World Economic and Financial Surveys

Regional Economic Outlook

Western Hemisphere

Northern Spring, Southern Chills

APR 15

INTERNATIONAL MONETARY FUND

World Economic and Financial Surveys

Regional Economic Outlook

Western Hemisphere

Northern Spring, Southern Chills

APR 15

INTERNATIONAL MONETARY FUND

©2015 International Monetary Fund

Cataloging-in-Publication Data

Regional economic outlook. Western Hemisphere. – Washington, D.C. : International Monetary Fund, 2006–

v. ;   cm. – (World economic and financial surveys, 0258-7440)

Once a year.
Began in 2006.
Some issues have thematic titles.

1. Economic forecasting – North America – Periodicals. 2. Economic forecasting – Latin America – Periodicals. 3. Economic forecasting – Caribbean Area – Periodicals. 4. North America – Economic conditions – Periodicals. 5. Latin America – Economic conditions – 1982 – Periodicals. 6. Caribbean Area – Economic conditions – Periodicals. 7. Economic development – North America – Periodicals. 8. Economic development – Latin America. 9. Economic development – Caribbean Area. I. Title: Western Hemisphere. II. International Monetary Fund. III. Series: World economic and financial surveys.

HC94.A1 R445

ISBN: 978-1-49831-212-7 (paper)
ISBN: 978-1-48432-623-7 (web PDF)

Please send orders to:
International Monetary Fund, Publication Services
700 19th St. N.W., Washington, D.C. 20431, U.S.A.
Tel.: (202) 623-7430   Telefax: (202) 623-7201
E-mail: publications@imf.org
Internet: www.imf.org

Contents

Preface v

Executive Summary vii

1. The United States, Canada, and the World: Outlook and Policy Challenges 1

Modest Growth and Cheaper Oil 1

Weaker Medium-Term Growth Prospects 3

The United States: Recovery Gaining Further Strength 3

Canada: Rebalancing Amid Lower Oil Prices 7

2. Outlook and Policy Challenges for Latin America and the Caribbean 13

Financially Integrated Economies 18

Other Commodity Exporters 24

Central America and the Dominican Republic 26

The Caribbean 29

Annex 2.1. Data Disclaimer 38

3. The Commodity Price Bust: Fiscal and External Implications for Latin America 43

The Commodity Price Cycle: Where Do We Stand Now? 44

Adjusting to Commodity Price Shocks—Historical Evidence 46

Looking Ahead: Outlook for Trade and Fiscal Balances 50

Conclusions and Policy Implications 51

Annex 3.1. Technical Details 53

4. Recent Investment Weakness in Latin America: Is There a Puzzle? 55

Recent Investment Dynamics: The Slowdown in Perspective 55

What Determines Private Investment in Emerging Markets? 56

Which Factors Have Been Driving the Recent Slowdown? 61

A Focus on the Financially Integrated Economies 62

Summary and Policy Implications 64

Annex 4.1 64

5. Long-Run Growth in Latin America and the Caribbean: The Role of Economic Diversification and Complexity 67

How (Un)Diversified Are LAC Economies? 67

Do Diversification and Complexity Matter? 69

Implications for Growth Prospects in LAC 71
How Can Policies Promote Complexity and Diversification? 72
Policy Conclusions 74
Annex 5.1. Regression Results 77

List of Country Abbreviations 79

References 81

New Publications from the Western Hemisphere Department 85

Boxes

1.1 Is the U.S. Shale Boom Over? 10
2.1 Credit Gaps in Latin America: Keeping a Watchful Eye 32
2.2 U.S. Dollar Strength and Economic Activity in Latin America 34
2.3 How Does the Oil Price Decline Affect Countries in Central America and the Caribbean? 36
3.1 Commodity Sector Activity and Fiscal Revenue—Direct Links 52
5.1 Defining and Measuring Economic Complexity 76

Preface

The April 2015 *Regional Economic Outlook: Western Hemisphere* was prepared by a team led by Hamid Faruqee and André Meier under the overall direction of Alejandro Werner and the guidance of Krishna Srinivasan. The team included Steve Brito, Carlos Caceres, Bertrand Gruss, Genevieve Lindow, Nicolás E. Magud, Natalija Novta, Sebastián Sosa, Fabiano Rodrigues Bastos, and Ben Sutton. In addition, Stephan Danninger, Lusine Lusinyan, and Andrea Pescatori contributed to Chapter 1; Gabriel Di Bella, Pablo Druck, and Jaume Puig Forné contributed to Chapter 2; and Ke Wang contributed to Chapter 5. Production assistance was provided by Maria S. Gutierrez with support from Misael Galdamez; Joanne Creary Johnson of the Communications Department coordinated editing and production, with assistance from Katy Whipple. This report reflects developments and staff projections through early April 2015.

Executive Summary

Global growth remained modest and uneven last year—amid further downgrades in medium-term growth forecasts and a sharp decline in the price of oil—and is projected to strengthen only gradually over the period ahead. Prospects for advanced economies have improved somewhat, as the U.S. economy is projected to maintain robust growth, while cheaper oil and weaker currencies should support recovery in the euro area and Japan. By contrast, growth is expected to ease in oil exporters and several major emerging market economies, including China. Risks around this global outlook have become more balanced, but key downside risks remain—including renewed geopolitical tensions, possible abrupt shifts in financial markets, and stagnation and low inflation risks in advanced economies.

In this global setting, Latin America and the Caribbean face a particularly challenging outlook, notwithstanding intraregional divergences broadly along north-south lines. Overall, growth is projected to decline for a fifth consecutive year in 2015, dipping just below 1 percent before staging a moderate recovery in 2016. Economic weakness is concentrated among South America's commodity exporters, where falling global commodity prices have compounded country-specific challenges. Thus, output is set to contract this year in three of the largest economies in the south (Argentina, Brazil, and Venezuela), while only Chile and Peru are projected to see a pickup in growth. By contrast, most of Central America, the Caribbean, and Mexico are projected to experience steady or stronger growth, supported by lower oil bills for importers and robust economic recovery in the United States.

Despite the continued regional slowdown, economic slack remains limited, while medium-term growth expectations have continued to decline. Moreover, fiscal positions have weakened in most countries, cautioning against further fiscal expansion to boost growth. Flexible exchange rates can play a critical role in facilitating adjustment to more difficult external conditions. Importantly, policymakers will need to (1) ensure sound public finances, especially since downside risks to growth remain prominent; (2) keep financial sector vulnerabilities in check given that weaker earnings, tighter funding conditions, and a stronger U.S. dollar are testing borrowers' resilience; and (3) tackle long-standing structural problems to raise investment and productivity.

- These broad policy priorities also apply to the *financially integrated economies*, although country circumstances require a tailored approach. *Brazil* is undergoing its most serious downturn in more than two decades but will need to persevere with recent policy efforts to contain the rise in public debt and rebuild trust in the macroeconomic policy framework. In *Mexico*, a moderate recovery is finally in prospect, which should facilitate the authorities' plan to gradually reduce the budget deficit. Stronger initial fiscal positions will allow *Chile*, *Colombia*, and *Peru* to smooth the necessary adjustment of their economies to a weaker terms-of-trade environment.

- The collapse in oil prices has hit several of South America's *other commodity exporters* hard, heightening the need for fiscal restraint, greater exchange rate flexibility, and broad improvements in governance and the business environment. Major policy changes are indispensable to arrest the economic crisis in *Venezuela*. In *Argentina*, foreign exchange pressures have eased recently, but economic distortions and imbalances call for policy adjustments to restore growth and stability.

- *Central America*'s economies should take advantage of the relief provided by cheaper energy imports to reduce fiscal vulnerabilities and strengthen the credibility of inflation-targeting regimes. Structural reforms remain indispensable to address supply bottlenecks and enhance the prospects for sustained and inclusive growth.

- Similarly, the apparent recovery in the tourism-dependent *Caribbean* provides an opportunity to make headway toward strengthening competitiveness, reducing still-high external and fiscal deficits, and restoring stability to fragile financial systems.

This issue of the *Regional Economic Outlook* features three analytical chapters that examine core challenges surrounding the current downturn and growth outlook. Specifically, the analysis assesses the impact of lower commodity prices on fiscal and external positions in the region, the drivers of a marked slowdown in investment, and the role of economic diversification and complexity in shaping longer-term growth prospects. Key findings are:

- Given the prospects of persistently lower global commodity prices, several commodity exporters in Latin America are likely to experience a significant and durable drop in fiscal revenues, requiring some deliberate effort to reduce budgetary deficits. The deterioration in trade balances is likely to be relatively moderate and short lived. However, external adjustment typically does not appear to be driven by higher noncommodity exports, but rather by import compression, especially in countries with more rigid exchange rate regimes and low export diversification.
- Real investment across the region has slowed markedly since 2011, though developments to date have been consistent with historical patterns. Based on firm-level data, the sharp decline in commodity export prices stands out as the main driver of the investment slowdown in Latin America, although other standard determinants also play a role. Prospects for a stronger recovery will depend on policymakers making decisive progress in improving conditions for private investment.
- Economic diversification and complexity—relating to the range of products that a country produces and how sophisticated these products are—matter for long-term growth. However, Latin America and the Caribbean scores relatively low in both dimensions, with little progress made over the last decade. The key to improving longer-term growth prospects is to prioritize structural reforms and harness knowledge spillovers through greater openness, while preserving sound macroeconomic frameworks.

1. The United States, Canada, and the World: Outlook and Policy Challenges

Alongside weaker prospects, lower oil prices, and currency swings, global growth remains modest and uneven. The outlook and policy challenges in Western Hemisphere economies are shaped by many of the same factors. First, a substantial fall in oil prices will affect the near-term pattern of growth—positively for the United States, negatively for Canada, and broadly neutral for the region as a whole. In this context, a stronger U.S. dollar has been helpful, but more volatile exchange rates also pose risks. Second, weaker expectations for medium-term growth in many emerging markets and advanced economies dampen current investment. Global and regional growth rates have been marked down, although risks are now more balanced than before. Key policy challenges center on raising actual and potential growth and supporting rebalancing.

Modest Growth and Cheaper Oil

Global growth remained modest at 3.3 percent in 2014, broadly in line with expectations. Performances across major economies have been uneven or divergent, with many falling short of earlier growth forecasts. As discussed in the April 2015 *World Economic Outlook*, global growth is projected at 3.5 percent and 3.8 percent in 2015 and 2016, respectively, 0.3 percentage point below the respective projections from October (see Figure 1.1). The downward revisions reflect a reassessment of prospects for large emerging markets and some major oil exporters. Meanwhile, the outlook for advanced economies, most notably the United States, is showing some signs of improvement.

The most dramatic change in the global environment recently has been the sharp drop in oil prices—currently more than 40 percent lower than assumed in the October 2014 *World Economic Outlook*.

Figure 1.1

Global growth remains modest and uneven in the wake of lower oil prices and weaker medium-term growth prospects.

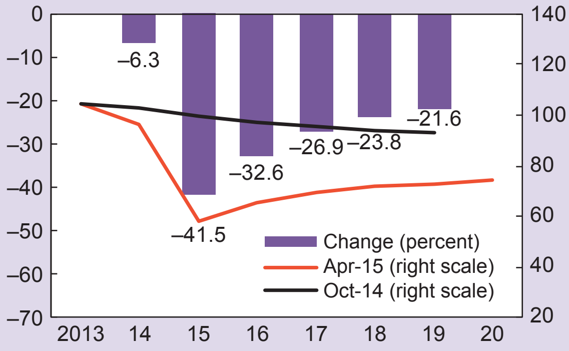
Real GDP Growth

(Percent; annual rate)

			Projections	
	2013	**2014**	**2015**	**2016**
World	**3.4**	**3.4**	**3.5**	**3.8**
Advanced economies	1.4	1.8	2.4	2.4
United States	2.2	2.4	3.1	3.1
Euro area	–0.4	0.9	1.5	1.7
Japan	1.6	–0.1	1.0	1.2
Emerging market and developing economies	5.0	4.6	4.3	4.7
China	7.8	7.4	6.8	6.3
Russia	1.3	0.6	–3.8	–1.1

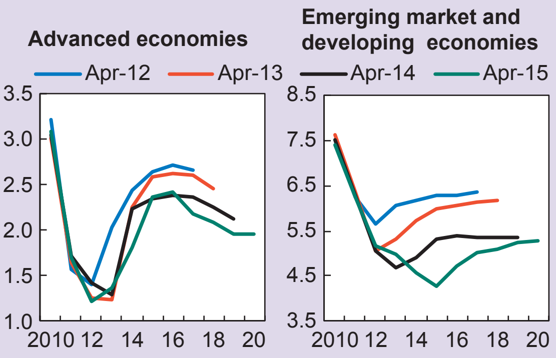
Oil Baseline Comparison

(U.S. dollars per barrel)



Real GDP Growth by *World Economic Outlook* Vintage

(Percent; annual rate)



Sources: IMF, World Economic Outlook database; and IMF staff projections.

Note: Prepared by Hamid Faruqee with Stephan Danninger and Andrea Pescatori. Madelyn Estrada, Genevieve Lindow, and Rania Papageorgiou provided excellent research assistance.

This unusually large price decline mainly reflects higher-than-expected supply from both Organization of the Petroleum Exporting Countries and other oil producers, as well as weaker-than-expected economic activity and oil demand (especially in some emerging markets). A lower oil price, by itself, should provide an overall boost to the global economy through lower energy input costs for firms and higher disposable incomes for consumers. But the oil shock will have important redistribution effects, shifting income from oil exporters to importers, and will dampen already low global inflation. Other commodity prices also remain well below their recent peaks.

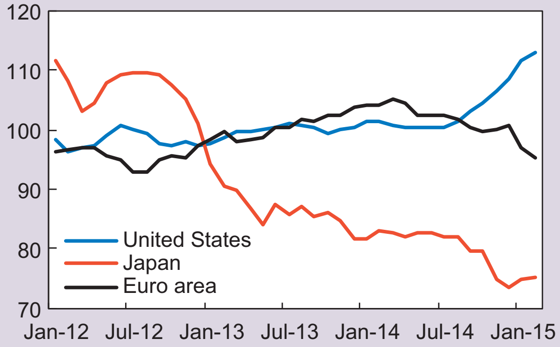
Global financial conditions—notably, low long-term bond yields—remain relaxed as further monetary easing by central banks in Europe and Japan combats deflationary pressures. Possible tensions with U.S. monetary policy aiming to lift rates later this year may, however, impart some market volatility.[1] Across major currencies, exchange rates have moved substantially in recent months led by a stronger U.S. dollar—reflecting different (expected) evolutions for growth and policy rates, as well as the price of oil (see Figure 1.2). Exchange rate movements, in principle, can be helpful by redistributing demand across countries but can also present risks when the dollar appreciates suddenly and sharply.

Overall, risks appear more balanced now than before around a lower global growth projection. A greater-than-anticipated boost to demand from oil prices is an upside risk, and downside risks from slower emerging market growth is reflected in the baseline. Key downside risks still include intensifying geopolitical tensions (notably in Russia and Ukraine) affecting major economies, disruptive asset price shifts as the configuration of accommodative monetary policies shifts, and risks of stagnation and low inflation in advanced economies. Across the major economies or regions:

Figure 1.2

Nominal Effective Exchange Rates

(Index: 2010 = 100)



Source: IMF, *Information Notice System.*

- Reflecting a stronger recovery, the *United States* is projected to grow about 3 percent in 2015–16, with above-trend growth and robust private demand supported by lower oil prices, despite the projected gradual rise in interest rates and recent dollar appreciation (see the section that follows).
- After a mid-year trough in 2014 related to subdued private investment, growth in the *euro area* has shown signs of pickup, supported by lower oil prices, low interest rates, and a weaker euro. And after a disappointing 2014, growth in *Japan* is also projected to pick up, sustained by a weaker yen and lower oil prices.
- In emerging markets, *China*'s slowdown in real estate investment has been somewhat sharper than anticipated. A continued gradual slowdown in growth is expected, alongside measured policy stimulus as authorities try to strike the right balance between supporting activity and reducing vulnerabilities from past rapid credit and investment growth. For *Russia*, a markedly weaker growth outlook reflects the impact of sharply lower oil prices and increased geopolitical tensions, while in other emerging market commodity exporters, weaker terms of trade are now forecast to take a heavier toll on medium-term growth.
- Against a backdrop of country-specific headwinds to growth, lower commodity prices but a stronger U.S. recovery, regional growth in *Latin America and the Caribbean* is expected to dip just below 1 percent—though with divergences

---

[1] See April 2015 *Global Financial Stability Report.*

broadly along north-south lines. Specifically, downward revisions are concentrated in South America's commodity exporters, notably *Brazil* (see Chapter 2). In terms of fiscal and external balances, the commodity price shock can also have noticeable effects within the region (see Chapter 3).

Weaker Medium-Term Growth Prospects

Looking further ahead, medium-term prospects have become less favorable than before for advanced economies and, especially, for emerging markets, where activity has been slowing since 2010 (see Figure 1.1).

Concerns about slowing potential output in advanced economies reflect long-term factors such as demographics, as well as an unexpectedly protracted period of weak investment after the global financial crisis. In the euro area, for example, a legacy of high indebtedness and gradual bank balance sheet adjustment continues to hamper monetary transmission, credit flows, and investment, thus affecting growth.

Weaker-than-anticipated growth for emerging markets—extending a string of negative surprises over the past four years—reflect ongoing, protracted adjustment to diminished expectations regarding their medium-term growth prospects.[2]

In Latin America, dampened prospects for future growth and earnings—in a context of changing external conditions, notably lower commodity prices—are expected to weigh on investment decisions by domestic firms (see Chapter 4). While not a puzzle per se, restrained investment behavior will weigh on future growth prospects in the region.

More broadly speaking, several economies in Latin America and the Caribbean face significant growth challenges, in part due to a relatively narrow economic base and lack of diversification toward more sophisticated, knowledge-intensive industries (see Chapter 5).

Policy Challenges

In this setting, raising actual and potential output continues to be a priority. Over the medium term, rebalancing in major economies will be important to help ensure the sustainability of growth.

In many advanced economies, accommodative monetary policy remains essential to support economic activity and to ward off the risk of further declines in inflation expectations, particularly in the euro area. There is also a strong case for increasing infrastructure investment in some economies, including the United States.

In many emerging markets, macroeconomic policy space to support growth remains limited. But in some, lower oil prices will help reduce inflation and external vulnerabilities, thereby relaxing pressure on central banks to raise policy interest rates. Structural reforms to boost potential output are urgently needed in both advanced and emerging market economies.

In Latin America, many of the same issues are pertinent given slower growth, softer commodity prices, and structural weaknesses. Limited economic slack and reduced policy space in most countries constrain the option for near-term policy stimulus and raise the stakes for medium-term structural reform to shoulder the burden for raising growth and boosting economic prosperity.

The United States: Recovery Gaining Further Strength

The U.S. economy picked up steam last year. GDP grew by more than 2½ percent (on an annual basis) during the second half of 2014, easily overcoming a weather-related contraction in the first quarter. Job growth accelerated to 260,000 per month for the year—the highest level since the global financial crisis—fueling robust consumption growth exceeding 4 percent (seasonally adjusted annual rate) at year end (see Figure 1.3).

---

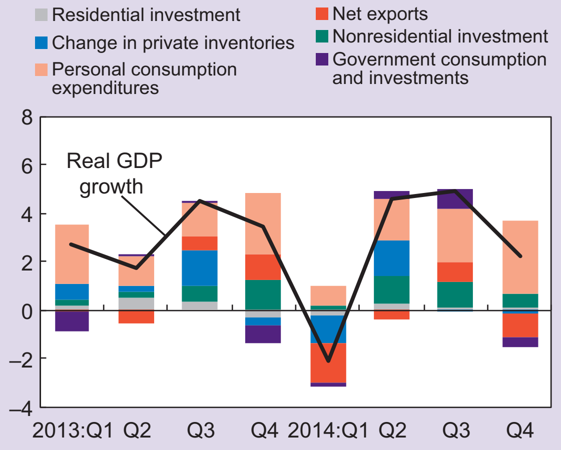
[2] These topics are also discussed in more detail in Chapter 3 (potential output) and Chapter 4 (investment) of the April 2015 *World Economic Outlook*.

Figure 1.3

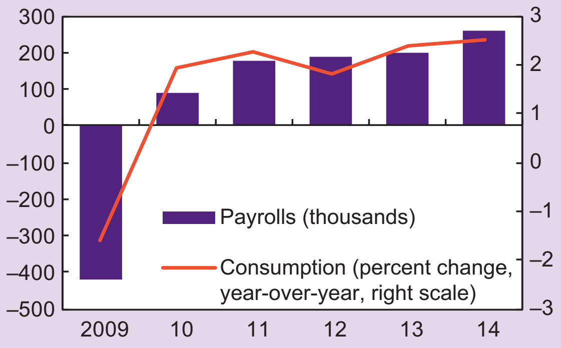
Led by consumption and strengthening labor markets, a strong U.S. recovery remains on track.

United States: Contribution to GDP Growth

(Percent change from previous quarter, seasonally adjusted annual rate)

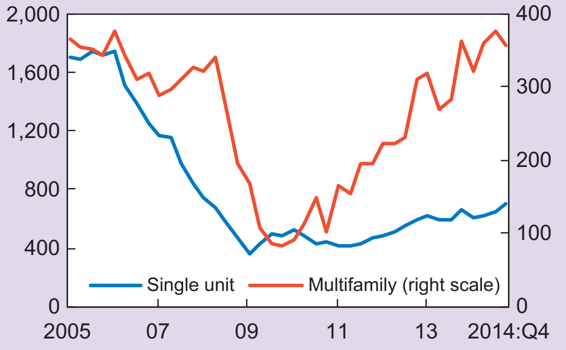


United States: Consumption and Payrolls



United States: Housing Starts

(Thousands, seasonally adjusted annual rate)



Sources: Haver Analytics; U.S. Bureau of Economic Analysis; U.S. Bureau of Labor Statistics; and U.S. Census Bureau.

Consumer spending was further buttressed by improving household balance sheets, a rising stock market, and recovering house prices. A decline in mortgage rates boosted housing starts and permits to 1 million units. Foreclosure rates (as a share of mortgages) declined to a seven-year low.

Exports and business investment growth was less buoyant—pointing to the need for further rebalancing of the economy. Lower oil prices are helping the current account through the oil trade balance, but soft overseas demand and a stronger dollar dampened exports in an otherwise strong year for manufacturing. Businesses started to upgrade equipment with a steady rise in capacity utilization. Momentum slowed, however, toward year end as lower oil prices pulled down valuations in the energy sector—by about 20 percent in the second half of the year—and slowed investment spending in the fourth quarter.

The unemployment rate declined to 5.5 percent in February 2015. Nonetheless, wage growth remained subdued owing to still sizable labor underutilization and is muted in lower-skilled segments as previously discouraged job seekers re-enter the labor market. Core personal consumption expenditure inflation declined during the second half of 2014, reaching 1.3 percent in January, well below the Federal Reserve's 2 percent goal with headline inflation even lower at 0.7 percent (reflecting falling energy prices).

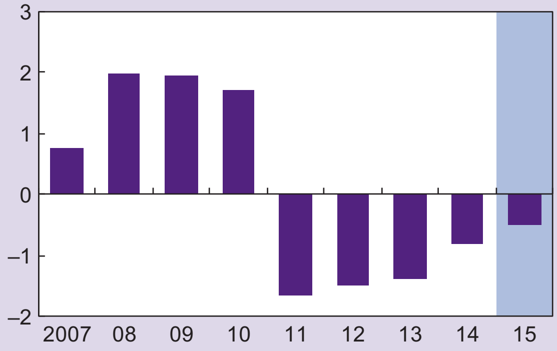
Robust Outlook and Private Demand

Consumers will continue to be the main driver of the recovery. Growth in 2015 is projected to reach 3.1 percent and remain there in 2016. Drivers of robust consumer spending include a further firming of the labor market, markedly lower energy prices, and tame core inflation boosting real incomes, as well as accommodative financial conditions. With earnings rising and an expected moderate rebound in household formation, housing starts for the large single units market will continue to pick up.

Figure 1.4

United States: Fiscal Impulse

(Percent of GDP)

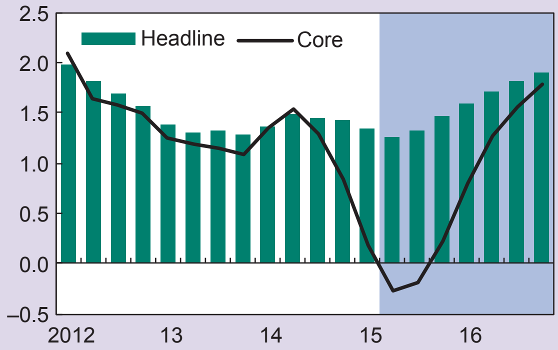


Sources: IMF, World Economic Outlook database; and IMF staff projections.
Note: The fiscal impulse is the negative of the change in the primary structural balance.

Figure 1.5

United States: Personal Consumption Expenditures Inflation

(End of period, year-over-year percent change)



Sources: Haver Analytics; U.S. Bureau of Labor Statistics; and IMF staff projections.

Businesses are expected to further upgrade their aging capital stock given high capacity utilization rates and substantial cash holdings. The exception is the energy sector where low energy prices are eroding profitability. Finally, fiscal withdrawal will continue this year, albeit with a reduced fiscal drag (see Figure 1.4).

Taken together, the firming of domestic demand is expected to more than offset the impact from a strengthening of the dollar on the tradable sector via greater overseas competition which, on its own, could deduct about ½ percent from growth in 2015. Over the medium term, both factors could work against rebalancing and, over time, lead to a wider trade deficit.

With respect to consumer prices, personal consumption expenditure inflation has declined significantly in recent months, but is expected to rebound as temporary effects from recent dollar price appreciation and lower energy prices wane. Core personal consumption expenditure inflation is expected to temporarily decline to 1.2 percent this year before rising to 1¾ percent in 2016 (see Figure 1.5). Rapid changes in terms of lower oil prices and a stronger dollar, however, have made the near-term inflation outlook more uncertain.

Because of the strong economy, especially private domestic demand, second-round effects on core inflation from lower oil prices are estimated to be modest. The size of these spillovers are, however, hard to predict and depend on the perceived duration and severity of the commodity price shock—leaving greater uncertainty than usual about underlying inflation momentum. Also, wage inflation has been tame, but could pick up quickly as the unemployment rate drops further. Finally, actual inflation will likely remain below the 2 percent target for a longer time, potentially pulling down inflation expectations (although survey data suggests that expectations are still well anchored).

Amid subdued near-term inflation pressures, long-term interest rates have further declined and are strengthening monetary accommodation and underlying demand. The decline in the term premium reflects weaker external conditions, excess demand for safe assets, and expectations of future dollar strength—it may take time for these effects to recede.

The confluence of factors affecting inflation and employment complicates the assessment of the appropriate timing for lift-off of policy rates from the zero interest rate bound. In its recent communication, the Federal Reserve has explained that upon continued improvements in the labor market and given that it expects inflation to move back to 2 percent over the medium term, policy rates should rise, depending on incoming information. Weighing these factors carefully, the Federal Reserve is appropriately planning to raise its policy rates, with lift-off expected later this year, only gradually.

Risks to the U.S. Recovery

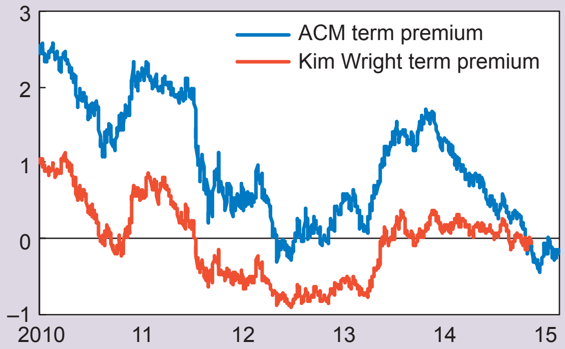
Although developments point to a robust U.S. recovery, there are several downside risks:

- A firmer dollar—particularly, a sudden and sharp appreciation—could suppress export growth in manufacturing more than anticipated, especially if overseas growth disappoints. Model estimates suggest that a further dollar appreciation in real effective terms by 10 percent could slow growth by ½ percent to 1 percent and hinder rebalancing. Knock-on effects for business investment could further slow domestic demand. Low oil prices could exacerbate this by suppressing investment in the oil sector by more than forecast, with important regional implications for growth (see Box 1.1).
- Long-term interest rates could rise abruptly and harm the recovery, especially in housing. Compressed term premiums are partly related to global developments, which could reverse (see Figure 1.6). Similarly, the lift-off by the Federal Reserve from the zero interest bound or political brinkmanship over the debt limit or the 2016 budget could lead to abrupt changes in the term premium or greater volatility of yields. Sharply rising mortgage rates could be a particular issue with first-time home buyers, as this market segment may be more interest rate sensitive.
- Financial vulnerabilities could come to the fore, despite progress on many fronts. With implementation of the Dodd-Frank Act, the financial system is better equipped to deal with systemic risk and the regulatory perimeter has been broadened. Risk management has improved through regular stress testing and there is better coordination among supervisory agencies, though the risk assessments should be broadened to the nonbanking financial sector. Repair of household balance sheets has progressed and banks' capital positions remain strong. But the prolonged period of low interest rates is creating pockets of vulnerabilities, especially in the non-bank financial sector. The insurance sector has been hurt by low interest rates and, because of a maturity mismatch between assets and liabilities, a rapid rise in interest rates could weaken its capital position. Mutual funds continued to grow, heightening their capacity to transmit liquidity shocks via funding channels, such as the repo market. Risks have also been building in high-yield bond and leveraged loan markets as weaker firms utilize relatively easy access to credit.

Figure 1.6

United States: Term Premium

(Percent)



Sources: Federal Reserve Bank of New York; and Haver Analytics.
Note: ACM term premium refers to Adrian, Crump, and Moench (2013); Kim Wright term premium refers to Kim and Wright (2005).

U.S. Policy Priorities

The U.S. economy will not be able to carry the same momentum forward for long. Potential growth is estimated to be about 2 percent, weighed down by population aging and weaker innovation and productivity growth. Over the medium term, labor force growth is expected to slow for demographic reasons. The slowdown in information technology innovation (that appears to have contributed to the decline in U.S. total factor productivity growth) could have a more lasting effect on growth. Finally, fiscal sustainability concerns need to be addressed as the public debt-to-GDP ratio is substantially above its precrisis level and is expected to rise further under current policies.

Addressing these challenges will require the implementation of an ambitious agenda of supply-side policies in a fractious political environment. Forging agreement on a credible medium-term fiscal consolidation plan is a high priority to ensure that debt does not rise again with aging-related costs and to sustain confidence in stable financing conditions. This will require efforts to lower the growth of health care costs, reform social security, simplify the tax code, and increase tax revenues (through base broadening and, possibly, new indirect taxes).[3]

Policies should also be targeted toward raising labor force participation. Any reform package should include measures to incentivize work by expanding the earned income tax credit system, providing support for childcare, and enacting a skill-based immigration reform.

Productivity-enhancing innovation could be better induced through the tax system while skill-building could be fostered through better training programs at the state level and through partnerships with industry and higher education institutions. Finally, the October 2014 *World Economic Outlook* made a clear case that key infrastructure investment can be made in the United States at relatively modest near-term costs but with long-term growth benefits.

Canada: Rebalancing Amid Lower Oil Prices

The Canadian economy expanded at a solid pace of 2.5 percent in 2014. Net exports contributed positively to growth for a second consecutive year. But private consumption remained the single largest driver, alongside an overheated housing market, leaving the rebalancing of the Canadian economy toward stronger business investment incomplete (see Figure 1.7).

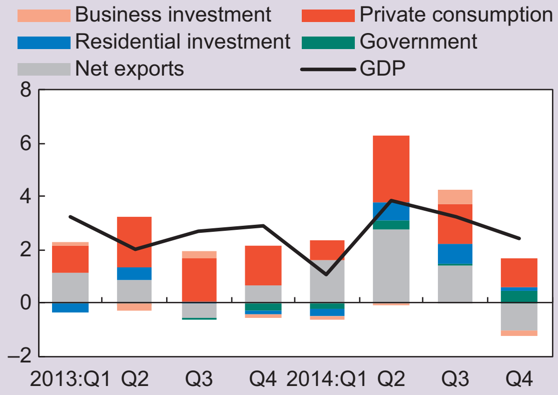
Leading the recovery, private consumption remained resilient. Supported by still easy financial conditions and rising disposable income, consumers increased purchases of durable goods such as

Figure 1.7

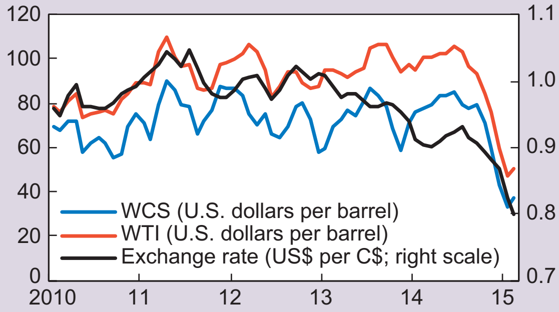
Solid growth in Canada is expected to slow because of lower oil prices, but a weaker Canadian dollar should support nonenergy exports.

Canada: Contributions to GDP Growth

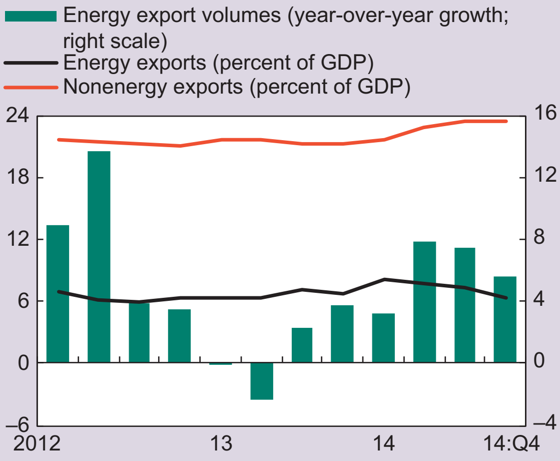
(Percentage change from previous quarter, seasonally adjusted annual rate)



Canada: Oil Prices and Exchange Rate



Canada: Energy and Nonenergy Exports



Sources: Bloomberg, L.P.; Haver Analytics; Statistics Canada; and IMF staff calculations.

Note: WCS = Western Canada Select; WTI = West Texas Intermediate.

---

[3] See the April 2015 *Fiscal Monitor* for further discussion of tax code reform.

automobiles and other household-related goods. Household indebtedness also continued to rise, with the debt-to-income ratio reaching a historical high of 157 percent in 2014.

Nonresidential business investment continued to be weak. Moreover, there are firm indications that the recent fall in oil prices will significantly reduce investment in the energy sector. Canadian prices for heavy crude oil—that is, Western Canadian Select (WCS) prices—have fallen broadly in line with their U.S. benchmark (see Figure 1.7, middle panel). Leading domestic energy companies have announced investment cuts in oil sands projects for this year. Investment in non-oil sectors may mitigate this reduction, however, particularly in energy-reliant sectors and sectors expected to benefit from the U.S. recovery and a weaker Canadian dollar, such as manufacturing.

The pickup in net exports has been encouraging over the past few years. Export volumes expanded by 5.4 percent in 2014, the strongest growth registered since 2010. Exports have been supported by depreciation of the Canadian dollar (10 percent in nominal effective terms since December 2013), a stronger U.S. recovery, and high energy demand (see Figure 1.7, bottom panel).

As a result, the current account deficit narrowed considerably to −2.2 percent in 2014 compared to −3.0 percent in 2013, mainly due to strength in the energy trade balance. In volume terms, energy exports grew strongly, reflecting a compositional shift in U.S. oil demand. Specifically, Canadian oil has gained substantial market share in the United States, rising from 22 percent in 2009 to 40 percent in 2014. The nonenergy trade balance improved as well, with exports rising above precrisis levels in value terms. In the last few months of 2014, however, with the decline in oil prices, the value of energy exports has substantially declined.

Fiscal consolidation continued in 2014. The federal government is broadly on track to achieving a balanced budget in fiscal year 2015/16. Adopting a neutral stance thereafter would be consistent with reaching its medium-term public debt objectives. Provincial governments remain committed to their balanced budget legislation, and consolidation efforts have reduced their deficits by about ½ percent of GDP in 2014. Fiscal positions vary considerably by province, however. Some will need to step up consolidation efforts. Eastern provinces, such as Ontario and Quebec, continue to face long-term fiscal challenges, while western provinces, such as Alberta, start with relatively strong public finances. The recent drop in crude oil prices, however, will significantly impact fiscal revenues from the oil sector in Alberta.

Dampened Outlook and Downside Risks

In 2015, growth in the wake of lower oil prices is expected to slow modestly to 2.2 percent, still somewhat above potential growth. Although the economic outlook for businesses linked to the energy sector has noticeably deteriorated, a stronger U.S. recovery and weaker Canadian dollar are expected to boost exports and investment in nonenergy sectors, leading to some rebalancing of growth. In this setting, a soft landing of the housing market is expected given a solid labor market and low mortgage rates.

Alongside slower growth, inflation is likely to decline. The fall in crude oil prices is expected to ease the rate of headline inflation to around 1 percent, though core inflation should remain closer to the Bank of Canada's 2 percent target.

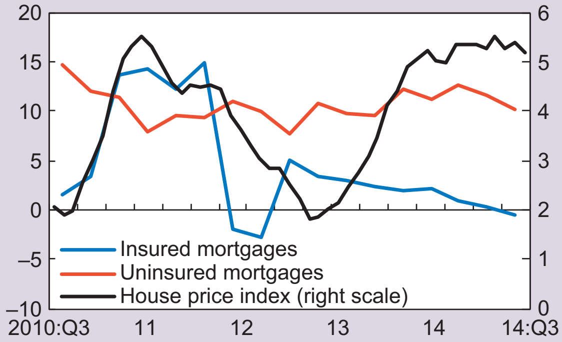
Risks remain modestly tilted to the downside for Canada. Principal risks are the effects of substantially lower oil prices, tightening of global financial conditions, and a protracted period of slower growth in advanced and emerging market economies. Risk of lower-than-expected U.S. growth would be particularly relevant.

Domestically, high levels of household indebtedness and overvaluation in the housing sector represent the main domestic vulnerabilities. Signs of overheated housing markets have persisted, though they vary by region and market segment. House prices have risen between 5 percent and 6 percent (year over year; see Figure 1.8). This

Figure 1.8

Canada: House Prices and Mortgage Loans

(Year-over-year percentage change)



Sources: Office of the Superintendent of Financial Institutions; and The Canadian Real Estate Association.

Note: Growth in insured mortgages in 2011:Q4–2012:Q4 is calculated as the rolling average of quarter-over-quarter annualized growth rates to adjust for a structural break in the series due to International Financial Reporting Standards reclassification of securitized mortgages in 2011:Q4.

has been driven principally by Calgary and by the single-family home and condominium markets in the greater Toronto and Vancouver areas. IMF staff analysis suggests a national real house price overvaluation between 7 and 20 percent.

With lower oil prices, however, some signs of cooling in housing markets have become visible, and risks of a harder landing need to be watched closely. A deeper downside scenario would be one where key domestic and external risks materialize in unison and interact.

Canada: Policy Challenges

Against this setting, the appropriate mix of policies will need to support both near- and medium-term growth by facilitating economic rebalancing while mitigating risks in housing markets and from high household debt.

The Bank of Canada lowered its policy rate by 25 basis points in January, citing the sharp decline in oil prices and the need to provide insurance against downside risks to inflation. The policy action is in line with IMF staff advice to use available monetary policy space should adverse shocks intensify. Alongside lower oil prices and weaker terms of trade, a weaker Canadian dollar should also be helpful in terms of rebalancing toward the nonenergy sector.

Overall, maintaining monetary accommodation along with gradual fiscal consolidation at the general government level would be conducive to achieving growth led by stronger exports and investment in the economy, while targeted macroprudential policies would help address housing sector vulnerabilities as needed.

To reduce financial vulnerabilities, policymakers have taken several steps over the years to tighten macroprudential policy—with a visible impact on the growth of insured mortgages and the credit quality of borrowers. However, uninsured mortgages, not subject to the same regulatory tightening, have continued to grow apace, helping fuel housing demand and suggesting possible leakage from macroprudential tightening (see Figure 1.8). Further policy action on this front would be needed if financial risks resume rising.

Finally, Canada faces a number of longer-term challenges. These include low productivity, energy infrastructure bottlenecks, improving competition in network sectors, reducing barriers to interprovincial trade, and further enhancing financial sector resilience in line with recommendations of the 2013 Financial Sector Assessment Program.

Box 1.1

Is the U.S. Shale Boom Over?

What do low crude oil prices imply for the U.S. oil industry? Is the unconventional energy boom over? This box summarizes the recent evidence and discusses potential prospects for the U.S. oil sector: While in the short term, lower oil prices will clearly adversely impact the U.S. oil industry, over the medium term they may induce healthy restructuring through mergers and cost saving through improved technology.

Rise and Fall of Crude Oil Prices

The large and sustained rise in oil prices since the early 2000s, driven mainly by strong demand (coupled with a series of supply disruptions), eventually led to major shifts in the global energy landscape. Crude oil prices hovered around $105 per barrel between 2011 and mid-2014, up from $25 per barrel a decade before. North America (particularly the United States) emerged as a major producer from an unconventional energy revolution (see Box 1.2 in the April 2014 *Regional Economic Outlook: Western Hemisphere*). But the recent dramatic drop in oil prices may have a serious impact on the U.S. unconventional oil industry. Between August 2014 and February 2015, the West Texas Intermediate (WTI) spot oil price nearly halved to about $50 per barrel, below most estimates of the "breakeven" price for the U.S. shale oil production. Currently, markets expect oil prices to modestly recover to about $60 in 2016.

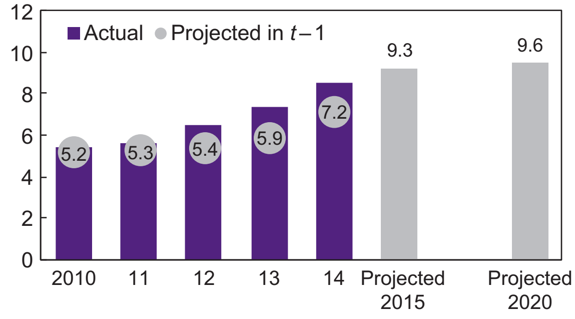
U.S. Oil Sector: Important But Still Small and Concentrated

Energy production in the United States had indeed responded strongly to high prices before and benefited from technological innovation. U.S. crude oil production has been rising steadily since 2008, surpassing 9 million barrels per day (mbd) by end-2014. Nearly all of the 4 mbd increase in production has been driven by "sweet grades" or light tight oil, which now represents over 50 percent of total U.S. oil production. In turn, oil production has consistently surprised on the upside in recent years (Figure 1.1.1) and has mainly been absorbed by reducing imports of similar oil grades while consumption has been mostly flat benefiting from rising energy efficiency (Figure 1.1.2).

Figure 1.1.1

U.S. Crude Oil Production

(Millions of barrels per day)

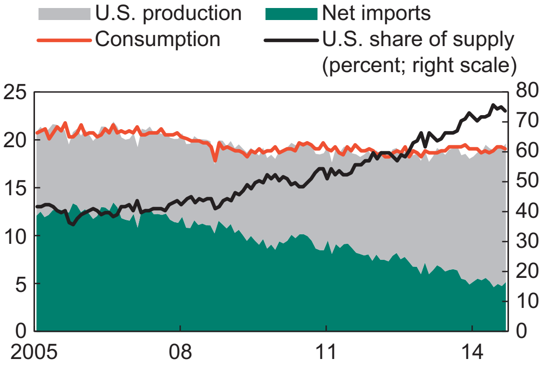


Source: U.S. Energy Information Administration.

Figure 1.1.2

U.S. Oil Production and Consumption

(Millions of barrels per day)



Source: U.S. Energy Information Administration.
Note: Refers to the production, consumption, and net import of petroleum. Petroleum consists of crude oil and petroleum products, which are unfinished oils, pentanes plus, and gasoline blending components.

For the U.S. economy, the oil and gas extraction sector amounts to 1½–2 percent of GDP. Investment in oil and gas extraction and support activities amounted to about 1 percent of GDP or 8½ percent of nonresidential

---

Note: This box was prepared by Lusine Lusinyan and Andrea Pescatori.

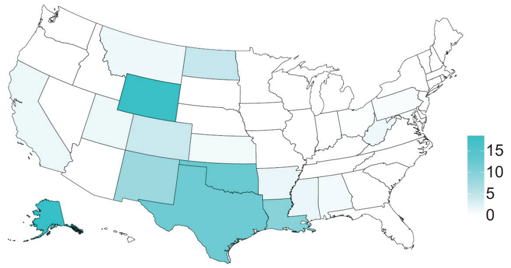
Box 1.1 *(continued)*

investment in recent years, contributing to 20 percent of its growth on average in 2011–13. But production is concentrated in a few states (see Figure 1.1.3). Even in North Dakota—one of the two main centers of the U.S. tight oil boom (after Texas)—the sector's share in state GDP is below 5 percent. Employment share of the sector in total employment is small (0.6 percent).

Figure 1.1.3

Share of Oil and Gas Extraction in State GDP

(Percent, average 2011–12)



Sources: U.S. Bureau of Economic Analysis; and IMF staff calculations.

In the Aftermath of the Oil Price Collapse

While lower oil prices are expected to have a net positive impact for the U.S. economy, the effects on the oil industry will be negative. So far, however, the oil price collapse has had a relatively modest impact on production, which continued rising and hit 9.3 mbd in February (the highest level since 1972). U.S. crude oil inventories are at all-time highs, but recent declines in gasoline and product stocks may suggest that lower crude prices are beginning to boost demand.

With a lag, employment in the oil sector has already started taking a toll,[1] and industry analysts estimate that investment in shale and tight oil drilling and exploration could be reduced by about 40 percent of the previously planned level for 2015. However, there is large uncertainty around these estimates as breakeven prices vary greatly by oil field, operating and financial costs also differ widely by operator, and companies may divert some of the planned investment in shale to more traditional investments. In general, given upfront costs, lower prices should affect new rather than existing investment projects. In addition, the effects of lower oil prices would be different in different segments of the oil industry, with support activities and oilfield services likely to be the hardest hit.

Challenges of a Low Price Environment

Tight oil projects are deemed to be more price sensitive: output from unconventional oil wells declines faster and requires continuous drilling of rigs. This implies that securing financing to continue production would be particularly challenging for smaller operators who are presently predominantly in the unconventional oil sector. Financial stability implications, however, seem to be limited given the relatively high underwriting standards applied for energy loans and the ability of producers to hedge oil price risk, at least at short horizons.

Lower oil prices will impact the U.S. oil industry by cutting investment in projects with the lowest return and likely shutting down operations that give a negative cash flow. However, the lower crude environment may not return the U.S. energy industry to its preshale revolution years, but it may actually induce a healthy restructuring of the industry by stimulating mergers and spurring cost-cutting technological improvements.

---

[1] The energy sector was the main underperformer in the latest job reports: according to the Department of Labor's payroll report, the number of workers in the mining sector, which includes oil and gas workers, fell by more than 9,000 in February and 5,000 in January. Nonfarm payrolls, by contrast, rose by 295,000 in February, with the unemployment rate reaching a six-year low at 5.5 percent.

2. Outlook and Policy Challenges for Latin America and the Caribbean

Growth in Latin America and the Caribbean slowed to 1.3 percent in 2014 and is projected to dip below 1 percent in 2015. The downturn in global commodity markets remains an important drag on South America's economies, even as lower oil prices and a solid U.S. recovery support activity elsewhere in the region. Country-specific factors, including weak private sector confidence in Brazil and the intensifying economic crisis in Venezuela, further weigh on the outlook for regional growth. Meanwhile, evidence of economic slack remains limited, underscoring the presence of supply-side bottlenecks. Flexible exchange rates can play a critical role in adapting to tougher external conditions, but policymakers will also need to ensure prudent fiscal positions, keep financial sector vulnerabilities in check, and tackle long-standing structural problems to raise investment, productivity, and potential growth.

Economic activity in Latin America and the Caribbean (LAC) continued to weaken in 2014 (Figure 2.1). With just 1.3 percent growth, regional output expanded at the slowest pace since 2002 (except for the short-lived recession in the midst of the global financial crisis in 2009). The weakness was concentrated in South America, where falling commodity prices reinforced a generalized sense of leaner times, weighing down on private demand. Domestic policy uncertainties further depressed confidence in some countries.

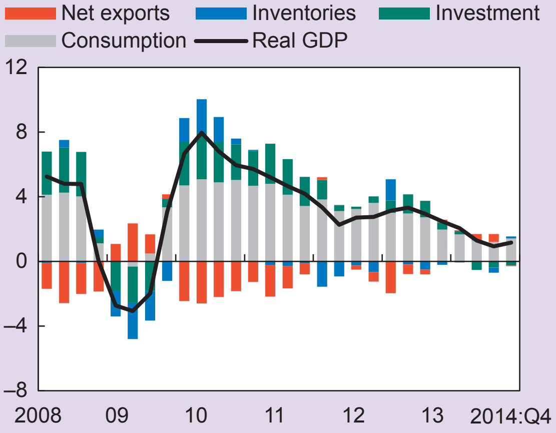
The challenging economic environment has also affected financial markets. The region's main currencies have depreciated by almost 20 percent on average against the U.S. dollar since mid-2014; equity prices have languished; and external bond spreads have widened, especially for companies and sovereigns exposed to commodities. Nonetheless, LAC continued to receive sizable portfolio inflows, and domestic bond markets generally held up well, in a context of very low global benchmark rates.

Figure 2.1

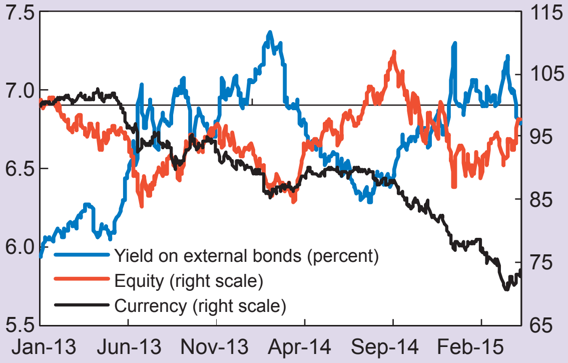
Economic activity has slowed further, led by weak investment. In this context, the region's floating currencies have depreciated markedly.

Selected Latin American Countries: Contributions to Real GDP Growth[1]

(Year-over-year percent change)



Latin America: Financial Markets[2]



Sources: Bloomberg, L.P.; Haver Analytics; national authorities; and IMF staff calculations.

[1] Seasonally adjusted. Purchasing power parity–weighted GDP averages of Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Paraguay, Peru, and Uruguay. Inventories include statistical discrepancies. See Annex 2.1 for details on Argentina's GDP.

[2] Yield on external bonds is based on J.P. Morgan Emerging Markets Bond Index for Latin America. Equity index is MSCI Emerging Markets Latin America Index equity local net total return index. Currency index is Bloomberg J.P. Morgan Latin America Currency Index. The equity and currency indices are rebased to January 2, 2013 = 100.

Near-term prospects remain fairly dim for South America, with output contractions projected in three of the largest economies (Argentina, Brazil, and Venezuela) for 2015, while only Chile and Peru

---

Note: Prepared by André Meier with Gabriel Di Bella, Pablo Druck, Nicolás Magud, Natalija Novta, and Jaume Puig Forné. Genevieve Lindow and Steve Brito provided outstanding research assistance.

would see a pick-up in growth. Elsewhere in LAC, growth is projected to be steady (Central America and the Caribbean) or strengthen (Mexico); see Figure 2.2. On balance, regional growth is expected to decline for a fifth consecutive year, bottoming out at just below 1 percent before staging a moderate recovery in 2016. The large downward revision to 2015 growth (almost 1.4 percentage points) relative to the October 2014 *World Economic Outlook* is driven by lower projections for South America—especially Brazil, Ecuador, and Venezuela—whereas prospects for Central America and the Caribbean have improved somewhat.

External factors play an important role in shaping the outlook for the region:

- *Broad-based weakness in commodity markets* is causing a protracted downward adjustment in corporate investment, well beyond the most exposed industries in commodity-dependent economies (see Chapter 4). Weaker long-term income prospects in these economies are also weighing on consumer sentiment and spending, even though labor markets have remained relatively tight to date.
- That said, *the sharp drop in oil prices since mid-2014* has provided divergent impulses to different parts of LAC which, on balance, should be broadly neutral for regional growth. While cheaper oil is intensifying terms-of-trade pressures for a handful of net oil exporters, it is creating significant relief elsewhere. Central America and the Caribbean are among the main beneficiaries, with average cuts to their import bills of 3–4 percentage points of GDP in 2015. In many economies, these savings will accrue at least partially to the private sector, boosting purchasing power, whereas governments in oil-exporting countries have tended to keep fuel prices stable, reducing effective subsidy levels (Figure 2.3).
- The *uneven recovery of the global economy*, where solid U.S. growth contrasts with still-subdued prospects for the euro area and Japan, and a secular slowdown in China, is set to benefit those LAC countries most closely linked to the U.S. economy. From a trade perspective, this includes Mexico, much of Central America, and a few South American countries (Figure 2.4). However, the latter mostly export commodities to the U.S. market, and thus are primarily exposed to the global commodity cycle rather than specific U.S. demand conditions. For Mexico, Central America, and the Caribbean, in turn, positive spillovers from the United States also arise from remittance and tourism flows.

Figure 2.2

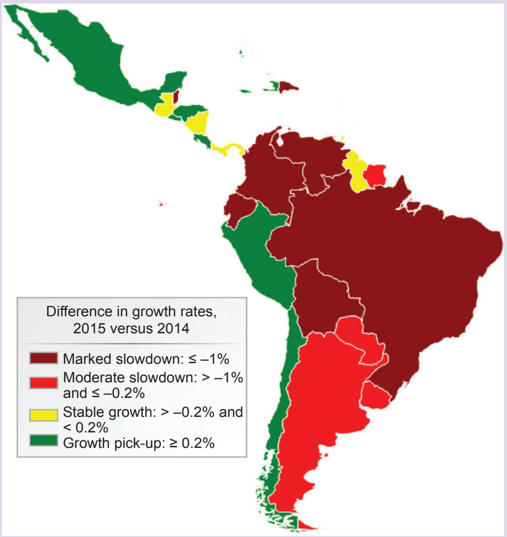
Regional growth is projected to decline for a fifth consecutive year in 2015, though prospects vary across subregions.

LAC: Real GDP Growth

(Percent)

			Projections	
	2013	**2014**	**2015**	**2016**
LAC	**2.9**	**1.3**	**0.9**	**2.0**
Financially integrated economies (LA6)	3.9	2.4	2.4	3.2
Other commodity exporters	6.0	2.0	0.6	1.6
CADR	4.2	4.4	4.2	4.2
Caribbean				
Tourism-dependent	1.1	1.5	2.0	2.4
Commodity exporters	3.1	2.8	2.4	3.2
Memorandum items:				
Brazil	2.7	0.1	–1.0	1.0
Mexico	1.4	2.1	3.0	3.3

LAC: Growth Momentum, 2014–15


Difference in growth rates, 2015 versus 2014
Marked slowdown: ≤ –1%
Moderate slowdown: > –1% and ≤ –0.2%
Stable growth: > –0.2% and < 0.2%
Growth pick-up: ≥ 0.2%

Sources: IMF, World Economic Outlook database; and IMF staff calculations and projections.

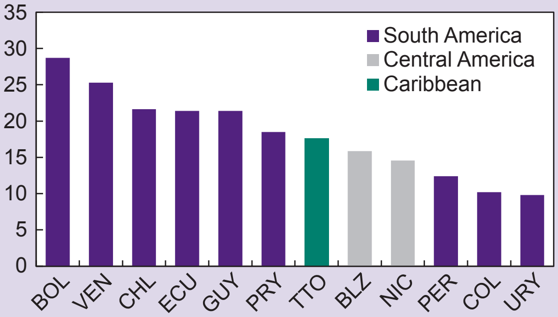
Note: CADR = Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and Panama; LA6 = Brazil, Chile, Colombia, Mexico, Peru, and Uruguay; LAC = Latin America and the Caribbean. For definitions of the other country groups and details on the aggregation method, see Table A2.1.

Figure 2.3

Worsening terms of trade have hit South America hard, weighing on capital spending. The growth effect of cheaper oil is more differentiated, as many economies stand to benefit, either through lower private sector fuel bills or through fiscal savings in countries with a history of high energy subsidies.

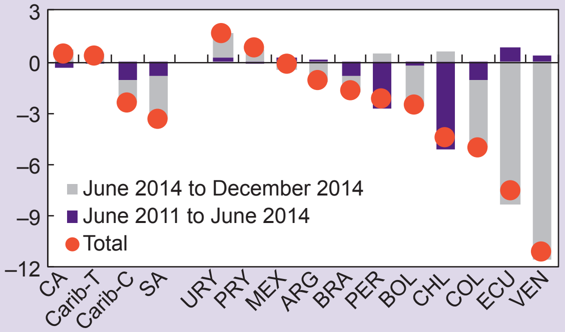
Commodity Exports[1]

(Percent of GDP)



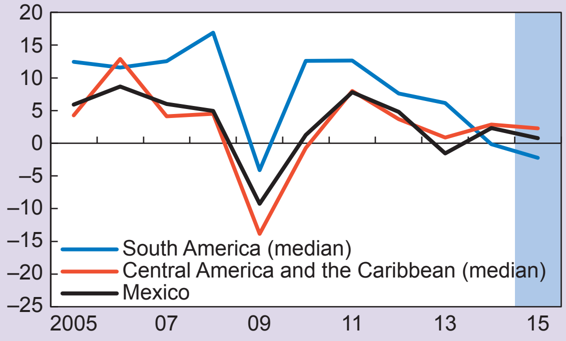
Change in Commodity Terms of Trade, 2011–14[2]

(Cumulative log change, percent)

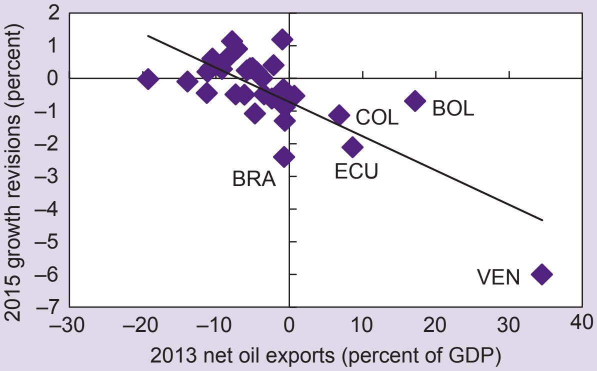


Real Fixed Investment Growth

(Percent change)

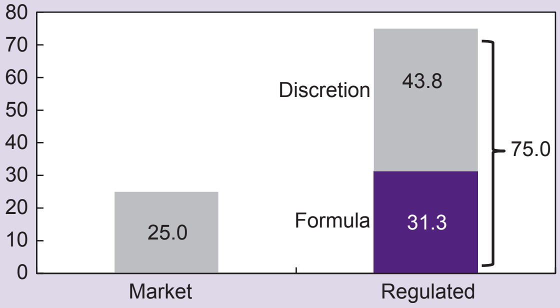


Recent Growth Revisions versus Net Oil Exports[3]



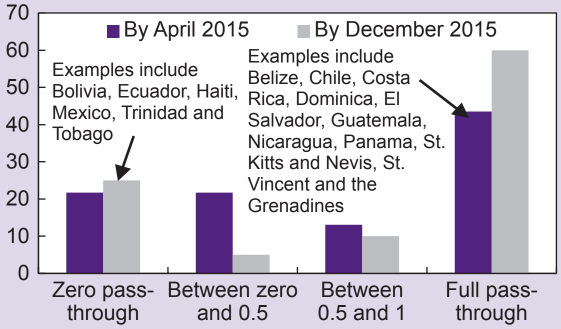
Adjustment Mechanisms for Domestic Fuel Prices with Respect to Global Oil Price Changes

(Proportion of total sample, 32 countries)



Expected Pass-Through Ranges Associated with the Recent Decline in Oil Prices[4]

(Proportion of total sample)



Sources: Gruss (2014); Haver Analytics; IMF, World Economic Outlook database; UN Comtrade; and IMF staff calculations and projections.

Note: CA = Central America; Carib-T = tourism-dependent Caribbean; Carib-C = commodity-exporting Caribbean; SA = South America. For country name abbreviations, see page 79.

[1] Average ratios to GDP for 2010–12. Excludes precious metals and re-exports. Venezuela data refer to net oil exports.

[2] Commodity terms of trade are weighted by the share of commodity exports/imports in GDP, so a 1 percent increase can be interpreted approximately as an income gain of 1 percent of GDP. Indices exclude precious metals, except for Bolivia, Colombia, and Peru. See also Annex 3.1 and Gruss (2014).

[3] Growth data refer to the difference between the 2015 growth projections from the April 2015 *World Economic Outlook* and October 2014 *World Economic Outlook*. Net oil export data for Bolivia include natural gas.

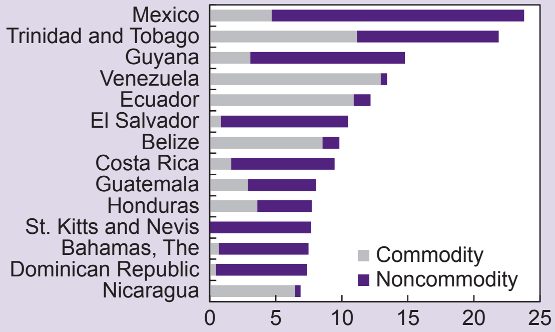
[4] Sample includes 23 countries for April 2015 and 20 countries for December 2015. Pass-through computations based on domestic-currency prices of oil and fuel.

Figure 2.4

The U.S. recovery will have the greatest positive impact on countries featuring close linkages via trade, tourism, and remittances.

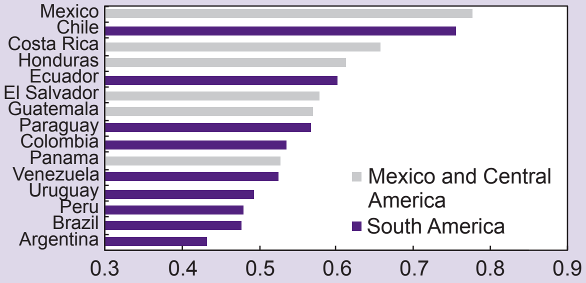
Exports of Goods to the United States[1]

(Percent of GDP)



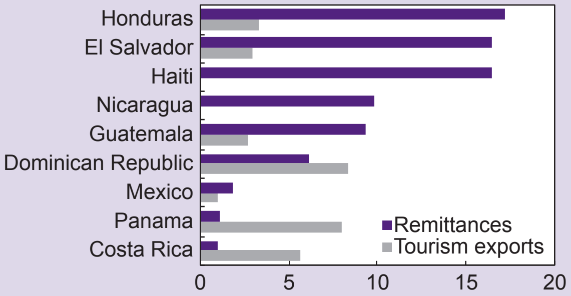
Business Cycle Comovement with the U.S. Economy, 2002–14[2]

(Correlation coefficient for monthly industrial output series)



Remittances and Tourism Exports, 2013–14[3]

(Average, percent of GDP)



Sources: Haver Analytics; IMF, *Direction of Trade Statistics*; IMF, World Economic Outlook database; national authorities; UN Comtrade; and IMF staff calculations.

[1] Average ratios to GDP for 2011–13 or latest available. Countries not shown have ratios below 6 percent of GDP.

[2] Correlation calculated using the U.S. Industrial Production Index with the corresponding IP/Manufacturing/Economic Activity index for each country.

[3] Remittance data for Costa Rica and Dominican Republic end in September 2014. Panama refers to 2013. Tourism exports for Dominican Republic and Guatemala refer to latest eight-quarter data.

Beyond these external influences, there are important country-specific factors that will differentiate economic developments across the region. Most prominent among these are the persistent weakness of private sector confidence in Brazil and the intensifying crisis in Venezuela. More broadly, the capacity to respond to adverse external developments depends on domestic policy space, which is more ample in the Andean economies (Chile, Colombia, and Peru) than in most other countries of the region.

Together, these factors underscore the significant challenges facing South America, notably those economies with weaker macroeconomic fundamentals.

Despite the pronounced slowdown over the past several years, there are few indications of significant economic slack in LAC. Labor markets have started to weaken, but unemployment remains at historically low levels in most of the larger economies;[1] inflation is projected to decline only gradually toward midpoint targets, as the impact of lower commodity prices is balanced by currency depreciation and broadly closed output gaps; and current account deficits have generally widened further (Figure 2.5). Coupled with the drop in investment and chronically sluggish productivity growth, these observations point to a deeper problem of low potential growth, which in the absence of significant structural reforms could jeopardize the region's catch-up process. Indeed, projections for medium-term growth have fallen to their lowest level in at least 15 years.

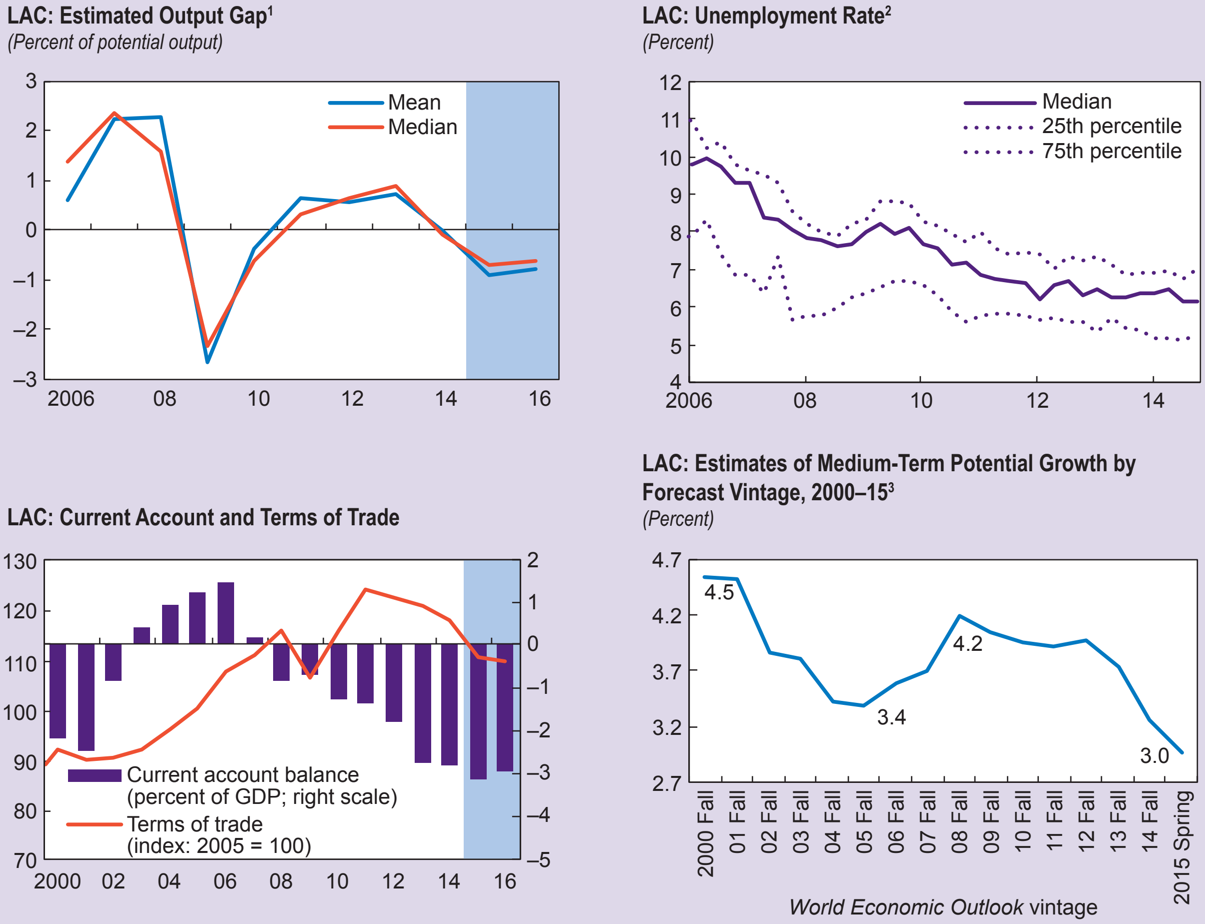
Risks around the outlook are directly related to the factors mentioned previously and, overall, are still weighted to the downside. Further weakness in commodity prices, perhaps related to a more pronounced deceleration of investment in China, would heighten pressures on South America's net commodity exporters. Stronger-than-expected

---

[1] Employment statistics might conceal a weakening in labor demand that occurs chiefly through reduced hours worked by workers in the informal sector. Yet, other indicators, including wage growth, have also remained robust. More broadly, Box 2 in the October 2014 *Regional Economic Outlook: Western Hemisphere Update* shows that labor market developments through mid-2014 were generally consistent with Okun's law.

Figure 2.5

Despite the marked slowdown in growth, output remains close to its estimated potential, consistent with the observation of historically low unemployment rates and wide current account deficits. Meanwhile, estimates of medium-term potential growth have fallen further.



LAC: Estimated Output Gap[1]

(Percent of potential output)

LAC: Unemployment Rate[2]

(Percent)

LAC: Current Account and Terms of Trade

LAC: Estimates of Medium-Term Potential Growth by Forecast Vintage, 2000–15[3]

(Percent)

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

Note: LAC = Latin America and the Caribbean.

[1] Purchasing power parity–weighted GDP statistics; sample includes all 27 LAC countries for which IMF staff estimates output gaps.

[2] Includes Argentina, Brazil, Chile, Colombia, Dominican Republic, Ecuador, Mexico, Peru, Uruguay, and Venezuela.

[3] Reflects projected real GDP growth for the last year (*t* + 5) of the forecast horizon.

U.S. growth would benefit its closest trading partners in the region, but could also accelerate the normalization of U.S. monetary policy. In a scenario of rapidly rising U.S. bond yields, renewed financial turmoil in the euro area, or other global shocks, disruptive moves in Latin American currency and capital markets cannot be ruled out, even as monetary expansion proceeds in the euro area and Japan (see also Chapter 3 of the April 2014 *Regional Economic Outlook: Western Hemisphere*, which analyzes spillovers from U.S. monetary policy in detail). The most exposed are countries with large current account deficits and heavy reliance on U.S. dollar debt, although high levels of official foreign exchange reserves should provide a significant buffer.

The protracted weakening of economic activity also heightens the risk of domestic policy missteps, especially attempts to stave off a structural slowdown with excessive policy stimulus. At present, most countries seem to be resisting this risk, and fiscal stimulus is generally limited to economies with strong public balance sheets, such as Chile and Peru.

However, commitments to fiscal prudence could come under political pressure as expectations for continued economic and social progress become harder to fulfill in a less favorable environment.

Further risks to macroeconomic stability could arise from a sharper-than-expected worsening of asset quality in the banking system, as lower earnings take their toll on corporate and household borrowers (Box 2.1). Policymakers will therefore have to monitor closely indicators of financial vulnerability and ensure that lenders maintain sufficient balance sheet buffers to manage the downswing in the credit cycle.

Financially Integrated Economies

Developments and Outlook

Growth trends among the financially integrated economies (LA6, comprising Brazil, Chile, Colombia, Mexico, Peru, and Uruguay) are projected to diverge over the period ahead, reflecting distinct exposures to global commodity markets and other country-specific factors (Figure 2.6):

- *Brazil* is undergoing its most serious economic downturn in more than two decades, with output projected to contract by 1 percent in 2015. Private investment remains an important drag, as long-standing competitiveness problems are being compounded by weaker terms of trade and high uncertainty, including about the fallout from the Petrobras investigation and the impact of a protracted drought on electricity supply. Consumer sentiment has also worsened sharply, amid elevated inflation, tighter credit supply, and an incipient weakening of the labor market. The authorities' move to tighten macroeconomic policies adds to the short-term weakness of demand, but is critically needed to contain the rise in public debt and rebuild trust in the macroeconomic policy framework. Similarly, the ongoing realignment of key relative prices, including the real exchange rate, should help to improve prospects for investment over time.
- *Mexico*, the second-largest economy in the region, faces a comparatively favorable outlook, even though earlier growth forecasts have been pared back once again. GDP is projected to expand by 3 percent this year. Stronger external demand from the United States has started to support activity, whereas domestic confidence and demand have yet to perk up. The immediate impact on growth from lower oil prices is limited, given the relatively small share of hydrocarbon sector activity in GDP. However, the drop in government revenue has prompted a modest fiscal tightening for 2015. Potential longer-term gains from reforms in the telecommunications and energy sector remain significant, though persistently low oil prices could dampen investor interest over time.
- Among the other financially integrated economies, *Chile*, *Colombia*, and *Peru* are all facing headwinds from lower commodity export prices and the related cuts to corporate investment. In Chile and Peru, these headwinds have been felt for some time, as metal prices started to decline more than three years ago. More recently, cheaper oil imports have provided some offset. Growth is likely to rebound this year, helped by expansionary policies and the removal of short-term brakes on activity, notably last year's delays in Peruvian mining production. Still, important uncertainties cloud the horizon in both countries, related to external conditions, the impact of ongoing reforms in Chile, and slow investment execution at the subnational level in Peru. For Colombia, in turn, terms of trade pressures have mounted recently, as the oil price collapse has hit the country's largest export sector. Growth is projected to ease below 4 percent but remain fairly resilient, as the sharp depreciation of the peso should support noncommodity exports over time. *Uruguay*, meanwhile, continues to post solid growth but is undergoing a gradual slowdown, linked to weak activity in neighboring Argentina and Brazil.

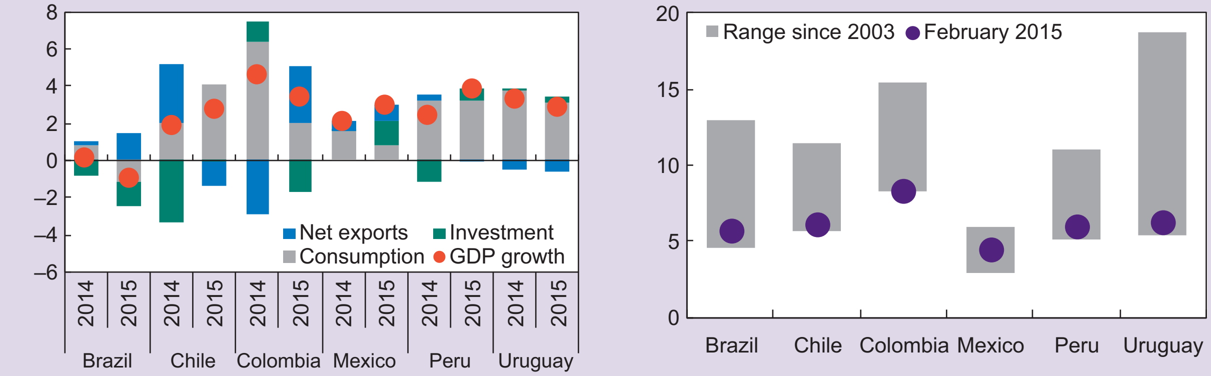
Across most of the LA6, employment growth has slowed. At the same time, persistently low unemployment rates and still-solid wage growth suggest that economic slack generally remains

Figure 2.6

Although growth dynamics across the financially integrated economies are expected to diverge, labor markets remain relatively firm in most countries. Depreciated currencies should help reduce current account deficits over time, though they contribute to keeping inflation above target over the near term.

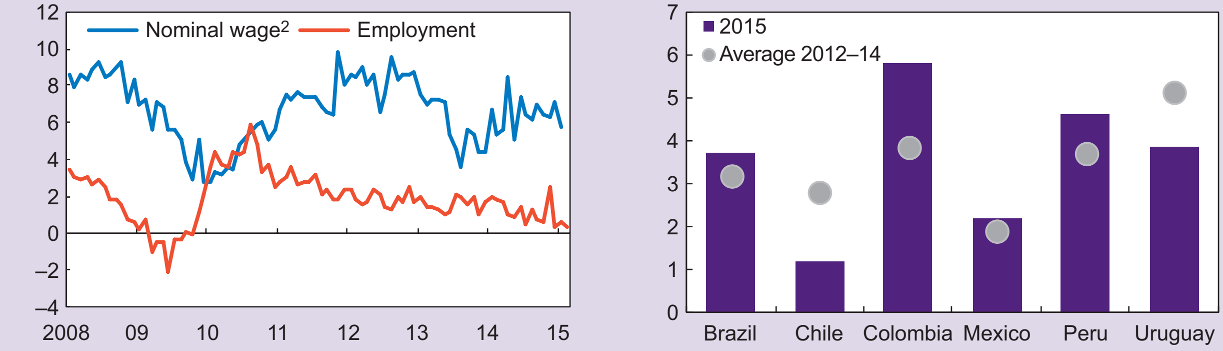
LA6: Real GDP Growth Contributions
(Percentage points)

LA6: Unemployment Rate[1]
(Percent)



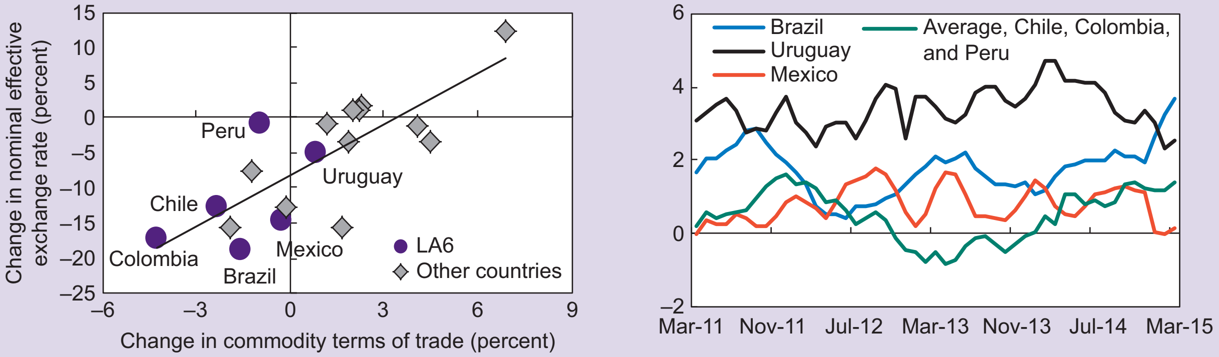
LA6: Nominal Wage and Employment Growth
(Median, 12-month percentage change, seasonally adjusted)

LA6: Current Account Deficit
(Percent of GDP)



LA6: Change in NEER versus Change in Commodity Terms of Trade Since April 2013[3]

LA6: Headline Inflation Less Inflation Target
(12-month percentage change)



Sources: Bloomberg, L.P.; Haver Analytics; IMF, *Information Notice System*; IMF, World Economic Outlook database; national authorities; UN Comtrade; and IMF staff calculations.

Note: LA6 = Brazil, Chile, Colombia, Mexico, Peru, and Uruguay; NEER = nominal effective exchange rate.

[1] Seasonally adjusted. Latest observation for Uruguay is January 2015.

[2] Peru data are minimum wage.

[3] Data are through end-February 2015. Other countries include Hungary, India, Indonesia, Israel, Korea, Malaysia, Philippines, Poland, Romania, South Africa, Thailand, and Turkey. Commodity terms of trade are weighted by the share of commodity exports/imports in GDP, so a 1 percent increase can be interpreted approximately as an income gain of 1 percent of GDP. Indices exclude precious metals, except for Colombia and Peru. See also Annex 3.1 and Gruss (2014).

limited. Large deficits in external current accounts and above-target inflation rates support this view, even though they have also been affected by other important factors of late:

- External deficits have continued to widen in several of the LA6 economies (Chile being a notable counterexample) as lower commodity prices have reduced export proceeds. In response, exchange rates have depreciated, and typically more so in countries hit by larger terms-of-trade shocks. Over time, these weaker exchange rates—some currencies have depreciated as much as 25 percent against the U.S. dollar in six months, though movements in trade-weighted terms have been much less extreme—should help to boost net exports. Yet, IMF staff research suggests that much of this adjustment typically occurs through the compression of imports, as domestic demand cools, rather than a rise in export volumes (see Chapter 3; see also Box 2.2 on the broader implications of U.S. dollar strength for Latin America).

- Depreciated exchange rates have also put some upward pressure on consumer prices. However, estimated pass-through rates are moderate (below 0.1), and lower commodity prices have had a countervailing effect.

On balance, macroeconomic data do not yet point to a significant shortfall in aggregate demand, cautioning against excessive macroeconomic stimulus even where policy space would be available in principle.

Amid persistent current account deficits, the structure of external financing has been broadly stable (Figure 2.7). Both foreign direct investment (FDI) and portfolio inflows have remained sizable, while other investment has edged up. Thus, foreign holdings of domestic-currency government bonds have reached new record levels in Colombia and Mexico. Simultaneously, corporate bond issuance has continued at a rapid clip, albeit below 2013 peak rates.

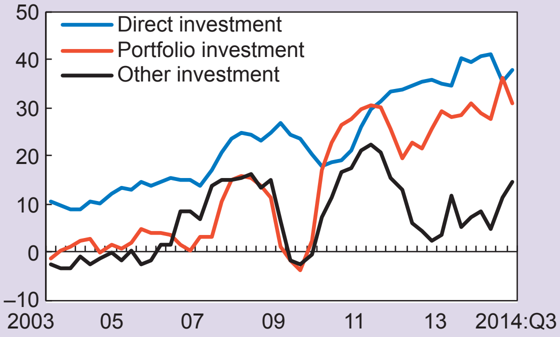
Countries' considerable reliance on non-FDI inflows could foreshadow further volatility in currencies and broader asset markets.

Figure 2.7

Capital inflows have remained strong, supporting high foreign holdings of local-currency bonds and robust corporate issuance.

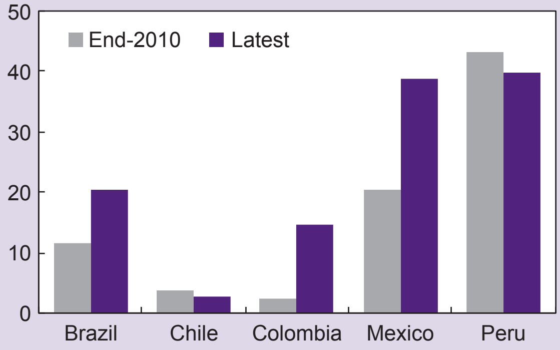
LA6: Gross Capital Inflows[1]

(Billions of U.S. dollars, four-quarter moving average)



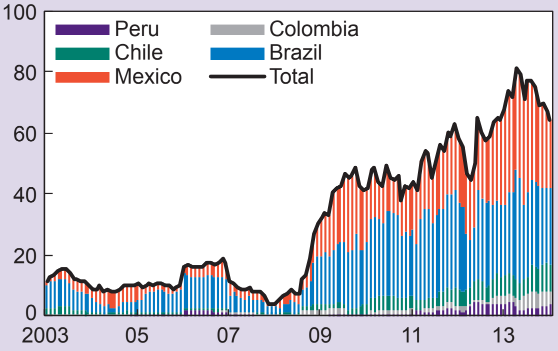
LA5: Nonresident Holdings of Domestic Debt

(Percent of total)



LA6: Foreign Bond Issuance: Nonfinancial Firms[2]

(Billions of U.S. dollars, 12-month moving average)



Sources: Dealogic; IMF, *Balance of Payments Statistics Yearbook*; national authorities; and IMF staff calculations.

Note: LA6 = Brazil, Chile, Colombia, Mexico, Peru, and Uruguay; LA5 excludes Uruguay.

[1] Excludes Peru.

[2] Residency-based issuance criterion for all countries except Brazil, which is based on nationality criterion.

This also entails the risk that external financing conditions for Latin American borrowers might tighten abruptly, whether in response to specific news from the region or because of external developments, notably the anticipated tightening of U.S. monetary policy.

Concerns are focused on firms from the financially integrated economies that have ramped up their bond issuance in international capital markets since the global financial crisis. Immediate repricing and rollover risks are limited by the fact that many firms used the favorable market conditions of recent years to issue longer-maturity bonds with fixed-rate coupons.

Question marks remain, however, over the possibility that some firms may have built up foreign-currency liabilities that are not matched by foreign-currency claims or revenue streams. To date, there is no evidence that such open positions have led to financial difficulties among LA6 firms, despite the sharp recent depreciation of domestic currencies. Nonetheless, this risk requires close monitoring, especially since firms' debt-servicing capacity is already being pressured by lower earnings (Figure 2.8). In this context, some commodity sector firms have seen a notable increase in credit spreads, and corporate investment budgets have been trimmed across the board.

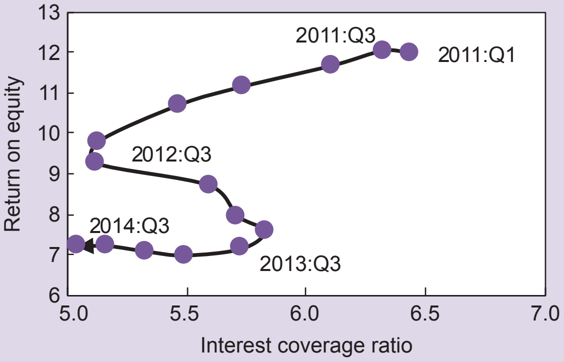
Reflecting the more challenging outlook, domestic credit growth has also slowed. Lower loan demand has been a principal factor, but in some cases (notably, loans extended by public banks in Brazil) a deliberate tightening of credit supply is playing a role as well. Thus far, the share of nonperforming loans has generally remained moderate (at or below 3 percent), but asset quality is likely to worsen over the period ahead, especially in economies that saw credit grow at a rapid clip in recent years and are now facing a sharp economic slowdown (Box 2.1). In these economies, the unanticipated weakening of activity is likely to catch some borrowers off guard. For households, the main concerns relate to a higher risk of unemployment, while relatively underdeveloped mortgage markets limit the risks associated with falling house prices.

Figure 2.8

Weaker corporate earnings have reduced interest coverage ratios and prompted cuts to investment plans. Credit growth has slowed.

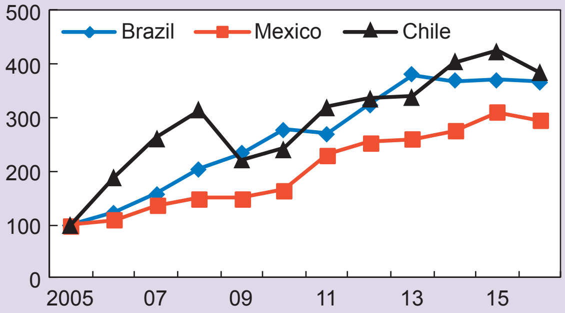
Recent Evolution of the Interest Coverage Ratio and Return on Equity[1]

(Median; x-axis: ratio; y-axis: percent)



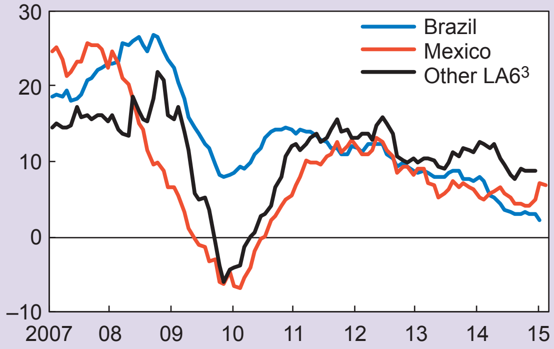
Capital Expenditure of Selected Large Firms[2]

(Index: 2005 = 100)



LA6: Credit to the Private Sector in Real Terms

(12-month percentage change)



Sources: Bloomberg, L.P.; Haver Analytics; IMF, Financial Soundness Indicators database; national authorities; and IMF staff calculations.

[1] Sample includes about 400 nonfinancial firms from Brazil, Chile, Colombia, Mexico, and Peru. Four-quarter rolling averages of median values.

[2] Index based on sum of nominal capital expenditures (in local currency) of 26 large companies from Brazil, Chile, and Mexico; historical data up to 2013, and analyst forecasts for 2015 and 2016; 2014 refers to outturns where available, and otherwise analyst forecasts.

[3] Simple average of Chile, Colombia, Peru, and Uruguay.

Policy Priorities

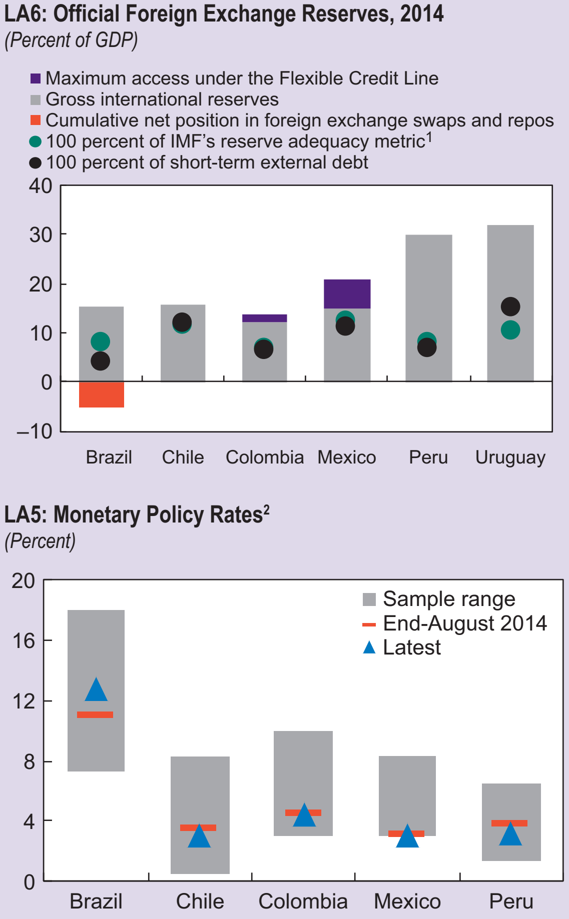
The combination of subdued growth, limited economic slack, and growing financial risks presents significant challenges to policymakers. Although the extent of these challenges varies across the LA6 economies, a core set of five policy considerations applies to all of them.

First, flexible exchange rates can play a crucial role in the adjustment to a more difficult external environment. In particular, weaker currencies help to redirect demand toward domestically produced output, thereby reducing external deficits.

Strong official reserve buffers allow the authorities in the LA6 to mitigate acute depreciation pressures (Figure 2.9), but intervention should be limited to cases where exchange rate volatility becomes excessive, market conditions turn disorderly, or other significant financial stability risks emerge. Thus far, currency movements have been large but orderly, and in general have reduced, rather than amplified, concerns about currency misalignment. It is therefore judicious that authorities have mostly allowed their exchange rates to adjust, despite relatively frequent intervention in Peru (a highly dollarized economy, where sharp exchange rate movements could have more disruptive effects on the real economy). The Brazilian authorities' decision to end their long-running foreign exchange swap program, which had accumulated a synthetic short position in foreign currency of more than $113 billion by end-March, is welcome.

Figure 2.9

Reserve buffers remain strong across the LA6 economies. Central banks have recently cut rates in Chile and Peru, but hiked in Brazil.



LA6: Official Foreign Exchange Reserves, 2014
(Percent of GDP)

LA5: Monetary Policy Rates[2]
(Percent)

Sources: Bloomberg, L.P.; IMF, *International Financial Statistics*; IMF, World Economic Outlook database; national authorities; and IMF staff calculations.
Note: LA6 = Brazil, Chile, Colombia, Mexico, Peru, and Uruguay; LA5 excludes Uruguay.
[1] Methodology described in Moghadam, Ostry, and Sheehy (2011).
[2] Sample period is January 2006 to April 13, 2015

Second, vigilant monitoring of financial stability risks has gained further importance in an environment of sharp exchange rate movements, lower earnings and, in some cases, rising interest rates. Banking systems in the financially integrated economies generally continue to post solid levels of capitalization and profitability, yet the challenges ahead argue for a clear focus on maintaining or even strengthening existing buffers. In this regard, it is welcome that the authorities in Peru recently raised further the reserve requirement on foreign-currency-denominated deposits. Regarding the corporate sector, further efforts are needed to gather granular data on unhedged currency exposures.

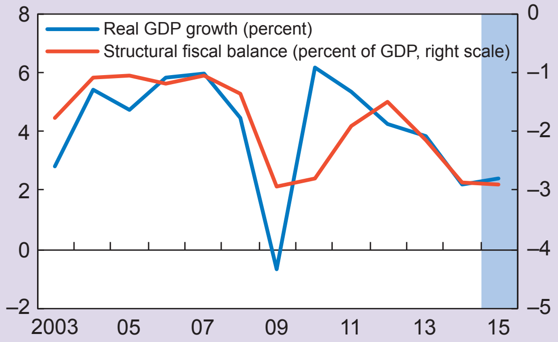
Third, monetary policy should remain focused on keeping expected inflation in line with official targets. Unlike many emerging markets in Asia and Europe, where inflation rates have fallen to very low levels, the LA6 generally still face above-target inflation, partly reflecting sharp recent currency depreciation. As a result, policy easing has been more limited, with only Chile and Peru recently enacting modest rate cuts (Figure 2.9). Meanwhile, central banks in Brazil and Uruguay continue to face the task of strengthening the credibility of their monetary frameworks, as inflation persists in high single digits. The determined further tightening of monetary policy in Brazil since late 2014 is appropriate in this regard.

Fourth, fiscal policy choices need to weigh not only what is *desirable* from a cyclical perspective, but also what is *feasible* without jeopardizing debt sustainability. Given still-limited slack in most economies, the case for policy stimulus appears tenuous from the outset. Even where rising output gaps are in prospect due to the recent terms-of-trade shock, policymakers must consider the likelihood that much of that shock is likely to be permanent (see Chapter 3). As such, fiscal policy can soften but not prevent the impact of the shock, consistent with the design of structural fiscal rules like those in Chile and Colombia. For several economies, cyclical considerations are, in any event, outweighed by the reality of limited fiscal space. Indeed, the average structural deficit across the LA6 has gradually widened in recent years and is now 2 percentage points of GDP higher than in 2004 (Figure 2.10), when the terms of trade were much weaker than they are today. This deficit bias has been particularly apparent in Brazil, where, as a consequence, the authorities now have little choice but to tighten fiscal policy in the midst of a downturn. Tighter fiscal stances are also impending in Mexico, Uruguay, and, by 2016, in Colombia. Chile and Peru, in turn, have the most latitude to smooth the inevitable adjustment to a weaker terms-of-trade environment, reflecting low public debt levels.

Figure 2.10

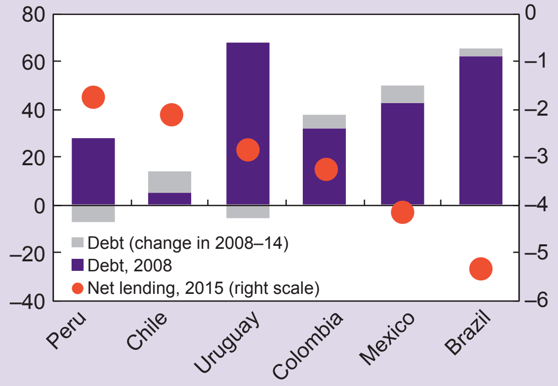
Fiscal policy in the financially integrated economies has tended to be countercyclical in recent years, however with a deficit bias. As a result, debt has risen in several countries.

LA5: Real GDP Growth and Structural Fiscal Balance[1]



LA6: General Government Gross Debt and Net Lending[2]

(Percent of fiscal year GDP)



Sources: IMF, World Economic Outlook database; and IMF staff calculations and projections.

Note: LA6 = Brazil, Chile, Colombia, Mexico, Peru, and Uruguay. LA5 excludes Uruguay.

[1] Simple average of Brazil, Chile, Colombia, Mexico, and Peru.

[2] For definitions of government coverage, see Table A2.2.

Last but not least, the above considerations underscore the central importance of *structural reforms* to restore robust, sustainable growth. With the tailwinds of the commodity boom decidedly over, long-standing problems of low saving, investment, and productivity have come back to the fore in many economies. Addressing these problems is becoming ever more urgent to avoid an extended period of low growth. Efforts should focus on eliminating critical bottlenecks in infrastructure and human capital—both areas where private investment can play a role but where some reprioritization and reoptimization of public spending will also be required (Figure 2.11).[2] These efforts need to be supported by steps to improve the business environment, with the goal of fostering more diversified, resilient, and prosperous economies (see also Chapter 5).

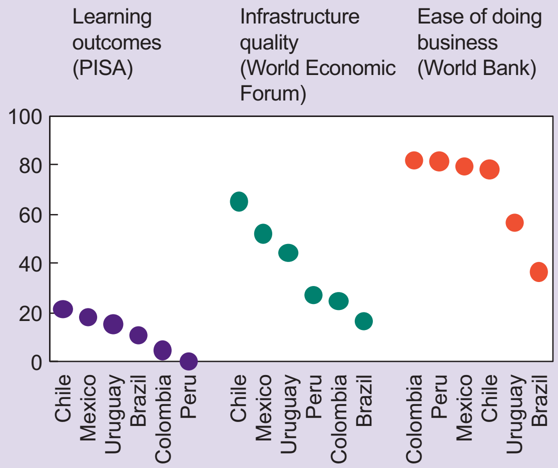
---

[2] On the challenge of raising domestic saving rates, see Grigoli, Herman, and Schmidt-Hebbel (2014).

Figure 2.11

LA6: Structural Performance Indicators

(Percentile ranks)



Sources: Organisation for Economic Co-operation and Development, *2012 Programme for International Student Assessment* (PISA); World Bank, 2015 Ease of Doing Business database; World Economic Forum, *2014–15 Global Competitiveness Report*; and IMF staff calculations.
Note: LA6 = Brazil, Chile, Colombia, Mexico, Peru, and Uruguay. The scale reflects the percentile distribution in all countries for each respective survey; higher scores reflect higher performance.

Several countries have already launched reforms in these areas, but more work is needed in many of the LA6 economies to strengthen governance, reduce excessive bureaucratic burdens, and promote competition.

Other Commodity Exporters

Developments and Outlook

Economic developments across the remaining (less financially integrated) commodity exporters of South America have continued to diverge (Figure 2.12). The halving of oil prices since mid-2014 has caused major setbacks for Bolivia, Ecuador, and especially Venezuela, whereas Paraguay—which exports agricultural products and electricity but imports all of its fuel needs—has benefited. Beyond these external shocks, domestic policies have played a crucial role in determining the country-specific outlook.

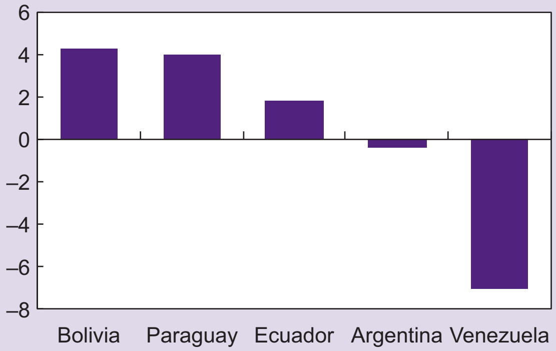
For *Venezuela*'s economy, the massive terms-of-trade shock suffered over the past few months has made

Figure 2.12

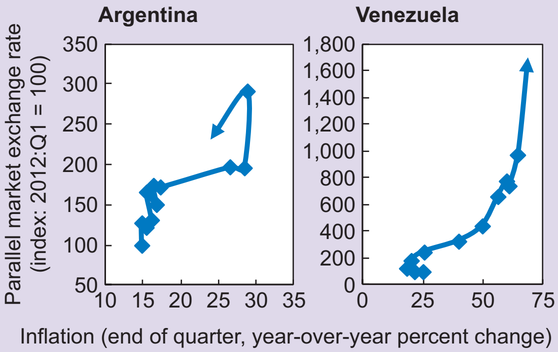
Growth prospects differ markedly across the other South American commodity exporters, as solid activity in Bolivia and Paraguay contrasts with a deepening crisis in Venezuela.

Other Commodity Exporters: Real GDP Growth, 2015

(Percent)

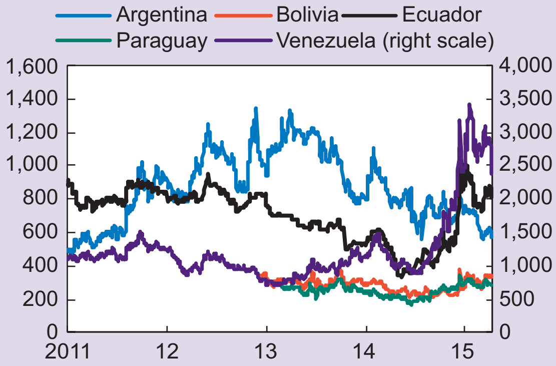


Inflation and Parallel Market Exchange Rates, 2012:Q1–2014:Q4[1]



Other Commodity Exporters: Sovereign Credit Spreads[2]

(Basis points)



Sources: Bloomberg, L.P.; Haver Analytics; IMF, World Economic Outlook database; national authorities; and IMF staff calculations.

[1] Inflation data for Argentina reflect staff estimates through 2014:Q3 and official IPCNu data thereafter.

[2] Refers to J.P. Morgan Emerging Market Bond Index.

an already difficult situation even worse. Years of unsustainable macroeconomic expansion and heavy-handed microeconomic intervention have created a mix of high double-digit inflation, acute scarcities, and depressed private sector confidence that prompted a slide into recession in early 2014. All of these problems have recently been aggravated by a sharp drop in government revenue from oil exports, which has further intensified the shortage of foreign currency and driven the informal exchange rate up to a level of 280 bolivars per U.S. dollar, more than 40 times higher than the lowest official exchange rate in Venezuela's complex multiple-exchange-rate system. Simultaneously, financial markets have started to signal a high risk of default. The authorities have responded to the deepening economic crisis by further tightening price and quantity controls and nationalizing more enterprises. Amid the ensuing disruptions, Venezuela is projected to face both the highest inflation rate (95 percent) and third-largest output contraction (−7 percent) of any economy in the world in 2015.

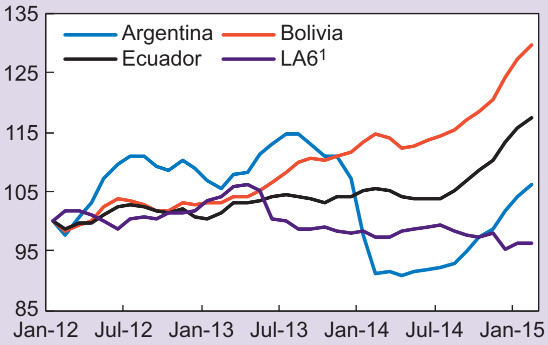
Argentina's macroeconomic imbalances also remain significant, following an extended period of fiscal expansion that has increasingly relied on central bank financing. Intrusive restrictions on trade and currency markets have also created a significant gap between the official and the informal exchange rate of the peso. That said, the exchange rate gap has stabilized at 40–50 percent since late 2014, and inflation appears to have eased back into the lower double digits. Financial investor sentiment toward Argentina has also recovered some ground, even though the ongoing standoff with holdout investors leaves the country shut off from global bond markets. Investors' relative optimism appears linked to Argentina's moderate external indebtedness along with an expectation that some of the most disruptive economic policies might be relaxed following elections in October. Recent legal changes have also improved the investment climate for international oil companies, holding out the prospect of tapping Argentina's large potential in the energy sector. However, adverse terms-of-trade developments (notably the sharp drop in soy prices), weak activity in Brazil, and the renewed appreciation of the real effective exchange rate have added fresh headwinds to growth. Thus, output is projected to decline 0.3 percent in 2015, extending last year's slowdown.

Ecuador is projected to suffer a marked deceleration, with growth at 1.9 percent in 2015, while *Bolivia*'s growth rate would ease to a still-robust 4.3 percent. Both economies have large hydrocarbon sectors and are undergoing the adjustment to much lower oil and gas prices after a decade of boom-like conditions. For Ecuador, which has seen the largest expansion of primary government spending of all economies in the region since 2004, the absence of fiscal buffers poses a particular challenge. As a fully dollarized economy, Ecuador also cannot benefit from nominal exchange rate depreciation to help the adjustment to weaker external conditions. In this context, the authorities have recently imposed import surcharges (subject to review by the World Trade Organization), citing concerns over balance of payments pressures. In Bolivia, fiscal reserves are available to smooth the downturn, but several ongoing policy initiatives—including steps to expand central bank lending to public enterprises—are likely to accelerate the weakening of public balance sheets. Moreover, the authorities have resisted any currency depreciation, hampering the necessary rebalancing of demand (Figure 2.13).

Figure 2.13

Other Commodity Exporters: Real Effective Exchange Rates

(Index: January 2012 = 100)



Source: IMF, *Information Notice System*.

[1] Simple average of Brazil, Chile, Colombia, Mexico, Peru, and Uruguay.

Paraguay, in turn, is projected to sustain growth at about 4 percent in 2015, spurred by cheaper oil, a projected rebound in electricity generation, and the launch of several infrastructure projects. Solid macroeconomic fundamentals, including moderate public sector debt and a recently established inflation targeting regime, underpin the comparatively favorable outlook, and have manifested themselves in external borrowing costs well below those of many regional peers.

Policy Priorities

Necessary policy adjustments mirror the distinct circumstances of each country, although fiscal consolidation, eliminating energy subsidies, and greater exchange rate flexibility are common priorities in all of the economies where macroeconomic imbalances have been mounting.

In Venezuela, the damage caused by years of economic mismanagement will be impossible to reverse in a short time. Yet, any successful stabilization of the situation will have to involve further depreciation of the (average) official exchange rate, a reduction of the large fiscal deficit, and an end to monetary financing, as well as the unwinding of a host of dirigiste measures that have choked private sector activity.

Although its economic disruptions are less extreme, Argentina will require a similar mix of tighter macroeconomic policies, a weaker exchange rate, and less microeconomic distortion to lay the foundation for a return to stability and growth.

For Bolivia and Ecuador, the principal challenge is to rein in fiscal and external deficits that have opened up with the drop in oil and gas prices. The very large expansion of government spending in recent years has arguably created areas of inefficiency where savings can and should now be sought. Greater flexibility of the exchange rate and, failing that, of domestic prices would facilitate the adjustment. Paraguay, in turn, will need to integrate the envisaged buildup of public infrastructure into a prudent medium-term fiscal plan. Across all three economies, resolute efforts to address governance issues and enhance educational outcomes are also crucial.

Central America and the Dominican Republic

Developments and Outlook

Unlike South America, Central America's economies are expected to benefit from the current external environment (Figure 2.14). The global pattern of U.S.-led recovery is particularly favorable for the region, given its strong real-sector linkages to the U.S. economy through exports and remittances, which are likely to outweigh the tightening of financial conditions resulting from orderly U.S. monetary policy normalization.[3] Windfall gains from the decline in oil prices are also important, as all Central American countries are net oil importers (Box 2.3). At the same time, there are country-specific headwinds to growth; and many economies cope with long-standing fiscal and external vulnerabilities as well as deep-seated problems of governance and security, that leave some clouds on an otherwise brighter outlook.

Growth in 2015 is projected at a solid 4¼ percent, close to last year's outturn. However, this headline number masks important country differences. In the Dominican Republic, growth is set to slow after several years of above-trend expansion. Guatemala's economy should continue to grow at a broadly unchanged rate, as the effect of a more favorable external environment makes up for a negative base effect, related to last year's launch of several new mining projects. Elsewhere in the region, growth will also be steady or increase modestly, despite a number of idiosyncratic factors that dampen the boost from external conditions—these include the normalization of the public investment cycle in Panama, reduced financing from Venezuela's Petrocaribe program, and welcome fiscal consolidation in Honduras and possibly Costa Rica.

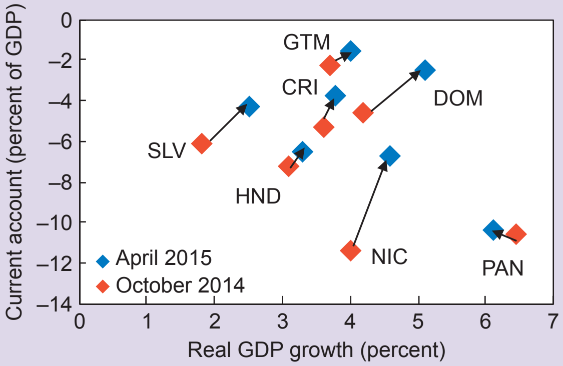
---

[3] See the April 2014 *Regional Economic Outlook: Western Hemisphere*, Chapter 3.

Figure 2.14

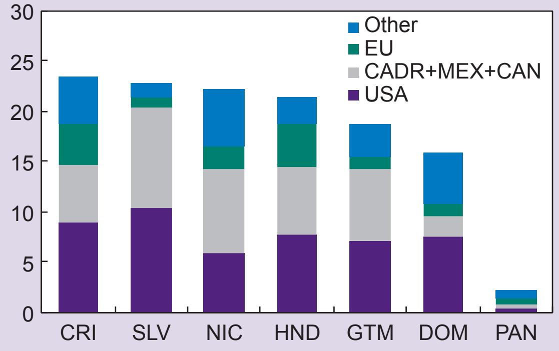
Growth prospects for Central America have brightened, owing to cheaper oil and a solid U.S. recovery.

CADR: Revisions to Growth and Current Account Projections, 2015



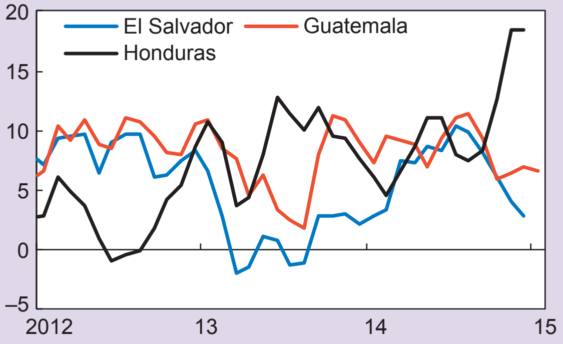
CADR: Destination of Goods Exports, 2013[1]

(Percent of GDP)



Workers' Remittances[2]

(12-month percentage change, 3-month moving average)



Sources: Haver Analytics; IMF, *Direction of Trade Statistics*; IMF, World Economic Outlook database; national authorities; and IMF staff calculations.

Note: CADR = Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and Panama; EU = European Union. For country name abbreviations, see page 79.

[1] Many countries also export significant amounts of services to the United States, which are not captured in this chart owing to data constraints.

[2] Measured in U.S. dollars.

Headline inflation across Central America has fallen much more sharply in the wake of lower global oil prices than in larger Latin American countries. This reflects both greater pass-through to domestic energy prices and the absence of depreciation pressures in the region.

However, fiscal vulnerabilities render some Central American countries susceptible to downside risks, especially since public debt levels are projected to stay elevated and, in some cases, increase further under current policies.

External bond spreads have widened again during the recent period of volatility in emerging markets, highlighting the risks associated with large financing needs (Figures 2.15 and 2.16).

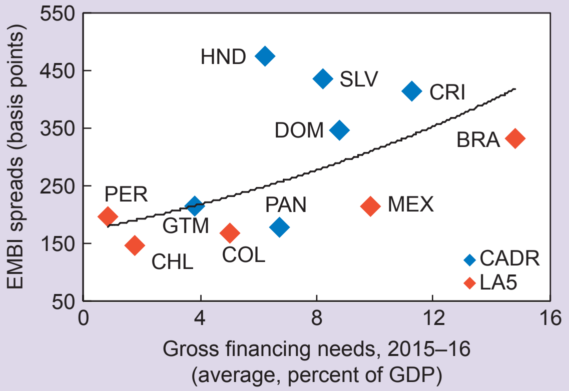
External vulnerabilities are tempered by the prospect of narrower current account deficits that should be fully financeable by foreign direct investment in several countries. Current account deficits will shrink due to both lower oil prices and higher U.S. growth, and could approach 5 percent of GDP in 2015 on average, down from nearly 6 percent of GDP in 2014 and 7 percent of GDP in 2013. Foreign direct investment and portfolio flows have remained steady, with sovereigns continuing to tap international markets in significant amounts. International reserve coverage has improved somewhat, although buffers generally remain modest.

Credit growth has eased in most countries from the peaks reached in recent years, with the Dominican Republic a notable exception. Slower growth in foreign-currency-denominated loans has been an important factor in Central America, possibly reflecting some greater internalization of exchange rate risks by borrowers—particularly in Costa Rica, following a period of exchange rate volatility in early 2014—as well as greater use of alternative funding sources, notably external corporate bond issuance in the case of Guatemala. Although banks are generally well capitalized and already meet Basel III liquidity requirements, vulnerabilities to credit risks from unhedged borrowers have increased after a period of strong growth in foreign currency loans.

Figure 2.15

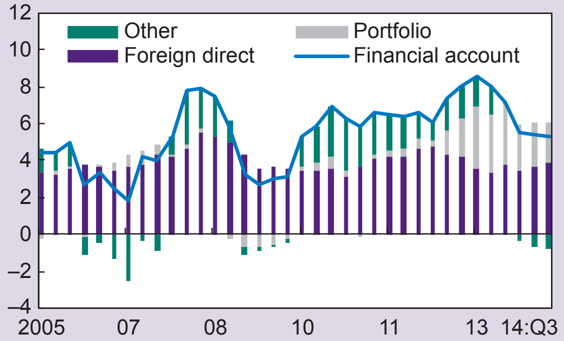
Fiscal and external vulnerabilities remain significant in several countries, although current account deficits are set to shrink.

CADR: Gross Public Sector Financing Needs and External Debt Spreads[1]



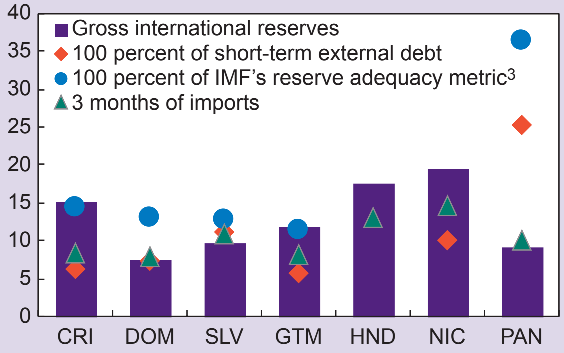
CADR: Net Capital Flows[2]

(Four-quarter moving average, percent of GDP)



CADR: Reserve Coverage, 2014

(Percent of GDP)



Sources: IMF, *Balance of Payments Statistics Yearbook*; national authorities; and IMF staff calculations.

Note: CADR = Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and Panama; EMBI = Emerging Markets Bond Index. For country name abbreviations, see page 79.

[1] Definition of the public sector varies by country.

[2] CADR excluding El Salvador and Panama.

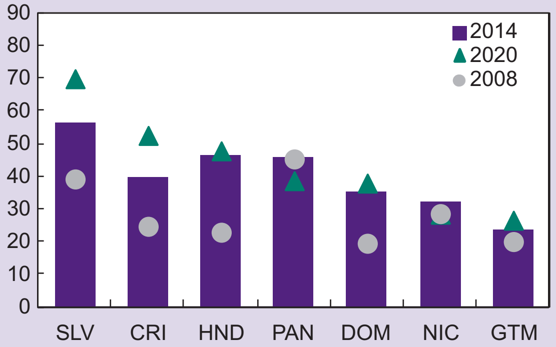
[3] Methodology described in Moghadam, Ostry, and Sheehy (2011).

Figure 2.16

Under current policies, public debt would continue to rise in several economies. Credit growth has eased in Central America recently.

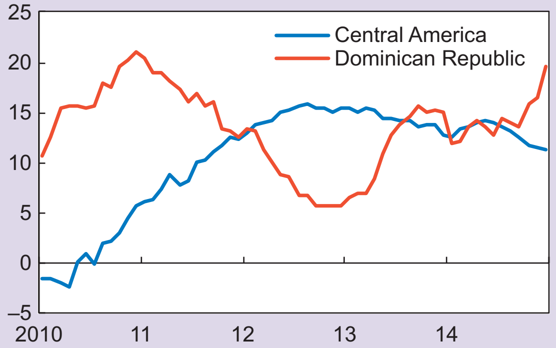
CADR: General Government Gross Debt

(Percent of fiscal year GDP)



CADR: Credit to the Private Sector[1]

(Year-over-year percentage change)



Sources: IMF, World Economic Outlook database; national authorities; and IMF staff calculations.

Note: CADR = Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and Panama. For country name abbreviations, see page 79.

[1] Central America is the simple average of Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama.

Policy Priorities

Policymakers in the region should take advantage of the opportunity provided by a more favorable external environment to further reduce fiscal vulnerabilities and foster inclusive growth. On the fiscal front, any direct windfall gains from faster growth and reduced public subsidies (resulting from lower oil prices) should be saved at least initially, given uncertainties about their durability as well as the need to rebuild policy space to respond to future negative shocks. This would be of particular importance in countries with large sustainability gaps. Lower oil prices should also facilitate the implementation of measures foreseen in existing or recommended consolidation programs, including the phasing out of energy subsidies and increases in value-added tax rates. More generally, countries would benefit from strengthening policy frameworks, including through the introduction of fiscal rules and adoption of measures to enhance transparency and minimize contingent risks from public-private partnerships.

Central banks in the nondollarized economies should advance their efforts to strengthen inflation-targeting frameworks. In general, it seems appropriate to avoid responding to the first-round effects on headline inflation from lower commodity prices, especially in countries where underlying price pressures could soon reemerge due to limited spare capacity. Indeed, the fall in headline inflation provides an opportunity to better anchor inflation expectations that have persisted above official targets in some cases. Allowing greater exchange rate flexibility will also be important to underpin the credibility of inflation-targeting frameworks and facilitate the adjustment to external shocks. In this regard, the recent removal of the exchange rate band in Costa Rica marks a step in the right direction. Separately, further enhancements to prudential regulations are needed to reduce financial vulnerabilities, including those related to credit dollarization.

Further progress in structural reforms will also be critical to achieve sustained and inclusive growth. A key priority relates to tax reforms that create the fiscal space for higher public investment and education spending, helping to overcome existing supply bottlenecks and enhance human capital and productivity. These efforts should be supplemented by improvements in the business environment, which will help to attract private investment.

The Caribbean

Developments and Outlook

Prospects for economic growth in the Caribbean are the product of opposing forces. On the one hand, the projected recovery of the U.S. economy provides a positive impulse, especially to tourism-based economies that depend heavily on U.S. visitors. Even more important, all Caribbean economies, with the significant exception of Trinidad and Tobago, are net hydrocarbon importers and as such benefit from the sharp drop in oil prices. On the other hand, these positive impulses are clearly not powerful enough to overcome the long-standing structural weaknesses holding back the region. Moreover, the oil market rout has heightened the risk of disruptions to the Petrocaribe program through which Venezuela has been providing subsidized financing of oil imports to many partner economies in the Caribbean and beyond (Box 2.3).

On balance, the economic recovery is expected to continue, even as external, fiscal, and financial vulnerabilities remain high in several economies. In the tourism-dependent Caribbean, average growth reached 1.5 percent in 2014—the highest rate since 2007—and is projected to improve further, to 2.0 percent, in 2015 (Figure 2.17). The better momentum is led by The Bahamas and Jamaica, as well as several economies from the Eastern Caribbean Currency Union (ECCU). The commodity-exporting Caribbean, in turn, lacks the tailwinds from stronger terms of trade, but is still set to grow at 2.4 percent on average, only slightly below last year's outturn.[4]

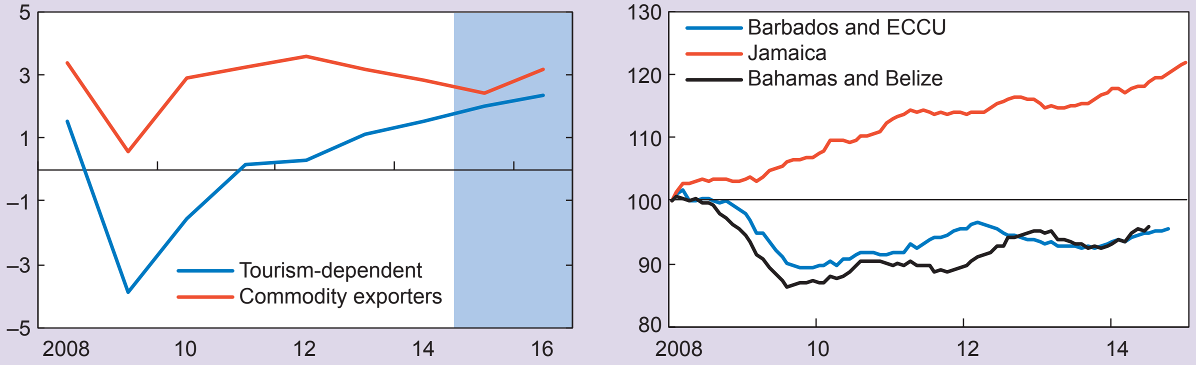
Despite this moderately more favorable outlook, tremendous challenges remain. For many tourist destinations in the Caribbean, the recent rise in arrivals follows several years of stagnation or decline, reflecting competitiveness gaps that even a broad-based recovery in U.S. and European tourism demand is unlikely to offset. In fact, problems related to the Caribbean's high cost levels could worsen further, as the region's pegged currencies appreciate in lockstep with the U.S. dollar. Unless this effect is offset by other cost savings or significant upgrades to the tourism product,

---

[4] These growth numbers refer to simple averages, which tend to be higher than GDP-weighted averages, given that the region's largest economy (Trinidad and Tobago) has one of the lowest growth rates.

Figure 2.17

Improving external conditions underpin a somewhat better outlook for growth in the Caribbean. However, significant fiscal, external, and financial vulnerabilities remain to be addressed.

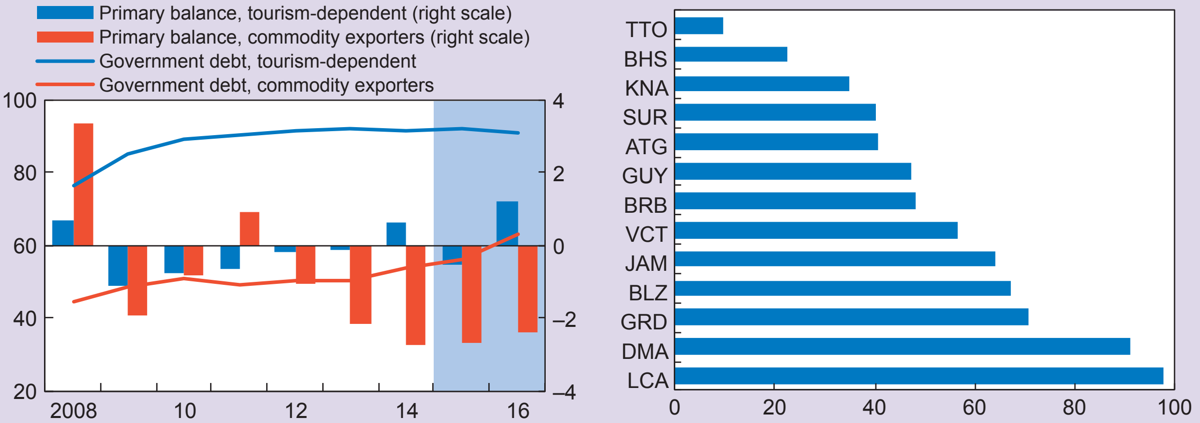


Caribbean: Real GDP Growth[1]

(Percent change)

Caribbean: Tourist Arrivals

(Index: 2008 = 100; 12-month moving average)

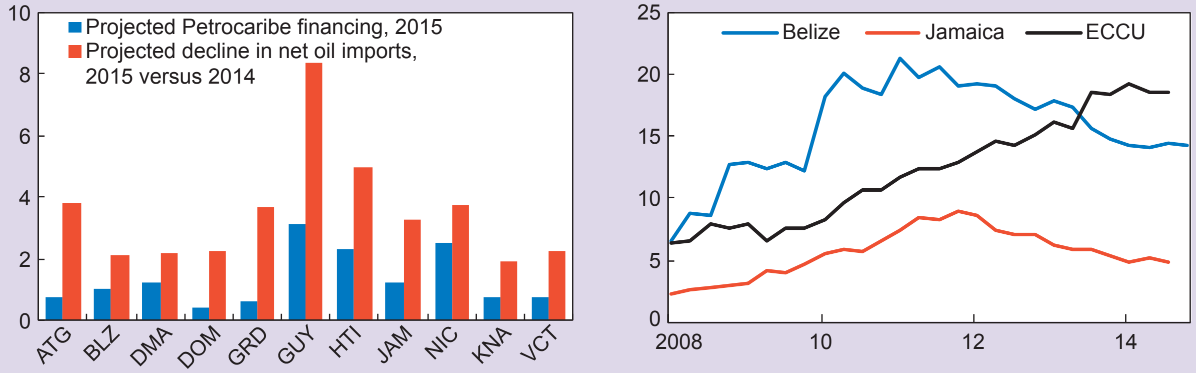


Caribbean: Fiscal Accounts

(Percent of fiscal year GDP)

Caribbean: External Debt, 2014

(Percent of GDP)



Caribbean: Petrocaribe Exposure

(Percent of GDP)

Caribbean: Nonperforming Loans

(Percent of total loans)

Sources: Caribbean Tourism Organization; Eastern Caribbean Central Bank; IMF, World Economic Outlook database; national authorities; and IMF staff calculations and projections.

Note: Commodity exporters = Belize, Guyana, Suriname, and Trinidad and Tobago; tourism-dependent economies = Antigua and Barbuda, The Bahamas, Barbados, Dominica, Grenada, Jamaica, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines; Eastern Caribbean Currency Union (ECCU) = Anguilla, Antigua and Barbuda, Dominica, Grenada, Montserrat, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines. For country name abbreviations, see page 79.

[1] Simple average.

many destinations are likely to lose further market share to competitors in Mexico, Central America, and beyond.[5]

The region's large external imbalances underscore the scale of the challenges. Even though cheaper oil imports provide significant relief, the average current account deficit among the tourism-dependent economies is still projected at more than 13 percent of GDP in 2015. In the commodity-exporting Caribbean, current account deficits are lower but still significant at about 6 percent of GDP. These deficits continue to be financed mainly through foreign direct investment and official flows, including in some cases from the IMF. For several countries, support through the Petrocaribe program also plays an important role, exposing them to the risk of sudden financing gaps should the ongoing crisis in Venezuela compromise its commitments to Petrocaribe partners (Box 2.3).

Public finances also remain under strain. Primary balances are projected to be broadly stable in many economies, although the recent large surplus in St. Kitts and Nevis is likely to shrink significantly as receipts from the citizenship-by-investment program decline. By contrast, both Grenada and Haiti have committed to rein in their previous high deficits, while Jamaica is set to maintain the high primary surplus that is needed to bring down public debt. On average, the tourism-dependent economies carry a debt burden in excess of 90 percent of GDP that has failed to lighten in recent years. Among the commodity-exporting economies, meanwhile, public debt continues to creep up, likely reaching 56 percent of GDP by end-2015. A relatively positive outlier is Trinidad and Tobago, which has kept gross debt below 40 percent of GDP while building up assets in its Heritage and Stabilization Fund. However, the sharp drop in energy prices is causing revenue declines that will require offsetting fiscal measures to achieve the authorities' original budget targets.

In the ECCU, external and fiscal vulnerabilities are compounded by acute financial fragilities, as many indigenous banks suffer from low capitalization, weak asset quality, and outsized exposures to their fiscally fragile sovereigns.

Policy Priorities

The critical challenge facing the Caribbean is to secure a sustained economic recovery while reducing still-high macroeconomic vulnerabilities, especially in tourism-dependent economies. The favorable recent shift in external conditions is creating a window of opportunity to make more decisive progress. Policymakers should take advantage of more buoyant economic activity to achieve sufficiently ambitious fiscal consolidation targets and put public debt on a downward path. Headwinds to growth from policy tightening can be mitigated through the careful design of fiscal measures, notably by redirecting scarce budget resources from current spending toward high-value public investment. Phasing out the level of tax waivers and concessions would assist the consolidation process. The recent adoption of a value-added tax in The Bahamas provides another encouraging example.

Lower public deficits will also support external rebalancing. However, a broader strategy will be needed to reduce the region's high current account deficits. The key is to raise competitiveness, notably in the tourism sector, by better aligning wages with productivity, reducing energy costs, and improving the quality of the supporting infrastructure and public services.

In the ECCU, progress toward resolving weak banks in an orderly and coordinated regional approach is urgently needed. Beyond addressing acute current problems, the authorities will also need to strengthen the general legal and regulatory framework to enhance supervision and facilitate crisis management in future.

---

[5] See also the analysis in Laframboise and others (2014).

Box 2.1

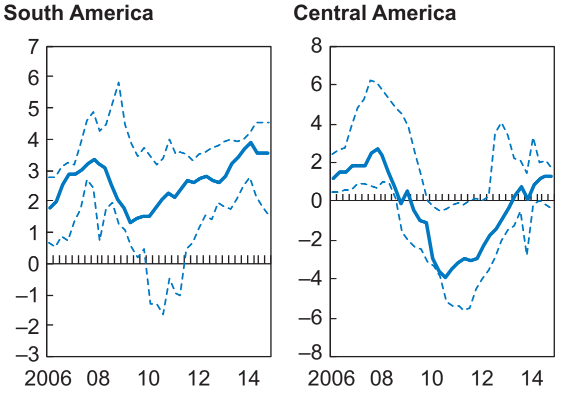
Credit Gaps in Latin America: Keeping a Watchful Eye

Credit has grown rapidly over the past decade in much of Latin America and, despite the recent slowdown, generally remains above trend levels relative to GDP. Figure 2.1.1 shows the range of estimated credit gaps across Latin American countries, calculated as the difference between private credit to GDP and its long-term trend.[1] In South America, credit gaps have been positive since the mid-2000s in most countries. During the same period, Central American countries have typically had smaller or negative credit gaps, reflecting more subdued economic and financial conditions there. At end-2014, Venezuela, Paraguay, and Panama stood out with the largest stock of credit relative to estimated trend levels (Figure 2.1.2). Even these credit gaps were still below 10 percentage points of GDP, a threshold often considered an early warning indicator of banking crisis risk (Basel Committee on Banking Supervision 2010; Borio and Lowe 2002). Nonetheless, the legacy of rapid credit growth across South America underscores the need for vigilance.

Figure 2.1.1

Estimated Credit Gaps

(Percent of GDP)



Sources: IMF, *International Financial Statistics*; IMF, World Economic Outlook database; and IMF staff calculations.
Note: Solid blue line shows the median; dotted lines show the 25th and 75th percentile of estimated credit gaps across individual countries in each regional group. South America includes Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, and Venezuela. Central America includes Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, and Panama.

Particular caution is warranted in countries where a long-running credit boom has now given way to a sharp downturn in growth. In such countries, borrowers took on increasing amounts of debt during the "good years" and are suddenly facing a much weaker economic environment that could put their repayment capacity to the test. Appealing to this basic argument, the arrow in Figure 2.1.2 points in the direction of rising vulnerabilities. Thus, the country with the most challenging combination of a large credit gap and significant growth slowdown[2] is Venezuela, followed (at some distance) by Argentina, Brazil, Panama, and Paraguay.[3] From a somewhat different perspective, Figure 2.1.3 combines information on estimated credit gaps and the total stock of credit at end-2014. The red-shaded area suggests higher risk, in the sense that countries in this area not only have experienced a stronger credit boom but also feature a larger overall stock of private debt, increasing the potential for losses should credit quality weaken.

Note: This box was prepared by Natalija Novta, with excellent research assistance from Genevieve Lindow.

[1] The long-term credit-to-GDP trend is calculated using the one-sided Hodrick-Prescott (HP) filter, as in Borio and Lowe (2002) and the Basel Committee on Banking Supervision (2010). Starting in 2001, using quarterly data and a smoothing parameter (lambda) of 400,000, the HP filter is run recursively for increasingly longer time periods. Thus, the credit gap presented for time *t* uses only data up to time *t*. For Bolivia and Uruguay, the sample starts in 2005:Q1 to avoid apparent structural breaks in the series. Trend estimation inevitably requires specification choices that can affect estimated credit gaps.

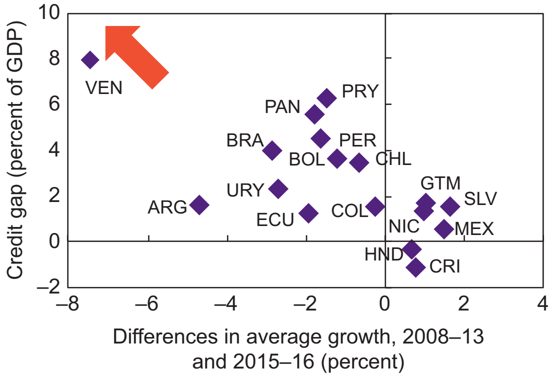
[2] Slowdown in growth is measured as the difference between the average expected growth during 2015–16 and the observed average growth during 2008–13.

[3] Estimates for Venezuela need to be taken with caution, insofar as high inflation and the multiple exchange rate regime tend to distort macroeconomic statistics. Credit data for Panama, in turn, reflect the country's role as a regional financial center, making them somewhat less informative about strictly domestic credit developments.

Box 2.1 *(continued)*

Figure 2.1.2

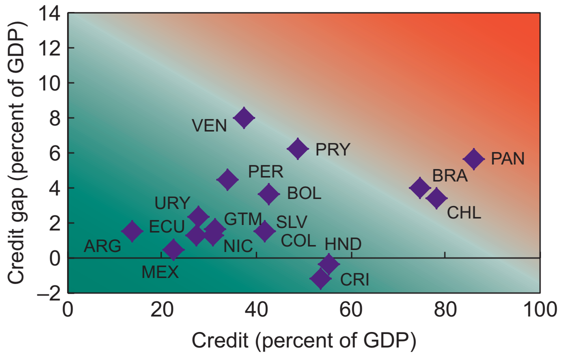
Credit Gap and Growth Slowdown



Sources: IMF, *International Financial Statistics*; IMF, World Economic Outlook database; and IMF staff calculations.
Note: For country name abbreviations, see page 79.

Figure 2.1.3

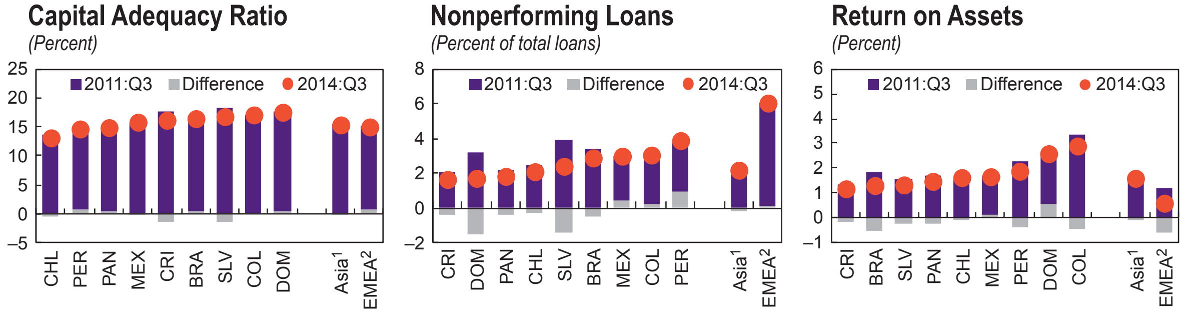
Credit Gap and Credit-to-GDP Ratio, 2014



Sources: IMF, *International Financial Statistics*; IMF, World Economic Outlook database; and IMF staff calculations.
Note: For country name abbreviations, see page 79.

Reassuringly, the region still appears to have significant financial buffers to cope with the fallout of lower growth and rising asset quality pressures. Capital adequacy ratios, return on assets, and provisioning ratios remain relatively comfortable compared to other emerging market regions; and nonperforming loan (NPL) ratios typically do not exceed 3 percent (Figure 2.1.4). These indicators also do not show a significant recent deterioration, although the backward-looking nature of some indicators (especially NPL ratios) cautions against complacency.

Figure 2.1.4



Sources: IMF, Financial Soundness Indicators database; and IMF staff calculations.
Note: Asia = India, Indonesia, Korea, Malaysia, and the Philippines. Europe, Middle East, Africa (EMEA) = Hungary, Israel, Poland, Russia, South Africa, and Turkey. For country name abbreviations, see page 79.
[1] Simple average. Due to missing data: Indonesia, average of 2011:Q2 and 2011:Q4 data used for 2011:Q3; Korea, 2014:Q2 data used for 2014:Q3.
[2] Simple average. Due to missing data: South Africa, 2014:Q2 data used for 2014:Q3.

The priority is to maintain strong capital levels and ensure swift recognition of bad loans. The negative terms-of-trade shock affecting many Latin American countries, the anticipated tightening of U.S. monetary policy, and the related strong appreciation of the U.S. dollar increase the likelihood of worsening credit quality going forward. To ensure that such a development would not undermine financial stability, regulators and supervisors should guide banks to maintain conservative provisioning standards, scrutinize credit quality trends and quickly recognize problem loans, and avoid outsized profit distributions that would compromise capital buffers. More broadly, the ongoing downturn in the credit cycle underscores the benefits of countercyclical macroprudential policies during the upswing. Regulators that appropriately tightened prudential standards during the boom years not only helped to curtail excesses at the time but also created additional buffers that should prove valuable over the period ahead.

Box 2.2

U.S. Dollar Strength and Economic Activity in Latin America

The U.S. dollar has appreciated by about 18 percent in real effective terms since June 2014, marking the fastest appreciation in over 40 years. Moreover, many observers expect the current dollar strength to continue, driven by favorable growth prospects and widening interest differentials vis-à-vis other major currencies. How might this appreciation trend affect growth in Latin America? Looking at the past 45 years, emerging markets have tended to grow at a slower pace, on average, during periods of extended dollar appreciation. In Latin America, this pattern appears stronger than in other emerging market regions, particularly for South America's commodity exporters (Figure 2.2.1).

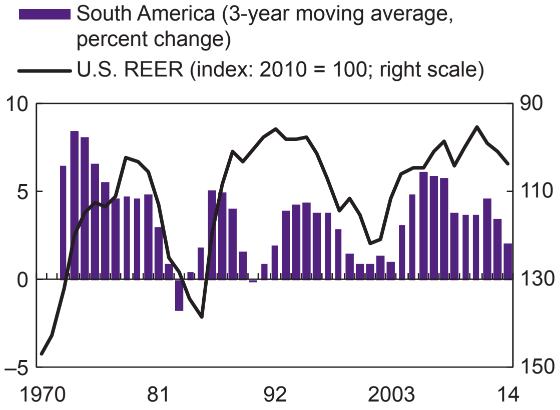
Event analysis (Figure 2.2.2) shows that during periods of extended dollar appreciation, lower growth in Latin America has been associated with higher U.S. real interest rates, weaker dynamics in commodity markets, and hence less favorable terms of trade.

Interestingly, U.S. growth outturns have not differed much on average between appreciation and depreciation episodes. This suggests that differences in Latin America's growth rates between dollar appreciation and depreciation episodes mainly reflect factors other than U.S. growth. Moreover, Latin American currencies have appreciated, on average, somewhat less during periods of dollar strength, though apparently without providing sufficient support to overall demand through better net exports.[1]

U.S. dollar appreciation can arise from different underlying shocks, with distinct spillovers to Latin America. Monetary tightening and/or strong growth have usually driven the appreciation. But other factors, such as a global flight to quality and coordinated foreign exchange interventions, have also contributed in the past, reflecting the dollar's central role in the international monetary system. With that in mind, what are possible transmission channels that could

Figure 2.2.1

Dollar Strength and South America's Growth

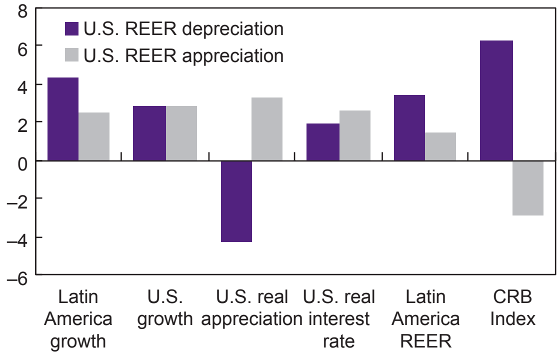


Sources: Federal Reserve Economic Data; IMF, *International Financial Statistics*; IMF, World Economic Outlook database; and IMF staff calculations.
Note: REER = real effective exchange rate. Higher value = appreciation.

Figure 2.2.2

Appreciation and Depreciation Cycles

(Percent)



Sources: IMF, *International Financial Statistics*; IMF, World Economic Outlook database; and IMF staff calculations.
Note: CRB = Commodity Research Bureau (commodity price index); REER = real effective exchange rate. U.S. real interest rates are 10-year treasury rates deflated by observed annual inflation. Appreciation and depreciation cycles defined by peak-to-trough long-term trend changes in U.S. real effective exchange rate. Depreciation cyles: 1970–78, 1986–92, and 2002–11. Appreciation cycles: 1979–85, 1996–2001, and 2011–13. Bars show average percent change per annum. See Druck and Magud (forthcoming) for details.

Note: This box was prepared by Pablo Druck and Nicolas Magud, with excellent research assistance from Rodrigo Mariscal; based on a forthcoming paper by Druck and Magud.

[1] A stronger U.S. dollar in multilateral terms need not improve competitiveness of any country vis-à-vis other exporters to the United States, in particular for countries with little export share to the United States.

Box 2.2 *(continued)*

explain the link between a stronger U.S. dollar and lower activity in Latin America? Empirical analysis in Druck and Magud (forthcoming) points to the following channels:

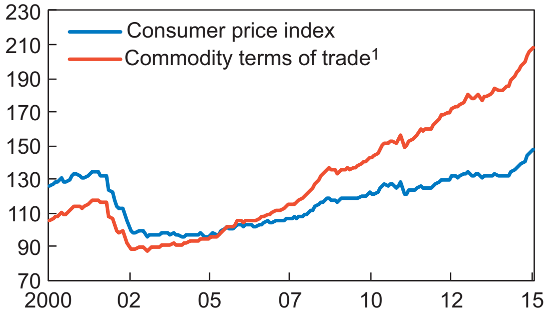
- *Financial channel:* After controlling for U.S. growth, higher U.S. real interest rates make external financing more costly and restrictive for emerging market borrowers, negatively affecting investment and consumption. These effects have been further compounded in past episodes of sustained dollar appreciation by currency mismatches in private and public sector balance sheets.

- *Income/substitution effects:* A stronger U.S. dollar implies weaker domestic currencies and commodity prices, reducing the dollar-purchasing power of agents in emerging markets. Expressing purchasing power in commodity terms of trade, this effect is even more pronounced (Figure 2.2.3), amplifying the weakness in aggregate domestic demand.[2] This argument is particularly relevant for South America's large net commodity exporters, though less so for Central America and Mexico. In principle, the resulting weakness in domestic output should be outweighed by positive expenditure switching effects (that is, demand shifting toward domestic goods, as foreign goods become more expensive due to the depreciation). However, many Latin American economies rely on foreign final, intermediate, and capital goods that cannot be easily replaced with domestic goods, given limited economic diversification. The implied low rate of substitution between imported and domestic goods would lend credence to the argument that the income effect dominates the expenditure switching effect of exchange rate changes.

Figure 2.2.3

South America and Mexico: Real Effective Exchange Rates

(Index: 2005 = 100)



Sources: IMF, *Information Notice System*; and IMF staff calculations.
Note: South America = Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, and Venezuela.
[1] Calculated using net commodity terms of trade data based on Gruss (2014) (instead of domestic consumer price indices) for the partner countries.

For countries that are highly integrated with the U.S. economy, the effects just mentioned need to be considered alongside *positive* demand spillovers if the strength of the U.S. dollar is driven by faster U.S. growth. Such positive spillover effects are relevant in particular for Central America and Mexico, thanks to large trade and remittance flows, but less so for South America.

Overall, the prospect for a persistently strong U.S. dollar on the back of the expected lift-off in U.S. interest rates could pose risks to growth in Latin America, particularly to commodity exporters and those exposed to currency mismatches. That said, to the extent that individual countries have implemented macroeconomic reforms since the late 1990s—by strengthening monetary policy regimes, allowing greater exchange rate flexibility, and reducing the dollarization of liabilities—they should be better placed than in the past to navigate a period of U.S. dollar strength.

---

[2] This results from substituting the country-specific commodity terms-of-trade index for the basket of trading partners' price indices to compute the "commodity-terms-of-trade" real effective exchange rate.

Box 2.3

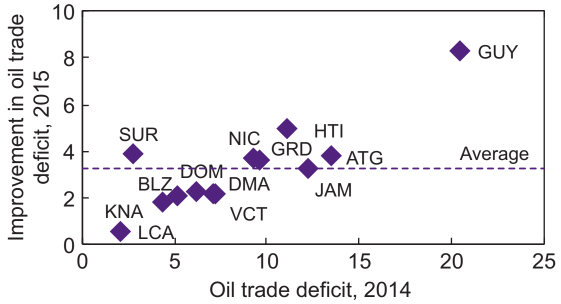
How Does the Oil Price Decline Affect Countries in Central America and the Caribbean?

Oil prices have recently witnessed the largest decline since the global financial crisis. As of March 2015, spot crude oil prices were down 50 percent from one year earlier. This sharp drop represents a large positive terms-of-trade shock for net oil importers in LAC, in particular those in Central America and the Caribbean (CAC—Figure 2.3.1). Provided the decline is passed through to end users (the application of current pricing mechanisms would imply complete or almost complete pass-through in most CAC countries by end-2015), the first-round effect of lower oil prices should be decreases in transportation and electricity costs (in particular for countries with power generation reliant on fossil fuels). This should boost households' disposable income, strengthen firm profitability, and decrease fiscal deficits in countries that subsidize energy products.

Figure 2.3.1

Improvement in Oil Trade Deficit, 2015

(Percent of GDP)



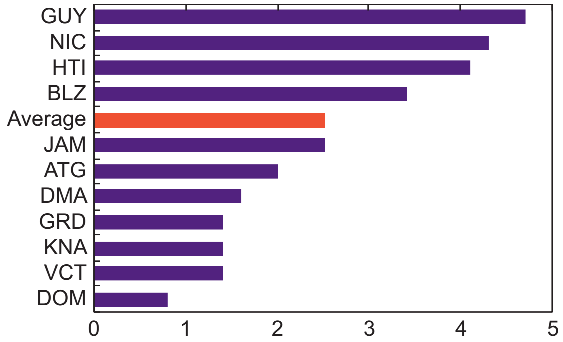
Sources: IMF, World Economic Outlook database; and IMF staff calculations.
Note: For country name abbreviations, see page 79.

However, many countries in CAC will also see a decline in financing from Venezuela-sponsored Petrocaribe. Since 2005, this initiative has allowed a number of governments in CAC to obtain long-term debt at below-market rates as their countries purchased oil from Venezuela.[1] At high oil prices, oil bills were large and so was Petrocaribe financing, representing 2.5 percent of GDP for the average member country in 2014 (Figure 2.3.2). The current low oil prices mean that Petrocaribe members should see their oil bills decline—by an average 3.3 percent of GDP in 2015. This significant gain will be somewhat offset by lower access to financing (by about 1 percent GDP for the average recipient country), as the size of Petrocaribe loans declines, while loan terms become less generous with lower oil prices (Figure 2.3.3 and Table 2.3.1).

Figure 2.3.2

Petrocaribe Financing, 2014[1]

(Percent of GDP)

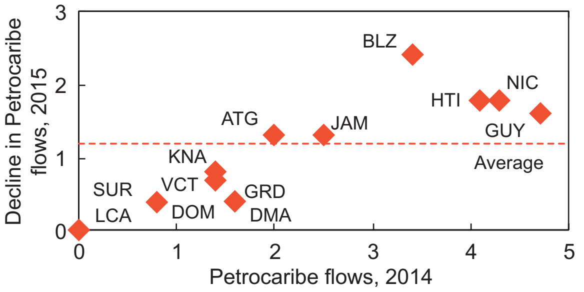


Sources: National authorities; and IMF staff calculations.
Note: For country name abbreviations, see page 79.
[1] St. Lucia and Suriname are Petrocaribe members but they have not taken any financing under the initiative.

Figure 2.3.3

Decline in Petrocaribe Financing Flows, 2015

(Percent of GDP)



Sources: National authorities; and IMF staff calculations.
Note: For country name abbreviations, see page 79.

Note: This box was prepared by Gabriel Di Bella.

[1] In addition to Venezuela, current members include Antigua and Barbuda, Bahamas, Belize, Cuba, Dominica, Dominican Republic, El Salvador, Grenada, Guyana, Haiti, Honduras, Jamaica, Nicaragua, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, and Suriname. Debt terms include long repayment periods (17–25 years) and low interest rates (1–2 percent). St. Lucia and Suriname have not so far imported oil under the arrangement and thus have not accumulated Petrocaribe debt.

Box 2.3 *(continued)*

While on balance the oil price decline will leave Petrocaribe members better off (as the gain from the lower oil bill will outweigh the expected decline in inflows), lower financing could nonetheless create problems. In this regard, the impact of lower financing will be different between the public and private sectors. While the private sector should see disposable income and profits increase, the reduction (or stop) of Petrocaribe financing will leave some governments cash-strapped. If resources are not recycled from the private to the public sector (for example, through reductions in energy subsidies), some governments may be faced with the choice to either find budgetary financing for Petrocaribe-related social or investment programs, or discontinue them. Nicaragua and Haiti, lacking market access, ample reserves, and deep domestic financial markets, may need to adjust the most (Table 2.3.2). Guyana and St. Kitts (and to a lesser extent Jamaica) have built buffers to offset the impact. Moreover, in the case of a total stop of Petrocaribe flows, fiscal deficits may increase in Antigua, Dominica, Grenada, Haiti, Jamaica, and Nicaragua, to the extent that governments take over (currently off-budget) social programs or infrastructure projects. A few countries with energy subsidies, notably Haiti, plan to offset the additional cost by recovering foregone revenue on the taxation of fuel.

Table 2.3.1. Net Benefit from Decrease in Oil Prices

(Percent of GDP)

	Continues			Stops
Petrocaribe:	**Decrease in Oil Trade Deficit (A)**	**Decrease in Petrocaribe Financing (B)**	**Improvement in External Position (A – B)**	**Improvement in External Position**
Antigua and Barbuda	3.8	1.3	2.5	1.8
Belize	2.1	2.4	–0.3	–1.3
Dominica	2.2	0.4	1.8	0.6
Dominican Republic	2.2	0.4	1.8	1.4
Grenada	3.6	0.8	2.8	2.2
Guyana	8.3	1.6	6.7	3.6
Haiti	4.9	1.8	3.1	0.8
Jamaica	3.2	1.3	1.9	0.7
Nicaragua	3.7	1.8	1.9	–0.6
St. Kitts and Nevis	1.8	0.7	1.1	0.4
St. Lucia	0.6	0.0	0.6	0.6
St. Vincent and the Grenadines	2.2	0.7	1.5	0.8
Suriname	3.9	0.0	3.9	3.9
Average	**3.3**	**1.0**	**2.3**	**1.2**

Sources: IMF, World Economic Outlook database; national authorities; and IMF staff calculations.

Table 2.3.2. Contingent Fiscal Effort, 2015

(Percent of GDP)

	Petrocaribe Flows	
	Continue	**Stop**
Antigua and Barbuda	0.1	0.5
Dominica	0.0	0.1
Grenada	0.2	1.0
Haiti	1.4	4.6
Jamaica	1.3	2.5
Nicaragua	1.7	4.0
Average	**0.8**	**2.1**

Source: IMF staff calculations.

A possible discontinuation of Petrocaribe flows may nonetheless be more manageable now than in the past. The budgetary cost of the oil price drop for Venezuela raises questions about whether Petrocaribe support will continue. If it were to cease, the impact would differ across Petrocaribe members. Governments receiving large flows and without alternative financing sources (like in Nicaragua and Haiti) would be most affected—although less so than they would have been in a world of higher oil prices. Governments that have built buffers (like Guyana), or that have alternative financing sources (like the Dominican Republic and Jamaica), should be affected less.[2] Belize would be particularly affected as lower oil prices also reduce the value of its own exports of crude oil.

The decline in Petrocaribe flows should not affect growth significantly. The effect on GDP growth and on the current account depends on the size of the oil trade deficit and the extent to which the increases in disposable income and profits are saved or absorbed. Taking these elements into consideration, it appears that only Haiti and Nicaragua, where fiscal adjustment will be required to compensate for the loss of financing, could face declines in growth. For other countries, lower oil prices and a potential widening of fiscal deficits should offset the effect on growth of lower Petrocaribe flows.

---

[2] In January 2015, the Dominican Republic cancelled all its Petrocaribe debt through a buy-back operation.

Annex 2.1. Data Disclaimer

GDP data for Argentina are officially reported data as revised in May 2014. On February 1, 2013, the IMF issued a declaration of censure, and in December 2013 called on Argentina to implement specified actions to address the quality of its official GDP data according to a specified timetable. On December 15, 2014, the Executive Board recognized the implementation of the specified actions it had called for by end-September 2014 and the steps taken by the Argentine authorities to remedy the inaccurate provision of data. The Executive Board will review this issue again as per the calendar specified in December 2013 and in line with the procedures set forth in the IMF's legal framework.

Consumer price data from December 2013 onwards reflect the new national consumer price index (CPI; IPCNu), which differs substantively from the preceding CPI (the CPI for the Greater Buenos Aires Area, CPI-GBA). Because of the differences in geographical coverage, weights, sampling, and methodology, the IPCNu data cannot be directly compared to the earlier CPI-GBA data. Because of this structural break in the data, the average CPI inflation for 2014 is not reported in the April 2015 *Regional Economic Outlook*. Following a declaration of censure by the IMF on February 1, 2013, the public release of a new national CPI by end-March 2014 was one of the specified actions in the IMF Executive Board's December 2013 decision calling on Argentina to address the quality of its official CPI data. On December 15, 2014, the Executive Board recognized the implementation of the specified actions it had called for by end-September 2014 and the steps taken by the Argentine authorities to remedy the inaccurate provision of data. The Executive Board will review this issue again as per the calendar specified in December 2013 and in line with the procedures set forth in the IMF's legal framework.

Table A2.1. Western Hemisphere: Main Economic Indicators[1]

	Output Growth (Percent)					Inflation[2] (End of period, percent)					External Current Account Balance (Percent of GDP)				
	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
			Est.	Projections				Est.	Projections				Est.	Projections	
North America															
Canada	1.9	2.0	2.5	2.2	2.0	1.0	1.0	1.9	1.0	2.4	–3.3	–3.0	–2.2	–2.6	–2.3
Mexico	4.0	1.4	2.1	3.0	3.3	3.6	4.0	4.1	3.1	3.0	–1.3	–2.4	–2.1	–2.2	–2.2
United States	2.3	2.2	2.4	3.1	3.1	1.8	1.3	0.9	0.5	2.1	–2.9	–2.4	–2.4	–2.3	–2.4
South America															
Argentina[3]	0.8	2.9	0.5	–0.3	0.1	10.8	10.9	23.9	20.5	20.5	–0.2	–0.8	–0.9	–1.7	–1.8
Bolivia	5.2	6.8	5.4	4.3	4.3	4.5	6.5	5.2	5.0	5.0	8.3	3.3	0.7	–2.8	–4.2
Brazil	1.8	2.7	0.1	–1.0	1.0	5.8	5.9	6.4	8.0	5.4	–2.2	–3.4	–3.9	–3.7	–3.4
Chile	5.5	4.3	1.8	2.7	3.3	1.5	2.8	4.6	2.9	3.0	–3.6	–3.7	–1.2	–1.2	–2.0
Colombia	4.0	4.9	4.6	3.4	3.7	2.4	1.9	3.7	3.6	3.2	–3.2	–3.4	–5.0	–5.8	–4.9
Ecuador	5.2	4.6	3.6	1.9	3.6	4.2	2.7	3.7	3.0	3.0	–0.2	–1.0	–0.8	–3.3	–3.0
Guyana	4.8	5.2	3.8	3.8	4.4	3.5	0.9	1.2	1.2	3.9	–11.6	–13.3	–15.9	–16.4	–21.9
Paraguay	–1.2	14.2	4.4	4.0	4.0	4.0	3.7	4.2	4.5	4.5	–0.9	2.2	0.1	–1.7	–2.2
Peru	6.0	5.8	2.4	3.8	5.0	2.6	2.9	3.2	2.2	2.0	–2.7	–4.4	–4.1	–4.6	–4.3
Suriname	4.8	4.1	2.9	2.7	3.8	4.4	0.6	3.9	2.1	3.0	3.4	–3.9	–7.3	–7.8	–6.9
Uruguay	3.7	4.4	3.3	2.8	2.9	7.5	8.5	8.3	7.4	7.3	–5.4	–5.2	–4.7	–3.8	–4.1
Venezuela	5.6	1.3	–4.0	–7.0	–4.0	20.1	56.2	68.5	94.9	78.4	3.7	2.4	4.3	–4.7	–0.8
Central America															
Belize	3.3	1.5	3.4	2.0	3.0	0.8	1.6	–0.4	1.5	2.3	–1.2	–4.4	–5.7	–4.5	–6.1
Costa Rica	5.2	3.4	3.5	3.8	4.4	4.6	3.7	5.1	4.0	4.0	–5.3	–5.0	–4.5	–3.6	–4.0
El Salvador	1.9	1.7	2.0	2.5	2.6	0.8	0.8	0.5	0.6	1.7	–5.4	–6.5	–5.0	–4.3	–4.9
Guatemala	3.0	3.7	4.0	4.0	3.9	3.4	4.4	2.9	3.0	3.4	–2.6	–2.5	–2.3	–1.6	–1.8
Honduras	4.1	2.8	3.1	3.3	3.4	5.4	4.9	5.8	4.7	5.2	–8.5	–9.5	–7.4	–6.5	–6.4
Nicaragua	5.0	4.4	4.5	4.6	4.3	6.6	5.7	6.5	6.0	7.0	–9.8	–8.9	–6.2	–6.8	–7.5
Panama[4]	10.7	8.4	6.2	6.1	6.4	4.6	3.7	1.0	2.4	2.0	–9.8	–12.2	–12.0	–10.4	–10.0
The Caribbean															
Antigua and Barbuda	3.6	1.8	2.4	1.9	2.3	1.8	1.1	1.3	1.0	1.6	–14.6	–14.6	–14.5	–10.7	–12.4
The Bahamas	1.0	0.7	1.3	2.3	2.8	0.7	0.8	0.2	2.3	1.6	–18.3	–17.7	–21.6	–12.4	–8.2
Barbados	0.0	0.0	–0.3	0.8	1.4	2.4	1.1	2.3	0.9	1.9	–9.3	–9.3	–9.1	–5.1	–5.9
Dominica	–1.4	–0.9	1.1	2.4	2.9	1.2	–0.4	–0.1	0.9	0.6	–17.7	–13.1	–13.0	–13.1	–19.4
Dominican Republic	2.6	4.8	7.3	5.1	4.5	3.9	3.9	1.6	3.0	4.0	–6.6	–4.1	–3.1	–2.4	–3.0
Grenada	–1.2	2.4	1.5	1.5	2.0	1.8	–1.2	–0.7	–1.0	2.3	–19.2	–27.0	–23.6	–17.4	–16.1
Haiti[5]	2.9	4.2	2.7	3.3	3.8	6.5	4.5	5.3	6.1	5.0	–5.7	–6.7	–5.8	–3.0	–3.7
Jamaica	–0.5	0.2	0.5	1.7	2.2	8.0	9.5	4.7	7.0	7.2	–10.7	–8.9	–6.4	–5.0	–4.6
St. Kitts and Nevis	–0.9	3.8	7.0	3.5	3.0	0.1	0.4	2.0	2.0	2.0	–9.8	–6.7	–10.7	–16.2	–16.8
St. Lucia	0.6	–0.5	–1.1	1.8	1.4	5.0	–0.7	1.7	3.1	3.1	–13.5	–12.8	–12.4	–13.4	–13.9
St. Vincent and the Grenadines	1.1	2.4	1.1	2.1	3.1	1.0	0.0	0.6	0.1	1.6	–27.5	–31.3	–29.4	–27.6	–25.4
Trinidad and Tobago	1.4	1.7	1.1	1.2	1.5	7.2	5.6	8.5	6.0	5.3	3.4	6.7	8.3	5.2	4.4
Memorandum:															
Latin America and the Caribbean (LAC)	**3.1**	**2.9**	**1.3**	**0.9**	**2.0**	**5.4**	**7.4**	**8.2**	**9.0**	**7.2**	**–1.8**	**–2.8**	**–2.8**	**–3.2**	**–3.0**
Financially integrated LAC[6]	4.2	3.9	2.4	2.4	3.2	3.9	4.3	5.0	4.5	4.0	–3.1	–3.7	–3.5	–3.5	–3.5
Other commodity exporters[7]	3.1	6.0	2.0	0.6	1.6	8.2	17.3	20.4	26.9	22.7	2.1	1.2	0.7	–2.8	–2.4
CADR[8]	4.6	4.2	4.4	4.2	4.2	4.2	3.9	3.4	3.4	3.9	–6.9	–7.0	–5.8	–5.1	–5.4
Caribbean															
Tourism-dependent[9]	0.3	1.1	1.5	2.0	2.4	2.5	1.2	1.3	1.8	2.4	–15.6	–15.7	–15.6	–13.4	–13.7
Commodity exporters[10]	3.6	3.1	2.8	2.4	3.2	4.0	2.2	3.3	2.7	3.6	–1.5	–3.7	–5.2	–5.9	–7.6
Eastern Caribbean Currency Union[11]	0.3	1.1	1.7	2.0	2.1	2.1	0.0	0.7	1.2	1.9	–17.1	–17.2	–15.8	–13.9	–14.5

Sources: IMF, World Economic Outlook database; and IMF staff calculations and projections.

[1] Regional aggregates are purchasing power parity–weighted GDP averages unless otherwise noted. Current account aggregates are U.S. dollar nominal GDP weighted averages. Consumer price index (CPI) series exclude Argentina. Consistent with the IMF's *World Economic Outlook*, the cut-off date for the data and projections in this table is April 3, 2015.

[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] See Annex 2.1 "Data Disclaimer" for details on Argentina's data.

[4] Ratios to GDP are based on the "1996-base" GDP series.

[5] Fiscal year data.

[6] Simple average of Brazil, Chile, Colombia, Mexico, Peru, and Uruguay.

[7] Simple average of Argentina, Bolivia, Ecuador, Paraguay, and Venezuela. CPI series exclude Argentina.

[8] Simple average of Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and Panama.

[9] Simple average of The Bahamas, Barbados, Jamaica, and Eastern Caribbean Currency Union member states.

[10] Simple average of Belize, Guyana, Suriname, and Trinidad and Tobago.

[11] Eastern Caribbean Currency Union members are 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.

Table A2.2. Western Hemisphere: Main Fiscal Indicators[1]

	Public Sector Primary Expenditure (Percent of GDP)					Public Sector Primary Balance (Percent of GDP)					Public Sector Gross Debt (Percent of GDP)				
	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
			Est.	Projections				Est.	Projections				Est.	Projections	
North America															
Canada	37.7	37.5	36.3	36.6	36.3	–2.6	–2.4	–1.4	–1.4	–0.9	87.9	87.7	86.5	87.0	85.0
Mexico[2]	25.0	25.5	25.4	23.4	22.4	–1.1	–1.3	–2.0	–1.4	–0.6	43.2	46.3	50.1	51.4	51.7
United States[3]	35.0	34.0	34.1	33.6	33.2	–6.3	–3.6	–3.2	–2.2	–1.8	102.4	103.4	104.8	105.1	104.9
South America															
Argentina[4]	32.0	34.1	36.7	37.3	36.6	–0.5	–0.7	–1.0	–1.6	–1.4	37.3	40.2	48.6	49.5	50.5
Bolivia[5]	35.0	37.5	40.8	38.5	38.0	2.8	1.6	–2.3	–3.6	–4.6	33.4	32.6	32.4	36.3	40.2
Brazil[6]	31.5	32.5	33.9	32.1	31.4	2.0	1.8	–0.6	1.2	2.0	63.5	62.2	65.2	66.2	66.2
Chile	23.1	23.1	23.6	24.8	25.5	0.8	–0.4	–1.4	–1.9	–1.5	12.0	12.8	13.9	16.3	17.9
Colombia[7]	25.6	26.6	26.8	26.3	25.7	1.6	1.2	0.9	–0.5	0.0	32.0	35.8	38.0	40.6	40.1
Ecuador	39.6	43.0	42.8	38.1	37.7	–0.2	–3.6	–4.0	–4.1	–3.6	21.3	24.2	29.8	34.3	36.6
Guyana[8]	30.2	29.2	33.0	32.4	29.9	–3.9	–3.5	–4.4	–3.7	–2.9	62.5	57.3	65.8	70.6	71.1
Paraguay	24.7	22.8	23.4	24.5	24.4	–1.1	–0.7	0.3	–0.1	0.1	16.0	16.8	21.4	22.8	23.3
Peru	19.3	20.5	21.4	21.7	21.5	2.8	1.7	0.8	–0.8	–0.4	21.2	20.3	20.7	21.5	22.3
Suriname[9]	28.9	30.1	26.7	25.2	24.6	–3.0	–5.5	–4.1	–4.8	–3.7	22.2	30.7	34.1	38.3	41.8
Uruguay[10]	28.7	30.1	30.6	29.9	30.0	–0.2	0.4	–0.5	0.2	0.0	59.5	62.1	62.8	64.4	65.3
Venezuela	37.3	35.0	39.8	39.4	39.1	–13.8	–11.6	–10.9	–16.8	–18.0	46.0	55.4	45.6	39.6	30.6
Central America															
Belize[8]	25.1	28.1	27.8	27.6	27.0	1.3	0.8	0.1	0.0	0.4	75.0	75.3	76.3	75.7	95.6
Costa Rica[8]	16.0	16.6	16.6	16.3	16.5	–2.3	–2.9	–3.1	–2.5	–1.9	35.2	36.3	39.8	42.4	44.6
El Salvador[11]	19.6	19.7	19.0	19.6	19.8	–1.7	–1.2	–1.1	–1.6	–1.4	55.2	55.5	56.5	59.1	61.2
Guatemala[8]	12.5	12.2	11.7	12.0	11.9	–0.9	–0.6	–0.4	–0.9	–0.6	24.3	24.6	23.7	24.6	25.3
Honduras	25.4	28.5	26.6	25.3	24.7	–4.3	–7.1	–3.8	–1.6	–0.5	34.7	45.3	46.1	48.3	49.7
Nicaragua[11]	22.4	23.0	23.3	23.6	24.1	0.7	–0.1	–0.6	–0.3	–0.1	32.1	32.4	32.2	31.6	30.6
Panama[12]	24.5	25.1	25.4	24.2	23.9	0.0	–0.5	–2.4	–1.5	–1.2	42.6	41.7	45.6	47.3	47.2
The Caribbean															
Antigua and Barbuda[13]	18.7	20.3	20.4	28.6	16.5	1.1	–1.6	–0.2	–7.4	5.0	87.1	94.3	98.7	106.9	102.4
The Bahamas[8]	21.2	20.5	18.7	19.3	18.9	–3.3	–4.2	–1.7	–0.9	–0.1	48.4	56.4	60.4	61.6	61.4
Barbados[14]	39.6	39.6	36.6	34.8	35.2	–4.0	–7.7	–3.5	–1.6	–1.4	84.6	95.9	100.4	102.5	103.9
Dominica[13]	32.6	30.7	31.3	30.8	30.8	–3.3	–1.0	–1.6	–1.4	–1.6	69.8	73.9	76.6	78.5	80.1
Dominican Republic[11]	17.8	15.8	15.6	14.6	14.7	–4.2	–1.2	–0.5	0.2	0.1	30.5	34.6	35.1	30.7	36.2
Grenada[13]	23.3	25.0	27.4	23.7	21.0	–2.5	–4.0	–2.4	1.3	3.5	104.5	108.0	107.2	107.1	102.7
Haiti[8]	27.8	27.5	25.5	23.5	22.7	–4.4	–6.7	–5.9	–2.6	–2.3	16.6	21.5	26.7	27.6	28.6
Jamaica[13]	20.3	19.5	18.9	19.6	19.1	5.4	7.7	7.7	7.5	7.5	146.5	141.6	140.6	132.8	127.3
St. Kitts and Nevis[13]	25.4	29.7	30.0	28.6	28.0	10.8	16.3	13.1	3.6	2.4	137.3	104.7	81.0	74.5	68.3
St. Lucia[13]	30.6	27.5	27.6	27.6	27.6	–5.8	–2.1	–2.2	–2.6	–2.8	73.7	79.0	83.9	88.0	92.5
St. Vincent and the Grenadines[13]	26.4	29.3	30.3	29.6	28.3	–0.3	–4.1	–3.4	–3.3	–1.6	72.3	73.4	75.1	77.1	78.8
Trinidad and Tobago[15]	32.1	33.8	33.5	32.0	33.5	1.4	–0.4	–2.4	–2.2	–3.3	40.3	37.4	37.6	39.5	43.7
Memorandum:															
Latin America and the Caribbean (LAC)	**29.1**	**29.7**	**30.6**	**29.1**	**28.3**	**0.0**	**–0.1**	**–1.3**	**–0.9**	**–0.5**	**47.9**	**48.7**	**51.6**	**51.7**	**51.7**
Financially integrated LAC[16]	25.5	26.4	27.0	26.4	26.1	1.0	0.6	–0.5	–0.5	–0.1	38.6	39.9	41.8	43.4	43.9
Other commodity exporters[17]	33.7	34.5	36.7	35.6	35.2	–2.5	–3.0	–3.6	–5.3	–5.5	30.8	33.8	35.6	36.5	36.2
CADR[18]	19.8	20.1	19.7	19.4	19.4	–1.8	–1.9	–1.7	–1.2	–0.8	36.4	38.6	39.9	40.6	42.1
Caribbean															
Tourism-dependent[19]	26.5	26.9	26.8	26.9	25.0	–0.2	–0.1	0.6	–0.5	1.2	91.6	91.9	91.5	92.1	90.8
Commodity exporters[20]	29.1	30.3	30.3	29.3	28.8	–1.0	–2.2	–2.7	–2.7	–2.4	50.0	50.2	53.5	56.0	63.1
Eastern Caribbean Currency Union[13,21]	26.2	27.1	27.2	28.3	25.4	–0.4	0.3	0.9	–1.9	1.0	85.7	85.2	84.4	86.7	85.7

Sources: IMF, World Economic Outlook database; and IMF staff calculations and projections.

[1] 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 purchasing power parity–weighted GDP averages, unless otherwise noted. Consistent with the IMF's *World Economic Outlook*, the cut-off date for the data and projections in this table is April 3, 2015.

[2] Includes central government, social security funds, nonfinancial public corporations, and financial public corporations.

[3] For cross-country comparability, expenditure and fiscal balances of the United States are adjusted to exclude the items related to the accrual basis accounting of government employees' defined benefit pension plans, which is counted as expenditure under the 2008 System of National Accounts recently adopted by the United States, but not so in countries that have not yet adopted the 2008 System of National Accounts. Data for the United States in this table may thus differ from data published by the U.S. Bureau of Economic Analysis.

[4] Federal government and provinces; includes interest payments on a cash basis. Primary expenditure and primary balance include the federal government and provinces. Gross debt is for the federal government only.

[5] Nonfinancial public sector, excluding the operations of nationalized mixed-ownership companies in the hydrocarbon and electricity sectors.

[6] Nonfinancial public sector, excluding Petrobras and Eletrobras, and consolidated with the sovereign wealth fund. The definition includes Treasury securities on the central bank's balance sheet, including those not used under repurchase agreements. The national definition of general government gross debt includes the stock of Treasury securities used for monetary policy purposes by the Central Bank (those pledged as security in reverse repo operations). It excludes the rest of the government securities held by the Central Bank. According to this definition, general government gross debt amounted to 58.9 percent of GDP at end-2014.

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

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

[9] Primary expenditures for Suriname exclude net lending. Debt data refer to central government and government-guaranteed public debt.

[10] Consolidated public sector.

[11] General government.

[12] Ratios to GDP are based on the "1996-base" GDP series. Fiscal data cover the nonfinancial public sector excluding the Panama Canal Authority.

[13] Central government for primary expenditure and primary balance; public sector for gross debt. For Jamaica, the public debt includes central government, guaranteed, and PetroCaribe debt.

[14] Overall and primary balances include off-budget and public-private partnership activities for Barbados and the nonfinancial public sector. Central government for gross debt (excludes NIS holdings).

[15] Central government for primary expenditure. Consolidated public sector for primary balance and gross debt.

[16] Simple average of Brazil, Chile, Colombia, Mexico, Peru, and Uruguay.

[17] Simple average of Argentina, Bolivia, Ecuador, Paraguay, and Venezuela.

[18] Simple average of Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and Panama.

[19] Simple average of The Bahamas, Barbados, Jamaica, and ECCU member states.

[20] Simple average of Belize, Guyana, Suriname, and Trinidad and Tobago.

[21] Eastern Caribbean Currency Union members are 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.

Table A2.3. Western Hemisphere: Selected Economic and Social Indicators, 2005–14[1]

	2014									2014		Latest Available		
	GDP[2] (US$ Billion)	Population (Million)	Gdp per Capita (PPP$)	Nominal Output Share of Lac Region[2] (Percent)	Real GDP Growth (Percent)	CPI Inflation[3] (Percent)	Current Account (Percent of GDP)	Domestic Saving (Percent of GDP)	Trade Openness[4] (Percent of GDP)	Gross Reserves[5] (Percent of GDP)	Unemployment Rate (Percent)	Poverty Rate[6]	Gini Coefficient[6]	Sovereign Credit Rating[7]
North America														
Canada	1,788.7	35.5	44,843	—	1.9	1.8	–1.3	22.4	64.1	4.2	6.9	—	31.3	AAA
Mexico	1,282.7	119.7	17,881	22.1	2.5	4.1	–1.3	21.4	60.6	14.9	4.8	11.4	49.1	BBB+
United States	17,418.9	319.0	54,597	—	1.6	2.1	–3.7	16.8	28.3	0.8	6.2	—	47.6	AAA
South America														
Argentina[8]	540.2	42.0	22,582	9.3	5.1	11.2	0.7	20.1	33.2	5.4	7.3	5.0	42.0	SD
Bolivia	34.4	11.2	6,221	0.6	5.0	6.2	6.1	25.0	71.9	39.4	4.0	14.4	46.5	BB–
Brazil	2,353.0	202.8	16,096	40.6	3.4	5.4	–1.4	18.7	24.0	15.3	4.8	9.4	52.3	BBB
Chile	258.0	17.8	22,971	4.4	4.3	3.6	0.1	22.8	70.8	15.7	6.4	2.0	50.8	AA–
Colombia	384.9	47.7	13,430	6.6	4.8	4.0	–2.9	20.1	35.5	12.1	9.1	15.2	53.4	BBB
Ecuador	100.8	16.0	11,244	1.7	4.4	4.2	0.7	26.7	60.4	3.5	5.0	10.5	46.2	B
Guyana	3.0	0.8	6,895	0.1	3.9	5.0	–11.8	7.1	133.0	22.3		—	—	—
Paraguay	29.7	6.9	8,449	0.5	5.0	6.2	1.2	17.1	102.1	22.5	5.5	8.3	52.6	BB
Peru	202.9	31.4	11,817	3.5	6.2	2.9	–1.4	22.4	50.7	30.2	6.0	10.0	45.3	BBB+
Suriname	5.3	0.6	16,623	0.1	4.4	7.8	3.8		104.6	10.8	8.9	—	—	BB–
Uruguay	55.1	3.4	20,556	1.0	5.4	7.5	–3.0	17.9	56.2	31.8	6.5	2.3	41.3	BBB–
Venezuela	205.8	30.5	17,695	3.5	3.7	30.9	7.4	31.1	58.1	3.4	7.0	11.5	40.4	CCC
Central America														
Belize	1.7	0.4	8,248	0.0	2.6	2.0	–5.0	12.1	124.7	28.8	12.9	—	—	B–
Costa Rica	48.1	4.8	14,864	0.8	4.6	7.6	–5.1	17.2	67.5	15.0	8.2	4.6	48.5	BB+
El Salvador	25.3	6.4	8,021	0.4	1.9	2.9	–4.7	10.3	65.1	9.6	5.5	12.7	41.8	BB–
Guatemala	60.4	15.9	7,503	1.0	3.6	5.5	–3.0	13.3	62.7	11.7		40.7	52.2	BB
Honduras	19.5	8.3	4,729	0.3	3.8	6.4	–7.3	18.9	90.5	17.6	4.5	39.6	57.2	B
Nicaragua	11.7	6.2	4,736	0.2	3.7	8.7	–10.9	15.7	94.1	19.4	4.8	29.3	45.7	B–
Panama	43.8	3.9	19,455	0.8	8.5	4.1	–8.9	16.7	75.4	9.2	4.1	9.9	51.9	BBB
The Caribbean														
The Bahamas	8.7	0.4	25,049	0.1	0.6	2.0	–14.2	13.1	95.7	10.1	15.0	—	—	BBB
Barbados	4.3	0.3	16,183	0.1	0.8	5.1	–8.8	7.1	98.1	14.7	12.7	—	—	B
Dominican Republic	64.1	10.6	13,012	1.1	5.8	5.5	–5.3	20.2	59.1	7.6	6.4	13.9	47.4	B+
Haiti	8.7	10.5	1,750	0.2	2.1	8.2	–3.1	25.6	65.3	13.2		—	—	—
Jamaica	13.8	2.8	8,609	0.2	0.1	10.0	–11.0	12.4	90.2	17.6	15.3	—	—	B–
Trinidad and Tobago	28.8	1.4	32,139	0.5	2.7	8.0	17.5	32.9	98.1	41.3	4.0	—	—	A–
Eastern Caribbean Currency Union	5.6	0.6	15,359	0.1	1.4	2.7	–20.2	9.9	97.5	24.7		—	—	—
Antigua and Barbuda	1.2	0.1	22,573	0.0	1.5	2.2	–18.2	17.3	110.6	23.9	—	—	—	—
Dominica	0.5	0.1	10,800	0.0	1.7	1.8	–17.7	–0.6	86.2	19.3	—	—	—	—
Grenada	0.9	0.1	11,979	0.0	1.3	2.6	–25.1	3.3	81.6	19.7	—	—	—	—
St. Kitts and St. Nevis	0.8	0.1	21,091	0.0	2.2	3.5	–15.9	19.4	87.3	38.9	—	—	—	—
St. Lucia	1.4	0.2	11,594	0.0	1.0	2.8	–18.7	11.5	106.7	19.0	—	—	—	—
St. Vincent and the Grenadines	0.7	0.1	10,778	0.0	1.2	3.1	–27.7	–1.3	86.5	21.4	—	2.9	40.2	B–
Latin America and the Caribbean	**5,800.4**	**603.0**	**15,489**	**100.0**	**3.7**	**6.3**	**–0.9**	**20.6**	**43.0**	**14.3**	—	**11.3**	**49.6**	—

Sources: IMF, *International Financial Statistics*; IMF, World Economic Outlook database; Inter-American Development Bank; Socio-Economic Database for Latin America and the Caribbean (CEDLAS and The World Bank); national authorities; and IMF staff calculations.

[1] Estimates may vary from those reported by national authorities on account of differences in methodology and source. Regional aggregates are purchasing power parity–weighted GDP averages, except for regional GDP in U.S. dollars and population where totals are computed. Consumer price index (CPI) series excludes Argentina. Consistent with the IMF's *World Economic Outlook*, the cut-off date for the data and projections in this table is April 3, 2015.

[2] At market exchange rates.

[3] End-of-period, 12-month percent change.

[4] Exports plus imports of goods and services in percent of GDP.

[5] Latest available data from IMF's International Financial Statistics database.

[6] Data from Socio-Economic Database for Latin America and the Caribbean (SEDLAC), based on the latest country-specific household surveys. In most cases, the surveys are from 2013 or 2014, though the vintage for Nicaragua (2009) is less recent. Poverty rate is defined as the share of the population earning less than US$2.50 per day. For Venezuela, poverty rate is defined as a share of the population in extreme poverty per national definition (INE). Gini index is calculated by the World Bank using pooled data for each country. For Venezuela, Gini index is based on official statistics (INE). Data for aggregate is population-weighted average from the Inter-American Development Bank. Data for the United States are from the U.S. Census Bureau; those for Canada are from Statistics Canada.

[7] Median of long-term foreign currency ratings published by Moody's, Standard & Poor's, and Fitch.

[8] See Annex 2.1 "Data Disclaimer" for details on Argentina's data.

3. The Commodity Price Bust: Fiscal and External Implications for Latin America

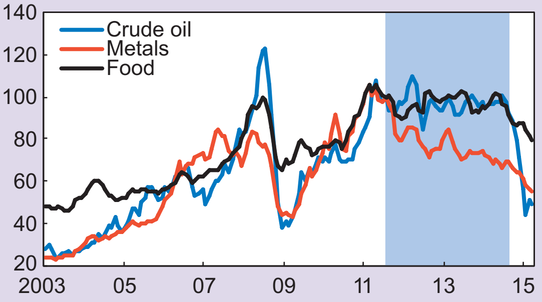
The impact of the recent sharp drop in commodity prices on Latin America's major economies will have important implications for their fiscal and external positions going forward. Several commodity exporters in the region will likely experience a significant and persistent drop in fiscal revenues, requiring some deliberate deficit reduction efforts. Regarding external positions, historical evidence suggests that the deterioration in trade balances will be relatively moderate and short lived. Unfortunately, external adjustment typically does not appear to be driven by a rise in noncommodity exports, but rather by acute import compression, especially in countries with more rigid exchange rate regimes and low export diversification.

The end of the upswing in commodity prices has been affecting Latin America ever since prices peaked in mid-2011. More recently, commodity markets received wider global attention when prices seemed to go into free fall during the second half of 2014. The most notable mover by far was crude oil, owing to both demand and supply factors.[1] Oil prices dropped by half between July 2014 and December 2014, and have edged down further since (Figure 3.1). Prices of other commodity categories also declined, albeit by less. Metal prices are down 20 percent since mid-2014 (although the price of iron ore has fallen by more than 40 percent), and food prices decreased 17 percent during the same period.

Figure 3.1

Commodity Prices

(Index: July 2011 = 100)



Source: IMF, World Economic Outlook database.
Note: The shaded area corresponds to the plateau period referred to in the text.

Not all the news has been bad for every Latin American commodity exporter. First, some commodities held up well (the price of beef, for instance, actually rose by 15 percent between July and November). Second, many oil-importing countries stand to benefit from cheaper oil. Nevertheless, given Latin America's high dependence on commodities, such a swift change in prices is bound to necessitate a sizable macroeconomic adjustment in many economies of the region.[2]

But how much have the terms of trade worsened across individual commodity exporters in Latin America? Is the shock temporary or permanent? What is the likely impact on fiscal accounts and trade balances, and how are countries likely to adjust? This chapter takes stock of the situation, and attempts to shed light on the impending adjustment.

To set the scene, we examine recent developments in commodity terms of trade (CTOT) across the region, and assess the probability of recovering the lost ground over the next two years.[3] We then use a set of econometric models to investigate how fiscal and external variables have adjusted to past commodity price shocks across Latin America's main commodity exporters. Finally, we use these

---

Note: Prepared by Carlos Caceres and Bertrand Gruss, with excellent research assistance from Genevieve Lindow. See Caceres and Gruss (forthcoming) for technical details.

[1] See Chapter 1 in the April 2015 *World Economic Outlook* for a discussion on the drivers of the recent change in commodity prices.

[2] See Adler and Sosa (2011) for a discussion on Latin America's exposure to commodity-related risks.

[3] See Annex 3.1 for a definition of CTOT indices.

model estimates, combined with current commodity price forecasts, to project the likely adjustment path for individual economies.

The Commodity Price Cycle: Where Do We Stand Now?

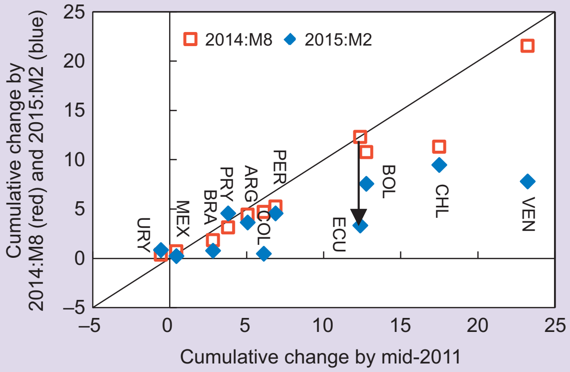
To understand what has happened since mid-2014, it is useful to take a step back and recall the evolution of commodity terms of trade since the early 2000s.

Commodity prices soared during the 2000s, increasing by more than threefold between 2003 and 2011. The associated terms-of-trade gains were truly exceptional for most commodity exporters in Latin America.[4] Figure 3.2 displays the cumulative change in CTOT from their average levels in 2002 (that is, just before the boom period) for a sample of 11 Latin American commodity exporters. The figure combines data for different reference points: the horizontal axis shows the cumulative change up to the peak of the boom (that is, mid-2011), while the vertical axis shows the cumulative change through mid-2014 (red squares) and February 2015 (blue diamonds), respectively. Thus, markers further below the diagonal line indicate a larger recent decline in CTOT from the mid-2011 peak. Focusing initially on the horizontal axis, Figure 3.2 shows that by mid-2011, CTOT had increased on average by about 8 percentage points of GDP—and by almost three times as much in the case of Venezuela.[5]

Figure 3.2

Commodity Terms of Trade, 2003–15

(Cumulative change in CTOT indices from average levels in 2002; percentage points of GDP)



Sources: IMF, World Economic Outlook database; UN Comtrade; and IMF staff calculations.
Note: CTOT = commodity terms of trade. For country name abbreviations, see page 79.

The boom was followed by a period—from mid-2011 to mid-2014—in which commodity prices were broadly stable (oil, most agricultural products) or started weakening (notably metals but also a few agricultural products). Reflecting their specific commodity exposures, some countries had already lost an important fraction of their previous CTOT gains during this *plateau* period (as evidenced by the vertical distance of the red squares from the diagonal line in Figure 3.2). Brazil and Chile, for instance, had lost about one-third of their boom-period CTOT gains by mid-2014. Colombia and Peru, in turn, had lost about one-fourth of their earlier gains, while Bolivia, Ecuador, and Venezuela were relatively unscathed, because of the resilience of oil markets up to that point.

However, this *plateau* period of relatively low price volatility was followed by a phase of sharp declines in commodity prices starting in mid-2014. Given that this latest commodity market rout has been led by oil, it implies a differentiated picture in terms of CTOT movements across the region. Major oil exporters such as Colombia, Ecuador, and Venezuela experienced substantial CTOT losses in a short period (about 4¼ percent of GDP, 9 percent of GDP, and 14 percent of

---

[4] Chapter 4 of the October 2011 *Regional Economic Outlook: Western Hemisphere* and Gruss (2014) show that the terms-of-trade gains during the recent boom stand out in a historical perspective.

[5] The CTOT is a chained price index. It is constructed by weighting changes in prices of individual commodities by their (net) export value, normalized by GDP (see Annex 3.1). A given increase (drop) in CTOT can then be interpreted as an approximate gain (loss) in GDP terms. Compared to traditional terms-of-trade measures, this CTOT metric presents a number of advantages: it is not affected by noncommodity prices, its variation is exogenous at the country level, and, crucially, it does not weigh export and import prices equally but proportionally to their relative trade magnitudes.

GDP, respectively, between August 2014 and February 2015; see Figure 3.2). In the case of Colombia, moreover, these losses have eroded almost all of the net gains of the previous decade. Bolivia, Brazil, and Chile suffered more moderate CTOT losses, ranging from 1 percent of GDP to 3 percent of GDP. For Peru, in turn, the CTOT loss was even smaller (⅔ percent of GDP), as the drop in oil prices largely offset the decline in metal prices; Paraguay and Uruguay even saw a slight improvement of their CTOT.[6]

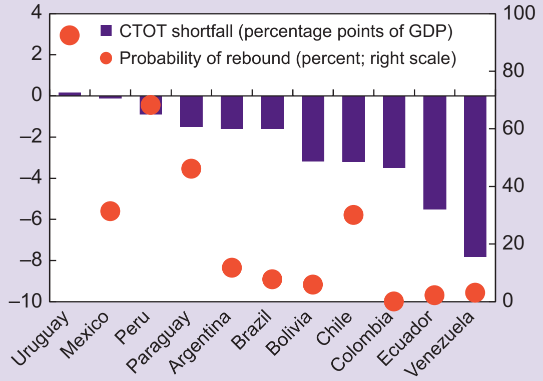
A Temporary or Permanent Shock?

Assessing whether the most recent correction in commodity prices is temporary or likely to persist is a daunting task. That said, we present some indicative evidence from two alternative approaches suggesting that the observed correction contains a large permanent—or at least highly persistent—component.

Figure 3.3

Projected Commodity Terms of Trade, End-2016

(Comparison of CTOT indices in the future and their observed levels during the plateau period)



Sources: IMF, World Economic Outlook database; UN Comtrade; and IMF staff calculations.

Note: CTOT = commodity terms of trade. The bars denote the difference between the projected CTOT by end-2016, based on the prices of commodity futures prevailing at end-February 2015, and the average levels observed during the *plateau* period (between mid-2011 and mid-2014). The red dots denote the probability for each country's CTOT of reaching or exceeding by end-2016 the average level observed during the *plateau* period, based on stochastic simulations using the Geometric Brownian Motion model of Caceres and Medina (forthcoming). See Annex 3.1 for details.

Our specific goal is to gauge the likelihood that CTOT will revert to the levels of the *plateau* period (that is, the average price observed between mid-2011 and mid-2014).[7] To this end, we first compute projected country-specific CTOT using prices of commodity futures. According to these financial market data, by end-2016 the CTOT of commodity exporters in Latin America would still be, on average, 2½ percentage points of GDP below their *plateau* levels (Figure 3.3). The remaining shortfall is particularly large in the case of Colombia, Ecuador, and Venezuela (3½ percentage points of GDP, 5½ percentage points of GDP, and 8 percentage points of GDP, respectively), as markets expect only a partial and gradual recovery of oil prices over the coming years.

Second, we model the distribution of CTOT based on their historical trend and volatility, and generate stochastic simulations of their possible future paths (see Annex 3.1 for more details). Based on these simulations, we generate confidence intervals and the probability of country-specific CTOT remaining below their *plateau* level by the end of 2016. Figure 3.3 (red dots) shows that, except for Paraguay, Peru, and Uruguay, the probability of CTOT reverting to—or exceeding—those levels is less than one in three.

In sum, while the uncertainty involved in forecasting commodity prices is large, it seems unlikely that CTOT will revert to their *plateau* levels anytime soon.

---

[6] Our CTOT indices do not include precious metals, and thus do not account for changes in, for instance, gold and silver prices, which are important for some countries in the region (notably Bolivia, Peru, and, to a lesser extent, Colombia). The inclusion of these precious metals, however, would not affect significantly the relative magnitude of the correction in CTOT since mid-2011 shown in Figure 3.3 (gold and silver prices in February 2015 were, on average, 39 percent lower than in mid-2011, comparable to the 41 percent and 50 percent decline in the price of copper and oil, respectively).

[7] Although some commodity prices, notably certain metals, exhibited a slight downward trend between mid-2011 and mid-2014, the *plateau* was a sufficiently long period of low CTOT variability (compared to the preceding years) to serve as a useful reference point.

Adjusting to Commodity Price Shocks—Historical Evidence

What does a less favorable outlook imply for commodity exporters in Latin America? To examine this issue, we first explore the historical response of public finances and external accounts to commodity price shocks. More precisely, we estimate a set of country-specific vector autoregressive models for nine Latin American countries, using quarterly data since the mid-1990s.[8] All models include a country-specific CTOT index (expressed in terms of deviations from its trend, which we denote CTOT "gap" hereafter) as an exogenous variable and a set of endogenous variables comprising the output gap, the real effective exchange rate (REER), and, depending on the question, a fiscal or external aggregate (expressed in percent of GDP).[9] We base our quantitative analysis on the models' impulse response functions of the fiscal and external variables, in reaction to a shock to the country-specific CTOT gap.[10]

Fiscal Dynamics

Regarding public finances, we focus our analysis mainly on the response of fiscal revenues, which are likely to better reflect the exogenous effect of the commodity price shock.[11] The overall fiscal balance, in contrast, will also be strongly influenced by discretionary spending adjustments in response to the commodity price shock.[12] This policy reaction would likely depend on specific circumstances and could deviate significantly from historical patterns. That said, we also report results for vector autoregressive models where the revenue-to-GDP ratio is replaced by the fiscal balance (Figure 3.4).

In terms of fiscal revenues, Bolivia and Ecuador stand out in our sample as exhibiting the largest responses: about 0.8 percentage point of GDP—in response to a one standard deviation shock to their CTOT, roughly equivalent to a 13 percent decline in the price of natural gas for Bolivia and a 16 percent drop in oil prices for Ecuador (Figure 3.4).[13] Chile comes next, with a decline in revenue of about ½ percentage point of GDP (following a shock to its CTOT roughly equivalent to a 12 percent decline in copper prices). The revenue ratio reacts somewhat less in Mexico and Peru (less than ⅓ percentage point of GDP), while

---

[8] The sample comprises Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, and Uruguay. Overall, individual vector autoregressive sample periods were mainly dictated by data availability, with individual samples starting between 1990:Q3 and 2001:Q2. Argentina and Venezuela were removed from the sample based on data availability issues.

[9] We assume the period of the commodity price cycle to be 20 years for the computation of CTOT gaps, which is in line with the literature on commodity super-cycles (for example, Erten and Ocampo 2013; Jacks 2013). To account for possible changes in seasonality of fiscal aggregates, we use four-quarter-cumulative values to compute ratios to GDP.

[10] Table A3.1 in Annex 3.1 shows the percent change in CTOT equivalent to a one standard deviation shock to the index gap. It also shows, as an illustration, the percent variation in each country's main commodity export that would result in a commensurate change in the CTOT gap.

[11] The coverage of fiscal variables is at the nonfinancial public sector level for Bolivia, Colombia, and Uruguay. For Mexico, the consolidation includes federal government, public enterprises under budgetary control (including Pemex), and social security. For the rest, the coverage is at the central government level. Even in these countries, however, the bulk of commodity-related revenues are collected by the central government, notwithstanding possible subsequent transfers to subnational governments.

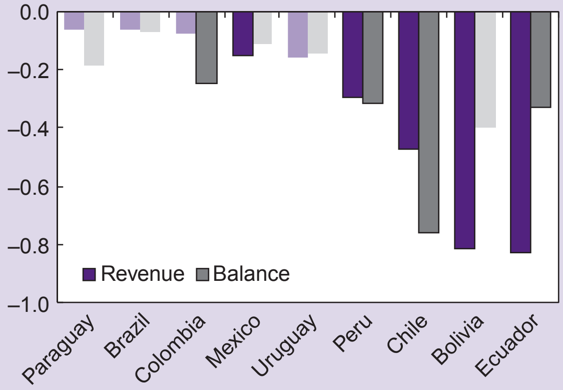
[12] The response of fiscal variables arguably reflects both the direct effect of commodity price shocks and the historical policy response. In the case of revenues, however, the bulk of the response is likely to reflect the former. Indeed, revenue-side policies and outturns, such as changes in tax rates or the introduction of new taxes, tend to materialize with a lag, owing to implementation and institutional constraints.

[13] Venezuela is not included in this exercise, but given the size of commodity-related revenues (about 20 percent of GDP in 2004–09; see Rodriguez, Morales, and Monaldi 2012), its response is likely to be almost twice as large as in Bolivia and Ecuador.

Figure 3.4

Response of Fiscal Revenue and Overall Balance to a Negative CTOT Shock

(Peak response; percentage points of GDP)



Source: IMF staff calculations.
Note: CTOT = commodity terms of trade. Peak response of fiscal-revenue-to-GDP and fiscal-balance-to-GDP ratios to a negative one standard deviation shock to each country's CTOT gap. In most countries, the peak response is observed about one year after the shock. Solid bars denote that the response is statistically significant at the 5 percent confidence level. Table A3.1 in Annex 3.1 shows the magnitude of the one standard deviation shocks considered here.

for all other countries the response is relatively small and statistically insignificant.[14,15]

Turning to fiscal balances, Chile shows the largest response (close to ¾ percentage point of GDP), followed by Bolivia and Ecuador (close to ⅓ percentage point). The fact that Chile's fiscal balance shows a larger response compared to that of Bolivia and Ecuador—while it was the opposite for their fiscal revenue responses—suggests that Chile was able to adopt countercyclical fiscal policies in the past. This ability is likely to have been supported by Chile's fiscal rule, which prescribes that a significant share of commodity-related windfalls be saved during good times. Bolivia and Ecuador, in turn, experienced a faster expansion of public spending during the boom years, and had virtually no access to international funding to smooth the effects of the sharp drop in commodity prices in late 2008.

Which macroeconomic fundamentals help to further explain the differences in fiscal responses across countries? A natural candidate is the size of the commodity sector relative to the overall economy. A country that is highly dependent on commodities is likely to have a larger share of revenues directly linked to the commodity sector, as well as a larger sensitivity of total output to commodity price shocks.[16] Another potential candidate is the extent of exchange rate flexibility. If the nominal exchange rate depreciates significantly in response to a negative CTOT shock, commodity-related revenues expressed in local currency would drop by less than would have been the case otherwise. In addition, a (real) depreciation would help boost noncommodity exports, aggregate demand, and, eventually, fiscal revenues.[17]

With only nine countries to exploit cross-sectional variation, we limit the analysis to exploring bivariate relationships between the magnitude of the responses to CTOT shocks and a few "fundamentals" for which it is relatively easy to quantify the extent of cross-country heterogeneity: the degree of de facto nominal exchange rate flexibility, the size of the commodity sector (proxied by the ratio of commodity exports to GDP), and the degree of export diversification

---

[14] In the case of Colombia, the magnitude of the response could be somewhat underestimated from historical data as oil production rose significantly over the sample period.

[15] Arguably, a given CTOT change could have different effects on fiscal accounts depending on whether it is driven by a change in commodity export or import prices. As a robustness exercise, we substituted the CTOT variable with an index based only on export prices, but the responses do not differ significantly from the ones reported here.

[16] Our analysis shows that output gaps in all countries in the sample tend to fall (that is, indicate a decline of actual output relative to potential) following a negative shock to their CTOT. The responses (not reported here owing to space constraints) are particularly large and significant for Chile, Colombia, Ecuador, and Peru, where commodity exports account for a large share of GDP.

[17] Our results show that the REER depreciates in all countries in response to a negative CTOT shock, but the response is particularly large (and statistically significant) for Bolivia, Brazil, Chile, Colombia, and Mexico.

Table 3.1. Relationship Between Macroeconomic Responses to CTOT Shocks and Fundamentals

(Significance level)

	Share of Commodity Exports	Export Diversification	Exchange Rate Flexibility
Revenue	0.022	0.035	0.000
Fiscal balance	0.026	0.125	0.337
Exports	0.005	0.000	0.108
Imports	0.003	0.005	0.062
Trade balance	0.471	0.540	0.809

Source: IMF staff calculations.

Note: The numbers denote the statistical significance (*p* values) of the bivariate correlation between, on the one hand, the responses of fiscal or external variables to a commodity terms of trade (CTOT) shock, and on the other hand, country-specific fundamentals (green denotes significance at the 10 percent level; yellow between 10 percent and 15 percent; and orange beyond the 15 percent level). All relationships exhibit the expected sign. Country-specific fundamentals include the ratio of commodity exports to GDP; a diversification index, derived from merchandise export data and following the methodology of IMF (2014a and 2014b); and a measure of de facto exchange rate flexibility, proposed by Aizenman, Chinn, and Ito (2008).

(based on the indicator presented in Chapter 5). Naturally, even after accounting for the size of the commodity sector and exchange rate flexibility, fiscal responses would also depend on other "institutional" characteristics, such as the ownership structure of the commodity sector and the specific fiscal regime used to tax natural resource rents (see Box 3.1). These aspects are, however, harder to capture with a simple metric.

Notwithstanding the limitations of this simple approach, Table 3.1 indicates a number of interesting findings with respect to the bivariate relationship between the estimated fiscal responses and country-specific fundamentals (with 10 percent representing a typical benchmark for statistical significance of the relationship). As expected, the magnitude of the response of fiscal revenues and fiscal balances is strongly related to the size of the commodity sector: the larger the commodity sector, the more its fiscal position deteriorates as a result of a negative CTOT shock. The relationship with the degree of export diversification also appears to be significant, with fiscal accounts deteriorating less in countries that have a more diversified export base.

Turning to the exchange rate regime, our basic correlation analysis suggests that greater exchange rate flexibility helps to buffer the effect of commodity price shocks on public finances. The deterioration of both fiscal revenue and overall balance following a negative CTOT shock is smaller for countries that have higher de facto exchange rate flexibility, owing mainly to a smaller drop in local-currency-denominated revenues. This relationship is strongly significant for fiscal revenue, but not for the overall balance (Table 3.1).

External Adjustment

The reaction of trade balances to a negative CTOT shock looks, at a first glance, less unequivocal than that of fiscal aggregates.[18] While in most countries the trade balance tends to deteriorate right after the shock, in many cases it then bounces back and after three years has typically converged back to the original level or even exceeded it (Figure 3.5).[19] For instance, the trade balances of Chile and Peru worsen by about ½–⅔ percentage point of GDP in response to a negative CTOT shock. But after three years, the balances are found to be about ¼ percentage point *above* the initial level.

This limited deterioration and relatively quick reversal of the trade balance would be consistent with a scenario where noncommodity exports increase markedly in response to the real depreciation triggered by the negative CTOT shock. However, it could also reflect a less benign dynamic whereby most of the adjustment occurs through a sharp contraction in imports, amid weak domestic demand.

To better understand what is behind the trade balance dynamics, we explore the responses of

---

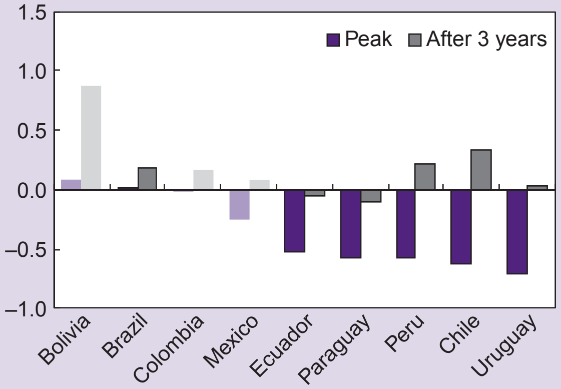
[18] Trade variables throughout the chapter refer to trade in both goods and services.

[19] These results are in line with the *S-shaped* lead and lag correlation between the trade balance and terms of trade documented by Backus, Kehoe, and Kydland (1994) for a set of Organisation for Economic Co-operation and Development countries and Senhadji (1998) for developing countries.

Figure 3.5

Response of the Trade Balance to a Negative CTOT Shock

(Percentage points of GDP)



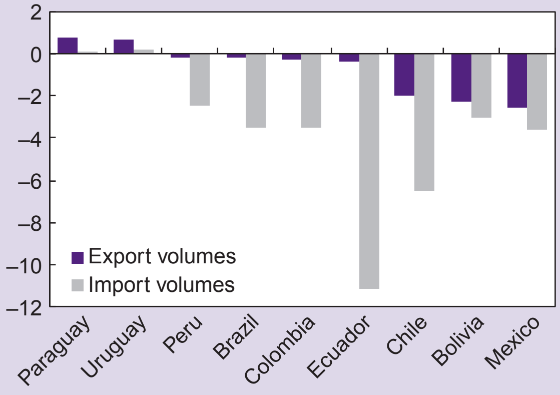
Source: IMF staff calculations.

Note: CTOT = commodity terms of trade. Response of the trade-balance-to-GDP ratio to a negative one standard deviation shock to each country's CTOT gap. Solid bars denote that the response is statistically significant at the 5 percent confidence level. Table A3.1 in Annex 3.1 shows the magnitude of the one standard deviation shocks considered here.

Figure 3.6

Response of Export and Import Volumes to a Negative CTOT Shock

(Peak response; percentage points)



Source: IMF staff calculations.

Note: CTOT = commodity terms of trade. Peak deviation from baseline in response to a negative one standard deviation shock to each country's CTOT index, obtained from country-specific vector error correction models that include, besides the country's CTOT, four domestic variables: real exports, real imports, real effective exchange rate, and real GDP.

exports and imports separately, using a set of additional models.[20] Our findings suggest that the limited deterioration of the trade balance and, ultimately, its reversal are explained by a sharp compression in imports—rather than a rebound in exports.

Overall export volumes initially fall in all countries except Paraguay and Uruguay, suggesting a rather muted response in noncommodity tradables sectors to the exchange rate depreciation triggered by the commodity price shock. Considering again the cases of Chile and Peru, the drop in import volumes after a negative CTOT shock is larger by 2½ percentage points and 4½ percentage points, respectively, than that of export volumes (Figure 3.6). The pattern is broadly similar for the other commodity exporters: most of the medium-term improvements in trade balances seem to be due to import compression rather than export expansion.[21]

While the import compression pattern is common across the region, there is still considerable heterogeneity in terms of the external sector adjustment. This heterogeneity in the response of trade variables also appears linked to some country fundamentals.

As before, we find that flexible exchange rates play a stabilizing role: the drop in exports is smaller in countries that have greater exchange rate flexibility. However, the relationship is only marginally significant at conventional levels, probably reflecting the low degree of export diversification in the region (see Chapter 5). Import compression is also larger in countries that have a more rigid exchange rate regime (and the relationship is highly statistically significant). The stronger import compression in countries with less exchange rate flexibility may appear surprising at first glance, as a smaller change in relative prices (foreign goods becoming more expensive relative to domestic goods when the REER falls) reduces the so-called expenditure switching effects (domestic buyers shifting from imported to domestic goods). The result suggests that income effects—from a deep domestic downturn that reduces spending across the board—are more important in the import adjustment. Finally, the relationship between exchange rate flexibility and the response of the overall trade balance has the expected sign, but is not statistically significant.

---

[20] For this purpose, we estimate country-specific vector error correction models. These include the CTOT index as an exogenous variable, and real exports, real imports, REER, and real GDP (all in log levels) as endogenous variables.

[21] The strong import compression could be reflecting a sharp contraction in corporate investment across sectors (both commodity and noncommodity), as suggested by the findings in Chapter 4.

As expected, the drop in total exports in response to a CTOT shock is larger in countries that are more dependent on commodities. It is also larger in countries that show a lower degree of export diversification, as fewer sectors can benefit from the exchange rate depreciation triggered by the CTOT shock.[22] In both cases, the relationship is statistically significant. Interestingly, the degree of import compression is also larger in these countries, reinforcing the notion that income effects play a key role in the adjustment. The relationships for the trade balance go in the same direction—but are not statistically significant.

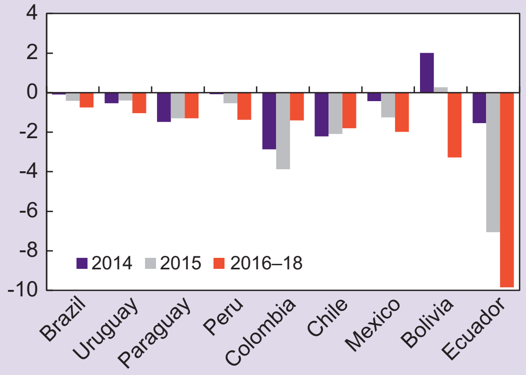
Looking Ahead: Outlook for Trade and Fiscal Balances

Building on the analysis presented thus far, conditional out-of-sample forecasts for fiscal and external variables can be constructed using commodity futures. In terms of methodology, the analysis of the previous section presented the dynamic adjustment of an economy that is assumed to be *in equilibrium* when hit by a commodity price shock of historically "normal" size. In this section, instead, the economy is assumed to start from its *current* position (typically the third quarter of 2014, based on data availability) and face the path for commodity prices actually implied by futures markets.

Figure 3.7

Out-of-Sample Forecast: Fiscal Revenue

(Difference between projected revenue-to-GDP ratio and maximum revenue-to-GDP ratio attained between mid-2011 and mid-2014; percentage points)



Source: IMF staff calculations.
Note: Values for 2014 are based on actual data up to 2014:Q2 or 2014:Q3 and out-of-sample forecast for the rest of the year, except for Mexico and Peru, for which there is actual data up to 2014:Q4.

Figure 3.7 reports the difference between fiscal revenue-to-GDP ratios in 2014–18 vis-à-vis the peak levels attained during the *plateau* period. In 2014, fiscal revenues in some countries (for example, Chile and Colombia) were already noticeably lower than the record levels reached a few years earlier. Except for Chile and Paraguay, the simulations suggest that revenue ratios would drop further going forward, especially in hydrocarbon-producing countries.[23] Indeed, the medium-term revenue loss would be large for Bolivia and Ecuador.

Turning to the external side, our simulations suggest that trade balances across the countries in our sample will be noticeably lower than during the boom (Figure 3.8). In the case of Chile, and conditioning on its current trade balance and the expected path for its CTOT, the model projections

---

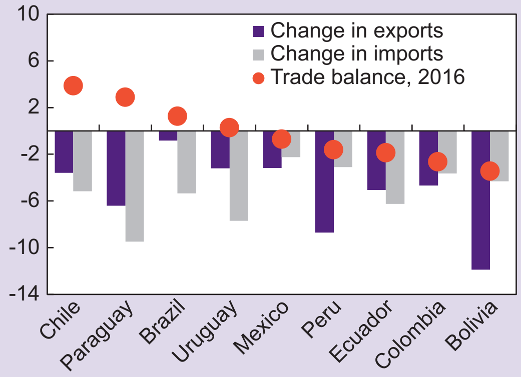
[22] The relationship is also highly statistically significant if, instead of diversity, we use the indicator of export complexity used in Chapter 5.

[23] In the case of Mexico, the projections do not take into account the possibility that derivative positions built up before the recent oil price decline might offer temporary protection for oil-related fiscal revenue.

Figure 3.8

Out-of-Sample Forecast: External Variables

(Percentage points of GDP)



Source: IMF staff calculations.

Note: The change in exports (imports) denotes the difference between the average projected exports (imports)-to-GDP ratio in 2015–16 and the maximum ratio reached between mid-2011 and mid-2014.

indicate a 4 percent of GDP trade surplus in 2016. This would be much lower than the 8 percent of GDP surplus observed on average during 2003–11, but still remarkably strong. At the other end of the spectrum, Bolivia is projected to post a sizable trade deficit of about 3½ percent of GDP, compared to an average surplus of above 5 percent during 2003–11. In absolute levels, however, the projected trade deficit in most countries looks manageable.

Nevertheless, and in line with the results in the previous section, our simulations also suggest that significant import compression—rather than a rebound in noncommodity exports—is responsible for a large share of the adjustment. Figure 3.8 shows the projected change in the ratios of exports and imports to GDP over the next two years relative to their highs at the peak of the recent boom. The import ratio is projected to decline sharply and, in many cases, by more than the export ratio (for example, in Brazil, Chile, Ecuador, Paraguay, and Uruguay). In principle, cutting back on imports is a natural way of preserving external sustainability after an adverse shock. Yet, this adjustment would still be rather painful if, as suggested by the historical pattern for the region, it mainly reflects a contraction in domestic demand.

These projections, as well as the responses reported in the previous section, are naturally subject to some caveats. By relying on historical patterns and assuming stable relationships over time, they do not (fully) take into account more recent changes in relevant economic attributes, such as changes in policy frameworks. Many Latin American countries have indeed significantly strengthened their policy frameworks in recent years (for instance, by allowing greater exchange rate flexibility and adopting fiscal policy rules). In addition, the importance of commodity exports for some countries may have evolved considerably during our sample period (for example, it has increased in Colombia but decreased in Mexico). Finally, the projections are obtained by conditioning only on one external factor (that is, the expected path for CTOT) and do not take into account new policy measures that may yet be taken. All this could naturally introduce a bias in the projections.

Conclusions and Policy Implications

The analysis in this chapter shows that most commodity exporters in Latin America have suffered a substantial deterioration of their commodity terms of trade over the last 3½ years. This situation has become particularly acute since mid-2014. In addition, the probability of a swift recovery in the terms of trade is low for most countries.

In this context, the analysis suggests that some countries will probably need to cope with a sizable and protracted fall in fiscal revenues over the next two to four years. This pressure on public finances will typically require fiscal restraint to avoid a destabilizing rise in deficits. The buildup of fiscal space over the boom years and the ability to borrow at still-low funding costs will allow some countries to smooth this necessary adjustment, for instance, by preserving capital spending in key areas that are crucial to alleviate existing supply-side bottlenecks. Several other countries, however, have essentially no buffers left, and thus will need to rein in deficits over the near term, in an unfortunate reminder of the region's historical policy procyclicality.

In terms of external sector adjustment, our analysis suggests a somewhat muted impact on external balances. However, in the past this has been the result of sizable import compression rather than a rebound in exports.

Exchange rate flexibility appears to be an important safety mechanism, facilitating a smoother fiscal and external adjustment following a commodity price shock.

Box 3.1

Commodity Sector Activity and Fiscal Revenue—Direct Links

The sensitivity of fiscal revenue to commodity prices depends on country characteristics, including the size and nature of the commodity sector, ownership structures, and, importantly, the specifics of the existing tax regime. Fiscal revenue may be particularly sensitive to commodity price changes where commodity rents (that is, profits above and beyond the normal return on capital) are sizable and part of the tax base. Implementing mechanisms that effectively tax such rents (for instance, progressive gross income–based taxes that allow for a rising tax take as firms' operational margins increase) tends to be easier when production is concentrated in a small number of large firms—as is common in the mining and energy sectors—than when ownership is spread among a large number of atomistic producers whose individual cost structures and revenues are more difficult to monitor—as is typically the case in the agricultural sector. The exposure of fiscal revenue to commodity price volatility also tends to be heightened when the commodity sector is (fully or partly) owned by state enterprises that not only pay taxes and royalties but also distribute dividends to the state—a model that is found across many Latin American countries, notably in the mining and energy sectors.[1]

Indeed, the prominence of commodity-related revenue—and the sensitivity of total fiscal revenue to commodity price fluctuations documented in this chapter—is larger in hydrocarbon and metal-producing countries than among other commodity exporters in the region. For instance, fiscal revenue from state-owned energy companies represents about 10 percent of GDP in Bolivia and Ecuador. In Colombia, where oil also plays a dominant role and about 60 percent of the sector is state owned, commodity-related revenues are about 5 percent of GDP. Comparable revenue in metal-producing countries is somewhat lower but still sizable. For instance, the importance of the mining sector in Peru is roughly comparable to that of hydrocarbon production in Bolivia, Colombia, and Ecuador (about one-tenth of the economy), yet the associated fiscal revenue in Peru averaged "only" about 2 percentage points of GDP during 2005–13. In Chile, where the sector is somewhat larger (about one-eighth of the economy), commodity-related revenues reached almost 5 percent of GDP. Compared to Peru, the higher revenue seems to reflect the contributions from Codelco, Chile's large state-owned copper company. Specifically, Codelco accounts for one-third of Chile's copper production but as much as 60 percent of total commodity-related revenues.

The estimated revenue responses reported in Figure 3.4 clearly reflect these differences in *direct* linkages between fiscal revenue and the commodity sector. But the model-based estimates also capture a host of additional factors, and thus should be expected to differ from the narrow direct effects discussed in this box.[2] These additional factors include the specific fiscal mechanism used to tax natural resource rents, the extent of interlinkages between the commodity sector and the rest of the economy, the implementation of fiscal rules, and the extent of exchange rate flexibility, among others.

---

[1] Needless to say, the long-run level of commodity-related revenue could well turn out to be lower under public ownership if, for instance, the efficiency and profitability of investment is inferior in state-owned enterprises. Exclusive reliance on public capital may also limit the sector's capacity to fully exploit available reserves, constraining potential output and fiscal revenue.

[2] For instance, while staff estimates that the *direct* revenue loss in Ecuador associated with a $10 drop in oil prices is about 0.7–0.8 percentage point of GDP, the vector autoregressive estimates suggest a somewhat higher loss (0.8–0.9 percentage point of GDP).

Annex 3.1. Technical Details

Commodity Terms of Trade

The construction of country-specific CTOT indices follows Gruss (2014). It is computed in (log) levels by iterating on the equation:

$$\Delta \mathrm{Log}\left(\mathrm{CTOT}\right)_{i,t} = \sum_{j=1}^{J} \Delta P_{j,t} \cdot \overbrace{\left\{ \left(x_{i,j,\tau-1} - m_{i,j,\tau-1} \right) / \mathrm{GDP}_{i,\tau-1} \right\}}^{\omega_{i,j,\tau-1}},$$

where $P_{j,t}$ is the logarithm of the relative price of commodity j in period t within year τ (in U.S. dollars and divided by the IMF's unit value index for manufactured exports); Δ denotes first differences; $x_{i,j,\tau-1}$ ($m_{i,j,\tau-1}$) denotes the exports (imports) value of commodity j by country i (in U.S. dollars, from UN Comtrade); and $GDP_{i,\tau-1}$ denotes country i's nominal GDP in U.S. dollars, all averaged between years $\tau-1$ and $\tau-3$ (the weights $\omega_{i,j,\tau-1}$ are thus predetermined vis-à-vis the price change in each period, but are allowed to vary over time reflecting changes in the basket of commodities actually traded). We use prices for 45 commodities (from the IMF's International Financial Statistics database).

Table A3.1. Magnitude of Shocks in VAR Models

(Commodity price drop equivalent to a negative one standard deviation CTOT shock)

Country	Main Export Good	Percent Change in CTOT	Equivalent Percent Change in Price of Main Export
BOL	Natural gas	–1.0	–13.1
BRA	Iron ore	–0.2	–21.2
CHL	Copper	–1.6	–11.8
COL	Crude oil	–0.5	–14.8
ECU	Crude oil	–1.7	–16.4
MEX	Crude oil	–0.2	–13.4
PER	Copper	–0.6	–15.3
PRY	Soybeans	–0.9	–16.2
URY	Beef	–0.3	–10.7

Source: IMF staff calculations.
Note: CTOT = commodity terms of trade; VAR = vector autoregressive. See page 79 for country abbreviations.

Stochastic Simulations

The probabilities reported in Figure 3.3 are computed following a two-step process. First, the distribution of each country-specific CTOT index is characterized using the Geometric Brownian Motion model of Caceres and Medina (forthcoming). More precisely, the behavior of each CTOT is assumed to be driven by the following stochastic differential equation:

$$dy_t = \alpha y_t \, dt + y_t \, \sigma \, dB_t$$

where y_t is the log-CTOT index at time t; B_t is a standard Brownian motion (or Wiener process); and α and σ are "drift" (trend) and "volatility" parameters, estimated using maximum likelihood. Second, the probability that each CTOT exceeds a predetermined level at any forecast horizon (for example, by end-2016) is computed from the empirical distribution of possible future CTOT paths, which are in turn generated from stochastic (Monte Carlo) simulations based on model estimates.

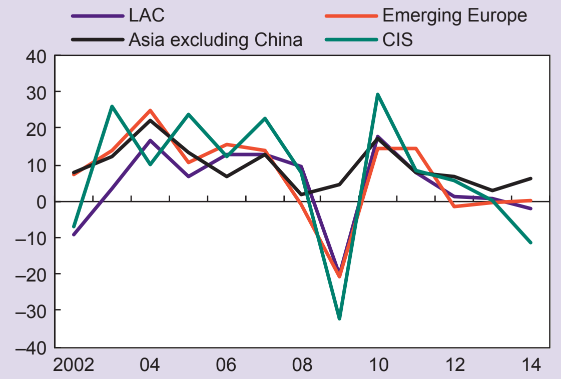
4. Recent Investment Weakness in Latin America: Is There a Puzzle?

After peaking in 2010–11, real investment has decelerated in Latin America and the Caribbean (LAC), in line with developments in other emerging markets. Coming down from cyclical highs, however, investment ratios are still above historical averages in most countries in the region. This chapter examines the key factors determining the behavior of private investment. The analysis suggests that the sharp decline in commodity export prices is the main driver behind the investment slowdown in Latin America. Lower current cash flows and expected profitability, and increased corporate leverage at the firm level have also played a role, though to a more limited extent than elsewhere. Given the subdued outlook for many key drivers of corporate capital spending, a robust investment recovery in Latin America seems relatively unlikely, unless policymakers can make decisive progress in improving conditions for private investment.

Figure 4.1

Real Private Investment Growth

(Percent change)



Sources: IMF, World Economic Outlook database; and IMF staff calculations.
Note: CIS = Commonwealth of Independent States; LAC = Latin America and the Caribbean. Purchasing power parity–weighted GDP average.

Recent Investment Dynamics: The Slowdown in Perspective

After peaking in 2010–11, investment growth has slowed markedly in emerging market economies. Most emerging market regions, including LAC, have shared similar investment dynamics—robust growth in the period before the global financial crisis, a sharp contraction in 2009 followed by a rapid and strong rebound, and a sustained deceleration in the last three years (Figure 4.1). The latter has been most pronounced in emerging Europe, where investment growth has stalled since 2012, and especially in the Commonwealth of Independent States, where it turned negative in 2014 owing to events in Russia and Ukraine.

Moreover, the recent slowdown in investment has come essentially as a surprise. As shown in Box 1.2 of the October 2014 *World Economic Outlook*, investment accounted for the largest share of forecast revisions in emerging markets during 2011–13. This naturally raises the question whether anything unusual has been going on. Is there a puzzle about the continued weakness of investment in emerging markets?[1]

In LAC, the prima facie evidence does not necessarily point to a puzzle. The average ratio of private investment (the largest component of total investment and our focus in the remainder of this chapter) to output has declined recently and is now below the levels observed just before the global financial crisis, but remains above the average of the last three decades. In emerging Asia, ratios to GDP are still in line with precrisis levels—and much higher than in LAC—despite having eased in the last three years (Figure 4.2).

Looking across emerging markets, private investment is highly correlated with commodity prices (Figure 4.3). The comovement between private investment and (country-specific) gross commodity export prices is especially strong in LAC and Commonwealth of Independent States (with correlation coefficients of 0.84), reflecting

---

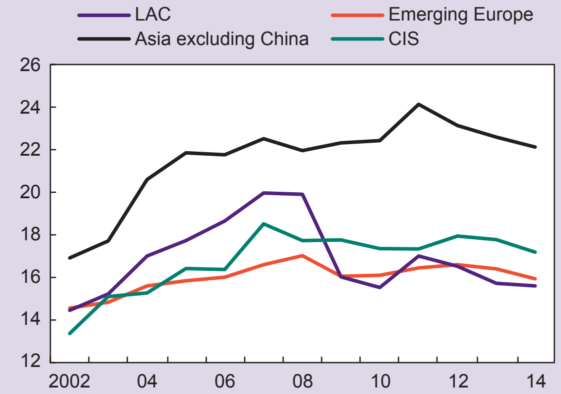
Note: Prepared by Nicolás E. Magud and Sebastián Sosa. Genevieve Lindow provided excellent research assistance. See Magud and Sosa (2015) for technical details.

[1] Chapter 4 of the April 2015 *World Economic Outlook* addresses a similar question for a group of advanced economies.

Figure 4.2

Private Investment Ratios

(Percent of GDP)



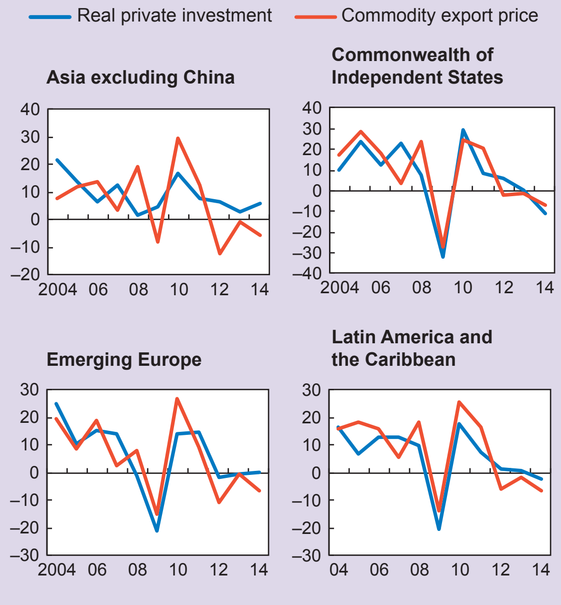
Sources: IMF, World Economic Outlook database; and IMF staff calculations.

Note: CIS = Commonwealth of Independent States; LAC = Latin America and the Caribbean. Investment ratios are purchasing power parity–weighted GDP averages.

Figure 4.3

Real Private Investment and Commodity Export Price Growth, 2004–14

(Percent change)



Sources: Gruss (2014); IMF, World Economic Outlook database; and IMF staff calculations.

Note: Purchasing power parity–weighted GDP averages.

that these two regions include many commodity-exporting firms.[2] Focusing on quarterly data for the most recent period, both commodity prices and private investment growth rates peaked around mid-2011 and have declined since. In LAC, the sharp decline in commodity export prices has reinforced a general sentiment of leaner times—associated with significant downward revisions to potential growth that have arguably caused firms to curtail their capital expenditure. In addition, private investment in emerging markets has also been positively correlated with capital inflows, suggesting a role for external financing conditions in explaining domestic investment dynamics.

What Determines Private Investment in Emerging Markets?

To study the main determinants of private investment and whether the recent deceleration can be explained by these determinants, we draw on both firm-level and macroeconomic regression analysis.

Firm-Level Data Panel Regressions

We start by looking at investment at the firm level. At the outset, it is worth noting that the share of total private investment accounted for by corporate investment ranges between 70 percent and 75 percent across countries in LAC (based on the countries for which disaggregated data are available). Moreover, corporate investment has been the main driver of the ongoing downturn (although residential investment has also weakened in some countries).[3]

---

[2] This is consistent with findings in other studies. For example, Fernandez, Gonzales, and Rodriguez (2014) document that, on average, emerging markets are commodity exporters and tend to respond procyclically to country-specific commodity prices.

[3] The firm-level data in the sample represent about 12 percent of aggregate private investment (from the national accounts), with correlation coefficients between these time series varying by country but averaging over 30 percent.

The empirical model of investment combines firm-level determinants and country-specific macroeconomic variables in a panel framework. Our baseline specification is derived from the standard Q theory of investment.[4] We use Tobin's Q and cash flow measures as proxies for marginal profitability and financing constraints, respectively.[5] As is standard in the literature, a higher dependence on internal funding is interpreted as evidence of tighter external financing constraints.[6] Also in line with earlier studies, we include several additional corporate financial variables at the firm level (cost of debt, leverage, and debt flows).[7] To this standard list of regressors we add three country-specific macroeconomic variables—commodity export prices, net capital inflows, and uncertainty—that may also affect corporate investment and are the principal focus of this chapter.[8]

Our linear panel regressions allow for both time and firm fixed effects to capture other unobserved influences on corporate investment.[9] The specification combines firm-level and country-level data, so we compute standard errors that are robust to clustering by country. Thus, the baseline specification is as follows:

$$\begin{aligned}\frac{I_{ic,t}}{K_{ic,t-1}} &= \alpha + \beta_1 Q_{ic,t} + \beta_2 \frac{CF_{ic,t}}{K_{ic,t-1}} + \beta_3 Lev_{ic,t-1} \\ &+ \beta_4 \frac{\Delta Debt_{ic,t}}{K_{ic,t-1}} + \beta_5 Int_{ic,t-1} + \beta_6 P^x_{c,t-1} \qquad (4.1) \\ &+ \beta_7 KI_{c,t} + \beta_8 Unc_{c,t} + d_i + d_t + \varepsilon_{ic,t}\end{aligned}$$

where subscripts *(ic,t)* stand for firm *i* in country *c* during period *t*. *I* is investment, measured as the firm's purchases of gross fixed assets; and *K* is the stock of capital, measured as the total net value of property, plant, and equipment. *Q* represents the standard Tobin's Q, and is measured as the price-to-book-value of the company's equity. *CF* denotes the firm's cash flow, computed as net profits from operating activities; *Lev* is leverage, measured as the ratio of total debt to total assets; *ΔDebt* stands for the change in total debt since the previous period; and *Int* is the firm's effective interest rate paid on total debt.[10] *KI* denotes (net) capital inflows at the country level; P^x denotes (the log difference) of the commodity export price index;[11] and *Unc* stands for aggregate uncertainty, measured as the volatility of stock market prices. Finally, ε represents an error term.[12]

Table 4.1 reports the results of the baseline specification. Column 1 shows that all coefficients for the firm-level variables have the expected sign and are statistically significant at the 1 percent level (except for the cost of debt, which is significant only at the 10 percent level). Tobin's Q is positively related to investment, indicating that firms that financial markets expect to be more profitable tend to invest more, a common result in the literature. In quantitative terms, a one standard deviation shock to

---

[4] See, for example, Gilchrist and Himmelberg (1995).

[5] Marginal Q is unobservable and typically proxied by average Q. Hayashi (1982) discusses the conditions under which both measures are equivalent.

[6] See, for example, Fazzari, Hubbard, and Petersen (1988, 2000); and Blanchard, Ree, and Summers (1994).

[7] Lagging these variables does not change the results, while mitigating potential endogeneity issues.

[8] Chapter 1 of the October 2014 *Global Financial Stability Report* relies on a similar firm-level approach to examine the determinants of investment for a set of advanced economies, although it does not include any macroeconomic variable.

[9] The results are also robust to the inclusion of country fixed effects.

[10] Firm-level data are from Worldscope and cover about 16,000 publicly traded firms from 38 emerging markets for the period 1990–2013. Figure A4.1 in the Annex illustrates the variation of the main firm-level data across regions, particularly between emerging Asia and Latin America.

[11] Commodity export prices are lagged, capturing the idea of a delayed response owing to decision and implementation lags. The same applies to firms' cost of debt.

[12] Regarding the macroeconomic variables, the (country-specific) gross commodity export price indices are from Gruss (2014). They are constructed by weighting changes in international prices of individual commodities by their share in commodity exports—and can be considered exogenous to each country. Capital inflows (measured using the financial account balance, in percent of GDP) and real GDP series come from the IMF's International Financial Statistics and World Economic Outlook databases. Finally, we use data from Bloomberg, L.P., to construct our measure of country-specific uncertainty based on the average monthly volatility of stock market returns.

Table 4.1. Firm-Level Data Panel Regressions

	(1) ICR	(2) ICR	(3) ICR	(4) ICR	(5) ICR	(6) ICR
Tobin's Q	0.0200***	0.0188***	0.0184***	0.0179***	0.0192***	0.0191***
	(0.00508)	(0.00490)	(0.00465)	(0.00465)	(0.00445)	(0.00451)
Cash flow	0.0118***	0.0114***	0.0114***	0.0112***	0.00609***	0.00608***
	(0.00208)	(0.00221)	(0.00219)	(0.00212)	(0.00136)	(0.00136)
Leverage (t − 1)	–0.0340***	–0.0323***	–0.0315***	–0.0318***	–0.0308***	–0.0307***
	(0.00345)	(0.00292)	(0.00305)	(0.00315)	(0.00311)	(0.00312)
Interest expense ratio (t − 1)	–0.0448*	–0.0415	–0.0394	–0.0421		
	(0.0261)	(0.0274)	(0.0281)	(0.0281)		
Change in debt	0.00334***	0.00296***	0.00292***	0.00291***	0.00276***	0.00276***
	(0.000911)	(0.00100)	(0.00101)	(0.00101)	(0.000930)	(0.000930)
Commodity export price (t − 1)		0.000445***	0.000475***	0.000461***	0.000449***	0.000420***
		(0.000105)	(9.97e-05)	(0.000101)	(9.89e-05)	(8.95e-05)
Net capital inflows			0.00255***	0.00260***	0.00266***	0.00273***
			(0.000680)	(0.000709)	(0.000727)	(0.000753)
Uncertainty				3.80e-06		
				(3.32e-06)		
Cash flow × net capital inflows					–0.000671***	–0.000671***
					(0.000220)	(0.000220)
Recent						–0.00503
						(0.00513)
Constant	10.94***	10.28***	10.04***	9.832***	9.456***	8.935***
	(1.010)	(0.806)	(0.863)	(1.013)	(0.885)	(0.933)
Observations	83,921	64,276	64,276	63,460	72,184	72,184
Number of firms	15,165	12,317	12,317	12,280	13,444	13,444
Number of countries	38	36	36	36	36	36
R^2	0.0352	0.0345	0.0414	0.0416	0.0377	0.0378

Source: IMF staff calculations.
Note: ICR = investment-to-capital ratio. The regressions include time and firm-level fixed effects. Robust standard errors (clustered by country) in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Tobin's Q raises the investment-to-capital ratio by a substantial 2.9 percentage points, holding everything else fixed. Also in line with previous studies, we find robust evidence of financial constraints, reflected in a positive relationship between firms' cash flow and capital spending. That is, firms in emerging markets need to rely on internal funds to finance investment projects. More leveraged firms, in turn, tend to exhibit lower investment in the following period. Specifically, a one standard deviation increase in leverage tends to be associated with a fall in the investment-to-capital ratio by 3.3 percentage points. Also as expected, debt flows are positively related to capital spending, arguably because financing investment is one of the main reasons to incur new debt.[13]

We then introduce the country-specific macroeconomic variables (columns 2 to 6). The magnitude and significance of the coefficients of Tobin's Q, cash flow, leverage, and change in debt do not change. The coefficient on the cost of debt, while still negative and similar in magnitude, becomes statistically insignificant.[14] We find robust evidence that an increase in a country's commodity export prices is associated with higher investment by firms in that country.[15] On average, a one standard deviation shock changes the investment-to-capital ratio by 0.6 percentage point. Investment by emerging market firms also appears to be positively influenced by the availability of foreign financing. The larger the net capital flows an economy receives, the higher its firms' capital expenditure (with investment-to-capital ratios rising by 1.4 percentage points in response to a one standard deviation change in capital flows). Both coefficients (on commodity export prices and capital inflows) are strongly statistically significant. By contrast, we do not find market uncertainty to be a significant determinant of capital expenditure at the firm level.[16]

---

[13] R^2 values for these regressions are low, but of similar magnitude to those reported by other studies.

We also examine a number of extensions to the baseline investment equation. First, to assess whether capital inflows help to relax financial constraints at the firm level, we add to equation (4.1) an interaction term of capital inflows and corporate cash flow. Column 5 shows that the coefficient on this interaction term is negative and significant. This implies that the larger the capital inflows to an economy, the lower the sensitivity of investment to cash flow, presumably because firms become less dependent on internal funds to finance investment projects.[17]

Next, we focus on the post-2010 period to explore if the recent investment slowdown was unusual in light of the above results. We add to the equation a dummy variable (*RECENT*) that takes the value of one for all observations during 2011–13.[18] The dummy turns out to be not statistically significant (column 6). Thus, we find no evidence that firms' capital expenditure has been abnormally weak in recent years, at least not beyond what can be explained by the determinants included in our model. Furthermore, this result holds across emerging market regions.[19] It also holds across broad sectors of activity, suggesting that the recent investment slowdown has not been abnormally large in any particular sector. In LAC, moreover, the investment downturn does not appear to be driven by only one specific sector—such as mining or energy. In fact, other tradable sectors (manufacturing) and nontradable sectors (such as construction and transportation) have also experienced a slowdown. That said, data are available only up to 2013, and the most recent declines in commodity prices (especially energy) are likely to affect firms in the primary sector further.

Did the marginal effect of the main determinants change in recent years? We address this question by adding additional terms to the regression, namely interactions of the *RECENT* dummy with the main determinants of investment. The coefficients on these interaction terms are not statistically significant, suggesting that the effect of the main determinants of business investment has remained stable.[20] Looking at the point estimates, however, we find some heterogeneity across emerging market regions: (1) financing constraints have become tighter after 2011 in LAC, (2) the positive relationship between commodity export prices and investment has become stronger in LAC and weaker in Asia, and (3) the impact of leverage on investment has become larger (that is, more negative) in emerging Asia.[21]

---

[14] Thus, we exclude this variable from subsequent extensions to the baseline specification.

[15] Previous studies have documented a related positive effect of the terms of trade on investment—for example, Fornero, Kirchner, and Yany (2014) for Chile, and Ross and Tashu (forthcoming) for Peru.

[16] This result is consistent with previous studies (for example, Leahy and Whited 1996) showing that although uncertainty has a negative effect on investment, the effect generally disappears when Tobin's Q is introduced.

[17] This result is, again, consistent with the existing literature (see, for instance, Harrison, Love, and McMillan 2004).

[18] Here, we control for time effects through a time trend rather than year dummies. Inspection of the year dummies used in the baseline specification points to a clear downward trend, justifying the use of a time trend in this regression, which serves to focus on the question of a structural break around 2011, and does not alter any of the main results.

[19] See Table 4 in Magud and Sosa (2015), which reports results for region-specific regressions.

[20] Leverage is an exception, with a negative (and significant) interaction coefficient, implying that the sensitivity of investment to leverage has been larger after 2011 (see Table 3 in Magud and Sosa 2015).

Another important question that we explore is how different firm characteristics affect investment (Table A4.2 in Annex 4.1). Larger firms (proxied by the value of assets and by gross income) tend to invest more on average (columns 1 and 3) and face weaker financial constraints (as captured by the interaction terms in columns 2 and 4). Firms more closely linked to international markets, as measured by the share of foreign assets in total assets, also invest more (column 5) and exhibit weaker financial constraints than their less internationally integrated peers (interaction term in column 6). Finally, we find that larger capital inflows help relax financial constraints relatively more for firms in the nontradable sector (column 7).[22]

Our results are robust to adding the lagged investment-to-capital ratio as an explanatory variable, and using the difference-in-difference Arellano-Bond approach. They are also robust to the use of cash stocks rather than cash flows to measure availability of internal funds (see, for instance, Harrison, Love, and McMillan 2004). Results do not change if we include additional macroeconomic regressors, such as real GDP growth and commodity import prices (both variables turn out to be not statistically significant) or country-time dummies instead of the macroeconomic variables. They also hold if either capital inflows or the change in debt is lagged (to minimize potential endogeneity problems). Finally, results are also unaffected by excluding from the sample the countries with the largest number of firms, such as China, Korea, and Taiwan Province of China.

Macroeconomic Panel Regressions

To complement the firm-level analysis of the previous section, we also run simple macroeconomic panel regressions using quarterly data for over 30 emerging markets during 1990–2014. Based on an augmented investment accelerator model, we again focus on the role of capital inflows and commodity export prices as potential drivers of corporate investment. The model, which allows for country and time fixed effects, is as follows:

$$\begin{aligned}\frac{I_{ct}}{K_{ct-1}} &= \alpha + \beta_1 P^{x}_{ct} + \beta_2 Vix_t + \beta_3 l_{ct-1} \\ &\quad + \beta_4 \sum_{s=1}^{n} \frac{\Delta y_{ct-s}}{K_{ct-s-1}} + kf_{ct} + d_c + d_t + \varepsilon_{ct}\end{aligned} \tag{4.2}$$

where *(c,t)* denote country and period, respectively. The capital expenditure ratio (I/K) is modeled as a function of commodity export prices (P^x), global uncertainty (proxied by the Chicago Board Options Exchange Market Volatility Index, VIX), real lending rates (l), real output growth ($\Delta y/K$), and capital inflows (kf) in percent of GDP. Data sources are the IMF's *International Financial Statistics* and *World Economic Outlook*.

Table 4.2 reports the results, which largely confirm those of the firm-level regressions. In particular, we find robust evidence that investment is positively related to commodity export prices. Higher global uncertainty appears to reduce investment in emerging markets,[23] and the real lending rate is negatively related to investment. To capture accelerator-type effects, we control for several lags of real GDP growth, but these appear to be not statistically significant (the impact probably being captured by other explanatory variables).[24]

Finally, increased capital inflows are accompanied by higher investment. Interestingly, these results

---

[21] See Tables A.2 to A.4 of the Appendix in Magud and Sosa (2015).

[22] The latter is consistent with theoretical arguments in Tornell and Westermann (2005), who also provide indirect evidence of stronger financial constraints in the nontradable sector.

[23] This measure of uncertainty is global, whereas firm-level regressions use country-level uncertainty.

[24] Results are unaffected by whether we use one, two, or three lags.

Table 4.2. Macroeconomic Panel Regressions

	(1) ICR	(2) ICR	(3) ICR	(4) ICR	(5) ICR
Commodity export price	6.12e-05***	5.57e-05***	6.95e-05***	7.01e-05***	8.42e-05***
	(7.69e-06)	(7.89e-06)	(8.39e-06)	(8.53e-06)	(8.05e-06)
Global uncertainty		–4.79e-05***	–4.77e-05***	–5.16e-05***	–5.14e-05***
		(1.58e-05)	(1.62e-05)	(1.64e-05)	(1.34e-05)
Real lending rate ($t-1$)			–4.13e-07*	–7.47e-07***	6.37e-07
			(2.42e-07)	(2.63e-07)	(4.66e-07)
Real GDP growth ($t-1$)				0.920	1.955
				(2.275)	(1.688)
Net capital inflows					9.52e-05***
					(1.47e-05)
Constant	1.341***	1.297***	1.345***	1.364***	1.517***
	(0.0521)	(0.0539)	(0.0598)	(0.0617)	(0.0684)
Observations	3,091	3,091	2,770	2,683	1,879
Number of countries	32	32	32	32	28
R^2	0.0120	0.0142	0.0250	0.0236	0.0647

Source: IMF staff calculations.
Note: ICR = investment-to-capital ratio. The regression includes country and time effects. Standard errors in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

hold even if we use gross instead of net inflows, and if we use foreign direct investment flows or "other" inflows (mainly bank flows). Thus, results from the macroeconomic panel regressions underscore the significant role of commodity export prices and capital inflows in driving investment in emerging markets.[25]

Which Factors Have Been Driving the Recent Slowdown?

The results presented thus far suggest that the relationship between corporate investment and its main determinants has not changed since the mid-2011 peak. But which of these determinants has played the biggest role in explaining the recent investment deceleration, particularly in Latin America? We answer this question by computing the contribution of each of the determinants to the average investment slowdown by region, based on the firm-level regression results.[26] Naturally, large effects can result from either sizable underlying shocks or from economically large coefficient estimates.

The recent weakening in business investment can, to a large extent, be explained by the evolution of a few key variables (Figure 4.4), especially in LAC and emerging Asia. However, the relative contribution of each factor differs across regions. Lower commodity export prices emerge as the biggest contributor to the recent slowdown in LAC and Commonwealth of Independent States economies, arguably reflecting the great weight of the commodity sector in private investment in

---

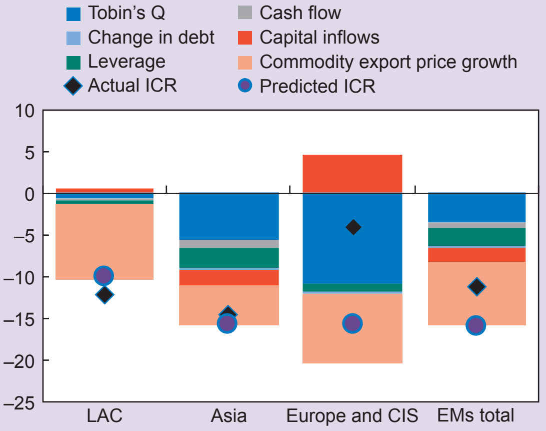
[25] As a note of caution, these regressions may not sufficiently control for country heterogeneity, reducing their information content of country-specific relationships.

[26] The contribution of each determinant is computed by multiplying the cumulative change in the variable since 2011 by the estimated marginal effect from a region-specific regression. The marginal effect of each variable in the post-2010 period is computed taking into account the direct effect and the effect on the interaction term of that variable with the *RECENT* dummy if the interaction is statistically significant. Fitted values include the variables depicted in the chart, abstracting from the contributions of fixed effects. By focusing on average effects across each region, we obviously do not attempt to explain investment in the entire cross-section of firms. Indeed, the modest R^2 values in Table 4.1 underscore the importance of company-level heterogeneity.

Figure 4.4

Contributions to the Recent Investment Slowdown

(Main effects, percent)



Source: IMF staff calculations.
Note: CIS = Commonwealth of Independent States; EMs = emerging markets; ICR = investment-to-capital ratio; LAC = Latin America and the Caribbean. Relative contribution of each factor to the 2011–13 investment slowdown (averaged across firms in each region). Contributions computed based on region-specific regression results; fixed effects not included in fixed values.

these regions and the large size of the observed commodity price shock.

More broadly, lower expectations of firms' future profitability (as measured by Tobin's Q) have been an important factor behind the weakening of investment in emerging markets. Corporate investment has also been influenced by the declining availability of international financing in recent years, particularly in emerging Asia. Indeed, a number of economies have seen a moderation in capital inflows since 2012,[27] and our firm-level regressions suggest that this explains a nonnegligible share of the average investment slowdown across firms. This factor, however, has not been relevant in LAC, as capital inflows have remained relatively strong to date. Finally, higher leverage and lower internal cash flow generation have also played a role, especially in Asia.[28]

A Focus on the Financially Integrated Economies

The behavior of private investment in the LA6—Brazil, Chile, Colombia, Mexico, Peru, and Uruguay, which represent about 75 percent of LAC's GDP—mimics the dynamics described earlier for the region at large, with a downturn observed since 2010–11 (Figure 4.5). The latter has been concentrated in Brazil, Chile, and Peru, whereas in Colombia and Mexico, investment has actually picked up more recently.

In the other commodity exporters, the downturn reflects a collapse in private investment in Venezuela and a more moderate decline in Argentina. In CADR, by contrast, investment growth has picked up in the last two years, presumably linked to the firmer recovery in the United States.

Next, to complement the analysis made in the previous section for a large sample of emerging markets, we estimate country-specific vector autoregressive models for selected LA6 countries to examine more closely the drivers of the recent investment slowdown at the aggregate level.[29] Each vector autoregression includes a set of external factors (commodity export prices, global demand growth, and global financial volatility) and domestic variables (real effective exchange rate, Tobin's Q, real lending rates, real investment growth, and real output growth).[30]

The historical decomposition analysis suggests that lower commodity export prices have been important drivers of the downturn in Brazil, Chile,

---

[27] See Chapter 4 of the IMF's October 2013 *World Economic Outlook* and the 2014 "Spillover Report" (IMF 2014c).

[28] The result for leverage is in line with Chapter 2 of the April 2014 *Regional Economic Outlook: Asia and Pacific*.

[29] For the sake of brevity, we focus here exclusively on countries that are facing an investment slowdown.

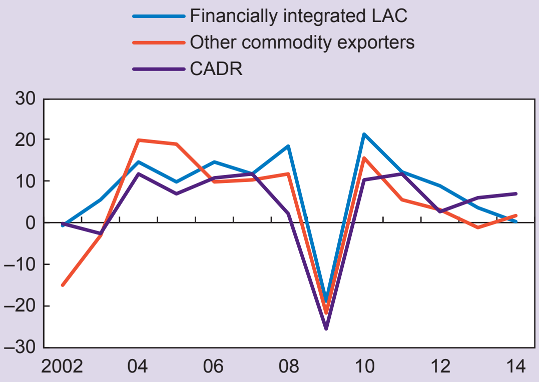
[30] Commodity export prices are the change in the country-specific index used in the previous exercises, global demand is measured as world real GDP growth, global volatility is measured by the VIX, Tobin's Q is computed as the stock market price index divided by the investment deflator, and real lending rates are measured by bank lending rates deflated by inflation. The identification strategy assumes block exogeneity restrictions (one external block and one domestic block), with domestic variables completely absent from equations in the external block.

Figure 4.5

Dynamics of Private Investment

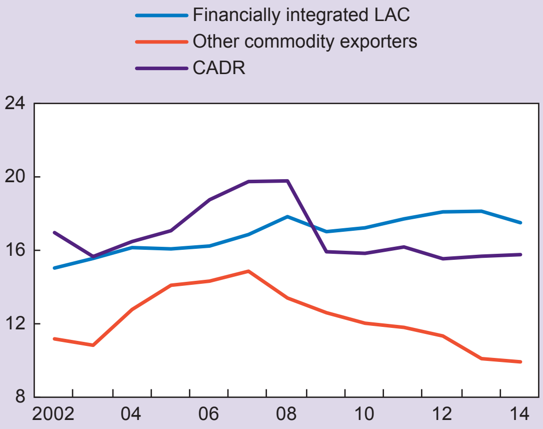
Real Private Investment Growth[1]

(Percent change)



Real Private Investment Ratios[2]

(Percent of real GDP)

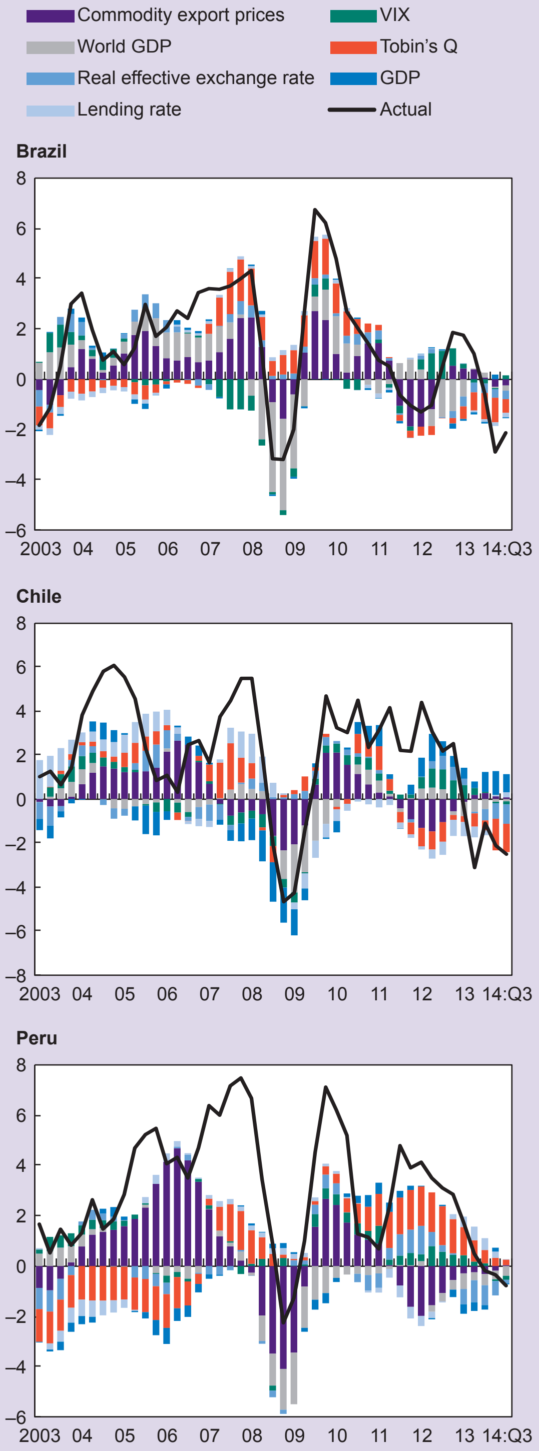


Sources: IMF, World Economic Outlook database; and IMF staff calculations.
Note: Financially integrated LAC = Brazil, Chile, Colombia, Mexico, Peru, and Uruguay; other commodity exporters = Argentina, Bolivia, Ecuador, Paraguay, and Venezuela; CADR = Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and Panama.
[1] Simple average.
[2] Purchasing power parity–weighted GDP average.

Figure 4.6

Historical Decomposition of Investment Growth

(Quarter-over-quarter percent change)



Sources: Bloomberg, L.P.; Haver Analytics; IMF, *International Financial Statistics*; and IMF staff calculations.
Note: REER = real effective exchange rate; VIX = Chicago Board Options Exchange Volatility Index.

and Peru, particularly during 2012–13 (Figure 4.6). Lower external demand has also played a significant role. In addition, recent exchange rate depreciation and, in Brazil and Chile, lower expected future profitability (as measured by Tobin's Q) have also contributed to the slowdown.[31] These results are generally consistent with those obtained for investment at the firm level. Finally, the downturn in Brazil and Chile has been somewhat larger than predicted by the model, perhaps reflecting the confluence of policy uncertainty and weak private sector confidence in the case of Brazil. In Chile, uncertainty over the impact of ongoing policy reforms on the environment and the cancellation of large energy and mining projects may have been weighing on investment.

---

[31] A real exchange depreciation tends to make capital goods more expensive, as they are to a large extent imported in these economies.

Summary and Policy Implications

Although the investment slowdown in LAC has been consistent with historical patterns and thus does not represent a "puzzle," it is still a concern. First, prospects for a recovery of private investment are not favorable, as the outlook for most of its determinants is dim: commodity prices are expected to remain weak, capital inflows are likely to moderate, and external financial conditions are set to become tighter, including because of the normalization of U.S. monetary policy. The recent declines in potential growth estimates are also likely to be a drag on business investment going forward. Second, investment ratios remain structurally low in LAC, imposing a significant bottleneck on economic activity. Thus, boosting private investment (and saving) remains a crucial policy priority for the region. In light of this chapter's results on the importance of financing constraints, especially for smaller firms, business investment would arguably benefit from further deepening domestic financial systems, strengthening capital market development, and promoting access to finance. These goals should be subject to strict safeguards to preserve financial stability. Strengthening financial infrastructure and legal frameworks, and enhancing capital market access to small and mid-sized firms (which tend to face more severe funding constraints) would be positive measures in this regard.

More generally, although this chapter's focus lies elsewhere, there is a strong argument for tackling some of the structural weaknesses that hold back productivity and investment in LAC. As discussed in Chapter 2, efforts should generally focus on improving infrastructure and human capital, strengthening the business climate, and fostering competition and open markets. These efforts would also support the broader objective of creating more diversified economies, as discussed in Chapter 5.

Annex 4.1

Table A4.1. Firm-Level Panels: List of Countries

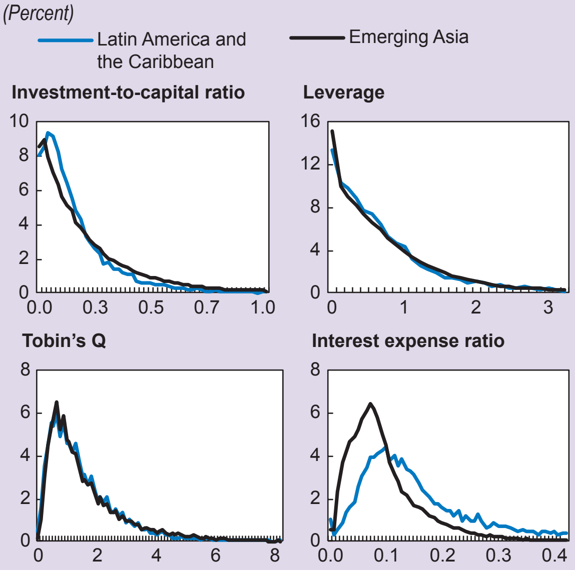
Country	Number of Observations	Country	Number of Firms
Argentina	1,073	Morocco	538
Brazil	3,100	Pakistan	2,342
Bulgaria	1,164	Peru	1,436
Chile	3,103	Philippines	2,708
China	22,799	Poland	3,602
Colombia	753	Romania	770
Croatia	545	Russia	4,998
Czech Republic	511	Serbia	534
Egypt	1,227	Singapore	7,982
Hungary	563	Slovakia	237
India	17,480	Slovenia	361
Indonesia	4,355	South Africa	5,381
Israel	3,618	Sri Lanka	1,551
Jordan	1,538	Taiwan Province of China	17,997
Kazakhstan	223	Thailand	7,065
South Korea	17,245	Turkey	2,453
Lithuania	225	Ukraine	375
Malaysia	12,814	Venezuela	378
Mexico	2,096	Vietnam	3,515

Source: Worldscope.

Figure A4.1

Distribution of Selected Variables

(Percent)



Source: IMF staff calculations.

Table A4.2. Extended Firm-Level Panel Regressions

	(1) ICR	(2) ICR	(3) ICR	(4) ICR	(5) ICR	(6) ICR	(7) ICR
Tobin's Q	0.0191***	0.0187***	0.0183***	0.0181***	0.0236***	0.0234***	0.0191***
	(0.00435)	(0.00431)	(0.00426)	(0.00424)	(0.00276)	(0.00275)	(0.00446)
Cash flow	0.00394**	0.0113***	–0.00210	0.00137	0.0146***	0.0162***	0.00756
	(0.00189)	(0.00309)	(0.00471)	(0.00485)	(0.00214)	(0.00270)	(0.00523)
Leverage ($t-1$)	–0.0313***	–0.0315***	–0.0465***	–0.0463***	–0.0269***	–0.0268***	–0.0306***
	(0.00312)	(0.00316)	(0.00405)	(0.00402)	(0.00644)	(0.00641)	(0.00305)
Change in debt	0.00254***	0.00218**	0.00534***	0.00531***	0.00350***	0.00344***	0.00275***
	(0.000903)	(0.000893)	(0.00162)	(0.00160)	(0.00117)	(0.00118)	(0.000932)
Net capital inflows	0.00243***	0.00239***	0.00233***	0.00232***	0.00222***	0.00221***	0.00210**
	(0.000670)	(0.000658)	(0.000684)	(0.000682)	(0.000798)	(0.000796)	(0.000975)
Commodity export price ($t-1$)	0.000441***	0.000446***	0.000499***	0.000499***	0.000621***	0.000621***	0.000451***
	(9.69e-05)	(9.74e-05)	(9.31e-05)	(9.29e-05)	(0.000153)	(0.000153)	(9.78e-05)
Size 1: Assets	0.000437***	0.000641***					
	(0.000154)	(0.000177)					
Assets × cash flow		–1.29e-05***					
		(4.03e-06)					
Size 2: Gross income			0.00976**	0.0102**			
			(0.00460)	(0.00482)			
Gross income × cash flow				–5.63e-05*			
				(2.85e-05)			
Share of foreign assets holdings					0.647***	1.254***	
					(0.124)	(0.179)	
Share of foreign assets holdings × cash flow						–0.0358***	
						(0.00460)	
Nontradables × cash flow							–0.00109
							(0.00505)
Nontradables × net capital inflows							0.000930
							(0.000828)
Cash flow × financial account balance							–1.47e-05
							(0.000252)
Nontradables × net capital inflows × cash flow							–0.00101***
							(0.000235)
Constant	9.870***	10.12***	9.206***	9.255***	7.636***	7.665***	9.458***
	(0.954)	(0.967)	(1.084)	(1.088)	(0.929)	(0.913)	(0.876)
Observations	72,184	72,184	66,345	66,345	27,458	27,458	72,184
Number of firms	13,444	13,444	12,540	12,540	6,082	6,082	13,444
Number of clusters	36	36	36	36	36	36	36
R^2	0.0434	0.0511	0.0545	0.0615	0.0566	0.0584	0.0395

Source: IMF staff calculations.
Note: ICR = investment-to-capital ratio. The regressions include time effects and firm-level fixed effects. Robust standard errors (clustered by country) in parentheses. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

5. Long-Run Growth in Latin America and the Caribbean: The Role of Economic Diversification and Complexity

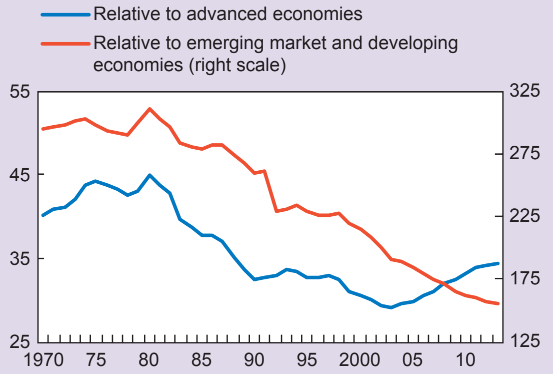
Economic diversification and complexity—relating to the range of products that a country produces and how sophisticated these products are—matter for long-term growth. Unfortunately, Latin America and the Caribbean (LAC) have not been able to benefit significantly from these levers so far. Economic diversification and complexity remain relatively low, and the dynamics over the last decade have not been encouraging. We also find that the benefits of diversification and complexity can be undermined by shortcomings in other areas (for example, macroeconomic instability), consistent with historical experiences in the region. Looking ahead, the key to improving longer-term growth prospects is to prioritize structural reforms and harness knowledge spillovers from greater openness, while preserving sound macroeconomic frameworks.

Growth has slowed markedly in LAC, and prospects for medium-term growth have been marked down (see Chapter 2). One often-cited argument for the region's subdued outlook is its relatively narrow economic base and strong dependence on commodity exports, especially now that global commodity markets appear to be in a secular downturn (see Chapter 3). Meanwhile, progress in branching into the production and export of goods intensive in skill and technology ("complex" goods) and high value added sectors has been modest throughout the region, especially when compared with the newly industrialized economies of Asia. Limited economic diversification and complexity, in turn, have also been linked, more generally, to the region's long-standing difficulty in improving its comparative growth performance with respect to both advanced and emerging market economies (Figure 5.1). But is the region really less diversified or complex than others? How big a handicap is this? And what can be done about it?

Figure 5.1

Latin America and the Caribbean: Relative GDP per Capita

(Percent)



Sources: IMF, World Economic Outlook database; and IMF staff calculations.
Note: Ratio of nominal GDP (purchasing power parity dollars) per capita for Latin America and the Caribbean versus advanced economies and emerging market and developing economies.

How (Un)Diversified Are LAC Economies?

To address these questions, this chapter considers two concepts of economic diversification with respect to merchandise exports.[1] The first one is a simple export diversification index (DIV) that captures the extent to which a country's exports are concentrated in particular goods (see IMF 2014a, 2014b). The second concept, economic "complexity," was proposed by Hidalgo and Hausmann (2009) and incorporates not only the breadth of a country's exports, but also how knowledge intensive they are. Conceptually, diversification refers to the concentration of exports across goods, whereas complexity complements that information with how sophisticated these goods are.

Note: Prepared by Fabiano Rodrigues Bastos and Ke Wang, with excellent research assistance from Genevieve Lindow. See Rodrigues Bastos and Wang (forthcoming).

[1] The availability of detailed, consistently defined, and long historical time series on goods trade facilitates comparisons of productive structures across countries over an extended period of time, a key goal of this chapter. Unfortunately, similar information is not available for service exports or nontradables.

We use two specific metrics derived from this approach, namely an economic complexity index (ECI) and a complexity outlook index. Box 5.1 provides a brief description of both metrics, and highlights conceptual differences vis-à-vis the export diversification index in further detail.

Figure 5.2 shows that the level of export diversification in LAC is significantly lower than in advanced economies and the newly industrialized Asian countries (which can be thought of as a reference point for successful economic convergence), but similar to what is observed among other emerging market and developing economies.[2] Relative to 1970, LAC appears to have diversified its export bundle, though this trend has been halted and even partly reversed since 2000.[3]

In terms of the ranking across regions, the ECI paints a very similar picture (Figure 5.2).[4] LAC economies stand out as being far less complex than advanced economies, but are on par or slightly better than other developing and emerging markets. However, actual economic complexity (ECI) in LAC has been stagnant or trending down since 1970, even though potential complexity (complexity outlook index) has followed a more benign trajectory. Together, these trends point to a growing untapped potential for economic progress.

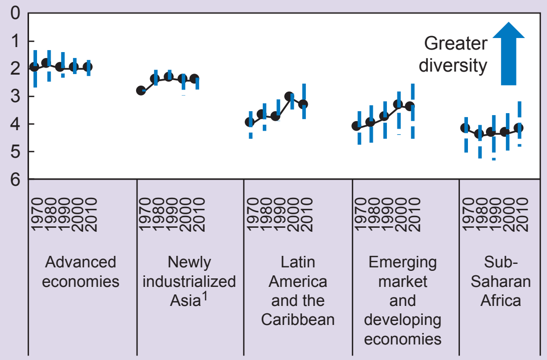
This is consistent with the region's modest success in branching out into more sophisticated goods markets. Similar arguments have recently been raised by De La Torre, Didier, and Pinat (2014), who note the region's failure to harness learning spillovers associated with trade, and Blyde (2014), who discusses LAC's limited participation in global supply chains, particularly compared to Asia.

Figure 5.2

Export Diversification and Economic Complexity

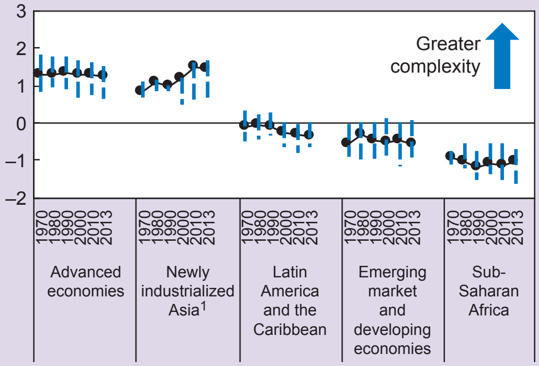
Export Diversification Index Across Groups of Countries

(Index, reverse order)



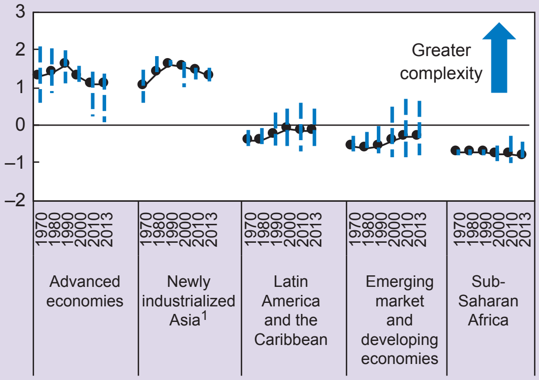
Economic Complexity Index Across Groups of Countries

(Index)



Economic Complexity Outlook Across Groups of Countries

(Index)



Sources: Hausmann and others (2014); IMF (2014b) and World Economic Outlook database; and IMF staff calculations.

Note: Includes only countries with goods exports larger than US$1 billion in 2013. The dots denote the median and the dashed vertical lines the range between the 25th and 75th percentiles of five-year averages of each index.

[1] Includes Hong Kong SAR, Korea, Singapore, and Taiwan Province of China.

---

[2] Higher values of DIV denote higher export concentration, and hence lower export diversification. The charts use a reverse scale for DIV to facilitate comparison with the complexity measures.

[3] The commodity boom of the past decade has contributed to an increasing export concentration measured in value terms, due to price effects.

[4] A *z*-score normalization procedure centers the indicator around 0 (see Hausmann and others 2014).

Do Diversification and Complexity Matter?

Export diversification and, even more so, economic complexity are closely correlated with the level of GDP per capita (Figure 5.3). The correlations are stronger for non–resource-rich countries, particularly non-oil exporters.[5] But do diversification and complexity contribute to prosperity, or merely reflect it? And are there any implications for prospective growth across LAC?

The relationship between diversification and economic growth has been investigated in a number of studies. Mejia (2011) provides an extensive survey on the topic. A leading argument casts diversification as a way to stabilize export earnings, particularly relevant for countries vulnerable to terms-of-trade shocks (portfolio effect). Export diversification is also portrayed as the result of structural transformation, possibly reflecting the modernization of productive structures and the widening of comparative advantages.

One potential mechanism linking higher complexity to stronger growth, in addition to the ones mentioned previously, is knowledge spillovers to productivity and investment. To achieve greater product variety and sophistication, economies need to get better at acquiring and combining specialized knowledge and inputs. This expands the set of production possibilities in higher value added activities, boosting investment and productivity.

In this chapter, we focus on one specific aspect of the debate. Similar to Hausmann and others (2014), we explore whether diversification and complexity help to *predict* long-term growth, by estimating the following panel regression:

$$g_{it} = \beta' X_{it-1} + \gamma' U_{it} + \in_{it}, \qquad (5.1)$$

where subscripts i and t denote country and decade, respectively, and g denotes average annual growth in GDP per capita over the decade (the panel covers the decades between 1970 and 2010) for each country. X contains predetermined values of the diversification and/or complexity indicators, measured as initial conditions for the subsequent decade. U contains the constant, fixed effects, and several control variables. The control variables include several predetermined variables relevant for long-term per capita growth (life expectancy, human capital, share of agriculture in total value added, and political regime) and some contemporaneous, decade-averaged variables that can plausibly be treated as exogenous (for example, terms of trade and degree of commodity dependence). $\in$ denotes the error term.[6]

We add to the analysis in Hausmann and others (2014) by considering specifications that include complexity and, simultaneously, multiple dimensions of relevant initial conditions for long-term growth such as demographic variables, human capital, capital intensity, sectoral composition, openness, political regime, and social development. We also control for macroeconomic instability, LAC-specific complexity slopes, and unobserved region-specific heterogeneity. This rich set of control variables allows for a more

---

[5] Natural endowments are an important determinant of national income whose effects operate through specific channels such as the quality of resource management, ability to mitigate the resource curse, and history of terms-of-trade shocks.

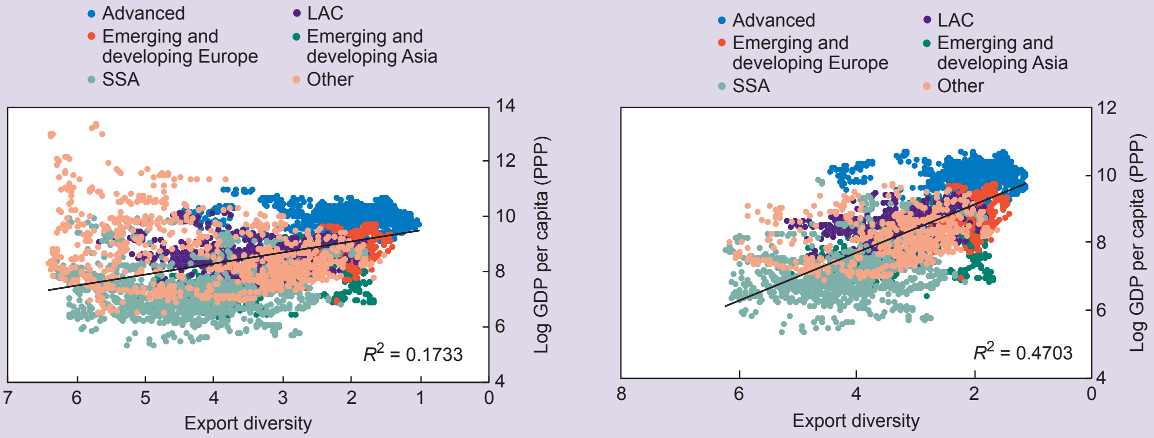
[6] Relating period-average growth only to predetermined and plausibly exogenous variables, the specification minimizes simultaneity risks. Nonetheless, R-squared statistics remain fairly high. The regressions incorporate time fixed effects and standard errors that are robust to clustering at the country level. Results are largely unchanged when allowing for LAC-specific slope coefficients on diversity/complexity. Results continue to hold when adding region-specific fixed effects and under some specifications for country fixed effects. However, the panel has a small time dimension (four decades at most), so scope for focusing on variation within the same country is limited, and country-level fixed effects are likely to purge much of the heterogeneity linked to different levels of diversity/complexity that the estimation is focused on. Thus, our preferred specification is to include region and time fixed effects along with an extended set of controls to contain risks of omitted variable bias while also exploiting data variation between countries.

Figure 5.3

Export Diversification, Economic Complexity, and GDP per Capita

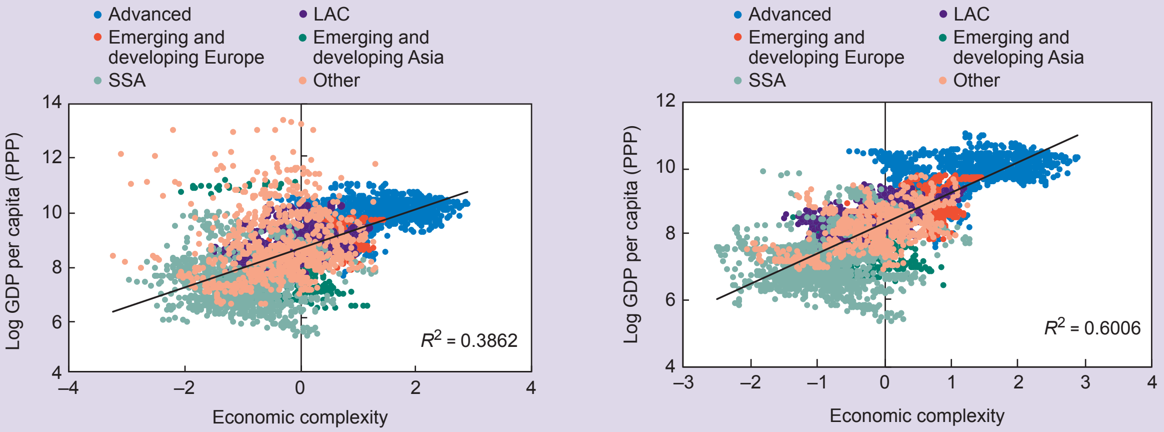
Export Diversification and GDP per Capita, 1970–2010

Export Diversification and GDP per Capita, Excluding Oil-Rich Countries, 1970–2010[1]



Economic Complexity and GDP per Capita, 1970–2010

Economic Complexity and GDP per Capita, Excluding Oil-Rich Countries , 1970–2010[1]



Sources: Hausmann and others (2014); IMF (2014b); IMF, World Economic Outlook database; Penn World Tables 8.0; and IMF staff calculations.

Note: LAC = Latin America and the Caribbean; PPP = purchasing power parity; SSA = sub-Saharan Africa. Sample includes 137 countries where total exports in 2013 are at least US$1 billion.

[1] Only includes countries where oil exports are less than 10 percent of GDP.

robust assessment of whether (and by how much) diversification and complexity matter for growth, which we then use to shed light on the current situation in LAC.

Using a sample of 103 countries for 1970–2010, we confirm that initial levels of diversification and complexity robustly predict long-term average growth of real GDP per capita, consistent with Hausmann and others (2014) (Table A5.1).[7] In essence, more complex and diversified economies tend to have higher GDP per capita growth on average over the following decade, holding everything else fixed.

---

[7] Other empirical studies also show a positive impact of export diversification on growth (see Agosin 2007; Al-Marhubi 2000; Lederman and Maloney 2003).

Variation in complexity levels across LAC countries can account for a full percentage point difference between annual per capita growth rates, as discussed in the next section. Although most of the regressors are predetermined, the equation explains 50–55 percent of the total variation in growth outcomes. In general, the complexity measures (ECI and complexity outlook index) are more powerful predictors of long-term growth than simple export diversification (DIV), pointing to the additional predictive content of controlling for the knowledge intensity of goods.

To shed further light on the link between complexity and economic development, we also include a distance measure that captures how much a country's GDP per capita deviates from the level predicted by complexity (Table A5.1, column VIII).[8] The results suggest that countries tend to experience lower growth subsequently if their initial level of income is "too high" for their complexity level. This finding aligns well with new evidence for growth reversion to the mean presented by Pritchett and Summers (2014).

Implications for Growth Prospects in LAC

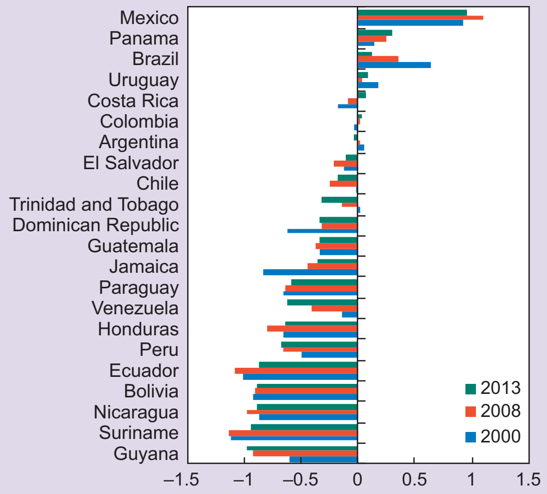
Several countries in LAC have experienced a decline in diversification and complexity over recent years, including large or fast-growing economies such as Brazil, Mexico, Chile, and Peru (Figure 5.4). This reinforces concerns about the region's long-term growth outlook.

Based on the econometric results of the previous section, we can quantify the contribution to long-term growth forecasts attributable to diversification and complexity. To this end, we use our estimates of equation (5.1) and compute a conditional growth forecast for the period 2011–21, using the latest values of the (predetermined) explanatory variables.[9] Heterogeneity across LAC can be summarized by comparing each country's predicted growth rate given its actual current complexity score with a hypothetical growth rate based on the average LAC value of complexity.

Figure 5.4

Economic Complexity Index

(Index, five-year rolling average)



Sources: Hausmann and others (2014); IMF, World Economic Outlook database; and IMF staff calculations.

The results show sizable differences across countries (Figure 5.5).[10] Mexico, the LAC country with the highest economic complexity score in our sample, is forecast by the model to experience GDP per capita growth almost 0.5 percentage point faster on average per year over the next decade than if it matched the LAC average for complexity. At the other end of the spectrum, Ecuador would grow faster by approximately 0.4 percentage point if its complexity score was at the LAC average.

---

[8] Calculated as the residuals (relative to fitted values) from a regression relating GDP levels to diversification/complexity and a measure of commodity dependence (see Rodrigues Bastos and Wang, forthcoming).

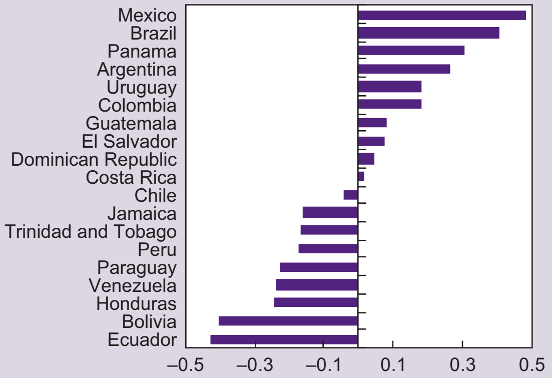
[9] This is an out-of-sample forecast but uses known values for predetermined variables. Because we focus on the net impact of different values of predetermined variables, the values of contemporaneous decade-averaged variables do not matter.

[10] Based on average projections from estimated models (I), (III), and (V) shown in Table A5.1.

Figure 5.5

Net Impact on Predicted GDP per Capita Growth Rates: Own Complexity Versus LAC Average Complexity

(Percentage points, annual averages)

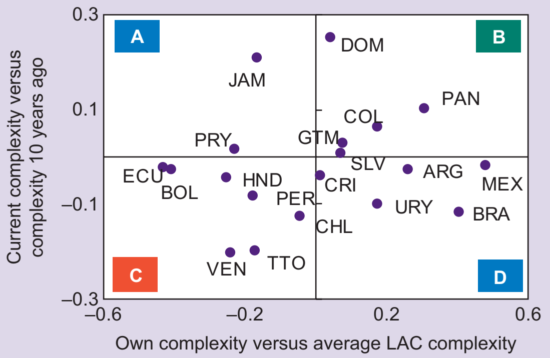


Source: Rodrigues Bastos and Wang (forthcoming).
Note: LAC = Latin America and the Caribbean.

Figure 5.6

Net Impact of Complexity Variables on Predicted GDP per Capita Growth Rates

(Percentage points, annual averages)



Source: Rodrigues Bastos and Wang (forthcoming).
Note: LAC = Latin America and the Caribbean. A: less complex than LAC average, increasing complexity; B: more complex than LAC average, increasing complexity; C: less complex than LAC average, declining complexity; D: more complex than LAC average, declining complexity. For country name abbreviations, see page 79.

We also examine how much faster or slower GDP per capita would be forecast to grow if the country-specific complexity scores were replaced with their own values of 10 years earlier (Figure 5.6, vertical axis). The results show that the recent evolution of complexity represents a drag for predicted per capita growth in most of the LAC countries, reaching 0.2 percentage point in the cases of Trinidad and Tobago and Venezuela. On the other hand, some countries have benefited from favorable complexity dynamics over the last decade, notably the Dominican Republic, Jamaica, and Panama.

The econometric results also highlight the importance of other predetermined variables. For instance, higher initial dependency ratios are unequivocally associated with lower trend per capita growth.[11] Although the near-term demographic outlook remains favorable for LAC, some countries are expected to face significant increases in dependency ratios over the next decades. Our estimates imply, for instance, that annual per capita growth in Brazil and Chile would slow by 0.2 percentage point and 0.5 percentage point, respectively, because of the projected dynamics of their dependency ratios between 2020 and 2030.[12] In addition, the results confirm the importance of sound macroeconomic policy frameworks—each year of macroeconomic instability (defined as annual inflation above 30 percent) can reduce GDP per capita growth by a cumulative 2 percentage points over the course of a decade.

How Can Policies Promote Complexity and Diversification?

Recent studies support the view that infrastructure, education, and market openness are key to inducing greater sophistication in exports and production. Given the structural shortcomings in LAC, steady progress in these areas should be a priority.

Daude, Nagengast, and Perea (2014) explore a number of factors that could, a priori, have a positive effect on economic complexity, and identify energy availability, tertiary education, and foreign

---

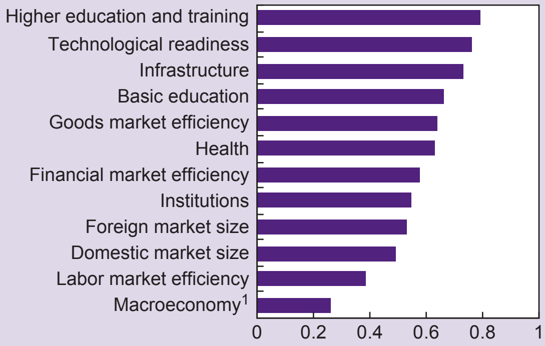
[11] Some of the channels discussed in the literature are labor supply, saving, and fiscal costs associated with aging (see Bloom, Canning, and Fink 2011).

[12] Demographic projections are taken from the *2012 World Population Prospects* (United Nations).

Figure 5.7

Correlation between GCI Components and ECI, 2006–13

(Correlation coefficient)



Sources: Hausmann and others (2014); World Economic Forum (2014); and IMF staff calculations.

Note: ECI = economic complexity index; GCI = Global Competitiveness Indicator.

[1] Macroeconomy refers to government budget balance, national savings, inflation, public debt, and country credit rating.

direct investment inflows as the most important variables.[13] Studies on global value chains point out that increased participation in complex production networks requires supportive transportation and logistics infrastructure as well as modern information and communication technologies systems (see Blyde 2014). These findings are consistent with simple correlations between economic complexity, on the one hand, and the components of the World Economic Forum's Global Competitiveness Indicator (GCI), on the other (Figure 5.7).[14]

Similar to the role of foreign direct investment flows, trade openness has long been highlighted as a source of knowledge spillovers for developing economies that could contribute to economic diversification. Since the work of Melitz (2003), studies have also emphasized the role of greater trade exposure in pushing resources toward more productive firms, even within narrowly defined industries, improving overall allocative efficiency in the economy.

A more controversial route is associated with activist development policies. At present, there is a lack of compelling evidence in favor of scaling up these types of policies in the region.

Hausmann and others (2014) highlight that there is no simple mapping between policies and increasing complexity. Thus, they advise policymakers to pursue context-specific solutions, building upon the country's existing productive capabilities to promote diversity and complexity. This view does not pin down specific courses of action, but has helped to revive interest in activist development policies, including at the sectoral level. In this context, the Inter-American Development Bank (2014) recently put forth a framework for a new generation of development strategies and principles to guide sensible policy intervention.[15]

However, a cautious approach appears warranted. There is still limited systematic understanding about the costs and risks associated with activist policies. Successful individual examples of "industrial policies" also need to be tallied against the numerous apparent failures—especially from within LAC's own economic history—and put into the relevant context. For instance, although the successful historical experiences of Korea, Singapore, and Taiwan Province of China did feature some activist policies, these were incorporated into a broader strategy of boosting international competitiveness. In addition, they were supported by effective structural policies targeting human capital and domestic saving (see United Nations Conference on Trade and Development 2003; World Bank 2008).

---

[13] The April 2015 *Regional Economic Outlook: Asia and the Pacific* uses a similar methodology to Daude, Nagengast, and Perea (2014), identifying trade openness and institutional quality as important positive correlates of complexity. In addition, geographic distance to markets and size of government are found to be negatively correlated with complexity.

[14] The ordering of correlation coefficients (Figure 5.7) remains broadly unchanged if one controls for the common effect of GDP per capita level on the ECI and GCI components. According to the correlations, solid macroeconomic policies do not appear sufficient for raising complexity, while the regressions results indicate that macroeconomic instability hurts long-term growth.

[15] The Inter-American Development Bank (2014) stresses the importance of a disciplined approach that requires clarity about (1) what is the underlying market failure being addressed, (2) how the proposed solution addresses the specific failure at hand, and (3) whether institutions are capable of implementing the solutions as intended.

Finally, increases in complexity are not, by themselves, sufficient to deliver strong growth, as illustrated by the historical examples of Brazil and Mexico. Indeed, the potential benefits of greater complexity may well be offset by countervailing factors, such as macroeconomic instability. At the same time, political capture and rent-seeking highlight the pitfalls associated with activist development policies and the quality of governance structures that they require to have a chance of success.[16]

Complexity, from a positive perspective, offers a valuable tool for characterizing comparative advantages of a country which, in turn, can inform the design of high-impact policies.

Using the complexity concept, Hausmann and others (2014) build a map that indicates how similar goods are to each other in terms of their required productive knowledge.[17] For each country, it is then possible to populate this map using detailed export data, unveiling the country's comparative advantage in terms of knowledge at a product level.

This exercise shows, for instance, that Brazil and Mexico have scope for more immediate knowledge upgrading across a wide range of products. Other countries are more restricted to selected areas (for example, products related to textiles or food processing). There are also countries where knowledge upgrading is harder to achieve given the existing productive capabilities (typically, oil economies).

This information can be useful for policymakers. It may help to inform the most appropriate priorities for reforms in areas such as education and market openness for a country, or inform trade and investment negotiations with other countries. It can reveal areas where deployment of public resources is particularly unlikely to spur complexity given a weak knowledge base. Finally, it can filter the cases where externalities are particularly costly for a country given its comparative advantages (for example, research and development in selected agricultural products, standards and certification in the food-processing industry), possibly facilitating and guiding the design of policies.[18]

Policy Conclusions

Complexity matters for growth but, by itself, is not sufficient. Initial conditions in terms of diversification and complexity are robustly associated with stronger long-term growth. Although the potential benefits of increasing complexity can be sizable, they can easily be offset by shortcomings in other areas. In particular, the projected demographic transition in some LAC countries over the next decades or renewed bouts of macroeconomic instability could meaningfully reduce long-term growth. Regarding the latter, LAC's low domestic saving rates stand out as a perennial factor underlying the region's vulnerability to external shocks, associated with strong swings in real exchange rates and risk of disruptive adjustments.

Steady progress on structural reforms remains a priority and is indispensable for sustainably improving complexity in LAC; a renewed push for activist development policies should be met with caution. The fact that LAC continues to clearly lag behind in many crucial policy areas closely associated with economic complexity (infrastructure, education, market openness) underscores the continued need to address structural deficiencies. Meanwhile, scaling up activist policies remains fraught with risks, as more work is needed to establish their overall costs and benefits.

---

[16] In addition, increases in complexity that fundamentally depend on market protection—like historical import substitution strategies in LAC—would naturally be more prone to complexity reversals.

[17] This is called the "product space" which can be found at http://atlas.cid.harvard.edu/.

[18] For instance, Rodrik (2004) highlights the role of strategic collaboration between the private sector and the government to unveil the most critical obstacles and identify effective policy solutions.

Countries need to evaluate thoroughly their comparative advantages and the implied potential for knowledge upgrading, to pursue effective reforms and policies. Recent trends in international production processes heighten diversification challenges in LAC, particularly for South American economies which are less integrated with U.S. markets and their supply chains. In this context, it has become crucial for countries to deepen the understanding of their own comparative advantages, and realistically assess chances for knowledge upgrading. Complexity offers a useful granular perspective on this question and can help to inform policy making if considered along with other traditional dimensions (such as spatial proximity to major markets, relative production costs, or trade agreements).

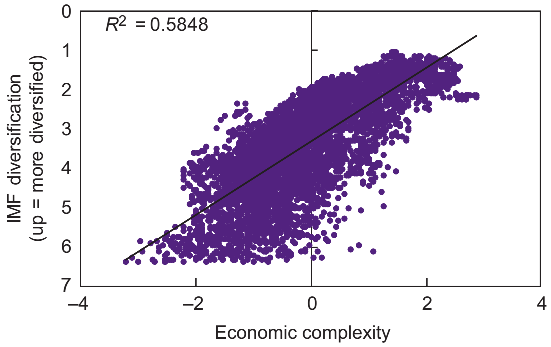
Box 5.1

Defining and Measuring Economic Complexity

Hidalgo and Hausmann (2009) and Hausmann and others (2014) apply the concept of complexity to study economic development across countries. The economic complexity of a country reflects not only the availability of productive knowledge, but also the quality of underlying networks and interactions needed to successfully combine different bits of specialized information. Because the latter is nonobservable, the authors propose an indirect way to infer complexity using international trade data.

Figure 5.1.1

Complexity and Diversification, 1970–2010



Sources: Hausmann and others (2014); and IMF staff calculations.
Note: Sample includes 137 countries where 2013 total exports is at least US$1 billion.

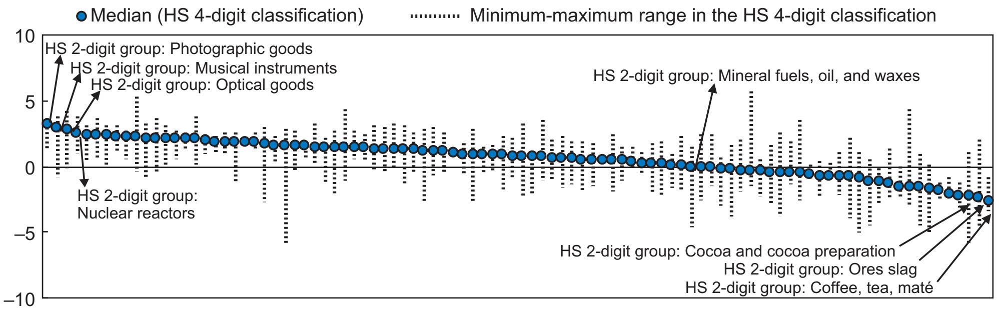
The economic complexity index is based on two key dimensions: *diversity* and *ubiquity*. The first dimension is conceptually similar to the export diversification index, but defined as the number of products in which a country has revealed comparative advantage (the country-specific export share of a product is larger than the export share of the same product in world trade) rather than in terms of export value concentration. This implies that the complexity measure is relatively less affected by price effects in commodity price booms, a desirable feature. Ubiquity is defined as the number of countries that export a particular product with a revealed comparative advantage. Another complexity measure used in this chapter is the complexity outlook index, which captures the country's proximity to complex goods based on its current productive capabilities; the complexity outlook index measures the distance to products that the country *is not* currently exporting, using the level of complexity of these products as weights.

The general idea is that countries exporting a large range of products (diversified), which in turn are exported by relatively few countries (low ubiquity), are more complex. The authors combine diversity and ubiquity iteratively to refine the overall measure of country complexity through a network algorithm; similarly, a corresponding measure of *product* complexity can be defined. The ubiquity dimension introduces an important conceptual difference from the pure export diversification concept. It sets a higher bar as it captures the country's ability to export goods that require coordination of high volumes of knowledge. The economic complexity index is ultimately determined by the complexity of the products that the country exports, and as shown below, product complexity is not dictated by the sector to which the good belongs. The complexity outlook index, in turn, indicates which countries are the best placed to increase their complexity, all else equal, because their current economic structures favor diversification into more, and more complex, new goods.

Figure 5.1.2

Product Complexity Scores

(Index)



Sources: Hausmann and others (2014); and IMF staff calculations.
Note: HS = Harmonized System codes.

Annex 5.1. Regression Results

Table A5.1. Determinants of GDP per Capita Growth Rates, Annual Averages

(Decades 1970–80, 1980–90, 1990–2000, 2000–10)

Variables	(I) ECI	(II) ECI-LAC Slope	(III) COI	(IV) COI-LAC Slope	(V) ECI-COI	(VI) ECI-COI-DIV	(VII) DIV	(VIII) Distance COI-implied
Initial GDP PC	–2.34***	–2.37***	–2.33***	–2.35***	–2.36***	–2.41***	–2.19***	–1.72***
	(0.45)	(0.47)	(0.44)	(0.44)	(0.45)	(0.47)	(0.42)	(0.41)
Initial complexity (ECI)	1.38**	1.22*			1.06	1.40*		
	(0.66)	(0.69)			(0.64)	(0.80)		
LAC-specific ECI slope		0.96						
		(1.58)						
Initial complexity (COI)			1.68**	1.35*	1.22*	1.54**		
			(0.84)	(0.78)	(0.62)	(0.76)		
LAC-specific COI slope				2.28				
				(1.92)				
Initial export diversification (DIV)						0.90	–1.31**	
						(0.90)	(0.66)	
Initial COI-based distance								–2.30*
								(1.24)
Initial human capital	1.15	1.20	1.03	1.17	1.12	1.15	0.86	0.93
	(0.92)	(0.93)	(0.91)	(0.93)	(0.91)	(0.91)	(0.87)	(0.87)
Initial capital intensity	–0.33	–0.30	–0.35	–0.34	–0.31	–0.30	–0.37	–0.49**
	(0.25)	(0.27)	(0.24)	(0.25)	(0.25)	(0.26)	(0.24)	(0.21)
Initial dependency ratio	–0.06***	–0.06***	–0.06***	–0.06***	–0.06***	–0.06***	–0.07***	–0.08***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Initial openness	0.04	0.04	0.06	0.12	0.04	–0.02	0.14	–0.02
	(0.29)	(0.29)	(0.28)	(0.27)	(0.29)	(0.30)	(0.31)	(0.30)
Initial life expectancy	0.07*	0.07*	0.07*	0.07*	0.07*	0.07*	0.13***	0.13***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.02)	(0.02)
Initial agriculture share	–0.03*	–0.03*	–0.03*	–0.03*	–0.03*	–0.04**	–0.02	–0.02
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Initial political regime	0.00	0.00	0.00	0.00	–0.01	–0.01	0.01	0.00
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)
Energy exports to GDP	0.08 ***	0.08***	0.08***	0.08***	0.09***	0.08***	0.08***	0.05***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)
Metals exports to GDP	–0.02	–0.02	–0.02	–0.01	–0.01	–0.02	0.00	0.01
	(0.04)	(0.04)	(0.04)	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)
Other commodity exports to GDP	0.05	0.05	0.04	0.04	0.05	0.05	0.01	0.01
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Terms-of-trade growth	0.08**	0.08**	0.08**	0.08**	0.08**	0.08**	0.08**	0.08**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.03)
Macroeconomic instability	–2.34 ***	–2.38***	–2.35***	–2.37***	–2.33***	–2.37***	–2.52***	–2.70***
	(0.58)	(0.59)	(0.57)	(0.57)	(0.58)	(0.59)	(0.62)	(0.60)
Observations	333	333	333	333	333	332	334	324
R^2	0.52	0.52	0.51	0.52	0.52	0.52	0.48	0.51

Source: IMF staff calculations.

Note: All regressions include time fixed effects and country-clustered standard errors. Regressions 1 to 6 include region-specific effects. Higher values of economic complexity variables (ECI and COI) denote higher complexity. Higher value of the export diversification variable (DIV) denotes less diversification. Higher value of the COI-based distance denotes countries with GDP per capita levels higher than its COI-implied level. See Rodrigues Bastos and Wang (forthcoming) for detailed discussion. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

List of Country Abbreviations

Antigua and Barbuda	ATG	Guyana	GUY
Argentina	ARG	Haiti	HTI
Bahamas	BHS	Honduras	HND
Barbados	BRB	Jamaica	JAM
Belize	BLZ	Mexico	MEX
Bolivia	BOL	Nicaragua	NIC
Brazil	BRA	Panama	PAN
Canada	CAN	Paraguay	PRY
Chile	CHL	Peru	PER
Colombia	COL	St. Kitts and Nevis	KNA
Costa Rica	CRI	St. Lucia	LCA
Dominica	DMA	St. Vincent and the Grenadines	VCT
Dominican Republic	DOM	Suriname	SUR
Ecuador	ECU	Trinidad and Tobago	TTO
El Salvador	SLV	United States	USA
Grenada	GRD	Uruguay	URY
Guatemala	GTM	Venezuela	VEN

References

Adler, G., and S. Sosa. 2011. "Commodity Price Cycles: The Perils of Mismanaging the Boom." IMF Working Paper No. 11/283, International Monetary Fund, Washington.

Adrian, T., R. K. Crump, and E. Moench. 2013. "Pricing the Term Structure with Linear Regressions." *Journal of Financial Economics* 110 (1): 110–138.

Agosin, M. 2007. "Export Diversification and Growth in Emerging Economies." Working Paper No. 233, Departamento de Economía, Universidad de Chile, Santiago.

Aizenman, J., M. D. Chinn, and H. Ito. 2008. "Assessing the Emerging Global Financial Architecture: Measuring the Trilemma's Configurations Over Time." NBER Working Paper 14533, National Bureau of Economic Research, Cambridge, Massachusetts.

Al-Marhubi, F. 2000. "Export Diversification and Growth: An Empirical Investigation." *Applied Economics Letters* 7 (9): 559–562.

Backus, D., P. Kehoe, and F. Kydland. 1994. "Dynamics of the Trade Balance and the Terms of Trade: The J-Curve?" *American Economic Review* 84 (1): 84–103.

Basel Committee on Banking Supervision. 2010. *Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems.* Basel, December.

Blanchard, O., C. Rhee, and L. Summers. 1994. "The Stock Market, Profit and Investment." *Quarterly Journal of Economics* 108 (1): 115–136.

Bloom, D., D. Canning, and G. Fink. 2011. "Implications of Population Aging for Economic Growth." NBER Working Paper 16705, National Bureau of Economic Research, Cambridge, Massachusetts.

Blyde, J. 2014. *Synchronized Factories: Latin America and the Caribbean in the Era of Global Value Chains*. Washington: Inter-American Development Bank.

Borio, C., and P. Lowe. 2002 (December). "Assessing the Risk of Banking Crises." *BIS Quarterly Review* 43–54.

Caceres, C., and B. Gruss. Forthcoming. "Commodity Price Swings: Fiscal and External Implications for Latin America." IMF Working Paper, International Monetary Fund, Washington.

Caceres, C., and L. Medina. Forthcoming. "Measures of Fiscal Risk in Oil-Exporting Countries," *Middle East Development Journal.*

Daude, C., A. Nagengast, and J. R. Perea. 2014. "Productive Capabilities: An Empirical Investigation of Their Determinants." OECD Development Centre Working Paper No. 321, OECD Publishing, Paris.

De La Torre, A., T. Didier, and M. Pinat. 2014. "Can Latin America Tap the Globalization Up-Side?" World Bank Policy Research Working Paper No. 6837, World Bank Group, Washington.

Druck, P., and N. Magud. Forthcoming. "Collateral Damage: Dollar Strength and Emerging Markets' Growth." IMF Working Paper, International Monetary Fund, Washington.

Erten, B., and J. A. Ocampo. 2013. "Super Cycles of Commodity Prices since the Mid-Nineteenth Century." *World Development* 44 (C): 14–30.

Fazzari, S., G. Hubbard, and B. Petersen. 1988. "Financing Constraints and Corporate Investment." *Brookings Papers on Economic Activity* 1: 141–195.

———. 2000. "Investment-Cash Flow Sensitivities Are Useful: A Comment on Kaplan and Zingales." *Quarterly Journal of Economics* 115 (2): 695–705.

Fernandez, A., A. Gonzales, and D. Rodriguez. 2014. "Sharing a Ride on the Commodities Roller Coaster: Common Factors in Business Cycles of Emerging Economies." Unpublished.

Fornero, J., M. Kirchner, and A. Yany. 2014. "Terms of Trade Shocks and Investment in Commodity-Exporting Economies." Central Bank of Chile Working Paper, Santiago.

Gilchrist, S., and C. Himmelberg. 1995. "Evidence on the Role of Cash Flow for Investment." *Journal of Monetary Economics* 36: 541–572.

Grigoli, F., A. Herman, and K. Schmidt-Hebbel. 2014. "World Saving." IMF Working Paper No. 14/204, International Monetary Fund, Washington.

Gruss, B. 2014. "After the Boom: Commodity Prices and Economic Growth in Latin America and the Caribbean." IMF Working Paper No. 14/154, International Monetary Fund, Washington.

Harrison, A., I. Love, and M. McMillan. 2004. "Global Capital Flows and Financing Constraints." *Journal of Development Economics* 75: 269–301.

Hausmann, R., C. Hidalgo, S. Bustos, M. Coscia, S. Chung, J. Jimenez, A. Simoes, and M. Yildrim. 2014. *The Atlas of Economic Complexity: Mapping Paths to Prosperity.* Cambridge, Massachusetts: Harvard University, Center for International Development.

Hayashi, F. 1982. "Tobin's Marginal Q and Average Q: A Neoclassical Interpretation." *Econometrica* 50 (1): 213–224.

Hidalgo, C., and R. Hausmann. 2009. "The Building Blocks of Economic Complexity." *Proceedings of the National Academy of Sciences USA* 106 (26): 10570–10575.

Inter-American Development Bank. 2014. *Rethinking Productive Development: Sound Policies and Institutions for Economic Transformation.* Washington: Inter-American Development Bank.

International Monetary Fund. 2014a. "Sustaining Long-Run Growth and Macroeconomic Stability in Low-Income Countries: The Role of Structural Transformation and Diversification." IMF Policy Paper, Washington, March.

———. 2014b. "The Diversification Toolkit: Export Diversification and Quality Databases." https://www.imf.org/external/np/res/dfidimf/diversification.htm.

———. 2014c. "Spillover Report: IMF Multilateral Policy Issues Report." IMF Policy Paper, Washington, June.

Jacks, D. S. 2013. "From Boom to Bust: A Typology of Real Commodity Prices in the Long Run." NBER Working Paper No. 18874, National Bureau of Economic Research, Cambridge, Massachusetts.

Kim, D. H., and J. H. Wright. 2005. "An Arbitrage-Free Three-Factor Term Structure Model and the Recent Behavior of Long-Term Yields and Distant-Horizon Forward Rates." Finance and Economics Discussion Series 2005-33, Board of Governors of the Federal Reserve System, Washington.

Laframboise, N., N. Mwase, J. Park, and Y. Zhou. 2014. "Revisiting Tourism Flows to the Caribbean: What Is Driving Arrivals?" IMF Working Paper No. 14/229, International Monetary Fund, Washington.

Leahy, J., and T. Whited. 1996. "The Effects of Uncertainty on Investment: Some Stylized Facts." *Journal of Money, Credit, and Banking* 28 (1): 64–83.

Lederman, D., and W. F. Maloney. 2003. "Trade Structure and Growth." World Bank Policy Research Working Paper No. 3025, The World Bank Group, Washington.

Magud, N., and S. Sosa. 2015. "Investment in Emerging Markets: We Are Not in Kansas Anymore…Or Are We?" IMF Working Paper No. 15/77, International Monetary Fund, Washington.

Mejia, J. 2011. "Export Diversification, International Trade, and Economic Growth: A Survey of the Literature." In *Export Diversification and Economic Growth*, chapter 2. Contributions to Economics. Heidelberg: Springer-Verlag.

Melitz, M. 2003. "The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity." *Econometrica* 71 (6): 1695–1725.

Moghadam, R., J. Ostry, and R. Sheehy. 2011. "Assessing Reserve Adequacy." IMF Policy Paper, Washington, February.

Organisation for Economic Co-operation and Development. 2014. *Programme for International Student Assessment.* Paris, February.

Pritchett, L., and L. Summers. 2014. "Asiaphoria Meets Regression to the Mean." NBER Working Paper 20573, National Bureau of Economic Research, Cambridge, Massachusetts.

Rodrigues Bastos, F., and K. Wang. Forthcoming. "Long-Run Growth in Latin America and the Caribbean: The Role of Economic Diversification and Complexity." IMF Working Paper, International Monetary Fund, Washington.

Rodríguez, P., J. Morales, and F. Monaldi. 2012. "Direct Distribution of Oil Revenues in Venezuela: A Viable Alternative?" CGD Working Paper No. 306, Center for Global Development, Washington.

Rodrik, D. 2004. "Industrial Policy for the Twenty-First Century." John F. Kennedy School of Government, Harvard University, Cambridge, Massachusetts.

Ross, K., and M. Tashu. Forthcoming. "Investment Dynamics in Peru." In *Peru: The Challenge of Managing Success*, edited by A. Warner and A. Santos. Washington: International Monetary Fund.

Senhadji, A. 1998. "Dynamics of the Trade Balance and the Terms of Trade in LDCs: The S-curve." *Journal of International Economics* 46 (1): 105–131.

Tornell, A., and F. Westermann. 2005. *Boom-Bust Cycles and Financial Liberalization.* Cambridge, Massachusetts: MIT Press.

United Nations. 2012. *World Population Prospects: The 2012 Revision*. New York: United Nations.

United Nations Conference on Trade and Development. 2003. "Investment and Technology Policies for Competitiveness: Review of Successful Country Experiences." Technology for Development Series, UNCTAD/ITE/IPC/2003/2, United Nations, New York.

World Bank. 2008. "The Growth Report: Strategies for Sustained Growth and Inclusive Development." Commission on Growth and Development. Washington.

———. 2015. "Ease of Doing Business Database." http://www.doingbusiness.org/data.

World Economic Forum. 2014. *2014–15 Global Competitiveness Report.* Geneva, September.

New Publications from the Western Hemisphere Department, April 2014–March 2015

IMF Working Papers

WP/14/67
Does Demand Volatility Lower Growth and Raise Inflation? Evidence from the Caribbean
Magda Kandil

WP/14/87
Central Bank Financial Strength in Central America and the Dominican Republic
Florencia Frantischek, Przemek Gajdeczka, Alexander Herman, and Andrew Swiston

WP/14/115
Labor Market Issues in the Caribbean: Scope to Mobilize Employment Growth
Magda Kandil, Qiaoe Chen, Xin Li, Genevieve Lindow, Mario Mansilla, Joel Okwuokei, Marika Santoro, Jochen Schmittmann, and Solomon Stavis

WP/14/121
Does Modeling Appropriate Fiscal Targets and Optimal Consolidation Paths for Resource-Rich Countries: The Case of Suriname
Daniel Kanda and Mario Mansilla

WP/14/124
What Is Behind Latin America's Declining Income Inequality?
Evridiki Tsounta and Anayochukwu Osueke

WP/14/125
Debt, Growth and Natural Disasters: A Caribbean Trilogy
Sebastian Acevedo

WP/14/154
After the Boom–Commodity Prices and Economic Growth in Latin America and the Caribbean
Bertrand Gruss

WP/14/161
Measuring External Risks for Peru: Insights from a Macroeconomic Model for a Small Open and Partially Dollarized Economy
Fei Han

WP/14/163
Determinants of Banks' Net Interest Margins in Honduras
Koffie Ben Nassar, Edder Martinez, and Anabel Pineda

WP/14/166
Financial Inclusion, Growth and Inequality: A Model Application to Colombia
Izabela Karpowicz

WP/14/167
News and Monetary Shocks at a High Frequency: A Simple Approach
Troy Matheson and Emil Stavrev

WP/14/204
World Saving
Francesco Grigoli, Alexander Herman, and Klaus Schmidt-Hebbel

WP/14/217
Motives and Effectiveness of Forex Interventions: Evidence from Peru
Melesse Tashu

WP/15/10
Corporate Financing Trends and Balance Sheet Risks in Latin America: Taking Stock of the Bon(d)anza
Fabiano Rodrigues Bastos, Herman Kamil, and Bennett Sutton

WP/15/13
Governments' Payment Discipline: The Macroeconomic Impact of Public Payment Delays and Arrears
Cristina Checherita-Westphal, Alexander Klemm, and Paul Viefers

WP/15/14
Output Gap Uncertainty and Real-Time Monetary Policy
Francesco Grigoli, Alexander Herman, Andrew Swiston, and Gabriel Di Bella

WP/15/26
Drivers of Peru's Equilibrium Real Exchange Rate: Is the Nuevo Sol a Commodity Currency?
Melesse Tashu

WP/15/30
Energy Subsidies in Latin America and the Caribbean: Stocktaking and Policy Challenges
Gabriel Di Bella, Lawrence Norton, Joseph Ntamatungiro, Sumiko Ogawa, Issouf Samake, and Marika Santoro

WP/15/45
Made in Mexico: Energy Reform and Manufacturing Growth
Jorge Alvarez and Fabian Valencia

WP/15/77
Investing in Emerging Markets: We Are Not in Kansas Anymore… Or Are We?
Nicolás Magud and Sebastián Sosa

Selected Issues Papers

Belize

- *Where Do We Stand on Efforts to Strengthen Belize's Financial Sector?*
  Jacques Bouhga-Hagbe, Joel Okwuokei, and Kristine Vitola
- *Belize—Toward a Fiscally Sustainable Wage Negotiation Framework*
  Jacques Bouhga-Hagbe and Marcio Ronci

Canada

- *Canada's Non-Energy Exports: Assessment of Post-Crisis Growth Performance*
  Minsuk Kim
- *Neutral Rate of Interest in a Small Open Economy: The Case of Canada*
  Andrea Pescatori
- *Anchoring Sustainable Fiscal Policy: A New Fiscal Rule in Canada*
  Tidiane Kinda

Chile

- *Why Foreign Ownership of Locally Issued Sovereign Bonds is So Low in Chile*
  Yi Wu
- *Chile's Experience with Inclusive Growth*
  Elif Ture
- *Chile's Tax System and the 2014 Tax Reform*
  Daniel Rodríguez-Delgado and Roberto Schatan
- *Chilean Banks' Loan to Deposits Ratio*
  Nicolas Arregui
- *Chile's Insurance Sector*
  Nicolas Arregui

Colombia

- *Assessing Spillover Risks*
  Pablo Morra, Mauricio Ruiz, Carlos Goes, and Eugenio Cerutti
- *Colombia's Fiscal Rule and Adjustment in the Context of Resource Wealth*
  Leonardo Martinez and Martín Wachs
- *Recent Performance of Colombia's Manufacturing Sector: Exchange Rate or Structural?*
  Naomi Griffin, in collaboration with Colombia's Superintendence of Corporations (Superintendencia de Sociedades)
- *Selected Financial Sector Issues*
  Izabela Karpowicz and Mohamed Norat
- *Financial Inclusion, Growth, and Inequality: A Model Application to Colombia*
  Izabela Karpowicz

Costa Rica

- *Selected Real Sector Issues*
  Patrick Blagrave, Jose Pablo Valdes, and Joyce Wong

- *Cross-Border Linkages and Spillovers*
  Patrick Blagrave, Eugenio Cerutti, Ewa Gradzka, Anna Ivanova, Rodrigo Mariscal, and Jaume Puig-Forné
- *Assessing Fiscal Vulnerability and Medium-Term Sustainability*
  Jaume Puig-Forné, Lennart Erickson, and Anna Ivanova
- *The Central Bank's Net Worth*
  Jorge Restrepo and Evelyn Muñoz
- *Monetary Policy and Inflation*
  Rodrigo Mariscal, Anna Ivanova, and Joyce Wong
- *Transition to a Flexible Exchange Rate: Lessons from Past Experience*
  Lennart Erickson, Anna Ivanova, and Jorge Restrepo
- *Financial Sector Issues*
  Anna Ivanova, Jaume Puig-Forné, and Jorge Resrepo

El Salvador

- *Assessing Potential Output*
  Iulia Teodoru
- *Fostering Diversification and Integration*
  Iulia Teodoru
- *Investment Drivers in Central America: An Application to El Salvador*
  Joyce Wong and Heba Hany

Guatemala

- *Assessing Potential Output*
  Iulia Teodoru
- *Cross-Border Linkages and Spillovers*
  Eugenio Cerutti, Ewa Gradzka, Anna Ivanova, Rodrigo Mariscal, and Jaume Puig-Forné
- *The Effect of U.S. Tapering*
  Patrick Blagrave, Anna Ivanova, Keiko Honjo, and Jaume Puig-Forné
- *Fiscal Sustainability Assessment*
  Lennart Erickson
- *Monetary Policy Stance*
  Jaume Puig-Forné

Mexico

- *The Impact of Mexico's Energy Reform on Hydrocarbons Production*
  Phil De Imus

- *Made in Mexico: The Energy Reform and Manufacturing Output*
  Fabián Valencia And Jorge Alvarez
- *Capital Flow Volatility and Investor Behaviour In Mexico*
  Jianping Zhou, Han Fei, And Jasmine Xiao

Paraguay

- *Global and Regional Spillovers: How Important for Paraguay?*
  Xin Xu
- *Debt Sustainability, Cyclical Stabilization, and the Fiscal Responsibility Law—A Simulation Exercise*
  Alejandro Guerson
- *Informality in Paraguay: Macro-Micro Evidence and Policy Implications*
  Mauricio Vargas
- *Financial Deepening, Growth, and Inequality*
  Camila Perez

Suriname

- *Modeling Demand Responses to Policies and Shocks: An Application to Suriname*
  Kalin Tintchev
- *Fostering Sustainable and Inclusive Growth in Suriname*
  Kalin Tintchev
- *What Does Ms. Muffet Tell us About the Macro-Financial Situation in Suriname?*
  Qiaoe Chen
- *Fiscal Sustainability and Aging Pressures in Suriname*
  Hye Sun (Marie) Kim

United States

- *Recent U.S. Labor Participation Dynamics: Reversible or Not?*
  Ravi Balakrishnan, Mai Dao, Juan Solé, and Jeremy Zook
- *U.S. Total Factor Productivity Slowdown: Evidence from the United States*
  Roberto Cardarelli and Lusine Lusinyan
- *Monetary Policy Communication and Forward Guidance*
  Tim Mahedy, Jarkko Turunen, and Niklas Westelius
- *The Operational Framework for Monetary Policy*
  Darryl King and Simon Gray
- *Fiscal Risks and Borrowing Costs in State and Local Governments*
  Madelyn Estrada, Deniz Igan, and Dinah Knight

Uruguay

- *Inclusive Growth: The Tale of Uruguay*
  Elif Ture
- *How Will the Normalization of U.S. Monetary Policy Affect Uruguay?*
  Diva Singh and Yulia Ustyugova