World Economic and Financial Surveys

# Regional Economic Outlook

## Western Hemisphere

### Shifting Winds, New Policy Challenges

OCT 11

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# Preface

This October 2011 issue of the *Regional Economic Outlook: Western Hemisphere* (REO) was prepared by a team led by Charles Kramer and Luis Cubeddu under the overall direction of Nicolás Eyzaguirre and the guidance of Rodrigo Valdés. The team included Gustavo Adler, Alejandro Carrión-Menéndez, Andresa Lagerborg, Andrea Medina, Sebastián Sosa, Bennett Sutton, Camilo E. Tovar and Evridiki Tsounta. In addition, Eugenio Cerutti, Sally Chen, Francesco Columba, Teresa Dabán-Sanchez, Mariusz Jarmuzek, and Cesar Serra contributed to boxes, while Charles Amo-Yartey and Therese Turner-Jones authored an analytical section on the Caribbean region. Production assistance was provided by Patricia Delgado Pino and Luke Lee. Michael Harrup of the External Relations Department edited the manuscript and coordinated the production. This report reflects developments through September 23, 2011.

# Executive Summary

***Global economic activity is slowing amid increasing concerns about its prospects***. Growth in advanced countries is stalling, owing not only to temporary shocks but also stronger-than-expected headwinds from sovereign and private balance-sheet strains. Fears of a renewed advanced-economy recession, along with concerns about negative feedback between sovereigns and financial institutions in Europe, and policy inaction in key advanced economies, have sparked risk aversion and market volatility. Meanwhile, emerging economies continue to rapidly expand, though domestic policy tightening—and more recently, global uncertainties are moderating growth.

***The slowing recovery and sovereign strains in advanced economies are adversely affecting global financial markets and commodity prices.*** Stress in global financial conditions has recently spilled over to emerging markets as fears of a global slowdown have spread, triggering sharp sell-offs in currencies, commodities and equities. However, heightened risk aversion seems to have had a more limited impact on balance of payments and funding conditions so far.

***Despite the recent deterioration in the global environment, our baseline entails only a modest worsening of the outlook for the region.*** Advanced economies are projected to grow at only 1½ percent in 2011 and just below 2 percent in 2012, constrained by continued balance-sheet headwinds. Growth in emerging and developing countries would register 6½ percent in 2011—led by emerging Asia, as softening exports would be offset by less policy tightening and stronger domestic demand. In this context, the tailwinds of easy external finance and still-high commodity prices (despite recent declines) would persist for much of Latin America, but would be far less brisk than expected in the spring.

***But downside risks to the baseline are severe.*** The lack of a decisive solution to the intertwined sovereign and bank balance sheet stresses in Europe could worsen confidence and global credit market conditions, with spillovers to emerging markets. Also, a sharp slowdown in Asia—say, triggered by an advanced economy recession—could further hit commodity prices, with negative effects on Latin American commodity exporters. That said, upside possibilities also exist. Early resolution of uncertainties about global growth and European stresses could stabilize financial markets and reduce risk aversion. With global monetary policy likely to remain highly accommodative for a prolonged period, this could stoke stronger capital flows, exacerbating overheating and amplifying vulnerabilities in emerging markets.

***In this environment, Latin America and the Caribbean should generally stay their present policy course and continue to rebuild buffers—but stand ready to shift tack if global winds change, starting with monetary policy.***

- In South American economies where output hovers above potential and domestic demand is still strong, overheating dangers have lessened but not fully disappeared. Where inflation pressures have eased, inflation expectations are aligned with targets, and policy frameworks are credible, monetary tightening could halt until global uncertainty fades. In a downside scenario, monetary policy should be the first line of defense, including by providing liquidity support if funding conditions become stressed. Meanwhile, fiscal consolidation should continue, to avoid impairing fiscal credibility and create room for maneuver should downside risks materialize. In addition, macroprudential policies remain an important part of the toolkit.

- Countries with strong real linkages to the United States, like Mexico and much of Central America, face a somewhat weaker outlook. Still, because fiscal dynamics are more stretched, priorities should

center on reducing public debt to pre-crisis levels, with monetary policy playing a more active role in managing the cycle in countries with credible inflation frameworks.

- While much of the Caribbean is finally recovering from a long and protracted recession, the outlook continues to be constrained by high debt levels and weak tourism flows in light of the subpar recovery in advanced economies. Greater resolve is required in bringing down high debt levels, as well as addressing financial sector vulnerabilities, without further compromising public finances.

***

***This edition of the Regional Economic Outlook: Western Hemisphere features an analysis of Latin America's vulnerability to a commodity price bust and the policies that could mitigate it***. Latin America, on average, is as dependent on commodities today as it was forty years ago and commodity prices are quite sensitive to global output. Accordingly, faltering global demand could deliver a blow to the region's terms of trade. Analysis in Chapter 3 finds, however, that policies can play an important role in mitigating the economic impact of these shocks. Countries with strong policies—exchange rate flexibility along with sound external and fiscal positions—particularly during the boom phase of the commodity price cycles, fare better. This underscores the need to rebuild policy buffers, to better place the region to weather a commodity price rout.

# 1. Global, U.S., and Canadian Outlook and Challenges

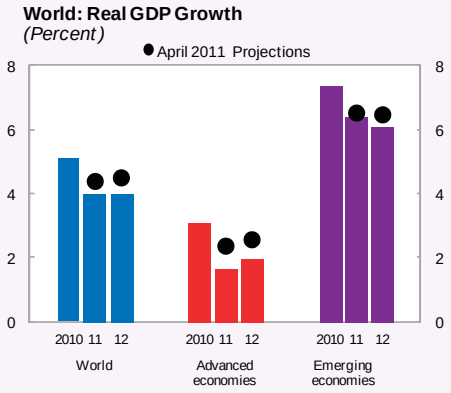
*Global activity has slowed, and the expansion has become more uneven with increasing downside risks, accompanied by bouts of global financial market volatility. Although the transient factors that contributed to the slowdown in the first half of the year will dissipate, the loss of confidence associated with perceived policy paralysis in many advanced economies along with deepening balance sheet fragilities will hold back growth going forward. These factors have already unnerved markets in recent weeks. Growth in emerging economies has thus far been somewhat more resilient, though there are increasing signs of moderation as global financial conditions have deteriorated.*

## 1.1. Global Outlook: Slowing Growth with Dominant Downside Risks

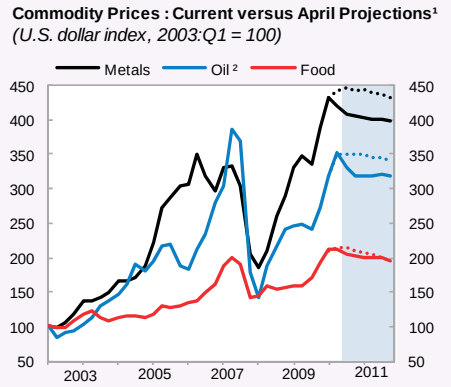
The pace of global expansion has weakened with increasing concerns about its sustainability (see the September 2011 *World Economic Outlook* [WEO] [IMF, 2011h]) (Figure 1.1). Growth in advanced economies has slowed markedly, reflecting both temporary factors as well as stronger than expected drags from weak balance sheets and stubbornly high unemployment. Fears of another recession in advanced economies, in which policy space for maneuver has diminished considerably, have increased global risk aversion and sparked market volatility. In Europe, negative feedback loops between weak sovereigns and financial institutions remain a concern, and in the United States, fragile household balance sheets and their linkage with housing troubles are holding back the recovery. In contrast, emerging economies have been expanding rapidly, with global uncertainties weighing on growth only more recently.

Note: This chapter was prepared by Luis Cubeddu and Evridiki Tsounta with contributions from Oya Celasun and Martin Sommer. Alejandro Carrion provided excellent research assistance.

***Figure 1.1. Growth in advanced economies is projected to slow sharply, with emerging markets and commodity prices being more resilient. Downside risks dominate.***




Source: IMF, *World Economic Outlook*.

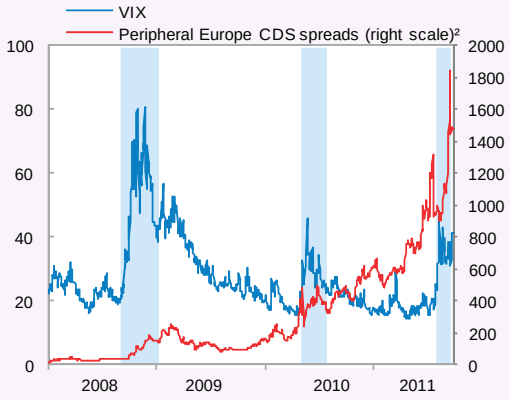



Sources: IMF, *World Economic Outlook*; and IMF staff calculations.
¹ Dotted lines represent the projections reported in the April 2011 WEO. Shaded area represents projection period.
² Average of West Texas Intermediate, Dated Brent, and Dubai Fateh.


Sources: Haver Analytics; and Markit.
¹ Average of Brazil, India, and Russia.
² Average of euro area, Hong Kong, Japan, and United Kingdom.

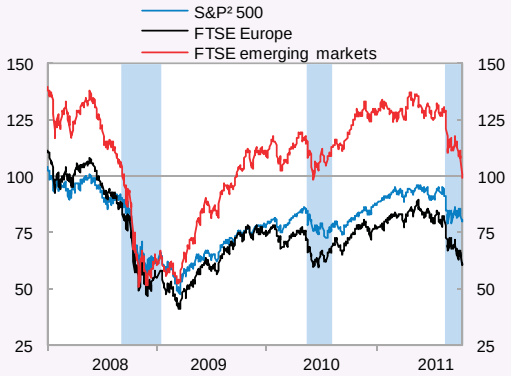
*Figure 1.2. Global risk aversion has risen, leading to declines in equities and a reprise in flows to emerging markets.*

**Global Risk Aversion: VIX and CDS Spreads[1]**



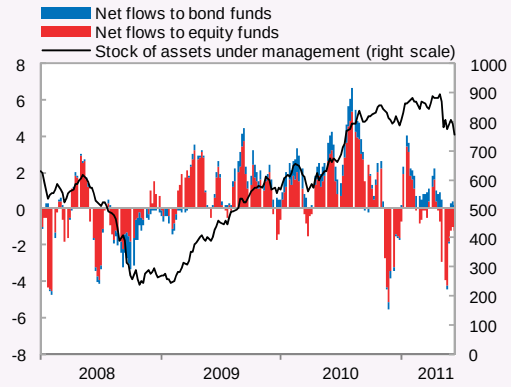

Sources: Bloomberg, L.P.; and IMF staff calculations.
[1] Shaded areas correspond to periods of VIX stress.
[2] Average for Greece, Ireland, Portugal, and Spain.
CDS = Credit default swap; VIX = Chicago Board Options Exchange Market Volatility Index.

**Equity Prices[1]**
*(January 4, 2007 = 100)*




Sources: Haver Analytics; and IMF staff calculations.
[1] Shaded areas correspond to periods of VIX stress.
[2] S&P = Standard and Poor's.

**Mutual Fund Net Inflows to Emerging Markets[1]**
*($ US billions)*




Sources: EPFR Global; Haver Analytics; and IMF staff calculations.
[1] Net flows data presented as 3–week moving average.

Prices for commodities have come down recently, but remain high in historical perspective. After peaking in May at levels last seen prior to the financial crisis, the prices of oil and metals have retreated, mainly reflecting lower demand from Asia (notably China) and global outlook concerns.[1] While commodity prices are still projected to remain at fairly high levels, risks are increasingly tilted to the downside, especially if activity in China decelerates more than expected.

Global financial conditions remain under stress, and this has led to a broad pullback in risk assets, including corporate and emerging market credit (September 2011 *Global Financial Stability Report* [GFSR] [IMF, 2011b]) (Figure 1.2). Spreads on European periphery sovereign debt have risen sharply since midyear, and tensions have more recently spilled over into core European countries, where the policy response to weak sovereign and financial balance sheets (and their feedback loops) has been perceived as inadequate thus far. In addition, the loss of confidence associated with the impasse over raising the debt limit in the United States, coupled with a weaker-than-anticipated recovery, contributed to generalized declines in equities (down by over 10 percent in advanced economies through mid-September).[2] Financial conditions in emerging markets, which until recently were relatively immune to the volatility in peripheral Europe, have become more volatile as fears of a global slowdown have become more generalized. Declines in equities and continued market volatility related to the situation in Europe are expected to put an additional drag on an already weak advanced-economy recovery.

Against this backdrop, IMF projections for global growth during 2011–12 have been revised down by about 0.5 percent (to around 4 percent), compared to the April 2011 *Regional Economic Outlook* (IMF,

[1] The release of crude oil and petroleum stocks from strategic emergency reserves by International Energy Agency members may have discouraged inventory building.
[2] The flight to safety has led to a strengthening of gold (until recently) and safe-haven currencies.

2011e). This downward revision mostly reflects lower growth in advanced economies, which is expected to reach a mere 1.6 percent in 2011 and 1.9 percent in 2012, with fragile balance sheets continuing to provide strong headwinds. Growth in emerging economies and developing countries is expected to reach about 6½ percent in 2011, slightly below the April forecast round. The expansion will continue to be led by emerging Asia, where declines in export demand are expected to be offset by stronger domestic demand.

The baseline scenario assumes decisive and coordinated policy actions, and is subject to unusual uncertainty, with important downside risks. For example, the baseline as described in the September 2011 *World Economic Outlook* (IMF, 2011h) assumes that European policymakers contain the crisis in the euro area periphery; that US fiscal policy strikes a balance between near-term support for the economy and medium-term fiscal consolidation; that volatility in global financial markets does not escalate; and that key surplus emerging economies adjust policies to offset a slowdown in external demand. However, continued difficulties in designing and implementing effective remedies to address mutually reinforcing sovereign and banking balance sheets in Europe could add to a generalized loss of confidence and affect global credit markets. Much as in the Lehman event of 2008, emerging economies would not be immune to this downside scenario. A particular concern is that spillovers could occur if one of the more vulnerable emerging markets came under severe strain, much as occurred during previous crises. Moreover, a sharp slowdown in export-dependent Asia could lead to a renewed decline in commodity prices, with particularly negative effects on Latin American commodity exporters.

### Policy Options: Rebalancing Demand

*Advanced economies* face the difficult task of balancing the need to support a still-weak recovery in private demand with the need to consolidate public finances over the medium term. In countries not facing market pressures, an overly front-loaded adjustment should be avoided, although a plan enshrined into law to consolidate public finances over the medium term is urgently required to reduce growing uncertainty about the course of future fiscal policy and to avoid a costly loss in confidence in fiscal sustainability. In Europe, a key priority is to enhance banks' capital buffers to end the negative macrofinancial loop between banks and sovereigns, while supporting orderly markets in peripheral sovereign debt. Given the weak recovery in private demand and the forthcoming fiscal drag, monetary policy in both the United States and Europe will need to remain supportive for a prolonged period.

Surplus *emerging economies* in Asia should consider boosting domestic demand to offset souring external demand and increasing exchange rate flexibility to ensure a stronger and more-balanced global expansion. Meanwhile, other emerging economies with deteriorating current account deficits (such as some countries in Latin America) should remain vigilant to overheating risks and build the necessary policy buffers to guard against a global downturn and sudden reversal in capital flows. This is particularly important for commodity exporters, which could also be subject to sharp declines in their export prices (see Chapter 3 for an in-depth analysis of the impact of terms-of-trade reversals). In a downside scenario, countries with policy room and credible frameworks could utilize that room to offset the drag from weaker global growth and financial markets volatility.

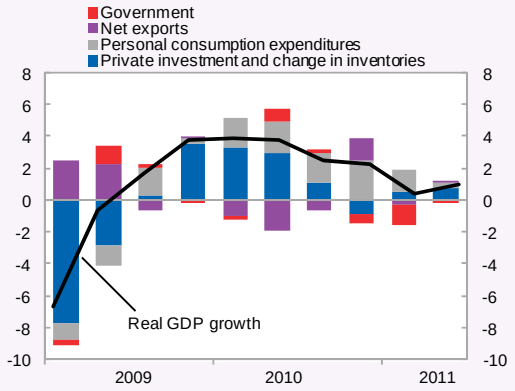
## 1.2. United States: A Tough Balancing Act

*The U.S. recovery has lost steam, reflecting both temporary factors and weaker-than-anticipated private consumption resulting from persistent fragilities in household balance sheets and stubbornly high unemployment. Policies need to strike the right balance between supporting the recovery in the near term and restoring public debt sustainability over the medium term.*

The U.S. economy slowed sharply in the first half of 2011, expanding at an annual rate of 1 percent, well below the 2.8 percent growth registered in the second half of 2010 (Figure 1.3). Although the slowdown reflected the temporary effect of higher

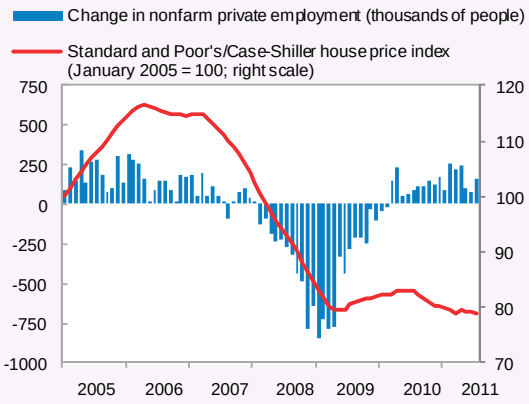
*Figure 1.3. U.S. growth slowed sharply in the first half of 2011, reflecting temporary factors and continued weaknesses in labor and housing markets.*

**United States: Contributions to Real GDP Growth**
(*Percentage points, seasonally adjusted annual rate*)



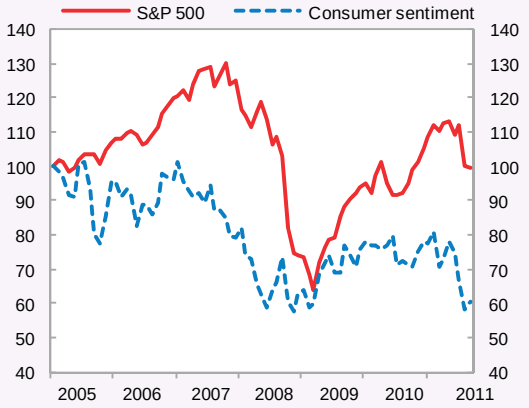

Sources: Haver Analytics; and IMF staff calculations.

**United States: Employment and Housing Indicators**




Sources: Haver Analytics; and IMF staff calculations.

**United States: Stock Market and Consumer Sentiment [1]**
(*January 2005 = 100*)




Sources: Haver Analytics; and IMF staff calculations.
[1] University of Michigan's consumer sentiment index.

world oil prices and disruptions to supply chains following the Japan earthquake, private consumption has turned out to be weaker than expected, in part reflecting fragile household balance sheets and feeble income. Weak consumption, in turn, is interacting with sluggish labor markets, exacerbating housing market weakness and vice versa (see Box 1.1).[3] Unemployment remains above 9 percent, with extremely subdued job creation. In addition, fiscal withdrawal has weighed on demand.

Core inflation has been on the rise during the past six months, largely reflecting pass-through from high commodity prices and higher rent costs. However, staff expect that amid economic slack and moderation of commodity prices, inflation will decline somewhat. In fact, expectations of a federal funds rate increase have been pushed well into 2013, following the U.S. Federal Reserve's statement that economic conditions would likely warrant exceptionally low levels for the federal funds rate at least through mid-2013, and more recently, further unconventional easing (Operation Twist).

Under our baseline, the U.S. economy is projected to expand by over 1½ percent in the second half of the year (quarter-over-quarter, seasonally adjusted annual rate). Lower equity prices, the sudden drop in sentiment, and increased uncertainties about the outlook will weigh on business investment and consumer demand, partly offsetting the uplift from the dissipating temporary drags of the first half of the year.[4] Growth is expected to reach a mere 1.5 percent in 2011 (nearly 1 percentage point lower than projected in the April 2011 *Regional Economic Outlook*) and increase to just 1.8 percent in 2012 on the back of a pickup in private demand and net exports, with the latter benefiting from the weakening U.S. dollar. The fiscal contraction in the pipeline is projected to subtract from growth in 2012, with the structural primary deficit falling by about 1¼ percent of GDP. However, this estimate

[3] For a discussion of the jobless aspect of the current recovery see Estevão and Keim (2011).
[4] The loss of U.S. household wealth from the recent market turmoil could reach 20 percent of disposable income.

assumes that some of the stimulus measures adopted in December 2010, such as unemployment insurance and payroll tax reductions, are extended.[5]

Risks to the U.S. baseline are clearly tilted to the downside, with the likelihood of another U.S. recession, although still contained, on the rise:

- Heightened concerns over sovereign and bank weaknesses in Europe could spill over into the United States, negatively affecting U.S. banks and money market funds with considerable holdings of European bank paper (Box 1.2).[6] Under this tail-risk scenario, global credit markets could be affected, with negative consequences for U.S. and global growth. Although spillovers to U.S. financial markets so far seem to have been manageable, vigilance for possible bouts of illiquidity will be essential.
- On the domestic front, an overly front-loaded fiscal adjustment and continued household balance sheet fragilities would further dampen the near-term outlook. Over the medium term, uncertainties about the U.S. fiscal outlook and failure to tackle debt sustainability could undermine confidence and lead to higher U.S. Treasury rates, with negative spillovers onto the cost of credit and the housing market more generally.

Some bright spots persist. Strong corporate balance sheets and pent-up demand for consumer durables present upside risks, and the weaker U.S. dollar could have a positive impact on net exports.[7] New measures to support repair in the housing market, if adopted, may also boost consumption.

## U.S. Policy Options

With growth in low gear, fiscal policy needs to be carefully calibrated not to undermine growth in the near term, yet must be complemented by a plan enshrined into law to restore public debt sustainability over the medium term. Indeed, such a plan could free up room for measures to offset the underlying near-term fiscal tightening, by underpinning confidence in medium-term fiscal sustainability. In addition, targeted policy actions to support ailing housing and labor markets should be considered.

In this context, *monetary policy* should remain supportive of growth over the next few years. The U.S. Federal Reserve's recent decision to maintain interest rates at historically low levels until at least mid-2013 and extend the maturity of its security holdings (Operation Twist) is appropriate; consideration may need to be given to further unconventional measures should the recovery weaken further (Figure 1.4).[8] Low interest rates will also support financial market stability, although authorities should be vigilant to bouts of illiquidity arising from financial strains in Europe.

On the *fiscal front*, a credible medium-term plan that is sufficiently back-loaded, so as not to jeopardize a weak recovery, remains urgently needed. If approved in its entirety, the proposed American Jobs Act (AJA) would offset the fiscal tightening in train for 2012, while being budget-neutral over the medium term.

But a credible medium-term adjustment plan that stabilizes debt remains missing.[9] Such a plan should

[5] Nonextension of these measures could imply a fiscal withdrawal of ¾ percentage points of GDP in 2012. The IMF's baseline forecast already incorporates the equivalent of 40 percent of the total package proposed by President Obama on September 8, 2011.

[6] See also the IMF's spillover report for the United States (IMF, 2011f).

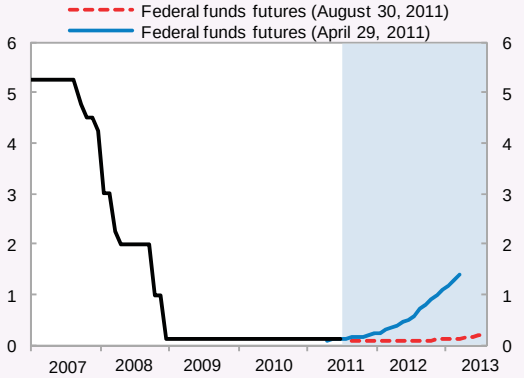
[7] See Batini and Felman (2011) for an assessment of U.S. corporate balance sheets.

[8] The second asset purchase program (QE2) for US$600 billion ended in June 2011. In September, the Federal Reserve announced that it would purchase, by end-June 2012, US$400 billion in long-term Treasury securities, while selling an equivalent amount of shorter-term Treasury securities. It also indicated that it would reinvest principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities.

[9] The consolidation plan under the August debt ceiling agreement did not consider entitlement reforms or revenue-raising measures, and fell short of the President's April strategy of achieving US$4 trillion savings over 12 years.

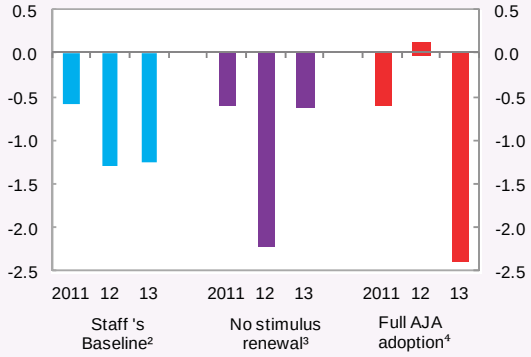
*Figure 1.4. Monetary policy will remain accommodative for a more-prolonged period, with much-needed fiscal consolidation providing some drag on growth.*

**United States: Federal Funds Rate Expectations Implied by Futures Contracts**
*(Percent)*




Source: Bloomberg, L.P.

**United States: Change in Cyclically-Adjusted General Government Balance[1]**
*(Percent of GDP)*




Sources: IMF, *World Economic Outlook*; and IMF staff calculations.
[1] Estimates for 2011 incorporate revised budget outturns.
[2] Staff projections assume a 2-year extension of unemployment insurance (calendar years 2012-13) and a one-year extension of payroll tax relief (calendar year 2012).
[3] Staff projections excluding renewal of unemployment insurance and payroll tax relief.
[4] Staff projections including all the measures in the American Jobs Act (AJA). Baseline projections include measures equivalent to about 40 percent of the resources provided under the AJA.

include both revenue-raising measures (such as fewer tax loopholes and deductions, higher taxes for the higher-income households, and consumption and carbon taxes) and changes to entitlement programs as well (such as raising the retirement age, trimming future benefits for higher-income retirees, and encouraging greater cost sharing with Medicare participants) amid population aging and rising health costs. In addition, strengthening fiscal and budget institutions would yield significant benefits, including reducing the uncertainty of fiscal policymaking (see Box 1.3).

Support is needed for *labor and housing markets* in light of the sluggish recovery, but within the envelope defined by a medium-term plan. On the *housing front*, courts could be allowed to amend the terms of residential mortgages ("cramdowns"), and programs to refinance mortgages and assist homeowners who are unemployed or have negative housing equity could be expanded. Government-sponsored enterprises could play a more active role in principal write-downs (Kiff and Tsounta, 2011). On the *labor front*, improving and consolidating the 50 existing job training and job search assistance programs, and adopting further tax incentives to spur hiring of the long-term unemployed—as proposed in the AJA—could avoid the erosion of job skills that accompanies long-term unemployment.

The continuous implementation of last year's *reform of financial supervision and regulation* is essential to address the weaknesses exposed during the 2008 crisis and prevent another crisis down the road. Although most of the recommendations made by the IMF's 2010 Financial Sector Stability Assessment for the United States have been addressed, funding constraints and delays in appointments are slowing the implementation of the Dodd-Frank Act (see IMF, 2010). Moreover, the still-fragmented regulatory system remains a concern, with the effectiveness of the new regulatory framework in stemming systemic risk and containing risks from too-big-to-fail institutions still untested. In particular, it would be important to ensure that the Financial Stability Oversight Council undertakes transparent and proactive surveillance of

systemic risks. Last but not least, further progress is required in strengthening risk retention and disclosures for securitized debt and redefining the roles of the rating agencies (with greater emphasis on investor due diligence along with steps to address potential conflicts of interest).

## 1.3. Canada: A Slowing Recovery

*The Canadian economy is slowing, largely reflecting close linkages to the United States. Policy challenges are less pressing than in the United States, given relatively strong financial and sovereign balance sheets and still-elevated commodity prices.*

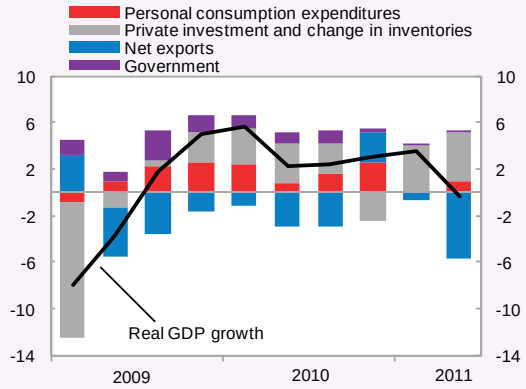
After expanding by about 3½ percent in late 2010 and early 2011, the Canadian economy contracted marginally during the second quarter of 2011, reflecting temporary factors (like those affecting the United States) and weakening private consumption from highly indebted households (Figure 1.5). Meanwhile, business investment remains robust, although net exports have continued to subtract from growth, reflecting a slowdown in U.S. demand and persistent strength in the Canadian dollar.

Contrary to what is taking place in the United States, labor and housing markets have performed relatively well. Unemployment fell below 7¼ percent in July 2011, and stricter mortgage rules were recently implemented to contain the growth in mortgage credit. Private credit remains strong, reflecting accommodative monetary conditions and a profitable banking system buttressed by strong regulation and supervision.[10]

The Canadian economy is now projected to expand by 2.1 percent during 2011, moderating to about 1.9 in 2012. Downward revisions to the outlook (½ percentage point in both 2011 and 2012) largely reflect weaker U.S. and global growth. Global factors have contributed to regional disparities, as the resource-rich western provinces benefit from

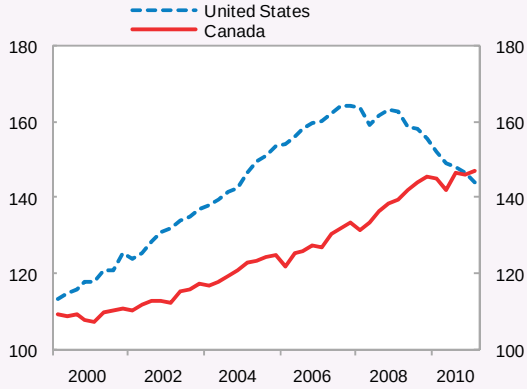
*Figure 1.5. Canada is slowing, reflecting close ties with the United States. Fiscal consolidation and high household indebtedness are also headwinds to growth.*

**Canada: Contributions to Real GDP Growth**
*(Percentage points, seasonally adjusted annual rate)*



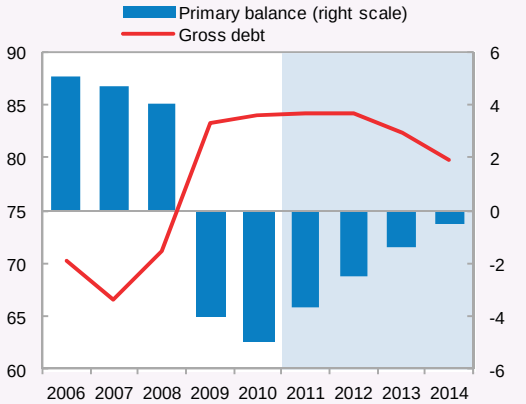

Sources: Haver Analytics; and IMF staff calculations.

**Household Leverage[1]**
*(Percent of disposable income)*




Sources: Haver Analytics; and IMF staff calculations.
[1]Adjusted for data to be comparable across countries.

**Canada: General Government Primary Balance [1] and Gross Public Debt**
*(Percent of GDP)*




Sources: IMF, *World Economic Outlook;* and IMF staff calculations.
[1] Primary Net Lending/Borrowing.

[10] Canadian banks were much less exposed to toxic assets and wholesale funding than were U.S. banks. See Box 1.3 of the April 2011 *Regional Economic Outlook* (IMF, 2011e).

elevated commodity prices, and the manufacturing-hub eastern provinces suffer from links to the slow-growing United States and reduced competitiveness.

Significant risks stem from the uncertain global environment, as well as potential fragilities in domestic consumption. International risks include a weaker-than-expected U.S. and global outlook, which could trigger a reversal in commodity prices. On the domestic front, consumption might moderate more than expected from a large retrenchment in highly indebted households amid concerns of a drop in house prices. The latter are estimated to be above levels dictated by economic fundamentals in some key provinces. On the upside, improved global financial conditions could bolster confidence, supporting domestic demand.

### Canada Policy Options

Following a combined fiscal stimulus in 2009–10 of more than 4 percent of GDP, the Canadian authorities embarked on a generally adequate fiscal consolidation plan (ex-post, some measures were adopted to reduce the up-front adjustment), which would bring the budget into surplus before fiscal year 2016. In this context, monetary policy should remain accommodative as long as inflation expectations remain well anchored.[11] In light of the weaker outlook, markets now expect a small rate cut in the near term, as well as no withdrawal of the monetary stimulus well into 2013.

Developments on the housing front require increased vigilance, and consideration may need to be given to additional prudential measures to prevent a further buildup in household debt.

## 1.4. Implications for Latin America and the Caribbean

Our global baseline scenario suggests that the region's more open economies will continue to benefit from the double tailwinds of high commodity prices and easy external finance, although both are now projected to be far less stimulative and more volatile than six months ago:

- The weaker-than-anticipated recovery in advanced economies (coupled with the need for fiscal consolidation) implies that unusually low international interest rates will remain in place for a prolonged period. However, bouts of risk aversion are likely to continue until advanced economies design and adopt comprehensive plans to address fragile balance sheets. In this context, capital inflows will likely remain more muted, especially given the environment of heightened exchange-rate volatility.
- Continued robust growth in emerging Asia is expected to keep commodity prices at relatively strong levels, although somewhat lower than anticipated 6 months ago particularly in the case of oil and metals (excluding gold and silver).

However, souring global conditions are having uneven implications for the region. Countries with strong real links with advanced economies (such as Mexico and the countries of Central America and the Caribbean) are expected to be harder hit by the recent slowdown. Although the Mexican economy is more dependent on U.S. manufacturing and trade, Central America and the Caribbean are more reliant on remittances and tourism flows, which in turn are very dependent on U.S. labor and housing market developments. Preliminary data point to only a minor slowdown in remittances and tourism receipts so far, though some further moderation is expected, as these flows typically manifest themselves with some lag. That said, remittances and tourism flows remain well below those observed prior to the crisis:

- Remittances have been hard hit by the adverse feedback loops between housing and labor markets, which have particularly affected Hispanic workers in the United States

[11] Inflation is expected to remain around 3 percent in the near term—above the Bank of Canada's 2 percent target—amid temporarily high commodity prices, returning to the target next year.

(Figure 1.6).[12] Unemployment among Hispanics is about 2½ percentage points higher than average, since they overwhelmingly work in low-skilled sectors (construction, extraction, transportation, and services) that have been hardest hit by the financial crisis. Moreover, weak housing markets may be crimping remittances through the wealth channel.[13]

- The recovery in tourism receipts remains weak. Although tourist arrivals have been on an upward trend since mid-2009, spending per tourist is down to levels last seen in 2004. Efforts to diversify the tourism base toward faster-growing regions have had limited impact thus far.

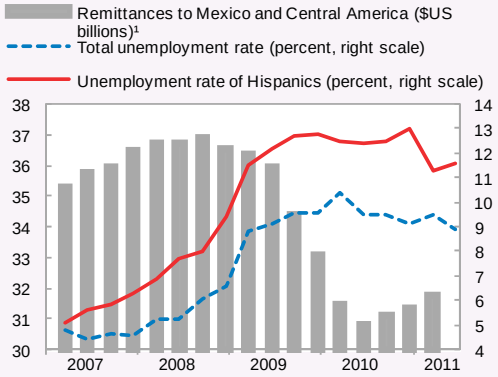
Whereas our global baseline scenario would have a relatively mild impact on much of the region, the materialization of *downside risks* would have a serious adverse impact:

- A recession in advanced economies could lead to a sharp slowdown in emerging Asia and in turn a reversal in commodity prices and capital inflows. This scenario would particularly affect South America's commodity exporters. In contrast, renewed declines in prices of commodities (particularly energy) would help buffer the impact of a global downturn in Central America and the Caribbean, which would suffer from reduced tourism receipts and remittances.

- Although the financial impact of sovereign debt problems in Europe has been relatively contained,[14] a full-blown sovereign and financial crisis in Europe would have very negative ramifications for the region's financial credit

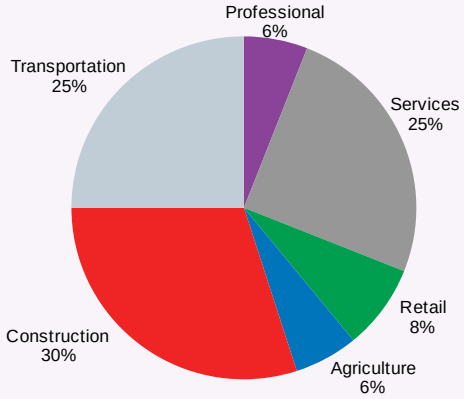
***Figure 1.6. Recovery in remittances has been slow, reflecting high levels of unemployment among Hispanics, who were employed in sectors hardest hit by the recession.***

**United States: Unemployment and Remittances to Latin America**



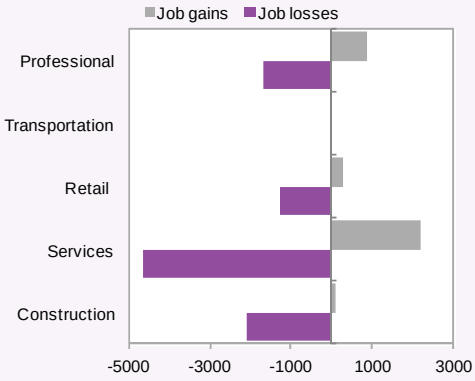

Sources: Haver Analytics; and IMF staff calculations.
¹ Simple sum over four quarters for the Dominican Republic, El Salvador, Guatemala, Honduras, and Mexico.

**United States: Employment of Mexican Male Immigrants by Sector, 2009**




Sources: Brick, Challinor, and Rosenblum (2011); and IMF staff calculations.

**United States: Employment Flows since Recession¹**
(*Thousands of jobs*)




Sources: Haver Analytics; and IMF staff calculations.
¹ Includes data from January 2008–August 2011.

[12] Remittances to Central America fell from an average of 12½ percent of GDP in 2006 to about 10 percent in 2010.
[13] According to Taylor, Fry, and Kochhar (2011), median home equity of Hispanics has fallen by more than 50 percent since 2005, in part because they tend to live in places hardest hit by the housing collapse (such as Florida and California).
[14] Despite the strong presence of Spanish banks in some countries (particularly Chile and Mexico), direct financial strains from Europe have been limited, since Spanish banks with presence in the region follow a subsidiary model relying heavily on retail funding.

markets (see Boxes 1.2 and 2.1), similar to those observed during the Lehman episode. A sudden stop in capital flows would particularly affect those banking systems that rely more on wholesale funding.

Over the medium term, prolonged and increased uncertainties about the U.S. fiscal outlook could eventually push up U.S. Treasury interest rates. Shocks to U.S. interest rates tend to have a strong bearing on the region's growth, particularly in countries where banking and corporate sectors rely on external debt. For the near term, safe-haven flows are likely to keep U.S. Treasury rates—which could even strengthen in a downside scenario—in check, but this dynamic should not breed complacency about medium-term U.S. fiscal challenges.

## Box 1.1. U.S. Housing and Labor Markets: Headwinds to Recovery

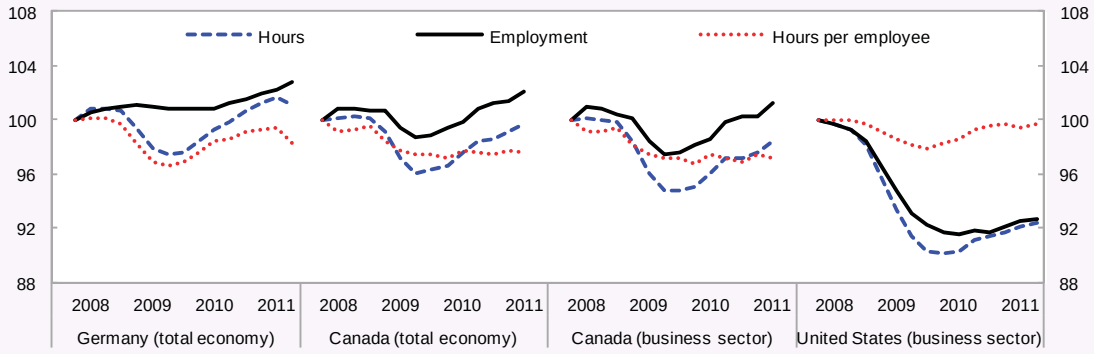
The housing market remains depressed (see figure, next page). Five years after the burst of the housing bubble, construction activity and house sales are close to record lows, with an estimated overhang of three million vacant homes depressing new construction activity. House prices—down more than 30 percent from their peaks—are again declining after the expiration of the homebuyers' tax credits in mid-2010. This decline is in part a natural consequence of past excesses, but it is also an outcome of elevated levels of foreclosures. Foreclosures are detrimental for the housing recovery, as they typically sell at a discount of 30 percent, lowering the price of neighboring properties as well. Indeed, Tsounta (2011) estimates that preventing one million foreclosures could raise house prices on aggregate by as much as 4 percent over the medium term.

Have we reached bottom in the housing market? Most analysts and IMF staff now expect further declines until late 2011, with a very subdued recovery over the medium term, amid record levels of "shadow" inventory of distress sales. These are properties—estimated at around six million—that could enter the market through distress sales and include houses currently in foreclosure or at risk for being foreclosed upon.

The state of the housing market plays an important role in explaining the weakness of U.S. private demand via households' balance sheets. Household real estate assets—which account for about one-quarter of total assets—are down 30 percent from their peak, whereas household debt as a share of disposable income remains well above prebubble levels, despite elevated numbers of mortgage defaults. Celasun and Li (2011) find that a 10 percent house price depreciation could lower consumption by 1½ percent over the medium term, as households save more to buttress their finances. Thus, the weak outlook for house prices and housing wealth would continue to be a significant headwind against a faster recovery in output in the United States.

Indeed, the weak recovery in aggregate demand is partly responsible for sluggish job growth. U.S. unemployment has been hovering at rates last seen in the early 1980s for the past two years, with employers largely responding to the crisis by laying off workers rather than by shortening the workweek, in contrast to the experience in other advanced economies, notably Canada and Germany (see figure below). The recovery, in turn, has featured a relatively rapid increase in productivity but sluggish job creation—with uneven employment gains across sectors, suggesting that structural changes could be at play (for details, see Estevão and Keim, 2011). Given subdued income growth, elevated uncertainty regarding job prospects, and average unemployment duration at record levels, consumer confidence remains anemic, which is also reflected in subdued consumption growth. With prospects for unemployment remaining elevated for a while and some concerns in regard to rising structural unemployment, the outlook for private domestic demand remains subpar.[1]

**Comparison of Labor Input Cutbacks in the United States, Canada, and Germany**
*(Indices, 2007:Q4 = 100)*



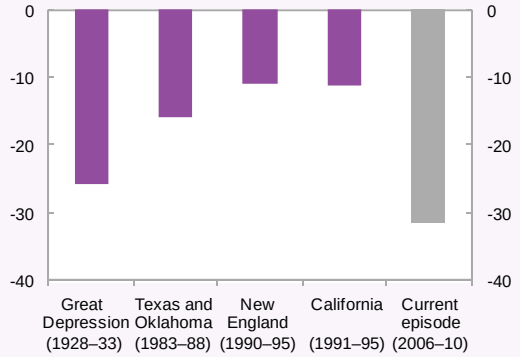

Sources: Bureau of Labor Statistics; Haver Analytics; Statistiches Bundesamt; Statistics Canada; and IMF staff calculations.

Note: This box was prepared by Evridiki Tsounta.

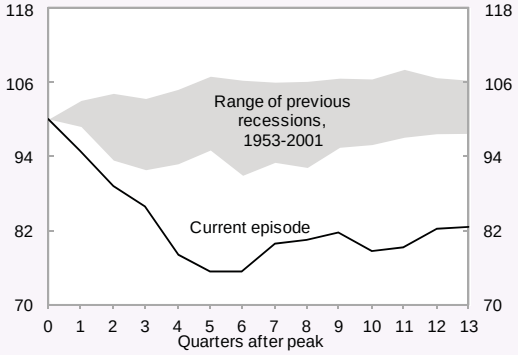
[1] Estevão and Tsounta (2011) find that skill mismatches and weak housing markets might have put upward pressure on structural unemployment, especially in regions were both effects are present.

## United States: Housing and Labor Markets – Impediments to Growth

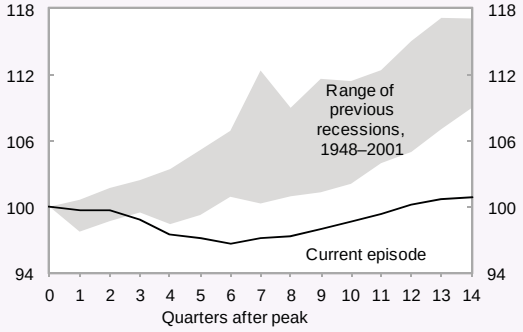
**House Price Declines in Major U.S. Real Estate Busts**
*(Percent)*



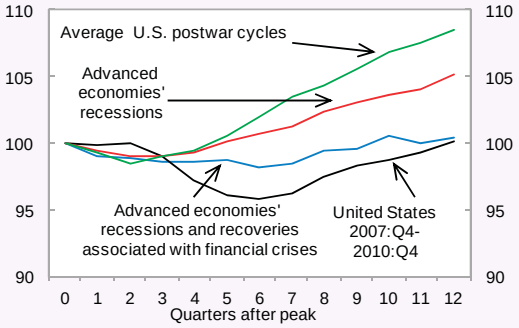

**Household Net Worth as a Percentage of Disposable Personal Income**
*(Indices, business cycle peak = 100)*



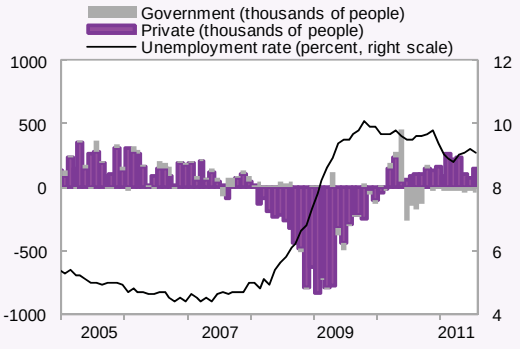

**Output Paths**
*(Indices; business cycle peak = 100)*



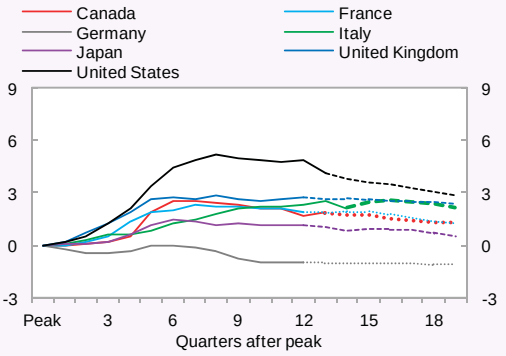

**Personal Consumption Expenditures**
*(Indices; business cycle peak = 100)*




**Change in Non-Farm Payrolls and Unemployment**




**U.S. Unemployment Rate versus G-7**
*(Percentage point difference from peak GDP[1])*

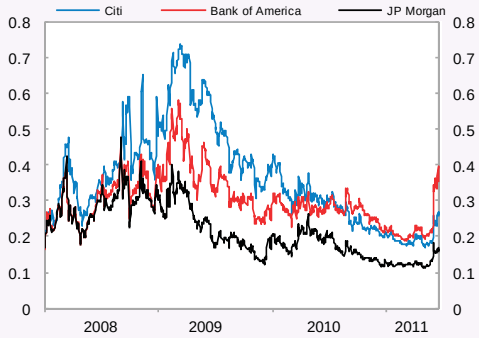



Sources: Bureau of Economic Analysis; Bureau of Labor Statistics; Freddie Mac; Haver Analytics; IMF *World Economic Outlook*; MacroMarkets LLC; Robert Shiller; Standard & Poor's/Case-Shiller Home Price Indices; and IMF staff calculations.
[1] The dates of the peaks are 2007Q3 for Italy, 2007Q4 for the Canada and United States and 2008Q1 for France, Germany, Japan, and United Kingdom. Dotted lines represent IMF staff projections.

## Box 1.2. U.S. Financial Exposure to Europe

**Net direct exposure of U.S. banks to European peripheral countries seems limited**. Banking statistics from the Bank for International Settlements and the U.S. Federal Reserve indicate limited direct claims of U.S. banks on European peripheral countries, although potential exposure—including derivatives, unused credit commitments, and guarantees—is larger. However, uncertainties surrounding the estimates of these potential exposures are amplified by the lack of data on the insurance purchased by U.S. banks against default in European peripheral countries, which would offset default insurance sold and limit the scope of net exposure.

**Probability of Distress in U.S. Banks Given Distress in Selected European Countries[1]**




Sources: Bloomberg L.P; Datastream; and IMF staff calculations.
[1]The sample consists of Greece, Ireland, Italy, Portugal and Spain as well as the three largest U.S. banks by capital: Citi, Bank of America, and JP Morgan.

**Meanwhile, although investors' concerns about the potential spillover to U.S. banks have increased in recent weeks, they remain primarily focused on domestic developments**. Using market information, Conditional Probabilities of Distress (CoPoDs) are estimated to represent the market's assessment of potential spillovers through direct exposure to European peripheral government debt (see figure).[1] Results suggest that whereas the probabilities of distress in European sovereigns have continued to increase, U.S. banks remain more sensitive to domestic events. Specifically, spikes in CoPoDs for all major U.S. banks occurred between 2008 and 2009, around credit downgrades, the Lehman bankruptcy, and the launch of various government programs—such as the Term Asset-Backed Securities Loan Facility and aid to American International Group. Still, despite limited sensitivity to European sovereigns, were distress in euro area peripheral sovereigns to spill over to banks, and in particular core euro area banks, the potential impact on U.S. banks could be much greater given their significant exposures to European banks.

**U.S. money market mutual funds (MMMFs) have minimal direct exposures to peripheral European countries, but retain sizable exposures to core European financial institutions**. According to market analysis, based on a sample of the 10 largest MMMFs, which represent 43 percent of the total prime fund universe, exposure to European banks accounts for almost half of U.S. MMMFs' assets. French banks (at nearly 12 percent of MMMFs' assets) form the largest country exposure, and 44 percent of the funds' total assets are concentrated in 15 banks. Therefore, if peripheral European sovereign distress reverberated to core European banks, U.S. MMMFs could also face significant strain (see also Box 1.4, "Why Do U.S. Money Market Funds Hold So Much European Bank Debt?" in the October 2008 *World Economic Outlook* [IMF, 2011b]).

**In sum, given strong financial linkages with Europe, developments in Europe could have significant knock-on effects on U.S. financial institutions**. In recent weeks, U.S. MMMFs have trimmed their core European bank holdings significantly, while their direct exposure to banks from the European periphery was already minimal. Such activities came at the time of heightened funding stress for European banks and could exacerbate these banks' funding difficulties. If the propagation of European sovereign credit crisis affects European banks beyond the periphery, and tension in the euro funding market escalates, the balance sheets of U.S. financial institutions could come under considerable strain.

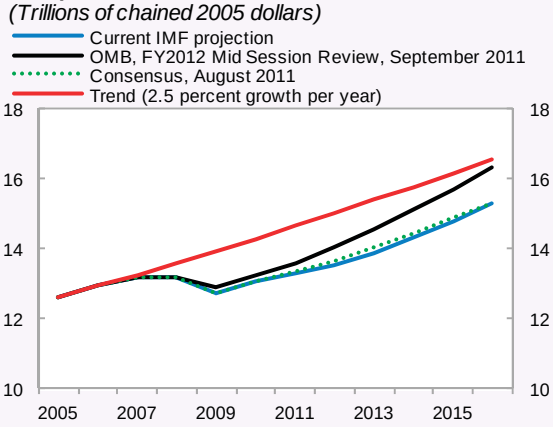
Note: This box was prepared by Sally Chen and Francesco Columba.

[1] The sample consists of Greece, Ireland, Italy, Portugal, and Spain, and the three largest banks in the United States by capital: JP Morgan Chase, Citi, and Bank of America. Distress is defined as a (hypothetical) credit event that triggers credit default swap contracts; a credit event could be a failure to pay on schedule, default, or more broadly, a restructuring in which bondholders are forced to bear losses. CoPoDs are estimated as in Segoviano (2006a, 2006b) and Segoviano and Goodhart (2009).

## Box 1.3. Budget Institutions for U.S. Federal Fiscal Consolidation

**The United States faces a large, multiyear fiscal adjustment that could be supported by reforms of federal budgetary institutions.** In some relevant areas, the quality of federal budgetary institutions is excellent—for example, in fiscal reporting and forecasting, budget execution controls, and background analysis. In addition, the Budget Control Act adopted in August specifies a medium-term path for discretionary spending, saving US$900 billion over 10 years, potentially improving the predictability of the annual budget cycles, and helping to keep consolidation efforts on track over time. As for the mandatory expenditures and revenues which are not part of the regular budget cycles, the costs of new programs in these areas need to be offset by future savings under the pay-as-you-go principle. However, the rules are subject to many exemptions and do not address underlying spending pressures from programs such as Social Security. Also, the administration's macroeconomic projections have recently been significantly above consensus (see figure), raising questions about the official estimate of fiscal consolidation needs.

**Comparison of Real GDP Forecasts**
*(Trillions of chained 2005 dollars)*




Sources: Congressional Budget Office; Office of Management and Budget; and IMF staff calculations.

**The ability of U.S. policymakers to find consensus on a fully fledged medium-term fiscal consolidation framework is crucial for the success of deficit-reduction efforts**. In this context, the following institutional enhancements could be helpful:

- *Clear medium-term objectives*. Endorsement of specific multiyear objectives by both chambers of Congress is essential to anchor expectations and achieve consistency with the administration's existing proposals. The objectives should include debt or deficit targets as a share of the economy, with the aim of stabilizing the debt ratio by mid-decade and gradually reducing it afterwards. The debate has so far focused on specifying dollar savings over a certain time frame, but fiscal outcomes can vary widely based on the baseline against which such savings are measured and macroeconomic assumptions.
- *Realistic macro framework.* The administration's macroeconomic framework could explicitly include inputs from private sector forecasters. Participation by outside participants in the forecasting process is common: notably, Canada has closely adhered to the consensus forecast (marked down with an additional prudence factor) since embarking on an ambitious consolidation strategy in the 1990s. Australia and Germany also consult widely on their macroeconomic framework. More recently, the United Kingdom created an independent agency to guide its forecasting process (see table).
- *Failsafe mechanisms.* Congress has mandated additional automatic spending cuts worth US$1.2 trillion starting from 2013 should the bipartisan Joint Committee fail to agree on a second round of deficit reduction measures. Although such an arrangement locks in additional deficit reduction, the automatic spending cuts would not be sufficient to stabilize the federal debt ratio. The fiscal consolidation framework could therefore include a failsafe mechanism recently proposed by the President that would trigger savings if the debt ratio fails to stabilize. It needs to be kept in mind, however, that such failsafe mechanisms cannot substitute for tough choices on specific fiscal consolidation measures (including those involving entitlements and taxes) and have not always been adhered to in the past.

Note: This box was prepared by Martin Sommer based on Sommer (2011).

**Who Prepares Macroeconomic Framework For Budget Projections?**

| | |
|---|---|
| Australia | Treasury, with inputs from an extensive consultation process, including through a Business Liaison Program. |
| Canada | Average of private forecasters. In the budgets for 2010 and 2011, the private sector average nominal GDP outlook was adjusted downward to account for risk related to the elevated level of economic uncertainty. |
| Germany | Interministerial Working Group, after consultation with research institutes and central bank. |
| France | Ministry of Finance, Forecasting Directorate. |
| Italy | Ministry of Finance. |
| Netherlands | Independent public agency. |
| Switzerland | Forecast by group of experts led by the State Secretariat for Economic Affairs, including representatives from the Federal Finance Administration, Customs, the Federal Statistical Office, and the Swiss National Bank. |
| United Kingdom | Forecast by independent public agency, based on iterative process between agency's macro model and revenue/spending departments' micro-based fiscal forecasts. |
| United States | Jointly developed by Council of Economic Advisers, Office of Management and Budget, and Treasury. |

Source: Sommer (2011).

# 2. Outlook and Policy Issues for Latin America and the Caribbean

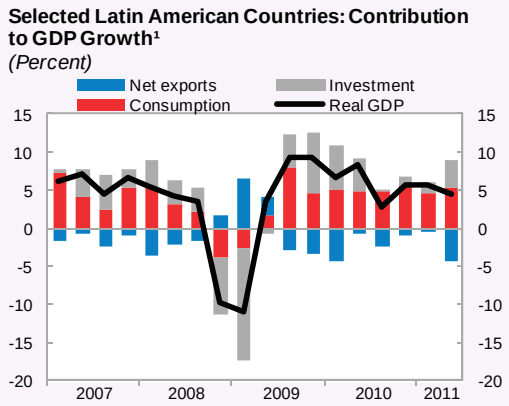
*Growth during the first half of 2011 was robust, supported by easy external financing, favorable terms of trade for commodity exporters, and lingering effects of past accommodative policies. However, the shift in the global economic environment and bouts of market volatility pose major challenges for policymakers. Although the slowdown in advanced economies is projected to have a moderate effect on growth in most countries, large downside risks to the outlook loom. In this context, policymakers should remain vigilant to overheating, and rebuild policy buffers used during the global crisis, since a rapid shift in global sentiment may require more supportive policies. In a downside scenario, monetary policy should be the first line of defense for countries with credible frameworks, while fiscal easing should be utilized only if severe downside risks materialize. Prospects are weaker in countries with closer links with advanced economies and limited policy space.*

## 2.1. Overview

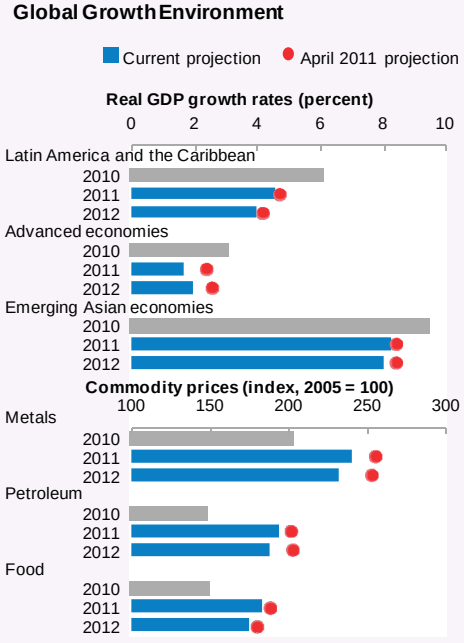
Latin America expanded by about 5 percent during the first half of 2011 (Figure 2.1). Growth continued to be led by the commodity-exporting countries of South America, supported by easy external financing conditions and favorable terms of trade. The growth in activity moderated from the high levels reached in 2010, but remained above potential in much of the region. Domestic demand continued to expand at a fast pace, amply exceeding (actual and potential) real GDP growth, although there are signs that policy tightening helped moderate demand. In Central America, the recovery gathered momentum, fueled by domestic demand and increased agricultural exports, whereas in the highly-indebted and tourism-dependent Caribbean, growth has remained stubbornly low.

Note: This chapter was prepared by Luis Cubeddu and Camilo E. Tovar. Andresa Lagerborg provided excellent research assistance.

***Figure 2.1. Real GDP growth has been robust. Under the baseline, the global slowdown is projected to have a moderate effect, although downside risks dominate.***



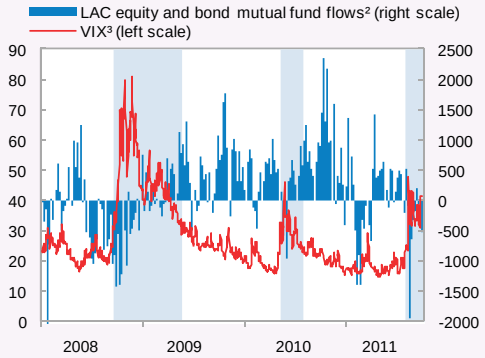

Sources: Haver Analytics; national authorities; and IMF staff calculations.
¹ Seasonally adjusted annual rate. PPP-GDP-weighted averages of Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Paraguay, and Peru. Estimates for 2011:Q2 include staff projections for Argentina and Mexico and excludes Costa Rica and Paraguay.




Source: IMF staff calculations.

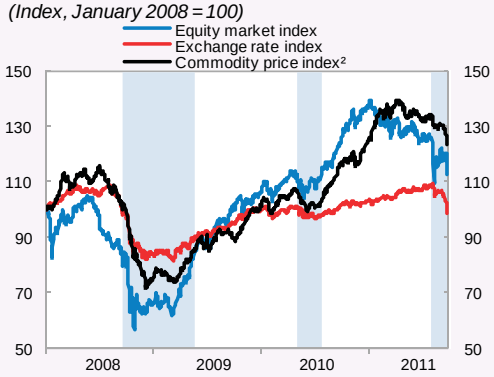
***Figure 2.2. In response to recent market tensions, Latin American equities, exchange rates and commodities have all taken a hit. Funding pressures have been more limited so far.***

**Global Risk Aversion: VIX and Mutual Fund Flows in Latin America[1]**



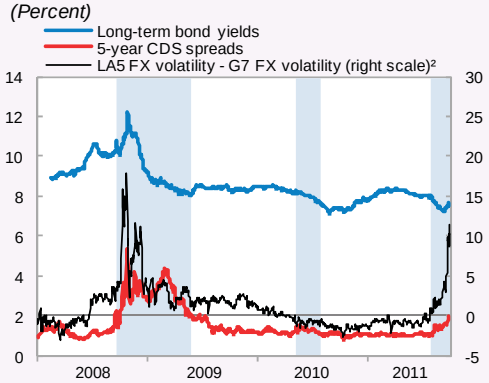

Sources: Bloomberg; and Haver Analytics.
[1] Shaded areas are periods of VIX stress.
[2] Weekly flows in millions of U.S. dollars.
[3] VIX is the Chicago Board Options Exchange Market Volatility Index.

**Selected Latin America: Stock Markets, Exchange Rates and Commodity Prices[1]**
*(Index, January 2008 = 100)*




Sources: Haver Analytics.
[1] Equity markets in local currency terms. Exchange rate in local currency per U.S. dollar terms. Shaded areas are periods of VIX stress. Simple average for Brazil, Chile, Colombia, Mexico, and Peru.
[2] Thompson Reuters/Jefferies CRB commodity price index.

**Selected Latin America: Bond Yields, Credit Default Swap Spreads, and Foreign Exchange Volatility[1]**
*(Percent)*




Sources: Bloomberg.
[1] CDS spreads and bond yields in local currency terms. Shaded areas are periods of VIX stress. Simple average for Brazil, Chile, Colombia, Mexico, and Peru.
[2] 1-month at-the-money foreign exchange rate volatility.

Although it is somewhat early to make a full assessment, recent financial market volatility and falling commodity prices have started to weigh in on the region's financial markets. Spillovers from troubles in peripheral Europe had been relatively contained through the first half of the year. More recently, however, increased fears of a full-blown crisis in Europe and another recession in the United States have heightened global risk aversion, negatively affecting equities and currencies. That said, balance of payments and funding pressures seem to have been limited, though capital flows remain highly volatile (Figure 2.2). Consensus growth forecasts for 2011 and 2012 were reduced in recent months, and business confidence and other leading indicators suggest that some moderation in activity is in store.

Under our new *baseline scenario*, growth is projected to reach 4½ percent in 2011 and to moderate to about 4 percent in 2012, leaving output slightly above potential next year. Despite downward revisions to growth in the United States and other advanced economies, the outlook is only slightly less favorable than that projected back in April 2011. This reflects in part emerging Asia's relative resilience, which in turn would support commodity prices at fairly high levels. In addition, in some cases the projections assume less policy tightening than originally envisaged in light of weaker external demand conditions.[1]

This baseline scenario assumes that growth in advanced economies will remain sluggish, with a pause in advanced-country monetary tightening—implying a prolonged period of accommodative monetary conditions. It also assumes that European policymakers contain the crisis in the euro area periphery, that U.S. policymakers strike a judicious balance between support for the economy and medium-term fiscal consolidation, and that volatility in global financial markets does not escalate further.

[1] For 2011, large upward revisions in some countries (e.g., Argentina, Ecuador, Venezuela), reflecting stronger-than-anticipated growth during the first half of the year, partially offset downward revisions elsewhere.

Finally, the baseline implies that emerging Asia suffers only a minor loss of dynamism. In such a scenario, *double tailwinds of easy external financing conditions and firm commodity prices* will continue to support growth, albeit with a more moderate push from commodities and more subdued inflows amid continued uncertainties about the resolution of balance sheet problems in advanced economies.

However, *downside risks* from the world economy dominate the outlook, which could turn the tailwinds into headwinds:

- A sustained crisis of sovereign and financial confidence in Europe could disrupt global credit markets and lead to a sudden stop of trade and bank financing, much like that observed following the Lehman Brothers' failure in September 2008 (Box 2.1).
- Another recession in the United States, triggered by woes in Europe or persistent weaknesses in private domestic demand coupled with an overly large up-front fiscal adjustment, could lead to a considerable slowdown in emerging Asia and much lower oil and metal prices.[2] The ensuing contagion could reverse tailwinds and negatively affect the region's commodity exporters. Chapter 3 analyzes the impact of commodity price reversals.

*Upside risks* remain, particularly if Europe's balance sheet fragilities are contained and financial conditions normalize. Under such a scenario, risk appetite would resume. In the context of a prolonged period of easy monetary conditions in advanced economies, this would stoke larger capital flows to emerging economies (particularly those with stronger policy frameworks) and intensify overheating pressures.

Given the complexity and uncertainties surrounding the global economy, policymakers must stand ready to adjust policies should downside risks materialize.

Countries with policy space and credible frameworks may have room to utilize that space in a downside scenario to mitigate the impact of a global recession and financial market volatility. Accordingly, under our baseline scenario it will be critical to rebuild policy buffers to prepare for an adverse scenario, particularly on the fiscal side, as fiscal positions are weaker than prior to the crisis. Naturally, a country's policy response will also depend on its cyclical position, the strength of its public sector balance sheets, and external (real and financial) linkages:

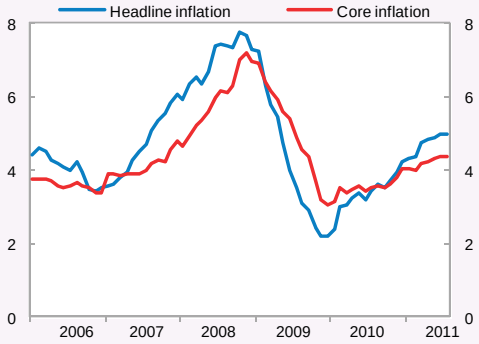
- Commodity exporters in South America with closed output gaps need to remain vigilant to overheating, but also prepare for downside risks. In countries with credible monetary frameworks, where inflation pressures have abated, monetary policy can be more flexible, serving as a first line of defense. Consideration could be given to halting the pace of monetary policy tightening (and in some cases easing), at least until a clearer picture of the global outlook emerges. Meanwhile, fiscal consolidation should proceed as planned to rebuild policy buffers and avoid impairing fiscal credibility. Furthermore, authorities should be vigilant for potential liquidity strains that could impair financial stability.
- Most countries in Central America, where debt remains well above precrisis levels, need to step-up efforts to rebuild fiscal buffers. Meanwhile, the Caribbean must resist fiscal consolidation fatigue, while containing the possible fallout from weak financial institutions.

This chapter is organized as follows: Section 2.2 summarizes the policy challenges of the different subregions in Latin America and the Caribbean. In light of lingering overheating risks, Section 2.3 examines the tightness of labor markets, and Section 2.4 analyzes the effectiveness of macroprudential policies in curbing credit growth. Finally, Section 2.5 reviews recent experiences with fiscal consolidation efforts in the Caribbean, which could shed light on challenges elsewhere.

[2] Roache (forthcoming) finds that a 3 percent decline in Chinese industrial production growth (one standard deviation) causes crude oil and copper prices to fall by 6 percent.

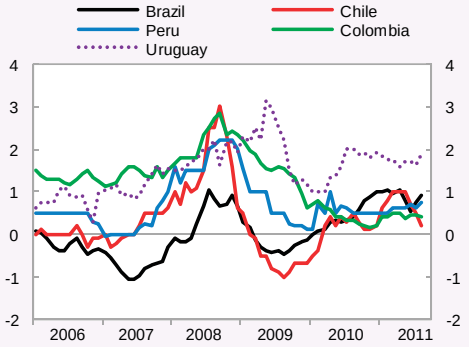
*Figure 2.3. Underlying inflation and inflation expectations are moderating, in line with some slowing in domestic demand.*

**Selected South America: Headline and Core Inflation[1]**
*(12-month percent change)*



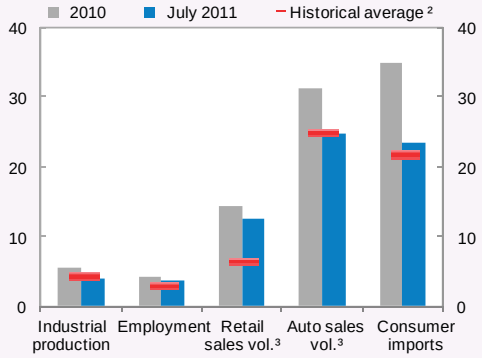

Sources: Haver Analytics; national authorities; and IMF staff calculations.
[1] Simple average of Brazil, Chile, Colombia, Peru, and Uruguay. Data through August 2011.

**Selected South America: Inflation Expectations Less Target Inflation[1]**
*(12-month percent change, 12 months ahead)*




Sources: Central banks; Haver Analytics; and IMF staff calculations.
[1] Target inflation is the midpoint of the inflation band. The inflation target range is (± 1), except for Brazil and Uruguay (± 2). Data are through August 2011.

**Selected South America: Economic Activity and Demand Indicators [1]**
*(12-month percent change)*




Sources: Haver Analytics; and IMF staff calculations.
[1] Average of Brazil, Chile, Colombia, Peru, and Uruguay. Indices for industrial production, employment, retail sales and auto sales; nominal U.S. dollars for consumer imports. All underlying indicators are seasonally adjusted.
[2] Average over January 2003 — July 2011.
[3] Data through June 2011.

# 2.2. Policy Challenges

## South America: Financially Integrated Commodity Exporters—Guarding against Overheating

*With output gaps already closed in most commodity-exporting countries of South America, guarding against overheating remains a key policy priority. In the context of souring global prospects, monetary tightening could pause in countries where policy frameworks are credible and inflation expectations are well anchored, though fiscal consolidation should proceed in line with medium-term plans to rebuild buffers and enhance policy room for maneuver should more extreme downside risks materialize.*

*Output growth* in the more financially integrated commodity exporters (Brazil, Chile, Colombia, Peru, and Uruguay) remained strong during the first half of 2011, averaging close to 5 percent year over year. The expansion was led by strong private domestic demand, supported by favorable commodity prices, easy external financing conditions, and effects of past accommodative macroeconomic policies. Economic activity is now projected to moderate to an average of 4½ percent by the end of the year, reflecting somewhat less stimulative external conditions and some further tightening of macroeconomic policies.

*Inflation* peaked by midyear, following a period of sustained upward pressures, although it remains above the upper band of the range in Brazil and Uruguay (Figure 2.3). Tighter monetary policy, coupled with declines in world commodity prices and (until recently) further currency appreciation, has helped dissipate some of these pressures. However, inflation expectations remain sticky in some countries, notably Brazil and Uruguay.

The *current account* balance deteriorated slightly during the first half of the year, despite strong commodity prices. Imports increased by more than 35 percent year over year through June, well above the growth in exports.[3] The current account deficit in

[3] In an effort to curb growing imports, in September 2011 Brazil introduced a temporary tax on imported vehicles through end

*(continued)*

the more financially integrated economies of South America is projected to reach 1¾ percent of GDP by end-2011, ¾ percent higher than in 2010, though further declines in commodity prices (mainly oil and metals) will lead to larger deficits.

Meanwhile, the *capital account* has been buoyant, comfortably financing current account deficits and leading to a further accumulation of international reserves, despite a strengthening of currencies until recently (Figure 2.4). The composition of inflows has tilted in favor of foreign direct investment (FDI), though it remains unclear whether the adoption of capital flow management measures (CFMs) slowed portfolio flows or shifted the composition of flows.

In the context of easy financing conditions, *credit* has continued to expand at a rapid pace and has shown little sign of deceleration:

- Real bank credit to the private sector continues to grow at a brisk pace (an average of about 12 percent year over year through June), though there are indications that lending standards have been tightened for consumption and housing credit, in response to a rise in nonperforming loans in the corresponding sectors and targeted prudential measures. In most countries, banks are increasingly relying on wholesale funding to finance their lending operations, albeit starting from a fairly low base.[4] Although these trends are not an immediate threat to stability, they need to be closely monitored to avoid problems down the road.

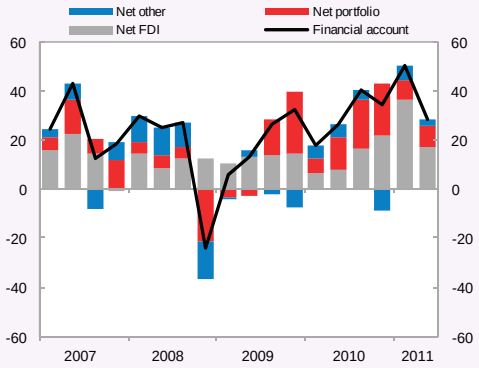
- Similarly, nonbank borrowing by firms is up sharply, although vulnerabilities still remain low. Although an increasing share of borrowing is in foreign currency, maturities have been extended and leverage ratios are low for most countries.

2012. The tax does not apply to vehicles imported from Mercosur or Mexico.

[4] Smaller banks tend to have higher levels of exposure to consumer credit and wholesale funding.

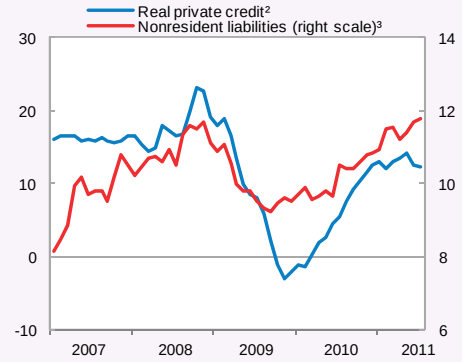
***Figure 2.4. Until recently, strong capital flows have fueled credit growth and led a strengthening of currencies in some countries.***

**Selected South America : Financial Account [1]**
*($US billions)*



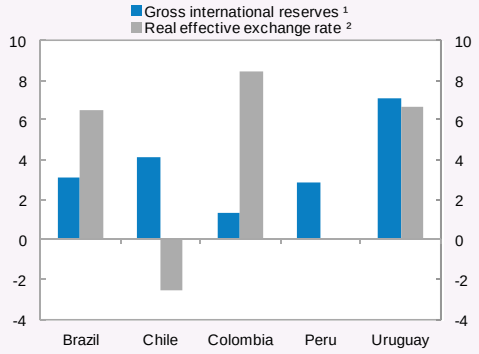

Sources: Haver Analytics; national authorities; and IMF staff calculations.
[1] Includes Brazil,Chile, Colombia, Peru, and Uruguay, except for 2011Q2 where data for Colombia and Uruguay were not available.

**Selected South America: Real Bank Credit and Leverage[1]**
*(Percent)*




Sources: EMED; Haver Analytics; and IMF staff calculations.
[1] Average of Brazil, Chile, Colombia, Peru, and Uruguay.
[2] Real bank credit to private sector; 12-month percentage change.
[3] Defined as liabilities to nonresidents as a percentage of total liabilities. Excludes Chile.

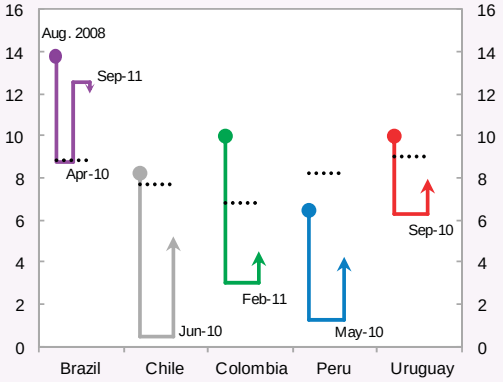
**Selected South America: Change in International Reserves and Real Effective Exchange Rates, January/August 2011**




Sources: Haver Analytics; IMF, Information Notice System; and IMF staff calculations.
[1] Change in gross international reserves in percent of 2010 GDP. Includes data up to August 2011.
[2] Real effective exchange rate change between December 2010 and July 2011, in percent. Positive values indicate an appreciation.

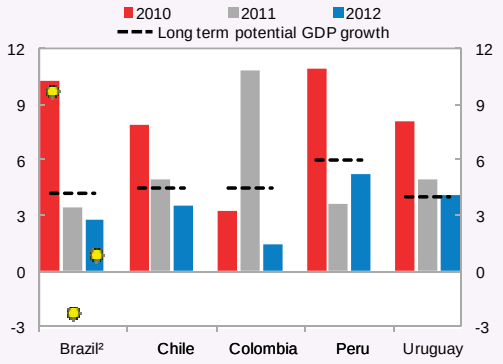
***Figure 2.5. Policies have been tightened. However, fiscal positions remain somewhat weaker than pre-crisis levels.***

**Selected South America: Monetary Policy Rate[1]**
*(Percent)*



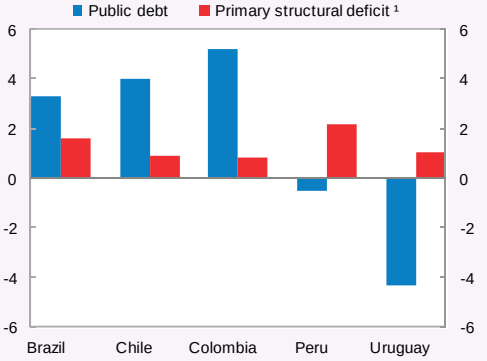

Sources: Haver Analytics; and IMF staff calculations.
[1] Dot at the beginning of the graphs for each country represent the peak policy rate prior to the beginning of the easing cycle in the second half of 2008. The dotted line presents potential growth plus inflation target. Last data available is August 2011, except for Brazil (September 2011).

**Selected South America: Real Primary Expenditure Growth[1]**
*(Percent)*




Source: IMF staff calculations.
[1] Percent change in primary expenditures deflated by consumer prices.
[2] Bars exclude policy lending in all years and Petrobras' capitalization in 2010; dots include policy lending.

**Selected South America: Change in Public Debt and Structural Primary Balance, 2008/10**
*(Percent of GDP)*




Sources: IMF, *World Economic Outlook*; and IMF staff calculations.
[1] For Uruguay, measures the change in the cyclically-adjusted primary fiscal deficit.

- In contrast, equity prices have been on a downward trend since early this year in most countries, likely reflecting concerns regarding valuations (price-earnings ratios have returned to historical averages), and more recently, increased global risk aversion and capital outflows in this segment.

In the context of strong domestic demand and tight labor markets, *monetary policy* was tightened (Figure 2.5 and Section 2.3). The average monetary policy rate has been raised by 280 basis points since the beginning of the tightening cycle in 2010, with Brazil and Chile posting the strongest swings. For most inflation-targeting countries, policy rates are now near neutral levels. More recently, and in response to the global slowdown and related uncertainties, central banks have started to put rate hikes on hold, with Brazil reducing rates (by 50 basis points). The decision to pause policy tightening in some countries is appropriate, particularly where inflation expectations remain well anchored. Further rate hikes may be warranted once uncertainties settle and downside tail risks dissipate; in a downside scenario, countries with policy credibility may have room to ease if inflation expectations remain well anchored.

*Fiscal policy* should continue to focus on gradually reducing public debt and on returning structural balances to precrisis levels.[5] This strategy would support policy credibility, while rebuilding fiscal buffers that could be deployed in a downside scenario; given high levels of uncertainty, fiscal easing now would be premature. Fiscal consolidation efforts should avoid placing an undue burden on infrastructure spending (needed to support medium-term growth), and pressures to increase recurrent spending (particularly wages)

[5] Brazil's recent decision to increase the government primary surplus by ¼ percent of GDP in 2011 by saving the bulk of the revenue windfall is a step in the right direction, though greater action on the fiscal front may be required to strengthen the policy mix.

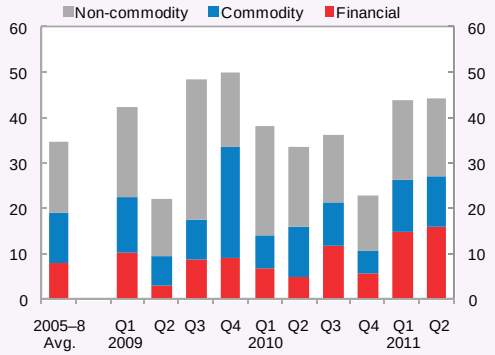
should be resisted (Box 2.2).[6] To meet growing social and infrastructure needs in a manner consistent with fiscal consolidation, revenue mobilization should be considered, particularly in countries where tax burdens are still relatively low (Chile, Colombia, and Peru).

Meanwhile, fiscal frameworks should be strengthened—countries should consider establishing structural fiscal targets (that control for the cycle) and binding medium-term plans (Box 2.3)—and efforts towards improving the structure of public debt should continue. In that regard, it is worth noting that the average maturity on outstanding sovereign domestic debt has more than doubled from about 4 years in 2003 to over 8 years in 2010, with maturities on new issuance averaging near 14 years.

*Macroprudential policies* should remain part of the toolkit to protect the stability of the banking system (see also Section 2.4). In light of heightened downside risks to a sudden stop in financing, it remains imperative to ensure that the financial and corporate sectors do not continue to build vulnerabilities. The increase in wholesale funding by banks and firms is a worrying trend, and prudential measures should actively be deployed to discourage foreign-financed credit expansions and risk taking (Figure 2.6).[7] Moreover, authorities should remain vigilant about liquidity pressures, which (if they arose) could be countered partly via macroprudential means (easing of reserve requirements), as well as via direct intervention in foreign exchange and domestic liquidity markets if needed to ward off instability. Finally, further efforts are required to address regulatory blind spots and bring financial oversight in line with best practices (Box 2.4).

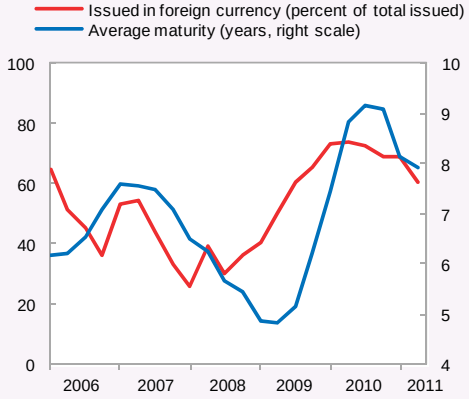
*Figure 2.6. Corporate indebtedness is on the rise, though leverage indicators remain low.*

**Latin America: Corporate Bonds and Loans Issuance by Borrower Type [1]**
*($US billions)*



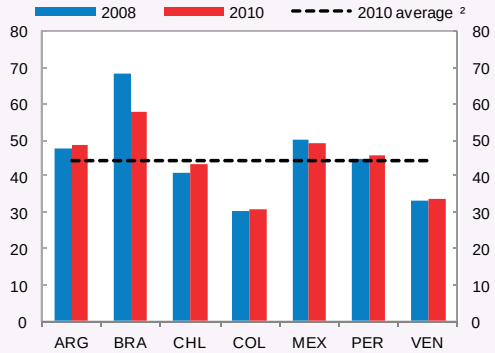

Sources: Dealogic; and IMF staff calculations.
[1] Includes Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela.

**Latin America: Bond Issuance by Currency and Maturity[1]**
*(Three-quarter moving average)*




Sources: Dealogic; and IMF staff calculations.
[1] Includes Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela.

**Latin America: Nonfinancial Corporate Sector Leverage [1]**
*(Percent of total assets)*



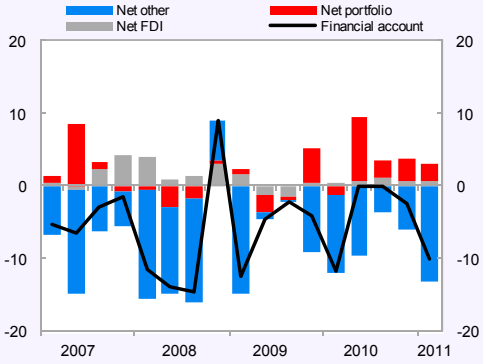

Sources: Dealogic; Worldscope; and IMF staff calculations.
[1] Leverage is defined as the simple average over all nonfinancial firms' total liabilities-to-total assets ratios, where liabilities include current liabilities, long-term debt, pension benefits, and unrealized losses on marketable securities.
[2] Simple average for Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela in 2010.

[6] In Brazil, the legally mandated 13.6 percent minimum wage increase during 2012 will increase public sector wages and pensions by 0.5 percent of GDP in 2012.

[7] In January 2011, the Brazilian central bank required banks to deposit 60 percent of their short spot dollar positions in cash at the central bank. This requirement applied to positions in excess of US$3 billion or Tier 1 capital. In July, the central bank lowered this threshold to US$1 billion.

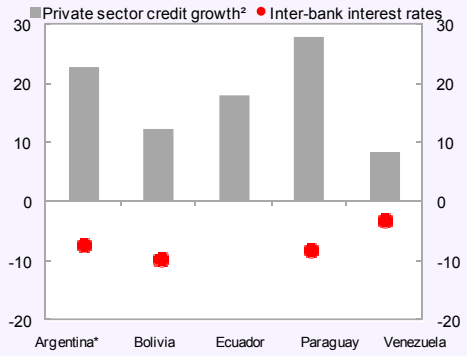
***Figure 2.7. Policies remain highly procyclical in the less integrated commodity exporters, while capital outflows continue.***

**Other South America: Financial Account[1]**
*($US billions)*



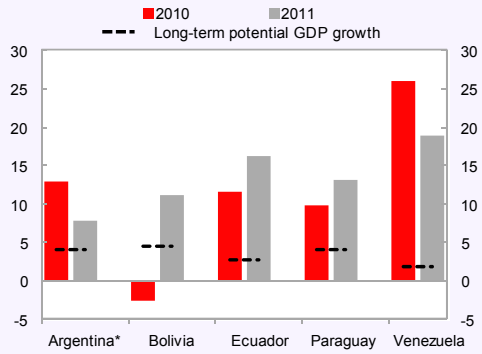

Sources: Haver Analytics; national authorities; and IMF staff calculations.
[1] Average of Argentina, Bolivia, Ecuador, Paraguay, and Venezuela. Excludes Bolivia and Paraguay in 2011:Q1.

**Other South America: Real Interest Rates and Real Bank Credit Growth, 2011 [1]**
*(Percent)*




Sources: Haver Analytics; national authorities; and IMF staff calculations.
[1] Data through August 2011. Deflated by consumer prices.
[2] Data through July for Ecuador and Venezuela, and through June for Argentina and Paraguay.

**Other South America: Real Primary Expenditure[1]**
*(Percent)*




Source: IMF staff calculations.
[1] Percent change in primary expenditures deflated by consumer prices.
* Nominal variables are deflated using the IMF staff's estimate of the average provincial inflation rate (excluding Buenos Aires). A Laspeyres index is employed to aggregate price changes across provinces, using weights derived from the 2004/05 National Household Expenditure Survey (ENGH). Based on data for 11 provinces for which provincial CPI data are available through 2011.

*Exchange rate flexibility* should be maintained. Not only do flexible exchange rates help cushion against downside tail risks, but they also reduce vulnerabilities by limiting foreign exchange exposure and the adverse impact of sudden stops. During September, some countries (Brazil, Peru) intervened to counter volatility in currency markets resulting from the recent spike in risk aversion and falling commodity prices. Going forward, there are both upside and downside risks to inflows; although sterilized interventions and CFMs can be useful tools to manage volatile inflows, these should not substitute for traditional macroeconomic policies (see Adler and Tovar, 2011; Eyzaguirre and others, 2011; and Ostry and others, 2011).[8]

## South America: Less Financially Integrated Commodity Exporters—Avoiding Procyclicality

*With output above potential and inflation in double digits in most countries, macroeconomic policies need to shift quickly to a countercyclical stance. Further declines in commodity prices pose serious downside risks where policy buffers have not been built during the boom years, given limited access to market financing.*

In most of the less financially integrated commodity-exporting economies (Argentina, Bolivia, Ecuador, Paraguay, Venezuela), growth was very strong during the first half of 2011, supported by high commodity prices and expansionary policies. In some cases (Argentina, Bolivia, Paraguay) vibrant demand from Brazil also played a key role. High world food prices, strong domestic demand, and supply constraints contributed to a rise in inflation (which reached double digits in most countries, except Ecuador), although inflation has peaked in a few cases (Bolivia, Paraguay).

Macroeconomic policies are mostly procyclical. Monetary aggregates and private credit are expanding at nearly 20 percent year over year in real terms (Figure 2.7). Although interest rates have been raised (particularly in Paraguay) in some countries,

[8] In general, trade protection measures should be avoided.

they still remain quite negative in real terms. Fiscal policy is also adding to demand pressures, with real government primary expenditures growing well ahead of potential growth in most countries.[9] Moreover, much of the increase in primary spending is recurrent in nature, adding to budget rigidities and concerns regarding the composition of public expenditures (Box 2.2).

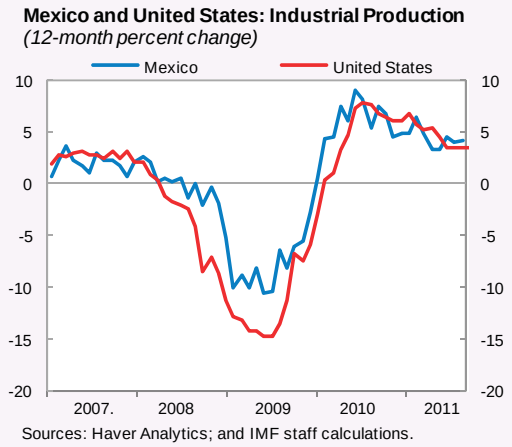
Downside risks dominate the outlook, particularly in a scenario in which commodity prices drop significantly. Procyclical policies during the boom years and limited access to financing would leave these economies with little ammunition to avoid a sharp contraction during a commodity downturn. Looking forward, priority should be given to strengthening fiscal frameworks, with the aim of reducing the procyclicality and improving the transparency and predictability of public sector operations. Monetary policies need to be tighter, significantly in some cases.

## Mexico and Central America: More Headwinds to Growth

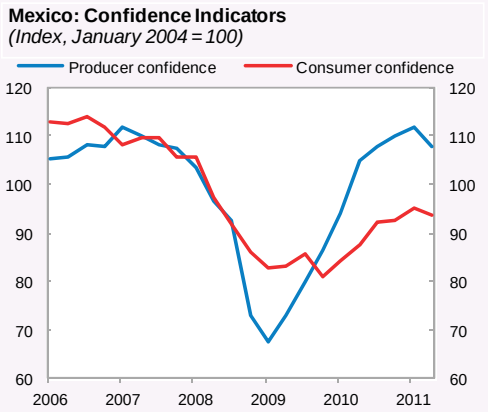
*Growth in Mexico and Central America was fairly robust during the first half of the year, despite the lackluster performance in the United States. However, there are increasing signs of some moderation with externally driven downside risks dominating. In this context, fiscal policy buffers need to be rebuilt to bring public debt down gradually to precrisis levels, and monetary policy (particularly in Mexico) can be put on hold to assess the evolution of economic conditions and adjust accordingly.*

*Mexico* expanded at a pace of about 3½ percent during the first half of 2011, supported by strong manufacturing exports and domestic demand. This relative resilience reflects in part strong linkages to U.S. manufacturing, which has performed better than the overall U.S. economy. Weaker-than-envisaged U.S. growth and an increase in global uncertainties would hinder Mexico's performance, with confidence indicators already on a downward

***Figure 2.8. In Mexico, industrial production has held up, though headwinds from weak U.S. growth and global uncertainties will persist.***




Sources: Haver Analytics; and IMF staff calculations.




Sources: Haver Analytics; and IMF staff calculations.

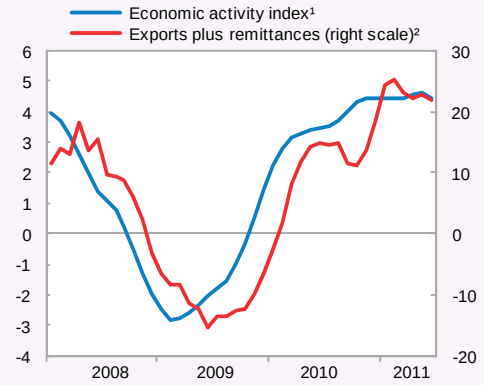
trend. Growth is now estimated to reach about 3¾ percent in 2011–12, roughly ½ percent lower than projected in the April 2011 *Regional Economic Outlook*, largely reflecting the revised U.S. outlook. Risks are clearly tilted to the downside, linked to risks in the United States (Figure 2.8).

Mexico's policy stance has been appropriately balanced, with monetary policy supporting the recovery, while fiscal consolidation (which started in 2010) proceeds. In light of the U.S. slowdown and increased uncertainties, and in the context of firmly anchored inflation expectations, monetary policy can be put on hold to assess the evolution of economic conditions, with remaining scope for further accommodation in case downside risks to the global

[9] In Bolivia, the planned fiscal expansion in 2011 follows a period of sustained fiscal surpluses and accumulation of international reserves (which now exceed 40 percent of GDP).

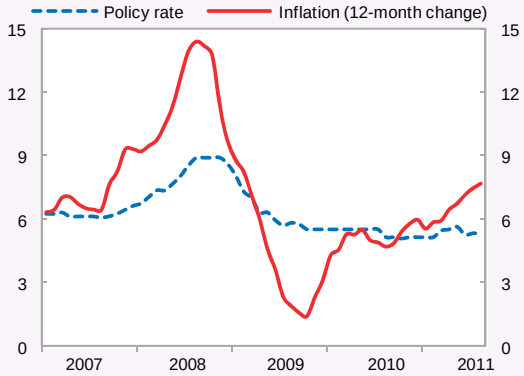
*Figure 2.9. In Central America the recovery has gained some strength. Policies need to shift toward building buffers, in the context of growing global downside risks.*

**Central America: Economic Activity**
*(Annual percent change)*



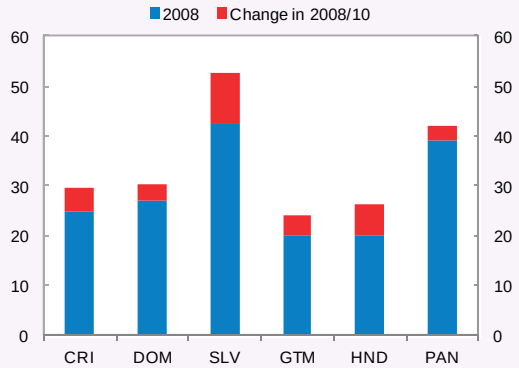

Sources: National authorities; and IMF staff calculations.
[1] Includes Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua.
[2] Three-month moving average. Includes El Salvador, Guatemala, Honduras, and Nicaragua.

**Central America: Inflation and Policy Rates[1]**
*(Percent)*




Sources: National authorities; and IMF staff calculations.
[1] Simple average for Costa Rica, Dominican Republic, Guatemala, and Honduras. Data through August 2011.

**Central America: Public Debt in 2010 versus 2008[1]**
*(Percent of GDP)*




Sources: National authorities; and IMF staff calculations.
[1] Countries consist of Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, and Panama.

outlook materialize. Meanwhile, gradual fiscal consolidation should continue to regain policy buffers. Reforms should also aim to address longer-term fiscal pressures, stemming from lower oil receipts (as a percentage of GDP) and higher age-related spending.

In the Central America, Panama, and the Dominican Republic (CAPDR) region, the recovery gained strength during the first half of the year. Output expanded by about 4½ percent, led by domestic demand. Growth was also supported by strong agricultural exports and some bounce-back in remittances, though these still remain well below precrisis levels (Figure 2.9). Growth has been particularly strong in Panama, fed by construction related to canal expansion, whereas in the Dominican Republic growth has declined, dissipating previous overheating concerns. Meanwhile, inflation in most countries continues to rise (reaching an average of 7¼ percent in July), despite some moderation in energy and food prices.

Growth in the CAPDR region is projected to remain near 4 percent during 2011–12, roughly ¼ percent lower than projected back in April 2011. However, downside risks dominate. Another U.S. recession would sharply reduce exports and remittances, setting back the recovery particularly in economies that have exhausted space to implement countercyclical policies.

Given small or closed output gaps in most countries and large downside risks, policies must quickly shift toward rebuilding policy buffers. On the fiscal side, efforts should center on reducing public debt, which is up by an average of more than 5 percent of GDP since the 2008 global crisis. Given the region's relatively low tax burden, revenue mobilization will be required to address fiscal consolidation needs as well as large social and infrastructure gaps (see also Box 2.2). Similarly, efforts are also needed to contain the public wage bill, which is already large relative to that of other regions with similar income per capita levels.

In countries with independent monetary policy (Costa Rica, the Dominican Republic, Guatemala),

further hikes in policy rates may be warranted, as these rates remain well below neutral levels and inflation has been trending above or near the upper bound of the target range. Increased exchange rate flexibility should be considered as part of the strategy to bring down inflation, as well as to buffer the impact of a more-pronounced slowdown in global demand.[10] In dollarized or peg regimes, wage pressures should continue to be resisted, and in some instances (e.g., Panama) a stronger tightening of fiscal policies may be required to address overheating risks.

## The Caribbean: Repairing Sovereign and Financial Balance Sheets

*The recovery in much of the Caribbean remains weak, with downside risks to growth. Greater resolve is required in bringing down high public debt levels and decisively addressing persistent weaknesses in the financial sector.*

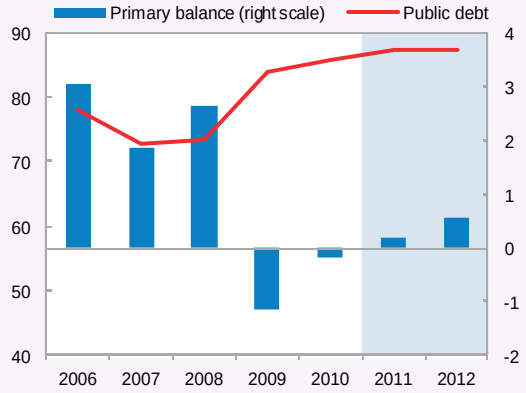
The Caribbean region continues to struggle to recover from a long and protracted recession. Drags from fiscal consolidation and higher energy prices continue to constrain private demand, while the recovery in tourism flows remains tepid amid high unemployment in advanced economies (Figure 2.10). Tourism-intensive economies are projected to expand by an average of 1¼ percent during 2011–12, almost 1 percent lower than anticipated six months ago. Prospects are better in the mineral-rich countries, with Guyana and Suriname benefiting from record gold prices. In Haiti, growth is estimated to reach about 6 percent this year, well below the 8½ percent projected back in April, as earthquake reconstruction efforts have been lagging.

Risks to the outlook are tilted to the downside. A further slowdown in advanced economies would dampen the recovery and add pressures to an already heavy public debt burden. Meanwhile, further delays in resolving sovereign and financial sector balance sheets could lead to a generalized

[10]The high degree of liability dollarization in some countries could pose some restrictions for exchange rate flexibility.

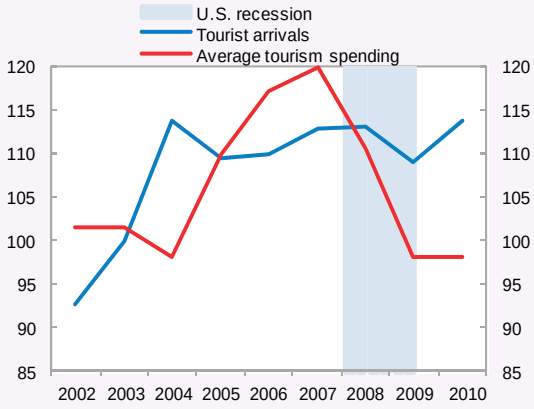
***Figure 2.10. Fiscal consolidation needs to proceed in the Caribbean in the context of a weak recovery of tourism and growing financial sector strains.***

**Caribbean: Primary Balance and Public Debt[1]**
*(Percent of GDP)*



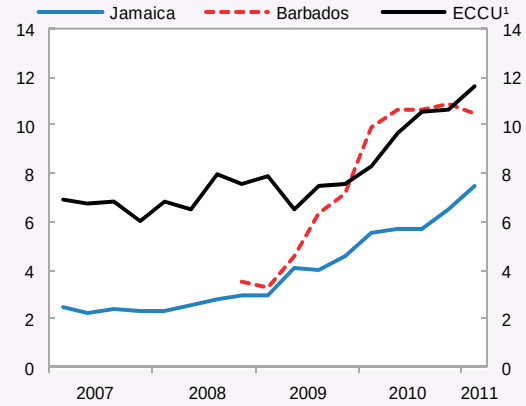

Sources: National authorities; and IMF staff calculations.
[1] Simple average of Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, and Trinidad and Tobago.

**Caribbean: Tourism Arrivals and Spending, 2002–10**
*(Index, 2000 = 100)*




Source: Caribbean Tourism Organization.

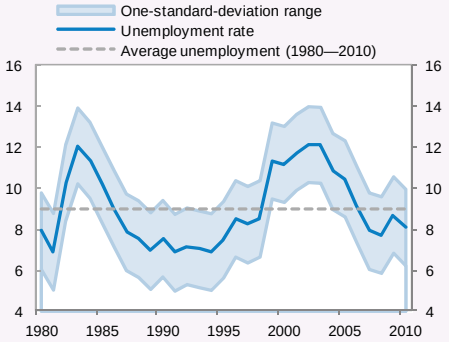
**Caribbean: Nonperforming Loans**
*(Percent of total loans)*




Sources: National authorities; and IMF staff calculations.
[1] ECCU stands for the Eastern Caribbean Currency Union.

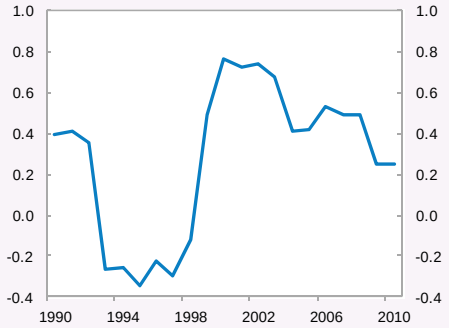
*Figure 2.11. Unemployment rates in key Latin American countries are below their historic levels and approaching their natural rates, signaling overheated labor markets.*

**Selected Latin America: Unemployment Rates, 1980/2010[1]**
*(Percent)*



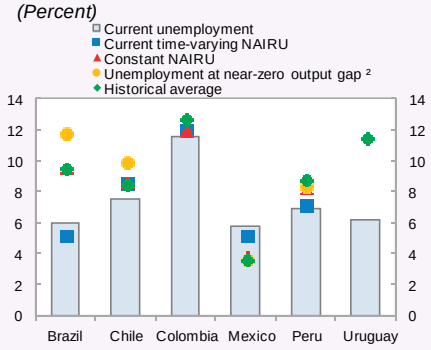

Sources: Ball, De Roux, and Hofstetter (2011); and IMF staff calculations.
[1] Simple average of Brazil, Chile, Colombia, Mexico, Peru, and Uruguay.

**Selected Latin America: Correlation of Unemployment and Output [1]**
*(Percent)*




Sources: Ball, De Roux, and Hofstetter (2011); and IMF staff calculations.
[1] Ten-year rolling correlation of the unemployment gap and output gap, measured as the series over its Hodrick-Prescott-filtered trend. Simple average of Brazil, Chile, Colombia, Mexico, Peru, and Uruguay.

**Selected Latin America: Current Unemployment Rate versus NAIRU[1]**
*(Percent)*




Sources: Haver Analytics; national authorities; and IMF staff calculations.
[1]Seasonally adjusted quarterly data; historical average for entire available series. Constant and time-varying NAIRU estimated from the Phillips curve. In the case of Chile, estimates may be affected by methodological changes to the measurement of unemployment that were introduced in 2010. Structural changes and supply shocks tend to distort NAIRU estimates for Uruguay, which are therefore not reported.
[2] Unemployment at near-zero output gap represents the observed unemployment rate in Q4 of the year in which the output gap was closest to zero in the series. Data unavailable for Colombia and Uruguay.

loss of confidence. The recent moderation in world commodity prices provides some relief to an otherwise difficult global and domestic environment.

In this context, greater resolve is required in reducing public debt (which is up over 9 percent of GDP since the crisis) and resisting fatigue in some countries, where pressures to increase wages and subsidies have intensified. Fiscal consolidation efforts should, to the extent possible, preserve growth and competitiveness by avoiding steep cuts in infrastructure spending. Section 2.5 discusses in detail the challenges for fiscal consolidation in high-debt tourism-intensive Caribbean economies.

Financial sector fragilities in the region have become more troubling. In the Eastern Caribbean Currency Union (ECCU), financial sector health indicators have continued to deteriorate, highlighting the importance of steps to further strengthen the sector.[11] In this context, the authorities need to diagnose the health of the financial system quickly and develop options for strengthening balance sheets, and avoid further compromising public finances. Moreover, financial regulation and supervision frameworks require significant strengthening, including ensuring that the resolution of failed institutions is carried out transparently.

## 2.3. How Tight Are Labor Markets in Inflation-Targeting Countries?

*As one gauge of the extent of overheating, we examine estimates of the nonaccelerating inflation rate of unemployment (NAIRU) for selected countries. Our findings suggest that labor markets have been showing signs of overheating in several economies.*

Unemployment rates in the faster-growing Latin American commodity exporters are currently near or

[11]In July 2011, the largest indigenous bank in Antigua and Barbuda was intervened. Meanwhile, the resolution of the failed insurance companies, British American Insurance Company (BAICO) and Colonial Life Insurance Company (CLICO), of the Trinidad and Tobago-based CL Financial Group, remains pending.

at historic lows. In contrast with past crises, the 2008–09 crisis had a relatively small and short-lived adverse impact on unemployment in the region (Figure 2.11). In fact, the strong economic expansion that Latin America experienced over the past decade has been more labor inclusive than that during the 1990s. However, questions have emerged about the sustainability and nature of recent unemployment trends. On the one hand, employment gains have taken place in sectors (construction and services) traditionally thought to be more vulnerable to a reversal in the economic cycle. On the other hand, it is unclear whether further declines in unemployment will add to wage pressures and stoke inflation.

## Estimating the Nonaccelerating Inflation Rate of Unemployment

How tight are labor markets? Monetary policy is often guided by some metric of economic slack—for example, output versus its potential level, or unemployment versus its natural rate or the rate at which inflation is "nonaccelerating."[12] Despite its importance, only a few studies have examined the relationship between inflation and unemployment in the region (Texeira da Silva Filho, 2010; Restrepo, 2008). This is not surprising given data constraints, as well as deep structural changes in recent years (Ball, De Roux, and Hoffstetter, 2011). Furthermore, particular labor market features in the region (e.g., informality and underemployment) can affect the inflation-unemployment relationship.[13]

To analyze this relationship we estimate a Phillips curve equation, with the goal of finding a time-varying unemployment rate consistent with stable inflation.[14] The estimated NAIRUs are also compared with other rule-of-thumb proxies such as (1) the average historical rate of unemployment, (2) the Hodrick-Prescott-filtered unemployment rate, and (3) the unemployment rate consistent with past episodes when our estimated output gaps were near zero.

Our results suggest that unemployment is currently below trend or near NAIRU levels for most inflation-targeting countries in the region (Figures 2.11 and 2.12).[15] The evidence is fairly robust for Chile, Colombia, and Peru, yet mixed in the case of Mexico. For Brazil and Uruguay we encountered more difficulties in identifying the NAIRU given the prominence of supply and structural factors (the sharp reductions in inflation during the early 2000s in both countries took place in tandem with important declines in unemployment).

## Policy Implications

From a policy perspective, our NAIRU estimates suggest that labor markets have been fairly tight and that further tightening of monetary policy in some countries could be warranted. Nonetheless, this has

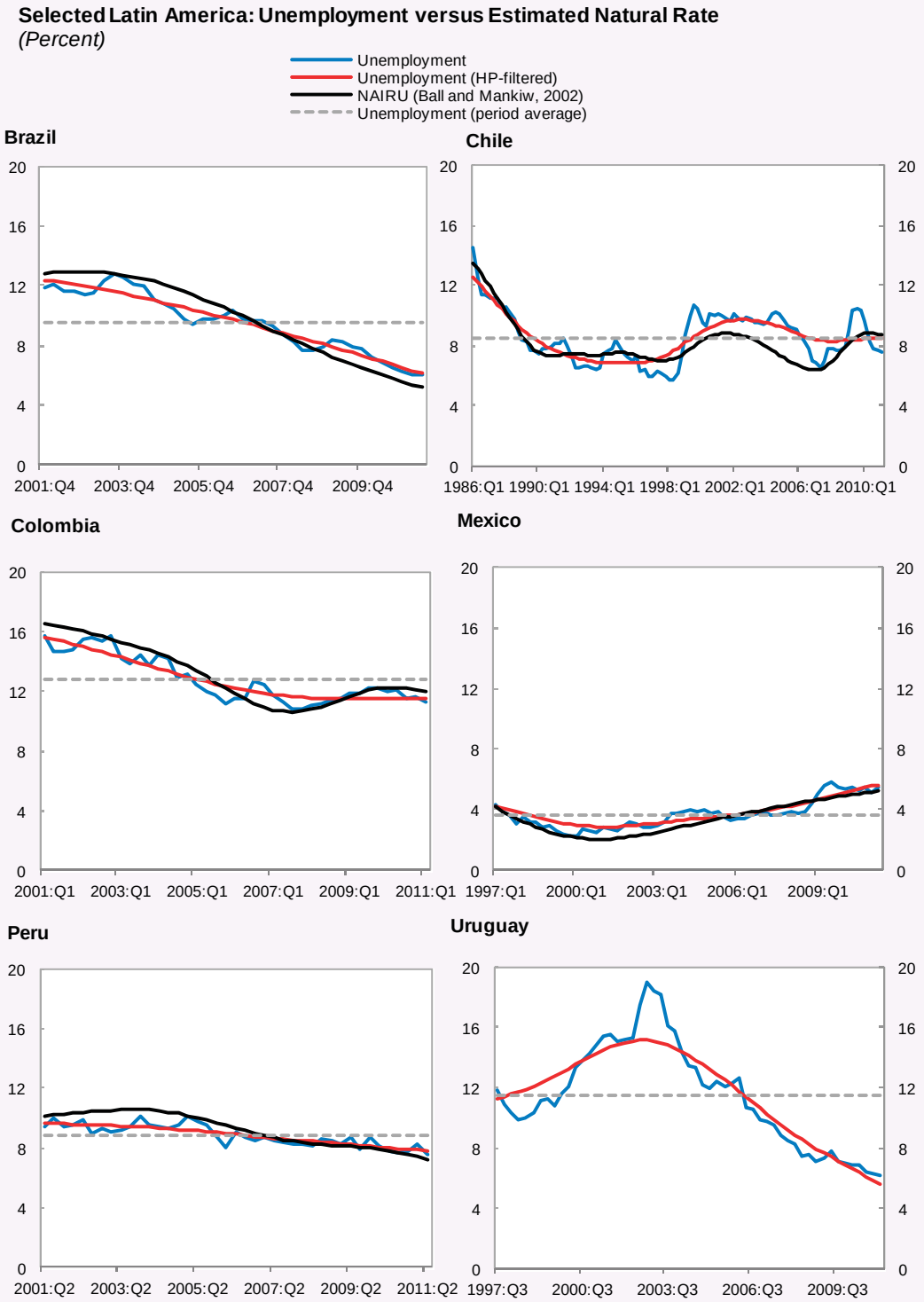
[12] Implicit in this concept is the idea that shifts in aggregate demand coming from either monetary policy or other sources have short-run impacts on unemployment. However, in the long-run, unemployment tends to return to the NAIRU. Although it is tempting to conclude that the NAIRU is determined by supply-side factors, such as labor market frictions, this is not necessarily the case, in particular if demand shocks have hysteresis effects (see Ball and Mankiw, 2002; Ball, 2009).

[13] In some instances, long time series cannot be used because episodes of hyperinflation break down the relationship between inflation and unemployment.

[14] To this end, we use quarterly data for six inflation-targeting countries in the region (dating back to at least 2001) and follow the methodology developed by Ball and Mankiw (2002). Formally, $\Delta\pi_t = \beta(U_t - U_t^*) + X_t + \varepsilon_t$, where changes in inflation ($\Delta\pi_t = \pi_t - \pi_t^e$) are regressed against the unemployment gap (i.e. how far is unemployment, $U_t$, from the nonaccelerating inflation rate of unemployment, $U_t^*$), and supply shocks ($X_t$). To identify the time varying NAIRU a Hodrick-Prescott filter is applied to $U_t + \frac{\pi_t - \pi_t^e}{\beta}$, based on the assumption that $U_t^*$ is a slow-moving process and $\frac{\varepsilon_t}{\beta}$ corresponds to high-frequency fluctuations associated with different shocks. A constant NAIRU is also estimated by regressing inflation against a constant, lagged inflation, and unemployment, where the NAIRU is equivalent to the ratio of the estimated constant term to the sum of the lagged unemployment coefficients (see Staiger, Stock, and Watson, 1997).

[15] A challenge in examining unemployment dynamics relates to the varying definitions used by statistical agencies across the region (see Ball, De Roux, and Hoffstetter, 2011). This can be a caveat for cross-country analyses, but it does not affect the estimates reported in this section as they do not use the cross-sectional dimension.

*Figure 2.12. Unemployment in Latin America is close to proxies for its natural rate, such as the Hodrick-Prescott-filtered unemployment series, the historic average unemployment rate for the period, and the estimated time-varying NAIRU.*




Sources: Haver Analytics; and IMF staff calculations.
[1] The NAIRU is estimated based on a regression of the Philips curve that includes core inflation, unemployment, and supply shocks (See Ball and Mankiw, 2002). For the cases of Peru and Mexico, core consumer price index (CPI) inflation is in levels, not detrended. Exchange rate supply shocks are defined in terms of annual percentage changes: the de-meaned real effective exchange rate is used for Brazil, Colombia, Chile, and Mexico; the nominal exchange rate is used for Peru. Estimates for Chile and Peru also include an inflation supply shock defined as the de-meaned difference between headline and core annual CPI inflation rates. Estimate for Brazil includes one lag of detrended inflation. In the case of Chile, estimates may be affected by methodological changes to the measurement of unemployment that were introduced in 2010. Structural changes and supply shocks tend to distort NAIRU estimates for Uruguay, which are therefore not reported.

to be complemented with further forward-looking analysis of inflation indicators, while taking into account the impact of the recent global slowdown and related uncertainties.

Although there exists a negative and statistically significant relationship between inflation and cyclical unemployment (and a role for unemployment to be a reliable predictor of inflation), structural features of labor markets suggest that further analysis is warranted. For example, informality, underemployment, or wage indexation may mask the extent to which unemployment dynamics are related to inflation. In Mexico recessions are characterized by declines in formal sector hiring, with increased informality or underemployment playing a buffering role (Lederman, Maloney, and Messina, 2011). In these situations, unemployment may need to be adjusted to include informality to obtain a more accurate measure of spare capacity.

## 2.4. Effectiveness of Macroprudential Policies

*Credit continues to expand rapidly across the region, raising concerns about the accumulation of risks and vulnerabilities. An increasing number of countries in the region have addressed these concerns by adopting macroprudential policies; however, little is known about these policies' effectiveness and how they interact with monetary policy. We report new cross-country evidence for the region suggesting that macroprudential policies have a moderate and transitory impact in slowing the pace of credit growth, possibly because narrowly based measures may be circumvented. We also find that monetary and macroprudential policies tend to complement each other.*

In the face of easy external financing conditions, many countries in the region have actively been adopting prudential measures to curb credit growth and anchor the stability of their financial systems (see Section 2.2). These policies, now commonly referred to as "macroprudential," include market-wide measures such as loan-loss dynamic provisioning (e.g., Bolivia, Colombia, Chile, Peru, Uruguay) and tightening of reserve requirements on bank deposits or other liabilities (Brazil, Peru, and Uruguay).[16] In some instances, targeted sectoral measures have been used, including a tightening of capital requirements to address specific market segments (e.g., the long-term consumer loan market in Brazil) and, more recently, reserve requirements on short spot dollar positions (Brazil).[17] These measures are summarized in Table 2.1.

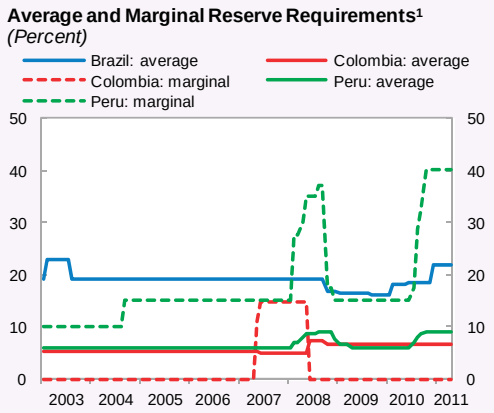
**Table 2.1 Summary of Recent Macroprudential Measures**

| Policy tool | Country and measure | Motivation—objective |
|---|---|---|
| Capital requirements and loan-to-value ratios | Brazil (long-term consumer loan market-2010) | Slow down consumer credit growth and shrink the duration of credit. |
| Dynamic provisioning | Bolivia (2008), Colombia (2007), Chile (2011), Peru (2008), Uruguay (2001) | Countercyclical tool that builds up a cushion against expected losses in good times so that they can be released in bad times. |
| Liquidity requirements | Colombia (2008) | Tools to identify, measure, monitor, and/or control liquidity risk under conditions of stress. |
| Reserve requirements on bank deposits | Peru (2011), Brazil (2010), Uruguay (2009, 2010, 2011) | Limit credit growth, manage liquidity, and complement monetary policy to achieve macroprudential goals. |
| Reserve requirements on short term external credit lines of banking instutions | Peru (2011) | Nonquantitative prudential tool to increase the cost of financing for banks and make domestic investment opportunities less attractive. |
| Tools to manage foreign exchange credit risk | Peru (2010), Uruguay (2010) | Internalize foreign exchange credit risks associated with lending to unhedged borrowers. |
| Limits on foreign exchange positions | Brazil (reserve requirement on short spot dollar positions, 2011), Peru (2010) | Quantitative measures to manage foreign exchange risk in on- and off-balance sheet foreign-exchange-denominated assets and liabilities. |
| Other | Peru (limits to foreign investment by domestic pension funds, 2010) | Measure to facilitate capital outflows and ease pressure on the currency, domestic demand, and consumer prices. |

Source: IMF Staff based on national sources.

[16] For a detailed overview of recent experiences with prudential policies see September 2011 *Global Financial Stability Report* (2011b), IMF (2011c, 2011d), and Terrier and others, (2011).
[17] Compared with Asia, measures aimed at real-estate related lending have been less common in Latin America (see IMF and Bank of Korea, 2011).

***Figure 2.13. Brazil, Colombia, and Peru have stepped up the use of macroprudential measures to protect the resilience of the financial sector.***




Sources: Central bank data; and IMF staff calculations.
[1] Simple average. Brazil: reserve requirements on sight deposits and term deposits; Colombia: checking, savings, term deposits, and certificates of deposit; Peru: domestic and foreign currency deposits for residents.

Despite their increasing use, the effectiveness of macroprudential policies in leaning against credit growth and protecting financial stability remains an open question, as empirical analysis has been limited thus far.[18] This is not surprising given the complexity of the question at hand, including the many dimensions over which these policies operate and their sectoral and market-specific targeted nature, as well as their relatively short history. Moreover, given that systemic risk is not directly observable, assessing effectiveness of these measures against credit growth may only provide us with a partial answer. For example, even if macroprudential measures were to have a muted effect on credit growth, systemic risks could be reduced, including through changes in the composition of credit and/or improvements in the quality of bank funding. These secondary effects are not examined in this section (Figure 2.13).

## Cross-Country Analysis

To assess the impact of macroprudential policies on bank credit to the private sector, we use two complementary methodologies: *event analysis, whereby we track the effect of measures through time,* and *dynamic panel autoregressions, whereby we consider feedback effects between credit and policies.*[19] The analysis captures the effects of macroprudential measures using a cumulative dummy variable.[20] We also pay special attention to the impact of *average* and *marginal* reserve requirements on bank deposits, reflecting both the widespread use of these requirements in the region and the growing interest regarding their effectiveness.

**Event analysis**. Macroprudential policy shocks lead to a *moderate* and *transitory* slowdown in the growth of bank credit to the private sector (Figure 2.12). In particular, we find that those countries that introduce macroprudential policies experience on average an immediate decline in bank credit growth of about one percentage point in the month following the shock. However, this effect is *moderate* given the high rates of credit growth observed prior to the policy measure and the fact that credit growth resumes its pre-event level after four months.

In addition, we find evidence that (1) macroprudential policies have nonnegligible weakening effects on the nominal exchange rate, suggesting that these policies form part of a broader strategy to manage exchange rate pressures, and (2) the effects of marginal reserve requirements cannot be decoupled from monetary policy shocks, suggesting that these policies are often complementary to one another, an issue that we explore further later in this section.

**Dynamic panel vector autoregression**. This methodology helps us isolate the effects of macroprudential policies from other shocks and take

[18] See IMF (2011c) for a comprehensive cross-country analysis on the effectiveness of macroprudential policies.

[19] The sample covers the period January 2003 to April 2011 and includes economies where macroprudential measures have been actively employed (Brazil, Colombia, and Peru), as well as others that have been less active with their use (Chile and Mexico).

[20] In some countries regulations already in place may be tight enough that they do not demand adjustment over the cycle. In these cases, it would be desirable to have a measure that controls for the level of regulations and not just its changes as is done in this section.

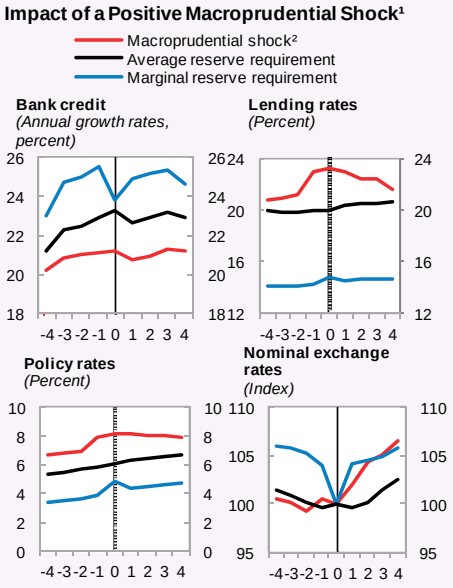
advantage of cross-country variation.[21] Consistent with the event analysis, our findings confirm that macroprudential measures lead to a *modest* and *temporary* reduction in private bank credit growth (Figure 2.14). Results are strongest in the case of average reserve requirements and *other* macroprudential policies (e.g., dynamic provisioning, countercyclical capital requirements). By contrast, we find that marginal reserve requirements have negligible short-run effects, confirming that findings in the event case analysis for marginal reserve requirements are due to hikes in policy rates.[22]

Finally, our results suggest that there is a reinforcing role between policy rate hikes and macroprudential policy shocks and vice versa. That is, policy rates tend to increase following a tightening in macroprudential policies, and vice versa (Figure 2.15).

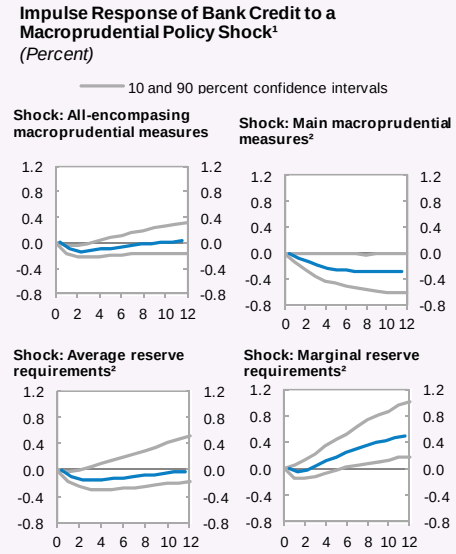
## Sectoral Evidence

Macroprudential policies are often targeted at specific markets or sectors of the economy, so their effectiveness need not have marked effects on aggregate credit measures, as those used so far. This could help explain why these policies are found to have only moderate and transitory effects. We illustrate this point by examining the impact of a

***Figure 2.14. Evidence suggests macroprudential shocks can affect bank credit and nominal exchange rates in the short-run.***




Sources: Central bank data; and IMF staff calculations.
[1] Periods in the horizontal axis denote months. Time equal to *zero* denotes the time of the shock. Sample consists of Brazil, Colombia, and Peru, over the period 2003:M1—2011:M4.
[2] Includes reserve requirements.



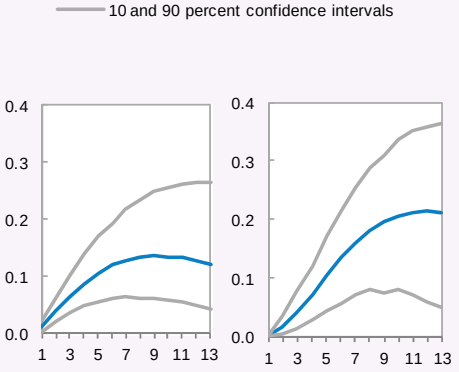

Sources: Central bank data; and IMF staff calculations.
[1] Macroprudential shock includes an all-encompassing measure that includes reserve requirements and other macroprudential measures (e.g. dynamic provisioning, countercyclical capital requirements). Estimates based on system generalized method of moments panel vector autoregression with two lags using monthly data for the period 2004:M6—2011:M4. The system includes macroprudential measures, the policy interest rate, the level of economic activity, and bank credit to the private sector. Identification is achieved using Choleski decomposition with the ordering mentioned above. Impulse responses have been normalized to one. Sample includes Brazil, Chile, Colombia, Mexico and Peru.
[2] The all-encompasing macroprudential variable has been split into average and marginal reserve requirements and main macroprudential measures.

[21] The panel vector autoregression is estimated using system Generalized Method of Moments estimations (see Holtz-Eakin, Newey, and Rosen, 1988; Love, 2003). Identification of shocks is achieved through a Choleski decomposition in which macroprudential policy shocks are assumed to be the most exogenous variables, followed by the level of economic activity and, finally, bank credit to the private sector. When macroprudential measures are split, we order other macroprudential measures first (most exogenous) followed by average and marginal reserve requirements. Results robust to alternative orderings.

[22] Further analysis on the impact of marginal reserve requirements is left for future research, in particular, the need to control for the tightness of the policy through a tax-equivalent measure.

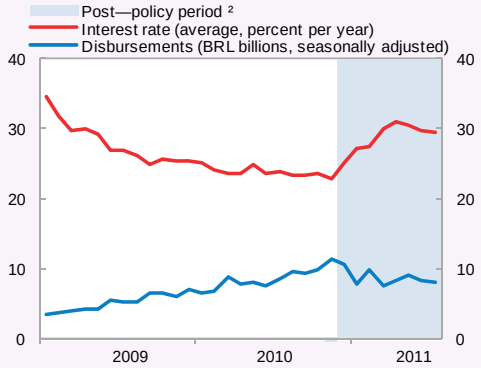
*Figure 2.15. Macroprudential and interest rate policies have played a complementary role. In Brazil, targeted measures on long term consumer loans helped to dent credit growth in that sector.*

**Complementary Role of Macroprudential and Interest Rate Policies [1]**
*(Percent)*




Sources: Central bank data; and IMF staff calculations.
[1] Estimates based on system generalized method of moments panel vector autoregression with two lags. The system includes macroprudential measures, policy interest rate, level of economic activity, and bank credit to the private sector. Identification is achieved using Choleski decomposition with the ordering mentioned above. Estimates are based on monthly data over the period 2004:M6—2011:M4 and include Brazil, Chile, Colombia, Mexico, and Peru. Macroprudential measure includes reserve requirements and other macroprudential measures (e.g., dynamic provisioning, countercyclical capital requirements) and is captured by a cumulative dummy. Simulation performed assuming 25-basis-point shock on policy interest rates. The impulse response has been normalized so that the corresponding macroprudential shock equals one.

**Brazil: Impact of Macroprudential Measures on New Car Loans [1]**




Source: Central Bank of Brazil.
[1] Data through July 2011.
[2] Shaded area starts in December 2010, when new macroprudential measures were put in place.

tightening of capital requirements adopted in regard to long-term consumer loans in Brazil.[23] After the introduction of these requirements in December 2010, the cost of auto loans rose sharply (close to 4½ percentage points between November 2010 and January 2011) and credit contracted immediately (Figure 2.14). This suggests that in using targeted measures authorities need to take into account the difficulties of calibrating the policies associated with such measures as well as the possibility that agents may circumvent the regulation (e.g., because of the existence of substitute markets).

### Policy Implications

Traditional macroeconomic policies often face limitations in containing the buildup of financial sector vulnerabilities. The findings presented in this section show that macroprudential policies can play a role in containing credit growth. Although the direct impact on credit appears modest and temporary, the secondary effects of these measures on systemic risk (for example as reflected on credit and funding quality) should not be underestimated and represent an area of future research.

Finally, although macroprudential measures tend to work best when complemented with traditional macroeconomic policies, they need not always be aligned. For example, it is possible to envision circumstances that call for tighter macroprudential policies (e.g., to address concerns arising from systemic risk) while monetary policy may need to be eased or put on hold (e.g., due to a global slowdown).

## 2.5. Fiscal Consolidation Challenges in Tourism-Intensive Economies

*Public debt dynamics in tourism-intensive economies of the Caribbean have deteriorated since the crisis, reflecting mainly a collapse in revenues. This section discusses recent fiscal trends,*

[23] Specifically, for any given maturity, the new rule under these requirements stipulates a greater risk weight for loans that carry high loan-to-value ratios (LTVs). For instance, a risk weight of 150 percent (vs. 100 percent before the change) is now imposed on auto loans with LTVs higher than 80 percent for the two- to three-year tenor, or loans with LTVs higher than 70 percent for the three- to four-year tenor, or loans with LTVs higher than 60 percent for the four- to five-year tenor (see Terrier and others, 2011).

*(continued)*

*including debt-restructuring agreements.*[24] *Despite the progress made, greater savings are required to stabilize and reduce debt over the medium term. This requires addressing budgetary rigidities, restraining public wage and pension spending, closing loopholes, and reducing tax incentives.*

Public debt in most Caribbean countries has increased sharply since the crisis.[25] The increase largely reflects a deep and prolonged economic recession, which has affected debt dynamics (Figure 2.16). In fact, despite reductions in real government expenditures in most countries, primary balances deteriorated almost across the board as revenue losses more than offset efforts to curb spending. In most cases, declines in real growth added to the debt burden.[26]

Fiscal consolidation efforts in the area have thus far been mixed. Countries have adopted various strategies to reduce fiscal imbalances (Table 2.2), with a combination of revenue-enhancing measures (e.g., a VAT was introduced in a few countries and VAT rates were hiked in others) and efforts to contain spending growth, including limiting losses in public enterprises (Jamaica). However, primary spending was down by only an average of 0.3 percent of GDP between 2008 and 2010, with the bulk of the adjustment falling on capital spending, as governments sought to protect public employment and wages as well as social programs.

Some countries have combined fiscal adjustment with debt restructuring to ease their debt service burdens. Recognizing that the up-front fiscal adjustment required would be too large to meet debt service obligations and preserve debt sustainability, Antigua and Barbuda and Jamaica sought to reduce their debt service burdens (Box 2.5). Antigua and Barbuda

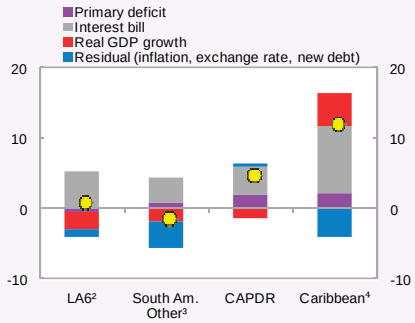
[24] This section was prepared by Charles Amo-Yartey and Therese Turner-Jones.

[25] This section focuses on fiscal consolidation efforts in tourism-intensive economies, including The Bahamas, Barbados, ECCU economies, and Jamaica. Belize, the Dominican Republic, Guyana, Haiti, Suriname, and Trinidad and Tobago are excluded.

[26] St. Vincent and the Grenadines and St. Lucia, with somewhat lower debt ratios, adopted a large fiscal stimulus during the crisis. (3) reprioritized

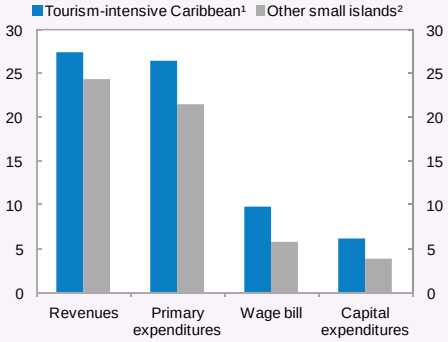
***Figure 2.16. A comprehensive approach will be required to tackle large and increasing public sector debt in the Caribbean.***

**Latin America and the Caribbean: Decomposing Increase in Public Debt, 2008–10[1]**
*(Percent of GDP)*



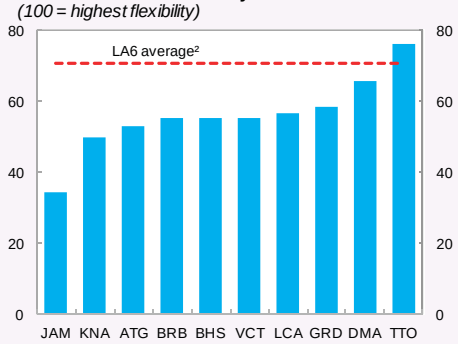

Sources: IMF, September 2011 *World Economic Outlook*; and IMF staff calculations.
[1] Dots display change in public debt as a percentage of GDP.
[2] Includes Brazil, Chile, Colombia, Mexico, Peru, and Uruguay.
[3] Includes Argentina, Bolivia, Ecuador, Paraguay, and Venezuela.
[4] Caribbean includes only Bahamas, Barbados, ECCU, and Jamaica.

**Caribbean: Fiscal Indicators**
*(Percent of GDP, average 2007—10)*




Sources: IMF, *World Economic Outlook*; and IMF staff calculations.
[1] Includes Bahamas, Barbados, ECCU, and Jamaica.
[2] Includes Dominican Republic, Mauritius, and Seychelles.

**Caribbean: Fiscal Flexibility Index[1]**
*(100 = highest flexibility)*




Sources: IMF, September 2011 *World Economic Outlook*; and IMF staff calculations.
[1] Defined as one minus the share of nondiscretionary spending, which in turn is equal to wages plus interest bill over total expenditures. Countries consist of Jamaica, St. Kitts and Nevis, Antigua and Barbuda, Barbados, the Bahamas, St. Vincent and the Grenadines, St. Lucia, Grenada, Dominica, and Trinidad and Tobago.
[2] Simple average for Brazil, Chile, Colombia, Mexico, Peru, and Uruguay.

**Table 2.2. Selected Caribbean Countries: Summary of Tax and Expenditure Measures, 2009–11**

| Country | Revenue policies | Expenditure policies |
|---|---|---|
| **Antigua and Barbuda** | (1) Rolled back all VAT exemptions granted since 2007 and increased VAT rate for tourism sector from 10.5% to 12.5%; (2) increased stamp duties from 5% to 10%; (3) increased import duties; (4) increased Airport Embarkation Tax from US$25 to US$50; (5) increased fuel taxes. | (1) Strict control over wages and salaries; (2) reduced capital spending by 35% (2010); (3) debt restructuring reduced interest payments from 2010 by 3 percent of GDP. |
| **Bahamas, The** | (1) Raised tax rates on vehicles, departure taxes, and taxes on hotel rooms; (2) revamped business license tax; (3) strengthened customs, by consolidating collections in one institution, and introduced new procedures to reduce tobacco smuggling. | (1) Strict expenditure control on wages and transfers to public corporations; (2) initiated reform of fiscal incentives. However, wage freeze was suspended. |
| **Barbados** | (1) Increased VAT from 15% to 17.5%; (2) eliminated tax-free allowances for travel and entertainment; (3) increased excise tax on gasoline by 50%; (4) increased immigration fees; (5) increased bus fares by 50%. | (1) Adopted reforms to reduce cost of tertiary education; (2) reduced capital spending by one percentage point of GDP in 2011/12. |
| **Dominica** | (1) Reduced personal income tax rates to levels comparable to regional peers; (2) introduced revenue administration reforms to improve efficiency and lower compliance burden; (3) adopted new Customs Act and upgraded customs information technology infrastructure. | (1) Maintained capital spending in 2009 at high posthurricane level of 2008; (2) scaled up social spending in response to the crisis; (3) adopted a medium-term expenditure framework to improve predictability of capital expenditure and its consistency with medium-term fiscal objectives. |
| **Grenada** | (1) Introduced VAT of 15% in February 2010. In October 2010, eliminated VAT on textbooks, bread, and medicine for chronic diseases, and hotel service charges and temporary VAT exemptions granted on selected construction materials; (2) reduced excises on manufacturing items and eliminated excises on new motor vehicles. | (1) Adopted a medium-term budget planning framework; (2) introduced temporary subsidy on cooking gas and gasoline (April 2011). |
| **Jamaica** | (1) Established cap on the concession of discretionary waivers (November 2010); (2) modified alcohol tax; (3) reduced ad valorem tax on gasoline from 15% to 10%; (4) introduced strategy to improve compliance of largest taxpayers and strengthened auditing of tax arrears. | (1) Reduced nonwage current spending; (2) paid in full wage arrears to public sector workers (2% of GDP), yet did not link to future wage negotiations; (3) reprioritized capital spending of central government and public enterprises. |
| **St. Kitts and Nevis** | (1) Introduced VAT and excise tax reform; (2) adopted an unincorporated business tax; (3) streamlined import duty exemptions; (4) strengthened auditing and monitoring of duty-free shops; (5) introduced environmental levy on new vehicles; (6) increased electricity tariffs by about 80%; (7) changed structure of housing and social development levy. | (1) Froze wage bill and (2) prioritized capital expenditure in 2011 budget. |
| **St. Lucia** | (1) Adopted new vehicle license fees and property taxes; (2) will introduce VAT in April 2012. | Increased capital expenditure (4 percent of GDP in 2011) for reconstruction purposes. |
| **St. Vincent and the Grenadines** | (1) Established a Large Taxpayer Unit to improve tax collections; (2) broadened the base for property taxation and plans to implement market-based property valuation; (3) increased stamp duties and license fees. | Froze public service wages. |

Source: National authorities; and IMF staff.

reached an agreement with the Paris Club in September 2010 to reschedule the country's official private debt, which lowered the annual interest bill from roughly 7 percent of GDP to about 4½ percent from 2010 onward. Jamaica reached agreement with domestic private creditors to reduce its debt service burden (interest and amortization) by about 14 percent of GDP one year after the debt exchange. St. Kitts and Nevis is in the process of preparing a comprehensive debt-restructuring deal involving all creditors.

However, greater efforts are necessary to generate fiscal savings to stabilize and reduce public debt over the medium term. The IMF staff's debt sustainability analysis suggests that the average Caribbean country will need to increase its primary balance by at least 4 percentage points of GDP through a combination of revenue-raising and expenditure-cutting measures. This is somewhat smaller than that required for advanced economies, where an 8 percent of GDP adjustment in the cyclically-adjusted primary balance of over the next decade is required to stabilize and reduce debt levels (see the September 2011 *Fiscal Monitor* [IMF, 2011a]).

Achieving meaningful fiscal savings will require tackling long-standing budget rigidities. In many countries, fiscal expenditures are mostly committed to wages, interest payments, and pensions, limiting the flexibility of fiscal adjustment. In fact, the share of nondiscretionary spending (defined as the share of expenditure on wages and salaries and interest payments) is among the highest in the Latin America and the Caribbean. A strategy to gradually reduce public wage and pension spending—not only in central government but also in autonomous agencies—will be necessary to guarantee public debt sustainability, with the added benefit of improving the region's competitiveness.[27]

Closing loopholes and reducing tax incentives should also form part of the consolidation strategy. With weak growth in advanced economies, revenues are unlikely to return to precrisis levels without fundamental change in the tax system. Efforts should be made to review generous tax incentive schemes, the impact of which on investment and growth remains elusive. Instead, emphasis should be on growth-enhancing structural reforms that enable private sector development.

Caribbean countries can draw lessons from successful fiscal consolidation strategies in other regions. In particular, fiscal consolidations based on expenditure reductions have tended to be more effective than tax-based consolidations, and cuts in current spending are more effective than capital expenditure cuts (Alesina and Perotti, 1997). Moreover, these efforts work best when framed as part of a medium-term fiscal framework that extends beyond the current administration (Kumar, Baldacci, and Schaechter, 2009).

[27] The public sector wage bill in the Caribbean exceeds 9½ percent of GDP. Although small economies of scale are in part responsible for the public sector's relatively large size, wage bills are higher than in other small island economies (around 5¼ percent of GDP).

## Box 2.1. Latin America: Banking Sector Spillovers from the European Crisis

Using *consolidated* Bank for International Settlements banking statistics through March 2011 and the IMF Research Department's Bank Contagion module,[1] two potential scenarios are constructed to attempt to assess the spillovers on the Latin American banking system of a crisis in Europe and its impact on the deleveraging of foreign banks:[2]

*Scenario A.* If average market-expected losses on Greek, Irish, Italian, Portuguese and Spanish (GIIPS) exposures were to materialize, international banks' associated losses would trigger a mild deleveraging process mostly affecting European countries. In the region, only Panama and Belize are estimated to experience a significant foreign bank credit reduction.

*Scenario B.* More adverse market-expected losses on GIIPS exposures would cause large losses in international banks, which, under the no-recapitalization assumption, would force a few European banks to deleverage to restore their capital asset ratios. In this context, Latin America would be among the regions most affected, with significant foreign bank credit reductions in Chile (2½ percent of GDP), Brazil (1½ percent), and Mexico (1¼ percent). It is worth noting that the deleveraging impact depends not only on the presence of European banks in the country, but also on the foreign affiliates' funding structure, the size of international banks' direct cross-border lending, and the size of the financial system. Brazil, despite having a slightly smaller foreign bank presence than some of its peers, has a higher share of direct cross-border lending from European banks, and a few of its European affiliates banks rely less on local deposits.

This analysis has certain data limitations and is based on some simplifying assumptions. Bank losses and deleveraging needs are calculated at the national banking system level of BIS reporting countries, since bank-level data on exposures to GIIPS are not available. In addition, losses in off-balance-sheet exposures are assumed to be an average across sectors, bank recapitalizations as well as other remedial policy actions are not assumed, and the deleveraging process is assumed to be uniformly distributed across all international bank assets (domestic and external) to exclude additional subjective judgments from the analysis.

**Figure 1. Estimated Deleveraging by International Banks (percent of GDP)**


Note: This box was prepared by Eugenio Cerutti.

[1] The scenario analysis includes several rounds of asset and funding shocks. The first round considers bank losses on assets that deplete banks' capital partially or fully. In the second round, if losses are large enough, an 8 percent Tier 1 capital ratio is assumed to be restored through deleveraging (loans not being rolled over and selling of assets, assuming no recapitalization). In the third round, banks are assumed to reduce their lending to other banks (funding shocks), causing fire sales and further deleveraging. Potential bank failures cause additional losses to other banks on the asset and liability sides. Final convergence is achieved when no further deleveraging needs to occur. For more details on the methodology and an analysis of the data limitations on measuring systemic banking in global banking see Cerutti, Claessens, and McGuire (2011).

[2] Assuming standard loss given default ratios of 75 and 60 percent for the sovereign and private sector, respectively, Scenario A's market-expected losses are built by taking each country's Moody's KMV mean credit default swap (CDS)-implied expected default frequency (EDF) for the private sector (as of mid-June 2011) and the CDS-implied sovereign five-year sector default probabilities (assuming risk neutrality, and as of mid-July 2001). Scenario B's tail market-expected losses are built using the 75th percentile Moody's KMV CDS-implied EDFs and two times the sovereign CDS-implied default probabilities.

## Box 2.2. Latin America: Fiscal Adjustment with Social Cohesion

Improved sovereign balance sheets in years leading up to the 2008–09 global crisis allowed most Latin American economies to implement a countercyclical fiscal response. Primary balances deteriorated by an average of 2 percent of GDP between 2008 and 2010, and public debt ratios increased by an average of 4½ percent of GDP during the same period. However, the size of the countercyclical response and quality of the expansion differed significantly across countries. In most financially integrated commodity-exporting economies, the fiscal stimulus tended to be larger (reflecting stronger balance sheets) and favored capital over current expenditures, which are also known to have larger multipliers and tend to be easier to unwind. In the rest of Latin America, the fiscal stimulus was somewhat smaller and concentrated in increases in current spending, adding to already large budget rigidities. The Caribbean had to react procyclically, though its efforts were focused on cutting capital expenditures.

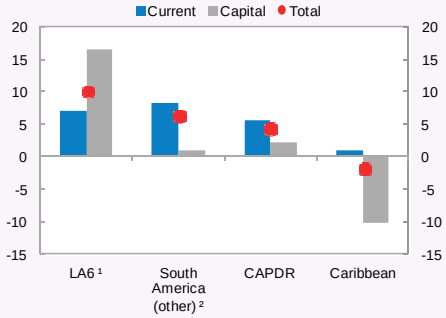
Rebuilding fiscal buffers used during the crisis is particularly critical given the increasingly uncertain global environment. However, consideration needs to be given to the speed and quality of the fiscal adjustment (see IMF, 2011a).

The **speed of fiscal adjustment** in a given country should depend on a combination of factors, including (1) its cyclical position; (2) its level of public debt; (3) the credibility of its fiscal framework and access to market financing; and (4) vulnerability to shocks (commodities, global interest rates, exchange rates). As such, the pace of consolidation may need to be faster in countries with high public debt levels and less credible and more vulnerable fiscal frameworks.

The **composition of fiscal adjustment** needs to be carefully crafted in a manner that does not cripple potential growth, protects the poor, and is consistent with social cohesion.

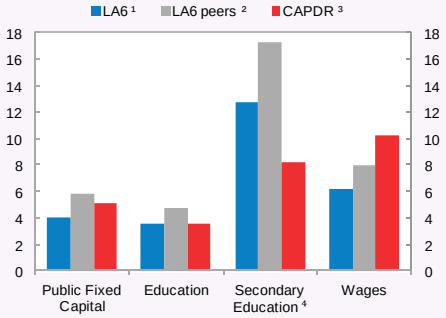
- Fiscal adjustment should avoid sharp cuts in expenditures for public infrastructure and education, which by and large are low relative to those of other countries and regions with similar income per capita. It is worth clarifying that although public investment could add to growth over the medium term, it fuels demand over the near term much like current spending. Therefore, increases in public infrastructure spending need to be offset by higher taxes and/or cuts in current spending to avoid adding to overheating risks in some countries. In Central America, Panama and the Dominican Republic (CAPDR), efforts must continue in limiting the growth in the public sector wage bill.

**Latin America and the Caribbean: Primary Expenditure Growth Composition, 2008/10**
*(Real annual percent change)*



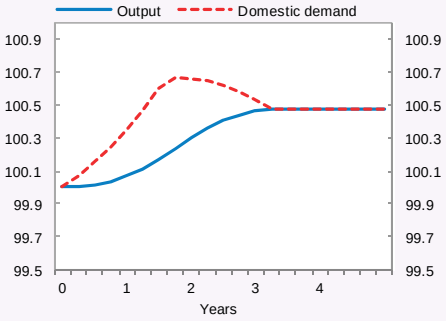

Sources: National authorities; and IMF staff calculations.
[1] Brazil, Chile, Colombia, Mexioo, Peru, and Uruguay.
[2] Argentina, Bolivia, Ecuador, Paraguay, and Venezuela.

**Government Expenditures, 2005-10**
*(Percent of GDP)*




Sources: World Bank; IMF, *World Economic Outlook*; and IMF staff calculations.
[1] Includes Brazil, Chile, Colombia, Mexico, Peru, and Uruguay.
[2] Includes Bulgaria, Malaysia, Poland, Romania, South Africa, Thailand, and Turkey.
[3] Includes Costa Rica, El Salvador, Guatemala, Panama, and Dominican Republic.
[4] Expenditures per pupil in percent of GDP per capita.

**Simulation: Impact on Output and Domestic Demand of a 1 Percent of GDP Investment Shock**




[1] Assumes a Cobb-Douglas production function with labor share = 0.5; initial capital-to-output ratio = 3.1; stock of extra investment = 1 percent of GDP for 3 years; after shock, investment is enough to keep new capital-to-output ratio unchanged.

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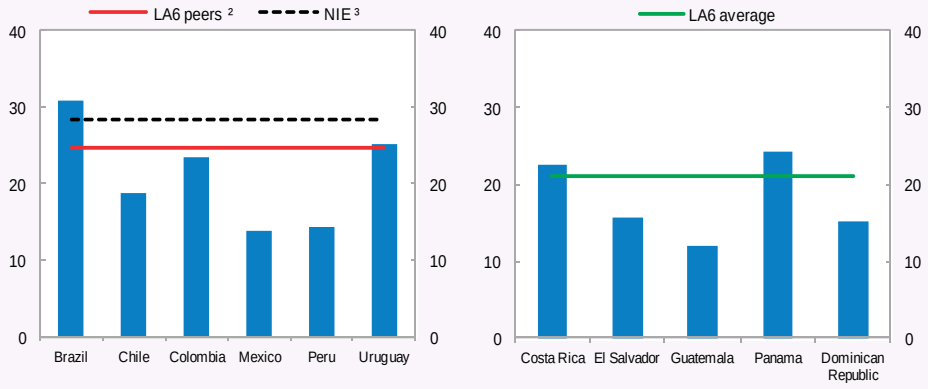
Note: This box was prepared by Luis Cubeddu.

## Box 2.2. Latin America: Fiscal Adjustment with Social Cohesion (continued)

- In countries with relatively low tax burdens (Chile, Mexico, Peru, much of Central America), efforts are also required in mobilizing revenues to attend to the region's large infrastructure and social needs, including still high levels of income inequality and unmet needs of a rapidly growing middle class. To reduce the social burden of fiscal consolidation, particular consideration should be given to raising direct taxes by bringing corporate tax rates to international standards and reducing generous tax concessions and incentives. In the case of the CAPDR region, staff estimates suggest that tax revenues could be raised by an average of over 4 percentage points of GDP by simply increasing tax rates to international standards, improving tax administration and halving tax incentives. Given the cost of tax incentives, attracting investment could be best achieved through improvements in the business and investment climate (e.g., reducing red tape, strengthening property rights, and lowering barriers to entry).

**Non-Commodity Revenues, Average 2005-10** [1]
*(Percent of GDP)*




Sources: IMF, *World Economic Outlook*; and IMF staff calculations.
[1] Excludes direct contributions from commodities, as well as social contributions and grants.
[2] Includes Bulgaria, Malaysia, Poland, Romania, South Africa, Thailand, and Turkey.
[3] Includes Australia, Czech Republic, Israel, Korea, and New Zealand.

### Box 2.3. Rule-Based Fiscal Frameworks for Latin America

**Latin American countries adopted rule-based fiscal frameworks over the course of the past decade to put an end to a long history of fiscal profligacy.** Aimed at addressing debt sustainability concerns and managing commodity price cycles, they paid little attention to the business cycle. They primarily targeted balanced budgets or deficit ceilings, and were reinforced at times with caps on subnational borrowing and current expenditure growth. Only Chile adopted a structural balance rule which, aside from addressing copper price volatility, included an adjustment for the business cycle (see table).

**Though these rules helped to strengthen fiscal sustainability, they benefitted from cyclical and commodity revenue windfalls.** However, improvements in public finances hid the fact that fiscal policy was broadly procyclical as real expenditures expanded well above the rate of potential economic growth. The procyclicality derived from the rules' emphasis on balanced budgets or deficit ceilings, but also from extensive revenue earmarking and frequent revisions to the numerical targets. Even in Chile, fiscal policy was slightly procyclical, mainly as a result of revisions to long-term copper prices and the numerical targets.

**The "first generation" of rules was generally ill equipped to respond to the challenges posed either by the global crisis or by the current recovery phase**. The rules did not provide any guidance on:

- *How to implement a discretionary response to the global crisis*, and in the absence of escape clauses, most rules were modified or suspended, on some occasions following ad hoc and improvised procedures.
- *How to develop a medium-term exit strategy to unwind the stimuli implemented during the crisis*, which, together with the lack of specific mechanisms to set aside current cyclical and commodity-related revenues gains, is making fiscal withdrawal very difficult to implement in the present context of closing output gaps.

**To strike the right balance between fiscal sustainability and cyclical management, a "second generation" of fiscal rules may be necessary:**

- To ensure sustainability, the rules should be embedded into a medium-term fiscal framework, which, depending on countries' data availability, could include (1) expenditure and revenue envelopes (e.g., floors on social spending and tax collections), (2) long-term projections for commodity revenues and the government's net financial assets, and (3) routine stress tests, sensitivity analysis, and assessments of debt sustainability and contingent liabilities.
- To reduce procyclicality, the rules should target the *structural primary balance*, adjusted for the business cycle and commodity prices (Peru recently committed to this). Given the difficulties in obtaining robust estimates of the output gap and long-term commodity prices, the rules could be complemented with ceilings on the noncommodity primary balance and the rate of growth of real expenditure.
- To discourage circumventions, the rules should envisage an institutional coverage as comprehensive as possible and include stringent transparency and accountability mechanisms. A nonpartisan fiscal watchdog could be established in charge of providing key parameters and assessing compliance with the rules.
- To provide flexibility, the rules should include transparent escape clauses and a strategy for returning to the medium-term objective.

**Success will depend greatly on solid institutional arrangements.** In some countries that currently have such rules, these institutional arrangements are even more important than the stand-alone numerical rules, with a few countries (e.g., New Zealand, Australia) not even specifying the numerical targets of their rules. The institutional arrangements should seek to (1) foster a strong consensus and political commitment regarding the rule's objectives, (2) maximize the reputational costs of breaching commitments without overrestricting discretion, and (3) guide the public debate on fiscal policy, rather than put fiscal policy on automatic pilot.

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Note: This box was prepared by Teresa Daban-Sanchez.

**Fiscal Rules in Selected Latin American Countries**

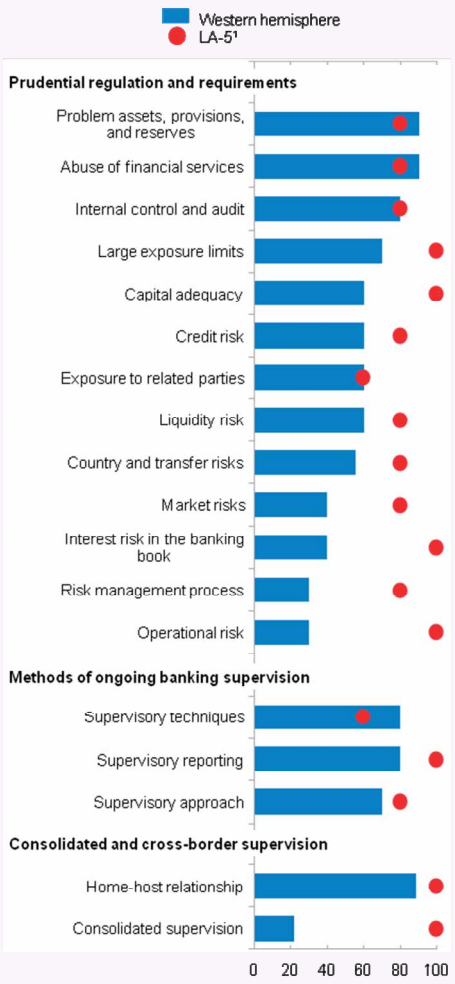
| Country | Type of rules | Numerical targets (current) | Statutory base | Time horizon and coverage | Escape clauses | Implementation issues |
|---|---|---|---|---|---|---|
| **Argentina** | Rules on current expenditure growth (constant or in line with nominal GDP), balanced budget, and debt. | Current expenditure growth in line with GDP. | Fiscal Responsibility Law (1999, revised in 2001 and 2004). | Annual; applicable to each individual entity of the general and central governments. | No. | Congress has on several occasions granted "emergency superpowers" to the President, leading to suspension of the fiscal rules. |
| **Brazil** | Rules on expenditures, (government payroll in relation to revenues), primary balance, and debt. | Primary surplus of 3 percent of GDP. Wage bill is limited to 50 percent of net current revenue for the federal government, and 60 percent for states and municipalities. There exist specific wage bill limits for the executive, legislative, judiciary and other offices. | Fiscal Responsibility Law (2000). | Fixed annual ceilings for debt and spending, and three-year rolling targets for the primary balance; general government. | Yes, escape clauses exist for real GDP growth below 1 percent over four quarters or natural disasters, but can only be invoked with congressional approval. | Ample room for Congress to change targets proposed by the government. Implementation is hampered by extensive revenue earmarking. In case of noncompliance, corrective measures need to be taken and can result in sanctions. |
| **Chile** | Rule on structural balance, which results from adjusting according to the economic cycle and copper prices. Two funds (stabilization and saving). | Commitment to achieve a structural deficit of 1 percent of GDP in 2014 (down from current 2 percent of GDP). | Political commitment (2000) and Fiscal Responsibility Law (2006). | Annual; work in progress for the adoption of a medium-term fiscal framework; central government. | No; implementation of the rule aims at achieving a specific target for the structural balance. The current administration has pledged to reduce the structural deficit from 3 percent of GDP in 2009 (reflecting the shocks and fiscal stimulus derived from the crisis) to 1 percent of GDP by 2014. | External bodies provide independent estimates of output gap and long-term copper price. Upward revisions of the long-term copper price have imparted an unintended procyclicality to government expenditures. The Commission for the Reform of the Fiscal Rule has proposed strengthening the rule's flexibility and transparency. |
| **Colombia** | Rules on subnational borrowing, current expenditure growth and structural balance for the central government. | Newly approved rule sets path for fiscal consolidation which lowers the central government structural deficit to 2.3 percent of GDP by 2014, and sets a deficit ceiling of 1 percent of GDP effective in 2022. | Laws enacted in 1997, 2000, and 2011. | Annual targets framed by a medium-term fiscal framework; structural balance rule covers only the central government. | Yes, an increase in the structural balance to accommodate 25 percent of the output gap, to be reversed in two years. | The new law on the structural balance has not been implemented; it leaves significant detail to future regulations (e.g. adjustment for commodity cycle); creates a saving and stabilization fund; and requires that an independent expert panel be set up to provide key inputs. |
| **Costa Rica** | Expenditure rule. | Golden rule. | Law. | Annual, although recent efforts to move toward multiannual budgeting; central government. | Annual. | The government has requested that Congress suspend the fiscal rule on several occasions. |
| **ECCU countries** | Rule on debt-to-GDP ratio. | Debt ratio at 60 percent of GDP by 2020. | International treaty. | Annual; general government. | No. | All ECCU countries rank within the 15 most indebted emerging markets and developing countries. Three have a public debt-to-GDP ratio above 100 percent. All countries currently exceed the 60-percent-of-GDP target. |
| **Mexico** | Rules on balanced budget and debt. | Commitment to achieve a balanced budget by 2012, down from the current deficit of 0.5 percent of GDP. | Fiscal Responsibility Law (2006). | Central government, but excludes important off-budget operations. | Yes, deviations from the rule are allowed under exceptional circumstances, but they are not defined. | The oil price rule place a large weight on short-term oil futures, which results in procyclicality. Capital expenditures for the public oil company (Pemex) were taken out of the rule, and since 2009 deficits have been allowed under the premise of exceptional circumstances. In 2010–11, the cap on accumulated revenues at the oil fund was removed on a temporary basis. |
| **Panama** | Rules on debt and deficit ceiling. | Deficit ceiling of 1 percent of GDP; debt-to-GDP ratio below 40 percent must be maintained once achieved. | Fiscal Responsibility Law (2008). | Annual; general government. | Yes; in the case of recession or slowdown of the global and Panama's economies and natural disasters; provides for a gradual adjustment path over four years. | Frequent use of escape clauses, which has happened every year since the inception of the rule, may reflect negatively on the credibility of the rule and the government's commitment to fiscal consolidation. |
| **Peru** | Rules based on deficit and expenditures growth ceilings. | Deficit ceiling of 1 percent of GDP (increased temporarily to 2 percent of GDP during 2009-10). | Fiscal Responsibility Law (2000). | Annual, although framed by a medium-term fiscal framework; nonfinancial public sector. | Yes; temporal relaxation of the rules' targets with congressional approval. | The deficit ceiling becomes nonbinding when the fiscal accounts reach a surplus; and the rule does not ensure full savings of revenue windfalls. The expenditure growth ceilings have been relaxed in certain years, and some expenditures are excluded. |
| **Venezuela** | Rules on the current balance, expenditure growth, and debt. | Implementation of the associated law has been postponed. | Organic Law on Public Finances (1999). | Annual targets, but framed in the medium-term fiscal framework; nonfinancial public sector. | No. | Expenditures have continued to be highly correlated with oil prices. Budgetary institutions have deteriorated, in part as a result of proliferation of extrabudgetary operations. |

Sources: IMF database on fiscal rules; IMF staff reports; and authorities' reports.

## Box 2.4. Challenges for Financial Regulation and Supervision in Latin America

Although Latin America's banking system weathered the global financial crisis relatively well, there is ample room for improving its financial and regulatory frameworks. Authorities need to comply effectively with international best practices and adopt the new Basel III regulatory and oversight reforms such as (1) improving the capitalization and funding structures of banks; (2) reducing procyclicality of the financial system; (3) widening the perimeter of regulation; (4) strengthening the assessments of exposure and interconnectedness among financial institutions; and (5) strengthening the effectiveness of consolidated supervision. However, priorities vary across the region (see figure and FSB, IMF, and WB, 2011).

**Western Hemisphere: Compliance with Selected Basel Core Principles for Effective Banking Supervision**
*(Percentage, 100 indicates full compliance)*




Source: IMF staff calculations based on IMF Financial Sector Standards and Codes database.
¹ LA-5 Includes Brazil, Chile, Colombia, Mexico, and Peru. For a detailed explanation of Basel Core Principles see BCBS (2006) . Does not include Financial Sector Assessment Program information for 2011:Q2 or 2011:Q3.

In *the financially integrated economies of Latin America* (Brazil, Chile, Colombia, Mexico, Peru, Uruguay) regulation is close to international best practices, yet qualitative aspects of supervision need strengthening. Banking systems display relatively good capital and funding structures—large banks exceed the new capital standards (Basel III), the new minimum leverage ratios are nonbinding (Terrier and others, 2011), and failure to comply with the new liquidity requirements is limited to some small banks. In this context, priority should be given to (1) assessing and improving the quality of capital; (2) enhancing the supervisors' capacity to perform a more thorough assessment of banks' risk management practices (in some cases this will require strengthening the legal protection of supervisors); (3) tackling information gaps, especially in areas such as property price indexes, which are fundamental for assessing misalignments (see the April 2011*Regional Economic Outlook* and Cubeddu and Tovar, 2011); and (4) establishing consolidated credit registries for information sharing across credit providers (e.g., banks and department stores) and a proper assessment of credit risk. In addition, a regulatory architecture for the monitoring and management of systemic risk needs to be put in place. In this respect, progress is underway: Brazil, Chile, Colombia, Mexico, Peru, and Uruguay have either established or are working towards establishing a financial stability committee and defining its governance structure. Of course, it remains to be seen how these new institutions will operate.

The *Central America, Panama, and the Dominican Republic* region lags relative to the financially integrated Latin American economies (Delgado and Meza, forthcoming). Despite recent progress, supervisory weaknesses make the quality of financial soundness indicators and compliance ratios questionable. The priority here is to strengthen legal and regulatory frameworks and bring supervisory standards closer to international best practices. Particular efforts are needed to widen the perimeter of regulation, fully enable cross-border consolidated supervision, and effectively implement risk-based supervision. These should be complemented with more proactive and intrusive supervision and a strengthening of the legal protection of supervisory authorities. Finally, efforts will be required in calibrating and expanding the prudential toolbox to manage procyclicality (Terrier and others, 2011).

Note: This box was prepared by Camilo E. Tovar.
[1]Compliance is rated for the Core Principles for Effective Banking Supervision, the International Organization of Securities Commissions Objectives and Principles of Securities Regulation, and the International Association of Insurance Supervisors Core Principles.

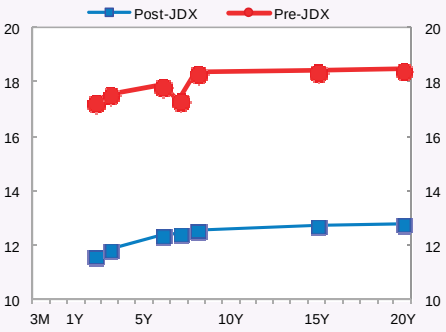
## Box 2.5. Recent Sovereign Debt Restructurings in Latin America and the Caribbean

Since 2000, nine Latin American and Caribbean economies have resorted to sovereign debt restructurings to deal with either an unsustainable fiscal position or acute liquidity pressures endangering solvency. Three recent cases (the Dominican Republic, Jamaica, and Uruguay) are analyzed in this box, differing in scope and approach. In the case of Uruguay, the debt exchange involved foreign-currency-denominated bonds held by both nonresidents and domestic financial institutions, with the latter supported by a government-financed fund (the Fund for the Stability of the Banking Sector). In the Dominican Republic, the debt restructuring was targeted at private and official external creditors and involved agreements with the Paris and London Clubs. The Jamaican debt exchange (JDX) targeted only domestic securities and given the high exposure of the financial sector to sovereign debt, it required (like that in Uruguay) the establishment of a Financial Sector Support Fund (FSSF) to assist banks with liquidity or capital needs potentially arising from the debt exchange. Despite differences, in all three cases the restructurings were preemptive in nature and did not entail a principal haircut.

| | | Type | | Debt involved (US$ billions) | As percent of GDP | Collective action clauses / exit consents | Net present value reduction | Actual participation |
|---|---|---|---|---|---|---|---|---|
| Uruguay | 2003 | Preemptive and maturity extension | External | 5.5 | 46% (50% of total debt) | Both used | 13% | 93% |
| Dominican Republic | 2005 | Preemptive and maturity extension | External | 1.1 | 3.3% (14% of total debt) | Yes | 1.4% | 97% |
| Jamaica | 2010 | Preemptive and maturity extension | Domestic | 7.8 | 65% (47% of total debt) | No | 15-20% | 99.2% |

**Impact.** All three restructurings involved significant short-term debt service reductions, which helped the countries to rebuild international reserves in the context of a strong fiscal adjustment program, with an average committed increase in the primary balance of more than 3 percent of GDP. Moreover, the countries' sovereign ratings were upgraded immediately after the exchange, and all three regained market access less than a year later. In the case of Jamaica, interest payments were reduced by 3½ percent of GDP, and the average maturity was extended by close to four years. Moreover, debt service relief was accompanied by reductions in the share of variable rate and U.S.-dollar-denominated securities, resulting in reduced interest and exchange rate risks. Financial institutions did not request access to the FSSF given that key sources of risk to their capital positions did not materialize.

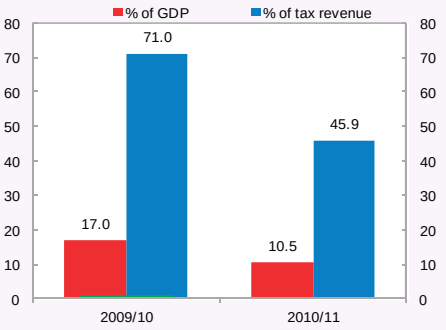
**Jamaica: Government Yield Curve [1]**
*(Local currency)*




[1] JDX stands for Jamaican Debt Exchange. Horizontal axis displays maturity in months and years.

**Lessons.** A transparent, preemptive and market-friendly approach with extensive coordination with stakeholders emerges as the key element in the aforementioned cases. The restructurings were complemented by a credible fiscal consolidation plan and growth-enhancing structural reforms. In the cases of Uruguay and Jamaica, the restructurings were also designed to protect the stability of financial systems heavily exposed to sovereign debt, with significant resources committed to the government-supported stability fund to boost confidence.[1]

**Jamaica: Interest Payments**




Note: This box was prepared by Mariusz Jarmuzek and Cesar Serra.

[1] The combination of fiscal resources to the stability funds plus financing under IMF-supported programs averaged more than 13 percent of GDP in both Jamaica and Uruguay.

# 3. Commodity Price Cycles: The Perils of Mismanaging the Boom

*As a net commodity-exporting region, Latin America—and especially South America—has significantly benefited from the commodity price boom of recent years. At the current juncture, however, uncertain global economic prospects have raised questions about its vulnerability to a sharp fall in commodity prices and the policies that can shield it from such a shock. This chapter examines the region's commodity dependence and the history of commodity price busts in the last four decades to address these questions. Despite shifting trade structures in some countries, Latin America is—on average—as reliant on commodities today as 40 years ago. With commodities responding sensitively to global output fluctuations, the region is particularly vulnerable to a global economic slowdown. However, we find evidence that policies in the run-up of sharp terms of trade drops—especially when those are preceded by booms—play an important role in shaping the economic impact. Limited exchange rate flexibility, a weak external position, and loose fiscal policy tend to amplify the negative effects of these shocks on domestic output. Financial dollarization also appears to act as a shock "amplifier." With improved fundamentals in many of these dimensions, the region appears to be better placed to withstand a turnaround in commodity prices today than in the past.*

## 3.1. Introduction

Increasing uncertainty about global economic prospects has raised questions about the region's vulnerability to a change in external conditions. In particular, what would the impact of a sharp and sustained reversal in commodity prices be? What policies could mitigate this impact? Is the region better prepared today than in the past to cope with this type of shock? This chapter answers these questions by taking a historical view of the behavior of commodity prices, the region's commodity dependence, and the determinants of output performance during episodes of large terms of trade drops (which are, most of the time, induced by marked movements in commodity prices).[1]

The chapter is organized as follows: Section 3.2 presents key stylized facts on commodity prices that put the recent boom in historical perspective and provide insights about the idiosyncratic behavior of different commodities and the comovement among them. Section 3.3 documents the extent of the region's commodity dependence (over time and compared with emerging Asia), highlighting key differences across subregions and some marked shifts in individual countries' trade structures. Section 3.4 studies the role of specific policies and fundamentals—particularly during the boom phase of the commodity price cycle—in determining the impact on domestic output of the subsequent negative terms of trade shocks. Section 3.5 discusses key conclusions and policy implications.

## 3.2. A Historical Perspective on Commodity Prices

Except for a brief interruption during the 2008–09 global crisis, commodity prices have increased sharply over the last decade, with the IMF broad commodity price index reaching levels similar (in real terms) to those recorded during the commodity

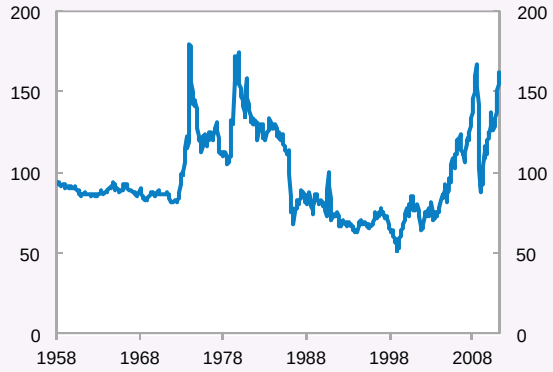
Note: This chapter was prepared by Gustavo Adler and Sebastián Sosa, with research assistance from Alejandro Carrión and Ben Sutton.

[1] Our focus is on the effect of these shocks on output. Chapter 3 of the September 2011 *World Economic Outlook,* in turn, examines the effects of international commodity price swings on inflation across different countries (and assesses the appropriateness of monetary policy responses).

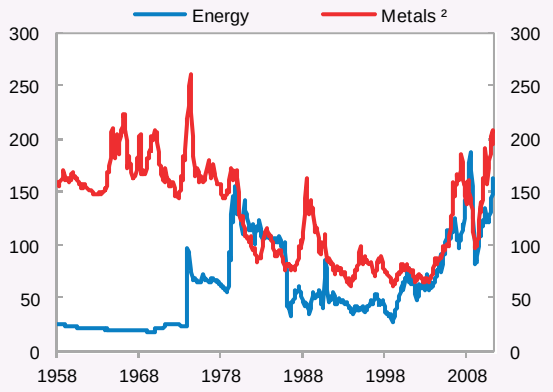
*Figure.3.1. The current boom is remarkable in historical perspective in regard to energy and metals, but not so much in regard to food.*

**Commodity Prices in Historical Perspective, 1958–2011** [1]
*(Index in real terms, 2005 = 100)*

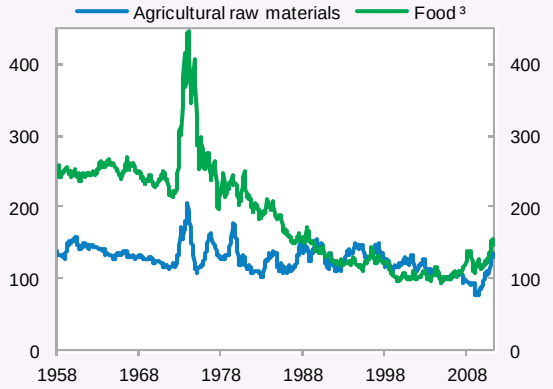
**Broad index**




**Energy and metals**




**Food and agricultural raw materials**




Sources: IMF, *International Financial Statistics*; and IMF staff calculations.
[1] See footnote 2 in the main text for an explanantion of how nominal prices are deflated to construct real price series.
[2] Excludes gold and silver.
[3] Includes agriculture food, meat and fishery.

price booms in the 1970s (Figure 3.1).[2] This boom has been remarkable in historical perspective not only for its magnitude, but also because—unlike most previous booms—it has been broad based.

Real energy and metal prices have tripled (in the latter case from record low levels) since 2003, and current prices are around the historic peaks of the 1970s. Food prices have also increased markedly, although their surge has been less spectacular (around 50 percent since 2003), and has only partly reversed the pronounced downward trend seen for several decades. Indeed, current prices are still about 50 percent below their average level of the 1970s and 65 percent below their peak level. This pattern is common to most of the cereals exported by the region (corn, wheat, rice, soybeans, etc.).[3]

**Table 3.1. Commodity Price Behavior, 1958–2011**[1]

| | Persistence | | Volatility |
|---|---|---|---|
| | Autocorrelation coefficient (24 months) | HLS[2] (years) | Std. dev. (dlog) (percent) |
| Energy | 0.70 | 9 | 8.2 |
| Metals | 0.70 | 9 | 3.9 |
| Agricultural raw materials | 0.26 | 2 | 3.0 |
| Food | 0.80 | 11 | 2.9 |
| Cereals [3] | 0.58 | 4 | 5.8 |

[1] Based on monthly data.
[2] Half-life of a unit shock (HLS) is the length of time (in years) until the impulse response of a unit shock to prices is half its initial magnitude.
[3] Include maize, rice, soybeans, and wheat.

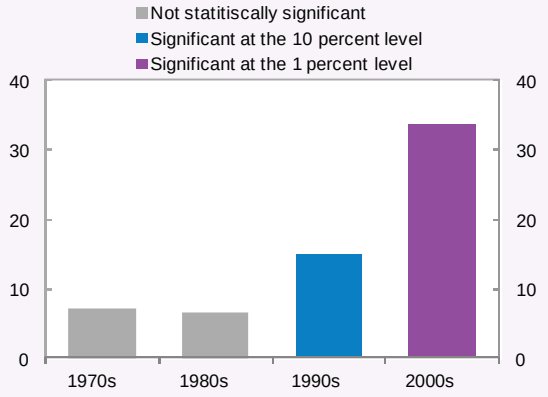
[2] References to commodity prices across the chapter are always in real terms. Commodity prices—in U.S. dollars—are deflated by a weighted average of the wholesale price indices (WPIs) of five countries (France, Germany, Japan, the United Kingdom and the United States) whose currencies comprise the IMF's Special Drawing Right (SDR) basket (with the euro succeeding the French franc and German mark in the euro era). Each country's WPI is converted to U.S. dollars using the average exchange rate of the period, and the average is computed using the weights of the SDR basket. Thus, our measure of real commodity prices is stripped of the mechanical impact of changes in the U.S.-dollar exchange rate vis-à-vis other currencies (a numeraire effect due to the fact that commodity prices are quoted in U.S. dollars).

[3] The evolution of agricultural raw material prices is similar to that of food prices, though the long-run decline has been less marked.

Food prices have also been less volatile and their shocks more persistent than those of metals and energy (Table 3.1)—although there are also marked differences within the food category, as prices for agricultural goods tend to display relatively high volatility and low persistence.

*Figure 3.2. Unlike previous decades, commodity prices have comoved closely in the last 10 years.*

**Comovement across Commodity Prices[1]**
*(Groupwise correlation across categories, percent)*




Sources: IMF, *International Financial Statistics*, and IMF staff calculations.
[1] Based on monthly percentage changes of IMF commodity price indexes for energy, metals and food, and on a statistic for a likelihood ratio test in which, under the null hypothesis, all pairwise correlations are equal to zero (i.e., the correlation matrix is equal to the identity matrix). See Valdes (1997) and Pindyck and Rotemberg (1990) for details.

At the same time, the comovement of prices of different commodities has changed significantly over time, reflecting the varying nature of underlying shocks (Figure 3.2). Prices across all categories have behaved very similarly in the last decade, due to the dominant role of global demand as a key common driver of price changes. They have also shown pronounced comovement in response to financial shocks, as seen during the 2008–09 crisis. In previous decades, however—and particularly during past commodity boom-bust cycles—the correlation was lower, even negative in some cases. Clear examples are the first and second oil price shocks in the 1970s and the Gulf War shock in the early 1990s, in which the oil supply shocks triggered a slowdown in global economic activity, negatively affecting the demand for and price of other commodities (Figure A in Annex 3.1).

The importance of common (global) underlying factors in driving prices across different categories of commodities is confirmed by a statistical analysis of principal components. In the last decade, the first principal component accounts for almost 85 percent of the variance of commodity prices, and prices of all categories are positively correlated with this underlying common force. This reflects to a great extent the increasing importance of China in global demand for commodities.[4] In the 1970s and 1980s, in contrast, the first principal component accounted for about 65 percent of the variance of commodity prices, and whereas it was positively correlated with prices of metals and food, the correlation with energy prices was negative (Table 3.2).

**Table 3.2. Global Factors and Commodity Prices: Principal Component Analysis**

| | 1970s–80s | 2000s |
|---|---|---|
| Share of variance explained by first principal component | 0.63 | 0.84 |
| Measure of comovement with common global factor[1] | | |
| Food | 0.63 | 0.56 |
| Energy | -0.36 | 0.59 |
| Metals | 0.68 | 0.58 |

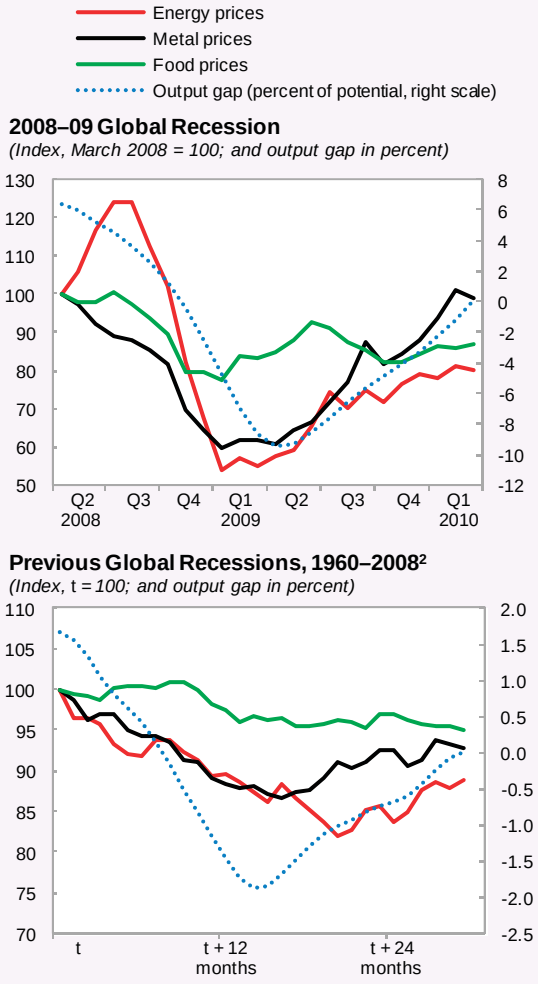
Source: IMF staff calculations.
[1] Loadings of first principal component.

Finally, despite their high correlation—especially recently—a glance at the behavior of commodity prices during global recessions suggests that there are notable differences across commodities in their sensitivity to the global cycle, with food prices being significantly less sensitive.[5] This has been the case during the 2008–09 Great Recession as well as in other slowdowns in the last four decades (Figure 3.3). These differences across categories suggest that the degree of vulnerability to a global slowdown may vary significantly even within the group of commodity-exporting countries,

[4] See the September 2006, April 2008, and October 2008 editions of the *World Economic Outlook* for more in-depth analyses of the underlying drivers of commodity prices in recent years.
[5] The lower sensitivity of food prices to global economic activity and their lower volatility likely reflect higher supply elasticity and lower income elasticity of demand (relative to other commodities).

*Figure 3.3. Commodity prices are quite sensitive to global output, except for food prices.*

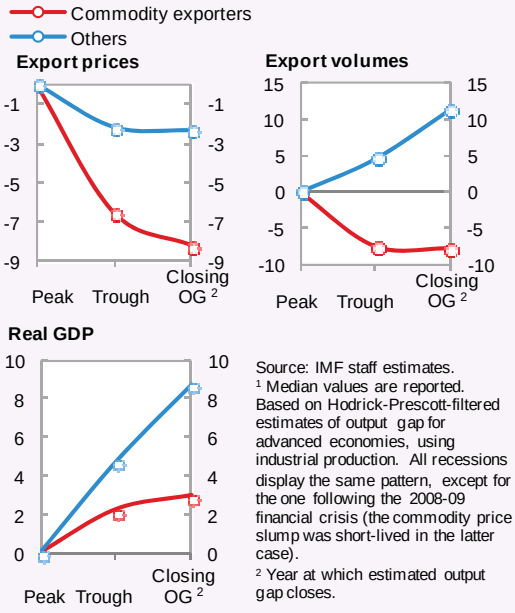
**Commodity Prices During Global Recessions, 1960–2010[1]**




Source: IMF staff calculations.
[1] Recessions defined on the basis of estimated output gap for advanced economies (using industrial production series). A slowdown is considered a recession if the output gap reaches at least –1. 5 percent of potential output for at least a quarter. Reported commodity prices are in real terms.
[2] *t* corresponds to the month of the peak value of the cyclical component of output, before ouput falls below potential. Only the first 30 months are reported as length of recessions varies across cases. Oil shocks of 1969 and 1973 are excluded.

*Figure 3.4. Commodity exporters have been significantly more affected by global recessions than other emerging market economies.*

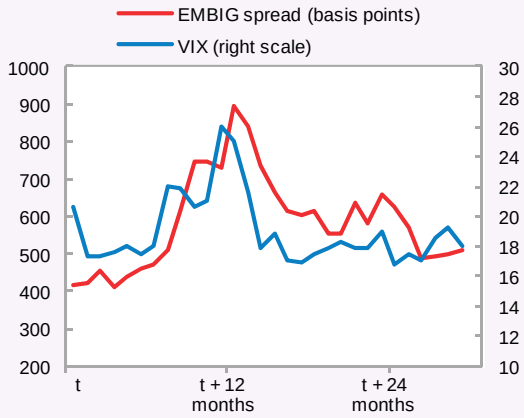
**Macro Performance of Commodity Exporters and Other Emerging Economies during Global Recessions, 1980–2010 [1]**
*(Median cumulative growth, peak year = 0)*




Source: IMF staff estimates.
[1] Median values are reported. Based on Hodrick-Prescott-filtered estimates of output gap for advanced economies, using industrial production. All recessions display the same pattern, except for the one following the 2008-09 financial crisis (the commodity price slump was short-lived in the latter case).
[2] Year at which estimated output gap closes.

*Figure 3.5. Recent recessions have been accompanied by tightening of financing conditions for emerging markets.*

**Financial Conditions During Global Recessions, 1995–2010[1]**




Source: IMF staff calculations.
[1] Simple average. Recessions defined on the basis of output gap estimated from advanced markets' industrial production series. A slowdown is considered a recession if the estimated output gap reaches at least –1. 5 percent of potential output for at least a quarter. (*t*) corresponds to month of the peak value of the cyclical component of output, before output falls below potential. Only the first 30 months are reported as length of recessions varies across episodes.

depending on the specific commodities countries specialize in.

Consistent with global recessions being accompanied by lower commodity prices, net commodity exporters have been particularly affected during those episodes (Figure 3.4). Recent recessions have also been, in general, associated with tighter financing conditions for emerging markets (Figure 3.5). Thus, the possibility of a "triple" shock—that is, weaker terms of trade, lower external demand, and tighter global financial conditions—is a tangible risk for many Latin American commodity-exporting economies.[6]

## 3.3. How Commodity Dependent Is Latin America?

How dependent is Latin America on commodity exports? How has this dependence evolved over time? How does it compare with emerging market economies in Asia?

The degree of commodity dependence, as well as its evolution over time, differs significantly across regions and subregions of Latin America (Figures 3.6 and 3.7, and Figure B in Annex 3.1).

- South America is the most commodity-dependent subregion, and this feature has become more pronounced over time (net commodity exports represented 10 percent of GDP in 2010, compared with 6 percent in 1970). Although the increase has been broad based, metals and energy still account for the largest shares of net commodity exports.
- In contrast, Mexico and Central America have recorded sharp declines in net commodity exports, primarily as a result of falling agriculture exports and increasing energy imports. The subregion was a large commodity exporter in 1970 (8 percent of GDP) and currently shows balanced trade in commodities (still being a net exporter of agriculture products but now also a net importer of energy).
- The trends in emerging Asia greatly differ from those in Latin America, as the former has evolved from being a net commodity exporter (reaching around 6 percent of GDP in 1970) to being a net importer (almost 3 percent of GDP) in 2010. This shift has been mostly due to a sharp decline in exports of raw materials and an increase in imports of energy and metals. Most large emerging economies in Asia are now net importers of energy.

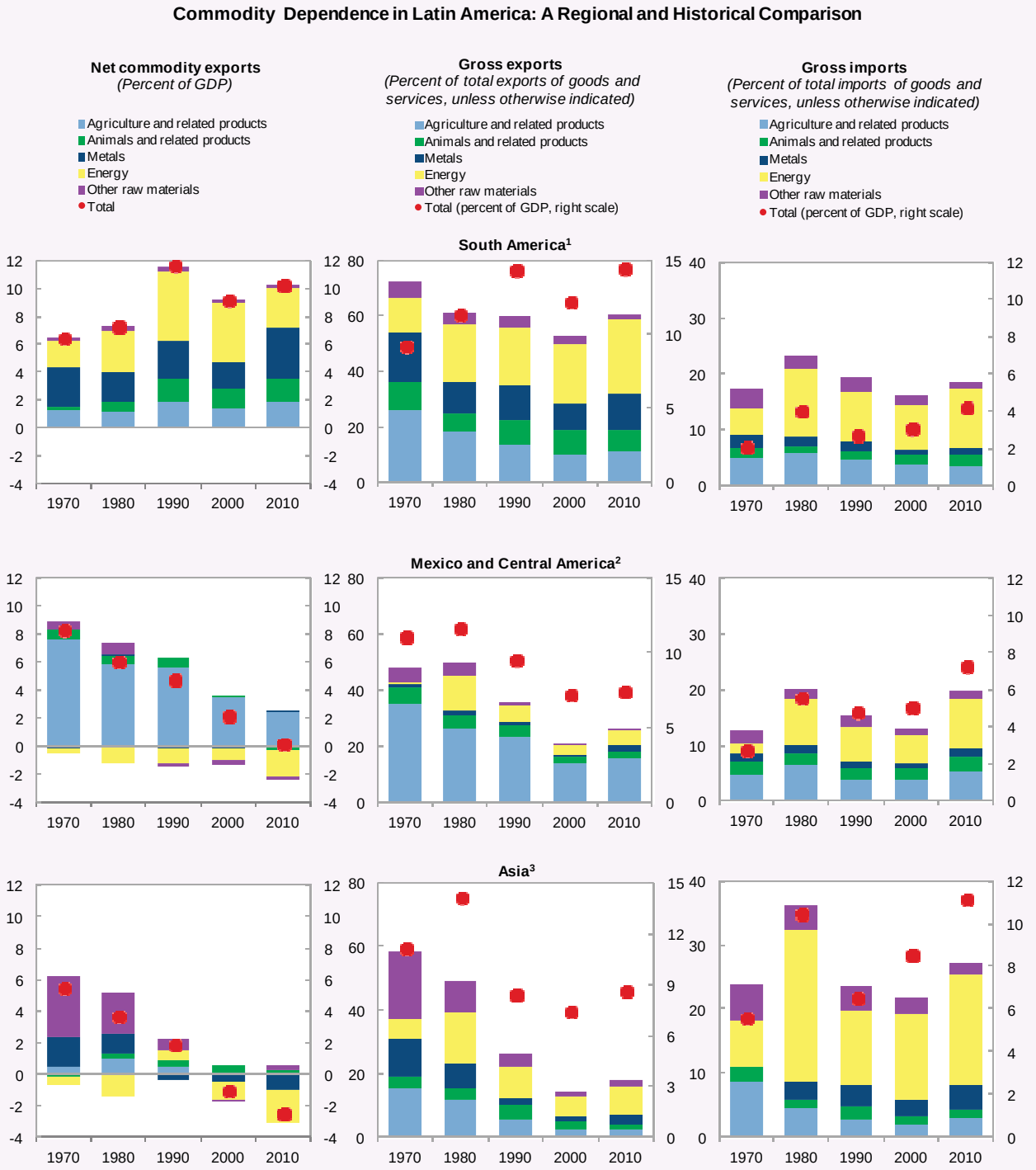
While increasing reliance on commodities (as percent of GDP) has made some countries in the region more vulnerable to commodity price shocks, even larger increases in non-commodity exports (trade openess has grown markedly) have led in many cases to a more diversified export structure, arguably making these economies more flexible to withstand commodity price shocks (Figures 3.6 and 3.7, and Figure C in Annex 3.1).[7]

- Several countries in South America (Argentina, Brazil, Uruguay) have diversified away from commodities, although the latter still account, on average, for 60 percent of their total exports of goods and services. Interestingly, this diversification has not taken place in the case of the heavy metal or energy exporters (Chile, Colombia, Ecuador, Peru, and Venezuela).
- In Mexico and Central America, the importance of commodity exports has also halved (from 50 percent of total exports to around 25 percent) between 1970–80 and 2010.
- Diversification in emerging Asia has been even starker, with commodity exports falling from

[6] A tightening of monetary policy in advanced economies could be another potential driver of lower commodity prices (see Box 3.1), though the likelihood of such an event is low in the near term.

[7] This source of strength has been pointed out by some authors (see, for instance, Calvo and Talvi, 2005), who have stressed the role of the relative size of the tradable sector (vis-à-vis the non-tradable sector) in determining the economy's ability to adjust to an external shock. A larger tradable sector would imply a smaller real exchange rate depreciation in order to restore external sustainability in the event of a negative shock. In this vein, the higher vulnerability due to a growing share of commodity exports in GDP would be mitigated by an even more pronounced increase in exports of other goods.

*Figure 3.6. While South America has become more commodity dependent, Mexico and Central America—like emerging Asia—have reduced their dependence.*




Sources: World Integrated Trade Solutions database; and IMF staff calculations.
[1] Simple average for Argentina, Brazil, Chile, Colombia, Ecuador, Peru, Uruguay, and Venezuela.
[2] Simple average for Mexico, Costa Rica, El Salvador, and Guatemala.
[3] Simple average for China, India, Indonesia, Korea, Malaysia, Philippines, and Thailand.

about 60 percent of total exports in the 1970s to less than 20 percent in 2010.

Finally, the changing dependence on commodities in many countries has also been, at least partly, driven by growing commodity imports—reflecting primarily the increasing need for energy in rapidly expanding emerging market economies.

- The share of commodities in Latin America's total imports has increased markedly as a percentage of GDP (although not in terms of total imports) with energy remaining the main category of commodity imports across the region.
- Emerging Asia has shown a similar pattern, with the exception of China—where commodity imports have increased both as a fraction of total imports and as a percentage of GDP.

In sum, Latin America remains—on average—as exposed to commodities-related risk as four decades ago, making it vulnerable to a sharp decline in commodity prices. At the same time, higher diversification (as non-commodity exports have grown even faster) has arguably made many of these countries more flexible to withstand such shocks. This is not the case, though, for energy and metal exporters, which are today particularly vulnerable to a global slowdown, given their higher overall commodity dependence and their greater concentration in commodities—heightened by their exposure to commodities that are more sensitive to the global economic cycle (Box 3.2).[8]

## 3.4. What Explains Economic Performance in the Face of Terms of Trade Busts?

Although high commodity dependence makes the region vulnerable to a sharp turnaround in commodity prices, the potential economic impact of such a shock is not obvious. This is partly because the degree of commodity reliance varies across countries, but also—and more importantly—because economic fundamentals and policies can play an important role in mitigating or amplifying the effects.

Furthermore, the frequent concurrence of terms of trade and other external shocks (global growth or

*Figure 3.7. The region is still heavily commodity dependent.*

**Commodity Dependence and Export Diversification in Latin America, 2010**


Sources: World Integrated Trade Solutions database and IMF staff calculations.

[8] A country's ultimate degree of vulnerability is, however, also determined by the flexibility and quality of their policy frameworks. The role of policies in shaping the impact of shocks is examined in the next section.

financial) makes it intrinsically difficult to observe the direct impact of price shocks, unless a multivariate setting is used (enabling the effect of different external factors to be disentangled from the price effect and its interactions with country economic fundamentals).

This section presents two complementary approaches for exploring the determinants of macroeconomic performance during episodes of sharp terms of trade drops—most of the time driven by commodity price shocks—in such a multivariate setting. The aim is to explain whether and to what extent country fundamentals and policies can shape the impact of these foreign shocks. The focus is on large terms of trade changes, as country fundamentals are likely to play a more important role when shocks are sizable (e.g., the flexibility of policy frameworks is more critical when the need for economic adjustment is large).

The first methodology entails a *cross-sectional study* of episodes of sharp negative terms of trade shocks that took place between 1970 and 2010 in a sample of 64 emerging and large commodity-exporting advanced economies. After documenting the behavior of key macroeconomic variables during these episodes, we explore the role of fundamentals in determining the overall impact of the external price shock on domestic output.

This approach is complemented by a similar exercise in a *panel setting*, which allows us to explore the importance of certain variables for which reliable data are available only for a shorter and more recent time span (e.g., degree of dollarization, fiscal stance).

Unlike other studies—which have focused mostly on the traditional measure of terms of trade (export prices over import prices)—we rely on an adjusted measure that captures the magnitude of the income effect of changes in trade prices, taking into account the initial export and import ratios to GDP (that is, the direct impact of the changes in export and import deflators on the trade balance, given volumes).[9] Specifically:

$$TOT_t^A = \widehat{P_t^X}\left(\frac{X_{t-1}}{GDP_{t-1}}\right) - \widehat{P_t^M}\left(\frac{M_{t-1}}{GDP_{t-1}}\right)$$

where $\widehat{P_t^X}$ and $\widehat{P_t^M}$ denote the percentage change in export and import deflators, respectively, and $\frac{X_{t-1}}{GDP_{t-1}}$ and $\frac{M_{t-1}}{GDP_{t-1}}$ are the previous-year ratios of exports and imports to GDP.

## Cross-Sectional Approach

The cross-sectional approach entails assessing whether country fundamentals at the outset of the shock can explain cross-country differences in macroeconomic performance during the full length (i.e., from peak to trough) of episodes of sharp and negative terms of trade shocks. Episodes are identified on the basis of whether a country experienced a cumulative drop in its (adjusted) terms of trade of at least 3 percentage points of GDP, from peak to trough (with negative changes in at least two consecutive years).[10] This criterion identifies 98 episodes (Figure 3.8).[11] Interestingly, although there is a prevalence of episodes during the commodity shocks of the 1970s and 1980s, there are

[9] This measure can be (loosely) interpreted as a combination of standard terms of trade and trade openness. It does not attempt to capture, however, the economy's ability to adjust to an external price shock—as raised by Calvo and Talvi, 2003—but its direct income effect. Econometric results confirm that this measure of terms of trade is more informative than the traditional ratio of export to import prices, as the latter does not deliver statistically significant results.

[10] The threshold is somewhat arbitrary. It is set at a relatively high level to increase the likelihood of identifying an economic impact and at the same time not too high in order to preserve a reasonable sample size. By requiring at least two consecutive years of terms of trade declines, our sample does not include any episode around the 2008-09 global crisis, given that the commodity price drop proved to be short-lived.

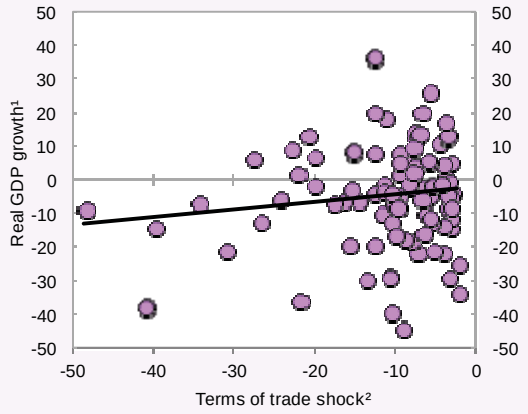
[11] The sample of countries includes both commodity exporters and importers, in order to disentangle the price effect from the effect of other external shocks that could be highly correlated with commodity prices (e.g., global growth). Terms-of-trade shocks induced by export prices do not appear to have a different impact than those induced by import prices (see Box 3.3).

**Figure 3.8. Episodes of Terms of Trade Busts[1]**
*(Time span of each episode)*


Source: IMF staff calculations.
[1] Episodes of negative (adjusted) terms of trade shocks of at least 3 percentage points of GDP, cumulative peak to trough. Lighter blue shading corresponds to episodes in which the terms of trade drop is not accompanied by a drop in real (U.S. CPI-deflated) export prices (i.e., the change in terms of trade comes from import prices).

*Figure 3.9. Terms of trade shocks cannot explain, by themselves, economic performance, even for large shocks.*

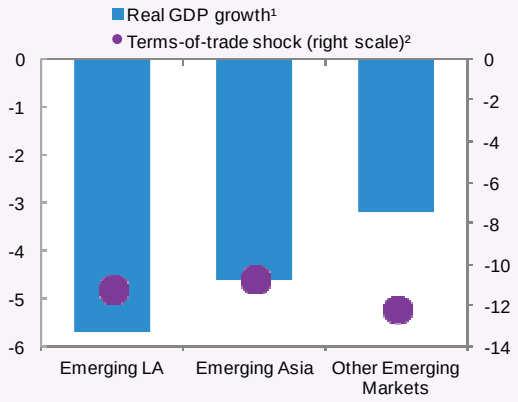
**Terms of Trade Shocks and GDP Growth**
*(Cumulative, peak to trough)*




Source: IMF staf calculations.
¹ Cumulative difference with respect to prebust (*t*–3 to *t*) growth. *t* is the last year before the drop in terms of trade.
² Cumulative direct effect in adjusted terms of trade, in percent of GDP.

*Figure 3.10. Latin America appears to be more vulnerable to terms of trade shocks.*

**Performance by Region**
*(Percent, simple averages)*




Source: IMF staff calculations.
¹ Cumulative difference with respect to prebust (*t*–3 to *t*–1) growth, in percentage points.
² Cumulative direct effect in terms of trade, in percent of GDP.

still a fair number of episodes dated in the last two decades—although the latter reflect primarily shocks to commodity-importing countries arising from higher import prices, rather than from lower export prices. In most cases, terms of trade shocks have been quite persistent, with an average peak-to-trough time span of 4½ years. The magnitude of these shocks has been wide ranging, and so has output performance during the episodes—suggesting that, despite being sizable, the price shocks cannot by themselves explain the differences in macroeconomic performance (Figure 3.9). In fact, only two-thirds of the episodes show negative cumulative growth (relative to the preshock average), and the fraction falls to one-half for the subsample of episodes taking place during the 2000s.[12]

A breakdown by region indicates that, for shocks of similar magnitude, Latin America appears to have been more affected than other regions (Figure 3.10). Since our measure of terms of trade already factors in the countries' degree of trade openness, this disparity in economic impact suggests that other economic fundamentals may have played a role in amplifying the impact of these shocks.

A glance at the dynamics of key macro variables around the episodes, comparing best and worst macro performers (in terms of GDP growth) offers some additional insights (Figure 3.11):

- There is considerable difference between the best and the worst performers, with evidence suggesting that those growing faster before the shock (while external conditions were favorable) suffer the most with the reversal.
- Interestingly, these two groups do not appear to have faced significantly different trade prices.
- As most episodes of price busts were preceded by improving terms of trade, current account balances often strengthened before the negative shock.
- However, underlying current accounts (stripped of terms of trade changes) weakened markedly—a feature that closely resembles the current situation in Latin America.

Overall, macro performance during these episodes appears to reflect more than simply the effect of the terms of trade, to the extent that countries facing

[12] This reflects the importance of other external factors in driving economic growth, as the latter period was characterized by favorable global growth and financial conditions.

more favorable price dynamics do not appear to have outperformed the rest (Box 3.4). These stylized facts reinforce the need for a multivariate setting in order to properly examine the determinants of output performance in the face of large terms of trade shocks.

With this aim, we first estimate a simple regression model to identify the effects of fundamentals on output performance during the episodes, controlling for the size of the shock and other external factors. The specification is as follows:

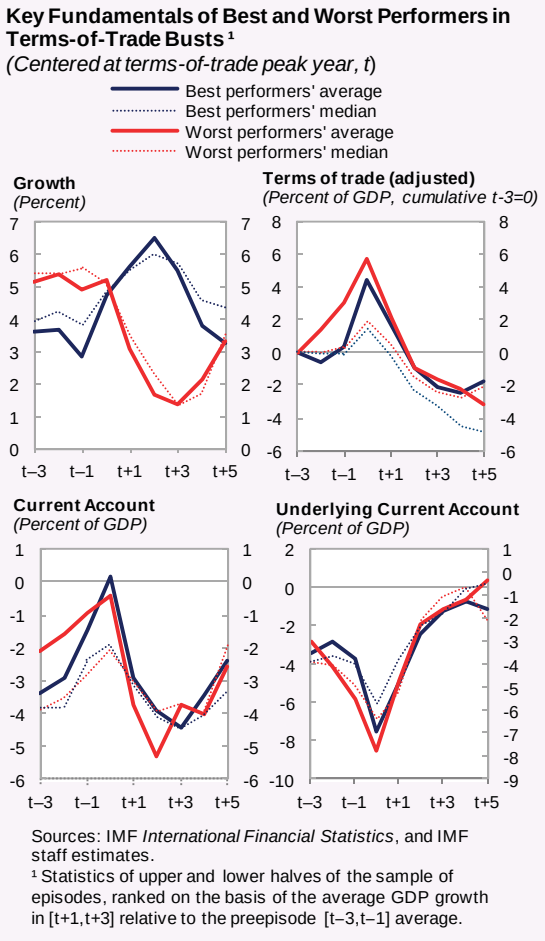
$$Y_i = \alpha + \beta_0 ToT_i^{A} + \beta'_k \mathbf{X}_i + \beta'_j \mathbf{Z}_i + \varepsilon_i$$

where $Y_i$ is the output performance in episode $i$, (measured as the cumulative difference between annual growth during the episode and the average growth rate in the preshock period);[13] $ToT_i^{A}$ is the (adjusted) terms of trade cumulative change during the time span of episode $i$;, $\mathbf{X}_i$ is a vector of variables reflecting fundamentals and policies in the run-up to the shock, and $\mathbf{Z}_i$ is a vector of controls (external factors).

We focus on the following explanatory variables that—to different degrees—reflect economic policies:[14]

- The external position, as reflected by the current account, external debt or international reserves (either the level at the time of the shock or the change in the three years preceding the episode).
- A measure of "de facto" exchange rate flexibility, using the classification of Ilzetzki, Reinhart, and Rogoff (2008).[15]
- The occurrence of a credit boom during the three-year period preceding the shock, as identified by either Gourinchas, Landerretche, and Valdes (2001) or Mendoza and Terrones (2008).

*Figure 3.11. Good performers during terms-of-trade slumps do not appear to have faced better conditions.*



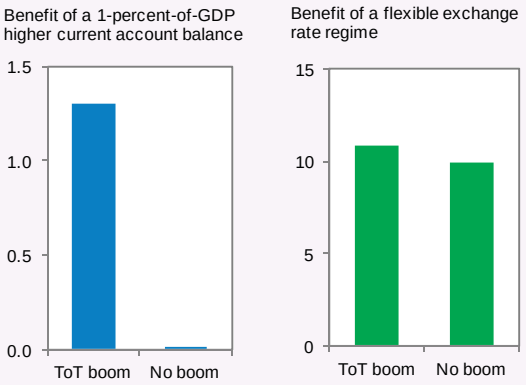

Sources: IMF *International Financial Statistics*, and IMF staff estimates.
[1] Statistics of upper and lower halves of the sample of episodes, ranked on the basis of the average GDP growth in [t+1,t+3] relative to the preepisode [t–3,t–1] average.

We also explore the role of financial openness—which could determine the country's ability to obtain foreign funding to buffer the shock—using a measure of capital account openness based on the index constructed by Chinn and Ito (2008), as well as a measure of international financial integration, calculated as the sum of the countries' total foreign assets and liabilities—in percent of GDP—from the

[13] The average growth rate is computed over the five-year period up to the shock. We also use the three-year period preceding the shock, and the main results do not change significantly.
[14] All explanatory as well as control variables are explained in detail in Annex 3.2.
[15] We also explore an alternative measure based on the standard deviation of the monthly percentage changes of the nominal exchange rate (over a 12-month window).

*Figure 3.12. Does it matter whether the bust was preceded by a boom?*

**Policies And Output Performance: Does It Matter if the Bust Was Preceded by a Boom?**
*(Percentage points of GDP growth)*[1]




Sources: IMF, *International Financial Statistics*; and IMF staff calculations.
[1] Impact on cumulative output growth during the episode, as defined in the text. Based on column 10 of Table 3.3. *ToT boom* reflects the increase in the adjusted terms of trade (prior to the bust) of the 75th percentile of the sample (around 6 percent). *No boom* reflects the increase of the 25th percentile of the sample (roughly zero).

updated and extended version of the Lane and Milesi-Ferretti (2007) data set.[16]

Fiscal and financial sector variables are not included in this approach. In the case of fiscal variables, this reflects poor data quality and/or coverage for a number of episodes that date back to the 1970s and 1980s. In the case of financial variables (notably, financial dollarization), it is because insufficient variance across episodes in those decades also precludes proper econometric examination. These variables, however, are explored in the panel approach presented in the next section.

External factors used as controls are global demand (proxied by world real GDP growth) and global financial conditions (using the Chicago Board Options Exchange Market Volatility Index [VIX], and the 10-year U.S. Treasury Bond yield).

Following a "specific-to-general" approach, we first regress output performance on each of the fundamentals, controlling for the size of the shock and for external conditions. Then, we include all the relevant fundamentals (and control variables) in a single regression. A negative value in our dependent variable indicates a loss of output, therefore a positive (negative) coefficient on an explanatory variable implies that this variable mitigates (exacerbates) the negative impact of the terms of trade shock on output.

The main results are as follows (Figure 3.12 and Table 3.3):[17]

- The output loss is smaller in countries with a stronger external position, as reflected in any of the current account measures (columns 1–2 and 6–9 in the table). The result holds when the change in terms of trade in the three years preceding the shock is controlled for, suggesting that countries with a weaker (or deteriorating) underlying current account position tend to underperform in the aftermath of large terms of trade declines.
- Moreover, the negative impact of a weak external position is larger, the larger the preceding terms of trade boom (columns 10–11).
- There is robust evidence that the decline in output is smaller in countries with more flexible exchange rate regimes (see columns 3–4 and 6–11), supporting the notion that exchange rate flexibility significantly enhances the economy's ability to adjust to real external disturbances.
- We find no evidence that countries' external (or public) debt position explains differences in

[16] The use of two different measures of financial openness allows us to properly interpret the results of the regression. See discussion of results.

[17] Regressions are estimated using ordinary least squares with robust standard errors. For the sake of brevity, in Table 3.3 we omit the coefficients of the external controls. Results may underestimate the effect of terms-of-trade shocks to the extent that some price movements arise from idiosyncratic shocks in countries with a large share in global supply of commodities (e.g. an unexpected increase in production of copper in Chile leading to a fall in international copper prices and, thus, on Chile's terms of trade).

**Table 3.3. Cross-Sectional Approach: Results[1]**

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Dependent variable: Cumulative output growth during the bust ($Y_i$), relative to trend growth* | | | | | | | | | | | |
| *ToT*$^{A}$ [2] | 0.264 | 0.284* | 0.205 | -0.113 | 0.160 | 0.0916 | 0.0115 | 0.159 | 0.0197 | 0.135 | 0.0959 |
| | (0.23) | (0.17) | (0.20) | (0.19) | (0.15) | (0.26) | (0.27) | (0.23) | (0.22) | (0.199) | (0.200) |
| *CA* (percent of GDP, level in *t*) [3] | 0.568* | | | | | 0.615$^{+}$ | 0.648* | | | -0.105 | -0.101 |
| | (0.29) | | | | | (0.42) | (0.37) | | | (0.37) | (0.36) |
| *CA_2* (percent of GDP, change *t*-3, *t*) [3] | | 0.503** | | | | | | 0.557* | 0.456** | | |
| | | (0.20) | | | | | | (0.30) | (0.23) | | |
| *ER Regime* [4] | | | -10.59** | | | -9.084* | | -10.50** | | -9.589* | -13.54*** |
| | | | (4.43) | | | (4.57) | | (4.74) | | (4.80) | (4.59) |
| *FXVol* [5] | | | | 0.946*** | | | 0.707** | | 0.701** | | |
| | | | | (0.32) | | | (0.34) | | (0.32) | | |
| *KA openness* [6] | | | | | -2.030* | -1.755 | -2.036 | -1.567 | -1.991 | -2.339$^{+}$ | |
| | | | | | (1.21) | (1.50) | (1.50) | (1.58) | (1.45) | (1.45) | |
| *Fin. Integ.* [7] | | | | | | | | | | | 0.071*** |
| | | | | | | | | | | | (0.02) |
| *CA* x *ToT*$^{A}$ *Prev* [8] | | | | | | | | | | 0.222*** | 0.133** |
| | | | | | | | | | | (0.08) | (0.06) |
| *ER Regime* x *ToT*$^{A}$ *Prev* [8] | | | | | | | | | | -0.277 | -0.209 |
| | | | | | | | | | | (0.51) | (0.48) |
| *ToT*$^{A}$ *Prev* [8] | | | | | | | | | | 0.129 | 0.191 |
| | | | | | | | | | | (0.48) | (0.44) |
| *Constant* | -1.27 | -3.43 | 0.62 | -7.70** | -3.86 | -0.29 | -5.68** | -1.35 | -7.57*** | -0.86 | -6.60 |
| | (2.75) | (2.34) | (2.70) | (2.97) | (2.40) | (3.19) | (2.83) | (2.67) | (2.78) | (3.25) | (4.36) |
| Number of observations | 91 | 93 | 79 | 68 | 92 | 70 | 64 | 73 | 66 | 70 | 70 |
| $R^2$ | 0.103 | 0.114 | 0.131 | 0.119 | 0.102 | 0.207 | 0.213 | 0.211 | 0.206 | 0.305 | 0.332 |

Source: IMF staff calculations.

[1] Regressions estimated using ordinary least squares with robust standard errors (shown in parentheses). Regressions include controls for global factors (coefficients not shown).

[2] Cumulative change in the adjusted terms of trade measure, from peak to trough.

[3] Current account balance, percent of GDP, in period *t* or change from *t*–3 to *t,* as indicated.

[4] Exchange rate flexibility, based on Ilzetzki, Reinhart, and Rogoff (2008) de facto index, at *t*. Dummy = 1 if index is between 1 and 4 (fixed), 0 if between 4 and 13 (flexible).

[5] Standard deviation of the monthly percentage changes of the nominal exchange rate (over a 12-month window).

[6] Chinn and Ito (2008) capital account openness index, average *t*–2 to *t*.

[7] Measure of financial integration, defined as the sum of total external assets and total external liabilities (in percent of GDP).

[8] Cumulative change in the adjusted terms of trade measure, in the three-year period before the shock.

*** p<0.01, ** p<0.05, * p<0.1, + p<0.15.

output performance during the bust.[18] Similarly, neither international reserves nor credit booms appear to have played a role.[19]

A higher degree of capital account openness appears to be associated with larger output costs (columns 5–10), suggesting that capital inflows have, at least on average, been procyclical in the cases examined. However, the degree of capital procyclicality is likely to depend on the quality of country fundamentals.[20] In fact, when using the measure of international financial integration, the result reverts. This is because the latter better captures the interaction of financial openess and quality of fundamentals (as countries with good fundamentals tend to be more financially integrated). These results suggest that financial openness helps buffer the shock when country fundamentals are strong but could exacerbate it when fundamentals are weak.

- Finally, there is strong evidence that other external factors (notably, international interest rates and the degree of risk aversion) are also significant determinants of output performance during the bust.

## A Panel Approach

A large number of the episodes identified under the previous methodology date back to the 1970s and 1980s. As mentioned previously, this poses a constraint on our ability to assess the importance of some fiscal and financial sector features, in the first case because of unavailable or unreliable data, and in the second case because of insufficient variance across countries and time for those decades. An example of the latter is financial dollarization, a feature that arose widely only during the 1980s, partly as a result of the move towards capital account liberalization. Hence, we complement the cross-sectional exercise with a panel approach that allows us to exploit the time series dimension of fiscal and financial variables, for which recent data are more reliable and show higher variation.

Our interest here is in assessing the potential "amplifying" role of certain fundamentals in regard to the impact of large and negative terms-of-trade shocks. We estimate the following specification in a panel setting with fixed effects:

$$\hat{y}_{i,t} = \beta_0 + \beta_1 ToT^{A}_{i,t} + \beta_2^{'}\mathbf{X}_{i,t} + \beta_3^{'}\mathbf{F}_{i,t}I_{i,t} + \varepsilon_{i,t}$$

where $\hat{y}_{i,t}$ is country *i*'s real GDP growth at year *t*, $ToT^{A}_{i,t}$ is the adjusted measure of terms of trade; $\mathbf{X}_{i,t}$ is a vector of exogenous control variables (including world real GDP growth, the U.S. 10-year Treasury Bond yield, and the VIX); $I_{i,t}$ is a variable that takes the value of the terms of trade shock at year *t* ($ToT^{A}_{i,t}$) if the latter is lower than a certain threshold (set at -1.5 percentage points of GDP in our benchmark estimation);[21] and $\mathbf{F}_{i,t}$ is a vector of country *i*'s economic fundamentals that (have the potential to) amplify the impact of terms of trade shocks. Our interest is in the vector of coefficients $\beta_3$ as it provides insights on which and to what extent certain economic fundamentals can exacerbate the effect of such shocks, over and above their direct effect.[22]

[18] This may reflect the fact that countries with stronger policies typically have greater access to markets and can afford higher debt ratios without raising concerns about debt sustainability.

[19] The muted result in regard to international reserves could reflect the fact that monetary authorities are often reluctant to make use of their reserve holdings to mitigate negative external shocks. This appears to have been the case, for instance, during the 2008 global financial crisis, when even countries with large amounts of reserves did not run down their holdings significantly.

[20] This caveat is particularly important in regard to our study, since many of the identified episodes from the 1970s and 1980s featured relatively weak policy frameworks. In fact, there is a vast literature pointing to the counterproductive effects of premature capital account liberalizations in developing countries.

[21] This threshold implies that about 20 percent of the annual observations are considered large and negative shocks.

[22] Under this specification the *direct* marginal effect of a large and negative terms of trade shock can be computed as ($\beta_1 + \beta_3'\mathbf{F}_{EM}$) where $\mathbf{F}_{EM}$ is the vector of fundamentals evaluated at the average value for the sample of countries. The amplification effect of country *i*'s policies (relative to an average country), on the other hand, can be calculated as $\beta_3'(\mathbf{F}_{i,t} - \mathbf{F}_{EM})$. Results are

*(continued)*

The following set of macroeconomic fundamentals is explored:

- Public and external debt, current account, and net foreign assets (in percent of GDP).
- A measure of "de facto" exchange rate flexibility, as discussed in the previous section.
- A measure of financial dollarization, defined as the share of foreign currency deposits in total deposits of the banking system. We rely on Levy Yeyati's database, although we augment it (using information from multiple sources, including IMF staff reports, academic papers, and country documents) to extend the series back to the 1970s for a number of countries.
- The primary fiscal balance, in percent of GDP, as a measure of the fiscal position.
- A measure of capital account openness, based on Chinn and Ito's (2008) index, normalized to range from 0 to 1, with 1 being the most open.
- The measure of international financial integration described previously.

We estimate two alternative specifications of the model. The first examines the role of policies in amplifying or mitigating the impact of *all* large and negative shocks (of at least 1½ percent of GDP). The second one examines the particular case of large negative shocks (also of at least 1½ percent of GDP) that were *preceded by improving terms of trade* (in the three previous years).[23] This second specification allows us to explore specifically to what extent policy responses during the boom phase of commodity price 'boom-bust cycles' determine the impact of subsequent large price reversals.

Results unveil a number of insights (Table 3.4):

- While terms of trade appear to explain relatively little of the variance in growth (see $R^2$ in column 1), the estimation captures an unambiguous and statistically significant effect: a terms-of-trade shock of 1 percentage point of GDP would lead to 0.13 percent lower growth in the same year of the shock and 0.08 percent lower growth in the second year.[24]

We find evidence that policies in the run up to negative terms of trade shocks, particularly during booms, play a critical role in mitigating the impact of the negative shocks (Figure 3.13 and Table 3.4):[25]

- A stronger fiscal position at the time of the shock can help mitigate its impact—arguably reflecting more space to undertake countercylical policy. The mitigating effect is considerably stronger in the cases of shocks preceded by favorable conditions, stressing the importance of prudent fiscal management during booms.
- As in the cross-sectional study, exchange rate flexibility during booms also appears to operate as an important shock absorber.
- There is also strong evidence that financial dollarization is an important shock "amplifier" of boom-bust price cycles.[26]

robust to an alternative specification that incorporates the level of policy variables, in addition to their interactions with $I_{i,t}$. Results also hold if the dependent variable is measured relative to potential growth (with the latter proxied by the 10-year moving average).

[23] In the first case the variable $I_{i,t}$ takes the value of the terms-of-trade shock if the latter is lower than -1.5 percentage points of GDP. In the second case, $I_{i,t}$ takes the value of the terms-of-trade shock if the latter is lower than -1.5 percentage points of GDP and the previous three years were characterized by positive terms of trade shocks.

[24] The introduction of the external variables as controls reduces only marginally the coefficients of terms of trade, suggesting that the correlation between these other factors and terms of trade is relatively low in the sample. To a great extent this reflects the fact that the sample includes both commodity exporters and importers. Any correlation between global financial and growth variables and commodity prices tends to disappear when the full sample is used (unlike the case of the subsample of commodity exporters). This highlights the advantage of including commodity importers, to better disentangle the price effect from the impact of other global shocks.

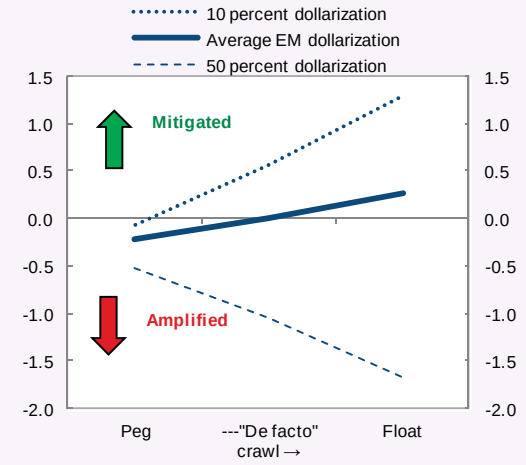
[25] Each chart in Figure 3.13 reports the mitigation effect—of having better fundamentals than the average emerging market economy, one dimension at a time—to a -1 percent of GDP terms-of-trade shock. See footnote 23.

[26] There is less clear evidence of such effect in other cases (not preceded by booms).

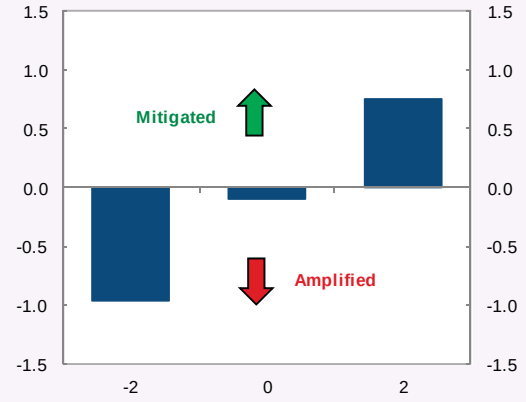
*Figure 3.13. Policies can play a critical role in amplifying or mitigating the impact of terms of trade shocks*

**Amplification/Mitigation by Key Economic Fundamentals [1]**
*(Effect of terms of trade shock for different levels of fundamentals)*

**Exchange rate flexibility and dollarization[2]**




**Primary balance[3]**




Source: IMF staff estimates.
[1] Based on panel approach results (column 19 of Table 3.4). Each figure reports the mitigation effect—of having better fundamentals than the average emerging market economy, in one dimesion at a time—to a 1 percent of GDP negative terms of trade shock.
[2] Net effect, including interaction between exchange rate flexibility and the level of deposit dollarization.
[3] Percent of GDP.

- As expected, exchange rate flexibility appears to lose power as a shock absorber in the presence of high financial dollarization (as indicated by the corresponding interaction term).[27]

[27] The positive coefficient on the interaction term likely reflects the impact of balance sheet effects in dollarized economies. Results may overstate the effect of dollarization to the extent that such a feature is not accompanied by significant currency mismatches.

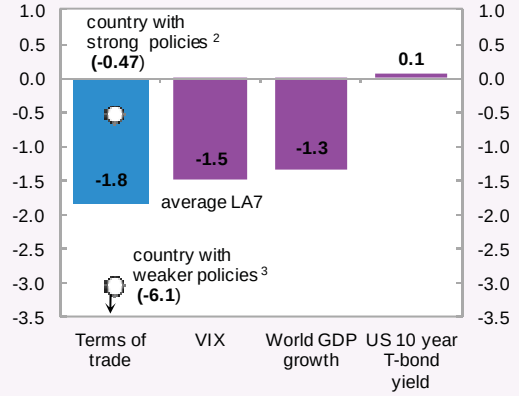
- In line with the results of the previous section, a more open capital account, on average, does not seem to smooth the external trade shock. The result reverts, however, if the measure of financial integration is used instead.

- With the exception of external debt and in line with previous results, we do not find evidence of other stock variables—public debt and net foreign assets—playing a significant role in amplifying or mitigating terms of trade shocks.

On the other hand, external factors show robust results, with statistically significant coefficients of expected signs. Furthermore, the magnitude of these suggests that the impact of shocks to these variables could be as pronounced as those of price shocks—at least in a 2008/09 crisis-like event (Figure 3.14)—

*Figure 3.14. Global growth and financial shocks can be as important as price shocks.*

**LA7: Impact of a 2008 Crisis-like Event[1]**
*(Percentage points of GDP growth)*




Source: IMF staff calculations.
[1] Based on specification presented in column 19 of Table 3.4 evaluated at the average 2010 value of fundamentals for the LA7 group (Argentina, Brazil, Chile, Colombia, Mexico, Peru and Uruguay). Assumes shocks of (i) 40 percent drop in all commodity prices, leading to a -2.8 percentage points of GDP terms of trade shock (based on LA7's average net commodity exposure); (ii) a slowdown in global growth of 3.3 percent; (iii) a fall of 137 basis points in the US 10-year T-bond yield; and (iv) an increase of 14 points in the VIX. These assumptions are broadly consistent with developments during the 2008–09 crisis. As discussed in previous sections, a global recession would likely impact metal and energy prices more markedly than other (e.g., food) prices. Thus, the assumed 40 percent shock across all commodities may overstate the likely price shock for some countries and understate it for others.
[2] With floating exchange rate regime, 15 percent dollarization and balanced primary fiscal accounts.
[3] With de-facto crawling band (narrower than +/-5 percent), 30 percent dollarization and primary balance of -2 percent of GDP.

## Table 3.4. Econometric Results of Panel Approach[1]

| Sample period: 1970–2007 | *Dependent Variable: GDP growth (annual, in percent)* | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Base* | *With ext. controls* | *Amplification of large and negative shocks* | | | | | | | *Amplification of large and negative shocks preceded by booms* | | | | | | | | |
| **Variable** | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** | **(7)** | **(8)** | **(9)** | **(10)** | **(11)** | **(12)** | **(13)** | **(15)** | **(16)** | **(17)** | **(18)** | **(19)** |
| ***Terms of trade*** [2] | 0.131*** | 0.100*** | 0.077* | 0.070 | 0.093+ | 0.070* | 0.081** | 0.084* | -0.023 | 0.069* | 0.074* | 0.061 | 0.024 | 0.090** | 0.090** | 0.004 | 0.002 | 0.002 |
| | (0.037) | (0.035) | (0.045) | (0.049) | (0.058) | (0.036) | (0.035) | (0.047) | (0.072) | (0.037) | (0.040) | (0.043) | (0.053) | (0.035) | (0.034) | (0.054) | (0.055) | (0.055) |
| ***Lagged terms of trade*** [2] | 0.082** | 0.074** | 0.070 | 0.122*** | 0.115*** | 0.068+ | 0.078** | 0.080** | 0.032 | 0.072 | 0.136*** | 0.119** | 0.092** | 0.087** | 0.091** | 0.033 | 0.031 | 0.032 |
| | (0.036) | (0.036) | (0.053) | (0.032) | (0.042) | (0.041) | (0.037) | (0.039) | (0.055) | (0.052) | (0.034) | (0.045) | (0.038) | (0.036) | (0.034) | (0.055) | (0.056) | (0.056) |
| ***Lagged real GDP (level)*** | | -0.002 | -0.009 | -0.000 | -0.009 | 0.025*** | 0.002 | -0.002 | 0.026** | -0.009 | 0.000 | -0.010 | 0.025*** | 0.002 | -0.002 | 0.025** | 0.025** | 0.025** |
| | | (0.008) | (0.008) | (0.010) | (0.010) | (0.009) | (0.008) | (0.008) | (0.011) | (0.008) | (0.010) | (0.010) | (0.009) | (0.008) | (0.008) | (0.011) | (0.011) | (0.011) |
| ***World GDP growth*** | | 0.477*** | 0.462*** | 0.419*** | 0.407*** | 0.516*** | 0.439*** | 0.495*** | 0.452*** | 0.458*** | 0.393*** | 0.403*** | 0.513*** | 0.422*** | 0.486*** | 0.405*** | 0.401** | 0.402** |
| | | (0.091) | (0.090) | (0.090) | (0.090) | (0.140) | (0.087) | (0.085) | (0.149) | (0.092) | (0.083) | (0.090) | (0.139) | (0.088) | (0.087) | (0.149) | (0.150) | (0.150) |
| ***U.S. 10-year Treasury Bond Yield*** | | -0.296*** | -0.231*** | -0.268*** | -0.266*** | -0.071 | -0.288*** | -0.297*** | -0.035 | -0.231*** | -0.250*** | -0.264*** | -0.093 | -0.278*** | -0.294*** | -0.042 | -0.042 | -0.043 |
| | | (0.069) | (0.066) | (0.081) | (0.080) | (0.086) | (0.069) | (0.071) | (0.064) | (0.065) | (0.079) | (0.078) | (0.080) | (0.069) | (0.071) | (0.064) | (0.064) | (0.064) |
| ***VIX*** | | -0.107*** | -0.110*** | -0.098*** | -0.119*** | -0.096*** | -0.113*** | -0.108*** | -0.107*** | -0.111*** | -0.101*** | -0.119*** | -0.099*** | -0.116*** | -0.111*** | -0.109*** | -0.110*** | -0.110*** |
| | | (0.021) | (0.023) | (0.023) | (0.023) | (0.023) | (0.021) | (0.020) | (0.030) | (0.024) | (0.022) | (0.023) | (0.024) | (0.021) | (0.021) | (0.029) | (0.030) | (0.030) |
| **Interaction of fundamentals and negative and large terms-of-trade shocks** [3] | | | | | | | | | | | | | | | | | | |
| ***Exchange rate flexibility (t–1)*** [4] | | | -0.001 | | -0.015 | | | | 0.053* | 0.019 | | -0.042 | | | | -0.239*** | -0.043 | -0.181*** |
| | | | (0.013) | | (0.011) | | | | (0.030) | (0.037) | | (0.036) | | | | (0.025) | (0.086) | (0.027) |
| ***Dollarization (t–1)*** [5] | | | | 0.004 | | | | | | | 0.050*** | | | | | | | |
| | | | | (0.004) | | | | | | | (0.018) | | | | | | | |
| ***Exchange rate flexibility * Dollarization (t–1)*** [6] | | | | | 0.000 | | | | -0.000 | | | 0.007 | | | | 0.006*** | 0.005*** | 0.006*** |
| | | | | | (0.000) | | | | (0.000) | | | (0.005) | | | | (0.001) | (0.001) | (0.000) |
| ***Primary fiscal balance (t–1)*** [7] | | | | | | -0.038*** | | | -0.023*** | | | | -0.096*** | | | -0.428*** | -0.428*** | -0.429*** |
| | | | | | | (0.013) | | | (0.008) | | | | (0.021) | | | (0.020) | (0.035) | (0.014) |
| ***Capital account openness*** [8] | | | | | | | 0.103 | | 0.251 | | | | | 0.802*** | | 2.437*** | | 2.202*** |
| | | | | | | | (0.121) | | (0.258) | | | | | (0.270) | | (0.320) | | (0.255) |
| ***Financial integration*** [9] | | | | | | | | 0.059 | -0.456+ | | | | | | 0.390* | | -1.573** | -0.491 |
| | | | | | | | | (0.099) | (0.281) | | | | | | (0.217) | | (0.599) | (0.342) |
| ***Constant*** | 4.256*** | 6.332*** | 6.698*** | 6.191*** | 7.319*** | 2.470** | 6.293*** | 6.335*** | 2.768** | 6.744*** | 6.166*** | 7.408*** | 2.744*** | 6.288*** | 6.342*** | 3.109** | 3.119** | 3.122** |
| | (0.009) | (0.852) | (0.865) | (1.038) | (1.062) | (1.022) | (0.861) | (0.866) | (1.194) | (0.902) | (1.020) | (1.066) | (0.979) | (0.849) | (0.894) | (1.163) | (1.165) | (1.165) |
| Number of observations | 2,025 | 2,025 | 1,567 | 1,571 | 1,227 | 1,130 | 1,970 | 1,879 | 760 | 1,567 | 1,571 | 1,227 | 1,130 | 1,970 | 1,879 | 767 | 760 | 760 |
| $R^2$- within | 0.023 | 0.089 | 0.090 | 0.084 | 0.109 | 0.125 | 0.091 | 0.098 | 0.100 | 0.090 | 0.102 | 0.110 | 0.128 | 0.097 | 0.103 | 0.100 | 0.100 | 0.101 |
| $R^2$- between | 0.006 | 0.004 | 0.154 | 0.008 | 0.133 | 0.039 | 0.003 | 0.004 | 0.261 | 0.164 | 0.055 | 0.172 | 0.006 | 0.001 | 0.002 | 0.234 | 0.236 | 0.242 |
| $R^2$- overall | 0.015 | 0.077 | 0.088 | 0.070 | 0.105 | 0.069 | 0.075 | 0.085 | 0.029 | 0.089 | 0.089 | 0.109 | 0.081 | 0.080 | 0.088 | 0.035 | 0.035 | 0.035 |
| Number of countries | 64 | 64 | 59 | 61 | 55 | 57 | 63 | 63 | 49 | 59 | 61 | 55 | 57 | 63 | 63 | 50 | 49 | 49 |

Source: IMF staff estimates.

[1] Based on panel estimation, with fixed effects, that allows for asymmetric amplification effect, of negative and large terms-of-trade shocks, by country economic fundamentals. Robust standard errors are reported in parenthesis.

[2] Adjusted terms-of-trade-measure.

[3] Interaction of country economic fundamentals with the measure of adjusted terms of trade when the latter is lower than – 1.5 percentage points of GDP (zero otherwise). Columns 10–19 add the constraint that these shocks must be preceded by improving terms of trade in the three previous years (to capture the importance of policies in preceding price booms for explaining subsequent performance during busts).

[4] Measure of "de facto" exchange rate flexibility constructed by Ilzetzki, Reinhart, and Rogoff (2008), ranging from 1 to 13, with 13 being the most flexible regime.

[5] Foreign currency deposits as a percentage of total deposits.

[6] Interaction of exchange rate flexibility measure and dollarization.

[7] Level, in percent of GDP.

[8] Index of Chinn and Ito (2008) normalized to range between 0 and 1 (1 being the most open).

[9] Total foreign assets plus total foreign liabilities, in percent of GDP. Countries with the level of the United States or higher are classified as fully integrated. For other countries, the measure is reported relative to the level of the United States.

*** p < 0.01, ** p < 0.05, * p < 0.1, + p < 0.15.

although policies are also likely to play an important role in shaping such impact.[28]

## 3.5. Key Takeaways and Policy Implications

With many net commodity exporters, Latin America—especially its southern region—is one of the most commodity-dependent regions within the emerging market world. In all but a few countries, this reliance on commodities appears to have remained broadly unchanged for the last 40 years.

In this setting, increasing uncertainty regarding global economic prospects has raised questions about the potential impact of a sharp decline in commodity prices on Latin America and policies that could mitigate such impact. The rich history of terms of trade shocks in emerging and commodity-exporting advanced economies over the last four decades provides valuable insights on these questions.

Results of two complementary methodologies suggest that policies preceding sharp drops in terms of trade play an important role in determining the countries' subsequent economic performance, particularly when such shocks are preceded by benign conditions (booms). This highlights the importance of countercyclical policies during the boom phase of commodity price cycles. In particular, we find evidence that exchange rate flexibility can play a powerful role as a shock absorber, although with significantly less of an effect in the context of highly dollarized economies—as balance sheet effects often limit the benefits of exchange rate flexibility. There is also strong evidence that countries that behave more prudently during the boom phase—preventing or limiting the deterioration of the underlying fiscal and external positions—perform better during the bust. Specifically, economies with weak current accounts tend to underperform, whereas a healthy initial fiscal position can play a major role in reducing the impact of the external shock—arguably because it allows countercyclical fiscal policy to be undertaken.

The econometric evidence also points to the significance of other external factors—like global economic activity and financial conditions—in driving economic growth in emerging markets.

In the current environment, where global growth prospects and financial stability are the main sources of concern, a tail event scenario would likely entail a deterioration of external conditions in all fronts, further stressing the need for prudent macroeconomic management—along the lines discussed previously—while favorable conditions last.

[28] See April 2007 and May 2010 editions of the *Regional Economic Outlook: Western Hemisphere* for a discussion on these issues.

## Box 3.1. U.S. Monetary Policy and Commodity Prices

The impact of monetary policy in the United States and other advanced countries on commodity prices has been studied extensively in the literature.[1] Understanding these effects is important for assessing the potential implications of changes in monetary conditions in advanced economies for Latin American commodity exporters.

**Impact of U.S. monetary policy on commodity prices**. Simple, illustrative ordinary least squares (OLS) regression analysis suggests a negative relationship between real commodity prices and U.S. monetary policy. This result holds for two alternative measures of U.S. monetary policy: changes in the federal funds real interest rate and the unanticipated component of those changes.[2] The estimated coefficient suggests that an increase in the real interest rate of 100 basis points would be associated with a decline in real commodity prices of about 6 percent.

**U.S. Monetary Policy and Commodity Prices**

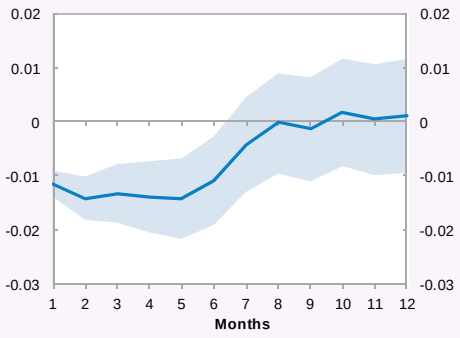
| Dependent variable: Log (commodity prices) | (1) | (2) |
|---|---|---|
| C | 4.503*** | 4.152*** |
| | (0.017) | (0.031) |
| Federal Funds real interest rate | -0.063*** | |
| | (0.007) | |
| Unanticipated interest rate | 4.503 | -0.442*** |
| | | (0.044) |
| Number of observations | 268 | 268 |
| $R^2$ | 0.222 | 0.271 |
| Prob. ($F$-statistic) | 0.000 | 0.000 |

Source: IMF staff calculations.

[1] OLS regression using monthly data for 1989:M1 through 2011:M4.
*** $p < 0.01$.

The analysis is complemented by estimating simple bivariate vector autoregressive (VAR) models including real commodity prices and the federal funds real interest rate.[3] Impulse responses suggest that a tightening in U.S. monetary policy is followed by a decline in real commodity prices, with the impact lasting for about 6 months (12 months in the case of an unanticipated shock). A 100-basis-point increase in the real interest rate would be followed by a fall in real commodity prices of 4 percent after 5 months, with the effects vanishing thereafter.

**Response of Real Commodity Prices to a U.S. Monetary Policy Shock [1]**




Source: IMF staff calculations.
[1] Response to a one-standard-deviation shock to the federal funds real interest rate ±two standard errors.

**Channels of transmission**. Lower interest rates may increase the price of commodities through a number of channels.[4] First, they affect commodity prices via stronger (domestic and global) growth. Second, they reduce the opportunity cost of carrying inventories, increasing the demand for commodities.[5] Third, they weaken the incentive to extract larger amounts of exhaustible commodities today, as the cost of holding inventories in the ground declines. Finally, they may encourage financial speculators to move into commodity contracts and away from Treasury bills.[5]

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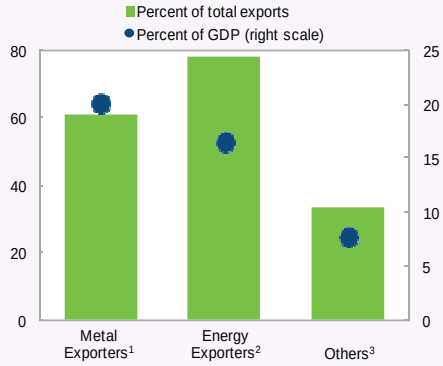
Note: This box was prepared by Sebastián Sosa.
[1] Moreover, during the commodity price surge of 2008 some commentators argued that loose monetary policy and persistently low interest rates in the U.S. and other advanced economies partly explained the commodity price hike
[2] Changes in monetary policy rates may be partly anticipated, with commodity prices moving at the time of information arrival rather than when the rate change actually takes place. Here the series of unanticipated rate changes from Chapter 4 of the April 2011 *World Economic Outlook* (IMF, 2011g) is used.
[3] The VARs are estimated using 12 lags, with real commodity prices being the last variable in the Choleski ordering.
[4] The study of the potential channels is beyond the scope of this box. For a discussion, see Frankel (2006) and Barsky and Kilian (2004).
[5] Box 1.4 of the September 2011 *World Economic Outlook* argues that although financialization has influenced commodity price behavior, there is not strong evidence to suggest that it either destabilizes or distorts spot markets.

## Box 3.2. Latin America's Commodity Dependence and Export Diversification: Selected Cases

The analysis of commodity dependence beyond subregional aggregates shows interesting differences across countries, as well as sizable shifts in a few countries' trade structure over time:

- **Metal** (Chile and Peru) and **energy exporters** (Colombia, Ecuador, and Venezuela) have higher concentrations of their exports, with metals (energy) accounting, on average, for about 60 percent (80 percent) of total exports of goods and services. Moreover, these countries exhibit a higher degree of commodity dependence, with commodity exports amounting to 20 and 17 percent of GDP, respectively, compared to only 8 percent in other countries in the region.

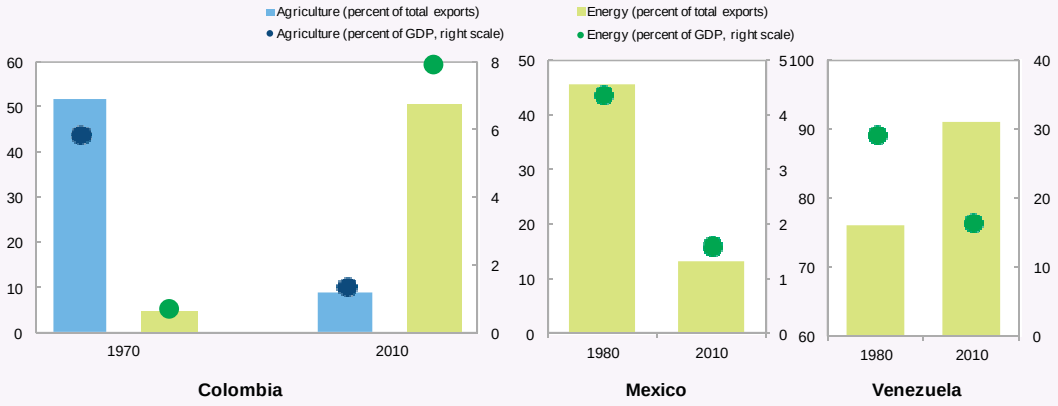
**Commodity Dependence and Export Diversification in LAC, 2010**




Sources: World Integrated Trade Solutions database, and IMF staff calculations.
[1] Metal exports > 5 percent of GDP. Includes Chile and Peru.
[2] Energyexports > 5 percent of GDP. Includes Colombia, Ecuador, and Venezuela.
[3] Includes Argentina, Brazil, Costa Rica, El Salvador, Guatemala, Mexico, and Uruguay.

- **Colombia** has exhibited a marked shift in its trade structure over the last four decades, even though the overall share of commodities has remained quite stable. Agricultural exports—which accounted for more than half of total exports in 1970–80—represent less than 10 percent today. In contrast, the share of energy exports has increased from less than 5 percent to 50 percent over the same period. As a percentage of GDP, net agricultural exports declined from about 5 percent to close to balance, whereas net energy exports surged from around zero to 8 percent over the same period.
- **Mexico** and **Venezuela**, on the other hand, have recorded a substantial decline in net energy exports. In the first case, these exports have declined from 4½ to 1½ percent of GDP between 1980 and today, and in the latter case, this figure fell from 30 percent in 1990 to about 15 percent in 2010. Still, the two cases differ markedly in terms of the degree of product diversification, as energy exports in Mexico currently amount only to 13 percent of total exports, whereas they reach about 90 percent in the case of Venezuela.

**Commodity Dependence and Export Diversification in Colombia, Mexico and Venezuela**



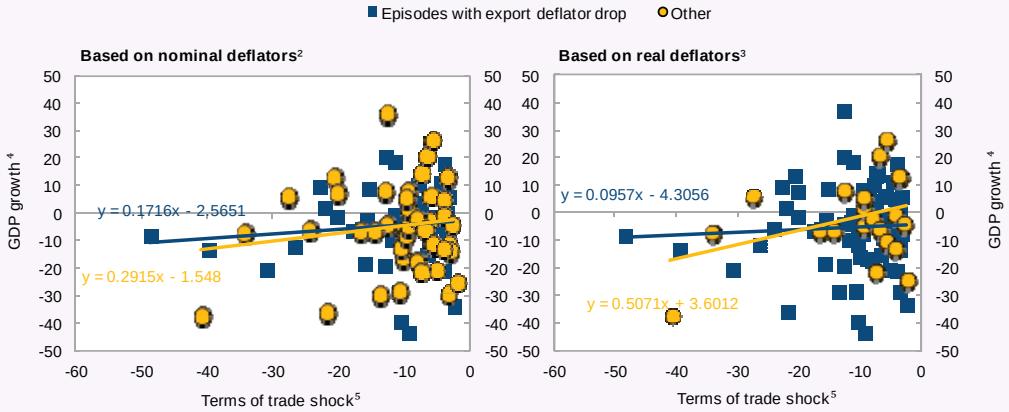

Sources: World Integrated Trade Solutions database; and IMF staff calculations.

Note: This box was prepared by Sebastián Sosa.

## Box 3.3. Export- or Import-Induced Terms-of-Trade Shocks: Are They Different?

Identified episodes of large and negative (adjusted) terms-of-trade shocks include both cases in which the shock arises primarily from (falling) export prices and cases in which it arises from (increasing) import prices. The first type normally correspond to net commodity exporters during commodity price busts, and the second type to net commodity importers during commodity price booms (see the distribution of different types of cases across time in Figure 3.8). The use of both types of cases in our analysis raises the question of whether the source of a terms-of-trade shock—export or import price—makes a difference in terms of its economic impact. A simple split of the sample between these two types of cases points to no noticeable difference, in part because terms of trade alone appear to explain little of the cross-country growth variation. Econometric results that control for other external factors and macroeconomic fundamentals (see Section 3.4) corroborate this finding.

**GDP Growth in the Face of Export- and Import-Induced Terms-of-Trade Shocks[1]**
*(Cumulative, peak-to-trough)*




Source: IMF staff calculations.
[1] Economic performance in episodes of large (adjusted) terms-of-trade shocks, differentiating whether these shocks are accompanied by a drop in export prices or not.
[2] On the basis of nominal deflators.
[3] On the basis of real (U.S. CPI-deflated) export deflators.
[4] Cumulative difference with respect to pre-bust (t–3 to t) growth, in percentage points.
[5] Cumulative direct effect of terms of trade, in percent of GDP.

Note: This box was prepared by Gustavo Adler.

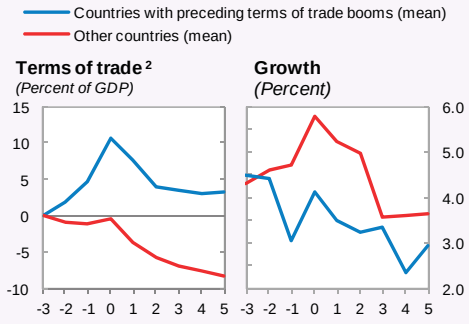
## Box 3.4. The Cost of Mismanaging Abundance

A number of the identified episodes of sharp negative terms of trade shocks were preceded by significant improvements in such terms. Although those preceding booms provided an opportunity for countries to improve their fundamentals and shield themselves against future shocks, the empirical evidence suggests that these countries by and large did not take advantage of this opportunity. We explore the importance of having experienced a terms-of-trade boom in the years preceding a bust by splitting the sample between countries with the largest improvements in terms of trade (in the three years preceding the fall) and the rest. This simple exercise points to the importance of policy responses during the boom: despite displaying significantly better terms of trade (an average cumulative impact of about 10 percentage points of GDP against 0 for the rest of the sample), countries with preceding booms did not perform better. On the contrary, although they grew at broadly the same pace as other countries before the bust, booming countries decelerated more markedly afterward in the face of the terms-of-trade drops of similar magnitudes.[1]

Policy responses appear to have played a role in explaining these "missed opportunities":

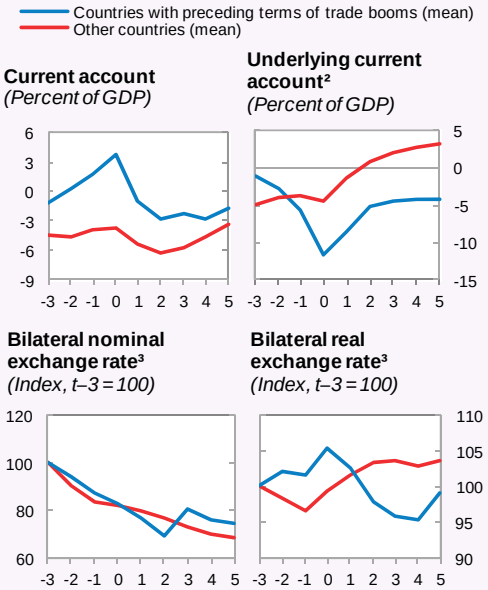
- Countries with preceding booms showed strong improvements in their current accounts during the boom, but significantly larger deteriorations in their underlying (price-adjusted) positions.
- Booming countries appear not to have allowed their nominal exchange rates to appreciate more, although their real exchange rates still appreciated more on account of higher inflation.
- Booming countries also missed the opportunity to strengthen their fiscal positions (not shown), as their primary balances did not improve during the boom either in relative terms to other countries or in absolute terms.

**Economic Performance in Countries with and without Preceding Terms of Trade Booms[1]**




Source: IMF staff calculations.
[1]Based on splitting the sample of episodes of large and negative (adjusted) terms of trade shocks into two halves, based on the cumulative terms-of-trade changes between t–3 and t. Averages for each subsample are reported.
[2] Adjusted terms of trade, cumulative since t-3.

**Key Fundamentals in Countries with and without Preceding Terms of Trade Booms[1]**



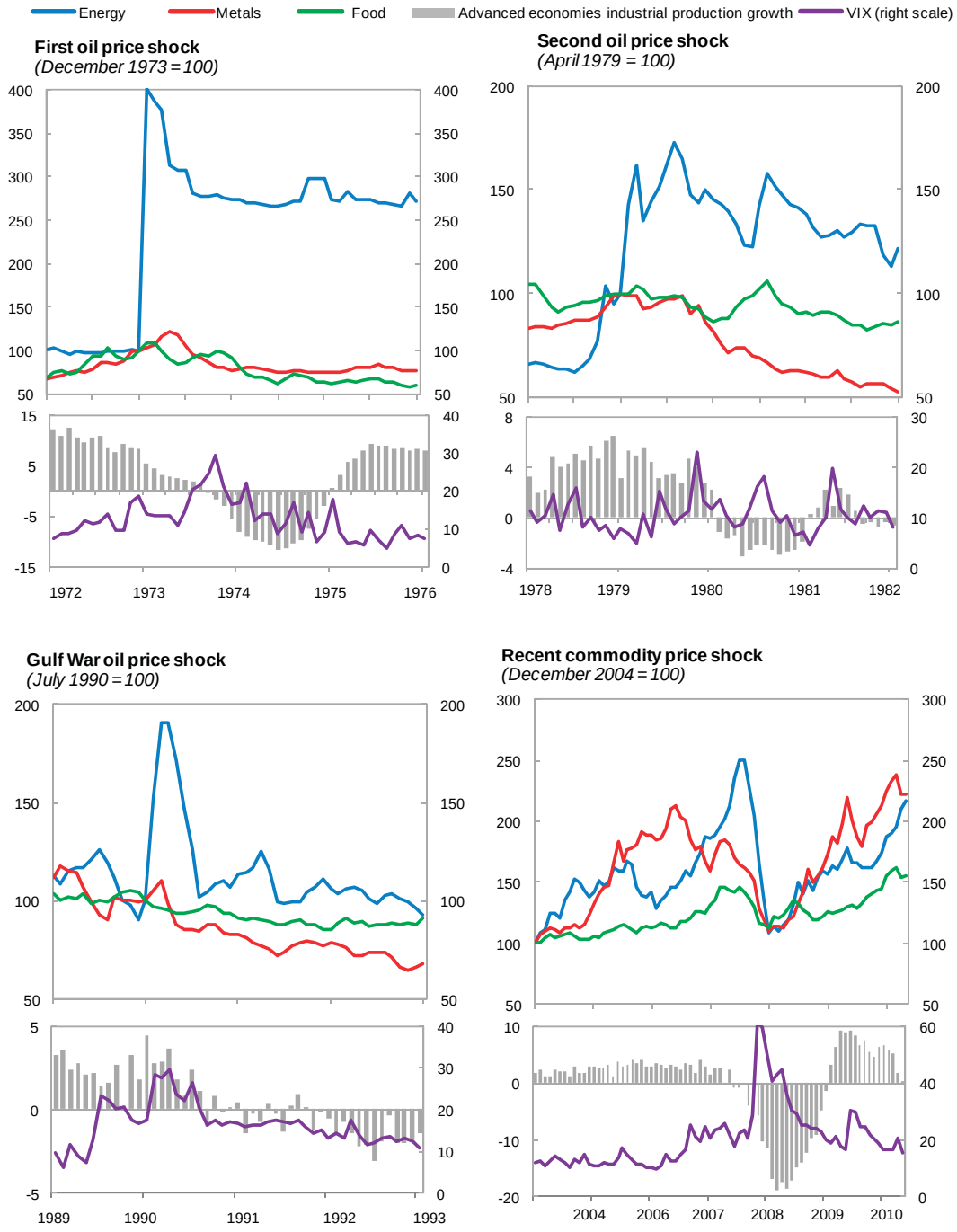

Source: IMF staff calculations.
[1] Based on splitting the sample of episodes of large and negative (adjusted) terms of trade shocks into two halves, based on the cumulative terms of trade changes between *t*-3 and *t*, where *t* is the year before the shock. Averages for each sub-sample are reported.
[2] Prices held constant at *t*-3 levels.
[3] Increases indicate appreciation.

Note: This box was prepared by Gustavo Adler.

[1] Series of medians (rather than averages) show very similar patterns.

# Annex 3.1. Additional Figures

**A. Episodes of Commodity Price Booms and Busts**




Sources: IMF, *World Economic Outlook*; Haver Analytics; and IMF staff calculations.

**B. Net Commodity Exports—Selected Latin American Countries**
*(Percent of GDP)*


Sources: World Integrated Trade Solutions database; and IMF staff calculations.

**C. Gross Commodity Exports—Selected Latin American Countries**
*(Percent of total exports of goods and services)*


Sources: World Integrated Trade Solutions database; and IMF staff calculations.

# Annex 3.2. Cross-Sectional Approach: List of Explanatory and Control Variables

| | |
|---|---|
| ***Dependent variable: output performance during the episode of terms-of-trade bust*** | |
| *Y* | Cumulative deviation of GDP growth during the episode (*t*+1, *t*+*K*+1*)* from average growth in the five years prior to the shock (*t*-4,*t*), where *t* is the year before the shock, and *k* is the number of years with declining (adjusted) terms of trade, defined so that a lower (more negative) value means a greater output loss. |
| ***Terms of trade*** | |
| *ToT*$^{A}$ | Cumulative change in adjusted terms of trade from *t*+*k* (trough) to *t* (peak). |
| *ToT*$^{A}$ *Prev* | Cumulative change in adjusted terms of trade from *t*-3 to *t*. |
| ***External position*** | |
| *CA* | Current account balance, in percent of GDP, in period *t*. |
| *CA_2* | Current account balance, in percent of GDP, change from *t*-3 to *t.* |
| *ExtDebt* | External debt, in percent of GDP, change from *t*-3 to *t.* |
| *FXRes* | Foreign reserves, in percent of GDP, in period *t.* |
| *FXRes_2* | Foreign reserves, in percent of GDP, change from *t*-3 to *t.* |
| ***Fiscal Position*** | |
| *PubDebt* | Public debt, in percent of GDP, level in period *t*. |
| *PubDebt_2* | Public debt, in percent of GDP, change from *t-3* to *t.* |
| ***Other country conditions/fundamentals*** | |
| *ER Regime* | ER flexibility, based on Ilzetzki, Reinhart, and Rogoff (2008) de facto index, at *t*. Dummy = 1 if index is between 1 and 4 (fixed), 0 if between 4 and 13 (flexible). |
| *Volfx* | Standard deviation of the monthly percentage changes of the nominal exchange rate (over a 12-month window), as a proxy for exchange rate flexibility. |
| *KA Openness* | Chinn and Ito (2008) capital account openness index, average *t*-2 to *t.* |
| *Fin. Integ.* | Measure of financial integration, defined as the sum of total external assets and liabilities, in percent of GDP. |
| *Credit Boom* | Dummy = 1 if a credit boom occurred in the three years preceding the shock, as identified by either Gourinchas, Landerretche, and Valdes (2001) or Mendoza and Terrones (2008). |
| ***Controls: external conditions*** | |
| *U.S. Tbond* | Change in U.S. Treasury bond real interest rate (in percent) after the shock: difference between average (t+1,*t*+*K*+1) and average (*t*-2,*t*). |
| *VIX* | Change in the VIX after the shock: difference between average (t+1,*t*+*K*+1) and average (*t*-2,*t*). |
| *WGDPGrowth* | World real GDP growth (in percent): difference between average (t+1,*t*+*K*+1) and average (*t*-2,*t*). |

## Western Hemisphere: Selected Economic and Social Indicators, 2005–11

| | 2010 | | | | 2005–10 average | | | | | 2010 | | Latest available | | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GDP[1] ($US bil.) | Population (mil.) | GDP per capita ($PPP) | Nominal output share of LAC region[1] (Percent) | Real GDP growth (Percent) | CPI inflation[2] (Percent) | Current account (Percent of GDP) | Domestic saving (Percent of GDP) | Trade openess[3] (Percent of GDP) | Gross reserves (Percent of GDP) | Unemployment rate (Percent) | Poverty rate[4] | Gini coefficient[4] | Sovereign credit rating[5] |
| **North America** | | | | | | | | | | | | | | |
| Canada | 1,577.0 | 34.1 | 39,171 | -- | 1.5 | 1.8 | -0.3 | 22.1 | 65.9 | 3.7 | 8.0 | — | 32.0 | AAA |
| Mexico | 1,034.3 | 108.6 | 14,406 | 21.4 | 2.0 | 4.3 | -0.8 | 24.6 | 58.1 | 11.6 | 5.4 | 14.0 | 50.5 | BBB |
| United States | 14,526.6 | 310.0 | 46,860 | -- | 1.1 | 2.4 | -4.6 | 13.9 | 27.8 | 0.9 | 9.6 | — | 46.9 | AAA |
| **South America** | | | | | | | | | | | | | | |
| Argentina | 370.0 | 40.5 | 15,901 | 7.7 | 7.2 | 9.4 | 2.1 | 24.3 | 42.7 | 13.6 | 7.8 | 6.6 | 44.3 | B |
| Bolivia | 19.8 | 10.4 | 4,604 | 0.4 | 4.6 | 6.8 | 8.5 | 25.4 | 67.1 | 42.5 | — | 33.5 | 57.2 | B+ |
| Brazil | 2,090.3 | 193.3 | 11,273 | 43.2 | 4.2 | 4.9 | -0.4 | 17.4 | 24.5 | 13.8 | 6.7 | 15.1 | 53.7 | BBB |
| Chile | 203.3 | 17.2 | 15,040 | 4.2 | 3.6 | 3.8 | 2.0 | 25.9 | 76.4 | 13.9 | 8.3 | 4.3 | 51.9 | A+ |
| Colombia | 289.4 | 45.5 | 9,593 | 6.0 | 4.6 | 4.6 | -2.4 | 20.0 | 34.1 | 9.6 | 11.8 | 17.0 | 57.9 | BBB- |
| Ecuador | 58.0 | 14.8 | 7,828 | 1.2 | 4.0 | 4.3 | 1.3 | 26.1 | 69.0 | 3.0 | 7.6 | 19.4 | 48.9 | B- |
| Guyana | 2.3 | 0.8 | 7,035 | 0.0 | 3.3 | 6.8 | -11.0 | 7.9 | 126.8 | 34.8 | — | — | — | |
| Paraguay | 18.4 | 6.4 | 5,208 | 0.4 | 5.2 | 7.5 | -0.3 | 17.2 | 108.9 | 22.5 | 6.1 | 20.6 | 50.7 | BB- |
| Peru | 153.8 | 29.6 | 9,358 | 3.2 | 7.2 | 2.6 | 0.1 | 22.4 | 48.7 | 28.1 | 7.9 | 20.0 | 49.1 | BBB- |
| Suriname | 3.7 | 0.5 | 8,951 | 0.1 | 4.3 | 8.3 | 2.5 | 19.5 | 120.8 | 18.6 | — | 45.1 | 61.6 | B+ |
| Uruguay | 40.3 | 3.4 | 14,339 | 0.8 | 6.4 | 7.0 | -1.2 | 17.8 | 55.7 | 19.0 | 6.7 | 3.4 | 44.4 | BB+ |
| Venezuela | 293.3 | 29.2 | 12,048 | 6.1 | 4.9 | 22.8 | 10.2 | 32.1 | 46.9 | 10.4 | 8.6 | 19.8 | 43.5 | B+ |
| **Central America** | | | | | | | | | | | | | | |
| Belize | 1.4 | 0.3 | 8,080 | 0.0 | 2.6 | 2.5 | -6.6 | 14.0 | 122.7 | 17.3 | 11.2 | 38.1 | 52.9 | B- |
| Costa Rica | 35.8 | 4.6 | 11,043 | 0.7 | 4.7 | 9.7 | -5.2 | 17.5 | 94.2 | 12.9 | 7.3 | 8.1 | 50.2 | BB+ |
| El Salvador | 21.2 | 6.2 | 7,340 | 0.4 | 1.8 | 3.7 | -4.1 | 11.0 | 70.8 | 13.6 | 5.8 | 21.1 | 46.6 | BB |
| Guatemala | 41.2 | 14.4 | 4,907 | 0.9 | 3.6 | 6.3 | -3.5 | 13.8 | 64.3 | 13.7 | — | 46.7 | 53.2 | BB+ |
| Honduras | 15.3 | 8.0 | 4,194 | 0.3 | 3.9 | 7.0 | -6.8 | 20.7 | 122.9 | 17.7 | 4.6 | 39.4 | 55.3 | B |
| Nicaragua | 6.6 | 5.8 | 3,037 | 0.1 | 3.0 | 10.0 | -16.0 | 13.5 | 126.3 | 27.5 | 7.8 | 42.7 | 52.3 | B- |
| Panama | 26.8 | 3.5 | 12,615 | 0.6 | 8.1 | 4.2 | -6.4 | 18.3 | 67.5 | 9.6 | 4.5 | 16.1 | 52.1 | BBB- |
| **The Caribbean** | | | | | | | | | | | | | | |
| Bahamas | 7.7 | 0.3 | 30,049 | 0.2 | 0.3 | 2.3 | -13.4 | 12.1 | 91.5 | 13.7 | 14.0 | 3.9 | — | BBB+ |
| Barbados | 4.1 | 0.3 | 22,776 | 0.1 | 1.1 | 6.0 | -7.7 | 10.6 | 103.8 | 20.8 | 10.6 | — | — | BBB- |
| Dominican Republic | 51.6 | 9.9 | 8,860 | 1.1 | 7.5 | 6.3 | -5.6 | 11.1 | 61.7 | 6.5 | 14.0 | 16.4 | 48.9 | B+ |
| Haiti | 6.6 | 9.9 | 1,163 | 0.1 | 1.0 | 9.2 | -2.1 | 27.8 | 59.9 | 27.9 | — | 78.8 | 59.2 | — |
| Jamaica | 13.4 | 2.7 | 8,745 | 0.3 | 0.1 | 12.3 | -12.1 | 9.4 | 95.2 | 16.2 | 11.8 | 43.1 | 59.9 | B- |
| Trinidad and Tobago | 20.4 | 1.3 | 19,743 | 0.4 | 3.7 | 8.8 | 24.2 | 39.8 | 104.4 | 46.8 | 5.6 | — | — | A- |
| Eastern Caribbean Currency Union | 5.1 | 0.6 | 15,232 | 0.1 | 2.3 | 3.3 | -23.0 | 12.1 | 100.4 | 16.7 | — | — | — | — |
| Antigua and Barbuda | 1.2 | 0.1 | 21,460 | 0.0 | 2.9 | 2.3 | -22.5 | 14.5 | 111.2 | 12.5 | — | — | — | — |
| Dominica | 0.5 | 0.1 | 13,258 | 0.0 | 2.2 | 3.0 | -20.5 | 4.9 | 90.4 | 16.0 | 9.8 | — | — | — |
| Grenada | 0.8 | 0.1 | 13,110 | 0.0 | 1.3 | 3.7 | -25.2 | 3.0 | 79.7 | 14.3 | — | — | — | B- |
| St. Kitts and St. Nevis | 0.7 | 0.1 | 16,192 | 0.0 | 3.1 | 4.7 | -21.1 | 26.9 | 87.3 | 25.0 | — | — | — | — |
| St. Lucia | 1.2 | 0.2 | 12,507 | 0.0 | 2.5 | 2.9 | -21.9 | 12.0 | 115.9 | 17.2 | 20.6 | — | — | — |
| St. Vincent and the Grenadines | 0.7 | 0.1 | 11,542 | 0.0 | 1.2 | 4.1 | -26.5 | 9.1 | 88.1 | 18.0 | — | — | — | B+ |
| **Latin America and the Caribbean** | **4,833.9** | **567.7** | **11,280** | **100.0** | **4.1** | **6.1** | **0.1** | **21.1** | **44.2** | **13.5** | — | — | — | — |

Sources: Bloomberg Financial; World Bank, World Development Indicators Database; and IMF staff calculations.
[1] At official exchange rates.
[2] End-of-period, 12-month percent change.
[3] Exports plus imports in percent of GDP.
[4] Data from Socio-Economic Database for Latin America and the Caribbean (SEDLAC). Poverty is share of population earning less than US$2.50 per day. Data for the U.S. is from the U.S. Census Bureau and for Canada is from Statistics Canada.
[5] Median of ratings published by Moody's, Standard & Poor's, and Fitch.

## Western Hemisphere

### Main Economic Indicators, October 2011[1]

| | Output Growth (Percent) | | | | | Inflation[2] (End of period, percent) | | | | | External Current Account Balance (Percent of GDP) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2008 | 2009 | 2010 | 2011 Proj. | 2012 Proj. | 2008 | 2009 | 2010 | 2011 Proj. | 2012 Proj. | 2008 | 2009 | 2010 | 2011 Proj. | 2012 Proj. |
| **North America** | | | | | | | | | | | | | | | |
| Canada | 0.7 | -2.8 | 3.2 | 2.1 | 1.9 | 1.8 | 0.8 | 2.2 | 2.6 | 2.0 | 0.3 | -3.0 | -3.1 | -3.3 | -3.8 |
| Mexico | 1.2 | -6.2 | 5.4 | 3.8 | 3.6 | 6.5 | 3.6 | 4.4 | 3.3 | 3.0 | -1.5 | -0.7 | -0.5 | -1.0 | -0.9 |
| United States | -0.3 | -3.5 | 3.0 | 1.5 | 1.8 | 0.7 | 1.9 | 1.7 | 2.5 | 0.9 | -4.7 | -2.7 | -3.2 | -3.1 | -2.1 |
| **South America** | | | | | | | | | | | | | | | |
| Argentina [3] | 6.8 | 0.8 | 9.2 | 8.0 | 4.6 | 7.2 | 7.7 | 10.9 | 11.0 | 11.0 | 1.5 | 2.1 | 0.8 | -0.3 | -0.9 |
| Bolivia | 6.1 | 3.4 | 4.1 | 5.0 | 4.5 | 11.8 | 0.3 | 7.2 | 6.9 | 4.7 | 12.0 | 4.7 | 4.6 | 4.2 | 3.9 |
| Brazil | 5.2 | -0.6 | 7.5 | 3.8 | 3.6 | 5.9 | 4.3 | 5.9 | 6.3 | 4.5 | -1.7 | -1.5 | -2.3 | -2.3 | -2.5 |
| Chile | 3.7 | -1.7 | 5.2 | 6.5 | 4.7 | 7.1 | -1.4 | 3.0 | 3.6 | 3.1 | -1.9 | 1.6 | 1.9 | 0.1 | -1.5 |
| Colombia | 3.5 | 1.5 | 4.3 | 4.9 | 4.5 | 7.7 | 2.0 | 3.2 | 3.1 | 3.1 | -2.9 | -2.2 | -3.1 | -2.6 | -2.5 |
| Ecuador | 7.2 | 0.4 | 3.6 | 5.8 | 3.8 | 8.8 | 4.3 | 3.3 | 5.4 | 4.8 | 2.5 | -0.3 | -3.3 | -3.0 | -3.1 |
| Guyana | 2.0 | 3.3 | 4.4 | 5.3 | 6.0 | 6.4 | 3.7 | 4.5 | 6.3 | 5.4 | -13.2 | -9.2 | -9.3 | -12.9 | -23.9 |
| Paraguay | 5.8 | -3.8 | 15.0 | 6.4 | 5.0 | 7.5 | 1.9 | 7.2 | 9.0 | 6.7 | -1.9 | -0.1 | -2.8 | -3.9 | -3.7 |
| Peru | 9.8 | 0.9 | 8.8 | 6.2 | 5.6 | 6.7 | 0.2 | 2.1 | 3.3 | 2.5 | -4.2 | 0.2 | -1.5 | -2.7 | -2.8 |
| Suriname | 4.7 | 3.1 | 4.4 | 5.0 | 5.0 | 9.3 | 1.3 | 10.3 | 19.9 | 7.5 | 9.6 | -1.1 | 1.0 | 0.4 | -0.2 |
| Uruguay | 8.6 | 2.6 | 8.5 | 6.0 | 4.2 | 9.2 | 5.9 | 6.9 | 7.2 | 6.0 | -4.7 | 0.6 | -0.4 | -1.6 | -3.0 |
| Venezuela | 5.3 | -3.2 | -1.5 | 2.8 | 3.6 | 30.9 | 25.1 | 27.2 | 24.5 | 24.0 | 12.0 | 2.6 | 4.9 | 7.3 | 5.8 |
| **Central America** | | | | | | | | | | | | | | | |
| Belize | 3.8 | 0.0 | 2.7 | 2.5 | 2.8 | 4.4 | -0.4 | 0.0 | 4.2 | 2.5 | -10.7 | -6.2 | -3.0 | -3.1 | -4.4 |
| Costa Rica | 2.7 | -1.3 | 4.2 | 4.0 | 4.1 | 13.9 | 4.0 | 5.8 | 6.0 | 7.5 | -9.3 | -2.0 | -4.0 | -4.9 | -5.1 |
| El Salvador | 1.3 | -3.1 | 1.4 | 2.0 | 2.5 | 5.5 | 0.0 | 2.1 | 7.0 | 3.0 | -7.1 | -1.5 | -2.3 | -3.8 | -3.5 |
| Guatemala | 3.3 | 0.5 | 2.8 | 2.8 | 3.0 | 9.4 | -0.3 | 5.4 | 7.0 | 5.5 | -4.3 | 0.0 | -2.0 | -3.3 | -3.8 |
| Honduras | 4.1 | -2.1 | 2.8 | 3.5 | 3.5 | 10.8 | 3.0 | 6.5 | 8.6 | 7.8 | -15.4 | -3.7 | -6.2 | -6.4 | -6.2 |
| Nicaragua | 2.8 | -1.5 | 4.5 | 4.0 | 3.3 | 13.8 | 0.9 | 9.2 | 8.2 | 7.3 | -23.8 | -12.2 | -14.5 | -16.0 | -17.7 |
| Panama | 10.1 | 3.2 | 7.5 | 7.4 | 7.2 | 6.8 | 1.9 | 4.9 | 5.5 | 3.3 | -11.9 | -0.2 | -11.2 | -12.4 | -11.9 |
| **The Caribbean** | | | | | | | | | | | | | | | |
| Antigua and Barbuda | 2.2 | -9.6 | -4.1 | 2.0 | 2.5 | 0.7 | 2.4 | 2.9 | 4.4 | 3.1 | -26.6 | -20.1 | -12.5 | -16.3 | -16.0 |
| The Bahamas | -1.3 | -5.4 | 1.0 | 2.0 | 2.5 | 4.5 | 1.3 | 1.6 | 4.0 | 1.5 | -14.9 | -11.4 | -11.7 | -16.9 | -18.5 |
| Barbados | -0.2 | -4.7 | 0.3 | 1.8 | 2.2 | 7.2 | 4.3 | 6.6 | 7.2 | 4.6 | -10.5 | -6.3 | -8.7 | -9.0 | -7.7 |
| Dominica | 7.8 | -0.7 | 0.3 | 0.9 | 1.5 | 2.0 | 3.2 | 2.3 | 3.8 | 2.3 | -25.6 | -21.3 | -21.6 | -22.2 | -20.9 |
| Dominican Republic | 5.3 | 3.5 | 7.8 | 4.5 | 5.5 | 4.5 | 5.8 | 6.2 | 7.0 | 5.5 | -9.9 | -5.0 | -8.6 | -8.1 | -6.1 |
| Grenada | 2.2 | -7.6 | -1.4 | 0.0 | 1.0 | 5.2 | -2.3 | 4.2 | 3.1 | 2.4 | -29.1 | -24.5 | -24.0 | -25.4 | -24.5 |
| Haiti [4] | 0.8 | 2.9 | -5.4 | 6.1 | 7.5 | 19.8 | -4.7 | 4.7 | 9.6 | 8.7 | -4.4 | -3.5 | -2.4 | -2.6 | -5.9 |
| Jamaica | -0.9 | -3.0 | -1.2 | 1.5 | 1.7 | 16.8 | 10.2 | 11.8 | 6.9 | 5.6 | -17.8 | -10.9 | -8.1 | -8.3 | -7.9 |
| St. Kitts and Nevis | 5.7 | -4.4 | -1.5 | 1.5 | 1.8 | 7.6 | 1.0 | 3.9 | 3.9 | 2.9 | -26.9 | -26.6 | -21.5 | -23.1 | -21.4 |
| St. Lucia | 5.8 | -1.3 | 4.4 | 2.0 | 2.6 | 3.4 | -3.1 | 4.2 | 3.7 | 2.3 | -28.4 | -12.7 | -12.5 | -17.2 | -17.9 |
| St. Vincent and the Grenadines | -0.6 | -2.3 | -1.8 | -0.4 | 2.0 | 9.4 | -2.2 | 0.5 | 3.1 | 0.5 | -32.9 | -29.4 | -31.1 | -27.4 | -25.2 |
| Trinidad and Tobago | 2.4 | -3.5 | -0.6 | 1.1 | 2.6 | 14.5 | 1.3 | 13.4 | 5.8 | 5.5 | 31.3 | 8.2 | 18.8 | 20.3 | 20.3 |
| *Memorandum:* | | | | | | | | | | | | | | | |
| Latin America and the Caribbean | 4.3 | -1.7 | 6.1 | 4.5 | 4.0 | 8.1 | 4.8 | 6.6 | 6.5 | 5.6 | -0.7 | -0.6 | -1.2 | -1.4 | -1.7 |
| (simple average) | 4.0 | -1.2 | 3.3 | 3.8 | 3.9 | 9.0 | 2.7 | 6.0 | 6.9 | 5.0 | -8.3 | -6.0 | -6.1 | -7.3 | -7.6 |
| LA-7 [5] | 4.2 | -2.0 | 6.3 | 4.7 | 4.0 | 8.1 | 5.2 | 6.8 | 6.5 | 5.7 | -0.5 | -0.5 | -1.0 | -1.0 | -1.4 |
| Eastern Caribbean Currency Union [6] | 3.2 | -5.7 | -1.1 | 1.1 | 2.0 | 4.3 | -0.3 | 3.0 | 3.7 | 2.4 | -31.0 | -21.7 | -21.4 | -23.3 | -21.0 |

Source: IMF staff calculations.
[1] Regional aggregates calculated as PPP-GDP-weighted averages, unless otherwise noted.
[2] End-of-period (December) rates. These will generally differ from period average inflation rates reported in the IMF's, *World Economic Outlook*, although both are based on identical underlying projections.
[3] Figures are based on official GDP and CPI data. The authorities have committed to improving the quality of Argentina's official GDP and CPI, so as to bring them into compliance with the obligations under the IMF's Articles of Agreement. Until the quality of data reporting has improved, IMF staff will also use alternative measures of GDP growth and inflation for macroeconomic surveillance, including estimates by private analysts that have shown growth that is, on average, significantly lower than official GDP growth from 2008 onward, and by provincial statistical offices and private analysts, which have shown inflation considerably higher than the official inflation from 2007 onward.
[4] Fiscal year data.
[5] Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela (the seven largest economies in Latin America and the Caribbean).
[6] Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines, as well as Anguilla and Montserrat, which are not IMF members.

## Latin America and the Caribbean

### Main Fiscal Indicators, October 2011[1]

| | Public Sector Revenue (Percent of GDP) | | | | | Public Sector Primary Expenditure (Percent of GDP) | | | | | Public Sector Primary Balance [2] (Percent of GDP) | | | | | Public Sector Gross Debt (Percent of GDP) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2008 | 2009 | 2010 | 2011 Proj. | 2012 Proj. | 2008 | 2009 | 2010 | 2011 Proj. | 2012 Proj. | 2008 | 2009 | 2010 | 2011 Proj. | 2012 Proj. | 2008 | 2009 | 2010 | 2011 Proj. | 2012 Proj. |
| **North America** | | | | | | | | | | | | | | | | | | | | |
| Canada | 39.7 | 39.2 | 38.3 | 38.0 | 38.7 | 35.7 | 40.2 | 40.1 | 38.6 | 38.1 | 4.0 | -1.1 | -1.8 | -0.6 | 0.6 | 71.1 | 83.3 | 84.0 | 84.1 | 84.2 |
| Mexico | 23.0 | 22.3 | 22.0 | 21.6 | 22.1 | 21.4 | 24.4 | 23.9 | 22.3 | 22.3 | 1.6 | -2.1 | -1.9 | -0.7 | -0.3 | 43.1 | 44.7 | 42.9 | 42.9 | 43.6 |
| United States | 32.7 | 31.2 | 30.9 | 31.6 | 32.6 | 36.4 | 41.4 | 38.6 | 38.6 | 38.0 | -3.7 | -10.2 | -7.7 | -7.0 | -5.3 | 71.6 | 85.2 | 94.4 | 100.0 | 105.0 |
| **South America** | | | | | | | | | | | | | | | | | | | | |
| Argentina [3] | 33.4 | 34.3 | 37.2 | 37.6 | 36.8 | 30.6 | 34.1 | 35.5 | 36.4 | 35.7 | 2.8 | 0.2 | 1.7 | 1.1 | 1.0 | 58.5 | 58.7 | 49.1 | 43.3 | 41.5 |
| Bolivia | 38.9 | 36.1 | 33.2 | 34.5 | 34.6 | 32.6 | 33.8 | 29.7 | 31.3 | 32.1 | 6.3 | 2.3 | 3.5 | 3.1 | 2.5 | 37.5 | 40.5 | 36.6 | 32.4 | 31.4 |
| Brazil | 36.3 | 35.6 | 37.5 | 36.7 | 36.4 | 32.3 | 33.5 | 35.1 | 33.6 | 33.4 | 4.0 | 2.1 | 2.4 | 3.2 | 3.0 | 63.6 | 68.1 | 66.8 | 65.0 | 64.0 |
| Chile | 27.2 | 22.0 | 24.8 | 26.1 | 25.9 | 22.4 | 25.9 | 24.6 | 24.1 | 23.7 | 4.8 | -3.8 | 0.2 | 2.0 | 2.2 | 5.2 | 6.2 | 9.2 | 10.5 | 10.6 |
| Colombia [4] | 26.3 | 26.5 | 24.4 | 25.3 | 25.9 | 22.8 | 25.7 | 24.5 | 25.1 | 24.4 | 3.5 | 0.8 | -0.1 | 0.2 | 1.5 | 30.8 | 35.8 | 36.0 | 35.9 | 34.7 |
| Ecuador | 34.5 | 30.2 | 34.0 | 37.5 | 35.9 | 32.6 | 33.8 | 35.1 | 37.4 | 36.7 | 1.9 | -3.6 | -1.0 | 0.1 | -0.9 | 26.3 | 24.7 | 20.7 | 20.9 | 20.8 |
| Guyana [5] | 27.7 | 29.3 | 28.2 | 31.5 | 30.0 | 29.6 | 31.2 | 29.2 | 32.3 | 30.9 | -1.9 | -1.9 | -1.0 | -0.9 | -1.0 | 61.6 | 61.2 | 60.2 | 60.4 | 59.3 |
| Paraguay | 20.9 | 23.2 | 22.6 | 23.8 | 23.5 | 17.3 | 22.1 | 21.2 | 23.0 | 23.8 | 3.6 | 1.2 | 1.4 | 0.8 | -0.3 | 19.1 | 18.0 | 15.4 | 12.8 | 11.2 |
| Peru | 21.1 | 18.9 | 20.0 | 20.4 | 20.6 | 17.4 | 19.4 | 19.3 | 18.6 | 18.6 | 3.8 | -0.6 | 0.7 | 1.8 | 2.0 | 25.0 | 27.1 | 24.5 | 21.5 | 19.2 |
| Suriname [6] | 27.5 | 29.9 | 26.2 | 25.8 | 24.4 | 25.0 | 31.6 | 28.8 | 26.3 | 24.7 | 2.5 | -1.6 | -2.6 | -0.5 | -0.3 | 18.0 | 18.5 | 21.6 | 20.0 | 18.6 |
| Uruguay [7] | 28.9 | 30.5 | 31.5 | 31.0 | 31.5 | 27.6 | 29.5 | 29.7 | 29.7 | 29.7 | 1.3 | 1.1 | 1.7 | 1.3 | 1.9 | 61.7 | 61.0 | 57.1 | 49.3 | 46.9 |
| Venezuela | 31.6 | 24.9 | 31.0 | 34.2 | 33.7 | 32.8 | 31.5 | 33.6 | 38.0 | 39.2 | -1.2 | -6.7 | -2.6 | -3.8 | -5.6 | 24.6 | 32.7 | 38.4 | 43.9 | 50.8 |
| **Central America** | | | | | | | | | | | | | | | | | | | | |
| Belize [8] | 28.7 | 27.0 | 27.4 | 28.6 | 27.4 | 24.4 | 24.6 | 24.7 | 26.5 | 25.7 | 4.2 | 2.4 | 2.7 | 2.1 | 1.7 | 78.2 | 80.2 | 81.4 | 79.3 | 77.7 |
| Costa Rica [5] | 15.9 | 14.1 | 13.9 | 14.1 | 16.3 | 13.5 | 15.4 | 17.0 | 17.1 | 17.2 | 2.4 | -1.3 | -3.1 | -3.0 | -1.0 | 24.8 | 27.4 | 29.6 | 32.6 | 33.3 |
| El Salvador [7] | 16.6 | 15.9 | 17.3 | 18.3 | 18.2 | 16.9 | 18.9 | 19.4 | 19.5 | 18.7 | -0.3 | -3.0 | -2.1 | -1.2 | -0.5 | 39.3 | 48.3 | 50.3 | 49.9 | 49.3 |
| Guatemala [8] | 12.0 | 11.1 | 11.3 | 11.4 | 11.6 | 12.3 | 12.8 | 13.1 | 12.8 | 12.3 | -0.3 | -1.7 | -1.8 | -1.4 | -0.7 | 20.0 | 22.9 | 24.2 | 24.2 | 25.0 |
| Honduras | 26.4 | 25.1 | 24.8 | 22.9 | 22.9 | 27.4 | 29.0 | 26.8 | 24.8 | 24.0 | -1.0 | -4.0 | -2.0 | -1.9 | -1.1 | 19.9 | 24.1 | 26.3 | 27.6 | 27.8 |
| Nicaragua [7] | 32.2 | 32.6 | 33.0 | 34.6 | 34.6 | 31.8 | 33.2 | 32.1 | 33.2 | 32.3 | 0.4 | -0.5 | 0.9 | 1.4 | 2.2 | 75.5 | 80.9 | 80.3 | 77.4 | 76.0 |
| Panama [10] | 25.0 | 24.6 | 24.6 | 26.5 | 26.2 | 21.4 | 22.6 | 23.9 | 26.0 | 26.0 | 3.6 | 2.0 | 0.7 | 0.5 | 0.2 | 39.2 | 41.2 | 38.7 | 36.2 | 34.8 |
| **The Caribbean** | | | | | | | | | | | | | | | | | | | | |
| Antigua and Barbuda [9] | 20.8 | 17.9 | 20.4 | 20.5 | 21.4 | 23.4 | 28.5 | 18.7 | 17.9 | 17.5 | -2.6 | -10.6 | 1.7 | 2.5 | 3.9 | 62.1 | 81.1 | 69.6 | 68.6 | 66.6 |
| The Bahamas [8] | 17.2 | 16.5 | 16.8 | 17.8 | 17.5 | 17.3 | 19.1 | 18.9 | 19.9 | 20.1 | -0.1 | -2.6 | -2.1 | -2.2 | -2.6 | 32.6 | 37.9 | 45.4 | 48.6 | 49.9 |
| Barbados [11] | 40.6 | 37.9 | 37.0 | 36.8 | 38.0 | 42.8 | 39.1 | 37.5 | 34.7 | 34.9 | -2.2 | -1.2 | -0.5 | 2.0 | 3.1 | 99.9 | 114.9 | 117.8 | 116.9 | 115.6 |
| Dominica [9] | 35.6 | 36.9 | 31.7 | 31.3 | 30.5 | 33.2 | 35.7 | 32.9 | 31.7 | 30.5 | 2.4 | 1.2 | -1.2 | -0.3 | 0.0 | 53.7 | 53.7 | 54.3 | 54.9 | 54.8 |
| Dominican Republic | 15.9 | 13.7 | 13.6 | 13.8 | 14.3 | 17.2 | 15.3 | 14.2 | 13.1 | 12.7 | -1.4 | -1.6 | -0.6 | 0.8 | 1.6 | 24.7 | 28.4 | 28.7 | 28.5 | 26.7 |
| Grenada [7] | 24.0 | 23.1 | 24.1 | 20.8 | 21.0 | 26.5 | 26.1 | 25.0 | 23.7 | 22.7 | -2.4 | -3.0 | -1.0 | -3.0 | -1.7 | 83.5 | 98.2 | 98.6 | 101.9 | 104.3 |
| Haiti [8] | 15.1 | 17.9 | 29.6 | 21.5 | 28.0 | 17.2 | 21.5 | 27.0 | 20.8 | 32.3 | -2.1 | -3.6 | 2.7 | 0.7 | -4.3 | 37.8 | 27.7 | 17.1 | 12.6 | 19.0 |
| Jamaica [9] | 26.9 | 27.1 | 26.3 | 27.2 | 26.8 | 22.0 | 21.0 | 21.9 | 22.1 | 21.8 | 4.9 | 6.1 | 4.4 | 5.1 | 5.0 | 126.1 | 141.4 | 143.4 | 143.3 | 138.0 |
| St. Kitts and Nevis [9] | 30.2 | 33.4 | 30.9 | 34.5 | 33.3 | 27.5 | 29.6 | 31.3 | 30.5 | 29.0 | 2.7 | 3.8 | -0.4 | 3.9 | 4.2 | 134.0 | 148.0 | 155.8 | 148.9 | 143.7 |
| St. Lucia [9] | 26.9 | 26.5 | 26.2 | 27.3 | 25.3 | 24.9 | 27.5 | 28.9 | 32.0 | 27.2 | 2.0 | -1.0 | -2.7 | -4.7 | -1.8 | 58.8 | 63.2 | 65.3 | 71.1 | 77.8 |
| St. Vincent and Grenadines [9] | 28.3 | 29.6 | 26.9 | 27.2 | 27.9 | 27.2 | 30.1 | 29.8 | 27.5 | 28.7 | 1.1 | -0.4 | -2.9 | -0.3 | -0.8 | 57.0 | 64.9 | 66.8 | 69.5 | 71.2 |
| Trinidad and Tobago | 39.6 | 30.6 | 36.4 | 34.8 | 34.5 | 29.6 | 37.0 | 38.1 | 38.6 | 37.8 | 10.0 | -6.4 | -1.7 | -3.8 | -3.2 | 25.4 | 34.4 | 40.1 | 50.0 | 51.0 |
| ECCU [12] | 26.6 | 26.5 | 26.2 | 26.5 | 26.1 | 26.7 | 29.4 | 27.1 | 27.1 | 25.5 | -0.1 | -3.0 | -0.9 | -0.6 | 0.5 | 72.3 | 84.8 | 83.5 | 84.3 | 84.9 |
| **Latin America and the Caribbean** | | | | | | | | | | | | | | | | | | | | |
| *PPP-GDP-weighted average* | **30.0** | **28.9** | **30.8** | **30.9** | **30.8** | **30.9** | **32.9** | **33.8** | **33.4** | **33.3** | **0.5** | **-1.3** | **-0.6** | **-0.3** | **-0.1** | **47.5** | **51.1** | **50.7** | **50.0** | **49.7** |
| *Simple average* | **26.7** | **25.8** | **26.5** | **26.9** | **26.7** | **25.0** | **27.0** | **26.6** | **26.6** | **26.5** | **1.7** | **-1.2** | **-0.2** | **0.2** | **0.3** | **48.9** | **53.4** | **53.5** | **53.2** | **52.8** |

Source: IMF staff calculations.

[1] Figures for overall public sector, including general government and public enterprises. Definitions of public sector accounts vary by country, depending on country-specific institutional differences, including on what constitutes the appropriate coverage from a fiscal policy perspective, as defined by the IMF staff. All indicators reported on fiscal year basis. Regional aggregates are PPP GDP-weighted averages unless otherwise noted.

[2] *Primary balance* defined as total revenues less primary expenditures (thus interest received is included in total revenues).

[3] Federal government and provinces; includes interest payments on an accrued basis.

[4] Nonfinancial public sector reported for revenue, expenditures, and balances (excluding statistical discrepancies); combined public sector including Ecopetrol and excluding Banco de la República's outstanding external debt reported for gross public debt.

[5] Includes central government and social security agency. Gross debt is for the central government only.

[6] Primary expenditures for Suriname exclude net lending.

[7] General government only; data for El Salvador include operations of pension trust funds. Revenues include grants received.

[8] Central government only. *Gross debt* for Belize includes both public and publicly guaranteed debt.

[9] Central government for revenue, expenditure, and balance accounts; public sector for gross debt.

[10] Fiscal data cover the nonfinancial public sector excluding the Panama Canal Authority.

[11] Overall and primary balances include off-budget and public-private partnership activities for Barbados and the nonfinancial public sector. Revenue and expenditure components of these items are not available and not included in the revenue and primary expenditure estimates.

[12] Eastern Caribbean Currency Union members are Anguilla, Antigua and Barbuda, Dominica, Grenada, Montserrat, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines. Central government for revenue, expenditure, and balance accounts; public sector for gross debt.

# References


Adler, Gustavo, and Camilo E. Tovar, 2011, "Foreign Exchange Intervention: A Shield against Appreciation Winds?" IMF Working Paper 11/165 (Washington: International Monetary Fund).

Alesina, Alberto, and Roberto Perotti, 1997, "Fiscal Adjustment in OECD Countries: Composition and Macroeconomic Effects," *IMF Staff Papers*, Vol. 44, pp. 210–48.

Ball, Laurence, 2009, "Hysteresis in Unemployment," in *Understanding Inflation and the Implementation of Monetary Policy: A Phillips Curve Retrospective*, ed. by J. Fuhrer, Y. Kodrzycki, J. Little, and G. Olivei (Cambridge, Massachusetts: MIT Press).

_____, Nicolas De Roux, and Marc Hoffstetter, 2011, "Unemployment in Latin America and the Caribbean," NBER Working Paper No. 17274 (Cambridge, Massachusetts: National Bureau of Economic Research).

_____, and N. Gregory Mankiw, 2002, "The NAIRU in Theory and Practice," *Journal of Economic Perspectives*, Vol. 16, No. 4 (Fall), pp. 115–36.

Barsky, Robert B. and Lutz Kilian, 2004, "Oil and the Macroeconomy since the 1970s." *Journal of Economic Perspectives*, Vol. 18, No. 4 (Fall), pp. 115–34.

Basel Committee on Banking Supervision, 2006, *Core Principles for Effective Banking Supervision*, October (Basel: Bank for International Settlements).

Batini, Nicoletta, and J. Felman, 2011, "Why Are U.S. Firms Hoarding Money?" in *United States—Selected Issues*, IMF Country Report No. 11/202 (Washington: International Monetary Fund).

Brick, Kate, A. E. Challinor, and Marc R. Rosenblum, 2011, "Mexican and Central American Immigrants in the United States" (Washington: Migration Policy Institute).

Calvo, Guillermo, Alejandro Izquierdo, and Ernesto Talvi, 2003, "Sudden Stops, the Real Exchange Rate, and Fiscal Sustainability: Argentina's Lessons," NBER Working Paper No. 9828 (Cambridge, Massachusetts: National Bureau of Economic Research).

Celasun, Oya, and Grace Bin Li, "Household Deleveraging and the Recovery," in *United States—Selected Issues*, IMF Country Report No. 11/202 (Washington: International Monetary Fund).

Cerutti, Eugenio, Stijn Claessens, and Patrick McGuire, 2011, "Systemic Risks in Global Banking: What Available Data Can Tell Us and What More Data Are Needed," Working Paper 11/222 (Washington: International Monetary Fund).

Chinn, Menzie D., and Hiro Ito, 2008, "A New Measure of Financial Openness," *Journal of Comparative Policy Analysis: Research and Practice*, Vol. 10, No. 3, pp. 309–22.

Cho, Yoonyoung, and David Newhouse, 2011, "How Did the Great Depression Affect Different Types of Workers: Evidence from 17 Middle Income Countries," IZA Discussion Paper No. 5681 (Bonn: Institute for the Study of Labor).

Cubeddu, Luis, and Camilo E. Tovar, 2011, "Today's Information Is Ammunition for Tomorrow," iMFdirect blog. Available at http://blog-imfdirect.imf.org/2011/01/21/todays-information-tomorrows-ammunition/

Delgado, Fernando, and Mynor Meza, forthcoming, "Developments in Financial Supervision in Central America, the Use of Macroprudential Measures and the Impact of Basel III," IMF Working Paper (Washington: International Monetary Fund).

Estevão, Marcello, and Evridiki Tsounta, 2011, "Has the Great Recession Raised U.S. Structural Unemployment?" IMF Working Paper 11/105 (Washington, DC: International Monetary Fund).

Estevão, Marcello, and Geoffrey Keim, 2011, "Policies to Facilitate Labor Market Adjustment," in *United States—Selected Issues*, IMF Country Report No. 11/202 (Washington: International Monetary Fund).

Eyzaguirre, Nicolás, Martin Kaufman, Steven Phillips, and Rodrigo Valdés, 2011, "Managing Abundance to Avoid a Bust in Latin America," IMF Staff Discussion Note 11/07 (Washington: International Monetary Fund).

Financial Stability Board, International Monetary Fund, and World Bank, 2011, "Financial Stability Issues in Emerging Market and Developing Economies," Report to the G-20 Finance Ministers and Central Bank Governors.

Frankel, Jeffrey, 2006, "The Effect of Monetary Policy on Real Commodity Prices," in *Asset Prices and Monetary Policy*, ed. by John Campbell (Chicago: University of Chicago Press).

Gourinchas, Pierre-Olivier, Rodrigo Valdés, and Oscar Landerretche, 2001, "Lending Booms: Latin America and the World," NBER Working Paper No. 8249 (Cambridge, Massachusetts: National Bureau of Economic Research).

Holtz-Eakin, Douglas, Whitney Newey, and Harvey S. Rosen, 1988, "Estimating Vector Autoregressions with Panel Data," *Econometrica*, Vol. 56, No. 6, pp. 1371–95.

Ilzetzki, Ethan, Carmen Reinhart, and Kenneth Rogoff, 2008, "Exchange Rate Arrangements Entering the 21st Century: Which Anchor Will Hold?" (unpublished; University of Maryland and Harvard University).

International Monetary Fund, 2006, *World Economic Outlook* (Washington, September).

———, 2008a, *World Economic Outlook* (Washington, April).

———, 2008b, *World Economic Outlook* (Washington, October).

———, 2010, *United States: Publication of Financial Sector Assessment Program Documentation—Financial System Stability Assessment*, IMF Country Report No. 10/247 (Washington).

———, 2011a, *Fiscal Monitor* (Washington, September).

———, 2011b, *Global Financial Stability Report* (Washington, September).

———, 2011c, *Macroprudential Policy: What Instruments and How to Use the Lessons from Country Experience* (Washington, International Monetary Fund).

———, 2011d, *Regional Economic Outlook: Asia and Pacific—Managing the Next Phase of Growth* (Washington: April).

———, 2011e, *Regional Economic Outlook: Western Hemisphere—Watching Out for Overheating* (Washington: April).

———, 2011f, *United States: Spillover Report—2011 Article IV Consultation*, IMF Country Report No. 11/203 (Washington).

———, 2011g, *World Economic Outlook* (Washington, April).

———, 2011h, *World Economic Outlook* (Washington, September).

———, and Bank of Korea, 2011, *Managing Real Estate Booms and Busts* (Seoul, April).

Kiff, John, and Evridiki Tsounta, 2011, "The Challenge of Dealing with Mortgage Delinquencies," in *United States—Selected Issues*, IMF Country Report No. 11/202 (Washington: International Monetary Fund).

Kumar, Manmohan, Andrea Schaechter, and Baldacci Emanuele, 2009, "Fiscal Rules Can Help Improve Fiscal Performance," *IMF Survey Magazine*, December 22.

Lane, Philip R., and Gian Maria Milesi-Ferretti (2007), "The External Wealth of Nations Mark II: Revised and Extended Estimates of Foreign Assets and Liabilities, 1970–2004," *Journal of International Economics* 73 (November), pp. 223–50.

Lederman, D., W.F. Maloney, and J. Messina, 2011, "The Fall of Wage Flexibility: Labor Markets and Business Cycles in Latin America and the Caribbean since the 1990s" (unpublished; Washington: World Bank).

Mendoza, Enrique, and Marco Terrones, 2008, "An Anatomy of Credit Booms: Evidence from Macro Aggregates and Micro Data," IMF Working Paper

08/226 (Washington: International Monetary Fund).

Ostry, Jonathan D., Atish R. Ghosh, Karl Habermeier, Marcos Chamon, Mahvash S. Qureshi, and Dennis B.S. Reingardt, 2010, "Capital Inflows: The Role of Controls," IMF Staff Position Note 10/04 (Washington: International Monetary Fund).

Ostry, Jonathan D., Atish R. Ghosh, Karl Habermeier, Luc Laeven, Marcos Chamon, Mahvash S. Qureshi, and Annamaria Kokenyne, 2011, "Managing Capital Inflows: What Tools to Use?" IMF Staff Discussion Note 11/06 (Washington: International Monetary Fund).

Pindyck, Robert, and Julio Rotemberg, 1990, "The Excess Co-movement of Commodity Prices," *Economic Journal*, Vol. 100, No. 4.

Rennhack, Robert, 2009, "Global Financial Regulatory Reforms: Implications for Latin America and the Caribbean," IMF Staff Position Note 09/19 (Washington: International Monetary Fund).

Restrepo, Jorge, 2008, "Estimaciones de la Nairu para Chile," *Economía Chile*, Vol. 1, No. 2, pp. 31–46.

Roache, Shaun, forthcoming, "China's Impact on World Commodity Markets," Working Paper (Washington: International Monetary Fund).

Segoviano, Miguel A., 2006a, "Consistent Information Multivariate Density Optimizing Methodology," Discussion Paper No. 557, Financial Markets Group, London School of Economics.

_____, 2006b, "The Conditional Probability of Default Methodology," Discussion Paper No. 558, Financial Markets Group, London School of Economics.

_____, and Charles Goodhart, 2009, "Banking Stability Measures," IMF Working Paper 09/04 (Washington: International Monetary Fund).

Sommer, M., 2011, "Budget Institutions for Federal Fiscal Consolidation," in *United States—Selected Issues*, IMF Country Report No. 11/202 (Washington: International Monetary Fund).

Staiger, Douglas, James Stock, and Mark Watson, 1997, "Nairu, Unemployment and Monetary Policy," *Journal of Economic Perspectives*, Vol. 11, No. 1, pp. 33–49.

Taylor, Paul, Richard Fry, and Rakesh Kochhar, 2011, *Wealth Gaps Rise to Record Highs between Whites, Blacks, Hispanics*, Pew Research Center, available at: http://pewsocialtrends.org/2011/07/26/wealth-gaps-rise-to-record-highs-between-whites-blacks-hispanics/

Terrier, Gilbert, Rodrigo Valdés, Camilo E. Tovar, Jorge Chan-Lau, Carlos Fernández-Valdovinos, Mercedes García-Escribano, Carlos Medeiros, Man-Keung Tang, Mercedes Vera Martin, and Chris Walker, 2011, "Policy Instruments to Lean against the Wind in Latin America," IMF Working Paper 11/159 (Washington: International Monetary Fund).

Texeira da Silva Filho, Tito, 2010, "The Natural Rate of Unemployment in Brazil, Chile, Colombia, and Venezuela: Some Results and Challenges," Working Paper No. 212 (Brasília: Central Bank of Brazil).

Tsounta, Evridiki, 2011, "The U.S. Housing Market Outlook—What Are the Potential Benefits of Mitigating Distressed Sales?" in *United States—Selected Issues*, IMF Country Report No. 11/202 (Washington: International Monetary Fund).

Valdés, Rodrigo, 1997, "Emerging Markets Contagion: Evidence and Theory," Documentos de Trabajo del Banco Central, Central Bank of Chile.

# New Publications from the Western Hemisphere Department, January 2010–August 2011

## 1. IMF Working Papers

**WP/11/199 –** Shocks, Financial Dependence, and Efficiency: Evidence from U.S. and Canadian Industries, by Marcello Estevão and Tiago Severo.

**WP/11/197 –** External Adjustment and the Global Crisis, by Philip R. Lane and Gian Maria Milesi-Ferretti.

**WP/11/191 –** Home Sweet Home: Government's Role in Reaching the American Dream, by Evridiki Tsounta.

**WP/11/165 –** Foreign Exchange Intervention: A Shield against Appreciation Winds? by Gustavo Adler and Camilo E. Tovar.

**WP/11/159 –** Policy Instruments to Lean against the Wind in Latin America, by Gilbert Terrier, Rodrigo O. Valdés, Camilo E. Tovar Mora, Jorge A. Chan Lau, Carlos Fernandez Valdovinos, Mercedes Garcia-Escribano, Carlos I. Medeiros, Man-Keung Tang, Mercedes Vera Martin, and W. Christopher Walker.

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