Routes to Growth in a New Trade World

2017

Latin American and Caribbean Macroeconomic Report

COORDINATED BY ANDREW POWELL

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Foreword

Global economic growth is set to rise, strengthened by rising demand from the United States but with considerable uncertainty regarding economic policies. Risks include rising global trade frictions and higher U.S. interest rates leading to tighter financing conditions. Growth in Latin America and the Caribbean should pick up, but only to moderate levels and these risks are real.

Since our report last year there have been several positive developments. Many countries have pursued fiscal reform and have trimmed expenditures seeking higher efficiency in public spending. Tax reform efforts in some countries have been very successful in boosting revenues, striving towards greater equity as well as improving efficiency. We commented last year that fiscal reform plans were weighted too much on cutting capital expenditures and the composition has now improved. Moreover, countries with high tax burdens are focused on cutting expenditures while those with low tax burdens are tending to seek higher revenues. As our discussions in previous reports have highlighted, the detail of fiscal policy is critical to ensure its success and it seems the region has shifted to a pattern of better policies. In addition, monetary policy in the larger economies has kept inflation under control while allowing the exchange rate to be very flexible. And the estimates in this report show that an external adjustment process is close to completion in most countries.

But the region needs to find ways to boost growth without large fiscal outlays and in a very uncertain world. In *Routes to Growth* we argue that deeper trade integration could provide such a mechanism. But there are no less than 33 Preferential Trade Agreements (PTAs) involving the 26 regional members of the Inter-American Development Bank. This patchwork of relatively small PTAs, each with its own set of *rules of origin,* does not allow the region to reap the rewards of the significant amount of work already done. Some 80% of trade today is already under preferences, so in that sense the region is not far from free trade; but actual trade is stifled by the complexity and inconsistencies between the different PTAs as well as some important missing links. This report makes a case for resolving these problems, thereby deepening integration in the region and allowing countries to reap the full rewards of trade.

We may appear to be swimming against the tide by proposing to deepen integration in Latin America and the Caribbean while some industrialized economies seem to be going in the opposite direction. But the effects of trade liberalization can be quite different

in emerging economies compared to their richer counterparts. As trade boomed in Latin America in the 2000s, inequality fell. Still, countries should be careful to address potential losers from a deeper integration process.

If the world does turn more protectionist, this could have serious impacts on the small open economies of the region. We show in this report that deeper integration helps Latin America and the Caribbean in any scenario, but that it would be particularly beneficial in this more negative case. There has not been a more important time to take bold moves towards true trade integration.

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Chief Economist

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This report was written by a group of economists at the Inter-American Development Bank (IDB) from the Research Department, the Integration and Trade Sector, the Fiscal and Municipal Management Division (all in the Vice Presidency of Sectors and Knowledge) and from the Vice Presidency of Countries. This year the team also included several economists from outside of the IDB. The team consisted of Martín Ardanaz, Andrés Fernández, Gustavo García, Daniel Hernaiz, Mauricio Mesquita Moreira, Denisse Pierola, Andrew Powell, Diego Rodríguez, Samuel Rosenow, Denis Sánchez, Ernesto Stein, Rodrigo Suescum, and Victor Zuluaga.

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CHAPTER 1

Introduction

As a group of small open economies, what happens in the rest of the world is critically important for the 26 regional members of the Inter-American Development Bank. The next Chapter considers recent developments in the global economy and how they may affect the region. In particular, a statistical model of the world economy including 14 countries in the region is used to analyze different scenarios and their impacts for Latin America and the Caribbean as a region and for individual countries and subregions.

In the second section, the report then considers how countries are adapting to external conditions, what macroeconomic policies are being pursued, and how those policies may be improved. As noted in last year's report, in the past external shocks provoked higher inflation, either directly in the case of some countries with fixed exchange rates or through the movement of exchange rates in those countries with exchange rate flexibility. Chapter 3 notes that these trends have reversed; in general, inflation is falling and is relatively low in most countries regardless of the monetary regime in place. The Chapter goes on to consider the role monetary policy has played in those countries with active monetary policy and inflation targeting regimes. A monetary model is developed and estimated which is then used to consider how new shocks might affect outcome variables including interest rates (assuming a constant policy rule assumption) and the impact of alternative policy rules is explored.

Chapter 4 turns to the analysis of fiscal accounts, fiscal policies, and plans. Fiscal positions are highly heterogenous. Countries are categorized in terms of whether current growth is above or below potential and each country's fiscal stance. Previous editions of this report noted that the expansionary response to the period during the global financial crisis was not truly counter-cyclical, as the expansionary measures adopted appeared more akin to permanent changes than temporary measures, and as output gaps turned positive again, countries maintained an expansionary fiscal stance. This, then, led to a period of growing deficits, which has now forced several countries to pursue pro-cyclical contractions. The Chapter analyzes the composition of current fiscal adjustment programs and notes that they now appear more in line with the ideas suggested in last year's report. Additional policy suggestions are provided.

Apart from adjustment in the fiscal accounts, the region has been undergoing a significant external adjustment. Current deficits have narrowed from recent peaks and in many cases, have approached medium or longer term averages. Chapter 5 analyzes the role of prices including exchange rates in this adjustment process. Export performance has been mixed but can be explained in part by changes in competition and similarity-adjusted real effective exchange rates. The chapter also notes that import penetration has declined significantly in many countries, assisting the adjustment process. The Chapter concludes with an assessment of how much adjustment has taken place and what further adjustment may be required.

In the third section, the report considers a particular area that may provide an attractive route to boost growth, namely deeper regional integration. Chapter 6 reviews the experience with trade agreements signed within the region and also between countries of the region and other countries in the world. A set of gravity type models are developed and estimated that assess the efficacy of these agreements. It is argued that while these agreements boosted trade between members in the region, the smaller trade agreements largely failed in their wider objective of creating large and integrated markets with sufficient scale to compete internationally. Chapter 7 then considers how to build on the current platform of no less than 33 interlocking regional trade agreements to construct a truly integrated market. A concrete action plan is developed. Several of the actions may be taken individually with tangible benefits but if they are taken together they have the power to transform the region into a true free trade area with a total market size on the same order as some other trading blocks and with the potential to allow firms and value chains to develop with sufficient scale to compete globally. This may then provide a cost-effective way to boost productivity and growth and to improve living standards.

Chapter 8 sums up the main arguments of the report and compiles the various policy suggestions.

CHAPTER 2

Global Risks and Impacts on Latin America and the Caribbean

Latin America and the Caribbean has suffered negative growth for the last two years—the first two-year period of consecutive negative growth since the early 1980s—but the prospects for 2017 are for economic performance to improve. This more optimistic outlook depends on at least two critical assumptions: a relatively benign scenario for world growth, with no major shocks to important trading partners or financial markets, and a recovery—albeit more modest than previously expected—in the two largest of the six regional economies in recession in 2016, namely Argentina and Brazil.

The 2017 baseline global growth of 3.4% (versus 3.1% in 2016) is based on somewhat higher growth in the United States (1.9%), in the Euro area (1.6%) and 6.5% growth in China. However, there is uncertainty regarding all three figures. In the United States, while some fiscal stimulus, tax cuts, deregulation, and a somewhat steeper path to higher interest rates is now expected, the magnitude of such policies and their impact remain uncertain. A larger than expected fiscal stimulus package might boost growth further but would also likely lead to faster monetary normalization and a stronger dollar, implying tighter financial conditions for emerging economies.[1]

Potential actions on trade have also raised concern, with the United States calling to renegotiate NAFTA and discussing the possibility of imposing tariffs on countries with large trade surpluses with the United States.[2] In parallel, there is talk of introducing a "border adjustment tax" as part of the corporate tax reform; a leading contender for such a tax is the so-called Destination Based Cash Flow Tax. This tax resembles a value-added tax but allows firms to deduct the cost of domestic inputs such as labor and hence boosts domestic production relative to imports. Assuming exchange rates do not fully adjust to offset the impacts, either policy may affect countries with significant exports to the

[1] As in previous editions of this report, the baseline is consistent with the IMF's *World Economic Outlook* (IMF, 2017) while alternative scenarios discussed further below are generated using an econometric (Global Vector Autoregression) model of the world economy maintained at the IDB.

[2] NAFTA is the North American Free Trade Area encompassing Canada, the United States and Mexico.

United States including China, Germany, Japan, and Mexico.[3] There is then speculation regarding whether these countries may respond with their own actions, thereby generating uncertainty in global trading relations.

Growth in China was actually upgraded in 2016 but risks remain as the Chinese economy is still expected to slow and rebalance towards one more focused on domestic consumption and away from exports and investment. As argued in the 2012 Latin American and Caribbean Macroeconomic Report, slower growth in China hits commodity prices, while rebalancing hits metals further but provides some support for food prices. Fiscal stimulus and the availability of credit continue to support growth but attempts to limit debt in low-performing institutions would act as a drag. Recent capital outflows and the fall in the value of the renminbi suggest investors may be nervous about the rebalancing process.[4]

There are several other risks in advanced economies. At the time of writing, the United Kingdom appears set to trigger Article 50 of the European constitution and will then have two years to negotiate its exit from the European Union. As the second largest economy in Europe and the fifth largest in the world, how such negotiations proceed is important not only for the United Kingdom and Europe but for other countries as well. Moreover, upcoming elections in several other European nations are generating uncertainty regarding the direction of economic policy and raise the specter of shocks to financial markets if, for example, results bring more political surprises and prove opinion polls wrong.

Global Trade

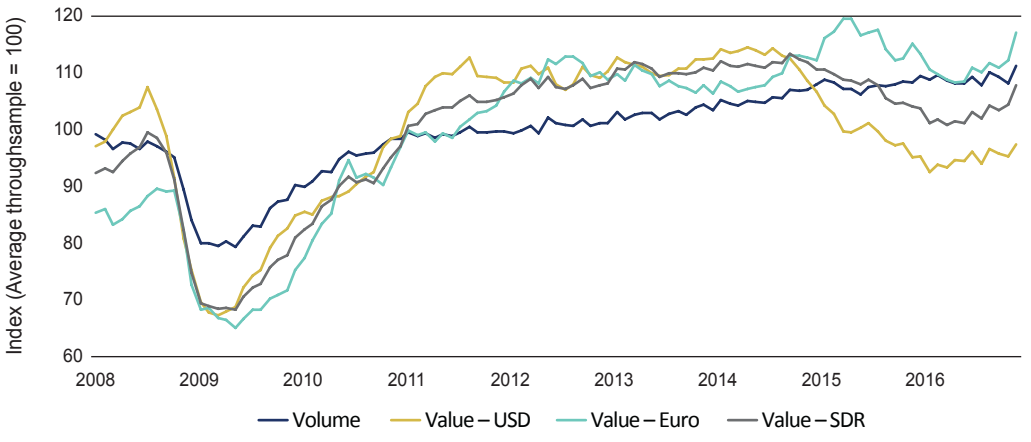
There has been much discussion regarding the collapse in global trade. Considering trade values in US dollars, global trade fell by around 20% from 2014 to 2016 and has only increased marginally from the low in January of that year (see Figure 2.1). However, the fall in global dollar trade values was more than fully accounted for by declines in prices, measured in dollars.[5] Global trade volumes fell slightly from January to May 2015 but then resumed their upward trend, albeit at a lower rate. Comparing trade values in dollars to the same in Euros or SDRs illustrates the effect of changes in the US currency. Global trade valued in Euros grew from April 2014 to April 2015, illustrating that much of the 2014

[3] In theory if the United States introduces a DBCFT, then the dollar may appreciate to exactly offset the tax rendering the change neutral in terms of exports and imports. However, there is considerable debate if this would actually occur in practice and in general economic models of exchange rates behave poorly. The assumption in this report is that while there may be some offset, this offset would likely be incomplete. See Martin (2017) for a more general discussion. It is worth noting that if the offset were complete then the implication could be a significant dollar appreciation which may have implications for corporates and sovereigns that have issued debt extensively in dollars—see last year's report for an analysis of Latin American corporate balance sheets.

[4] Chapter 5 details the importance of Chinese depreciation for Latin American and Caribbean exchange rate competitiveness.

[5] See in particular the discussion in Giordano (2016) and see IMF (2016) for an explanation of the fall in the growth of trade volumes.

FIGURE 2.1 Global Trade Values and Volumes



Source: IDB staff calculations based on CPB World Trade Monitor and OECD currency statistics.

"collapse" may reflect the appreciation of the dollar against that currency. As might be expected, valuing trade in SDR's yields a more balanced view.[6] Importantly, volumes and values measured in each currency showed an uptick in the most recent month illustrated.[7]

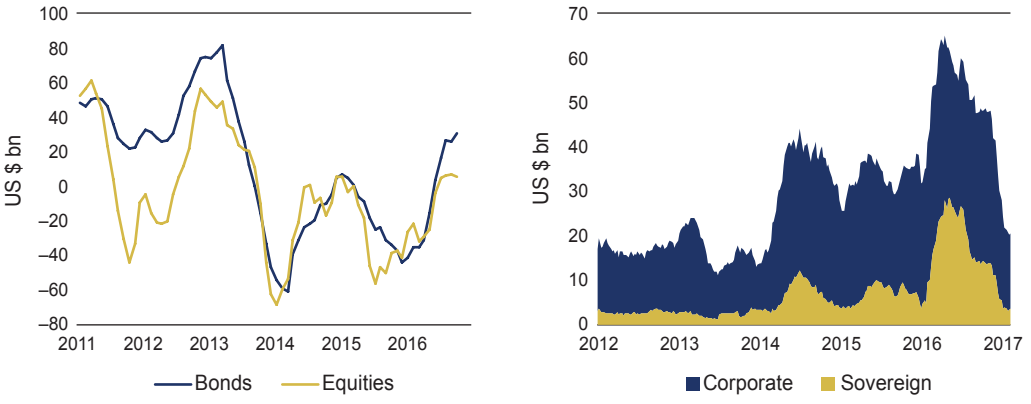
One factor behind the fall in dollar trade values in 2014 was the decline in dollar commodity prices. Trade volumes may also have become more sensitive to changes in growth due to the rise in global value chains. In the case of Latin America and the Caribbean, some countries' dollar trade values have been hit hard by declines in the dollar prices of commodities while in others, particularly Mexico, trade may have suffered from the multiplier effect of global value chains. Chapter 5 reviews the process of external adjustment in the region given these developments.

Global trading arrangements have become a key focus for policymakers given Brexit, the U.S. decision not to enter into the Trans Pacific Partnership, and ongoing discussions regarding renegotiating multinational trade agreements such as NAFTA. The world appears to be moving away from multilateral arrangements towards bilateral trade deals. Chapters 6 and 7 consider these issues, their implications, and the policy options for the region.

The proposed Destination Based Cash Flow Tax (DBCFT) could affect countries with significant trade surpluses with the United States including China, Japan, Germany, and Mexico.[8] Such shocks would then have knock-on effects on other economies. In particular, Japan, China, and other Asian economies would be affected through value chains while Latin America would be affected especially through the demand for commodities.

[6] The SDR (Special Drawing Right) is a currency basket defined by the IMF.
[7] November 2016 was the last data-point available at the time of writing.
[8] Raising tariffs would have similar or perhaps even greater impacts.

FIGURE 2.2 Net Withdrawals from Emerging Funds and Bond Issuance



Source: IDB Staff calculations based on data from EPFR and Thomson Reuters.
Note: The figure on the left shows monthly net purchases or withdrawals from emerging economy bond and equity funds. The figure on the right shows a 12 week moving average of weekly bond issuance in all currencies from emerging economies – nationality criterion.

The potential impact for the region is analyzed through the lens of a Global Vector Auto-Regression (G-VAR) model below.[9]

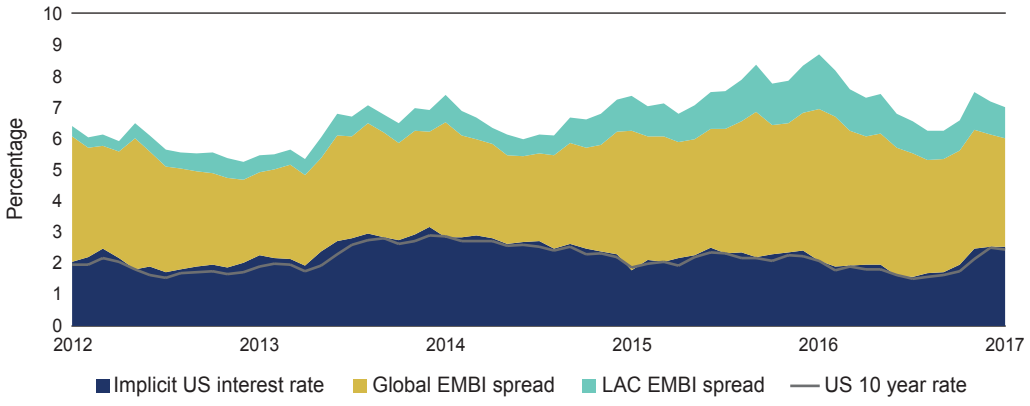
Capital Flows and Emerging Economy Bond Yields

At the start of 2016, with the prospect of rising interest rates in the United States, there was concern that emerging economy asset prices would fall and capital flows would diminish. However, while there were net withdrawals from emerging market funds through much of 2016, even with the U.S. policy interest rate on the rise, there were net purchases toward the end of the year (see Figure 2.2). Moreover, emerging economy corporates and sovereigns continued to take advantage of historically low interest rates to tap international markets in hard currencies, although issuance at the start of 2017 appears to have fallen. Latin America and the Caribbean follows these more general emerging economy trends.

However, the prospect of fiscal stimulus and tax reforms have rekindled fears of faster U.S. interest rate normalization and, in turn, impacts on emerging economy borrowing rates and currencies. Considering secondary market yields, while emerging market bond spreads have not increased in recent weeks, the rise in U.S. interest rates has pushed up yields and several emerging economy currencies, including in Latin America, have depreciated (see Figure 2.3). Chapter 3 reviews the difficult trade-offs of central banks in the region given inflationary pressures from pass-through even though output gaps are negative.

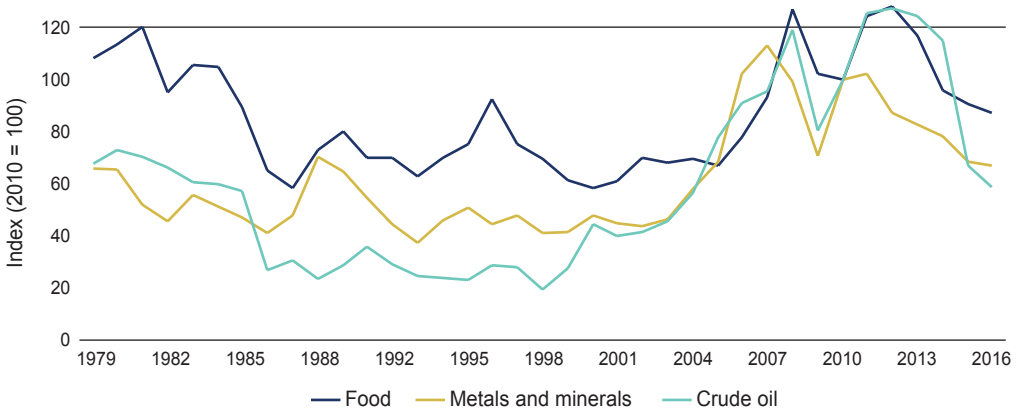
[9] On the G-VAR model and discussion of the methodology see Powell (2012) and Cesa-Bianchi et al. (2012).

FIGURE 2.3 Emerging Market Bond Yields



Source: IDB staff estimates, J.P. Morgan EMBI bond yields and US interest rates sourced from Thomson Reuters.

FIGURE 2.4 Real Commodity Prices



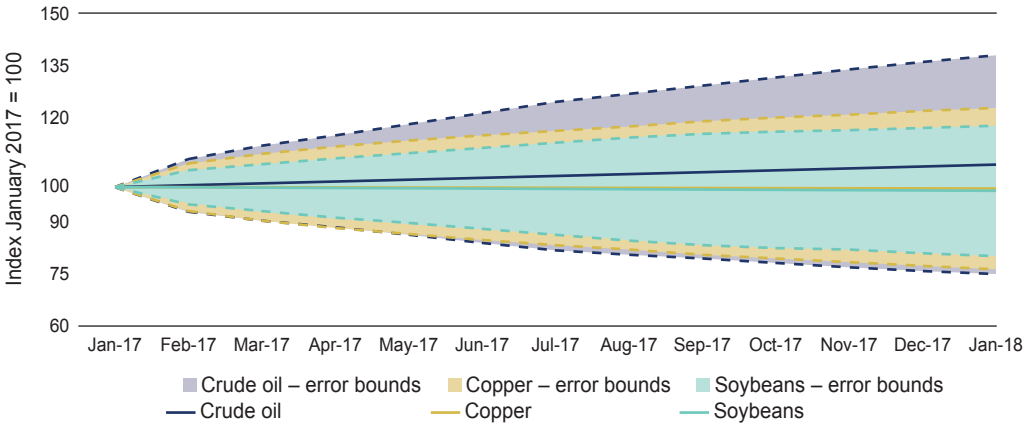
Source: World Bank, Global Economic Monitor.

Commodity Prices

After the steep decline in the price of metals from 2011, oil in 2014 and some other commodities, prices have recovered somewhat in recent months. In real terms, commodity prices remain above the lows of the 1990s and supply and demand conditions remain finely balanced (see Figure 2.4). Baseline projections for commodity prices in general suggest moderate expected increases commensurate with the level of global interest rates.

However, in several commodity markets, particularly in metals and minerals, supply conditions remain relatively tight such that any boost to demand or negative supply

FIGURE 2.5 The Uncertainty Around Commodity Price Projections



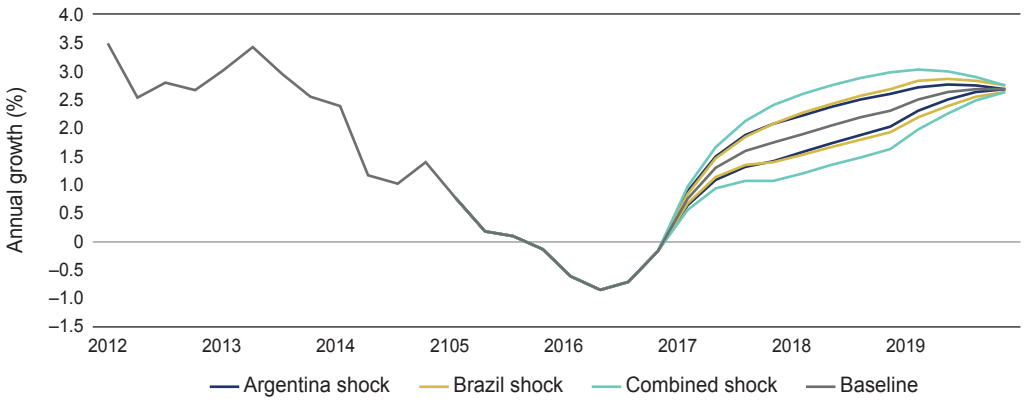
Sources: IDB Staff calculations based on implied volatilities from Datastream, and point forecasts from World Bank and IMF.
Notes: The monthly change in the error bounds are computed as the monthly growth rate of the forecasted series plus/minus one standard error drawn from the option implied volatilities. Implied volatilities are for the money call options expiring in several different months. In some cases gaps were filled with a linear interpolation and from information on call options that were not strictly at the money.

shocks could provoke significant price increases. Prices already rose in some metals after the U.S. election, apparently on the expectation of greater demand, in part from infrastructure spending. Price movements will then also likely depend on how the U.S. stimulus compares to those expectations, already reflected in current prices. Moreover, if significant changes to global trading arrangements translate into a shock to countries with large trade surpluses, particularly China, then commodity prices might suffer further declines. Appendix B contains a more detailed analysis of the supply and demand conditions for metals and minerals.

History suggests that any commodity price projections, including the price expectations from futures markets, are subject to large potential errors. The forward-looking implicit volatilities from commodity options provide one indication of this uncertainty. Considering the current pricing of options on oil, copper, and soybeans, error bands regarding any future price projection can be developed. While current forecasts indicate moderate price rises on the order of 5–8% over the next year, in the case of oil one standard deviation error band could mean a rise of 20% or a similar decline (see Figure 2.5).[10] As discussed in Appendix B, if prices turn out to be lower than expected, tax revenues for commodities exports would fall. Countries that are dependent on commodity revenues should carefully consider how to best manage those risks.

[10] While expected oil volatility is higher than that of copper and soybeans it is lower now than in the recent past. Implicit volatilities of oil options are around 30% but they were as high as 50% late last year.

FIGURE 2.6 Regional Growth with Shocks to Argentina and Brazil



Source: IDB Staff calculations and IMF (2016, 2017).
Notes: Argentina and Brazil shocks are 1/4 of a standard deviation of the hisotrical growth rate.
The 2002 Argentine crisis was excluded in the calculation of the standard deviation of growth in that case.

Growth Scenarios and Impacts on the Region

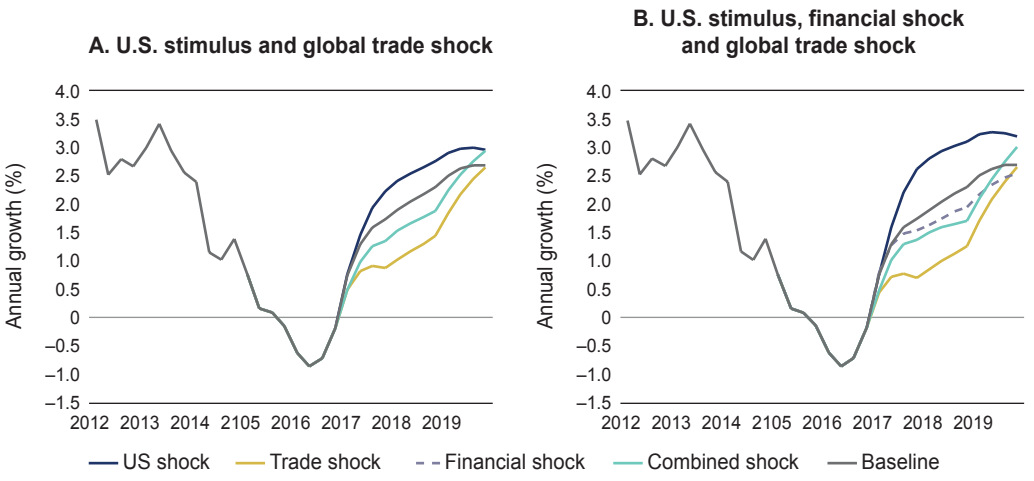
The baseline scenario includes a pick-up in global growth but the discussion above highlights several risks for Latin America and the Caribbean. A set of scenarios are developed in an attempt to quantify how these risks may affect economic growth in the region.

Six countries in the region were in recession in 2016 including two of the larger economies: Argentina and Brazil. Predicting growth when current growth rates are negative is extremely difficult and not surprisingly, the projected growth rates of both countries for 2017 were revised considerably between the October 2016 W*orld Economic Outlook* and the January 2017 update.[11] What would happen to regional growth if these two large regional economies were to undergo further changes? Figure 2.7 illustrates the results from simulations of a Global Vector Auto-Regression model of the world economy (G-VAR), considering both a positive and a negative scenario in which Argentina and Brazil are both assumed to gain (or lose) one quarter of a standard deviation of growth. Such a shock to Brazil affects Argentina, just as a shock to Argentina affects Brazil and both countries affect other countries in the region. Indeed, the impact on regional GDP is around 1.9 times the size of the combined Argentina plus Brazil shock, indicating a significant multiplier effect.

In these simulations, the shock (in this case the gain or loss of one quarter standard deviation of the growth rate of each country) is spread through eight quarters (two years).

[11] See Loungani (2001) and Genberg and Martinez (2014) on growth forecasts and the difficulty of predicting recessions and growth rates conditional on being in a recession.

FIGURE 2.7 Regional Growth Given Alternative Global Scenarios



Source: IDB Staff calculations and IMF (2016, 2017).
Notes: The U.S. Shock is a positive shock to growth designed to reflect a package of economic stimulus, deregulation and tax cuts. The Trade Shock is a set of shocks to those countries with large trade surpluses with the United States. The relative size of those shocks is in relation to their trade surplus as a percent of GDP and the volatility of the economy in question. The Financial Shock represents a shock to asset prices in the United States, the Euro Area and the UK.
For Panel A, the U.S. Shock is 1/4 of a standard deviation of US historical growth. The Trade Shock is then adjusted to ensure that the combined shock is neutral for the US.
For Panel B, the U.S. Shock is assumed to be larger (1/2 standard deviation of US historical growth), a financial shock is added and then the trade shock is adjusted to ensure the combined shock is neutral for the United States.

This affects the timing of the impacts but hardly affects the overall effects. Considering the three years from 2017 to 2019, the overall impact is almost 0.5% per annum on regional growth and naturally the Southern Cone is most affected (see Table 2.1 for further details).

What about the impact of fiscal stimulus and other U.S. policies that might boost growth coupled with actions that might affect global trade? Suppose, in particular, that those countries with significant trade surpluses with the United States (China, Germany, Japan, and Mexico) are negatively affected, say through a DBCFT where exchange rates do not fully compensate for these interventions. And suppose that the growth impacts on each country are related to the size of the trade surplus that country has with the United States, as well as the volatility of growth and the size of each economy. Given the tremendous uncertainty regarding the magnitude of the policy interventions (both the fiscal stimulus and on trade), calibrating these shocks is fiendishly difficult. One interesting possibility is that the shocks are sized such that the overall net impact on the United States is neutral. Or in other words, the positive stimulus and the trade developments do not alter U.S. growth rates in net terms so U.S. growth remains close to its levels in the baseline scenario. However, even if the shocks are calibrated such that the net impact on the U.S. economy is neutral, they imply significant impacts on other countries including those in Latin America and the Caribbean.

TABLE 2.1 Simulation Results from a G-VAR Model

Region	Baseline growth 2017–2019	Difference in growth with respect to baseline (2017–2019 average)			
		Combined shock to Argentina and Brazil*		US Growth, Trade and Financial Shocks	
				Combined shock 1**	Combined shock 2***
Latin America and the Caribbean	2.02%	+/–	0.47%	–0.32%	–0.38%
Southern Cone except Brazil	2.67%	+/–	0.63%	–0.39%	–0.44%
Brazil	1.22%	+/–	0.43%	–0.10%	–0.09%
Andean Region	2.87%	+/–	0.42%	–0.36%	–0.40%
Central America and the Caribbean	3.34%	+/–	0.10%	–0.07%	–0.10%
Mexico	2.20%	+/–	0.52%	–0.62%	–0.79%

Source: IDB Staff calculations and IMF (2016, 2017).
Notes:
* 1/4 standard deviation shock to Argentina and Brazil. The standard deviation of Argentine growth is calculated omitting the 2002 crisis.
** Combined shock 1 refers to the U.S. stimulus and global trade shock as in Figure 2.7.A.
*** Combined shock 2 refers to the U.S. stimulus, financial shock and global trade shock as in Figure 2.7.B.

Panel A of Figure 2.7 illustrates the impact on Latin America and the Caribbean as a whole of a positive boost to U.S. growth combined with a global trade shock that particularly impacts those countries with significant trade surpluses with the United States. Note that higher U.S. growth is positive for the region but the shocks to the United States' trading partners are negative. The composition of impacts on countries in the region varies widely. The net impact on all countries is either negative or negligible; no country enjoys a significant positive impact. Naturally, there is a large negative impact on Mexico but there are also negative impacts in South America. The main channel there appears to be the impact on China and, hence, the impact on the major commodity exporters of the region. Table 2.1 details the impacts across the region.

This first scenario might be considered a relatively mild version of the combination of fiscal stimulus and trade developments that do not provoke any shock to financial markets. But what if the policies were dramatic enough to provoke faster interest rate hikes than expected in the United States that subsequently impact financial asset prices? Panel B of Figure 2.7 illustrates the impact of such a scenario on Latin America and the Caribbean. In this case the boost to growth is larger, the trade adjustments are more extensive and financial markets receive an additional shock. Once again, however, the shocks are calibrated such that the overall net impact on the United States is neutral: U.S. growth under the combined shocks is roughly the same as in the baseline projections. However, the impacts on the region are larger than before. Higher U.S. growth is positive for the region but the assumed shocks to U.S. trading partners and the shocks to financial asset prices

are both negative, creating a larger net negative impact on regional growth. Once again, the impacts vary widely across countries. Mexico is most affected, but all countries face net negative impacts given the shocks to trading partners and the financial shock (see Table 2.1 for further detail).

A caveat is in order regarding the mechanics of G-VAR modeling. The model relies on historical patterns in the data to build the impacts of potential future shocks. Naturally, structural changes in the world economy could render historical patterns insufficient to capture future developments. Moreover, some changes may not be adequately captured by the model. As noted in previous reports, private sector firms have contracted significant amounts of dollar debt. If a set of policies provokes a large appreciation of the dollar, then this may cause financial problems in the region. This type of effect may not be fully captured by the model.

***

Latin America and the Caribbean is facing a very uncertain world. While the baseline scenario is reasonably positive with stronger global growth and an expected recovery in Argentina and Brazil, there are significant external and internal risks. On the external side, considerable uncertainty surrounds the magnitude of different policy actions in the United States that might boost U.S. growth but at the same time may affect global trading relations. While this may be on balance neutral, or positive, for the United States, the trade impacts may affect Mexico directly, and if China is affected, then South America may be impacted through lower commodity prices. If the U.S. stimulus is larger than expected, prompting a faster than anticipated monetary normalization, then financial markets may take a hit and financing conditions for emerging economies could be more constrained.

Having said this, the impacts of shocks to Argentine and Brazilian growth also remain very significant for the region. The success of the ongoing recovery in these two large economies is just as, if not more, important for regional growth prospects as external risks. Of course, the two are also related. Stronger global growth, higher commodity prices, and the absence of negative shocks on trade will help both economies recover successfully. Chapters 6 and 7 of this report discuss how deeper integration within the region would also serve to boost growth rates going forward.

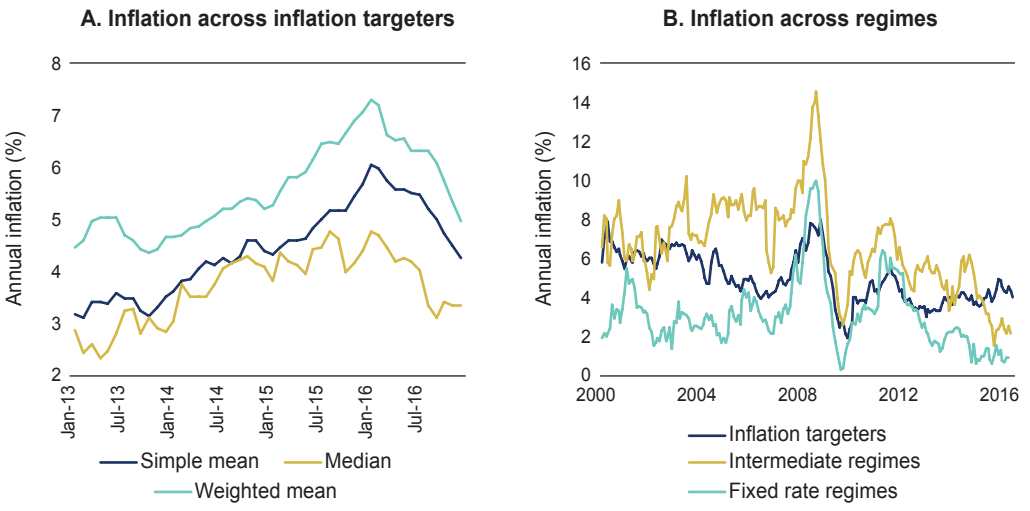
CHAPTER 3

Monetary Policy Tradeoffs in an Uncertain World

Countries in Latin America and the Caribbean vary widely in terms of their monetary and exchange rate systems. In countries with fixed exchange rates, inflation has been very low but the trade-off is that external shocks may impact domestic prices directly and, as discussed in last year's report, may have a greater effect on domestic activity. In countries with flexible exchange rates and active monetary policy, adjustment to external shocks may be assisted by exchange rate movements. However, floating regimes then face the challenge of calibrating monetary policy to allow the exchange rate to play its shock-absorber role while still maintaining low and stable inflation. A number of countries with intermediate regimes face similar tradeoffs but may use an explicit (or implicit) target for the exchange rate to gain credibility at the expense of reducing their flexibility.

Inflation has been relatively low for the median country in each of the three regimes. In the case of countries with inflation targets, while inflation has been higher, and in some cases inflation expectations have been above targets, inflation has now fallen (see Figure 3.1, Panel A). However, economic activity remains lackluster and has fallen further below estimates of potential. Central banks must decide how to respond to weak growth while ideally allowing inflation to continue to decline. Moreover, as discussed in Chapter 2, global interest rates may rise and commodity prices could decline in which case this tradeoff would become yet more acute as exchange rates would likely depreciate further, thereby fueling inflationary pressures. The conclusion of an analysis employing a model incorporating monetary policy is that central banks should maintain the type of policies they have been following to date, allowing the exchange rate to operate as an adjustment tool (thus limiting the size of negative output gaps), while calibrating monetary policy to maintain relatively low inflation. Adopting a less restrictive monetary policy, in an attempt to boost economic recovery, may have a rather low payoff and risks significantly higher levels of inflation, a de-anchoring of inflation expectations, and potentially a loss of credibility.

FIGURE 3.1 Inflation in Various Monetary Regimes



Source: Latin Macro Watch and Central Banks´ websites.
Notes: In Panel A, the "weighted mean" is the mean weighted by nominal 2015 GDP. Panel B graphs the median inflation rates. Inflation targeters are Brazil, Chile, Colombia, Guatemala, Mexico, Paraguay, Peru, and Uruguay; Intermediate regimes: Argentina, Bolivia, Costa Rica, Dominican Republic, Guyana, Haiti, Honduras, Jamaica, Suriname, Trinidad and Tobago, and Venezuela; Fixed rate regimes: The Bahamas, Barbados, Belize, Ecuador, El Salvador, Nicaragua, and Panama.

Inflation Trending Down

Inflation appears to be under control for the median country in each of the three types of monetary regimes in Latin America and the Caribbean.[1] Inflation in countries with fixed exchange rate regimes, predominantly in Central America and the Caribbean, has been very low and for the median country fluctuated around 1%—one of the lowest levels since the early 2000s (Figure 3.1, Panel B). Likewise, inflation is low for the median country in the intermediate regime, below 5% for 2016. Argentina, classified in this regime, announced its intention to adopt inflation targeting with a set of gradually decreasing target corridors over the medium term (see Box 3.1 on the Argentine case). On the other hand, inflation in Venezuela continues to surpass 100% per annum.

Figure 3.2 focuses on six of the inflation targeting countries in the region. Headline inflation in three of these countries—Brazil, Chile and Peru—has reverted to the target band. Inflation expectations have re-anchored within the targeted corridors in most of these six cases. The exceptions are Mexico and Uruguay where both the headline and expected inflation rates have been around the top of the target band.

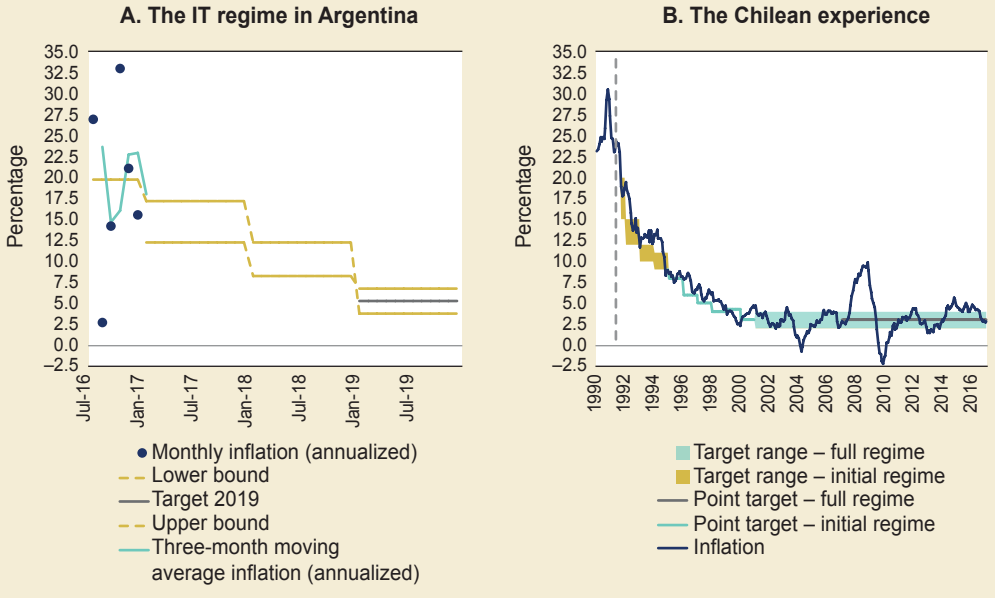
[1] Inflation is now falling considering simple averages, medians, or a GDP weighted average across the six inflation targeting countries.

BOX 3.1 On the Adoption of Inflation Targeting in Argentina

The Central Bank of Argentina (BCRA) announced its intention to formally adopt an inflation targeting framework in September, 2016. The BCRA has set a target range for annual inflation (December-December) for 2017 between 12% and 17%, 8% and 12% for 2018, and 5% (± 1.5%) for 2019 (*See Panel A*). These targets refer to inflation as measured by the general level of the broadest consumer price index reported by the Argentine national statistical agency (currently this is the consumer price index for greater Buenos Aires). The main instrument that will be used in relation to this policy is the 7-day interest rate.

International experience suggests that fully implementing an inflation targeting regime may take several years. The plan of a gradually decreasing target and gradual narrowing of the band to converge to one-digit inflation over the next three years concords with the experience of other countries. Indeed, arguably convergence took even longer in some cases. In Chile, the first inflation target was set in September 1990 for the 12 months of 1991. Inflation was well over 20% at that time. It was not until October 1994 that inflation fell below 10 percent, meaning it took 4 years for inflation to fall to single digits (*See Panel B*). Moreover, Chile maintained a crawling peg for the exchange rate along with inflation targets for an additional eight years.

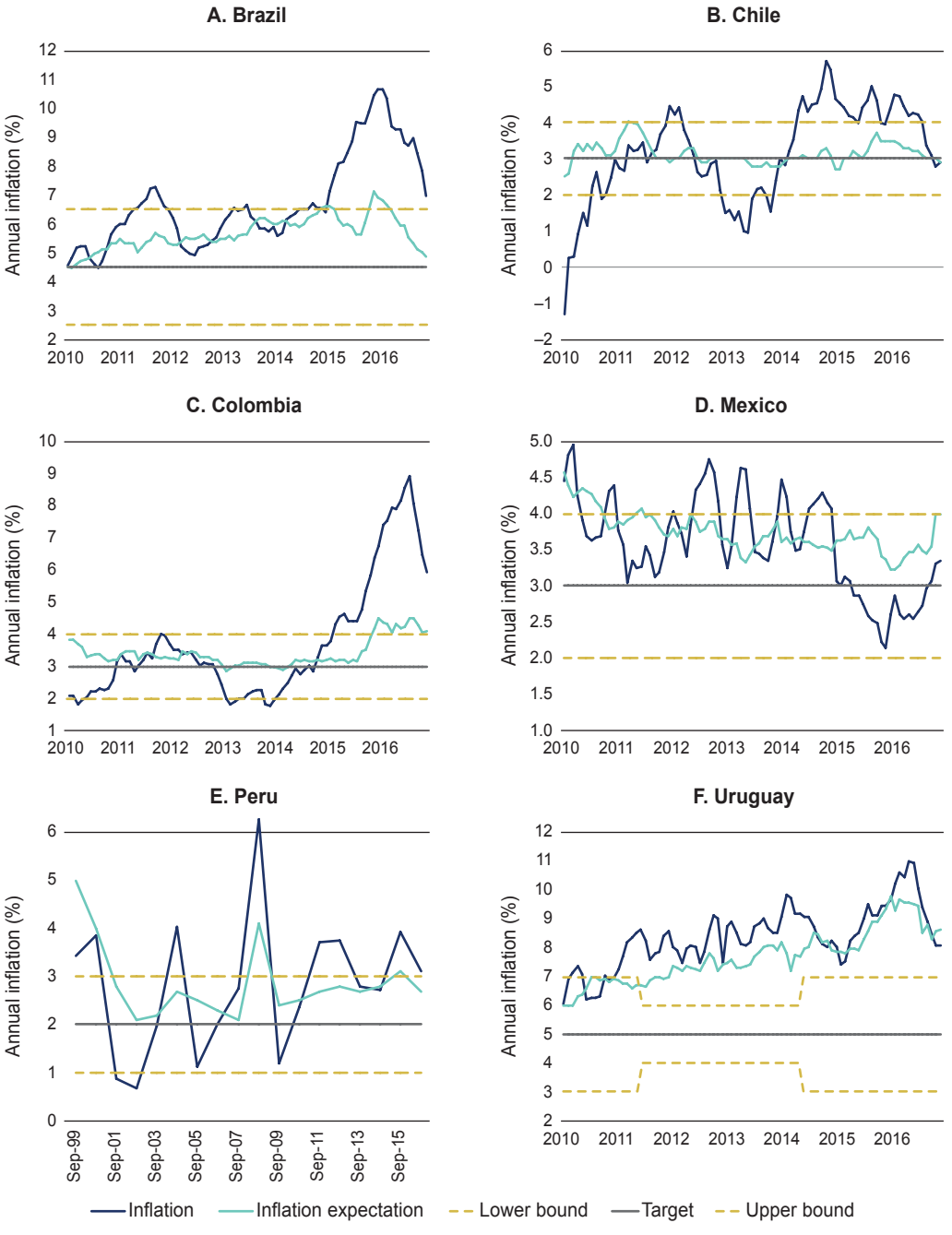
FIGURE B3.1 Implementing Inflation Targeting in Argentina and Chile



Source: Central Bank of the Argentine Republic, Instituto Nacional de Estadísticas y Censos (INDEC) and IDB staff estimates.

Source: Central Bank of Chile, Instituto Nacional de Estadística (INE) and Morandé and Schmidt-Hebbel (2000).

FIGURE 3.2 Inflation Rates, Targets and Expectations



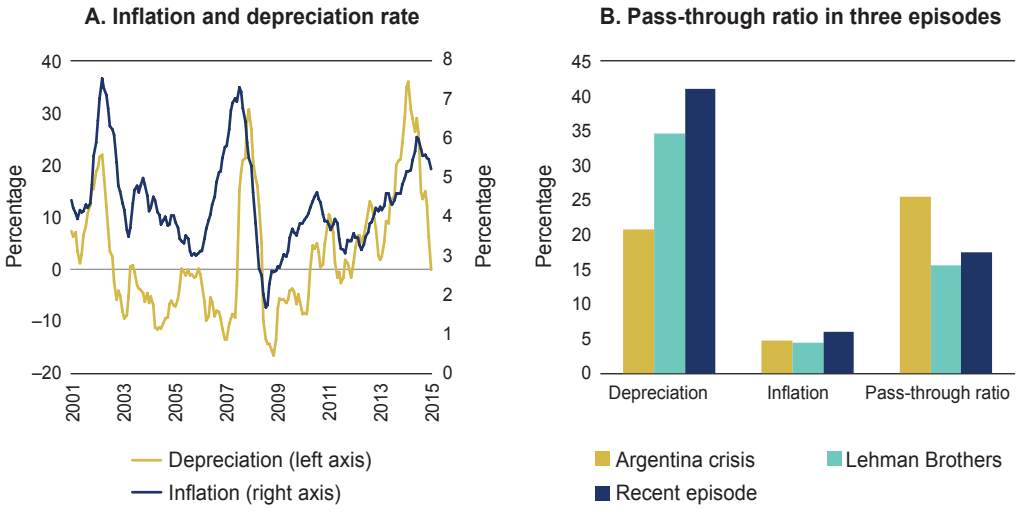
Source: Latin Macro Watch and Central Banks´ websites.
Notes: In the case of Peru, the graph illustrates inflation expectations each September for the subsequent year.

Pass-through and the Monetary Policy Stance

The yearly average rate of currency depreciation jumped from just 1–2% in late 2014 to a peak of 35% within less than a year, only to fall again in 2016. As illustrated in Figure 3.3, Panel A, inflation followed a similar path, but just a couple of months behind. Exchange rate depreciation may boost exports, stimulate import substitution, and help an economy respond to negative shocks (see Chapter 6). However, if the pass-through from depreciation to inflation is large, then central banks may need to tighten monetary policy in order to limit price rises that might slow economic recovery. Panel B in Figure 3.3 quantifies the average level of pass-through during 2015–16: the movement in the CPI was about 18% that of the exchange rate depreciations.

The strength of the pass-through may depend on the reason for the currency depreciation. Figure 3.3 presents the evolution of inflation and depreciation rates over time. Besides the latest depreciation episode discussed above, the graph depicts two distinctive episodes of large exchange rate depreciation: the Argentine crisis of 2002, and the global crisis triggered by the fall of Lehman Brothers in 2008–2009. During the global crisis, the pass-through was similar to the one observed around 2015–2016 but considerably lower

FIGURE 3.3 Inflation, Depreciation and Pass-Through



Source: Latin Macro Watch and Central Banks´ websites.
Notes: Panel (A) computes simple averages across inflation targeting regimes (see Figure 3.1). Panel (B) computes the average of the maximum depreciation of each of five countries (Brazil, Chile, Colombia, Mexico, and Peru) during the three episodes selected. For each country, the pass-through ratio is computed as the relative difference of the level of the consumer price index (CPI) between the end and the beginning of the episode divided by the relevant depreciation.

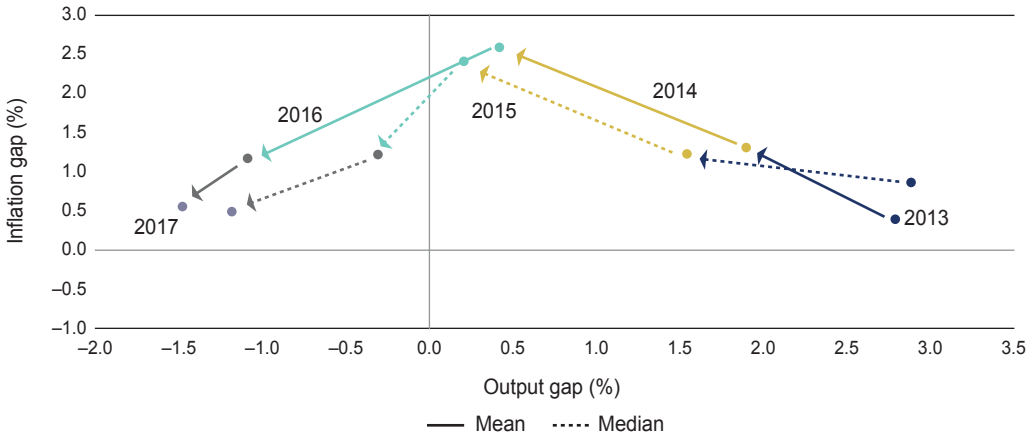
than the one recorded during the Argentine crisis. This suggests that pass-through may differ depending on whether the shock is external to the region or not.[2]

Monetary Policy Tradeoffs

As reviewed in previous editions of this report, several of the larger economies in the region that maintain inflation targeting regimes have shifted from having positive output gaps (production above trend) coupled with inflation above target to higher positive inflation gaps and to narrower and then negative output gaps. As illustrated in Figure 3.4, the average output gap in 2013 of five countries was about 3% and average inflation was only half a percentage point above target. Two years later, output gaps had virtually disappeared while inflation had jumped to about 2.5 percentage points above target. In 2016, inflation began to fall but the trend in output gaps steadily worsened, from an average of about 3 percentage points in 2013 to a negative output gap of about 1 percentage point in 2016. Moreover, some forecasts for 2017 indicate still more negative output gaps on average.

In this "troublesome quadrant" of positive inflation gaps and negative output gaps, monetary policy tradeoffs become more acute. If central banks choose to be more hawkish

FIGURE 3.4 Output and Inflation Gap for Inflation Targeters



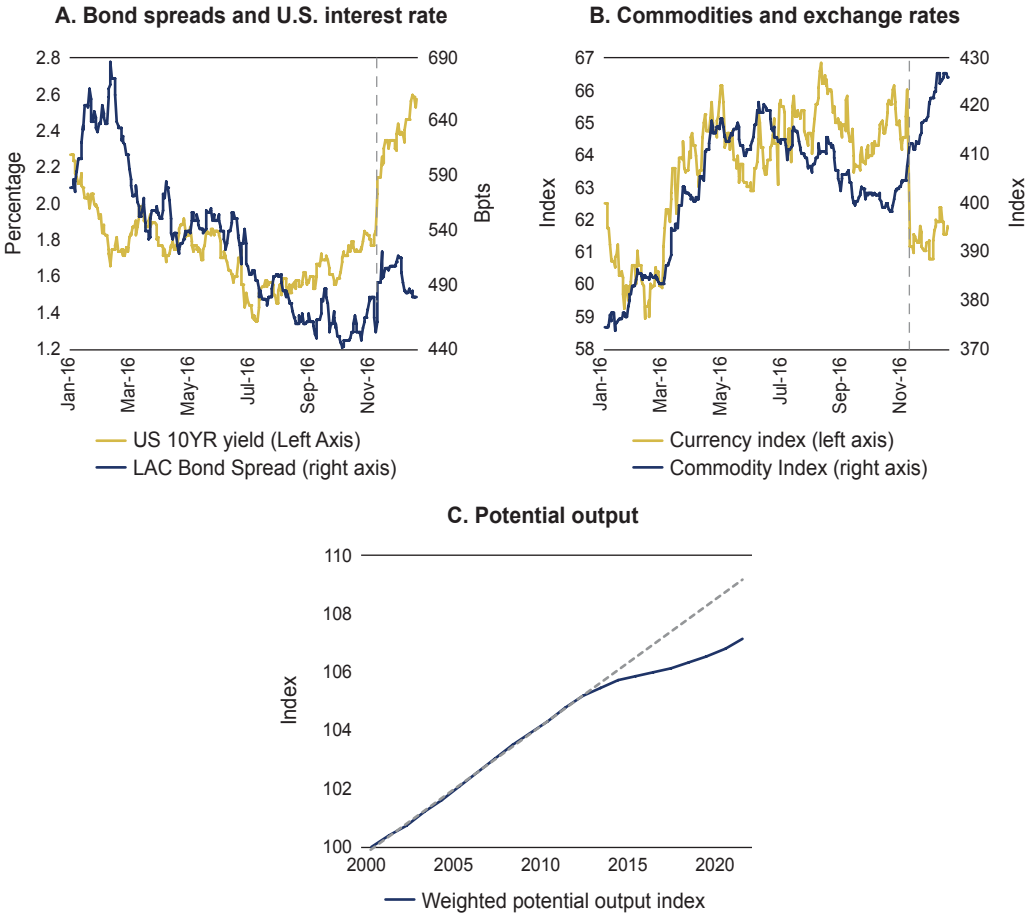
Source: Latin Macro Watch and Central Banks´ surveys and the International Monetary Fund's *World Economic Outlook* (IMF 2016).
Notes: The inflation gap is computed as the difference between the observed annual end-of-year inflation and the inflation target. The output gap is the cyclical component of the Hodrick-Prescott filter (lambda=100) of the log output recorded in the WEO between 1980 and 2021. The mean and the median across Brazil, Chile, Colombia, Mexico, and Peru are illustrated.

[2] A similar point has been recently stressed by Forbes, Hjortsoe, and Nenova (2015). They show that in a standard open-economy model the relationship between exchange rates and prices depends on the shocks that cause the exchange rate to move. They provide empirical evidence of this for the United Kingdom.

and rein in inflation more vigorously, output gaps may become even more negative. On the other hand, a more dovish stance to support recovery could reverse the trend of falling inflation, with potentially adverse consequences for inflation expectations and credibility.

Moreover, central bankers in the region may have to confront additional adverse shocks. The movement of interest rates and currencies in November 2016 following the U.S. election provides some indication of potential shocks that might materialize (see Figure 3.5, Panels A and B). As reviewed in Chapter 2, dollar interest rates rose, emerging market bond yields widened, and emerging economy currencies depreciated against the U.S. dollar In addition, developments in global trade may affect China and hence commodity prices.

FIGURE 3.5 Potential Shocks for Latin America and the Caribbean



Source: Bloomberg and the International Monetary Fund's *World Economic Outlook* (IMF, 2016).
Notes: Panel A depicts the J.P. Morgan EMBI (Emerging market bond index) spread and the yield of a 10-year U.S. Treasury bond. Panel B depicts the Bloomberg-J.P. Morgan Latin America Currency Index (LACI) and the Thomson Reuters/Core Commodity Index (CRB). Panel C depicts an index of the potential output (IMF, 2016) weighted by nominal 2015 GDP in US$ for Brazil, Chile, Colombia, Mexico, Peru, and Uruguay; the linear trend is computed using Ordinary Least Squares in the period 2000–2012.

Another issue faced by central bankers is that potential growth has fallen (see Figure 3.5, Panel C). Thus, the long run equilibrium real interest rate may have declined which, all things being equal, implies that the policy interest rate at which monetary policy would be deemed to be neutral (neither contractionary nor expansionary) may also have fallen. Another source of concern among central bankers relates to fiscal policy. As will be discussed in Chapter 4, while countries are adjusting, the decline in fiscal expenditures does not match the decline in revenues in many countries. To the extent that fiscal policy remains expansionary, monetary authorities may not be able to lower rates as fast as they would otherwise be able to do.

To quantify these policy tradeoffs, a small open economy monetary model is estimated for five large economies in the region—Brazil, Chile, Colombia, Mexico, and Peru—over the period 2000 to 2016. The details of the model and its estimation are presented in Appendix A. The model allows for three external sources of uncertainty. One captures temporary deviations of potential growth from its historical mean. A second captures volatility in borrowing rates on international markets—either due to changes in global interest rates or individual country spreads. Lastly, the model also incorporates a commodity sector; thus, a third source of uncertainty is the relevant commodity price.[3]

The model captures the policy stance of central banks and their reaction to adverse shocks (including global interest rates, and commodity prices) as well as how inflation and economic activity in these economies react to those policies**.** The model is estimated using historical data, so the baseline monetary policy mirrors how policy makers have actually reacted. But with certain assumptions, the model can also be used to see how the economy may react given a change in this historical monetary rule. Five forecasting scenarios are generated for the years 2017–2018 and the results (simple averages of the models for each of five countries) are illustrated in Figure 3.6:

1. an “unconditional” forecast with no new shocks in which variables return to long run or equilibrium values depending on the model’s estimated dynamics
2. a “conditional” forecast assuming an increase in global interest rates, a decline in commodity prices and a negative shock to growth
3. the same “conditional” scenario but assuming the monetary policy rule changes and the central bank reacts more aggressively to the fall in output and credibly commits to do so at all times in the future
4. the “conditional” scenario but where central banks surprise markets by deviating from the policy rule and reducing interest rates
5. the “conditional” scenario but assuming that expansionary fiscal policy is more persistent (i.e., that fiscal adjustment is slower).

[3] Commodity price fluctuations are captured as income shocks as in Fernández, González, and Rodríguez (2015).

FIGURE 3.6 Scenarios Given Shocks and Alternative Policy Rules

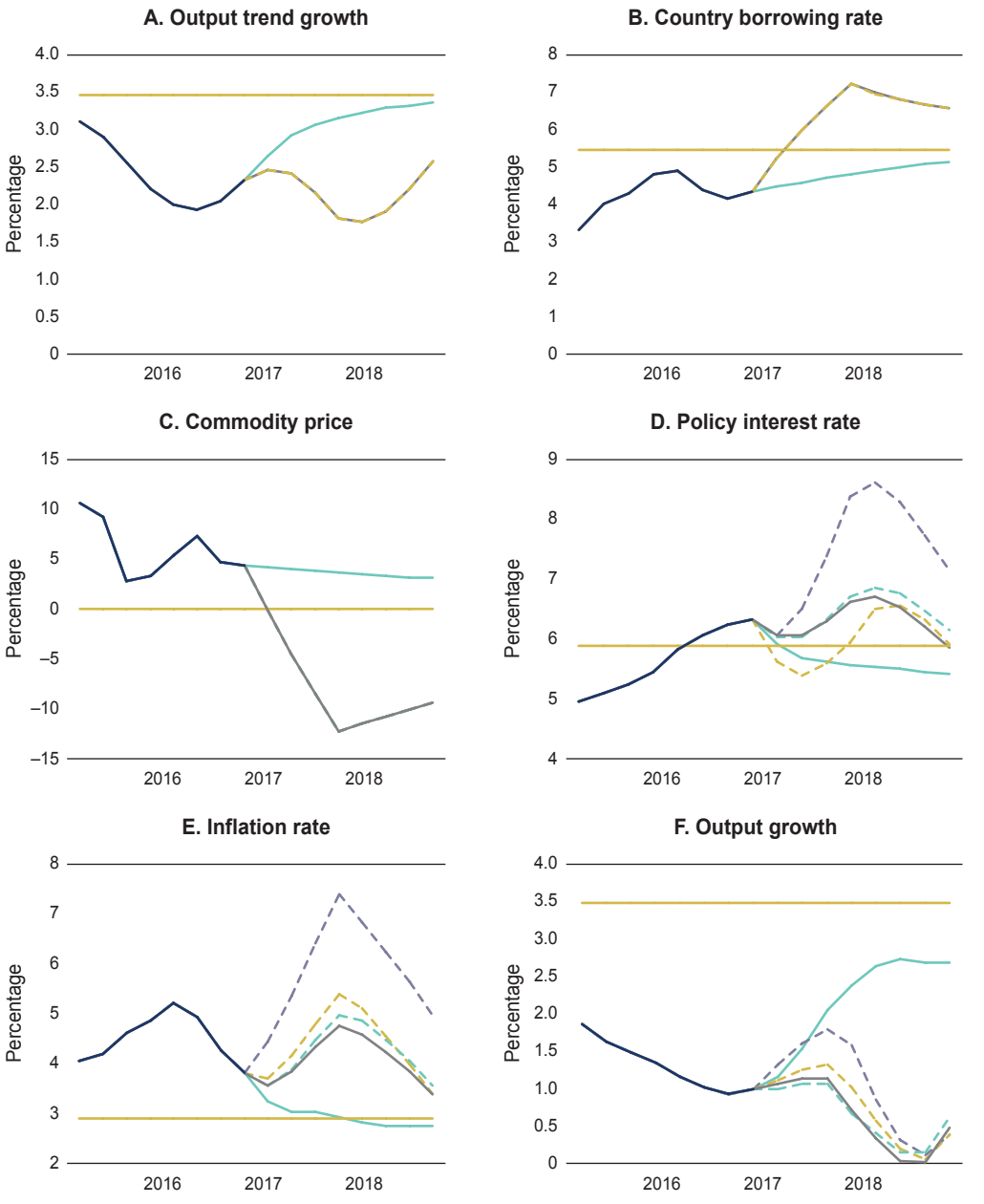


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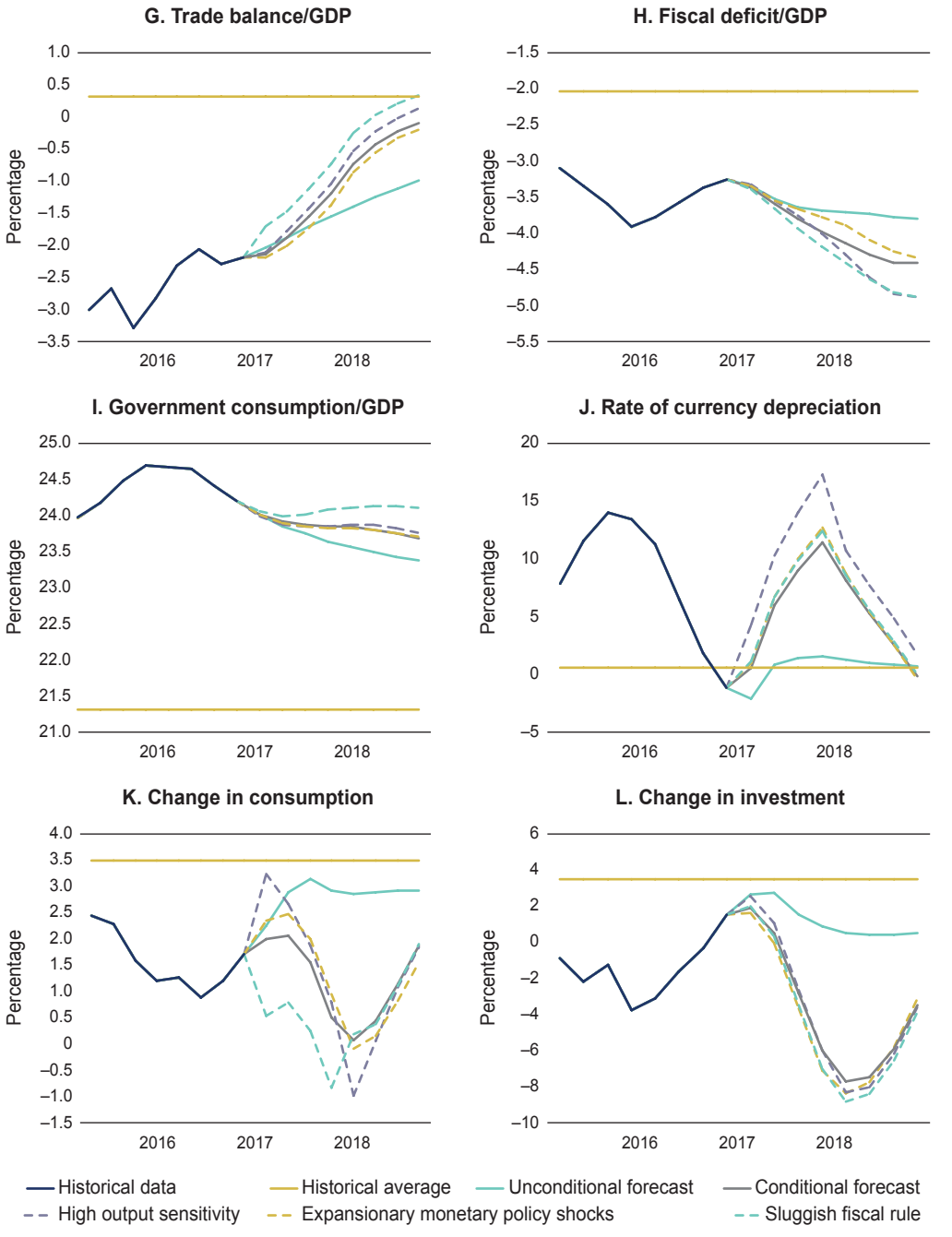
FIGURE 3.6 Scenarios Given Shocks and Alternative Policy Rules *(continued)*



Source: Latin Macro Watch and IDB estimates.
Notes: Reported dynamics are simple means across the 5 countries considered. The black line is the historical data. The yellow horizontal line is the historical average. The blue solid line is the unconditional forecast of the model (i.e. no shocks). The red solid line is the conditional forecast of the model (i.e. with the 3 shocks). The three dotted lines are conditional forecasts with different policy assumptions.

In the first scenario of no new shocks (the unconditional forecast) the model indicates that policy rates will decline further while inflation gradually falls and output recovers. However, in the second scenario, the increase in global interest rates together with other negative shocks cause growth to fall and inflation actually rises given the depreciation of the nominal exchange rate. In turn, this forces the central bank to increase the policy interest rate.

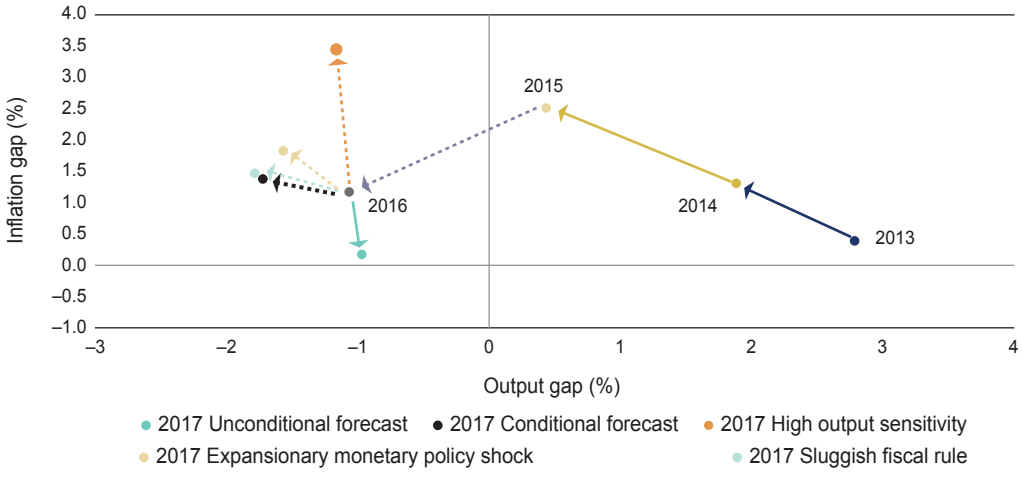
In the third scenario, where the central bank reacts more aggressively to the output decline, a positive, albeit short-lived, response in output occurs . As the private sector reacts immediately to the credible change in the policy rule, consumption and investment rise relative to the second scenario. However, this also implies higher inflation, especially as the exchange rate also depreciates. While the policy rule is more sensitive to a decline in output, the central bank still wants to keep inflation under control. Now the policy interest rate must respond and, in fact, it has to rise even further than in the previous scenario in which the policy rule remains unchanged. Economic activity then falls and, indeed, it falls by almost the same amount as in the previous scenario.

The fourth scenario envisions the central bank surprising the market with a temporary reduction in interest rates rather than a long-term credible change in the policy rule. The effects of such a move are short-lived as the policy rate needs to rise to curb the inflationary pressures generated by the initial temporary boost. Once again, the gains appear to be relatively small while producing costs in terms of higher inflation and higher subsequent policy rates. Moreover, the model does not capture any loss in credibility that might ensue from the surprise move of the central bank. If the market questions the credibility of the central bank, this may lead to higher policy rates and hence lower activity than would otherwise be the case, to maintain a particular level of inflation.

Finally, the last scenario highlights the possible tensions between monetary and fiscal policies. If fiscal policy is expansionary and the adjustment more sluggish, then output may increase moderately but inflation may be higher. This then prompts an additional hike in policy rates, thereby reducing the positive impact on output. Monetary and fiscal policy appear to act against each other and lead to an inefficient mix of policy actions.

Does the model suggest that countries may exit the “troublesome” quadrant of negative output gaps and positive inflation gaps in 2017? In the absence of further shocks, then both gaps should close, although the inflation gap may narrow more quickly (see Figure 3.7). If the adverse shocks of the second scenario are included, then the inflation gap rises and the output gap worsens. Would the situation improve if the monetary policy rule is changed? The third and fourth scenarios show a marginal improvement in the output gap relative to scenario two. However, this is at the expense of significantly higher inflation. Finally, with the slower fiscal adjustment scenario (the final scenario), inflation is higher and output lower. These results suggest that central banks should maintain policy rules and resist the temptation to react more strongly to weaker output. Moreover, in some

FIGURE 3.7 Output and Inflation Gaps with Shocks and Alternative Policy Responses



Source: Latin Macro Watch and Central Banks´ websites and authors' calculations.
Notes: The alternative scenarios are described in the text. The output gap for 2017 was computed using the average cyclical component of the Hodrick-Prescott filtered (lambda=1600) unconditional seasonally adjusted quarterly GDP forecasts of the model. The inflation gap for 2017 was computed as the difference between the model's forecast for inflation and the current inflation target.

cases the fiscal-monetary policy mix may not be optimal and a less expansionary fiscal policy could allow for a looser monetary stance. Lower interest rates and a more competitive exchange rate would then help growth while maintaining stable inflation and averting higher debt levels—the focus of the following chapter.

CHAPTER 4

Fiscal Developments: Different Policies for Different Positions

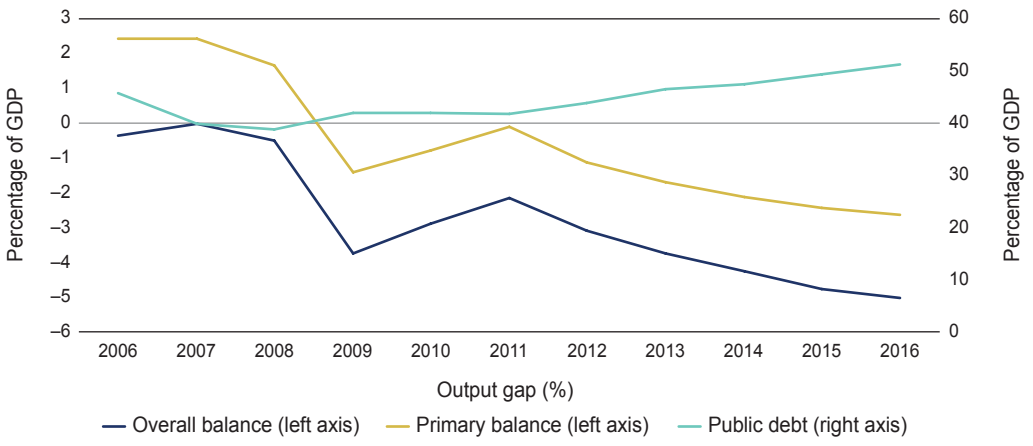
Fiscal positions vary widely in the region. One or two countries continue to have relatively strong fiscal positions and at current low growth rates can contemplate counter-cyclical fiscal policies. But several countries are being forced into a period of pro-cyclical adjustment to prevent further increases in debt. A danger is that restrictive fiscal policies may affect output as much as they affect fiscal balances, thereby rendering the adjustment effort counter-productive. However, the composition of fiscal consolidation plans has markedly improved compared to last year's report. As argued last year, countries should focus adjustment where fiscal multipliers are likely to have the lowest impact on growth. That means countries with already high tax rates should focus on cutting spending—and largely current spending rather than public investment—while countries with low tax burdens may wish to focus on raising revenues. Countries' plans now appear to follow these guidelines. Still, in some cases, more effort is required to arrest the upward trend in debt. This chapter outlines the fiscal trends, considers current fiscal plans, and suggests where countries may wish to focus additional efforts.

Fiscal Trends

Primary balances have deteriorated slightly for the typical country in the region from a deficit of 2.4% of GDP in 2015 to 2.6% in 2016 (the average overall fiscal deficit surpassed 5% of GDP in 2016). The debt-to-GDP ratio rose slightly to exceed 51% (see Figure 4.1). But these figures mask rising heterogeneity across countries. Comparing 2016 to 2015, the primary balance actually strengthened in eight countries but weakened in the same number, and was roughly the same (did not weaken or improve by more than 0.5% of GDP) in 11 (see Figure 4.2).

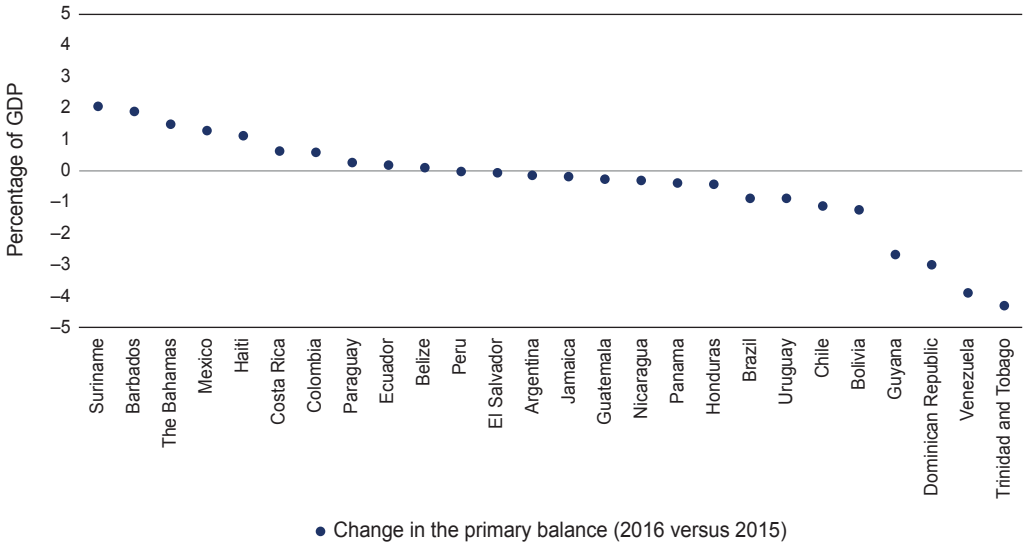
A set of commodity dependent countries have cut fiscal expenditures, but revenues fell even more such that deficits actually rose. Due to a combination of declining prices and production, commodity-dependent countries lost almost 1.5% of GDP more in public sector

FIGURE 4.1 Mild Deterioration in Fiscal Balances and Increasing Debt



Source: IDB staff estimates based on national sources and IMF (2016).
Note: Graph illustrates simple averages for 26 Latin American and Caribbean countries.

FIGURE 4.2 Diverse Fiscal Performance

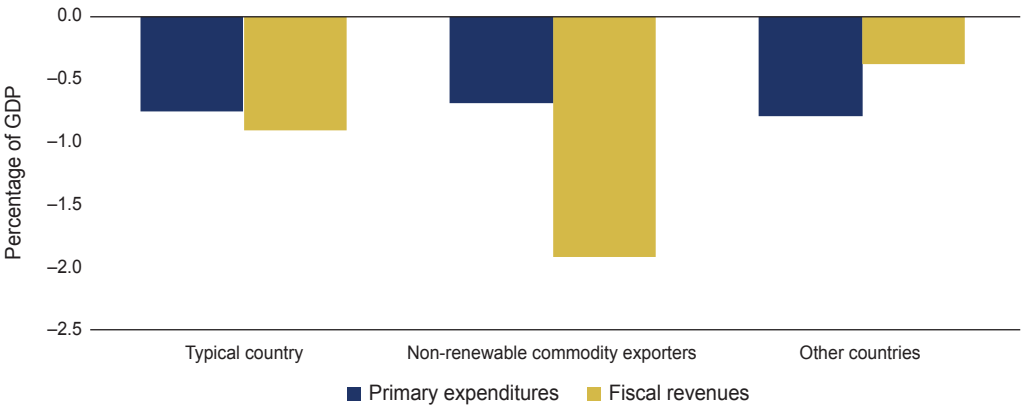


Source: IDB staff estimates based on national sources and IMF (2016).

revenues than other countries in the region.[1] Appendix B focuses on the impact of commodity prices on fiscal revenues. Employing a database and economic modeling of mining

[1] Prices of fuel commodities (crude oil, natural gas and coal) declined on average by 17% in 2016, after a reduction of 45% in 2015, while metal prices contracted a average 8% in 2016 and 14% in 2015.

FIGURE 4.3 Declining Expenditures and Revenues (2016 versus 2015)



Source: IDB staff estimates based on national sources and IMF (2016).

operations, fiscal revenues for alternative price scenarios are estimated. In other countries, while revenues fell, expenditures fell by more, so fiscal deficits were reduced (see Figure 4.3).

Fiscal Positions: A Varied Landscape

Given low growth, the typical country has a more negative output gap and the average (structural) primary fiscal deficit rose in 2016.[2],[3] However, this statement again masks heterogeneous fiscal responses across the region. While the output gap widened in the majority of countries, some responded by relaxing their fiscal stance (the ratio of the structural primary balance to potential GDP deteriorated); in other words, they pursued a counter-cyclical policy. Other countries tightened their fiscal stance (the structural balance improved), and in the remaining countries, fiscal policy remained largely neutral (the structural balance remained constant). Among the few countries where output gaps remained above potential, most actually pursued a more expansionary fiscal policy, which has reduced fiscal space (see Figure 4.4).

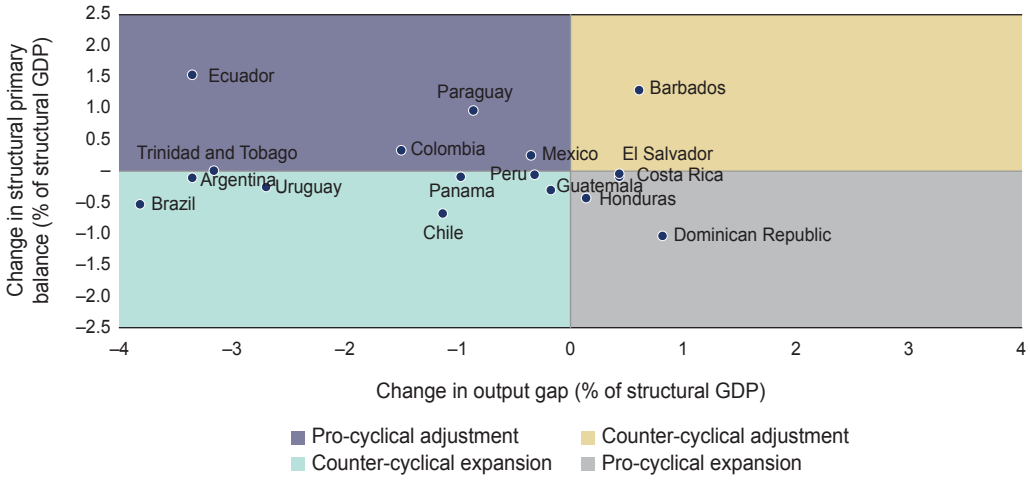
Declining Fiscal Space, Increasing Financial Constraints

There are several measures and indicators of *fiscal space*. Two such indicators are analyzed here: the debt to GDP ratio and, the fiscal adjustment needed to maintain that debt level

[2] The *structural primary balance* is a measure that filters out the impact of the business and commodity price cycle and, as such, is a useful indicator to assess the underlying fiscal position. It is available for 20 countries across Latin America and the Caribbean.

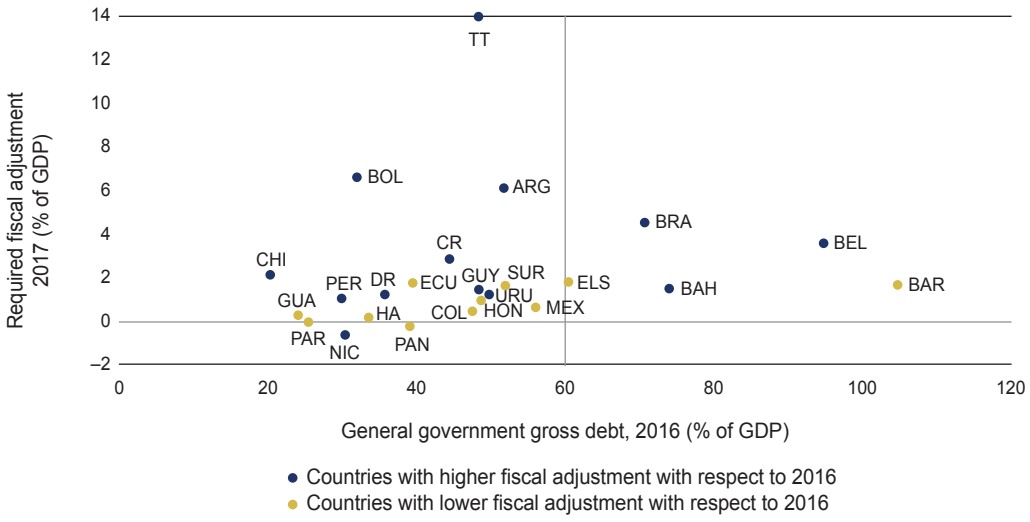
[3] GDP remained below potential in 21 of the 26 Latin American and Caribbean economies during 2016. The output gap is expected to widen in 11 countries by the end of 2017.

FIGURE 4.4 Diverse Economic Performance and Fiscal Policy Response



Source: IDB Structural Fiscal Balance Database.
Note: The figure shows the change in the estimated output gap and the change in the estimated structural fiscal balance between 2016 and 2015.

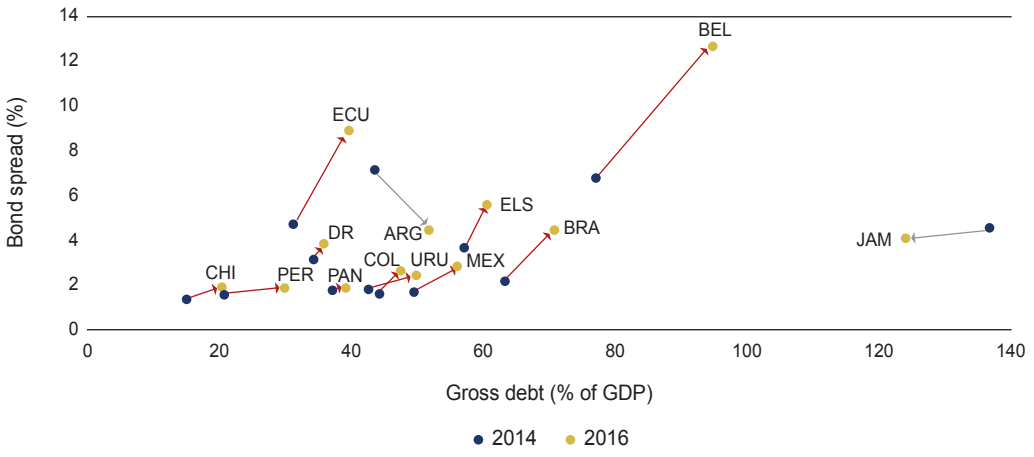
FIGURE 4.5 Required Fiscal Adjustment and Gross Debt to GDP



Source: IDB staff estimates based on IMF (2016).
Notes: Estimated required fiscal adjustment based on assumptions regarding potential growth and real interest rates. Definitions of gross debt may vary across countries.

constant over time, assuming the economy grows at its potential rate of growth. Primary balances remained below such debt-stabilizing levels in 21 of the countries analyzed. Compared to last year's estimates, this indicator of fiscal space improved in 14 countries and the required fiscal adjustment declined some 1.6% of GDP (see Figure 4.5). Among the

FIGURE 4.6 Rising Debt and Bond Spreads in Most Countries



Source: IDB staff estimates based on JP Morgan EMBIG spreads sourced from Thomson-Reuters Database and IMF (2016).
Notes: The Arrows represent the size and direction of the change in the government gross debt and bond spreads. Red arrows for countries with both rising debt and bond spreads.

11 countries where this indicator worsened, the required fiscal adjustment increased by an average 1.1% of GDP. However, this group is very heterogeneous and contains some countries with low debts such as Nicaragua, Chile, and Peru. In Chile and Peru, counter-cyclical fiscal policies aided growth prospects. Moreover, Chile implemented a tax reform in 2014 aimed at raising domestic revenues to counter lower copper prices and to improve equity.[4]

Financial constraints are becoming a more important driver in countries' fiscal policy stances, pushing them to step up their adjustment efforts.[5] The combination of higher debt levels and interest rates increases the urgency for policy action (see Figure 4.6). To what extent are fiscal plans and policies internalizing these dynamics?

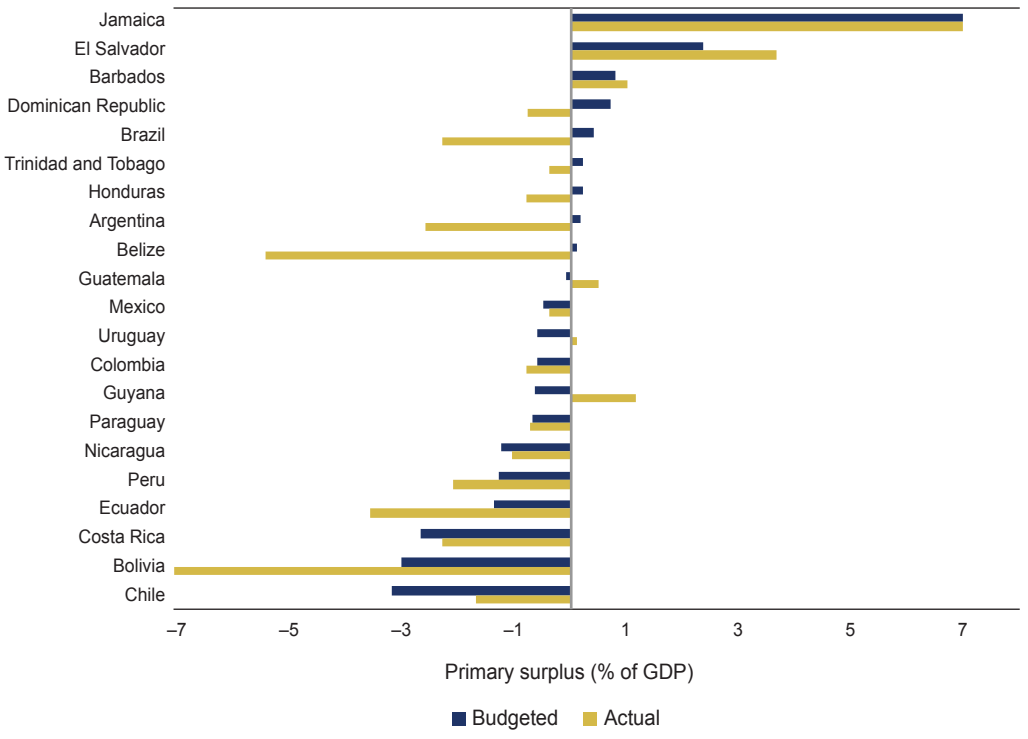
Fiscal Consolidation: What Has Happened, What Are the Plans?

A review of budget documents for 22 countries in the region shows that, on average, governments aimed for close to primary fiscal balance in 2016 but the out-turn figure indicates a deficit of about 0.8% of GDP (see Figure 4.7). This discrepancy was explained by a shortfall in public sector revenues of 0.6% of GDP, which in turn likely arose from an

[4] See Powell (2016), Box 3.2.

[5] Bond spreads increased by more than 100 basis points for the typical Latin American and Caribbean country during 2014–2016. Moreover, while bond spreads have narrowed slightly in recent months, the U.S. interest rate has started to rise (see Chapter 2). Argentina and Jamaica are exceptions to the trend of rising sovereign spreads.

FIGURE 4.7 Substantial Differences between Actual and Budgeted 2016 Fiscal Surpluses in Some Countries



Source: IDB staff estimates based on national sources.
Notes: Budgeted primary surplus (as specified in the 2016 planned budget). Actual primary balance (as specified in 2016 budget execution reports).

average overestimation of 1 percentage point in growth assumed in the budget documents. For a group of eight commodity exporting countries (Bolivia, Chile, Colombia, Ecuador, Guyana, Mexico, Peru, and Trinidad and Tobago) budgeted revenues were over-estimated by about 0.7% of GDP.[6] However, as illustrated in Figure 4.7, there is considerable variation across countries.

For 2017, budget documents indicate revenues will rise (by 0.2% GDP) while expenditures will fall (by 0.4% of GDP) and the primary deficit would then be just 0.2% of GDP. The expected evolution of the primary balance and other variables suggests that debt will continue to rise through 2017. In fact, the region's average public debt-to-GDP ratio has been trending upwards since 2011.

Notwithstanding, some 15 countries are pursuing plans for fiscal consolidation, which, once implemented, are expected to achieve an adjustment of about 2% of GDP for the typical country. These reforms aim to increase tax revenues by 1.2% of GDP and

[6] Exceptions were Chile and Mexico where revenues were actually higher than expected.

BOX 4.1 Structural Tax Reforms and Fiscal Consolidation

Several countries of the region have adopted tax reforms in recent years aimed at increasing revenue, improving equity, reducing distortions, promoting savings and investment, and simplifying tax compliance.[a]

Mexico

The 2013 tax reform included a reduction of the subsidies on gasoline and other fuel products, a widening of the corporate and personal income tax base and the equalization of VAT rates across the country—the northern border states previously had a lower rate. The reform was complemented with the introduction of a system of electronic invoicing (*Certificados Fiscales Digitales a través de Internet-CFDI*) including for VAT, corporate payroll and tax-withholdings. Recent estimates of the impact of these reforms have been to increase non-oil fiscal revenues by four percentage points of GDP for the period 2013–2016.

Chile

A tax reform was approved in 2014, which included a gradual increase in corporate tax rates of between five and seven percentage points over a period of five years, consolidation of personal and corporate taxes for individuals that receive income from both sources, and the creation of horizontal incentives for saving and investment, particularly for small and medium-sized enterprises. The reform is expected to increase fiscal revenue by three percentage points of GDP between 2014 and 2018. By 2016, the reform had already generated revenues of two percentage points of GDP.

Jamaica

A structural tax reform was passed at the end of 2014 aimed at broadening the tax base and making the tax system more efficient and equitable. The reform included measures to simplify and reduce import tariffs, to eliminate discretionary tax waivers and sector-specific benefits (that generated significant distortions in the allocation of capital), to standardize tax rates, and to accelerate depreciation of capital goods and tax deductions to create formal employment. The reform generated an estimated two percentage points of revenue and has likely contributed to investment, formal employment, and growth.

Colombia

In December 2016, a tax reform was approved to increase tax collection, reduce informality, and boost investment. The bulk of additional revenue will come from increasing the standard VAT rate from 16% to 19%, but as businesses may take an income tax credit from the tax paid on purchased investment goods, distortions may decline. The corporate income tax regime was simplified and unified. Personal income taxes were also modified with limits introduced on tax benefits from deductions. A tax on dividends was re-established and a simplified tax regime for small retail businesses ("monotributo") was created. A carbon tax was also created to be levied on the usage of energy commodities. Tax rates depend on the release of CO_2 of each fossil fuel. The subnational governments' excise tax on tobacco and cigarettes was increased. Reforms on tax administration were also introduced, including a more effective and advanced electronic invoice for VAT. The approved reform is expected to generate approximately 1% of GDP in additional revenue.

[a] See Arenas de Mesa (2016) for a recent review of tax reforms in selected countries.

reduce expenditures by some 0.8% of GDP over an average implementation period of 4.4 years. The reduction in capital spending is expected to contribute about 0.2% of GDP with the remainder (0.6% of GDP) achieved by cutting current expenditures. Interestingly, comparing these plans to actual changes in expenditure last year, when current expenditures fell on average by 0.15% of GDP and capital spending fell as much as 0.5% of GDP, countries are now attempting to maintain capital spending (as a percentage of GDP) and are focusing more on cutting current spending, as recommended in last year's report.

A medium-term fiscal plan is a sensible approach that avoids the straightjacket of annual budgets and abrupt, short-term fiscal policy shifts that may provoke longer-term negative consequences. Still, the region has much to do to improve fiscal institutions to address current fiscal consolidation needs. Out of the 22 countries analyzed, only five formally consider multi-annual budget planning within a medium-term fiscal framework; two have rules that might restrict spending in future years depending on fiscal outcomes. Only one country has an independent agency that evaluates ex-post budgetary performance and just three countries have quality control procedures in place to assess the macroeconomic assumptions underpinning the preparation of budgets.

Policy Alternatives

As reviewed above, baseline projections for the region indicate relatively modest growth rates. Moreover, there are significant downside risks, and while fiscal stimulus in the United States may boost growth, it may also bring about a faster climb in global interest rates and a stronger dollar, thereby complicating the access to external finance. The fiscal situation is very heterogeneous. A limited number of countries continue to have relatively low debt and moderate levels of required fiscal adjustment to maintain those debt levels; thus, if they have negative output gaps, they can contemplate counter-cyclical fiscal policy. Chile and Peru are in this enviable position and, according to estimates, both pursued counter-cyclical fiscal policy last year. A larger number of countries have negative output gaps and chose to adjust pro-cyclically; examples include Ecuador, Colombia, and Mexico. Barbados is an interesting case; classified as pursuing counter-cyclical adjustment, it is seeking to reduce debt. Two countries pursued expansionary fiscal policies while output gaps became more positive (the Dominican Republic and Honduras).

The majority of countries in the region, including virtually all of those currently pursuing pro-cyclical fiscal adjustment, have announced fairly ambitious plans to improve their fiscal policy stance. Still, in some cases these plans fall short of the adjustments required to stabilize debt levels and without further action, debt levels will rise. The duration of the

actual consolidation plans are on average just over 4 years and contemplate an adjustment of around 2% of GDP.

While last year's report noted that countries' plans in some instances did not appear to take into account recent work on tax multipliers, these plans appear to have evolved and are now more inline with advice in the area. For example, plans now focus more on cutting current expenditures than capital expenditures, which are normally associated with lower multipliers and hence should have less of an impact on output. Moreover, as suggested in last year's report, the clear tendency is for countries with already high tax rates to focus on cutting spending rather than raising taxes, while countries with low tax burdens are indeed contemplating raising revenues. These plans are consistent with recent work indicating that multipliers are highly non-linear with respect to initial tax levels (see Box 4.2).

BOX 4.2 The Macroeconomic Effects of Tax Changes on Output

Fiscal multipliers measure the impact of fiscal policy changes on output. They are defined as the ratio of the change in output to a change in government spending or tax revenue.[a] Thus, the tax multiplier measures the effect of a $1 change in revenues on the level of GDP. Measuring magnitudes of tax policy as well as estimating the causal impact of fiscal measures on GDP is very difficult.[b] Tax revenues may change due to fluctuations in the size of the tax base resulting from changes in GDP as opposed to changes in policy and identifying causal impacts is fraught with problems.

In recent work it has been found that the effect of tax changes on output depends on the original tax rate.[c] In particular, the effect of tax changes on output is (i) very small (or virtually zero) under low or moderate initial tax rate levels and (ii) increases faster and faster as the initial level of the tax rate rises. The distortion imposed by taxation on economic activity is directly related to the level of tax rate.

More precisely, a 2 percentage-point increase may have virtually no negative effect on GDP in countries with low tax rates such as the Bahamas, Costa Rica, El Salvador, Guatemala, Paraguay, and Trinidad and Tobago. In contrast, the same tax increase would likely cause output to fall substantially in countries with relatively high VAT rates such as Argentina, Chile, and Uruguay (see Table 4.2.1 for estimates of tax multipliers in Latin America and the Caribbean). As reviewed in this chapter, some 15 countries in the region have plans for fiscal adjustment. Last year's report suggested that countries with already high tax burdens should focus efforts on reducing expenditures while those with low tax rates might increase them to boost revenues. These quantitative estimates now provide further evidence to support this advice. An interesting question is whether countries' plans are consistent with this advice and with the estimated multipliers. Or, in other words, are those countries with low estimated tax multipliers contemplating fiscal adjustment by hiking tax revenues, while those countries with high estimated elasticities prefer to reduce expenditures?

The evidence is quite striking and is indeed consistent with the advice provided in last year's report, with the estimated tax multipliers and with the discussion in Gunter et al. (2017). Countries with already high tax rates are not planning to substantially increase revenues. In contrast, countries

(continued on next page)

BOX 4.2 The Macroeconomic Effects of Tax Changes on Output *(continued)*

TABLE B4.2.1 Tax Multiplier Associated with a 2 Percentage Point Increase in the VAT Rate

Country	VAT rate as of Oct. 2016	Tax multiplier associated with a 2 percentage points increase in the VAT rate
Argentina	21	–5.2*
Bahamas	7.5	0.4
Barbados	17.5	–3.4*
Belize	12.5	–1.3
Bolivia	13	–1.5
Chile	19	–4.1*
Colombia	16	–2.7*
Costa Rica	13	–1.5
Dominican Republic	18	–3.6*
Ecuador	14	–1.9*
El Salvador	13	–1.5
Guatemala	12	–1.1
Guyana	16	–2.7*
Haiti	10	–0.4
Honduras	15	–2.3*
Jamaica	16.5	–2.9*
Mexico	16	–2.7*
Nicaragua	15	–2.3*
Panama	7	0.5
Paraguay	10	–0.4
Peru	18	–3.6*
Suriname	10	–0.4
Trinidad and Tobago	12.5	–1.3
Uruguay	22	–5.8*
Venezuela	12	–1.1

Source: Gunter et al. (2017).
Notes: * represents statistically significant.

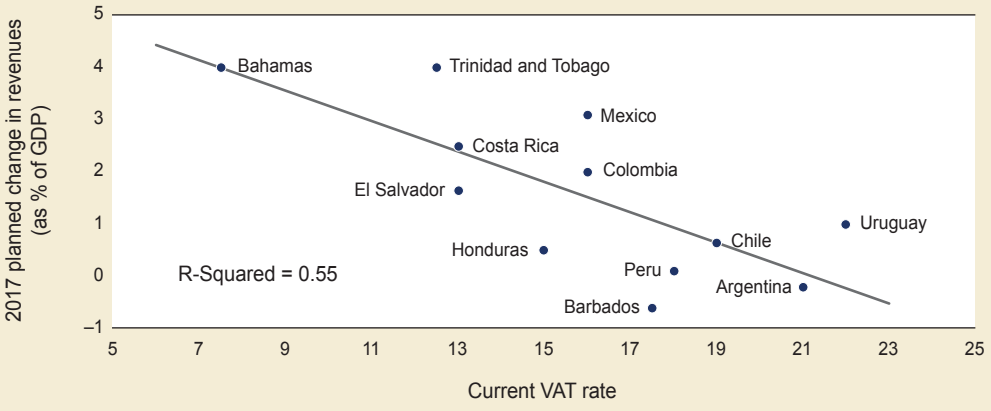
with low rates are indeed planning to boost tax revenues as part of their adjustment efforts (see Figure 4.2.1 for details).

[a] See for example Spilimbergo, Symansky and Schindler (2009).
[b] See Riera-Crichton, Végh, and Vuletin (2016) for a discussion.

(continued on next page)

BOX 4.2 The Macroeconomic Effects of Tax Changes on Output *(continued)*

FIGURE B4.2.1 Relation between Current VAT Rate and the Planned Change in Revenues for 2017



Source: IDB staff estimates.
Notes: The current VAT rate as of October 2016.
Planned change in revenues as specified in the 2017 budget.

[c] See Gunter et al. (2016), who apply the so-called narrative approach developed by Romer and Romer (2010) to a novel dataset on value-added taxes for 51 countries (21 industrial and 30 developing) for the period 1970–2014.

Despite these efforts, several countries will need to pursue additional fiscal consolidation efforts and some countries are already enacting new measures. The Brazilian Congress, for example, has already passed a cap on real fiscal expenditures and the executive has presented a proposal for a significant reform of the pension and social security system. Assuming positive economic growth, this cap will lower fiscal spending as a percentage of GDP. In many countries, significant fiscal gains can still be obtained by cutting tax expenditures that frequently have little economic justification. On the expenditure side, there is still room to improve the efficiency and targeting of social spending and to restructure costly energy subsidies, as discussed extensively in last year's report. Indeed, fiscal savings from these and other measures could be used to protect or even increase public investment in infrastructure, including maintenance programs to aid the prospects for growth.

Apart from these specific measures, there is also room in many countries of the region to consider more structural reforms of tax systems. Reforms aimed at widening the tax base, reducing distortions, and boosting saving rates and investment can improve both revenues and growth.[7] Moreover, well-designed reforms can also improve equity

[7] See discussion in Corbacho, Fretes Cibils, and Lora (2013).

and revenue at the same time. The recent reforms in select countries, reviewed in Box 4.1, resulted not only in significantly higher revenues but also improved development objectives. Several countries have also modernized their tax administration by digitalizing tax collections and controls with positive results.

On another front, fiscal institutions can be improved by adopting fiscal rules and medium-term fiscal and budgetary frameworks as well as creating independent fiscal councils. Relatively few countries in the region have a strong set of such institutions. Those countries with clearly defined medium-term budget constraints, such as debt limits or minimum required (structural) primary balances, were able to save during the recent commodity boom and have therefore been better-prepared to confront less benign external conditions. To ensure compliance with their medium-term budget constraints, they have also moved quickly to adopt the necessary measures to maintain relatively strong fiscal stances. The rules, therefore, are useful in and of themselves but also as an added stimulus to implement necessary measures on a timely basis.

Some countries announced adjustment targets that were subsequently missed or announced policy measures that were not actually enacted. While ambitious announcements may play an important political-economy role, they also run the danger of eroding credibility if they are not backed up by corresponding actions and outcomes. Frequently, it is better to plan for cautious but robust improvement rather than hoping for more aggressive but less likely outcomes. Missed targets may also result in later, larger forced adjustment measures to the detriment of economic efficiency. Improving medium-term fiscal frameworks would be one approach to address these concerns. The effectiveness of such frameworks improves significantly when they are complemented by measures that enhance transparency.[8] Moreover, further institutional innovations such as fiscal councils, charged with producing or reviewing compliance with medium-term targets and evaluating proposed policy measures, would further strengthen medium-term plans.

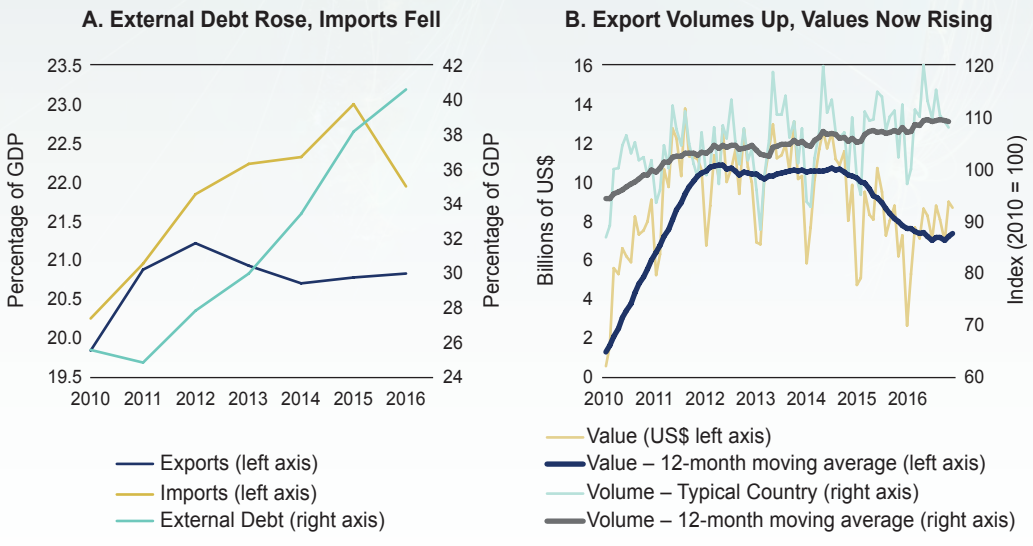
[8] The IMF's recently issued Fiscal Transparency Code is a very useful advance in this regard.

CHAPTER 5

External Adjustment: The Role of Prices

Latin America and the Caribbean has been hit by negative external shocks including declines in commodity prices and the rise in global interest rates. As negative external shocks reduce net income earned from abroad, countries must borrow more, attempt to find new sources of foreign income, or rebalance their spending towards domestic production to maintain the same level of consumption. Considering variables in relation to the size of the region's economy, external debt has risen and imports rose before falling steeply (see Figure 5.1 Panel A). As a result, current account deficits widened. Export volumes have continued to rise; dollar values fell in 2015 but in recent months have risen (see Figure 5.1 Panel B).[1]

FIGURE 5.1 Indicators of External Adjustment



Source: IMF (2016) and INTrade information system.

[1] See Giordano (2016) for a review of the trends in global and regional trade.

Many countries are in a process of external adjustment with current account deficits narrowing towards longer term averages. Price changes are critical to this adjustment path. If prices do not realign, adjustment may not be forthcoming and debt will continue to rise or the burden of adjustment will fall on consumption.[2] But prices can change in different ways. In countries with fixed exchange rates, domestic prices may adjust, but relatively slowly. In a flexible regime, an exchange-rate depreciation may be thought of as a coordinated price adjustment. Unless domestic prices readjust (known as pass-through and analyzed in Chapter 3), a depreciation will make exports more competitive and imports more expensive relative to domestically produced goods.[3] This shift in relative prices may induce external adjustment by enhancing competitiveness, thereby boosting the volume of current exports and creating new ones, and by switching expenditures from imports to domestically produced goods. This Chapter considers these mechanisms, offering conclusions regarding the state, speed, and efficacy of the adjustment process.

Exchange Rates and Export Competitiveness

Traditional real effective exchange rates (REERs) are a common measure of exchange rate competitiveness. They are weighted averages of bilateral real exchange rates, where the weights depend on the value of exports to different trading partners. In last year's report, an Adjusted-REER (A-REER) was developed reflecting two additional considerations: competition in destination markets and similarity in export baskets.[4] For example, although China is not an important destination for Mexican exports (and has a low weight in a traditional REER), the evolution of the Chinese yuan matters greatly for Mexico's A-REER, as China is an important exporter to the United States (Mexico's main export market), and China's U.S. export basket is similar to that of Mexico. Between June 2014 and October 2015, most countries in Latin America and the Caribbean witnessed substantial nominal depreciations. The average depreciation was around 15% and exceeded 35% in Colombia and Brazil. Yet considering A-REERs, most countries lost exchange rate competitiveness. Taking competition and similarity into account, only three nations—Brazil, Colombia, and Mexico—had substantial depreciations, and the typical country appreciated by 7.4%, according to A-REER measures.[5]

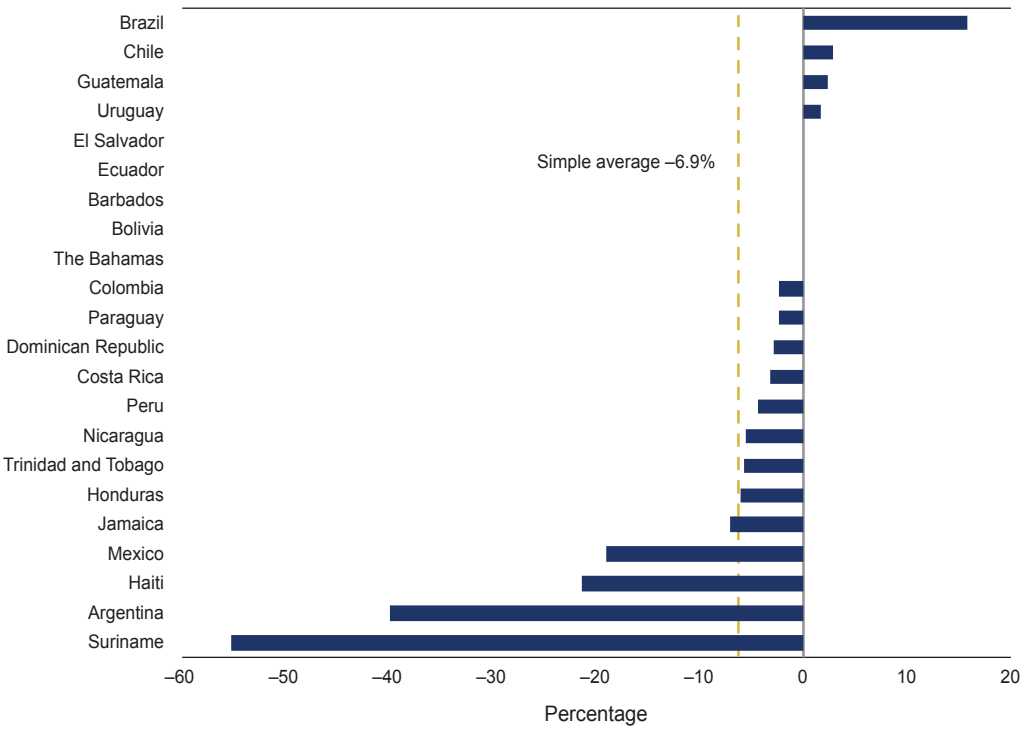
[2] In past episodes, the lack of price adjustment in the face of negative shocks has been blamed for generating unsustainable debt levels in the region.

[3] Exchange rate depreciation may have other effects, including on firms' balance sheets. Last year's report detailed how depreciations depressed investment in those firms that had issued debt in dollars. This channel may actually reduce exports, at least in the short term.

[4] See Appendix C, Stein et al. (2017) and Powell (2016) for more detail on the data and methodology.

[5] These trends were reported in last year's report although the data have been updated and the dataset extended so exact estimates may differ.

FIGURE 5.2 Nominal Depreciation (October 2015–December 2016)



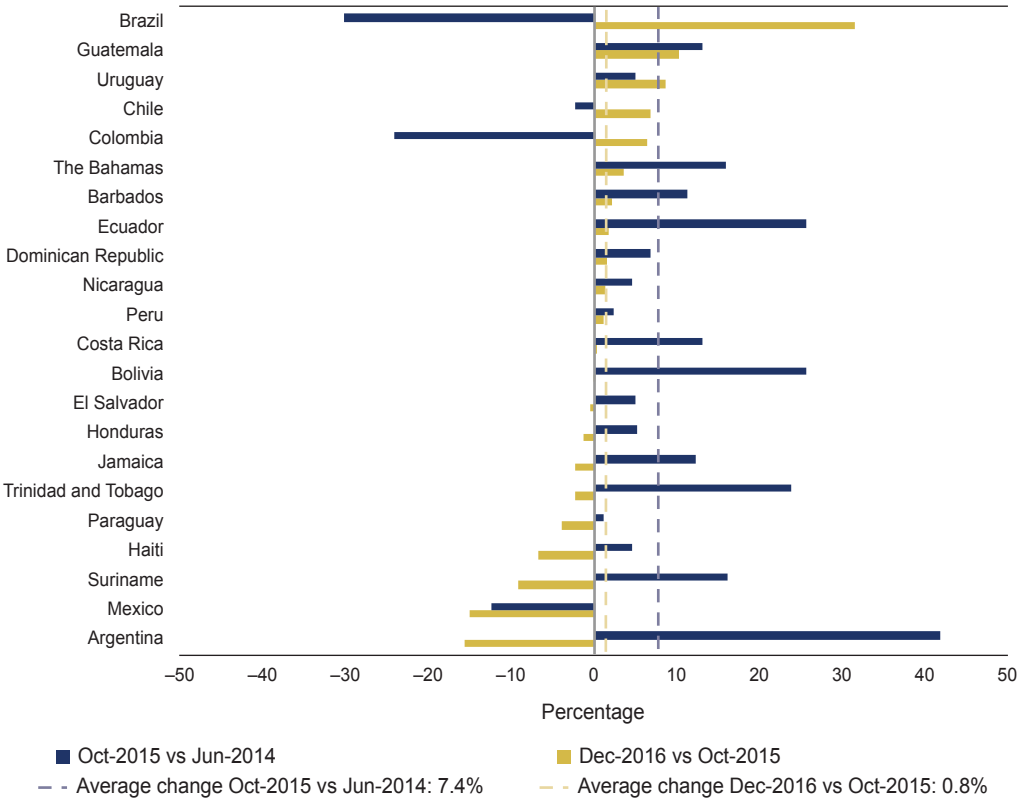
Source: IDB estimates based on IMF's International Financial Statistics.
Note: Negative (positive) values correspond to depreciation (appreciation). Vertical dotted line depicts simple average across countries.

What happened to exchange rate competitiveness in recent months? The nominal depreciation of the typical Latin American and Caribbean country was almost 7% between October 2015 and December 2016; thirteen countries depreciated and just four appreciated (see Figure 5.2). Over the same period (October 2015 to December 2016), the A-REER of the typical country remained almost constant (an appreciation of just 0.8%), and about as many countries saw significant depreciations as appreciations (see Figure 5.3).

In the recent period, Argentina, Mexico, Suriname, and Haiti enjoyed substantial gains in exchange rate competitiveness while Brazil lost competitiveness as did Guatemala, Uruguay, Chile, and Colombia, albeit to a lesser extent. Brazil's A-REER depreciated the most from October 2014 to December 2015 (30%) and then appreciated the most in the second period (almost 32%) (see Figure 5.4 Panel A).[6] These wide swings in the value of the Brazilian currency impacted the A-REERs of other countries in the region (see Figure

[6] The numbers can be deceiving here. Starting from an index of 100, a 30.3% depreciation leads to an index of 69.7, but a subsequent appreciation of 31.6% would take the value of the index to 69.7*1.31 = 91.7.

FIGURE 5.3 Changes in Exchange Rate Competitiveness (A-REER)



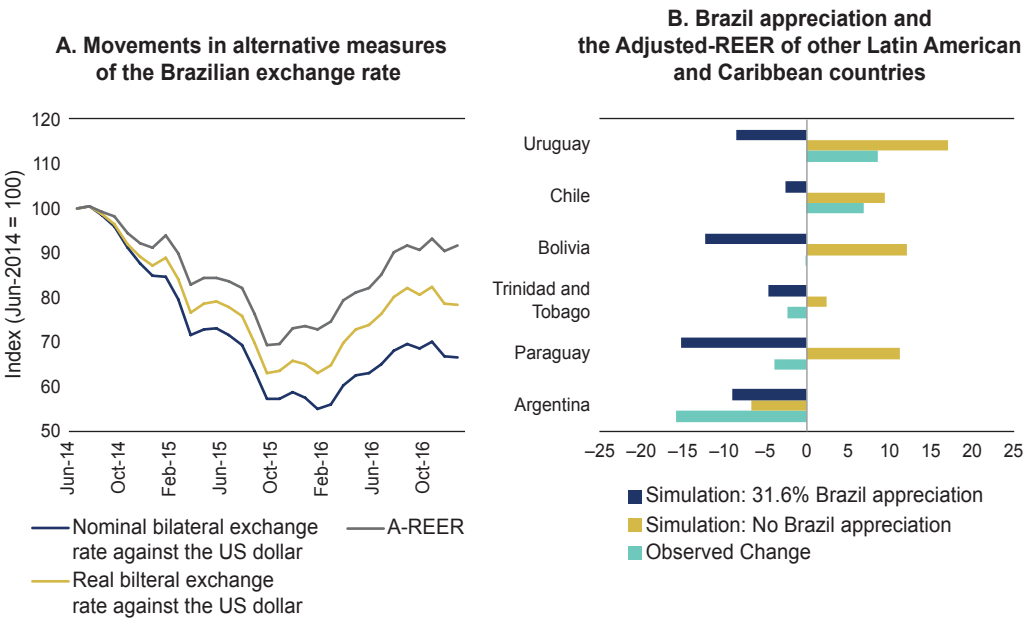
Source: IDB estimates based on: IMF's International Financial Statistics; Thompson Reuters DataStream; Bank of England's Continuous Exchange Rates for the Euro Zone; IDB; INDEC – Argentina; Harvard's CID Economic Complexity and Bilateral Trade Flows; and University of Michigan's World Development Indicators.
Note: Negative (positive) values correspond to depreciation (appreciation). Vertical lines depict simple averages across countries.

5.4, Panel B for an illustration of the impact on six countries. As an example, the actual depreciation of the Paraguayan A-REER was 4% but Brazil's appreciation implied a 15% depreciation of the Paraguayan A-REER. So, had it not been for the Brazilian appreciation, Paraguay's A-REER would have appreciated by 11%.

The United States and China also have a significant impact on A-REERs in Latin America and the Caribbean. The United States' A-REER appreciated by some 25% percent from June 2014 to the end of 2016 (see Figure 5.5). China, on the other hand, depreciated by more than 6% from the middle of 2015, almost completely reversing the real appreciation of the year before. China's weight in the A-REERs of Brazil, Chile, Costa Rica, Haiti, Peru, and Uruguay all exceeds 15%.[7] The A-REER appreciation of the US helps the

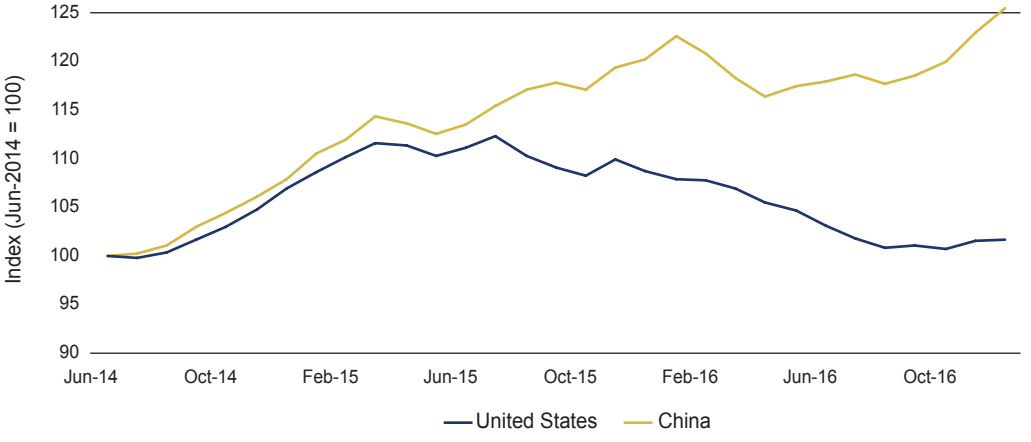
[7] Mexico is not far behind in this regard as the China weight is about 11%.

FIGURE 5.4 Changes and Impacts of the Brazilian Real



Source: IDB estimates based on: IMF International Financial Statistics, Thompson Reuters DataStream, the Bank of England's Continuous Exchange Rates for the Euro Zone, INDEC – Argentina, Harvard's CID Economic Complexity and Bilateral Trade Flows and the University of Michigan's World Development Indicators.
Notes: In Panel B the turquoise bars show the observed change in the adjusted REER.The blue bars show the impact of the actual Brazilian appreciation (31.6) on the Adjusted-REER of select countries. Gold bars show the change in the A-REER of other countries if there had been no change in the Brazilian currency.

FIGURE 5.5 Adjusted-REER for United States and China



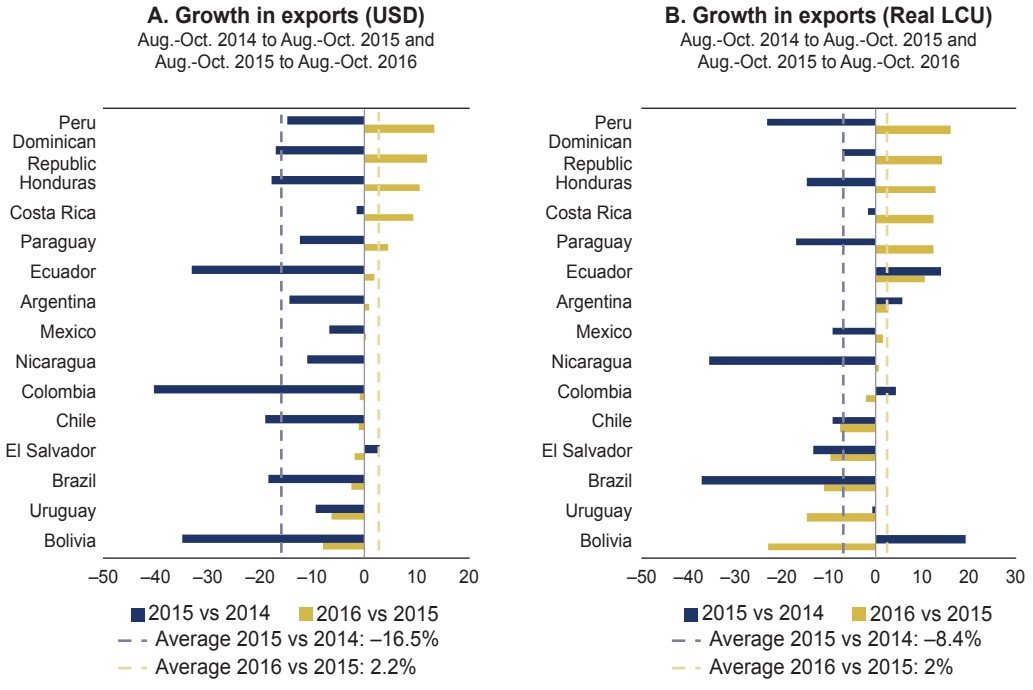
Source: IDB estimates based on: IMF International Financial Statistics, Thompson Reuters DataStream, the Bank of England's Continuous Exchange Rates for the Euro Zone, INDEC – Argentina, Harvard's CID Economic Complexity and Bilateral Trade Flows and the University of Michigan's World Development Indicators.
Note: The A-REERs of the United States and China are normalized to 100 as of June 2014.

competitiveness of exports from the region but China's recent depreciation reduces competitiveness. These different factors help explain the mixed movements of the A-REERs as illustrated in Figure 5.3.

Export Performance and the Adjusted Real Effective Exchange Rate

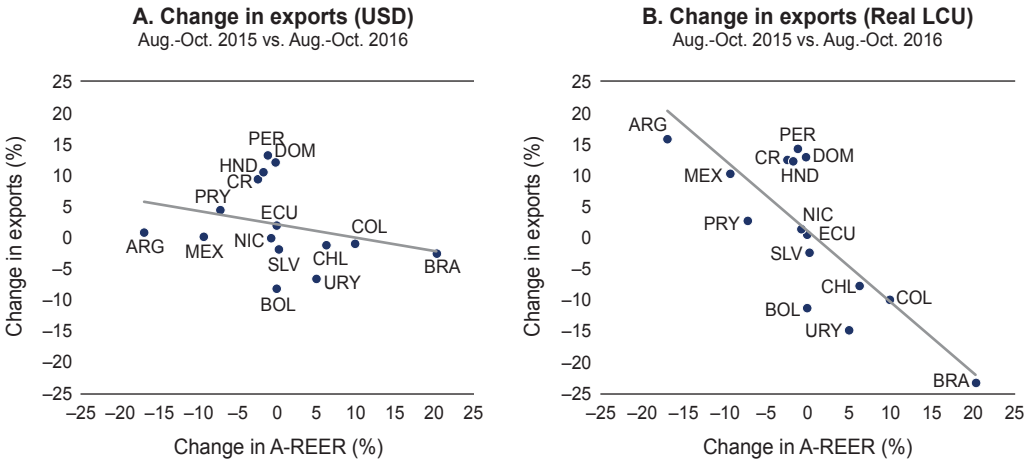
Exports valued in dollars fell about 17% from August 2014 to October 2015, but they rose by some 2% from October 2015 to December 2016. Five countries—Costa Rica, Dominican Republic, Honduras, Paraguay, and Peru—posted significant export growth. As discussed in last year's report, measuring export values in dollars, however, may be misleading given the strong appreciation of that numeraire. Considered in real local currency units, exports fell about 8.4% in the 2014 through October 2015 period and then grew 1% from October 2015 to December 2016. Eight countries experienced export growth and six saw exports grow more than 10% (Argentina, Costa Rica, the Dominican Republic, Honduras, Peru and Mexico) (see Figure 5.6).

FIGURE 5.6 Change in Exports



Source: IDB estimates based on INTrade information system data.
Note: Graphs show the change in average August-October exports for each year in dollars (Panel A) and in real local currency units (Panel B).

FIGURE 5.7 Adjusted-REER and Export Performance



Source: IDB estimates.
Note: The graph illustrates the change in export values measured in US dollars (Panel A) and in real local currencies (Panel B) against the change in the A-REER.

There is a significant correlation between A-REER depreciation and better export performance when exports are valued in real local currency units (see Figure 5.7).[8] This is also true considering only manufactured exports. In a more formal econometric exercise within the context of a gravity model that considers bilateral exports between many countries, a relationship is confirmed for exports valued in dollars (see Box 5.1 for a description).[9] An A-REER depreciation is associated with an initial fall but then a subsequent rise in total exports and a statistically significant rise in manufactured exports and in the number of different types of exports (export lines).

These results suggest that the mechanism of external adjustment from exchange rate depreciation to export growth is working. However, while exports have grown in some countries, they have not grown in all. This mixed performance may be related to the different movement in A-REERs. Exchange rate movements may also provoke more domestic production and lower imports. This is considered in the next section.

Import Substitution

Exchange rate depreciation may also open up opportunities for local industry to substitute for foreign suppliers. A change in the import penetration index (IP) provides a

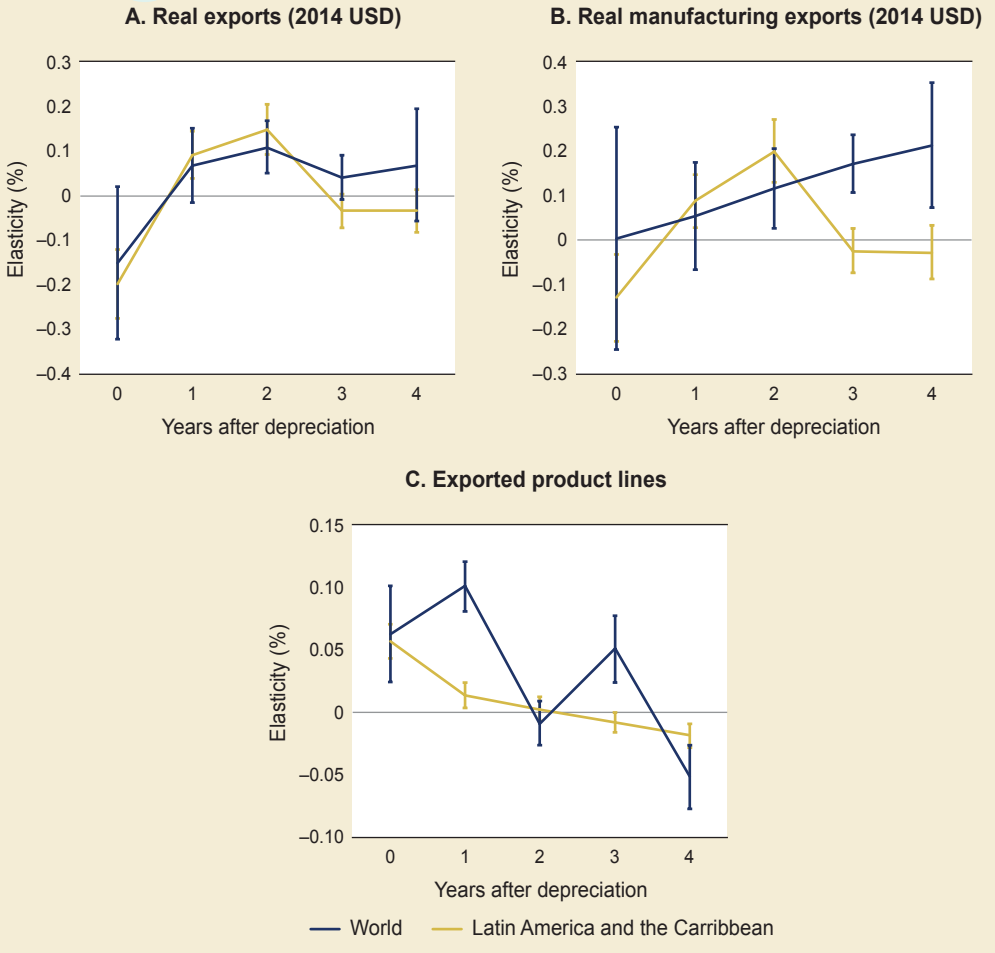
[8] The slope coefficient is statistically significant at 5% for exports measured in real local currency units. When measured in US$ the correlation is not statistically significant.
[9] The model includes a fixed effect that helps control for movements in the dollar. Giordano (2016) also finds a statistical relationship between traditional REERs and export performance.

BOX 5.1 The Impact of A-REER Depreciations on Exports

Employing bilateral export data for 120 exporters from 1985 to 2014, the impact of changes in bilateral A-REERs can be estimated. The bilateral A-REER for country i relative to country j is the bilateral REER adjusted, with suitable weighting, for the movement of exchange rates of other countries that compete with similar products in country j's market.[a]

A-REER depreciations appear to result in a J curve type effect with an initial fall in export values but then a subsequent rise (see Figure 5.1.1 Panel A). Countries in Latin America and the Caribbean appear to behave in a similar fashion to others around the world. In the case of manufactured goods from Latin America and the Caribbean, there is no decline on impact and the cumulative increase in subsequent years is significant (see Figure 5.1.1, Panel B);[b] a depreciation of 10% is associated with a cumulative increase of 5.5% in years one through four after the depreciation.

FIGURE B5.1.1 Impact of a Real Depreciation on Export Performance



Source: IDB estimates.
Note: Bars represent 95 percent confidence interval for the coefficients of a structural gravity equation estimated using PPML. Sample comprises 120 countries, including 23 Latin American countries, for 1985–2014.

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BOX 5.1 The Impact of A-REER Depreciations on Exports *(continued)*

A-REER depreciations also increase the number of product lines exported (Figure 5.1.1, Panel C). For the typical country in Latin America and the Caribbean, a real depreciation of 10% is associated with an increase of about 1.5 new product lines (compared to the average 99 product lines per country). The effect on manufacturing product lines is proportionally slightly larger.[c] New exports tend to be focused on low-technology manufacturing as well as garments and textiles.[d]

[a] While competition adjusted REERs have been estimated previously, this analysis is innovative as it adjusts for competition at a disaggregated level, employs bilateral A-REERs (and product level A-REERs can also be defined) and adjusts for similarity as well as competition. The estimate used is the Poisson pseudo maximum likelihood (PPML) method. See Appendix C for further details on the data and methodology.

[b] In this case, the A-REER measure considers solely trade in manufactured goods for the calculation of the weights.

[c] The average number of manufacturing export lines for Latin American and Caribbean countries is 77.

[d] Technology is proxied by the Lall product classification.

measure of this switch. The IP index reflects the share of foreign goods in total supply: the ratio of imports to the sum of domestic output and imports. However, the simple IP index captures not only real changes in import substitution but also valuation effects. For instance, a currency devaluation may increase the domestic price of imports and therefore the index (constructed in local currency) may increase even though import volumes may not have changed. To neutralize this valuation effect, an exchange rate adjustment is made equivalent to considering a constant exchange rate—the average over the period of analysis.[10] The overall IP index for the region has been decreasing strongly since 2011 and is now about 30% below its peak (see Figure 5.8).[11]

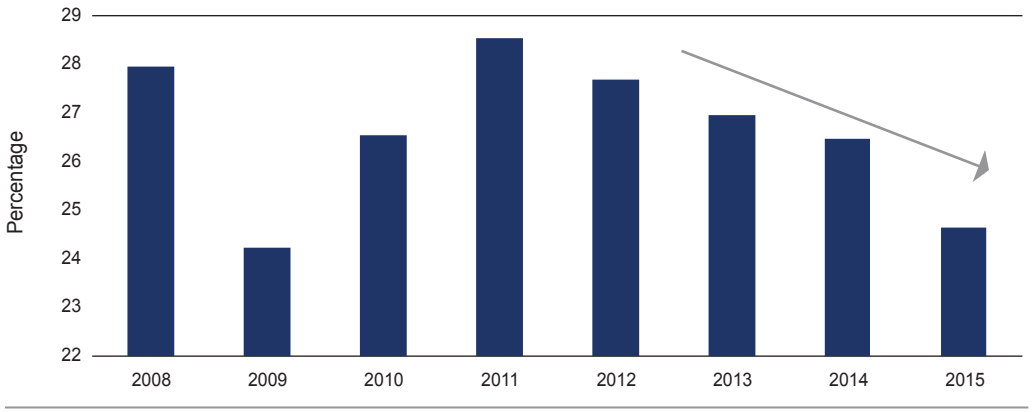
The fall in the import penetration index is associated with currency depreciation (see Figure 5.9). This pattern suggests local producers may have taken advantage of the devaluation to displace foreign competitors, but it might also reflect a change in the composition of expenditures away from sectors with a higher import share. For example, given a downturn in economic activity, investment in machinery (which usually has high import content) might have fallen more than other expenditures, driving the average IP index down.[12]

[10] A real exchange rate index is calculated for the period 2008-2015. This index and the market exchange rate are then used to solve for a nominal exchange rate that keeps the real exchange rate constant at the average level for the period.

[11] The countries included in the calculation of the average import penetration index are: Argentina, The Bahamas, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Guyana, Mexico, Nicaragua, Peru, Paraguay, Uruguay, and Venezuela.

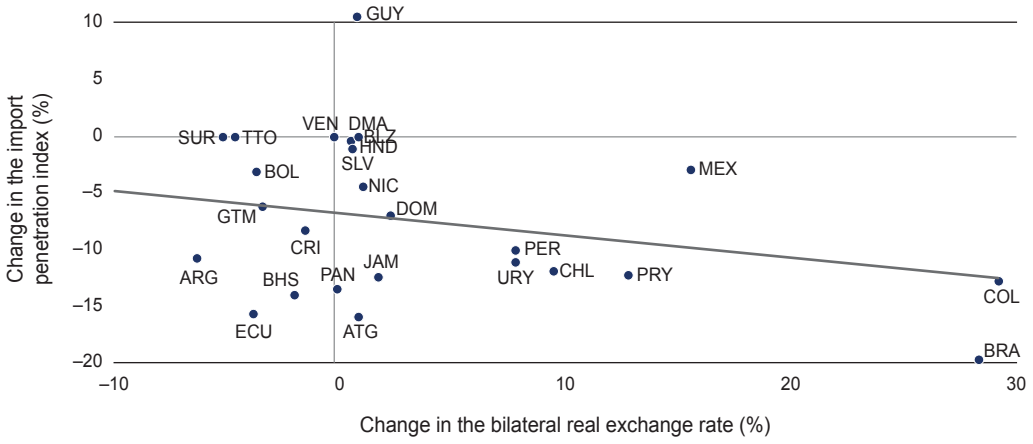
[12] Note that even if this were due to a change in composition it might still constitute a type of switching in the sense of an external adjustment. The evidence in Figure 5.9 is also confirmed considering sectoral data. The negative relationship between a devaluation and the decrease in the IP index holds at the sector level (for manufactured goods sections 15 to 36 according to the ISIC classification, rev 3).

FIGURE 5.8 Average Import Penetration for Latin America and the Caribbean



Source: IDB estimates using information from National Accounts and COMTRADE.
Note: Simple average across countries.

FIGURE 5.9 The Change in Import Penetration and Currency Depreciation



Source: IDB estimates using information from National Accounts, COMTRADE and IMF-IFS.

An econometric analysis, discussed in Appendix C, is required to dig deeper. This analysis confirms a strong relationship between traditional REERs (and a REER weighted by imports) and import substitution at the overall level of the economy, for the manufacturing sector as a whole and for individual sectors within manufacturing. The results indicate that at the level of the economy as a whole, a 10% depreciation results in roughly a 5% decrease in the import penetration index. The results are even stronger considering sector by sector estimates within the manufacturing sector: a depreciation of 10% leads

to a 7% decrease on average in the import penetration index. The effect is focused on those sectors where domestic supply is already reasonably developed and constitutes a significant proportion of total supply.[13]

Conclusion

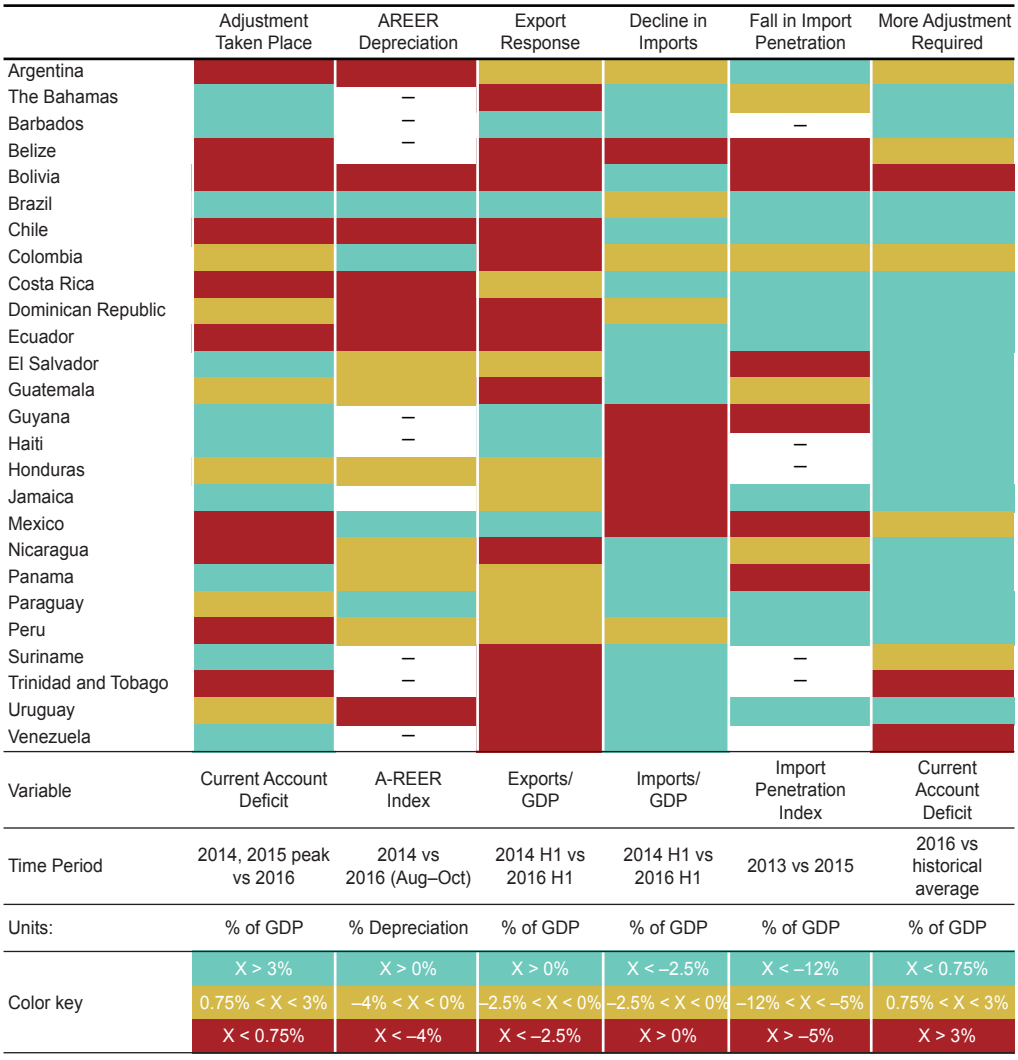
Given external shocks, a number of countries in the region have been undergoing a process of external adjustment. Comparing 2016 current account deficits with expected values in 2017, an adjustment this year is expected in 11 of the 26 IDB regional members.[14] But many countries have been adjusting already. Indeed, 16 countries have seen current account deficits narrow by more than 0.75% of GDP from recent peaks in 2014 or 2015 to 2016 values.

External adjustment has taken place through a mixture of export growth, import compression, and import substitution (see Figure 5.10 for measures of the adjustment that has taken place, indicators of these mechanisms, and how much future adjustment may be required). Real exchange rates play an important role in both the adjustment through exports and import penetration. The results presented in this chapter illustrate that these mechanisms are working. But only four countries have seen A-REER depreciations and only five have seen exports rise as a percentage of GDP. In more recent months, dollar export values have increased in several countries. Import penetration has fallen in many countries, indicating that import declines have not just been about demand. Perhaps most importantly, comparing 2016 current account deficits to medium-term and longer-term averages, only three countries may require significant further adjustment in the years ahead.

[13] In other words, where domestic supply divided by domestic supply plus imports is relatively large.

[14] These estimates stem from IMF's *World Economic Outlook* data and IDN estimates. The average adjustment across the 11 countries is expected to be 1.8% of GDP and the median just over 1%.

FIGURE 5.10 Heat Map on External Adjustment



Source: IDB estimates using information from National Accounts and COMTRADE.
Note: Simple average across countries.

CHAPTER 6

Trade Integration: Learning the Right Lessons

World growth may be on the rise, but the region faces the challenge of adapting to lower commodity prices, higher interest rates, and a potential backlash against the trend towards greater globalization. The results of the BREXIT referendum in June 2017, the recent decision of the United States not to ratify the Trans-Pacific Partnership (TTP), and calls to renegotiate the North American Free Trade Area (NAFTA) have halted the trend towards larger and larger preferential trade agreements (PTAs).

Currently, it's hard to predict the path global trading arrangements will take. The United States and Europe could lead a resurgence of the march to mega agreements; perhaps China will lead a new regionalism, marked by shallower and less ambitious deals; alternatively, the world could move to only bilateral agreements; or in the extreme, global trade frictions could escalate. Global post-war prosperity has, to a large degree, been built on a relatively open global trading regime, so perhaps a modified status quo, with much greater emphasis on compensating those that have lost out, will win the debate. But the possibility of less benign outcomes should not be ignored.

Last year's report argued that the trend towards mega agreements added urgency to addressing the limitations of integration within Latin America and the Caribbean. The report reasoned that the current mosaic of relatively small trade agreements not only worked against boosting economies of scale and competitiveness, but also ran the risk of becoming irrelevant amid the tide of larger agreements.

In this and the following chapter, it is argued that the uncertainty and likely negative environment for large global trading arrangements add a further reason why countries need to act on the regional integration agenda. Simulations illustrated in Chapter 8 suggest that irrespective of the prevailing trade scenario, the region has only to gain by having a stronger, more efficient and fully-integrated domestic market. The gains from further integration relative to the status quo, are even greater in a more extreme scenario of global trade frictions, in which the region's exports are likely to fall on average by at least 13%, with Mexico and Central America suffering the worst losses.

Fixing regional integration is not a panacea to solve all the region's growth problems, nor is it a full insurance policy against escalating global trade frictions. However, enhanced regional integration can offer tangible gains (especially in more extreme scenarios), at

modest costs; it is a low-hanging fruit in a world with few obvious alternatives. This Chapter focuses on the lessons learned from more than a half-century of integration efforts; the following chapter outlines a strategy to pursue a fully integrated regional market and provides estimates of the potential benefits.

A Little History

Latin America and the Caribbean has a long history of trial and error, and successes and failures, pursuing regional integration. The first formal attempts were pioneered by Central America in the early 1960s, with the Central American Common Market (CACM), followed later by the Andean Community (AC), the Caribbean Free Trade Association (which later became CARICOM), and more ambitious initiatives such as the Latin America Free Trade Area (LAFTA, South America plus Mexico), which then evolved into the Latin American Association for Integration (ALADI, in the Spanish acronym).[1] While ALADI remains in existence today, serving a useful if somewhat limited role, many of these early initiatives bore little economic or institutional fruit and largely disappeared or were transformed into other agreements.[2]

The quest for integration was reignited in the early 1990s when the aftermath of the debt crisis and ensuing market-oriented reforms gave rise to a "new regionalism"—a group of deeper, more comprehensive and more open integration initiatives that led to the consolidation of five sub-regional trade blocs: the Andean Community (AC), the Central American Common Market (CACM), CARICOM, MERCOSUR, and NAFTA (see Box 6.1 for details).

Nearly a quarter of a century later, these five trade blocs have evolved into a complex network of trade agreements covering a range of areas from trade and investment to labor regulation. Moreover, several countries within these blocs signed their own agreements with countries outside the region, thereby extending the reach of sub-regional PTAs to North America, Europe and Asia. The initial agreements themselves went through several phases, and new initiatives such as the Pacific Alliance emerged.[3] What lessons can be drawn from these experiences? What were the expectations and were they met?

Regional Integration: What Problem Was It Supposed to Solve?

Regional integration in Latin America and the Caribbean has always been about improving lives. The belief from the 1950s onwards has been that larger, integrated markets can deliver more growth opportunities, as firms and individuals reap the benefits of greater

[1] ALADI was founded in 1980, and its membership include Argentina, Bolivia, Brazil, Colombia, Chile, Cuba, Ecuador, Mexico, Panama, Paraguay, Peru, Uruguay, and Venezuela. Nicaragua has been in the process of accession since 2011.

[2] The exception is the case of Central America which brought more significant gains.

[3] See Box 6.1 for a short description of the Pacific Alliance.

BOX 6.1 Integration in Latin America and the Caribbean

The Andean Community (AC), the Central American Common Market (CACM), The Caribbean Community (CARICOM), the Southern Common Market (MERCOSUR), and the North America Free Trade Area (NAFTA) laid the foundations of a new regionalism in Latin America and the Caribbean. The results were mixed and, in some cases, they have become overshadowed by new initiatives, such as the Pacific Alliance. But these experiences provide invaluable lessons on how to move forward.

CACM was the pioneer, established as early as 1960 by El Salvador, Guatemala, Honduras and Nicaragua. Membership was later expanded to include Costa Rica in 1962 and Panama in 2012. Together with the new regionalism, it was relaunched in 1991 and more recently (2001) moved towards a customs union. In 2004 it signed the Dominican Republic-Central America-United States Free Trade Agreement (CAFTA-DR), which led to a deeper agreement and further openness.

AC was originally signed in 1969, under the name of the Andean Pact by Bolivia, Chile, Colombia, Ecuador, and Peru with the goal of becoming a common market. In 1973, Venezuela joined the group, and Chile left in 1976—the Chilean model clashed with the group's original idea of fostering more import substitution. The relaunching of the PTA, under the auspices of the new regionalism, came in 1992 when the free trade area was finally implemented with ambitions to become a customs union. In 2011, Venezuela left the group over disagreements about signing PTAs with the United States.

CARICOM was established in 1973 by Barbados, Jamaica, Guyana and Trinidad and Tobago. Membership was later expanded to include Antigua and Barbuda, the Bahamas, Belize, Dominica, Grenada, Haiti, Montserrat, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, and Suriname. The move to an open regionalism began in 1989, with the launching of the CARICOM Single Market and Economy (CSME), which aims at the free movement of goods, services, capital, and labor.

MERCOSUR was already born under the new regionalism in 1991 with members Argentina, Brazil, Paraguay, and Uruguay. The bloc's main goal is to develop a common market, with the free movement of goods, services, and factors of production. Venezuela joined later in 2012, but was recently suspended for failing to implement the bloc's norms. The entry of Bolivia was approved in 2015, but the country is still in the process of accession.

NAFTA formally commenced in January 1994 between Canada, Mexico, and the United States. Unlike the other four original PTAs, the bloc's objectives are limited to a free trade area in goods and services. It was the first major PTA in the region to involve developed countries and has served as a model for subsequent U.S. agreements with the region, such as those with Chile (2003), Peru (2006), Colombia (2006), and Central America (2004).

The Pacific Alliance was officially established in June 2012 by Chile, Colombia, Mexico and Peru. The initiative's goal is to establish a free trade area that will progressively advance towards the free movement of capital and labor. It represents a more pragmatic approach, building upon existing PTAs to further economic integration and serve as a global export platform. As such, it may provide a model on how to knit together FTAs in Latin America and the Caribbean and link them to extra-regional initiatives.

economies of scale and specialization.[4] Economic theory going back to Adam Smith supports these arguments. Still there can be winners and losers. Box 6.2 discusses how trade may exacerbate inequality but suggests that this complex issue may be quite different for emerging economies compared to the fierce debate in some high-income nations.

[4] ECLAC (1959:4).

BOX 6.2 Trade: Winners and Losers and the Relation to Inequality

There has been much discussion regarding the impacts of globalization, and, more specifically, trade. While most economists would agree that trade boosts growth and improves overall living standards, there is considerable disagreement on the extent to which particular groups may lose out and how trade may exacerbate inequality—making the rich richer and not helping the poor, or even worse, making them even poorer. But the impacts of trade on emerging and high-income countries are likely to be very different. In richer countries, where inequality has increased in recent decades, trade with poorer nations is often blamed as the ultimate culprit. This argument is grounded in the so-called Stolper-Samuelson theorem.[a] This theorem suggests that skill-abundant countries should expect increasing inequality after trade liberalization, triggered by a fall in the relative price of unskilled-labor-intensive imports and a boost in the relative return to skilled labor. However, other forces such as skill-biased technical change may also be at play with similar effects on inequality. By contrast, in poorer countries trade is expected to have the opposite effect. Fueled by the abundance of low skilled labor, trade liberalization should bring down inequality by depressing the skill premium.

However, earlier evidence from liberalization reforms in the developing world appear to be at odds with these predictions of neoclassical trade theory (see, for example, Goldberg and Pavcnik 2007). If anything, inequality actually increased. In Latin America, trade liberalization dominated the policy landscape of the late 1980s and early 1990s. Meanwhile, the inequality of earnings increased by three Gini points between 1993 and 2002 (Silva and Messina, forthcoming). However, a second wave of globalization during the 2000s, most notably marked by the emergence of China as a major player in world trade and a consumer of commodities, was accompanied by sharp reductions in inequality in most countries in the region. Inequality declined faster in the commodity producer countries of South America than in Central America and the Caribbean and between 2002 and 2013 the Gini coefficient of labor earnings fell by almost 6 points on average. Overall, by the end of the period inequality in the region was still high compared to other regions of the world, but had reached historical lows compared to its own past (Alvaredo and Gasparini, 2015).

The drivers of the recent decline in inequality in the region are still open to debate. Much of it may have had little to do with trade. Changes in labor supply driven by increasing educational attainment have certainly contributed to the decline of the skill premium (Gasparini et al., 2011; Fernández-Sierra and Messina, 2016). In some countries, including Brazil, the increase in minimum wages was also a driving factor (see Ferreira, Firpo, and Messina, 2014; Álvarez et al., 2016).

But globalization has certainly played a role. In Brazil, the direct impact of trade with China was felt in local labor markets. Employment and wages of manufacturing workers fell in regions affected by import penetration of Chinese manufacturing products, while wages and employment in commodity producing sectors and non-tradeables increased in commodity producing areas (Costa, Garred, and Pessoa, 2016). However, the direct effect of the commodity price boom on inequality does not seem large. Adão (2016) estimates that the increase in commodity prices contributed only about 5–10% of the actual reduction in inequality in Brazil. In Mexico, a net commodity importer with a strong manufacturing base that directly competes with Chinese exports, the negative effects may have been larger. Blyde et al. (2017) calculate that Chinese imports per worker in Mexico increased by US$1,000 since China joined the WTO in 2001. This resulted in a reduction of manufacturing employment per working-age population of 0.25 percentage points, which adds up to a cumulative loss of about 200,000 manufacturing jobs in the last 15 years. However, the direct impact on manufacturing jobs does not offer a complete picture of the welfare effects of trade. While the previous wave of globalization in Mexico that followed the NAFTA agreement may also have destroyed some low-value-added manufacturing jobs in previously protected industries, it created

(continued on next page)

BOX 6.2 Trade: Winners and Losers and the Relation to Inequality *(continued)*

many high-value-added jobs by linking Mexican firms to upstream firms in North America. Although the overall impact on manufacturing jobs is uncertain, trade liberalization following NAFTA clearly boosted manufacturing wages and Mexican manufacturing exports, contributing to a significant reduction in poverty (Hanson, 2007).

The direct impact of trade on local labor markets may underestimate the overall role of globalization on inequality. The gains in terms of trade experienced by commodity producers in South America triggered capital inflows and provoked a boom in aggregate demand that boosted wages of low skilled workers reducing inequality. This was partly through increasing demand for relatively unskilled labor intensive non-tradable goods (e.g., construction), and partly through labor shortages among the low skilled because relative supply fell while demand was growing (Silva and Messina, forthcoming).

In sum, the relationship between globalization and inequality is complex. While advanced economies may expect there to be winners and losers, this may not be the case in developing countries, including in Latin America and the Caribbean. The last decade highlighted the tremendous opportunities that trade offers. South American countries that benefited from the boom in commodity prices not only grew fast, but also managed to reduce inequality at an unprecedented rate. By contrast, regions and cities that produced goods that are also exported by China lost manufacturing employment and wages. In general, government policies could compensate the losers, and such policies may be needed to limit negative impacts and anti-globalization backlashes. This should then allow the full benefits of trade to be realized.

[a] This is a theorem that lies within the Hecksher-Ohlin theory of international trade.

The arguments for greater openness to exploit the gains from economies of scale and specialization do not necessarily support a regional strategy as opposed to a unilateral or a wider multilateral one. A first step in the argument to support a regional strategy is that a purely unilateral one is unlikely to work. Large countries, for instance, have an individual incentive to apply what is known as an *optimal tariff*. Without any coordination, countries left to their own unilateral actions may then apply a relatively high level of tariff, an outcome that would be inefficient compared to a coordinated agreement on a lower tariff structure. Countries' tariff policy is then like a Prisoner's Dilemma, and some level of coordination is required to avoid the inefficient uncoordinated outcome.[5] Apart from this fundamental coordination problem, several more subtle and sophisticated arguments also go in the direction of soliciting reciprocity between trading partners, rather than a truly unilateral approach.[6]

But if a unilateral approach would not lead to an open trade regime, why favor a regional rather than a truly multilateral one? A simple answer is that it is easier to negotiate

[5] See Bagwell and Staiger (2002).

[6] For example, Venables (1987), Brander and Spencer (1984), Ossa (2011) and Mrázová (2011) all suggest reciprocity is required to counter another type of Prisoner's Dilemma, namely that countries may wish to protect home markets to gain from scale at home. Finally, reciprocity may yield more predictable market access. Limão and Maggi (2015) argue lowering uncertainty will then boost investment.

and, therefore, more likely to happen and to happen more quickly. This motivation has been clearly behind the proliferation of PTAs since the early 1990s, led by Latin America and the Caribbean. Once this trend sets in, countries do not want to be left out of preferential access to the world's main markets, triggering a process of competitive regionalization. The incentives of an easier negotiation are reinforced by the risks of having exports displaced by less competitive producers with preferential access.[7]

But while a path through regional integration may be beneficial, there are also dangers to such a strategy. A large literature starting with Viner (1950) suggests that there may be little to be gained by signing agreements with countries that look very similar and forming trade areas with high external tariffs. Such a strategy may lead to high levels of trade diversion and yield few benefits. Not all integration schemes are equal and the range of combinations between types of partner (e.g. North-South or South-South) and types of design (e.g. customs unions, free trade zones, or common markets) can produce quite different results.[8] The devil is in the details.

Likewise, regional integration initiatives do not take place in an economic and political vacuum. If macroeconomic stability is not guaranteed among members and there is high inflation or a significant chance of a financial crisis (as at some points in the region's recent history), then regional integration is unlikely to have a strong impact. In the current environment of low growth but stability, with strong financial systems and relatively low inflation within robust inflation targeting systems (in most of the larger economies), the impacts of integration on trade should be greater. The external environment also matters. Small PTAs, like most of those signed by the region, may have been economically relevant in the early 1990s in a world with a few agreements and no significant trade frictions. As shown in Chapter 7, in today's environment, heavily populated by large PTAs and economies (such as the United States, China and India), only agreements that can offer a critical economic mass can offer meaningful gains.

Results from Regional Integration Initiatives

Latin America and the Caribbean's history with regional integration could not be more illustrative of the difficulties in translating sound motivation into effective design and implementation. The relatively small intra-regional PTAs such as the AC, CARICOM, CACM, and MERCOSUR may have had laudable ambitions in terms of economic integration and institutional expectations but their small size, and in some cases, the similarity of the members stacked the odds against success.[9] Theory suggests a PTA among a set of large and diverse economies would lead to much greater trade creation than one between small and

[7] See, for example, Baldwin (2009) for a review of the arguments for regional integration.
[8] See, for example, Frankel, Stein, and Wei (1996), Venables (2003), and Baldwin (2011).

relatively undiversified nations. But the proof is in the numbers. Did these intra-regional PTAs actually boost trade within the group? And did they substantially raise productivity and (hence), alter the region's role in the global economy?

In fact, each agreement was followed by an increase in the intraregional share of total trade, mostly driven by manufacturing (see Figure 6.1). The AC and MERCOSUR were particularly striking examples. But the gains seemed to peak in the early 2000s. The ensuing decline in the intraregional trade share was then more pronounced in the AC, MERCOSUR, and CARICOM.

Of course, many other factors are at work including structural changes in the world economy, the emergence of China, and several crises in different countries in the region, so it is impossible to draw any definitive conclusions simply from descriptive statistics and graphs. However, growing trade fictions, particularly in MERCOSUR and the AC, seem to have also played a role in the decline in trade shares.[10]

How did these trade agreements affect the region's insertion in the world? Unfortunately, with the exception of Mexico, in NAFTA, and to a much lesser extent CACM (recently boosted by CAFTA-DR), the other agreements appeared to have little positive impact on each PTAs share of world manufacturing exports (see Figure 6.2) — a key goal. If there was any significant impact on member country's productivity, it seems to have been insufficient to raise their level of participation in global markets.

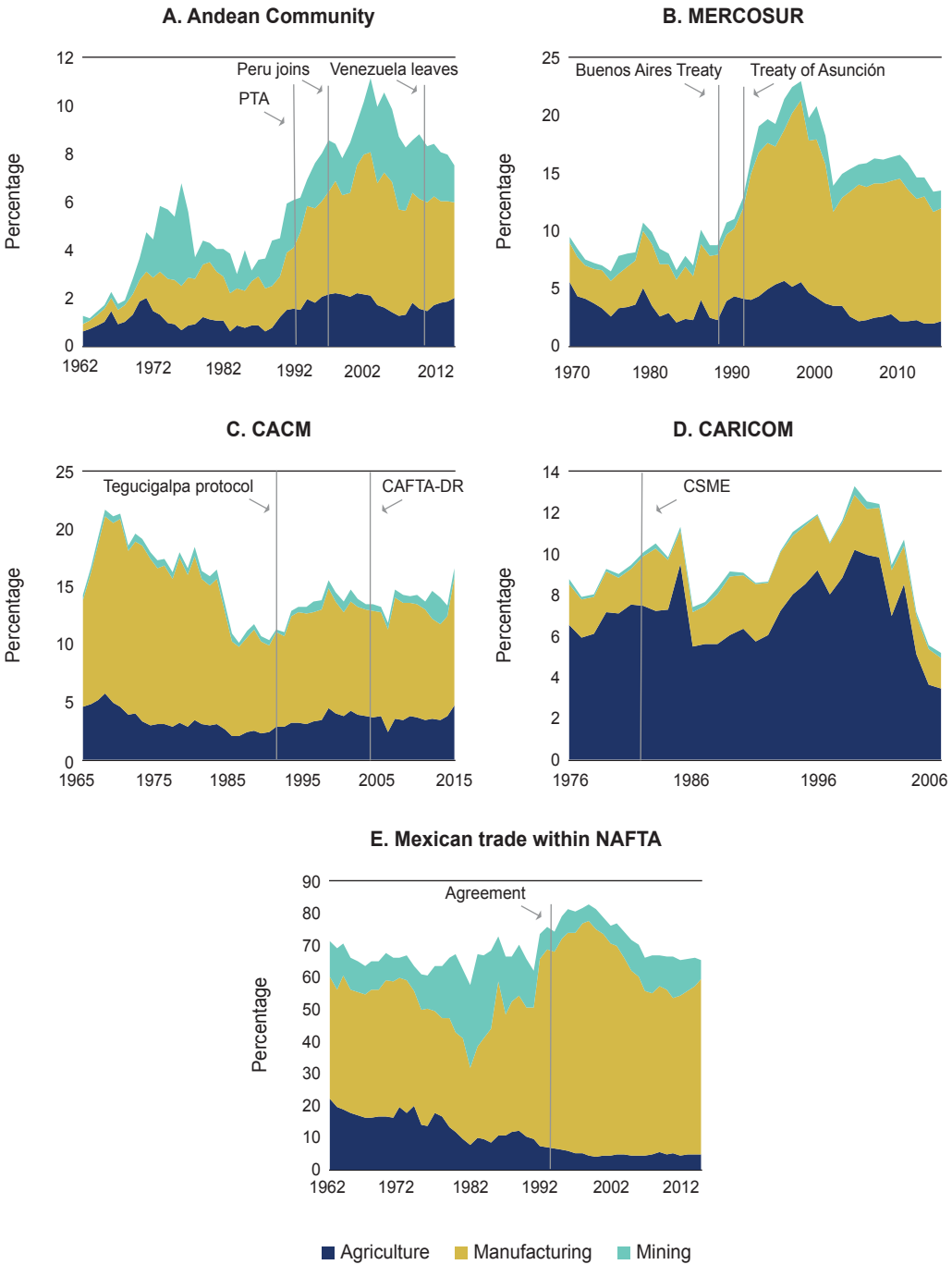
This preliminary evidence points to the advantages of pursuing integration with larger markets and the limitations of a piecemeal approach to integration. However, reaching a more definitive conclusion demands a more rigorous econometric exercise. Such an exercise was carried out using a gravity model—a standard methodology used by trade economists to assess the PTAs impact on trade. The model assumes that trade between countries is a function of the relative size of their economies, the distance between them, and other relevant geographical variables. The "PTA effect" is estimated with the help of an additional variable that captures whether the two countries share a PTA. The estimated coefficient of this variable reveals how much bilateral trade between PTA members increases (or not) compared to trade between countries that are not members of the same PTA. The data covers the period from 1976 to 2013 and statistical controls are added to make sure the PTA effect is not biased by country idiosyncrasies (think, for instance, of macroeconomic and institutional volatility) that might impact trade but are not related to PTAs.[11]

[9] See Mesquita Moreira (forthcoming).

[10] The size of these markets and the availability of factor endowments would have eventually curbed intraregional trade growth, except for the case of NAFTA, which gave Mexico access to a much larger market.

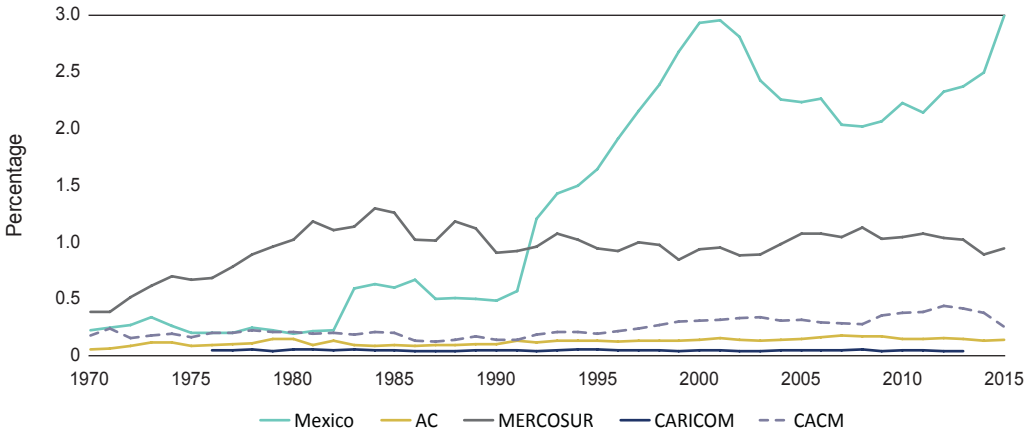
[11] The specification follows the preferred one of Baier, Bergstrand, and Feng (2014), including five year differences, exporter-year, importer-year, and bilateral trading-pair fixed effects. For a general review of the recent gravity literature, see Limão (2016) and Head and Mayer (2014).

FIGURE 6.1 Share of Intraregional Trade in Total Trade



Source: IDB staff estimates.
Note: Intraregional trade share defined as intraregional exports plus imports divided by all exports and imports with all countries.

FIGURE 6.2 Mexico within NAFTA and Select PTAs: Share of World Manufacturing Exports



Source: IDB staff estimates.

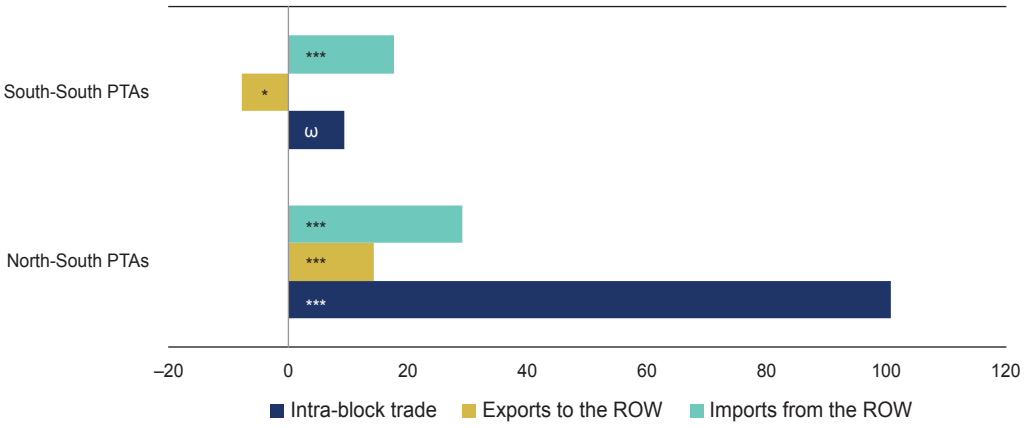
In a first exercise, the model is used to identify the average impact of all Latin American and Caribbean PTAs on trade between members, relative to PTAs in the rest of the world. Interestingly, the results suggest that the region's PTAs increased trade by an average of 41%, a little higher than the estimated 39% for PTAs in the rest of the world.[12] However, this average result may be misleading, as the region's PTAs differ significantly in their architecture and, therefore, are likely to have different impacts. One way of capturing these differences is to estimate the model dividing the PTAs into two groups: the North-South PTAs, which involve nonregional members (NAFTA and CAFTA-DR) and the South-South PTAs, limited to Latin American and Caribbean members (the AC, CACM, MERCOSUR and CARICOM). The results show that the North-South group has a quantitatively higher impact on trade between its members (42%) than its South-South counterpart (32%).[13] It seems that an agreement that includes a large economy such as the United States may have a different impact from a PTA that includes only a small number of relatively small economies. This observation supports the view that PTAs between small and relatively similar economies may create less trade than ones that are larger in terms of the number of economies and GDP.

Although indicative, these findings say little about the PTAs impact on trade with the rest of the world. That is, they do not shed light on the questions of whether these

[12] However, the difference is not statistically significant.

[13] While the difference is 10 percentage points and each estimate is significantly different from zero, the two estimates are not significantly different from each other in this specification, which contains a large number of fixed effects and controls.

FIGURE 6.3 North-South and South-South PTAs: Impacts on Intraregional and Extraregional Trade



Source: IDB staff estimates.
Note: Data runs from 1976 to 2013. North-South PTAs include NAFTA and CAFTA. South-South PTAs are the AC, CACM, MERCOSUR and CARICOM. Results stem from the estimation of a five-year difference, pair and year fixed effects, model that includes GDP. The PTA variables are adjusted to take into account countries' multilateral resistance (as in Egger and Nelson 2011). ω = non-significant; *** = significant at 1%; ** at 5%; and * at 10%.

agreements were able to boost extra-regional exports or whether they had a negative impact on imports from the rest of the world.[14]

To address these shortcomings, a second and more general model is estimated, which incorporates these two other dimensions of the potential impacts of PTAs.[15] In this model, three variables capture the impacts of PTAs on (i) intra-bloc trade (when both countries are PTA members) (ii) extra-regional imports (when just the importer is a member), and (iii) extra-regional exports (when just the exporter is a member). As before, the North-South, South-South groupings are used to assess the variation of these effects across different types of agreements. Strikingly, only the North-South agreements have a positive and statistically significant impact on extra-bloc exports (a 14% increase)—see Figure 6.3. None of the PTA groups appears to have triggered damaging trade diversion (at least not for trade as a whole), as the average impact on extra-regional imports is both positive and significant (a 29% and 17% increase for the North-South and South-South PTAs, respectively). The results for intra-bloc trade suggest an even higher positive and

[14] This latter result would suggest that the gains in intra-bloc trade were a costly diversion of flows from non-members, instead of trade creation.

[15] Due to identification problems, the countries' idiosyncrasies cannot be fully controlled as in the previous model, with fixed-effects limited to pair and year. Since there are no exporter-year, importer-year fixed effects, the GDP variable is included and the PTA variables are adjusted to take into account countries' so-called "multilateral resistance" as in Egger and Nelson (2011).

statistically significant impact for the North-South agreements (100%), but a much smaller effect for their South-South counterparts, which are not statistically significant from zero.[16]

What do these results indicate regarding the effectiveness of trade agreements in the region? First, they seem to confirm a significant positive impact on intra-PTA trade, with little sign of significant trade diversion. Second, they suggest that the most positive and significant effects on members' extra-regional exports are largely confined to those agreements that built large and diversified markets such as CAFTA-DR and NAFTA. The smaller agreements between regional members did not boost exports to the rest of the world. Overall, the results support the argument that the current balkanization of regional trade agreements in Latin America and the Caribbean works against its core economic motivation. The burning question, then, is how to fix this fragmentation? How can the existing mosaic of PTAs be transformed into a broader agreement with enough economic mass to make a difference in the current challenging and uncertain trade environment? The next chapter takes up this challenge.

[16] In the intra-bloc dimension, the results of the previous model are likely to be more reliable, as it has a greater ability to weed out non-observable factors that might affect trade but are not related to the PTAs.

CHAPTER 7

Fixing Regional Integration: What Would Be the Result?

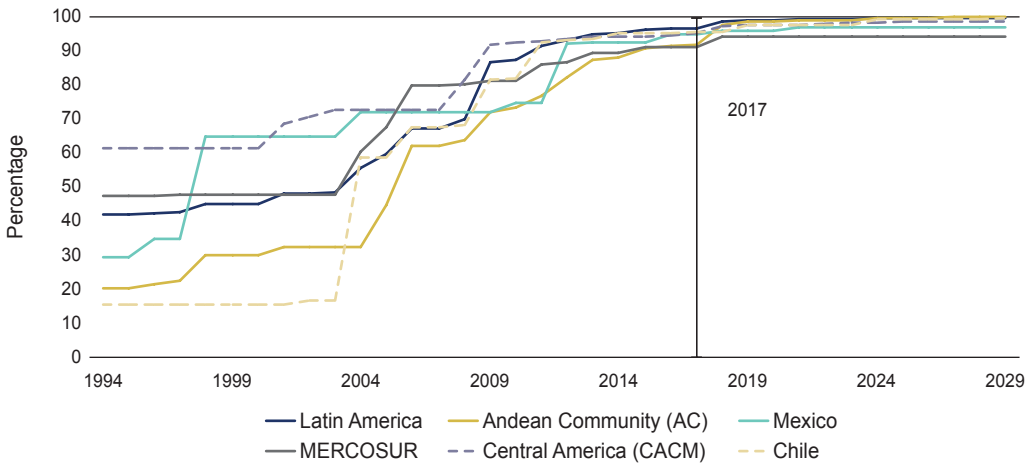
Regional integration in Latin America and the Caribbean suffers from an original sin: balkanization. There are just too many, small Preferential Trade Areas (PTA), a setup that works against greater productivity and competitiveness. This Chapter makes the case for a fully integrated regional market and a free trade area for the region (a LACFTA), with free circulation of goods and services. The Chapter argues that such an objective is actually not that difficult to achieve and makes step by step suggestions on how to move forward.

To anyone with knowledge of the historical trials and tribulations surrounding integration initiatives in the region, this proposal might resemble one of the failed grandiose visions that litter history. This chapter asks the reader to think again. Why would this time be different? First, as discussed in previous Chapters, a more challenging global trade environment lies ahead, which promises to be merciless to small agreements. Either they acquire critical economic mass or they risk becoming irrelevant. Second, the network of agreements built over the last 25 years provides the region with a powerful platform to build upon. The region is much closer to free intraregional trade than conventional wisdom might suggest. Third, the proposal developed below seeks to learn from the experiences of the past quarter century of "New Regionalism." This means a LACFTA should avoid complex architectures, with supranational institutions, customs unions and hard-to-enforce areas; instead it should be institutionally "light," relying as much as possible on inter-governmental mechanisms and WTO regulations. Finally, while the potential gains from LACFTA will not fully resolve the region's growth challenges, they are a surprisingly low hanging fruit that should not be ignored.

Closer than You Might Think

Where does the region stand in liberalizing intraregional trade? Excluding those agreements that cover less than 80% of products, there are currently 33 LAC-to-LAC PTAs in force. This network of agreements covers bilateral relationships accounting for approximately 80% of the current value of intra-regional trade, with nearly half of that

FIGURE 7.1 Tariff Reduction Schedule Negotiated in PTAs in Latin America and the Caribbean (% of trade liberalized within agreements, based on the 2014 trade structure)



Source: IDB Staff estimates.
Note: Trade flows correlated with tariff reduction schedules included in the official trade agreement annexes. Trade is classified as duty-free starting in the year the tariff elimination process is complete. This analysis assumes all trade would comply with the respective rules of origin to be eligible for duty-free treatment, and does not reflect actual preference utilization rates. Each line represents the weighted average of the individual bilateral tariff concessions involving the individual country or countries within each PTA with intra-LAC partners.

taking place within the four core agreements themselves (CACM, MERCOSUR, Andean Community and CARICOM).[1]

Although these core agreements were negotiated with little attempt to coordinate or synchronize liberalization schedules, the process of reducing tariffs has been, or will be, completed within the next few years for all—both in terms of the share of tariff lines and the share of trade covered (see Figure 7.1).

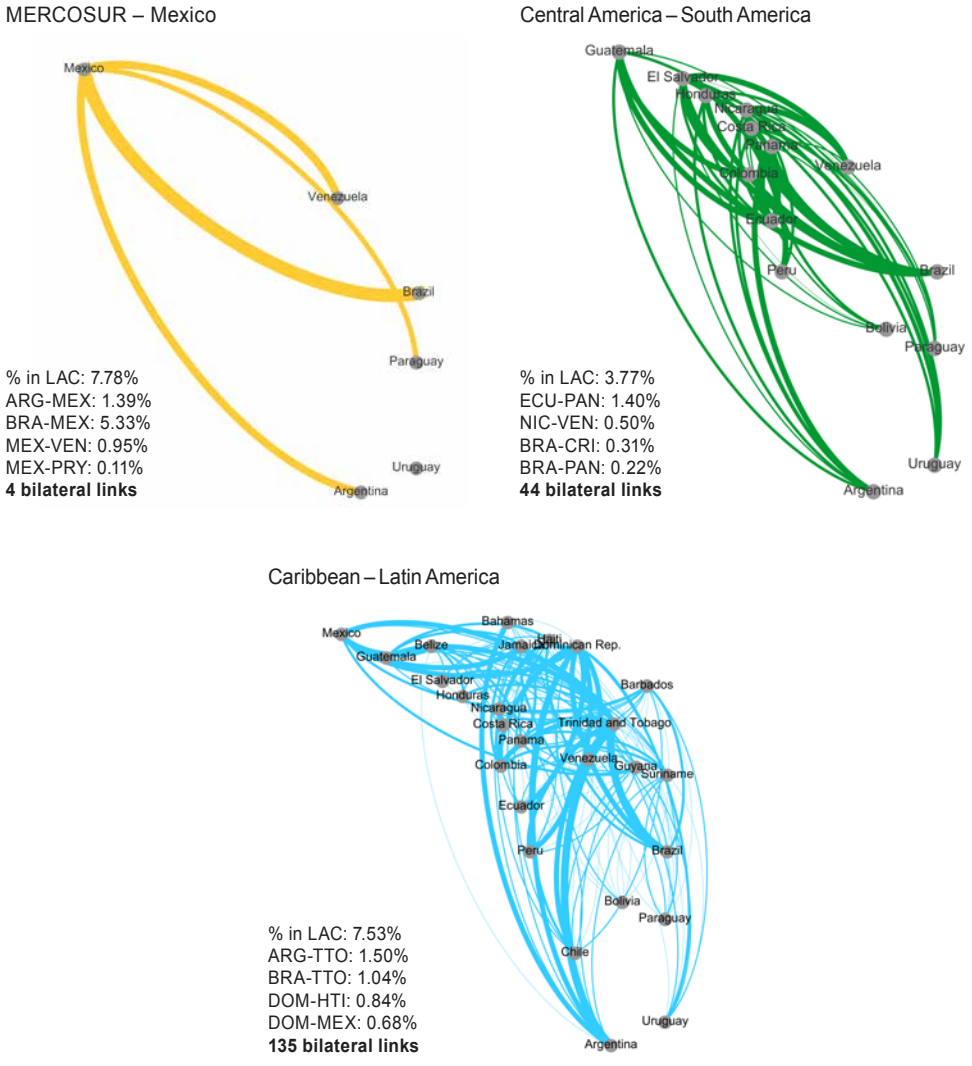
The extensive coverage of the agreements and their advanced stage of implementation may surprise some skeptics. Perhaps even more surprising is the implication that a fully-fledged LACFTA is actually a realistic proposition. At the same time, however, it is important not to underestimate the task ahead. There are at least two import gaps to fill. The first has to do with the gaps in the product coverage of the existing PTAs. Even though most PTAs will have reached their full-liberalization potential by 2020, tariffs on a number of products will not be completely eliminated. These exclusions cover only a small fraction of total trade, but they involve major exports for some of the countries involved. In the Andean and Central American subregions, they are concentrated in agricultural and labor-intensive goods, whereas in MERCOSUR, they mostly fall on machinery (much of

[1] The 80% figure comes from IDB estimates based on INTrade data and refers to 2014. NAFTA is excluded here as it includes the United States and Canada.

which is exempted from the common external tariff) and motor vehicles (which are the subject of tariff quotas cum balanced-trade requirements).

The other important gap is in the coverage of bilateral or subregional relationships. As mentioned earlier, just under 20% of regional trade (in value), corresponding to a total of 183 bilateral links, remains excluded from preferential treatment (see Figure 7.2). This

FIGURE 7.2 Missing Links in the Region's Integration Architecture (percentage of trade in value and number of bilateral relationships)



Source: IDB staff calculations.
Note: This figure shows Latin America and the Caribbean's bilateral trade relationships (links) that are not covered by PTAs. They are seen from the perspective of Mexico (yellow lines), Central America (green) and the Caribbean (blue). The thickness of the lines is proportional to the value of the trade involved.

20% might sound small, but it involves—inter alia—the two largest economies in the region—Brazil and Mexico—which suggests that the missing share would be much larger were it not for the existing trade barriers. In other words, while the majority of current actual trade may be under preferences, completing these missing links may generate more trade.

Filling these gaps will be an important step but they are not the only actions necessary to achieve free trade across the region. There is also the challenge of addressing the costs of multiple "Rules of Origin" (RoOs) adopted by the region's 33 PTAs. RoOs are specific provisions to determine the origin of goods and, therefore, their access to preferential tariff rates. They are the "necessary evil" of free-trade areas, used to prevent arbitrage between different tariffs among PTA members (see Box 7.1). They not only restrict firms' input choices, but also impose significant compliance and enforcement costs, particularly in the context of multiple PTAs. LACFTA would necessitate coordinating the multitude of RoOs. This alone would be a huge advance as it would reduce costs and promote regional value chains as firms would have more incentives to consider inputs from other countries.

The Road to the Promised Land

The large, but incomplete current network of PTAs is a powerful platform from which to launch an overhaul of regional integration. The ultimate goal would be to build a region-wide FTA, which would constitute a market worth about US$5 trillion or approximately 7% of global GDP, with sufficient critical mass to allow efficient firms to grow and develop value chains that can significantly boost productivity. But how should the region go about getting to this promised land?

Before discussing the options, it is important to be clear about the goal. If anything can be learned from more than a half-century of integration, it is that complex architecture like a customs union with supranational institutions should be avoided. Instead, the objective should be a "plain vanilla" free trade zone, with a focus on goods and services. Other chapters on intellectual property, labor, or the environment, which have become popular in some PTAs, may be considered further down the road, but they are not the main aim. Borrowing from the experience of the recently negotiated Pacific Alliance, they may be considered once the foundation of a regional FTA for goods and services is firmly in place. Likewise, the institutional architecture should be inter-governmental rather than supranational in nature, with a commission made up of ministers or senior-level officials overseeing the implementation and operation of the agreement and guiding its future evolution.

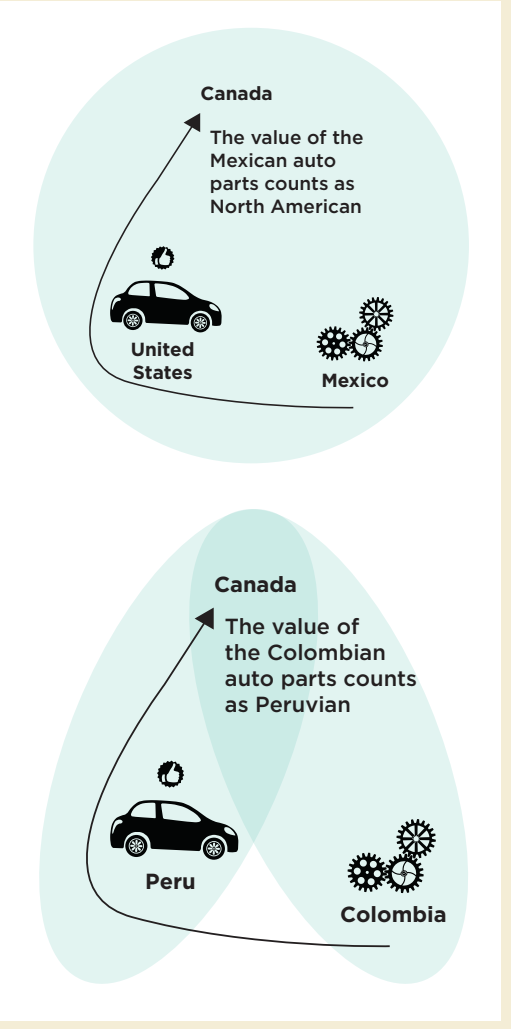
To be sure, there is more than one route to get to a free trade area and there would be benefits from traveling only part of the way—waiting for the right political conditions to complete the whole journey. Even the most modest of the initiatives can improve upon the status quo. That is the case, for instance, of promoting the convergence of existing PTAs by incorporating so-called "extended or diagonal cumulation" of their Rules of Origin

(RoOs) (see Box 7.1). What this boils down to is that inputs sourced, say, by a Brazilian firm from a member of the Pacific Alliance and later incorporated into a product exported to Argentina, would be treated as MERCOSUR inputs and, therefore, would not stop the exported product from enjoying full MERCOSUR preferences.

This initiative, in its simplest form, would take advantage of the already existing bilateral agreements between the members of the different blocs—such as the so-called

BOX 7.1 What are Rules of Origin (RoOs)?

The rules of origin in PTAs are the criteria that establish the degree to which materials or components imported from non-member countries can be incorporated into a product and have it still qualify for duty-free treatment under the agreement. These criteria are negotiated as part of the agreement, and can range from very restrictive (almost no imported materials allowed) to quite permissive (significant imported inputs allowed). Such rules are necessary to prevent goods from non-members entering through the lowest-tariff member and then moving freely to higher-tariff members, thus circumventing those tariffs. Regardless of the restrictiveness of the rules and their necessity, these types of controls can impede trade flows among a group of countries, even if they all share PTAs.



What is RoO cumulation?

One feature of almost all RoO is the ability to "cumulate" inputs from other members of the agreement. In this way, in NAFTA for example, auto parts from Mexico can be used in auto assembly in the United States, and not disqualify the resulting cars from preferential treatment going into Canada, because all three countries are NAFTA members, and so intermediate inputs from any one of them can be treated as "originating" in any of the others. Thus, within the agreement, supply chains can function freely and the resulting products can benefit from the agreement. However, the formation of more sophisticated supply chains across countries linked by different agreements can be limited by the fact that there is no cumulation *across agreements*.

(continued on next page)

BOX 7.1 What are Rules of Origin (RoOs)? *(continued)*

Can cumulation be extended to common third parties?

Generally speaking, PTAs do not provide for any cumulation of inputs from non-member countries (the so-called extended or diagonal cumulation), even if all members also have PTAs with a common third party. This is beginning to change, however, as mechanisms of this type have been introduced in different forms in some recent agreements, such as those of Canada with Colombia and Peru, and in a limited way in the agreements between Mercosur and the Andean countries.

In principle, then, one option to advance integration in Latin America and the Caribbean would be to promote the adoption of extended cumulation provisions in existing PTAs, thus enabling materials that would enter a given destination market duty-free if exported directly (under a PTA between the producer of the materials and that destination) to be treated as originating if used in further production in another of that destination country's PTA partners.

The disadvantage of this approach is that it requires exporters to understand and document compliance with the RoOs from many different PTAs, even ones to which their home country is not a party, and it requires customs to be able to administer this complex system as well. An alternative approach is to bring together all of the countries interested in deepening productive integration and negotiate a single new set of RoO under which all can cumulate from all.

Economic Complementarity Agreements (ACEs in the Spanish acronym) under ALADI's framework—and would not require the harmonization of the RoOs (i.e. that all the PTAs have the same set of RoOs).[2] Several examples of this practice already exist in the region, even though not all of them are operational. For instance, MERCOSUR countries' ACEs with members of the Andean Community include the possibility of extended cumulation, even though RoOs were not harmonized. In this case, a Colombian firm, for instance, can use Peru's inputs in its exports to Uruguay, as long as they meet the RoOs of the Colombia-Uruguay ACE. If the same firm wants to use the same input to export to Brazil, it will have to meet the requirements of the Brazil-Colombia ACE. Mexico's ACE with Uruguay, Chile's ACE with Ecuador and CAFTA's relationship with Mexico share similar arrangements, but with their own peculiarities.[3]

Such initiatives have the advantage of minimizing the likelihood of the political fatigue and backlash that has beset the traditional trade agenda. However, they still leave the potential gains of a more fundamental overhaul on the table. Exporters would still bear the costs of a multitude of RoOs—and the possibility of arbitrage between the different RoO regimes—and this step does not fill in the aforementioned gaps regarding product lines and bilateral links. Ideally, to meet the challenges of today's trade environment, the

[2] The Economic Complementarity Agreements (ACE in the Spanish acronym) are bilateral trade agreements signed between ALADI members under the framework established by article 4 of the 1980 Treaty of Montevideo. They usually do not cover all products and services. There are currently 112 ACEs in force. See http://www.aladi.org/sitioAladi/acuerdosInfoAcdosAP.htm.

[3] See earlier analysis in Estevadeordal and Suominen (2009) and more recently Cornejo (2016).

region should go further towards a new all-encompassing, region-wide agreement. To get there, the Pacific Alliance offers what has been, so far, the most successful road map.

A critical starting point would be a high-level political commitment, through for example a Heads of State and Presidents' Summit, with a declaration outlining the goals and establishing the necessary actions, mechanisms and timetable to achieve them.[4] These actions could take the following form:

- Action one would be to make sure that all aspiring members are integrated through bilateral or subregional PTAs. This move would not only help close the relationship gap, but would offer a strong platform upon which to build the LACFTA negotiations. Apart from sending a strong signal about the countries' commitment to region-wide integration, it would help to map the offers aspiring members are prepared to make and it would provide a fallback option just in case the LACFTA negotiations are not successful. If things go wrong, the region, at the very least, would have a broader network of relationships to boost trade.

  It is important to bear in mind that there is no need to wait until all the missing links are filled. All LACFTA needs to get the momentum going is a critical mass of countries, with enough gravitational pull. In this regard, Brazil and Mexico are in a unique position to make it happen. By negotiating an agreement, these two countries can eventually bring together Latin America and the Caribbean's largest subregional blocs—the Pacific Alliance and MERCOSUR—whose combined, US$4.3 trillion market (81% of Latin America and the Caribbean's GDP) is enough to generate meaningful gains and kick-start the remaining negotiations. Both countries have good reasons to move fast. Brazil largely missed out on the gains of the PTA boom of the last decade and needs to catch up, while Mexico needs to diversify its export markets.
- Action two would involve setting up the institutional framework to manage the negotiations and eventually LACFTA. As suggested earlier, the institutional structure should be minimal, borrowing not only from the Pacific Alliance but from other successful FTA negotiations such as NAFTA, CAFTA and more recently the TPP.[5] Most importantly, the process should have a high-level political endorsement by Heads of State and Presidents, who would meet regularly to provide strategic direction and monitoring of the results. A council of trade ministers and chief

[4] See, for example, the type of declaration made in the Pacific Alliance Framework Agreement. http://www.sice.oas.org/Trade/PAC_ALL/Framework_Agreement_Pacific_Alliance_s.pdf.

[5] The negotiations could also benefit from exiting subregional mechanisms and legal frameworks such as ALADI, SIECA and CARICOM, as well as from technical support from other regional organizations, for instance, the IDB has played an important role providing technical assistance to the Pacific Alliance as well as the FTAA negotiations under the Tripartite Committee (IDB-OAS-ECLAC).

negotiators, which would supervise the work of technical working groups, would be responsible for the day-to-day negotiating efforts. Once the agreement is signed, its governance would be based on a council of trade and or trade-related ministers, which would convene annually to evaluate the FTA performance and assess any major changes to the agreement and the accession of new members. The FTA would be a "living agreement," that is, open to new members and to address new issues, as the political will arises. As in other PTAs, late-comers would have to accept the already negotiated rules, providing an incentive to join earlier rather than later.

- Finally, action three would address the market access negotiations, covering tariff phase-outs, rules of origin and non-tariff barriers (sanitary and phytosanitary measures and technical standards), in addition to trade facilitation provisions. The tariff negotiations would be an exercise in consolidating the preferences across goods and trade partners from the existing LAC-LAC PTAs. The goal is to reach 100% preferences (zero tariffs) for all products and relationships, in a time frame short enough to make a difference in the current challenging environment—and avoid going through different political cycles—but not too short to risk avoidable adjustment costs. Exceptions should be used sparingly, even more so than suggested by the WTO rules, given the need for a credibility shock in the face of a history of abuse among most LAC-LAC PTAs.

Achieving this goal would probably involve product and country-pair specific phase-out schedules to accommodate sensitivities (Argentina, for instance, can offer a tariff phase-out in autos to Colombia that is faster than the one to Mexico). However, if LACFTA is going to prevail sooner rather than later, countries would be required to make offers that go beyond those of the existing PTAs (except, of course, when the tariffs are already zero). Otherwise, exporters would ignore the agreement until higher preferences set in. As in the Pacific Alliance and TPP initiatives, the existing LAC-LAC PTAs would not be revoked, such that all trade flows that currently enjoy preferences may continue uninterrupted.

The RoOs negotiation would run simultaneously alongside the tariff deliberations and would face similar challenges. Members would have to weave together more than 47 different sets of rules across products and partners into one single set of rules with full, extended cumulation. The goal is to allow exporters to source from the most competitive suppliers within the FTA and hopefully reduce trade diversion from inputs outside the region by negotiating rules that are more liberal than the ones in the existing LAC-LAC PTAs. As in the case of tariffs, a product and partner specific phase-in schedule could also be negotiated, subject to the same time frame.[6]

[6] See Estevadeordal and Talvi (2016) for a proposal at the hemispheric level.

Logistics and Trade Facilitation: Plumbing Is Important

To maximize its gains, LACFTA should also address head on the region's historical negligence of the so-called non-traditional trade costs, arising from poor logistics and costly customs procedures. As argued elsewhere, initiatives, for instance, to coordinate and finance transnational investments in transport infrastructure (think of a project such as the Agua Negra tunnel, which will drastically improve one of the major border crossings between Argentina and Chile); or to develop a harmonized and pro-competition regulatory framework (think of a regionwide open sky agreement to increase competition in air cargo services), could generate trade gains several orders of magnitude higher than pure tariff elimination.[7]

Likewise, the regional inter-operability of single-window systems, which enables trade and customs authorities to exchange and process information quickly, or the mutual recognition of authorized economic operator programs—whereby customs administrations work with large scale traders to secure the supply chain while simplifying customs processes—can also have a significant impact on trade, particularly on the development of regional value chains.[8]

These are issues that have both "hardware" (e.g. physical infrastructure) and software (e.g. rules and regulations) components and the latter are particularly attractive because they usually require limited financial resources—a key advantage in times of fiscal strains. They can also be addressed outside the FTA framework and, as such, could be counted as part of the "low-ambition" integration agenda mentioned earlier. However, this more recent wave of PTAs has shown that bringing them to the core of the agreement, and establishing a series of enforceable commitments, can be an effective way of addressing historical and elusive deficits in these areas. For instance, unlike previous LAC-LAC agreements, where infrastructure and trade facilitation have played a very marginal role, the Pacific Alliance has an entire chapter dedicated to issues of trade facilitation and is also in the process of setting up a fund to finance infrastructure projects.[9] Equally important, the internalization of logistic and trade facilitation issues was accompanied by the incorporation of the finance ministers into the agreement's decision making process: a key step to unlock the logistic and trade facilitation agenda since it involves fiscal and budgetary considerations.[10]

[7] See Mesquita Moreira, Volpe, and Blyde (2008) and Mesquita Moreira (2013). For details on the Agua Negra project see http://www19.iadb.org/intal/conexionintal/2016/09/27/tunel-binacional-agua-negra-un-programa-estrategico/?lang=en.

[8] See Volpe Martincus (2016) and Blyde (2014). There are important efforts underway at the subregional level, in addition to the multilateral TFA Agreement, involving the PA, Central America, and MERCOSUR. See Mesquita Moreira (forthcoming) for details.

[9] See Chapter 5 of the Pacific Alliance Additional Protocol of the Framework Agreement. http://www.sice.oas.org/Trade/PAC_ALL/Index_PDF_s.asp.

[10] The Pacific Alliance Council of Finance Ministers was established in 2015 to supervise five working groups to promote infrastructure investment, financial integration, export of services, catastrophic risk management and fiscal transparency and management.

Bringing these issues to the LACFTA framework could also have the additional benefit of coordinating and harmonizing the standards of a series of subregional initiatives both in infrastructure (e.g. Initiative for the Integration of the Regional Infrastructure of South America—IIRSA—and the Mesoamerica Integration and Development Project) and trade facilitation (inter-operability of single-window systems and authorized economic operator programs mostly carried out inside the existing PTAs).[11]

Estimating the Gains

What would be the gains of moving towards a region-wide FTA, which would eventually unify rules of origin and close the product and relationship gaps?

A first approximation of the gains of RoO harmonization can be estimated from existing experiences in the region. For instance, in 2011, Mexico signed a new joint PTA with Costa Rica, Nicaragua, El Salvador, Guatemala, and Honduras, which replaced previous bilateral agreements that did not allow for full, extended cumulation. An econometric exercise examining the changes in the sourcing patterns of Costa Rican exporters to Mexico suggests that this new PTA doubled the percentage of inputs sourced from Guatemala, Honduras, Nicaragua, and El Salvador.[12]

A more general exercise is to consider the impact of RoO unification and cumulation on regional value chains using a gravity model, but based on the flows of value added rather than goods between countries. More precisely, the variable of interest is the value added from, say, Argentina embodied in Uruguay's exports.[13] This measurement provides a more realistic measure of the supply chains between these two countries. This variable is likely to be influenced, not only by existence of a PTA between these countries (e.g. MERCOSUR), but also by their participation in a PTA with the countries to which Uruguay is exporting.

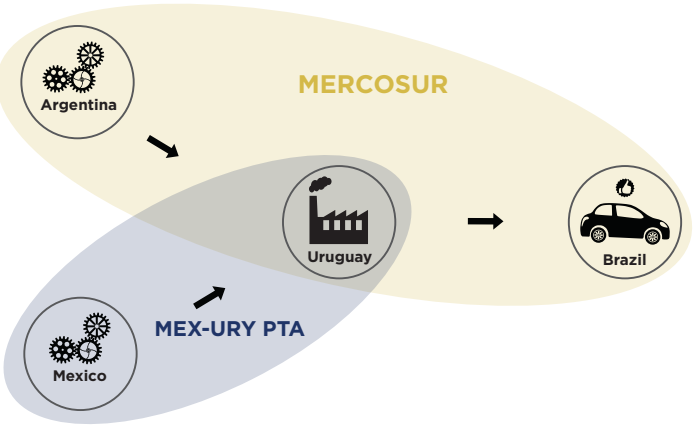
To better understand this point, consider the hypothetical example shown in Figure 7.3. Uruguay, Argentina, and Brazil are all members of MERCOSUR, sharing the same set of RoOs, which allow for extended cumulation, while Uruguay and Mexico share another PTA (as they do) with a different set of RoOs, without the option of cumulation to other MERCOSUR members. A Uruguayan firm can import parts either from Argentina

[11] For details see http://www.iirsa.org/ and http://www.proyectomesoamerica.org/.

[12] The exercise relies on comparing the sourcing patterns of Costa Rican firms exporting to Mexico (the treatment) with those exporting to other countries (the control) in a difference-in-difference framework. The results indicate that the inputs that are sourced from El Salvador, Guatemala, Honduras or Nicaragua, and that can be used in the production of the exports that go to Mexico increased by around 3 percentage points. Since only 3% of the inputs that can be used in the exports to Mexico are originally sourced from El Salvador, Guatemala, Honduras or Nicaragua, the effect implies a doubling of the percentage of inputs sourced from any of these countries. See Mesquita Moreira (forthcoming) for details.

[13] That is, the value of inputs imported from Argentina after subtracting the value of any component used in the production of these inputs coming from outside Argentina.

FIGURE 7.3 Rules of Origin Cumulation and Trade in Inputs



or Mexico to produce cars without paying duties because of the existing PTAs. But if the firm wants to export to Brazil, it would rather import parts from Argentina because the possibility of cumulation would allow its cars to still enjoy MERCOSUR tariff preferences. That would not happen if the parts were coming from Mexico, which does not have a PTA with Brazil. So, the fact Argentina has a PTA, with extended RoO cumulation, with the market the Uruguayan firms want to export to, provides an additional boost to their trade in intermediate goods and value-added. Estimating a model of the flows of value added can then capture not only the traditional impact of a regional PTA, but also the extra gain of unification and cumulation of RoOs across all countries in the region.[14]

The results from such an exercise suggest that, for the average country, the possibility of extended RoO cumulation for third markets could double the impact of a regional PTA on the exports of intermediate goods that are subsequently used as inputs

[14] The estimation of this model is based on a gravity equation in which the dependent variable is the foreign value added from country j embodied in the exports of country *i* in sector s at time *t*. To assess the impact of trade agreements on the formation of global value chains, we employ an econometric model that examines the extent to which the two countries are integrated with each other, and the extent to which the country using the foreign inputs is integrated with other countries. The estimated gravity equation has the following form.

$$FVA_{ijst} = \beta_1 PTA_{ijt} + \beta_2 S_{ijst} + D_{ij} + D_{it} + D_{jt} + D_s + \varepsilon_{ijst}$$

where FVA_{ijst} is the (log of) foreign value added from country j embodied in the exports of country *i* in sector s at time *t* (which consists of three years, 2001, 2004 and 2007); PTA_{ijt} is a dummy variable that is equal to 1 if countries *i* and *j* share a trade agreement at time t and zero otherwise; S_{ijst} is the share of exports of country *i* in sector *s* at time *t* that goes to trade agreements in which country *i* participates but not country *j* (we discuss this variable more extensively below); D_{ij} is a dummy variable that captures all the time-invariant geographical variables. The variables D_{it} and D_{jt} capture time-variant characteristics of countries *i* and *j* respectively, like economic size or population; D_s is a sector fixed effect that captures sector characteristics and ε_{ijst} is the error term. The standard errors of the regressions are clustered at the *ijt* level. See Mesquita Moreira (forthcoming) for details.

TABLE 7.1 The PTA-RoO Impact on Regional Value-Added Embodied in Intraregional Exports (%)

		Exporter		
		Central America & Mexico	Andean Region	Southern Cone
Importer	Central America & Mexico	5.4%	12.0%	11.7%
	Andean Region	11.2%	2.0%	3.7%
	Southern Cone	15.1%	7.0%	2.0%

Source: IDB-INT calculations.
Note: Central America and Mexico includes: Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, and Panama. Andean includes Bolivia, Colombia, Ecuador, and Peru. Southern Cone includes Argentina, Brazil, Chile, Paraguay, and Uruguay.

in the exports of other Latin American and Caribbean countries. The combined "PTA-RoOs effect" would boost these exports by 9% on average. Table 7.1 summarizes the combined effects by subregions. Note that the smallest numbers in the table are along the diagonal because most of the countries in each subregion already have PTAs and RoOs that allow for cumulation. Therefore, the proposed region-wide FTA adds less in those cases. The potential impacts are much larger across subregions where there is less integration today.

These figures provide one estimate of the immediate (partial equilibrium) LACFTA gains from a particular type of trade: trade in intermediate inputs, which is key for the development of value chains. They do not, however, capture the agreement's impact on overall trade, including the part that arises from its general equilibrium effects throughout the economy. For that, a more structural model is required such as a general computable equilibrium (CGE) model, which is a standard tool to address these more complex issues.

The simulations detail how exports of goods would change with the full implementation of LACFTA (including RoO cumulation) in three stylized scenarios. The first scenario—status quo—assumes that the world resumes its march towards mega agreements with the full implementation of TPP and TTIP.[15] The second assumes that China concludes a PTA with partners in the Pacific region—the Regional Comprehensive Economic Partnership (RCEP).[16] The third and final scenario, labeled "global trade frictions," mimics an environment of higher trade barriers, and simulates the impacts of a 20-percentage point increase in global bilateral tariffs.[17]

[15] The TPP was signed in 2016 between Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, the United States (which subsequently withdrew on January 23, 2017) and Vietnam. The TTIP is an agreement solely between the United States and Europe.

[16] The RCEP is being negotiated between the 10 ASEAN (Association of South-East Asian Nations) countries plus Australia, China, India, Japan, New Zealand, and South Korea.

[17] See, for instance, Hufbauer and Lu (2017).

TABLE 7.2 General Equilibrium Impact of LACFTA* on Regional Exports under Different Trade Scenarios (%)

	Trade Scenarios					
	Status quo		China-led		Global Frictions	
Country/sub-region	Baseline	LACFTA	Baseline	LACFTA	Baseline	LACFTA
Latin America	0.00	0.65	–0.03	0.62	–13.37	–8.12
Mexico	0.16	0.16	0.05	0.15	–15.25	–14.05
Cenral America & the Dominican Republic	–0.36	–0.36	0.03	1.96	–13.65	–4.91
Andean Region	0.00	0.00	–0.05	1.67	–10.98	–2.86
Chile	0.04	0.04	0.04	0.22	–6.69	–2.80
MERCOSUR	–0.07	–0.07	–0.13	0.25	–14.53	–7.67

Source: IDB Staff estimates.
* The Caribbean is not Included. See Appendix E.

Strikingly, the LACFTA "strategy" is the best one for the region in all three scenarios (see Table 7.2 for detailed results). Under the status quo, LACFTA would boost exports for the region as a whole and in all subregions considered. Under the alternative scenarios, if no action is taken, exports from the region would fall. LACFTA would not only prevent the region's exports from falling in the China-led RCEP scenario, but exports would actually rise. In the final scenario, labeled a "trade war," exports would fall by more than 13% but with LACFTA, while there would still be a drop, it would be much less (around 40% less). This "cushioning" effect is of the same order of magnitude for all countries and subregions, except for Mexico due to its higher dependency on the U.S. market.

As usual, several caveats are in order for this type of model. The model is likely to underestimate the impacts of PTAs as it does not capture the additional benefits due to "dynamic productivity gains" arising from greater competition, knowledge diffusion, and innovation. The simulations solely reflect changes in relative prices and in resource allocation.[18] The results, therefore, should be considered as a lower-bound of the potential gains and are more illustrative of the variation of impact across different scenarios than of their precise quantitative magnitude.

Summing Up

The global trade environment has grown more challenging and uncertain. The stakes involved in finding an adequate policy response have grown, particularly given the key role trade has played in the region's growth over the last 15 years. However, the region has

[18] For details, see the technical appendix and Giordano, Watanuki, and Gavagnin (2013).

a policy option that offers tangible gains in any scenario. Moving towards LACFTA and unifying RoOs and filling product and relationship gaps along the way is a low-hanging fruit. It has the potential to boost scale, efficiency, productivity, exports, and growth with likely modest economic and political costs. Since more the 80% of intraregional trade is already under preferences, most of the usually painful adjustment costs have already been paid. In addition, the initiative is in line with what governments across the region and across the entire political spectrum continue to profess: a commitment to deeper regional integration.

While this may seem a daunting proposition at first and reminiscent of the failed grandiose visions of the past, the implementation of LACFTA is easier than conventional wisdom may suggest. The existing network of PTAs provides a very useful platform for expansion and the implementation of a regional FTA can be flexible enough to accommodate political constraints. The status quo of a mosaic of balkanized trade agreements does not adequately serve the historical objectives of making the region more competitive. In the current deteriorating trade environment, it may be time to be bold.

CHAPTER 8

Policy Suggestions

Latin America and the Caribbean faces uncertain times. While the baseline is for stronger global growth and in particular a stronger U.S. economy, potential risks include rising global trade frictions and higher U.S. interest rates, which are likely to affect financing conditions for the region. Changes in global trading relations could have a significant direct impact on Mexico, Central America, and the Caribbean and if China and Europe are affected, then South America may feel the repercussions, especially through lower commodity prices. Moreover, six economies in the region were in recession in 2016 and it is particularly challenging to forecast growth rates when current growth is negative. A strong recovery in these nations, and particularly in Argentina and Brazil, would have additional benefits for the region as a whole.

The fiscal situation is very heterogenous. Primary balances have deteriorated for commodity exporters that have seen revenues fall more than expenditures but they have improved in a number of countries. Fiscal revenues continue to be vulnerable to commodity price volatility in commodity dependent countries that may wish to seek additional mechanisms to manage that risk.

One or two countries are pursuing a policy of pro-cyclical expansion; as they are growing strongly, they would be advised to reduce structural fiscal deficits to build fiscal space. One country with relatively high debts is pursuing counter-cyclical adjustment and while growth is considered above potential, it is attempting to bring debt levels down. A few countries saved sufficiently during better times and are in the enviable position of being able to pursue counter-cyclical expansion. As growth comes back to potential, these countries may wish to reduce structural fiscal deficits. Several countries are being forced into pro-cyclical adjustment; thus, even though output is below potential they are seeking fiscal consolidation.

The design of fiscal adjustment programs, especially for these latter cases, is critically important to avoid a low growth, tight fiscal policy type trap. Notably, fiscal plans have improved in the sense that they now appear consistent with a set of principles that will increase the likelihood of their success. Countries with low tax burdens appear to be focusing more on increasing revenues while those with higher taxes are focused on cutting expenditures with a greater emphasis on maintaining capital expenditures that tend to have higher growth multipliers.

Some countries have also attempted more fundamental tax reforms. Chile, Colombia, Jamaica, and Mexico to name but four cases have pursued reforms that have in general widened tax bases, reduced distortions, and significantly improved revenue collection while enhancing efficiency. Brazil has recently passed a constitutional amendment to cap real expenditures and is now seeking to pass pension and social security reforms. The region may wish to build on these efforts as tax and expenditure reforms, while often complex and sometimes politically challenging, may bring greater rewards then simply altering individual policies or tax rates. Policies to improve public spending to improve skills and to improve the efficiency of public spending more widely will be discussed in some detail in Cristia et al. (forthcoming) and Izquierdo and Vuletin (forthcoming), respectively. In some cases, such reforms may be necessary to turn around difficult starting positions.

In recent months, inflation has fallen in many countries and for most is at relatively low levels independent of the monetary regime in place. In those countries with exchange rate flexibility, monetary policy remains finely balanced. Inflation and output gaps for inflation targeters should continue to narrow unless new negative shocks appear, in which case inflation may rise and output may be hit again. Historical monetary policy rules appear to yield reasonable reactions to such new shocks. Simulations suggest that a less restrictive policy (i.e., one more sensitive to the decline in output) may result in significantly higher inflation with rather little benefit in terms of higher output. The private sector would react to the less restrictive policy by increasing demand and pushing up inflation, which may then cause the central bank to maintain higher interest rates—possibly even higher than with historical monetary policy rules.

While it has been argued that current monetary policy is pro-cyclical, as interest rates have risen while output has remained below potential, this argument implies no role for the exchange rate. And yet exchange rates have reacted strongly to negative shocks. Competition-adjusted real exchange rates have not depreciated in all countries, but there is a clear link between such depreciations where they have occurred and better export performance. Moreover, there is a relation between exchange rate movements and import penetration. If real exchange rates depreciate, then domestic supply is boosted, taking the place of some imported goods. The monetary stance, taking into account exchange rate movements, may then be more counter-cyclical than just interest rate policy. Thus, there is a strong argument to maintain the credibility of inflation targets, which in turn should allow for greater exchange rate flexibility.

Many countries faced a difficult period of external adjustment given strong external shocks. Estimates suggest that while precise mechanisms vary, considerable adjustment has already taken place in many countries and that very few need to make major external adjustments in the coming years. Thus, conditions are now much improved for higher growth rates to resume.

This report has also analyzed in some detail the history of integration efforts and how trade policy in the region should best respond to the current global trade environment.

Latin America and the Caribbean has considerable experience with trade agreements both among countries in the region (such as the CACM, CARICOM, the Andean Community and MERCOSUR) and with countries in other parts of the world (such as NAFTA and CAFTA-DR and agreements with the EU and Asian countries). Both types of agreements have boosted trade for members of the region. However, only the latter group appears to have boosted exports from countries of the region to the rest of the world. The smaller regional Preferential Trade Agreements (PTAs) have failed to provide the scale to create sufficiently strong and productive industries that are then able to export greater quantities outside of the region. The smaller the PTA and the more similar its members, the less likely these types of benefits will materialize and the more likely there will be greater trade diversion. Moreover, the tightly knotted spaghetti bowl of agreements with different rates of preferences and different rules of origin makes it very difficult indeed to reap the full benefits of the 33 different existing agreements.

However, some 80% of the trade that does exist in the region today is already under preferences. Policymakers have been willing to put in place these agreements and paid whatever costs were necessary to do so, yet the region has not reaped the full benefit of that work. Even with the existing agreements, harmonization of the different rules and allowing for what is called the cumulation of rules of origin, and improving trade logistics and facilitation would all produce tangible gains. This would boost trade and increase the gains from the existing PTAs. In addition, filling in the missing links (signing agreements between countries and trade blocs within the region where they do not exist today) would provide further gains, particularly if this included the larger countries such as a new trade agreement between Mexico and Brazil (or MERCOSUR). The results would then essentially be a free trade area of the entire region. The final action would be to transform this new regional trade architecture into a fully-fledged LACFTA. This report suggests four concrete actions to improve integration in the region.

One of the attractive features of this proposal is that it requires virtually no budget outlays. At a time when fiscal positions are strained, few proposals offer the potential to boost growth at such little financial cost. Moreover, learning the lessons of some negative experiences in the past and the more recent positive experience with the Pacific Alliance, this integration plan is feasible without contemplating new institutions, over-arching structures,

Actions to Improve Regional Integration

1. Allow extended cumulation of the rules of origin between existing trade agreements.
2. Negotiate new trade agreements, filling in the missing links within the region, allowing extended cumulation of rules of origin with other LAC PTAs.
3. Improve trade logistics and facilitation.
4. Consistent with current PTA's, consolidate existing preferences and rules of origin into a regionwide LAC-FTA.

or all-encompassing objectives. Indeed, it would likely be better to achieve the first objective of integration in trade and services before contemplating opening discussions on other topics such as intellectual property, environmental safeguards, and labor markets. These important topics could be incorporated at a later stage. Moreover, the first three actions could be taken independently of each other as countries desire. Countries could choose the speed and depth of their involvement. However, if a sufficient critical mass of countries joined in the others would likely wish to follow and avoid being left behind. In this sense these actions are self-reinforcing and incentive compatible.

While 80% of trade is under preferences, intraregional trade is lower than it could be. Following the above actions would provide a boost to intra-regional trade, and create a market of almost $5 trillion, and hence, truly provide scale to local industries. Moreover, part of the problem with the current pattern of small PTAs with many different rules, is that it stifles trade of intermediate goods, thereby preventing the creation of value chains associated with higher productivity. The above actions would allow domestic firms to grow and reap the benefits of scale and allow for regional value chains to be created which would in turn allow the region to truly compete on a global stage.

The arguments in favor of deeper integration are valid independent of how the global trade environment may develop. However, they become even more important if global trade frictions start to grow. If the rest of the world remains open and willing to sign trade agreements with Latin America and the Caribbean, then integration at home will help. However, if the world becomes more protectionist and reticent to entering into agreements, then deepening integration in the region has an even larger payoff. It may not provide full protection against the negative impacts of increased global trade frictions but can serve as an important insurance device.

A recurring question is, how can Latin America and the Caribbean, a group of small and open economies constantly buffeted by global economic shocks, find a reliable and robust route to sustainable growth? This report argues that adopting a set of macroeconomic policies, including sensible fiscal and monetary policies, to maintain economic stability, and taking concrete actions to deepen and improve the way in which countries trade within the region, may provide a cost-effective answer.

APPENDIX A

A Model for Inflation Targeting Countries

A New Keynesian dynamic stochastic general equilibrium (DSGE) model was developed to analyze the impact of external and internal shocks on a set of Latin American inflation targeters including Brazil, Chile, Colombia, Mexico, and Peru. The model is an adaptation of a small, open-economy version of Christiano, Eichenbaum, and Evans (2005) but with several additional features. For example, the model includes rules for fiscal policy, the (partial) pass-through of changes in the nominal exchange rate to prices, a role for imported inputs in the production of domestic goods and a commodity producing sector (commodity price shocks are considered as income shocks and affect the resource constraint of the economy as in Fernández, González, and Rodríguez 2015). The model is calibrated and estimated for the five economies using the information available from 2000 (quarter 1) to 2016 (quarter 3). The conditional and unconditional forecasting exercises presented in Chapter 3 employed the estimated version of this model.

The Model

The model is made up of several agents, including households, firms, government, the central bank and the rest of the world.[1] Households determine the supply of labor n_t and capital k_t. Labor and capital are inputs in the production of domestic goods. Households also determine the demand for goods for consumption c_t and investment x_t. They demand bonds issued by the government b_t and debt from the rest of the world b_t^*. In addition, they receive income from profits obtained by firms (ξ_t^f , ξ_t^h), production of commodity goods (y_t^{Co}) and remittances from abroad (rem_t^*). Finally, they pay taxes on income at a rate τ and in a lump sum fashion tr_t^g. Households maximize the expected value of their inter-temporal utility, given by the following functional form.

[1] The model includes several exogenous variables and all of them are assumed to follow first order auto-regressive processes. These include preferences shocks z_t^c, exogenous growth in labor efficiency $\frac{A_t}{A_{t-1}} = \varsigma_t$, investment efficiency shocks z_t^x, risk free interest rate i_t^{RF}, foreign risk perception $z_t^{i^*}$, productivity shocks z_t^y, external prices of imported raw materials $p_t^{rm^*}$, external price of imported goods $p_t^{f^*}$, external price of commodities p_t^{Co}, production of commodities y_t^{Co}, external demand c_t^*, remittances rem_t^* and the rate of external inflation π_t^*.

$$\max U = E_0 \sum_{t=0}^{\infty} \beta^t \left(\frac{A_t^{1-\sigma} z_t^c}{1-\sigma} \left(c_t - \frac{X (n_t)^{1+\gamma}}{1+\gamma} \right)^{1-\sigma} \right)$$

Subject to a budget constraint,

$$\begin{aligned} c_t + p_t^x x_t + p_t^h tr_t^g + \\ q_t \left(\frac{i_{t-1}^*}{\pi_t^*} \right) \frac{b_{t-1}^*}{\varsigma_t} + b_t \end{aligned} = \begin{aligned} & (1-\tau) \left(w_t n_t + r_t^k \frac{k_{t-1}}{\varsigma_t} + \xi_t^f + \xi_t^h + q_t p_t^{Co} y_t^{Co} \right) \\ & + q_t b_t^* + q_t rem_t^* + \left(\frac{i_{t-1}}{\pi_t^c} \right) \frac{b_{t-1}}{\varsigma_t} \end{aligned} \quad (1)$$

and subject to a capital accumulation technology affected by investment adjustment costs $\Psi(x_t)$

$$k_t = z_t^x x_t \left(1 - \Psi\left(x_t\right)\right) + \left(1-\delta\right) \frac{k_{t-1}}{\varsigma_t} \quad (2)$$

The optimality conditions of this problem imply that the labor supply depends exclusively on the real wage w_t, the consumption level depends on the expected value of the real *ex ante* interest rate $\left(i_t - E_t\left(\pi_{t+1}^c\right)\right)$ and the demand for investment goods depends on the gap between the expected return on capital r_t^k and the real interest rate. The demand for foreign debt depends on the real interest rate that the economy faces in international markets $\left(i_t^* - E_t\left(\pi_{t+1}^*\right)\right)$ and expectations of real devaluation E_t (q_{t+1} – q_t). The nominal interest rate faced by the economy depends on the ratio of external debt to GDP, i.e.

$$i_t^* = i_t^{RF} z_t^{i^*} + \omega_{b^*} \left(\left(\frac{q_t b_t^*}{gdp_t} - \bar{b}^* \right) - 1 \right) \quad (3)$$

There are two types of firms in the model. The first type produce domestic goods y_t^h using three production inputs: labor n_t, capital k_{t-1}, and imported raw materials rm_t. These firms produce differentiated goods and determine the price at which they sell their variety p_t^h.

$$y_t^h = z_t^y \left(\frac{k_{t-1}}{\varsigma_t} \right)^{\alpha} \left(rm_t \right)^{\alpha^{rm}} \left(n_t \right)^{1-\alpha-\alpha^{rm}} \quad (4)$$

The real marginal cost of production, ψ_t, of these firms depends on the price of the factors of production. That is, it depends on the real wage w_t, the return on capital r_t^k, and the price of imported raw materials denominated in local currency $q_t p_t^{rm^*}$,

$$\psi_t = \frac{1}{z_t^y} \left(\frac{r_t^k}{\alpha} \right)^{\alpha} \left(\frac{q_t p_t^{rm^*}}{\alpha^{rm}} \right)^{\alpha^{rm}} \left(\frac{w_t}{1-\alpha-\alpha^{rm}} \right)^{1-\alpha-\alpha^{rm}}$$

The second type of firm buys a homogenous good produced abroad, differentiates it to produce a good for local market y_t^f and sells it at a price p_t^f. These firms are price takers

in international markets, they buy the imported good at a price $p_t^{f^*}$. Both firms operate in an environment of monopolistic competition and choose a price such that their profits are maximized. They are subject to nominal rigidities in prices a la Rotemberg (1982). These nominal rigidities generate the non-neutrality of monetary policy and produce the imperfect pass through of the exchange rate on prices.

The government is included in the model as an additional agent that demands domestic goods g_t and finances this expense through debt issuance and tax collection. The government budget constraint is

$$\tau\left(w_t n_t + r_t^k \frac{k_{t-1}}{\varsigma_t} + \xi_t^f + \xi_t^h + q_t p_t^{Co} y_t^{Co}\right) + p_t^h tr_t^g + b_t = p_t^h g_t + \left(\frac{i_{t-1}}{\pi_t^c}\right)\frac{b_{t-1}}{\varsigma_t} \tag{5}$$

The government always honors its debt, which is ensured by a commitment to a fiscal rule. This rule forces the government to adjust its level of spending so that the level of government debt stabilizes over the long term.

$$g_t = \rho_g\left(g_{t-1}\right) + \left(1-\rho_g\right)\left(v_y\left(gdp_t - \overline{gdp}\right) - v_b\left(\frac{b_t}{gdp_t} - \frac{\overline{b}}{gdp}\right)\right) + \epsilon_t^g \tag{6}$$

In the fiscal rule, ρ_g represents the persistence of public spending, v_y represents the pro-cyclicality of public spending and v_b determines the response of expenditure to ensure the stability of public debt. Finally, ϵ_t^g are exogenous shocks to the government spending. The central bank follows an inflation targeting framework. To ensure the convergence of inflation to its long-term target, it uses the nominal interest rate as the policy instrument.

$$i_t = \rho_i\left(i_{t-1}\right) + \left(1-\rho_i\right)\left(\varphi_\pi\left(\pi_t^c - \overline{\pi}\right) + \varphi_y\left(gdp_t - \overline{gdp}\right)\right) + \epsilon_t^{z^i} \tag{7}$$

In the central bank rule, ρ_i represents the smoothing coefficient of interest rates, φ_π represents the policy response to deviation of total inflation π_t^c from the inflation target $\overline{\pi}$ and φ_y determines the response of interest rates to deviations on output from the long run value. Similar to the fiscal rule, $\epsilon_t^{z^i}$ are exogenous shocks to the monetary policy. Household consumption includes domestically produced goods and imported goods; therefore, the consumption price is

$$P_t^c = \left(\left(1-\alpha_c\right)\left(P_{t-1}^h\right)^{1-\eta_c} + \alpha_c\left(P_{t-1}^f\right)^{1-\eta_c}\right)^{\frac{1}{1-\eta_c}} \tag{8}$$

which implies that total inflation depends on home inflation π_t^h and imported inflation π_t^f which in turn depends on the nominal devaluation.

$$\pi_t^c = \left(\left(1-\alpha_c\right)\left(p_{t-1}^h \pi_t^h\right)^{1-\eta_c} + \alpha_c\left(p_{t-1}^f \pi_t^f\right)^{1-\eta_c}\right)^{\frac{1}{1-\eta_c}} \tag{9}$$

The assumption of a small and open economy implies that the country cannot affect external variables. Thus, all external variables are assumed exogenous and are determined independently of the analyzed economy. In this sense, the country is a price taker in the goods and commodities markets. Similarly, external demand c_t^*, the risk-free interest rate i_t^{RF}, the flow of remittances rem_t^* and the rate of external inflation π_t^* are given for the economy.

Calibration and Estimation

The model is calibrated and estimated for five economies: Brazil, Chile, Colombia, Mexico, and Peru. For calibration, some of the parameters of the model are adjusted in such a way that the long-term relationships implied by the model are similar to those observed in the data for each of the countries. Table A1.1 compares the relationships obtained by the model with the averages obtained from data.

For the estimation, Bayesian techniques are used. Fifteen time series are used for each country for the period 2000 quarter 1 to 2016 quarter 3 and most data is taken from national accounts and other national sources. Commodity prices are proxied by the commodity index used in Fernández, González, and Rodríguez (2015). Bond spreads are the (J.P. Morgan) EMBI series; the US 10-year bond is used as the external interest rate. With these time series, the persistence and the standard deviation of the exogenous processes and many of the parameters of the model are estimated. The parameters that govern price rigidities and adjustment costs, the elasticity of inter-temporal substitution, labor supply, and external demand are also all estimated, as are the coefficients of the fiscal policy and monetary policy rules.

TABLE A1.1 Model Results Compared to the Data (2000 q1 to 2016 q3)

	Brazil		Chile		Colombia		Mexico		Peru	
	Model	Data	Model	Data	Model	Data	Model	Data	Model	Data
Nominal Variables										
Interest rate	9.4%	14.1%	5.1%	4.0%	5.6%	4.5%	5.8%	4.6%	5.5%	3.8%
Inflation target	4.5%	6.8%	3.0%	3.4%	3.0%	3.2%	3.0%	4.4%	2.0%	2.8%
Nominal Devaluation	2.0%	3.7%	0.5%	1.4%	0.5%	2.5%	0.5%	4.0%	–0.5%	–0.3%
Spread	4.2%	4.2%	1.5%	1.5%	2.0%	3.2%	2.2%	2.2%	2.9%	2.9%
Fiscal Variables										
Fiscal Deficit/GDP	–3.8%	–3.8%	–0.7%	–0.7%	–2.6%	–2.6%	–2.7%	–2.7%	–0.4%	0.4%
Government Spending/GDP	38.5%	25.2%	20.7%	20.7%	17.6%	17.6%	23.1%	23.1%	20.0%	20.0%
National Account Variables										
Consumption total/ GDP	81.3%	80.7%	73.7%	73.1%	81.9%	81.5%	80.9%	75.8%	76.5%	76.5%
Investment/GDP	18.7%	18.7%	21.8%	21.8%	21.3%	21.3%	20.6%	20.6%	21.7%	21.7%
Exports/GDP	12.3%	12.9%	35.4%	36.3%	16.3%	16.5%	27.7%	28.1%	24.7%	24.0%
Imports/GDP	12.3%	12.9%	30.9%	31.8%	19.5%	19.7%	29.2%	29.6%	22.9%	22.2%
Trade Balance/GDP	0.0%	0.0%	4.5%	4.5%	–3.2%	–3.2%	–1.5%	–1.5%	1.8%	1.8%

APPENDIX B

Commodity Prices and Fiscal Impacts

An important driver of the economic slowdown and fiscal deterioration in the region has been the substantial fall in commodity prices since 2011. More recently, prices have recovered somewhat but the outlook remains uncertain. A global trade shock would likely hit commodity prices again, especially if it impacted China. A detailed project by project database is employed to analyze the impact of mineral commodity prices on both select regions and national economies.[1] The results suggest a relatively low level of new investment going forward with fiscal revenues highly sensitive to commodity prices. Policies to manage the inherent risks are considered.

Price Scenarios and Preliminary Statistics

Commodity prices have fallen sharply from the peaks reached in 2011, dramatically lowering revenue flows into resource rich regions and affecting fiscal revenues stemming from non-renewable resources (see Figure B1).

A minerals commodity index fell by around 40% between 2011 and 2015.[2] However, different commodities demonstrated differential trends. For example, bulk goods, such as iron ore and coal suffered particularly heavily, falling by 61% and 51% respectively between 2011 and 2015. However, other commodities faired considerably better with zinc prices falling by only 6% and bauxite values increasing by a similar proportion over the period. Weaker demand growth in China has been a notable contributor to the collapse in prices. Annualized demand growth for copper, for example, fell from 12.4% in 2010 to 3.8% in 2015, reflecting the slowdown in Chinese investment expenditure.

The outlook for different minerals is varied, reflecting gaps between existing supply and predicted demand and stock levels. For example, shortages in the supply of smelting capacity could support zinc prices while stock overhangs may curtail any recovery

[1] This database and the estimations therefrom were all put together by the Commodity Research Unit (CRU group).

[2] The index was created by considering the main minerals exported by Latin America and the Caribbean; the weights are the gross income obtained from each commodity. Price projections were provided by the Commodity Research Unit.

FIGURE B.1 Fiscal Revenues from Non-Renewables

Source: IDB estimates and IMF.

in nickel prices. By contrast, structural over-supply in iron ore may prompt further price declines. Medium-term forecast paths are subject to considerable uncertainty given the complex interaction between demand expectations, supply, and investment, which typically has to be planned many years in advance. An econometric analysis yields relatively large forecast errors. On average, absolute forecast errors for price levels are around 50% for mineral prices at a five-year forecast horizon.[3]

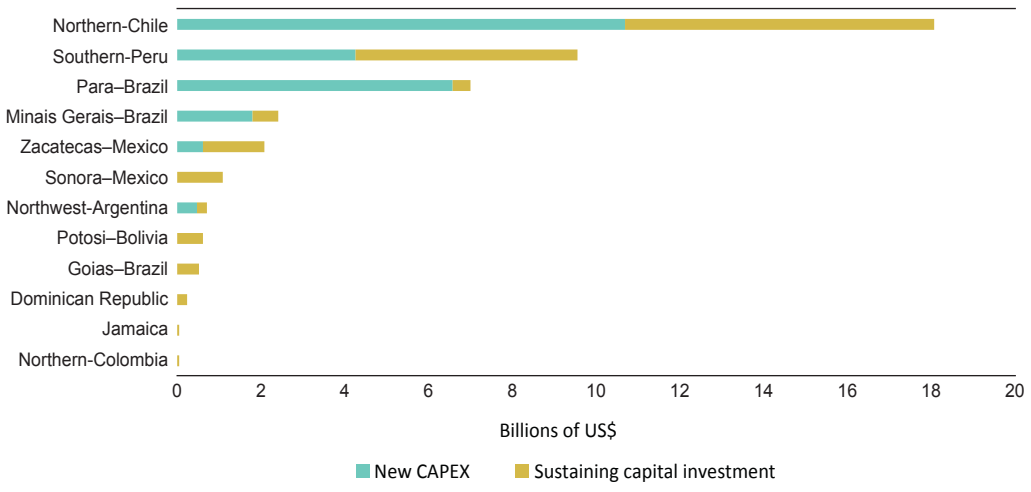
A baseline and a negative price scenario are employed. The baseline has the Latin American and Caribbean minerals' index rising at a moderate pace.[4] In the downside scenario, prices are below the baseline by one absolute forecast error at the five-year horizon. In this scenario, prices fall, and then level out at a new lower level. The downside scenario is not what most analysts have in mind but if serious global trade frictions affect major economies, particularly China. History suggests prices could fall by one forecast error.

The dataset that lies behind this Chapter covers 432 mining operations of 13 minerals across 12 regions in nine countries (three states in Brazil and two in Mexico are covered). The gross income from the sales of these commodities in 2015 was around US$85bn or roughly 2% of the GDP of the nine countries. However, gross income rises to as much as 70% of the GDP of Northern Chile, above 40% for Northern Colombia, almost 40% for the state of Para in Brazil and just over 30% for the state of Zacatecas in Mexico. In the case of Northern Chile, the vast majority of commodity income stems from copper. In Northern Colombia the main earner is coal, while Para and Zacatecas are more diversified in terms of commodity production.

[3] CRU Group econometric model of metals and minerals prices.

[4] The baseline is the weighted forecast for each individual mineral as supplied by the CRU group.

FIGURE B.2 Estimated Cumulative Investment (2016–2021)



Source: IDB estimates and CRU Group.

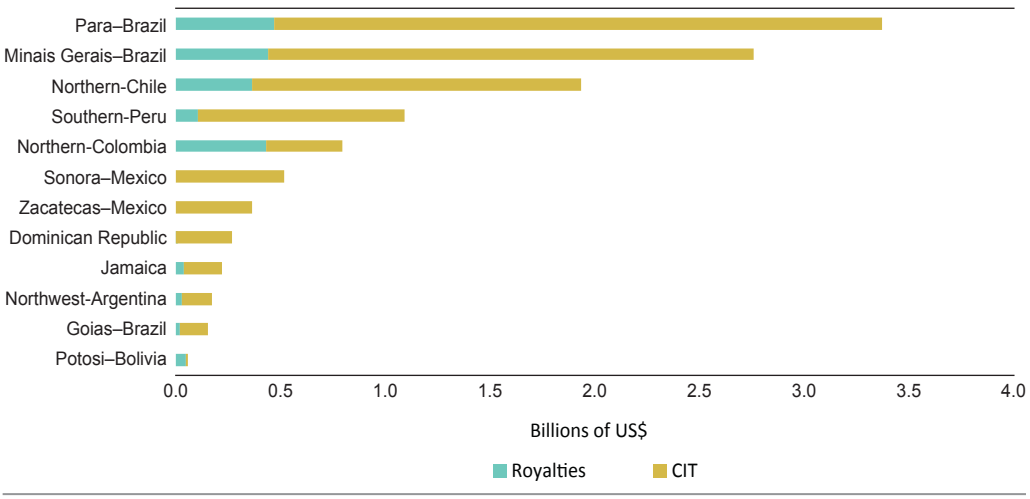
Profitability varies widely across commodities and individual projects. Most actual projects involve substantial sunk costs, which are then largely irrelevant when deciding whether the project should continue, expand, or close. A more relevant variable is the so-called free cash flow. This also varies and interestingly even if free cash flows are close to zero or negative at current prices, then projects may keep producing, as there is always the chance that prices will rise and closing costs can be significant. New investment is projected to be significant in Northern Chile, Para, Southern Peru and Minas Gerais but in other regions sustaining capital investment (required to maintain current production levels) may dominate (see Figure B2).

Public sector revenues derived from these mining projects are very substantial indeed and reach over US$3.5bn in Para and over 9% of regional GDP in Minas Gerais (see Figure B3). Each country has a somewhat different system for taxing commodities and tax and royalty rates change depending on the level of income. These estimates take into account the specifics of the tax and royalty systems of each country, although they exclude dividend payments from state companies.

The Impact of Lower Commodity Prices

A lower price scenario could have a substantial impact on gross commodity income. Perhaps surprisingly, however, it would have much less impact on output. Even if free cash-flows turn negative for some projects, estimates are that many of those would continue to maintain output levels close to those under the baseline. Indeed, it is precisely this lack of responsiveness of output to price changes that provokes such huge price volatility in

FIGURE B.3 Tax Revenues from Commodities by Region (US$ mn)



Source: IDB estimates and CRU Group.

some markets.[5] But while output is less affected in a negative scenario, as income falls there is a substantial effect on fiscal revenues. Figure B4 plots the difference between fiscal revenues in the baseline negative price scenario.

There are also significant impacts on investment, especially in those regions where new CAPEX was projected to be significant.

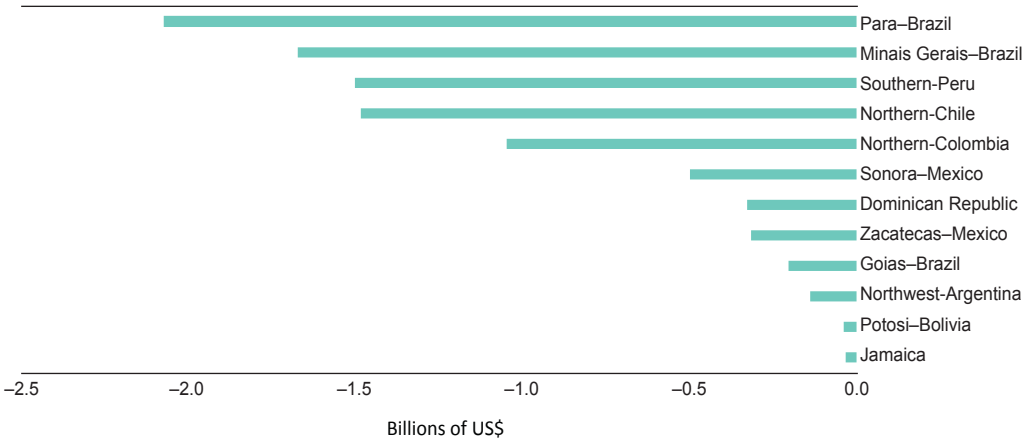
Policies to Manage Commodity Price Risks

Commodity prices have fallen substantially from their 2011 peaks but are not particularly low in historical real terms. History suggests that prices may be very volatile. If global growth picks up and there is no major shock to trade, then prices may move up, especially in those commodities where stock-holding is relatively low. But if there is a shock to global trade that impacts large commodity importers, particularly China, then prices will decline. Even if output is not particularly responsive to prices, gross commodity revenues and fiscal revenues are highly sensitive to price movements.

The sensitivity of fiscal revenues to prices is accentuated given the nature of some tax systems. In past years, commodity prices greatly exceeded the average cost of many non-renewable projects in the region. Economic theory suggests that the abnormal profits of private firms (known as "rents") may be taxed at relatively high marginal rates. Some tax structures then have a base level of corporate tax but higher additional taxes or royalties with higher rates placed to capture these rents. In the past, countries were reticent to tax

[5] Commodities with large sunk costs tend to have very low price elasticities.

FIGURE B.4 The Impact of the Downside Scenario on Fiscal Revenues



Source: IDB estimates and CRU Group.

profits, preferring to levy such taxes on gross revenues due to the difficulties of monitoring firms' costs. But increasingly, countries have moved to tax abnormal profits in order to tax the rents more precisely. Such a system may be more efficient but may exacerbate instability and cause fiscal revenues to fluctuate more as prices vary. The design of such tax systems is then a subtle trade-off between different often competing objectives (see Manzano, Navajas, and Powell, forthcoming, for a review and discussion of tax systems for commodities in Latin America).

In countries where fiscal revenue from commodities is a significant proportion of total public revenues, considerable thought should be given to how to manage such a volatile income flow. This is only made more important if tax systems are designed to promote economic efficiency, which may make such income flows yet more volatile. Budgets are normally a forward looking annual process. Thus, if expenditures in the coming year are based on revenue flows that in large part stem from commodities, one way to proceed is to hedge the price assumptions inherent in that budget with financial contracts. Mexico has taken this approach in recent years in response to volatile revenues from oil. Such hedging contracts are available in other commodity markets as well.

However, such contracts are not generally available at longer horizons or, where they are available, may become very costly. Hedging becomes less viable as the horizon lengthens. Some type of stabilization fund with rules to save part of the commodity income may then be appropriate. Note, however, that hedging and stabilization funds are complementary both conceptually and in practice. Hedging pushes risk onto others and alters income in different states of the world. A savings' rule is about altering the time path of expenditures. Even with a stabilization fund in place, large swings in commodity prices can call for significant adjustments. Hedging can smooth the adjustment process even with a stabilization fund in place.

APPENDIX C

Estimating A-REER Export Elasticities

Export elasticities were estimated employing a bilateral unbalanced panel dataset covering the period 1985–2014 for 120 countries, including 23 Latin American and Caribbean exporters. Export data comes from UN COMTRADE, with corrections suggested by Feenstra et al. (2005) and Hausmann et al. (2014). Exports are expressed in constant 2014 US dollars, deflated by the U.S. consumer price index. In the estimation, a fixed-effect is added that helps control for valuation effects from movements in the dollar as well as changes in global demand.

To measure export diversification, the number of total, and manufacturing, product lines exported (with positive export values) is calculated. Balassa's (1965) measure of Revealed Comparative Advantage (RCA) is employed to create a more conservative version of export diversification by only counting the number of (manufacturing) products in which a country exhibits export competitiveness. RCA is the share of a given product in the country's total exports divided by the share of the same product in global exports.

The source for a set of variables used as controls comes from the World Development Indicators. These include country GDPs. The model also includes exporter-importer fixed effects and time fixed effects. The model was estimated using the Poisson Pseudo-Maximum-Likelihood (PPML) estimator. This estimator is robust to different patterns of heteroskedasticity and measurement error and robust to the fact that many bilateral product trade flows may be zero. This estimator has become reasonably standard in the structural gravity literature since Santos Silva and Tenreyro (2006). Standard errors are clustered at the exporter-importer level. The specification was then as follows:

$$x_{ijt} = \exp\left(\sum_{\tau=0}^{4} \alpha_{t-\tau} \ln \mathrm{AREER}_{ij,t-\tau} + \beta \mathrm{MR}_{ijt} + \delta_1 \ln \mathrm{GDP}_{it} + \delta_2 \ln \mathrm{GDP}_{jt} + \gamma_t + \gamma_{ij}\right) + \varepsilon_{ijt} \qquad (1)$$

where X_{ijt} are real total exports of exporter i to country j in year t, ln $\mathrm{AREER}_{ij,t-\tau}$ is the natural logarithm of the adjusted real effective exchange rate between country i and country j in years t = –4 to 0. GDP-weighted trade costs MR_{ijt} proposed by Baier and Bergstrand (2009) proxy for the multilateral resistance term (Anderson and van Wincoop, 2003). Rather than using exporter-time and importer-time fixed effects, this enables the consistent

estimation of the impact of time-varying country specific factors such as the exchange rate. For the estimation by periods, equation (1) was re-estimated for two different periods—(1990–2000) and (2001–2014)—that split the sample into two symmetrical intervals.

A selection of results in graphical form is reported in Chapter 5 for total exports, manufactured goods and product lines. Further results are available in Stein et al. (2017).

APPENDIX D

The Effect of Exchange Rates on Import Substitution

In this appendix, the results of an econometric exercise that investigates how measures of import penetration respond to exchange rates is reported. The traditional measure of the real effective exchange rate (REER) with export weights and a measure of the real effective exchange rate using import weights were employed. The results were similar for both. The source of the REERs was the IMF's International Financial Statistics, and the alternative import-weighted REERs are IDB estimates. The focus is on the elasticity of the IP index with respect to each country's REER for all those Latin American and Caribbean countries with available information for 2008–2014.[1] The following specification is estimated:

$$ln\left(M_{pen}\right)_{i,t} = \alpha + \beta_1 \ln\left(REER\right)_{i,t} + e_{i,t} \quad (1)$$

Where, *i* represents the country and *t* the year. As the REER is defined as foreign currency per unit of local currency unit, a positive coefficient is expected, i.e., a depreciation (a fall in the REER) would be expected to be associated with a decrease in the import penetration index.

Results at the Country Level, All Imports

Table D1 presents the results covering all imports for all Latin American and Caribbean countries included in the sample, using different sets of fixed effects. The results confirm the relationship suggested above, with positive and significant estimates of the REER elasticity in all specifications, confirming that a depreciation (a fall in the REER) is correlated with a decrease in import penetration. On average—considering the last three columns including fixed effects—a depreciation of 10% is associated with a decrease in the IP index of about 5%.

[1] The sample considered in this estimate corresponds to the following 17 Latin American and Caribbean countries: Argentina, The Bahamas, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Guyana, Mexico, Nicaragua, Peru, Paraguay, Uruguay, and Venezuela.

TABLE D1 Elasticity of Import Penetration versus the REER. (All imports, all countries with available information)

VARIABLES	(1) Log M/P+M	(2) Log M/P+M	(3) Log M/P+M	(4) Log M/P+M
Log REER	0.531**	0.510**	0.486*	0.486*
	(0.244)	(0.237)	(0.243)	(0.243)
Constant	0.615	0.769	0.880	0.880
	(1.130)	(1.091)	(1.099)	(1.099)
Observations	117	117	117	117
Number of id	17	17	17	17
Year Fixed Effect	No	Yes	Yes	Yes
Country Fixed Effect	No	No	Yes	Yes
Errors Clustered	No	No	No	by country

Robust standard errors in parentheses.
*** p < 0.01, ** p < 0.05, * p < 0.1.

Results at the Country Level, Manufacturing Imports

Table D2 presents the estimates of REER elasticities considering only the manufacturing sector, using different sets of controls. In this case, the IP index was constructed using the information from the World Development Indicators on manufacturing value added.

As in the case with the economy wide data, the estimates of the IP to REER elasticity are positive and significant. Depreciation is associated with a decrease in the IP index. On average, considering the most demanding specification (column 4), a depreciation of 10% is correlated with a decrease in the IP index of 4.2%.[2]

To the extent that these elasticities are slightly lower than those obtained for the economy-wide sample, manufacturing imports are less sensitive to changes in the real exchange rate. However, it is important to keep in mind that these discrepancies may be related to the differences in the data used to construct the IP index. In the economy-wide sample, domestic production was proxied by GDP, while for manufacturing, the variable used was value added of the manufacturing sector.[3]

Results at the Country-Sector Level for Manufactured Goods (ISIC 4-digit)

In this subsection, results are reported for regressions using country-sector, ISIC (rev 3) at 4-digit data within the manufacturing sector. Four countries have the appropriate

[2] In related work, Faleiros, Domingos da Silva, and Nakaguma (2016) explores the effect of the exchange rate movements and labor productivity on import penetration in the Brazilian manufacturing sector. Despite differences in the technique and specification used, the results are consistent: an exchange rate depreciation is associated with a fall in import penetration.

[3] Value added is obtained from net output after subtracting intermediate inputs.

TABLE D2 Elasticity of Import Penetration versus the REER.
(Manufactured imports, all countries with available information)

VARIABLES	(1) Log M/P+M	(2) Log M/P+M	(3) Log M/P+M	(4) Log M/P+M
Log REER	0.609***	0.423***	0.412***	0.412***
	(0.111)	(0.130)	(0.133)	(0.133)
Constant	1.357***	2.130***	2.181***	2.181***
	(0.526)	(0.592)	(0.595)	(0.595)
Observations	151	151	151	151
Number of id	17	17	17	17
Year Fixed Effect	No	Yes	Yes	Yes
Country Fixed Effect	No	No	Yes	Yes
Errors Clustered	No	No	No	by country

Robust standard errors in parentheses.
*** p < 0.01, ** p < 0.05, * p < 0.1.

production data at that level: Brazil, Colombia, Costa Rica, and Mexico.[4] Coincidentally, some of these countries experienced strong depreciations in recent years, making this analysis of particular interest. The results are presented in Table D3.

Consistent with the previous results, the estimates of the REER elasticity are positive and significant. In this particular case, the results shown below are for the REER with weights related to import shares in the manufacturing sector. The results suggest that a 10% depreciation is correlated with a decrease in import penetration of 6.9% on average in the most demanding specification (column 4).

Again, it is important to note the differences in the information used to construct the IP index. In this sample, production data is employed whereas in previous results value added was used. In addition, the sample of countries differs. Still, the results underline a significant and quantitatively important relationship.

[4] The production data were available in these four countries but with slightly different categorizations: Colombia (ISIC A.C. – adapted for Colombia), Mexico (NAICS), Brazil (CNAE2), and Costa Rica (ISIC rev3). In the case of Costa Rica, the data from the national classification were transformed to ISIC rev 3.

TABLE D3 Elasticity of Import Penetration with respect to REERs Manufacturing Imports at ISIC 4-digit, Select Countries

	(1)	(2)	(3)	(4)
VARIABLES	Log M/P+M	Log M/P+M	Log M/P+M	Log M/P+M
Log real exchange rate	1.335***	0.721***	0.690***	0.690***
	(0.101)	(0.110)	(0.111)	(0.111)
Constant	–3.007***	–0.250	–0.0964	–0.0964
	(0.481)	(0.512)	(0.508)	(0.508)
Observations	2,264	2,264	2,264	2,264
Number of id	358	358	358	358
Year Fixed Effects.	No	Yes	Yes	Yes
Country-sector Fixed Effects.	No	No	Yes	Yes
Errors Clustered	No	No	No	By country-sector

Robust standard errors in parentheses.
*** p < 0.01, ** p < 0.05, * p < 0.1.

APPENDIX E

Assessing the Economic Implications of a New Trade Environment

Given the uncertainty surrounding the direction of global trade relations in the coming months, an assessment of the economic impact of a LAC-FTA compared to other options must necessarily build on hypothetical scenarios. The analysis below (reported in Chapter 7 of this report) is based on simulations undertaken with a Computable General Equilibrium (CGE) model (Giordano, Watanuki, and Gavagnin, 2013). In particular, this version of the model has been developed to specifically evaluate the payoff of a policy response that would allow the region to widen and deepen regional integration to offset the negative impact of an external environment that becomes progressively more protectionist.

The model belongs to the class of global (multi-country and multi-sector) CGE models, featuring the following characteristics: static, constant returns to scale and perfect competition, fixed employment level, and no link between trade and total factor productivity (TFP). For this particular application, the following extensions were introduced: i) the separation of imports and domestic inputs (i.e. Armington composite) in the production function of each demander; ii) the explicit modeling of the rules of origin; and iii) the inclusion of trade costs. The model is calibrated to the GTAP 9a database. Specifically, twenty-nine countries, eleven sectors, two labor categories, one physical capital stock, and natural resources (i.e. land) used in agriculture and mining, are singled out. The model assumes perfect mobility across sectors for both labor categories and physical capital, and sector-specificity for natural resources used in agriculture and mining.

At the macro level, the following macroeconomic closure rules are applied: (a) balance of payments: in order to ensure that the simulations are neutral in terms of changes in country net foreign assets, changes in the real exchange rates maintain a current account balance that is fixed in foreign currency; (b) government consumption: in order to ensure that the simulations are budget neutral, changes in income tax rates on households clear the government budget (i.e., no domestic and/or foreign financing additional to baseline values); and (c) intertemporal investment: in order to ensure neutrality across the

simulations in terms of investing in future activities, real investment is fixed. As a result of the last two closure rules, changes in real private consumption may be interpreted as equivalent to changes in aggregate welfare.

The simulations build on a baseline that replicates the world economy in the base-year, upon which the following groups of scenarios are designed:

1. **Status quo:** This set of scenarios assumes that the global trade environment follows the course set in the last decade. The United States (US) is positioned at the center of the negotiation initiatives (US-Global), and the mega-regional agreements—modeled as a complete phase out of residual tariffs among the members of the Trans-Pacific Partnership (TPP) and the Transatlantic Trade and Investment Partnership (TTIP) – are the main drivers of trade liberalization.
2. **China led:** An alternative scenario assumes that China takes the lead by concluding a free trade agreement with partners in the Pacific region, modeled as complete trade liberalization among the members of the Regional Comprehensive Economic Partnership (RCEP) initiative.
3. **Global trade frictions:** This set of scenarios assumes that global trade frictions increase. It is modeled as the imposition on all existing bilateral trade flows of a hypothetical tariff of 20 percentage points (p.p.) additional to tariffs currently applied.
4. **Latin American and Caribbean response** (with integration): The final set of scenarios is designed as variants of those discussed before. It compares the option of pursuing a deep free trade area whereby not only residual tariffs are phased out among all economies in the region, but rules of origin are also harmonized into a single set of provisions (LAC-FTA). Technically, this scenario eliminates the implicit subsidy granted to FTA intermediates, and the implicit tax on non-FTA intermediates originating in countries in the region that prevailed prior to deeper integration.

Given the specification of the model and the underlying assumptions, the results should not be interpreted as a prediction of the magnitude of the economy-wide effects of the otherwise hypothetical policy reform experiments, but rather serve as an indication of their ranking to establish policy priorities. Table E1 details the impact of select scenarios on exports and imports by subregion.

TABLE E1 Trade Impact of Select Simulation Scenarios (US$ and percentage change from base)

			External environment			LAC Response (Integration)		
	Country	Base (*)	Status-Quo	China-led	Global trade frictions	Status Quo + LAC-FTA	China-led + LAC-FTA	Global trade frictions + LAC-FTA
Exports	Mexico	352,233	0.157	0.049	–15.245	0.246	0.154	–14.051
	C. America & DR	87,968	–0.360	0.033	–13.654	1.596	1.963	–4.907
	Andean	213,466	–0.003	–0.045	–10.981	1.701	1.669	–2.857
	Chile	94,021	0.044	0.039	–6.691	0.230	0.224	–2.799
	MERCOSUR	390,387	–0.065	–0.132	–14.529	0.320	0.251	–7.665
	Latin America	1,138,075	0.001	–0.033	–13.370	0.647	0.617	–8.124
Imports	Mexico	322,089	–0.149	0.025	–17.936	0.669	0.860	–14.482
	C. America & DR	117,052	–0.387	–0.128	–10.443	1.367	1.609	–3.276
	Andean	180,673	–0.149	–0.142	–14.406	1.582	1.608	–4.840
	Chile	80,891	0.106	–0.241	–12.817	0.548	0.219	–6.763
	MERCOSUR	373,076	–0.194	–0.372	–17.074	0.312	0.128	–8.404
	Latin America	1,073,782	–0.171	–0.178	–15.840	0.765	0.765	–8.945

Source: IDB-INT CGE model simulations.
Note: (*) in million of US$.

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