0.2	-0.3
Uruguay	0.9	6.6	7.0	7.0	6.0	4.0	14.0	4.9	6.4	8.5	7.0	5.0	-1.1	0.0	-2.4	-0.8	-1.7	-0.8
Venezuela	1.3	10.3	10.3	8.4	5.8	3.5	35.1	14.4	17.0	22.5	29.0	33.0	6.5	17.7	14.7	9.8	7.2	5.0
Central America 2/	**3.7**	**4.7**	**6.3**	**6.5**	**4.7**	**4.6**	**7.5**	**8.0**	**6.0**	**8.6**	**6.9**	**5.7**	**-4.7**	**-5.0**	**-4.9**	**-6.8**	**-7.6**	**-7.6**
Costa Rica	4.3	5.9	8.8	6.8	4.1	4.0	12.4	14.1	9.4	10.8	8.0	6.0	-3.9	-5.2	-4.9	-5.8	-6.6	-6.1
El Salvador	3.0	3.1	4.2	4.7	3.0	3.4	4.0	4.3	4.9	4.9	4.9	4.0	-2.3	-4.2	-3.8	-4.8	-5.8	-5.3
Guatemala	3.4	3.3	5.2	5.7	4.8	4.5	7.4	8.6	5.8	8.7	6.2	5.8	-5.2	-4.5	-5.0	-5.0	-5.5	-5.4
Honduras	3.7	6.1	6.3	6.3	4.8	4.6	13.4	7.7	5.3	8.9	9.0	7.9	0.3	-3.0	-4.7	-10.0	-9.5	-9.0
Nicaragua	4.3	4.3	3.9	3.7	4.0	4.2	8.5	9.6	9.5	16.9	9.5	7.5	-20.4	-14.1	-13.2	-17.3	-24.8	-24.4
Panama	4.4	7.2	8.7	11.2	7.7	7.2	0.9	3.4	2.2	6.4	6.5	4.8	-5.3	-4.9	-3.2	-8.0	-7.8	-9.8
The Caribbean 2/	**4.0**	**6.0**	**7.8**	**5.7**	**4.4**	**3.8**	**10.3**	**8.4**	**6.0**	**9.0**	**7.4**	**5.2**	**-3.4**	**0.0**	**-0.8**	**-2.5**	**-2.6**	**-2.3**
The Bahamas	3.3	2.5	3.4	3.1	4.0	3.8	1.7	1.2	2.3	2.6	2.4	2.2	-10.1	-14.3	-25.3	-21.9	-18.5	-13.8
Barbados	2.2	4.1	3.9	4.2	2.7	2.5	2.5	7.4	5.6	5.7	2.3	2.0	-4.0	-12.5	-8.1	-6.8	-7.5	-7.5
Belize	5.5	3.1	5.6	2.2	3.0	2.3	1.8	4.2	3.0	3.0	2.6	2.5	-11.5	-14.4	-2.2	-4.0	-4.0	-4.3
Dominican Republic	5.2	9.3	10.7	8.5	4.8	3.3	13.0	7.4	5.0	8.9	7.0	4.0	-0.9	-1.4	-3.5	-5.6	-4.6	-3.9
ECCU 3/	2.7	5.2	5.9	3.9	3.0	3.3	1.8	4.4	2.3	4.9	2.7	2.3	-16.8	-22.2	-30.7	-36.4	-32.3	-28.4
Guyana	2.4	-1.9	5.1	5.4	4.6	4.5	5.4	8.3	4.2	13.9	6.8	6.3	-12.0	-14.8	-19.4	-18.2	-16.6	-15.8
Haiti 4/	1.8	1.8	2.3	3.2	3.7	4.0	17.1	14.8	12.4	7.9	9.0	7.0	-1.0	2.6	-0.4	0.2	-1.3	-2.5
Jamaica	0.5	1.4	2.5	1.4	2.4	2.8	11.5	12.6	5.6	16.8	14.4	9.3	-5.9	-11.2	-11.5	-14.5	-13.6	-11.9
Trinidad & Tobago	7.7	8.0	12.0	5.5	5.9	5.6	4.2	7.2	9.1	7.6	7.0	6.5	2.2	23.7	25.6	20.2	14.9	12.5
Memorandum item:																		
Latin America and the Caribbean 2/	**2.6**	**4.6**	**5.5**	**5.6**	**4.4**	**3.6**	**11.4**	**6.0**	**5.0**	**6.3**	**6.3**	**6.1**	**-1.9**	**1.4**	**1.5**	**0.5**	**-0.3**	**-0.9**

Sources: IMF, *World Economic Outlook;* and IMF staff estimates.

1/ End-of-period rates, i.e., December on December. These will generally differ from period average inflation rates quoted in the IMF's *World Economic Outlook* , although both are based on identical underlying projections.

2/ Weighted average. For output and inflation, weighted by PPP GDP; for external current account, dollar-weighted GDP.

3/ Eastern Caribbean Currency Union. For inflation, dollar-weighted GDP; for output and current account, ECCU aggregate.

4/ Fiscal year data.

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