

# WEATHERING THE STORM

POLICY OPTIONS FOR CENTRAL AMERICA AND  
THE DOMINICAN REPUBLIC IN AN UNCERTAIN ENVIRONMENT



**Coordinated by**  
Leonardo Maldonado  
Osmel Manzano



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**Cataloging-in-Publication data provided by the  
Inter-American Development Bank  
Felipe Herrera Library**

Maldonado, Leonardo.

Weathering the storm: policy options for Central America and the Dominican Republic in an uncertain environment / Leonardo Maldonado, Osmel Manzano.

p. cm. — (IDB Monograph ; 419)

Includes bibliographic references.

1. Central America—Commercial policy. 2. Central America—Commerce treaties. 3. Dominican Republic—Commercial policy. 4. Dominican Republic—Commercial treaties. I. Manzano, Osmel. II. Inter-American Development Bank. Country Department Central America, Mexico, Panama and the Dominican Republic. III. Title. IV. Series.

IDB-MG-419

**Classification JEL:** E52, E60, E66, F10, F13, F14, F15, F41, O24

**Keywords:** trade balance, CAFTA, quality, Central America, competitiveness, favorable environment, growth, external deficit, uncertain environment, exports, direct investment, basic manufactures, trade improvement, oil price, primary products, Dominican Republic, agricultural commodities, non-traditional products, terms of trade, exchange rate, external shocks, comparative advantage, free zones.

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# FOREWORD

During 2015 the international environment conjured an auspicious backdrop for Central America and the Dominican Republic. On the one hand, the United States, the region's main trade partner and source of most of its remittances, remained on the path of recovery from the global financial crisis. On the other hand, the marked fall in oil prices improved the region's terms of trade. This shored up the external positions of the countries of the region and favored economic growth with low inflation and without further deterioration in the fiscal balances.

For 2016 optimism prevails. It is expected that the US economy will keep growing and that relative international prices will again favor Central America and the Dominican Republic.

But there are medium-term risks which the region ought not to ignore. For example, the Chinese crisis may have an influence on growth in the United States, which would mean that the region's exports are adversely affected. Meanwhile the lifting of import tariffs set out in the Free Trade Agreement between Dominican Republic, Central America and the United States and the entry into force of the Trans-Pacific Partnership may put the region's productive sector under competitive pressure. It is also possible that there will be a decline in the supply of external funds to emerging economies owing to the increase in the Federal Funds Rate.

In these circumstances what leaps out is the need to reflect on how to take advantage in an effective and timely way of the positive external environment in which the region still finds itself while also formulating strategies which will make it possible to alleviate possible future shocks.

This Macroeconomic Report examines the great challenge of promoting competitiveness. The comparative advantages of the region continue to lie in the same categories as they did decades ago –primary animal products, vegetables and foodstuffs– which has limited the benefit drawn from the current economic climate. To keep macroeconomic performance stable will require national policy changes that reduce the dependence on short-term external flows, foster competitive non-traditional exports and ensure the maintenance of fiscal equilibrium.

The observations made and conclusions reached in this document assist reflection on the route towards competitiveness that the region must take, prompting regional and national dialogue on the policy options available.

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## ACKNOWLEDGMENTS

This Macroeconomic Report was coordinated by Leonardo Maldonado and Osmel Manzano. The content was prepared by the team of Economists within the Country Department for Central America, Mexico, Panama and the Dominican Republic of the Inter-American Development Bank. The authors who contributed to this edition were Guillermo Lagarda, Leonardo Maldonado, Osmel Manzano and José Alejandro Quijada. We recognize the valuable support of research and compilation of contents provided by Yocauris García, Jennifer Linares, Alejandra Mejía and Marco Solera. Inputs and comments made by Rodrigo Bolaños, Rudy Loo-Kung, Gina Montiel and Jorge Murillo enriched the report. The coordinators would like to give special thanks to Ximena Ríos for editing, Ian Campbell for translation, Miki Fernández for design, and Mili Parra for printing assistance. They all made an excellent work.



## EXECUTIVE SUMMARY

The countries of Central America and the Dominican Republic are enjoying a favorable external environment. After the sudden shock suffered during the global financial crisis, the United States – the main trade partner of the region– has regained the road of economic recovery to achieve in 2015, and possibly also in 2016, a growth rate close to its historical average. Similarly, from the middle of 2014, the terms of trade for the CADR region have improved, thanks to the marked drop in the global oil price, which has far exceeded the falls seen in the average prices of agricultural commodities (such as rice, sugar, bananas, coffee, maize and wheat).

On the one hand the recovery of the U.S. economy has made it possible to keep up flows of remittances and investment. On the other hand, the improvement in the terms of trade has translated into a smaller trade deficit and slowdown in inflation. Both elements have contributed to the strengthening of the region's external position and to economic growth. But full advantage has not been taken of this favorable environment.

The regional growth rate has still not reached the levels seen prior to the global financial crisis, public debt is rising and fiscal sustainability has not yet been realized. In spite of the fiscal consolidation efforts put in place, challenges remain to be addressed. In the last two years the fiscal accounts have shown signs of relative stability but the markets are ignoring it. Investors' risk aversion is higher and the region must remain very alert to the need to take advantage of the current period to balance the deficit and stabilize external debt.

The region has made few advances in modernizing its export basket to medium and high-scale production, which has worked against its competitive position and has limited its gains in the current environment. In these circumstances, as the first chapter sets out, and although propitious external conditions are still expected to prevail in 2016, there are risks.

A large part of the external deficit continues to be financed by short-term foreign capital flows so that upward adjustment in the U.S. interest rate could have a negative impact on the balance of payments. In parallel, China's deceleration could reduce growth expectations for the U.S. economy, which would in turn influence the region's evolution. Meanwhile, in the framework of the Free Trade Agreement between the Dominican Republic, Central America and the United States, some agricultural items protected until 2015 will begin to enter markets free of tariffs, which could unveil the fragility of regional competitiveness, including in traditional products. To this must be added climatic blows which do not cease to assail regional primary production.

How could the region mitigate these risks? How could it take greater advantage to opportunities times? These fundamental concerns are tackled in this Macroeconomic Report.

The external sector has been the main beneficiary of the current circumstances, but the outcome could have been better. Lags in the relative quality of exports and trade specialization without great results are reviving the idea of correcting promotion schemes for local industry and direct investment, avoiding the use of tax breaks to compensate for competitive weaknesses. The second chapter takes account of this and traces the competitive route along which the region is passing, pointing out the drawbacks in competitive positioning, the comparative advantages to be exploited and the need for greater regional coordination to create trade complementarities. It is pertinent to develop the non-traditional export basket with the aim of drawing more benefit from U.S. growth, diversifying trade risk and generating local horizontal spillovers. As is apparent from the third chapter, the current exchange rate policy does not appear to block external competitiveness and the development of new exports, so it is a key moment to prioritize the structural reform agenda and advance towards the articulation and coordination of economic policies with the private sector.

Given the external dynamics, it is not difficult to imagine that in the medium term the conditions will become less favorable than expected for the region. There are many pieces which must fall into place for the virtuous circle of external conditions to persist and, given this, it is crucial to examine whether the region has the economic structure and the policy room to maximize its benefits in uncertain periods. In this regard the fourth chapter confronts the economy of the region with less optimistic external scenarios, financially and in trade.

The report will give the countries of the region clearer vision, helping them decide between being spectators of external volatility or protagonists of policies which lead to lasting national benefits.

## THE PROSPECTS FOR THE REGION

**T**he 2015 was a year of opportunity for the region of Central America and the Dominican Republic (CADR). The international environment provided it. Improved prospects for the U.S. economy, the region's main trade partner, and the significant fall in commodity prices (in particular oil), allowed the main macroeconomic indicators in CADR to improve compared to 2014.

CADR recorded an economic growth rate close to the historical average while domestic price levels remained stable. Foreign Direct Investment (FDI) flows and income from remittances stayed at levels similar to those of 2014. There was an improvement in the oil trade balance, which made for a sizeable fall in the external deficit, and the level of the fiscal deficit remained the same. But the window of opportunity is getting smaller. Old challenges and new ones are beginning to cloud the regional panorama.

International dependency was central to the improvement in CADR's performance but might also prove a sword of Damocles. There are many different factors beyond the region's control which could have an unfavorable impact on forthcoming developments. The upward move in the U.S. Federal Reserve interest rate could redirect funds that had headed previously towards CADR back to the United States. Since 2015 the external shock has also been affecting the region's exports, so that it is possible that the gains in the terms of trade begin to show exhausted. Meanwhile the tariff reductions set out in the Dominican Republic-Central America-United States Free Trade Agreement (CAFTA-DR) are going ahead, facilitating the entry of the United States as the principal competitor in local markets (in particular for certain critical agricultural domains that were protected until 2015). To this must be added climatic shocks which will continue to affect the primary production in the region.

In general, in 2015 the region was able to profit from a favorable environment. It was able to reduce its external deficit, and begin to rebuild its anti-cyclical policy buffers. However, it remains necessary to carry out structural changes which address future risks associated with the ups and downs of international markets, promote regional competitiveness, reduce dependence on short-term external flows and set CADR on the path towards fiscal balance.

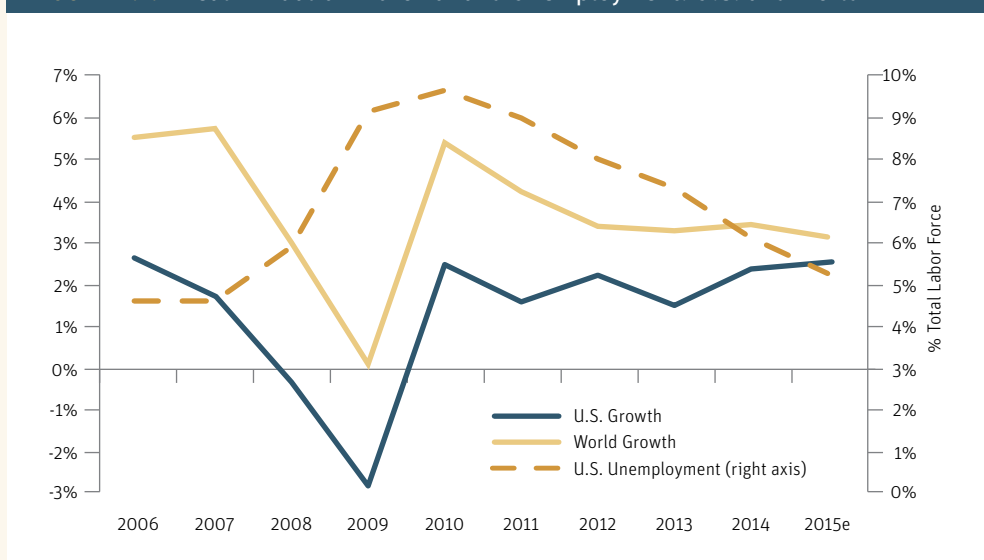
## ECONOMIC PERFORMANCE IN 2015

In 2015, expectations on the economic performance in CADR changed for the better, principally because of the evolution of the U.S. economy and the fall in the oil price. The results obtained have vindicated the more positive expectations. The United States continued on the path of recovery from the global financial crisis (2008-2009), assisting the region's exports. Meanwhile, the substantial fall in oil prices contributed to a reduction in the value of imports and, therefore, in the trade deficit.

### BOX 1.1 International Macroeconomic Environment

After the global crisis, the United States has undergone a slow but sustained economic recovery (see Figure 1.1.A). During 2015, the U.S. economy grew by 2.5%, exceeding the 1.5% average of the last decade and converging on its long-term rate (1980-2014). At the global level the situation is different. Average global growth decelerated to 3.1% in 2015. This was due to the difficulty other advanced economies –such as the Euro Area– have had, trying to recover fully from the crisis, and the deceleration or contraction suffered by some emerging economies, such as China and large Latin American countries (among them Argentina, Brazil and Venezuela).

**FIGURE 1.1.A** Real Annual GDP Growth and Unemployment: U.S. and World



Source: World Economic Outlook (International Monetary Fund, October 2015).

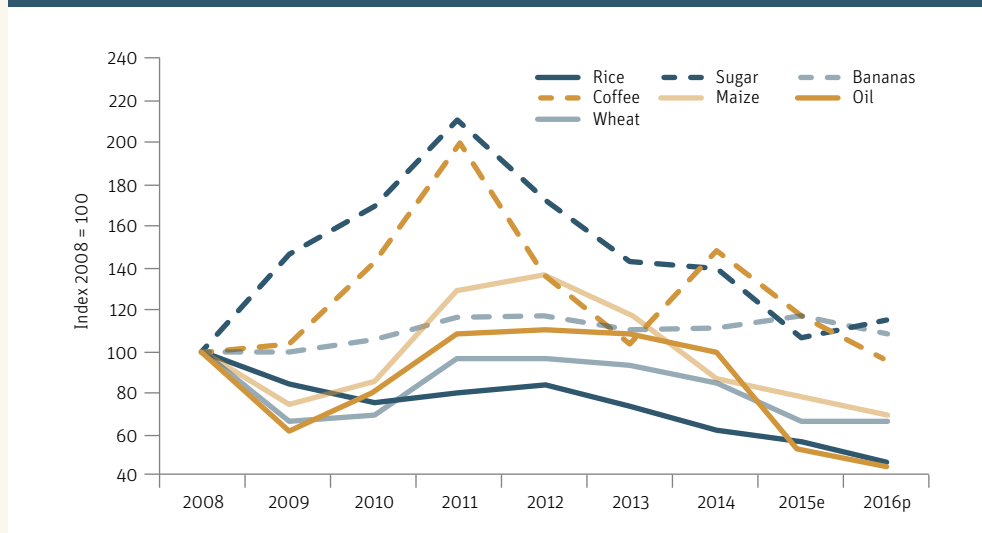
Note: e=expected.

Continued...

In parallel with the faster growth seen in U.S. Gross Domestic Product (GDP), the average unemployment rate has fallen. From the 9.6% of 2010, U.S. unemployment fell to 5.3% in 2015 (similar level to the pre-crisis position). The U.S. recovery in growth and employment meant the region succeeded in keeping its remittance transfers at an average level of 10% of GDP (with 80% of these transfers originating in the U.S.).

Meanwhile, the global prices for the main commodities associated with the region (such as bananas, coffee, maize, rice, sugar, wheat and oil) have been experiencing a decline in recent years; a situation which is expected to continue in 2016 (see Figure 1.1.B).

**FIGURE 1.1.B** Primary Commodity Prices



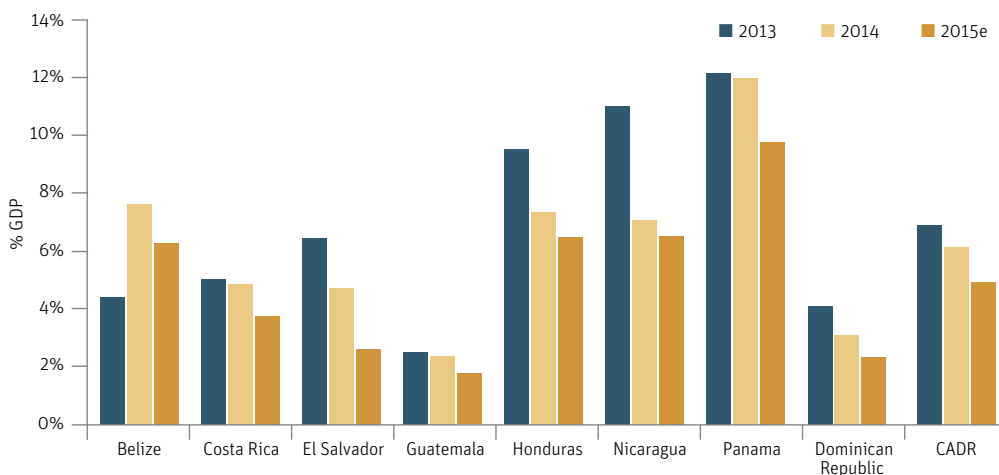
Source: Primary Commodity Prices (International Monetary Fund).  
Note: e=expected, p=projected.

Specifically, between 2014 and 2015 a big fall occurred in oil prices. In 2015 the average price of this commodity is estimated at USD 50.9 per barrel, which represents a fall of 47.1% compared to the 2014 average.

Given that CADR is a net importer of oil, this circumstance implied a big positive shock brought to the region through imports, improving the oil trade balance and reducing the trade deficit. This positive shock offset the negative impacts that the fall in other commodity prices had on the non-oil trade balance.

In this context, the external sector improved significantly. In 2015, the current account deficit was 5% of GDP – i.e. 1.2 percentage points below the level recorded in 2014 (see Figure 1.1). The drop in the value of oil imports (from 6.9% to 4.3% of GDP) alleviated the oil account and, given the sustained level of income from family remittances, was a linchpin in this recovery. In the same way, net FDI flows at 4.2% of GDP (similar level to that of the previous year) helped to balance the external accounts.

**FIGURE 1.1** Current Account Deficit



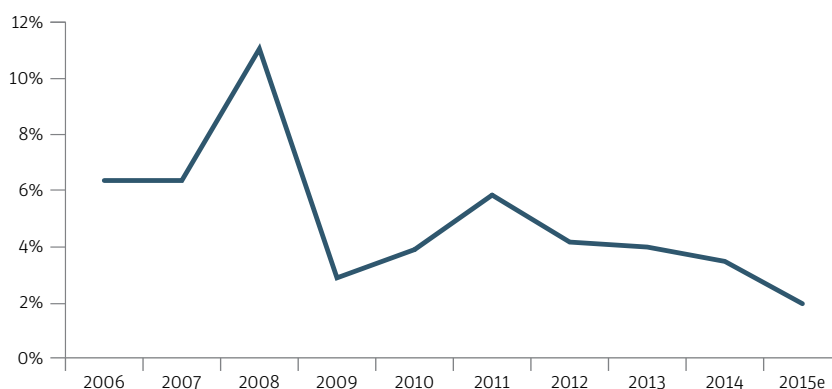
Source: World Economic Outlook (International Monetary Fund, October 2015).

Note: e=expected.

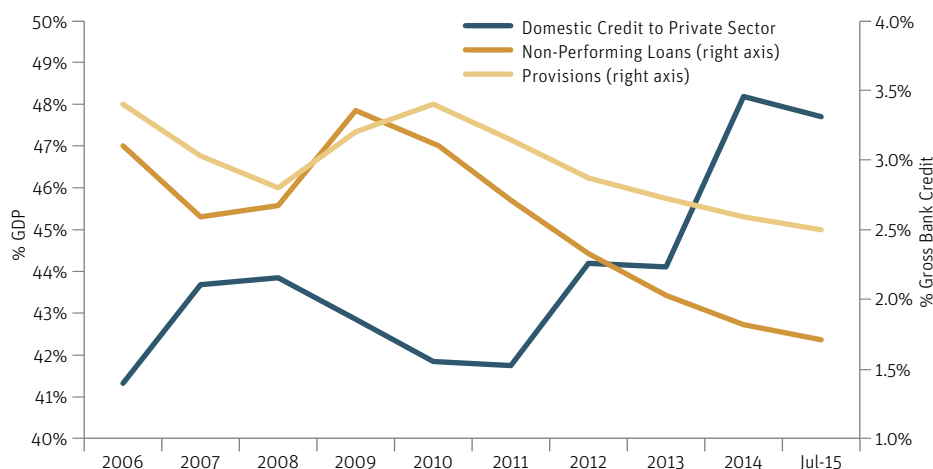
Lower commodity prices brought certain stability to domestic price levels (see Figure 1.2). Compared with the 2014 outturn of 3.5%, the average inflation rate in 2015 was significantly lower, at 1.9%. However, it cannot be ruled out that the severe droughts which are threatening crops in CAGR may reduce local food supply and push prices up. Indeed, in October 2015, average annual inflation in foods was 2.7% – i.e. above overall inflation.

The monetary trajectory has gone hand in hand with a regional banking system that has remained stable. Figure 1.3 shows how the degree of private sector leverage in domestic credit is at a similar level to 2014, so that in 2015 total domestic credit averaged 47.7% of regional GDP. In the same way, the gradual reduction in non-performing loans and banking provisions is evident, showing the stability of average credit quality in CAGR. Largely, the lower inflation rate and the results from exchange rate management have helped to lead to stability in local nominal interest rates.



**FIGURE 1.2** Inflation Rate: CADR

Source: World Economic Outlook (International Monetary Fund, October 2015).  
 Note: e=expected.

**FIGURE 1.3** Quality of the Loan Portfolio: CADR\*

Source: World Bank, SECMCA and IDB Staff.  
 Note: \*Excludes Belize.

Economic growth with relative price stability helped to sustain the fiscal results. In this regard a second consecutive year without growth in the fiscal deficit has been achieved (see Figure 1.4). In 2015, the average fiscal deficit was 3.4% of GDP, the same level as in 2014. This outturn reflected the sustained recovery in fiscal income<sup>1</sup> and deceleration in the average growth of actual spending. During 2015, General Government receipts rose on average by 5.6% (to a level of 19.7% of regional GDP), while actual spending reached an annual nominal growth of 5.3% (less than the 7.2% recorded in 2014).

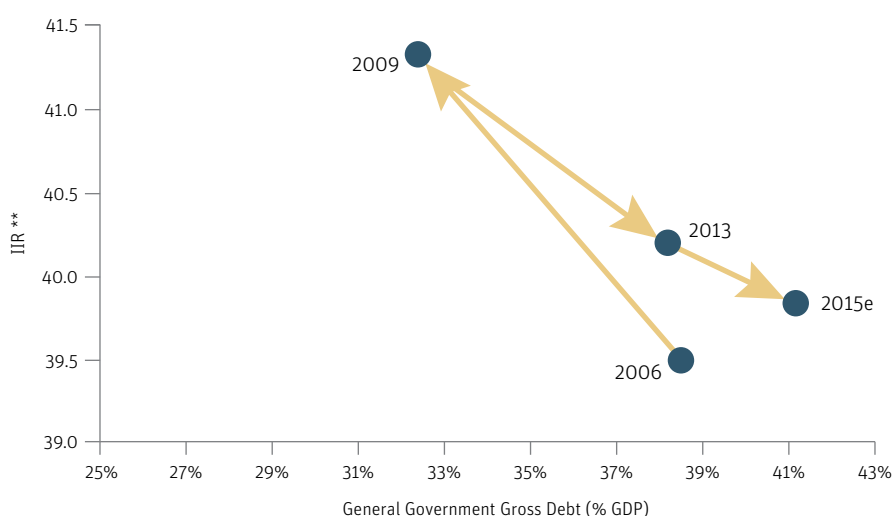
<sup>1</sup> In part thanks to the implementation of some fiscal reforms in the region during 2014, e.g., in El Salvador, Honduras, and Nicaragua.

**FIGURE 1.4** Fiscal Deficit: CADR

Source: World Economic Outlook (International Monetary Fund, October 2015).

Note: e=expected.

Fiscal developments did not bring an improvement in the credit position. Gross public debt in CADR rose by an average of 1.7 percentage points of GDP in 2015, reflecting both a weak effort to take advantage of the favorable conditions for debt reduction and the scale of the fiscal challenge which still confronts the region. Excluding Belize, the public debt reached 41.2% of regional GDP being characterized by greater use of domestic liabilities and bonds with longer maturities.

**FIGURE 1.5** Creditworthiness and Public Debt: CADR\*

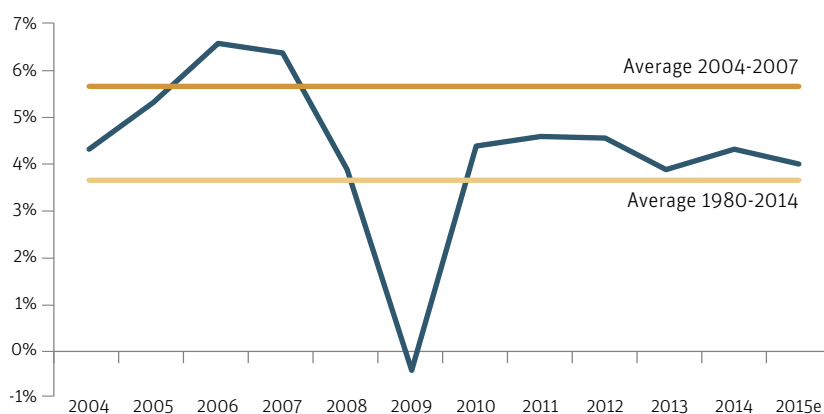
Source: Institutional Investor Magazine and World Economic Outlook (International Monetary Fund, October 2015).

Note: e=expected. \*Excludes Belize. \*\*The Institutional Investors' Rating (IIR) is an index which gives a value from 0 a 100 for a country, according to the quality of its debt.

The recent increase in the debt was accompanied by a deterioration in creditworthiness (see Figure 1.5). This implies that the markets are not yet valuing highly the stability seen in the fiscal accounts in the past few years. Therefore CADR ought not to neglect the pursuit of fiscal balance during favorable times, aiming to debt sustainability and to strengthen the buffers against future crises.

The overall position allowed for growth in the regional economy (see Figure 1.6). GDP expanded 4% during 2015, that is to say, below its long-term growth rate (3.6% in 1980-2014) but still above the 5.6% averaged in 2004-2007 (before the global crisis). Private consumption was the main contributor to this expansion, rising by 4.8% at a time when external demand did not rise sufficiently to drive forward growth still more (largely because of the fall in the price of commodities other than oil). Meanwhile in the course of 2015, manufacturing industry, the transport sector, storage and communications and financial intermediation contributed to economic growth.<sup>2</sup>

**FIGURE 1.6** Real Annual GDP Growth: CADR



Source: World Economic Outlook (International Monetary Fund, October 2015 and January 2016).

Note: e=expected.

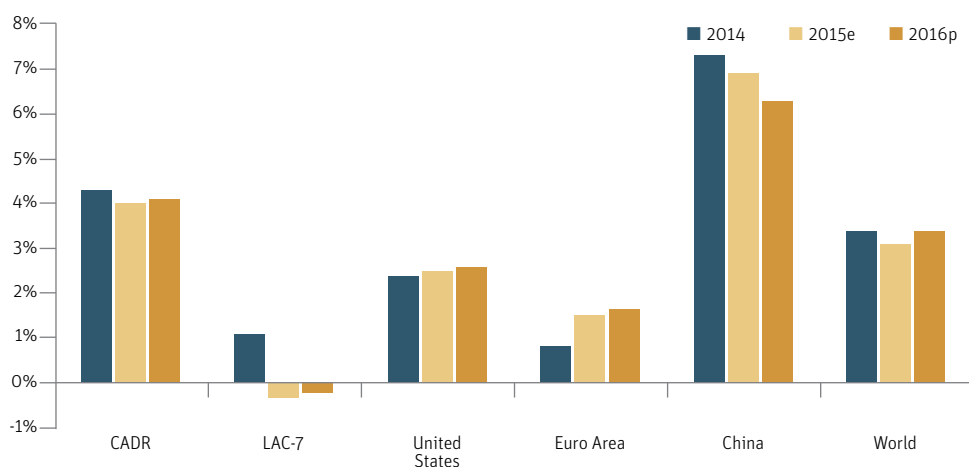
In summary, 2015 was a favorable year for CADR. The improved prospects of the region's main trade partner and the significant fall in oil prices were the chief allies enabling CADR to achieve economic growth with stability both in prices and in the domestic banking system, without increases in the fiscal deficit and with improvements in the external sector. It can then be seen that the region has begun to strengthen its position so as to be able to respond to periods of contraction with expansive policies. But this is not the whole story. Public debt is increasing and investors are beginning to note that the favorable momentum could be waning. Therefore the fiscal agenda needs to be revived and the competitiveness agenda not neglected, so that the region's weight in international trade can be enhanced.

<sup>2</sup> Until the third quarter of 2015 and taking account of Costa Rica, El Salvador, Guatemala and Honduras, the average contribution of the mentioned sectors to economic activity was approximately: manufacturing industry (0.5 percentage points), transport, storage and communications (0.6 percentage points) and financial services (0.7 percentage points).

## PROSPECTS FOR THE GLOBAL ECONOMY IN 2016

In terms of growth, 2016 will bring mixed results (see Figure 1.7). Global economic growth is forecast to average 3.4% (0.3 percentage points more than in 2015). It is expected that the United States, for its part, continues to consolidate its recovery. In 2015 its economy experienced growth of 2.5% and it is forecast to grow by 2.6% in 2016. This will be accompanied by a timid recovery of the Euro Area, another average contraction of the seven largest economies of Latin America (LAC-7),<sup>3</sup> and an estimated growth in CADR's GDP (4.1%) above the global average. However, economic growth in China keeps being revised down and it is expected to grow by 6.3% in 2016, well below its historical average (9.8% in 1980-2014).

**FIGURE 1.7** Real Annual GDP Growth by Economic Zones

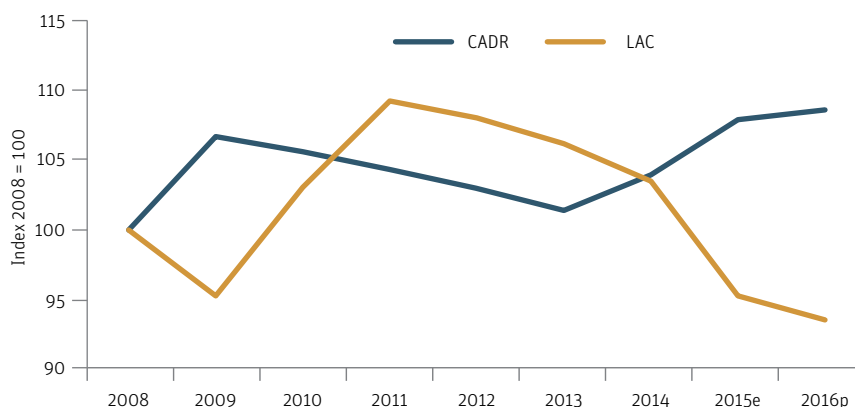


Source: World Economic Outlook (International Monetary Fund, January 2016).

Note: e=expected, p=projected.

To this prospect of higher growth in the main trade partner must be added the positive impact of oil and remittances on the region's external balance. On average, the fall in the oil price outweighed the drop in the prices of other commodities for CADR. Unlike Latin America and the Caribbean as a whole (LAC), for 2015, CADR enjoyed a relative rise in its goods' terms of trade. In 2016 a further improvement in the terms of trade is expected (see Figure 1.8). As in 2015, the lower prices of the region's exported goods will be more than offset by lower oil prices.

<sup>3</sup> Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.

**FIGURE 1.8** Terms of Trade: CADR and LAC

Source: World Economic Outlook (International Monetary Fund, October 2015).

Note: e=expected, p=projected.

Where risks are concerned, given that China is an important trade partner of the United States,<sup>4</sup> with closely interconnected markets, the slowdown in Chinese growth and its exchange rate decisions could have uncertain impacts on expected growth in the U.S., leaving CADR once again at the mercy of external swings.

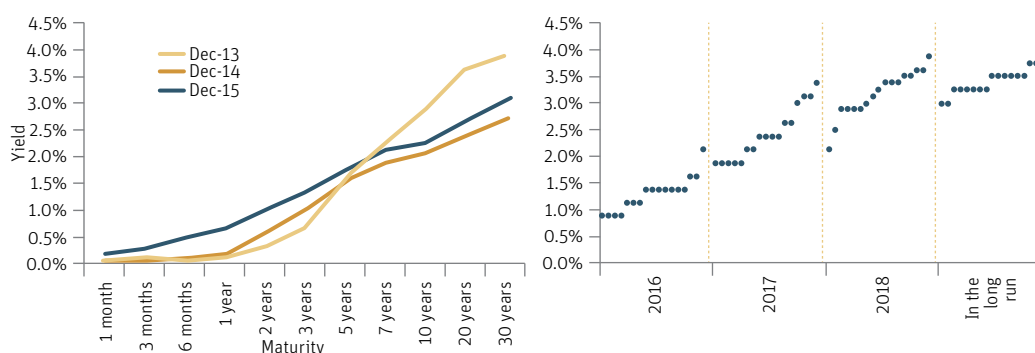
The expected outturn in China, the fall in the price level in the United States and the performance of capital markets opened up a debate on when would be the opportune moment for the Federal Reserve (FED) to begin to increase its reference interest rate. In December 2015 the FED ended this debate by increasing its rate by a quarter of a percentage point, placing it between 0.25% and 0.50%. The FED asserted its confidence in economic fundamentals, the sustainability of U.S. economic growth and an eventual moderate rise in inflation. However, it also recognized that its rate increase was slight and indicated that the accommodative policy scenario would continue for now. This provokes a new question: will the Fed continue to adjust interest rates?

China has shown its inclination to advance towards a growth model that is less dependent on capital investment and has proposed a transition towards yuan convertibility by 2020 at the latest. Greater flexibility in the currency regime in China would permit an exchange rate that is more consonant with market dynamics, which could generate a reduction in its dependency on exports and stimulate domestic demand. If China implements a reform of this kind it would show signs of efforts to reconfigure its economy on the basis of market fundamentals, improving its prospects and gradually reducing the instability it has provoked in financial markets and deflationary pressures in the United States. In that case the FED would be more comfortable raising its reference rate.

<sup>4</sup> In total U.S. imports 20% come from China, while around 7.2% of total U.S. exports go to China.

In addition, some investors take the view that inflation will gradually rise and that a similarly gradual increase in interest rates would permit a smooth reduction in quantitative easing. This first increase in the FED's reference rate might be understood as a step along this path towards a later cycle of monetary tightening. Investors and the FED seem to be betting on this progressive rise in rates. Figure 1.9 shows the yield curve on Treasury bills and the expectations of the Federal Open Market Committee.

**FIGURE 1.9** Yield Curve and Expectations on FED Rate Moves

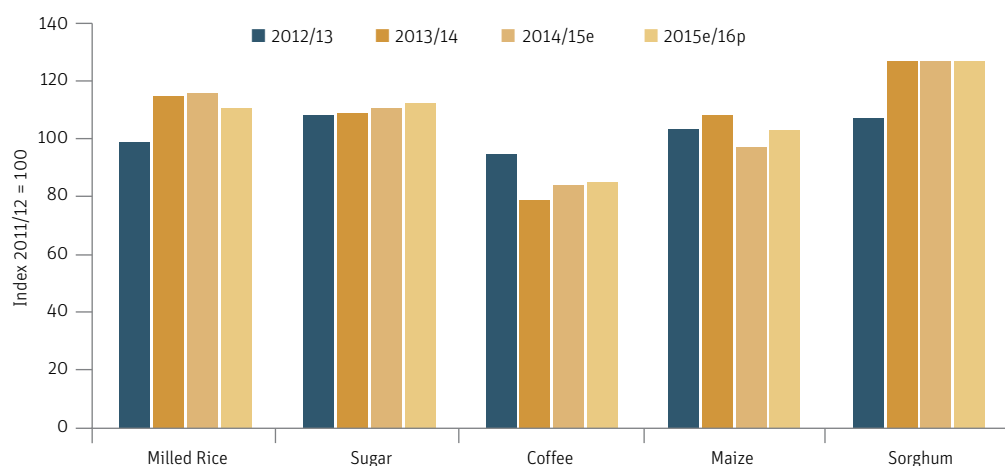


Source: U.S. Department of the Treasury and Federal Reserve (December 2015).

On the one hand, the positive slope of the yield curve in recent years can be seen, that is to say, inflation expectations among investors remain high (although lower now than before). However, in 2015 a curve higher than that in 2014 can be seen and a fall in the gap between short and long-term rates, which can be interpreted either as market expectations of a fixed rate above the equilibrium or as a market which is already assimilating the adjustment in rates. At present, very low short-term rates and relatively high long-term rates lead one to believe that the adjustment will continue. On the other hand, the 17 voting members of the Federal Committee expect the reference rate to stand at approximately 1.3% towards the end of 2016, confirming the possibility that the rate will adjust gradually.

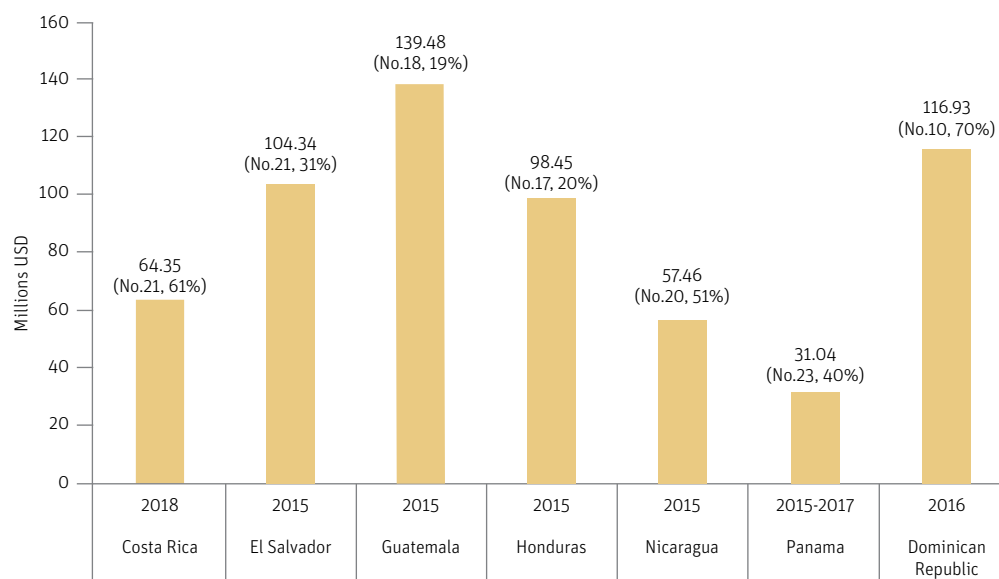
Also the continuing climatic shocks are still affecting the region. Except in sugar and sorghum, agricultural production has been unstable (see Figure 1.10). Coffee production continues to be below the level of the 2011/12 crop. In addition, the production of maize fell in 2015 and it is expected that production of milled rice will fall in 2016. All this could have implications for food supply in local markets. Thus it is possible that the severe drought which is afflicting CADR could translate into upward pressures for domestic prices.

Finally, the CAFTA-DR tariff reductions continue. From 2015, moreover, a new phase begins. A series of goods which had not previously been affected beginning to have their tariffs removed (see Figure 1.11). Accordingly the region will have to face tariff-free supply of products from the United States, a country of higher relative competitiveness. This includes in particular a list of agricultural goods which may be harmed by this competitions, such as rice, sorghum, yellow maize, beans,

**FIGURE 1.10** Agricultural Production: CADR\*

Source: FAO-Agricultural Market Information System (November 2015) and IDB Staff.

Note: e=expected, p=projected. \*For rice, coffee and maize, Belize is excluded. For sugar all countries are included. For sorghum Belize, Costa Rica and Panama are excluded.

**FIGURE 1.11** Imports from the U.S. of Products Facing Imminent Tariff Reduction\*

Source: Inter-American Development Bank (VPS/INT) based on INTrade.

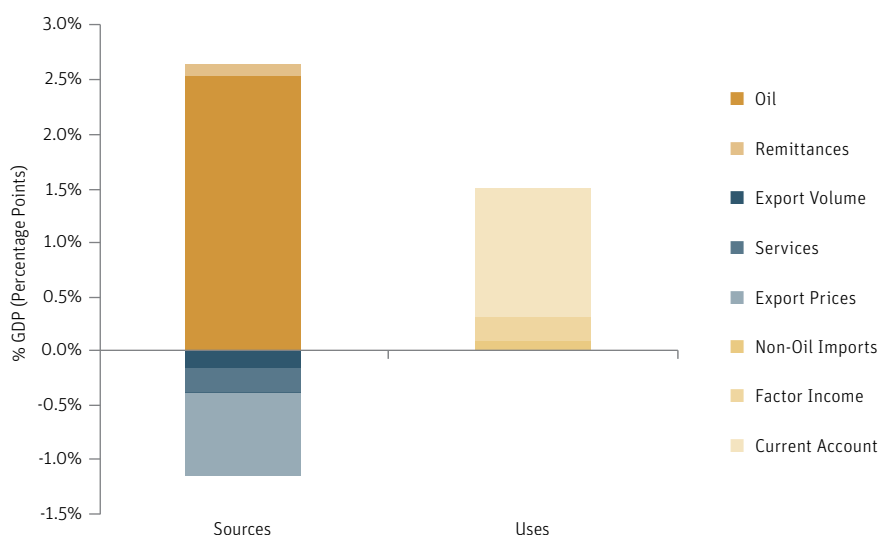
Note: \*Products affected: meat, chicken, dairy products, coffee, rice, vegetable and animal oil, processed meat, malt extracts, ice creams and other food preparations, children's clothing and stockings (Panama). In ( ) are found the Number of products affected by the tariff reduction and the average tariff on them.

among others. The behavior of the agricultural and agro-industrial sectors of CADR will be key in this situation since they will have to watch over both supply in their respective markets as well as the capacity to improve their competitive advantage over their main trade partner.

## THE CHALLENGES FOR THE REGION

The region remains closely tied to exogenous factors. For 2016 it would seem that these factors are again going to contribute positively. The fundamental question is whether the region is taking advantage of these circumstances. Figure 1.12 presents one way of looking at what took place in 2015.

**FIGURE 1.12** Incidence of External Components on the Current Account, Change between 2014 and 2015: CADR\*



Source: World Economic Outlook (International Monetary Fund, October 2015) and IDB Staff.

Note: \*Excludes Belize.

The first column shows the positive shock that the region experienced. The average country had a gross external gain of 2.6 percentage points of GDP, explained by the reduction in the oil price (2.5 percentage points of GDP) and higher remittances (0.1 percentage points of GDP). This gain was counteracted by the negative effect of the fall in price of the region's exports (-0.8 percentage points of GDP). Therefore, through "external" factors there was a net shock of 1.9 percentage points of GDP. However, the total net external shock is still smaller, at 1.5 percentage points of GDP, owing to the impact of changes in the volumes of exports of goods and of services. Therefore the fact that the United States is one of the few economies in the world to be growing at present, and, furthermore, that its imports are growing more rapidly than its production, is not being taken advantage of by the region.

The second column shows how the positive shock was used. As can be appreciated, the larger part of it translated into external savings (1.2 percentage points of GDP or almost 80% of the net positive shock), while the increase in non-oil imports was barely 0.1 percentage points of GDP. It could be argued that given that this oil price scenario seems to be structural, the need for saving



is lower and, therefore, the region's saving is sufficient. However, how much payment of interest increased is also evident. This reflects two trends: the increase in the cost of external debt and the region's continued accumulation of net external liabilities. Both factors show that it is still necessary to carry out a bigger current account adjustment in order to stabilize external liabilities. Accordingly, the region must save more.

When we try to see who contributed to the improvement in the current account, given the fiscal performance described above, we find that the saving came from the private sector. This private saving results from lower consumption (0.9 percentage points of GDP) and lower investment (0.5 percentage points of GDP). Furthermore, the fall in consumption is less than the saving arising from lower oil prices<sup>5</sup> (estimated at 1.8 percentage points of GDP for the final consumer), so that consumption of other goods has increased. Therefore we continue to observe that the public sector is not contributing to saving in the economy and that the private sector is using the benefits of the lower oil price and higher remittances for consumption.

In this regard, 2016 looks like being another positive year. But there are risks. Short-term external capital flows continue to finance part of CADR's external deficit and an abrupt change in the levels of these flows would imply major immediate changes in the capacity to make foreign purchases. In addition, it is possible that a gradual upward adjustment of the Fed funds interest rate is carried out, which makes likely a gradual contraction in the supply of funds to the region. Equally, if the crisis in China affects growth in the United States, the region will feel the impact.

How to take advantage of the positive environment? In the first place, as we mentioned with regards to Figure 1.12, it is necessary to profit from U.S. growth. As we will discuss in this report, the region has not developed a distinct export basket. The comparative advantages have remained in the same goods for 30 years, even in the U.S. market. In addition, we will see that the exchange rate does not seem to be an obstacle to the development of new exports.

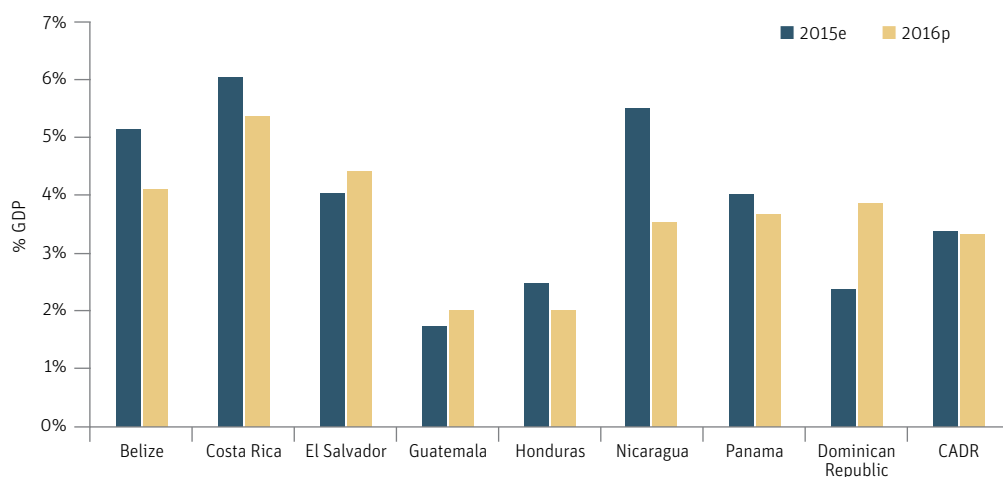
The change in the international environment makes it necessary to examine again policies to promote competitiveness. The region has made little progress in improving its position in the various rankings of competitiveness. Aspects such as logistics and transport continue to be pending tasks. In addition, incentives to attract capital must be reconsidered, and tax breaks to compensate the region's competitive deficiencies avoided. Finally, it is important to move ahead with growth strategies which assist the competitiveness of the non-traditional export basket.

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<sup>5</sup> Preliminary estimates indicate that the final consumer has been the main beneficiary of lower oil prices. This situation has not been exploited to increase taxes on fuel consumption and the government has lost earnings through lower prices. This loss has even been greater than the fall in subsidies on energy consumption. Therefore, for most countries lower oil prices have produced a fiscal loss.

Meanwhile the public debt carries on rising and the journey along the path towards fiscal balance continues not to be made. After two consecutive years without significant reductions in the fiscal deficit, the 2016 scenario does not look different (see Figure 1.13). The results are mixed but recovering tax revenues seems to remain an important task. Weaknesses in tax administration and the failure to approve tax reforms as a response to the end of free zone tax benefits mean there are tasks still pending for the region.

**FIGURE 1.13** Fiscal Deficit Outlook



Source: World Economic Outlook (International Monetary Fund, October 2015).

Note: e=expected, p=projected.

As a short-term policy, positive fiscal results would have a significant and prompt impact on the expectations of investors in the region, which would assist stability and access to credit, strengthen the buffers for the application of anti-cyclical policies and serve as a support for actions aimed at bolstering local institutions, the productive structure and the financial sector (see Lagarda *et al.*, 2015). Izquierdo and Manzano (2012) have already warned about the need for the region to adjust its fiscal balance, not only making its long-term additional tax collection goals effective but also reviewing the rigid structure of public spending. The political effort must be made to improve the focus of social spending, reduce the costs of intervention and take measures to re-examine regional subsidies (in particular for energy).

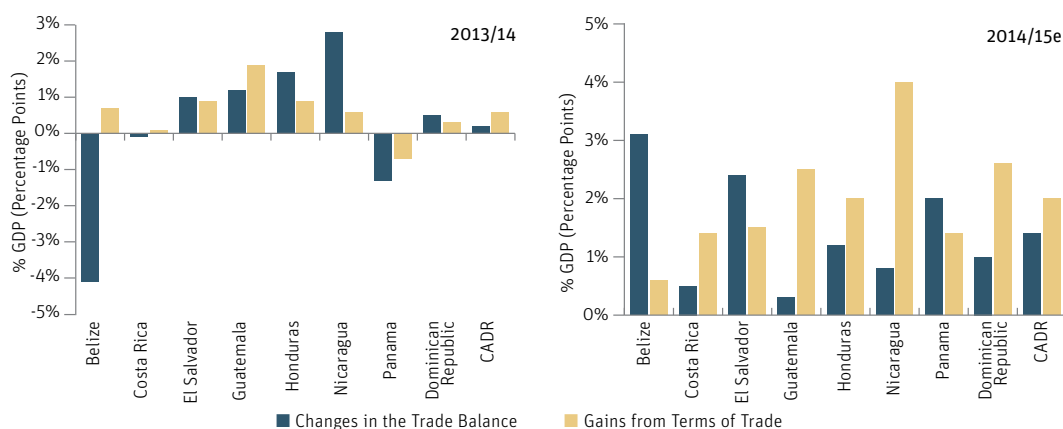
There is definitively a big opportunity now to re-emphasize the importance of reviewing national agendas. Advantage must be taken of the favorable environment in order to make debt sustainable and achieve a competitive export sector.

## EXTERNAL SECTOR COMPETITIVENESS

The positive outlook for the U.S. economy and the fall in oil prices have created a favorable trade environment for CADR. On the exports side, despite the fall in many commodity prices, the region has succeeded in increasing its non-oil exports in 1.6% in 2015, offsetting part of the still larger rise in its non-oil imports (3.5%). On the imports side, the substantial fall in oil prices has lightened the oil account, reducing the total trade deficit and therefore generating a sizeable fall in the external deficit. This has happened at a time when net FDI flows and remittance transfers, mostly originating in the United States, have remained relatively stable.

However, as mentioned in the first chapter, the international prices are still helping to improve CADR's trade balance. In 2015, commodities as coffee, maize, rice, sugar, and wheat, assimilate a fall in their prices proportionally lower than the fall in the oil price, allowing the improvement in the relative prices. This favorable scenario remains, although to a lesser extent. The gains in the terms of trade seem to diminish and consequently it is becoming evident that changes in imported volumes may be exceeding changes in exported volumes (see Figure 2.1).<sup>1</sup>

**FIGURE 2.1** Gains from Changes in the Terms of Trade



Source: World Economic Outlook (International Monetary Fund, October 2015) and IDB Staff.

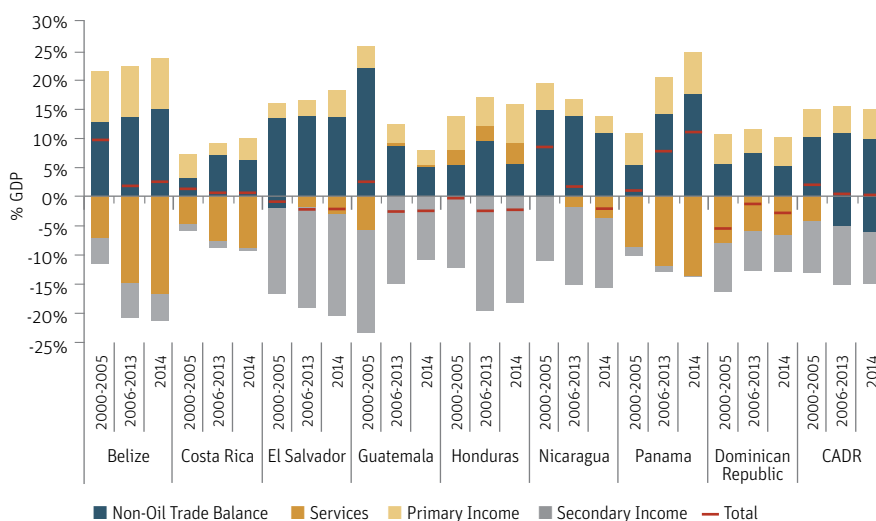
Note: e=expected. The gain from the change in terms of trade shows the change observed between the trade scenario with prices at the moment (t) and the trade scenario with the previous year's prices (t-1).

<sup>1</sup> As can be deduced from Figure 2.1, the difference between the change in the trade balance and the gains from the change in the terms of trade is explained, in large measure, by the change in the volumes brought to market.

Overall for the external accounts it is possible to consider that CADR has benefited from a positive shock in global prices (with a good part of the change in the trade balance determined by this shock). However, the outcome was accompanied by a significant deterioration in volumes – i.e. the region's volume of imported goods rose to a greater extent than export volumes – although this was not the case in all countries. In Belize, El Salvador and Panama, changes in volumes supported the positive shock in the terms of trade.

Figure 2.2 shows that on average the non-oil current account deficit had been falling. This is a structural weakness of the region. Historically, between 1980 and 2014, the non-oil current account deficit averaged 1.2% of regional GDP, but in 2014 it dropped to 0.3% of GDP. However, given the recent changes in trade volumes, the non-oil current account deficit closed 2015 at 1.2% of GDP (similar to the historical average). It is to be expected that any new negative exogenous shock in international prices will require a significant adjustment in volumes to prevent a possible imbalance in the current account.

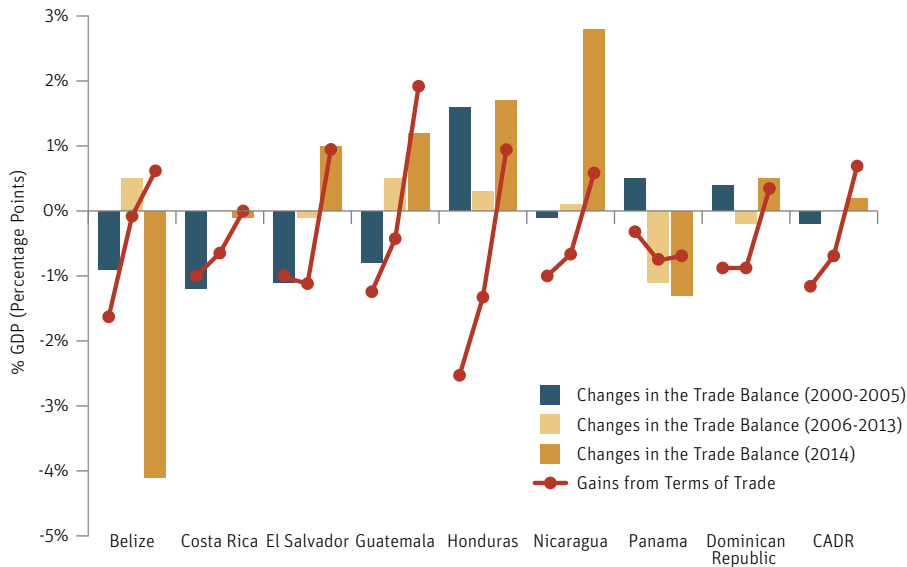
**FIGURE 2.2** Non-Oil Current Account Deficit



Source: World Economic Outlook (International Monetary Fund, October 2015) and IDB Staff.

Note: Values greater than zero indicate a deficit; values below indicate a surplus. It is assumed that primary income (factor income) and secondary income (transfer payments), as well as services, are non-oil.

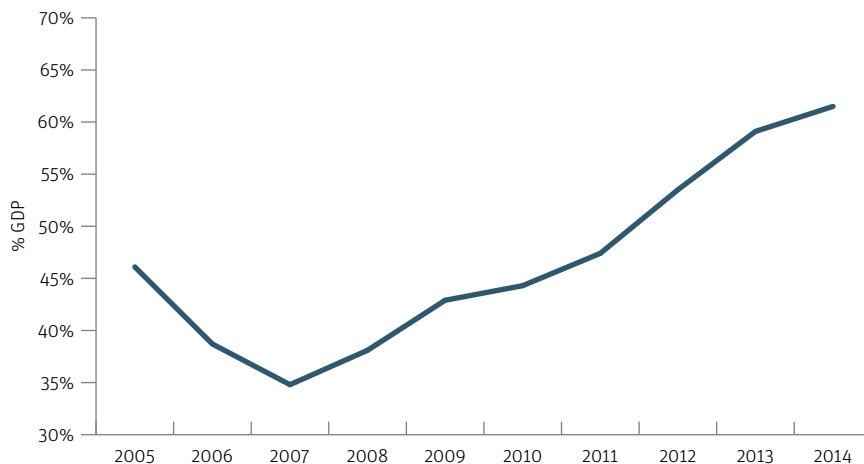
The above is not new. Figure 2.3 shows how the region's trade balance adjusts whenever there are changes in relative prices. Overall during the periods 2000-2005 and 2006-2013 the region faced negative and large terms of trade shocks but its trade balance did not reflect them completely, showing a capacity for volume adjustments. With the recent positive shock something similar is occurring. Volume changes are diminishing the overall impact of the shock.

**FIGURE 2.3** Average Gains from Changes in the Terms of Trade

Source: World Economic Outlook (International Monetary Fund, October 2015) and own calculations.

Note: The gain from the change in terms of trade shows the change observed between the trade scenario with prices at the moment (t) and the trade scenario with the previous year's prices (t-1). In this case, the average of the changes for the respective periods is shown.

Although in principle this might seem a reasonable response, there is no doubt that much remains to be done in order to adjust the current account position. As Figure 2.4 shows, the net external liabilities of the region have grown in the past decade, especially by the accumulation of FDI, foretelling larger external payments in the future. This could jeopardize balance of payments

**FIGURE 2.4** Net External Liabilities: CADR\*

Source: Central Banks.

Note: \*Excludes Belize, Panama and the Dominican Republic.

sustainability. In this regard, an analysis of external sustainability based on the standard approach was carried out.<sup>2</sup> For 2015, the results show that the region needs an average adjustment equivalent to 2.2% of GDP in the trade and services deficit to avoid a larger deterioration and keep its net external position at a constant level.

The current dynamic favored CADR's external accounts but the non-oil basket did not behave in the same way as the oil basket. The countries of the region are net oil importers and the bulk of the contribution to the fall in the current account deficit was due to the fall in the oil price. Other commodities (cocoa, coffee, sugar, among others), which contribute to the region's exports, also experienced a fall in their prices, which reduced the scope to cut the deficit even more. In these circumstances, the region cannot ignore the competitive agenda aimed at increasing its weight in international trade and improving its balance structurally.

Changes in global prices are exogenous events for the countries of the region. However, notwithstanding the characteristics of inelastic markets, the countries do have more control and ability to act by adjusting export and import volumes. In this regard, tariff reduction in CAFTA-DR represents a great challenge for the region as it must face up to tariff-free supply of goods from the U.S. economy, which could represent a large negative volume shock. Thus it is still more important to assess the trade strengths and weaknesses of CADR to acquire a sense of where to concentrate the efforts to gain control over export volumes (to smoothing future negative external shocks and retain niche markets), increase trade and stimulate economic growth rates.

## THE COMPARATIVE ADVANTAGES OF THE REGION

There are many ways of conceptualizing and interpreting the competitiveness of a country and many ways of measuring it.<sup>3</sup> In its broadest sense it can be defined as the country's ability to improve the standard of living of its citizens through the productivity with which its resources are employed (in this case, competitiveness is the same as productivity). Within this conceptual framework, measuring competitiveness is no easy matter. It involves analyzing components that are static or dynamic, local and aggregate, institutional, related to markets and factors of production, among others.

On the other hand, a frequently adopted perspective sees international competitiveness from an approach based on trade data. According to this perspective, reviewing some external trade indicators would highlight the position of a country or region with respect to the rest of the world

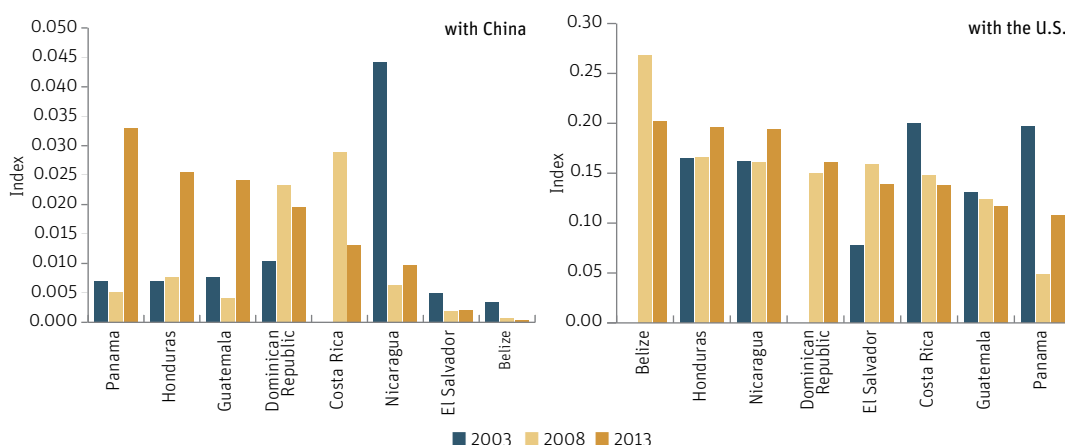
<sup>2</sup> The study was carried out for Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama and the Dominican Republic. Taking account of the different characteristics of the countries as well as the availability of historical data to 2014, scenarios were evaluated given different long-term growth rates and different real interest rates on external liabilities.

<sup>3</sup> See, for example, Porter (1990), Lall (2001) and Kitson et al. (2004).

and, therefore, would give signals on the goods on which trade efforts should be concentrated. Using this criterion the revealed competitiveness approach is adopted, so that a favorable evolution of a series of trade indicators can be interpreted as a trade gain in determined periods, and vice-versa.<sup>4</sup>

Given the international context described in the first chapter of this report, it is important to review the trade position of CADR against the world market and the U.S. market. At first, the pattern of trade insertion seems to favor the region (see Figure 2.5).<sup>5</sup> The growth of China (a country which represents 15.5% of global GDP) decelerated in 2015 while the United States continues in clear recovery following the global crisis. The low linkage of the region on China as a trade partner makes the regional trade balance less vulnerable to its deceleration. On the other hand, it is more feasible to expect direct positive effects on regional trade from the current links to the United States.

**FIGURE 2.5 Trade Linkage**



Source: WITS-UN Comtrade and IDB Staff.

Note: Six digit HS codes (2002 and 2007) were used, excluding non-specified goods. The index spans from zero (no linkage) to one (complete linkage). The missing bars in certain periods reflect the lack of available data.

In this context, what has been the development of the region's exports? Using external trade data, an analysis will be made on the results of the indicators for: product concentration, revealed comparative advantages, relative quality of the export basket, and trade specialization. In this way the trade strengths and weaknesses of CADR should be revealed.

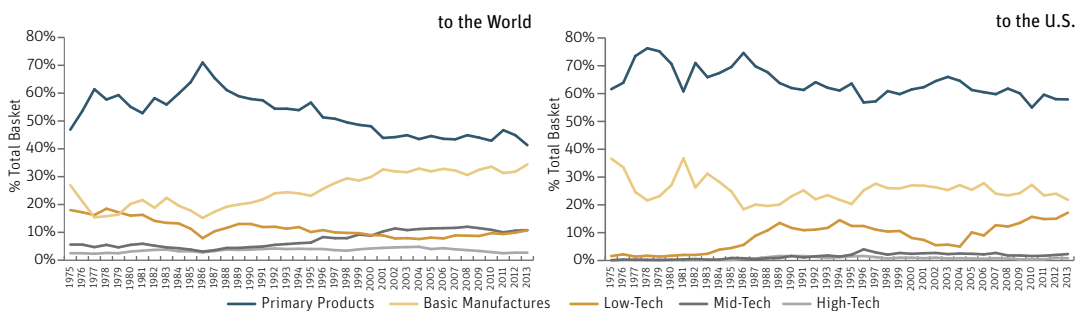
<sup>4</sup> See García-Herrero et al. (2014) whom used this framework to evaluate the manufacturing sector in Latin America.

<sup>5</sup> Following Ferchen et al. (2013), an index of trade linkage was constructed as a geometric average of three components, such that:

Linkage<sub>ij</sub> =  $\sqrt[3]{\frac{X_{ij}}{X_i} \cdot \frac{X_{jdestinationij}}{X_j} \cdot \text{average} \left[ \frac{M_{destinationij}}{M_j} \cdot \left( 1 - \frac{X_{ij}}{X_i} \right) \right]}$ . The first component expresses the exports of a product (i) of country (j) as a share of its total exports (it shows how concentrated are a country's exports in one product). The second component shows the exports of i of j to a particular destination (in this case to China or the U.S.), divided by the total exports of i (it reflects how dependent is the world in relation to the destination country for selling i). The last component averages two expressions: first, the share of the imports of i of the destination country in the global market; secondly, the complement of the market share that j has in the exports of i (a measure of the strength of the destination country as a buyer compared to the strength of j as a seller).

Figure 2.6 shows the behavior of the region's exports, according to technological classification: primary products, basic manufactures and non-basic manufactures (low, medium and high technology).<sup>6</sup> Given the challenge of tariff reduction for CAFTA-DR and given that the U.S. economy is the main trade partner of CADR, it is useful to review both the total export basket of the region and the basket of goods traded with the United States.<sup>7</sup>

**FIGURE 2.6** Evolution of Exports, by Technological Classification: CADR\*



Source: Central Banks, National Ministries, WITS-UN Comtrade and IDB Staff.

Note: Four digit codes were used following SITC rev. 1, excluding non-specified goods. \*Belize and the Dominican Republic are excluded.

In the total export basket of CADR, it can be seen a transition from the export of primary products towards the export of basic manufactures (these two types of products represent 75% of the total). This transition can also be seen in the basket directed to the United States. In the latter, the export of low technology products has risen relatively, to the detriment of the share of primary products.

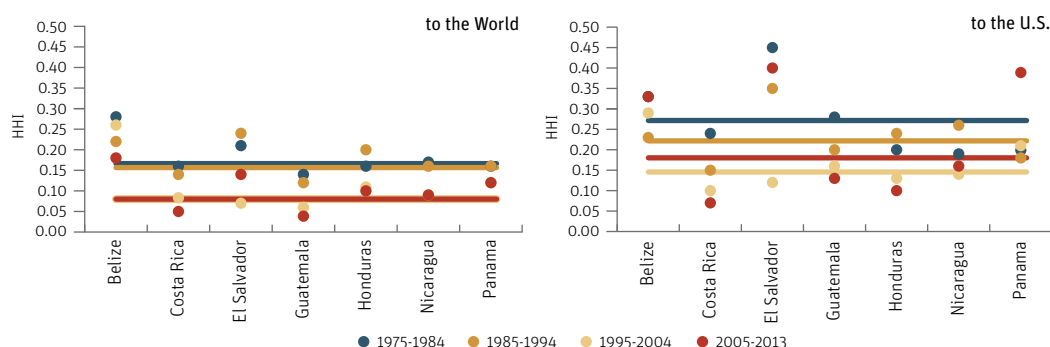
However, the gains in diversification are being lost (see Figure 2.7). Although the degree of export concentration<sup>8</sup> is lower than its historical level, contrasting the 2005-2013 period (in which CAFTA-DR was starting to implement, although in different years depending on the country) with 1995-2004, no advance is seen in this domain. Moreover, taking account of the basket with the United States, there is evidence of a reduction in diversification. In general, given the trade linkage of the region on the United States, it is confirmed that the products exported to the latter are less diverse than the overall basket: a long-term historical trend which makes clear how the region will be weakened if it does not reinvent its international trade.

<sup>6</sup> The detail of the technological classification is as follows: primary products (agricultural, live animals and animal products, meats and dairy products), fuels, fish and seafood, ceramics and glassware), basic manufactures (drinks, foods, wood, metals, minerals, paper, tobacco) and non-basic manufactures; the latter in: low-technology (shoes, rubber goods, leather, furs, clothing and industrial textiles), middle-technology (weapons, transport equipment, heating and cooling equipment, electro-domestic equipment, musical instruments and their parts, agricultural machinery, construction and mining, munitions and their parts, clocks and watches, chemical products such as fertilizers, extracts and paints, perfumes and toiletries, washing preparations, washing preparations, powders and explosives, fireworks, plastics and others) and high-technology (electron and proton accelerators, devices for electrical and telecommunications circuits, electro-medical apparatus, optical equipment and control instruments, batteries and accumulators, transistors and automotive electrical equipment, steam boilers, equipment for distributing electricity, steam and gas motors and turbines, propulsive and internal combustion motors, pharmaceuticals, nuclear reactors, cinematographic and photographic products).

<sup>7</sup> For this and where data permitted, an additional effort was made to homogenize data and exclude free trade zone components, maquila and similar (reducing the bias from reviewing baskets derived from high tax incentives for non-local industries). This process was to some degree possible for six countries in the region: Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama.

<sup>8</sup> Measured by the Herfindahl-Hirschman Index (HHI) normalized.

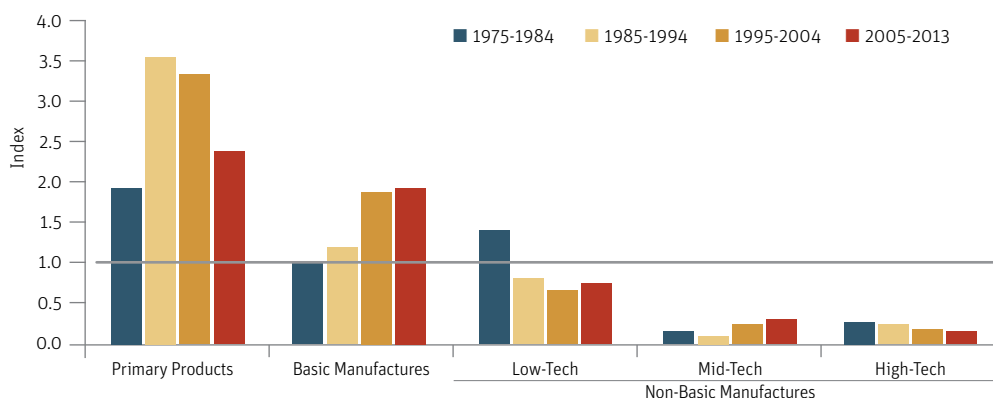


**FIGURE 2.7** Export Concentration

Source: WITS-UN Comtrade and IDB Staff.

Note: Four digit codes were used following SITC rev. 1, excluding non-specified goods. The lines indicate the regional average. An index close to 1 indicates high concentration of the export basket. The calculations include zones with fiscal incentives.

A background to this is the fact that the region has not developed comparative advantages other than in primary products, basic manufactures and, partly, low technology products (see Figure 2.8 and 2.9).<sup>9</sup> The region has even lost competitiveness against other countries in Latin America and the Caribbean (for more details, see Annex 2.1). The above reveal the regional persistent lag in the adoption of new technologies, the lack of technology transfer processes, and a public-private investment of limited impact.

**FIGURE 2.8** Revealed Advantages of CADR\* Compared with the World, by Technological Classification: Total Exports

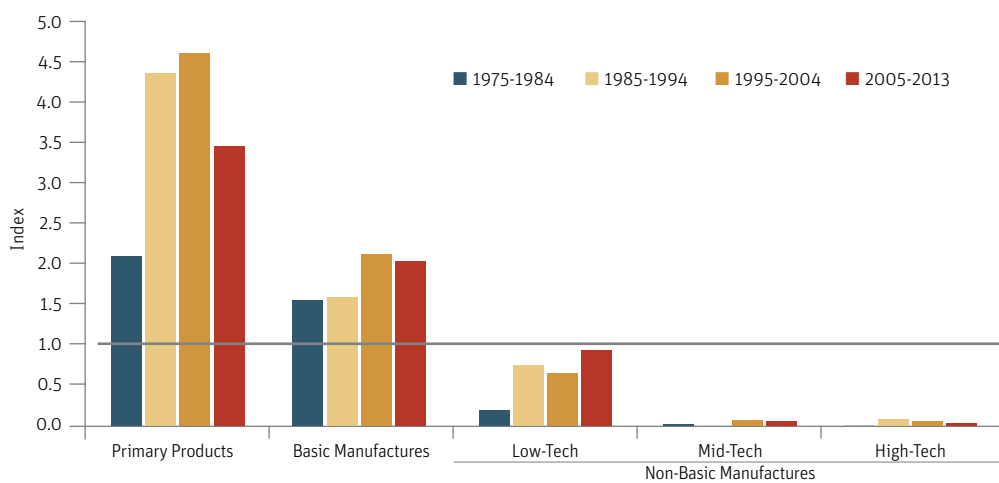
Source: Central Banks, National Ministries, WITS-UN Comtrade and IDB Staff.

Note: Four digit codes were used following SITC rev. 1, excluding non-specified goods. \*Belize and the Dominican Republic are excluded.

<sup>9</sup> Based on Balassa (1965), the index of revealed comparative advantages (RCA) is calculated to measure if, given one destination (such as, for example, the world or the United States), a product has more weight in the exports of one country or region than in others. If this is the case, then the country would tend to have a comparative advantage in the production of that good. The results derive from choosing an export basket for a particular destination (k) and then dividing the share which represents the export of one product (i) by the total exports of the country or region (j) and the share that represents the export of i over the total exports of

another country or region (w). Thus,  $RCA_{ijwk} = \frac{X_{ijk}}{X_{jk}} \div \frac{X_{iwk}}{X_{wk}}$ .

**FIGURE 2.9** Revealed Advantages of CADR\* Compared with the World, by Technological Classification: Exports to the U.S.



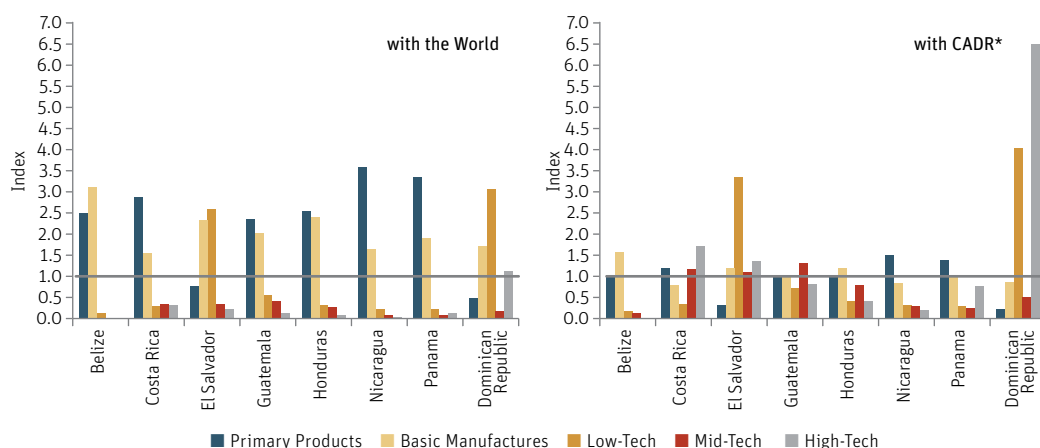
Source: Central Banks, National Ministries, WITS-UN Comtrade and IDB Staff.

Note: Four digit codes were used following SITC rev. 1, excluding non-specified goods. \*Belize and the Dominican Republic are excluded.

Nevertheless, the transition to basic and low technology manufactures is consistent with the revealed advantages for the region. Independent of the market that is being supplied, whether the global or the U.S., the region has advantages in primary products. It is important that the region maintains its leadership in this line of products (in which the Middle East and North Africa continue to enjoy a greater comparative advantage than CADR). In addition, it is evident that the region has similar trade structures for the development of advantages in low technology products, which makes possible a scenario of higher competitiveness to expand niche markets.

Differences remain in the region (see Figure 2.10 and 2.11, and for more details see Annex 2.2). In both export baskets, it can be seen that El Salvador and the Dominican Republic are not, at present, competitive in primary products. Meanwhile, there is no substantial difference between those countries with advantages in these products. Therefore, given the similarity in productivity among countries in the region, rather than competing for markets a better option would be to intensify intra-regional coordination seeking complementarities. However, the results are not absolute. Costa Rica, El Salvador and the Dominican Republic stand out from the others in non-traditional exports advantages. In principle these three countries could have a higher possibility of success than the rest of the region at marketing these manufactures but, contrasting with global competitiveness, Costa Rica – and not the other two countries in which the textile industry has an important representation of the total exports – shows disadvantages in low technology manufactures.

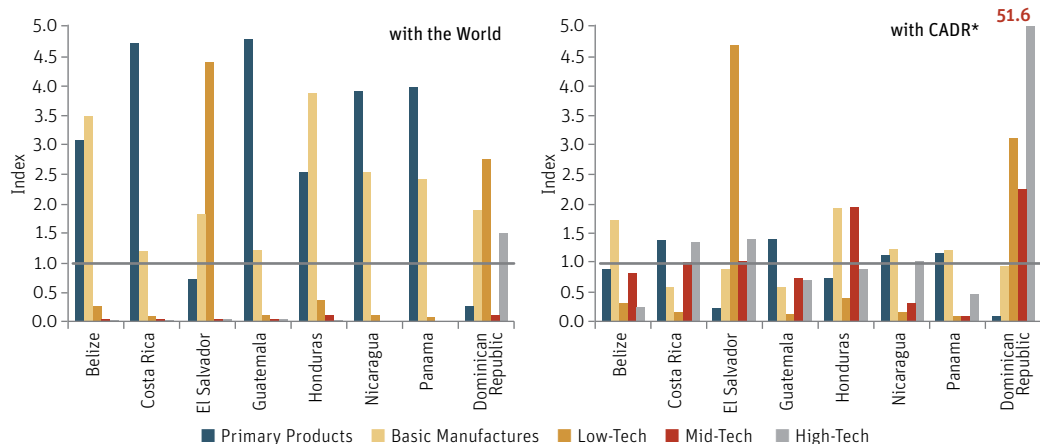
**FIGURE 2.10** Revealed Advantages of the Countries, Average 2005-2013, by Technological Technology: Total Exports



Source: Central Banks, National Ministries, WITS-UN Comtrade and IDB Staff.

Note: Four digit codes were used following SITC rev. 1, excluding non-specified goods. \*Belize and the Dominican Republic are excluded.

**FIGURE 2.11** Revealed Advantages of the Countries, Average 2005-2013, by Technological Technology: Exports to the U.S.



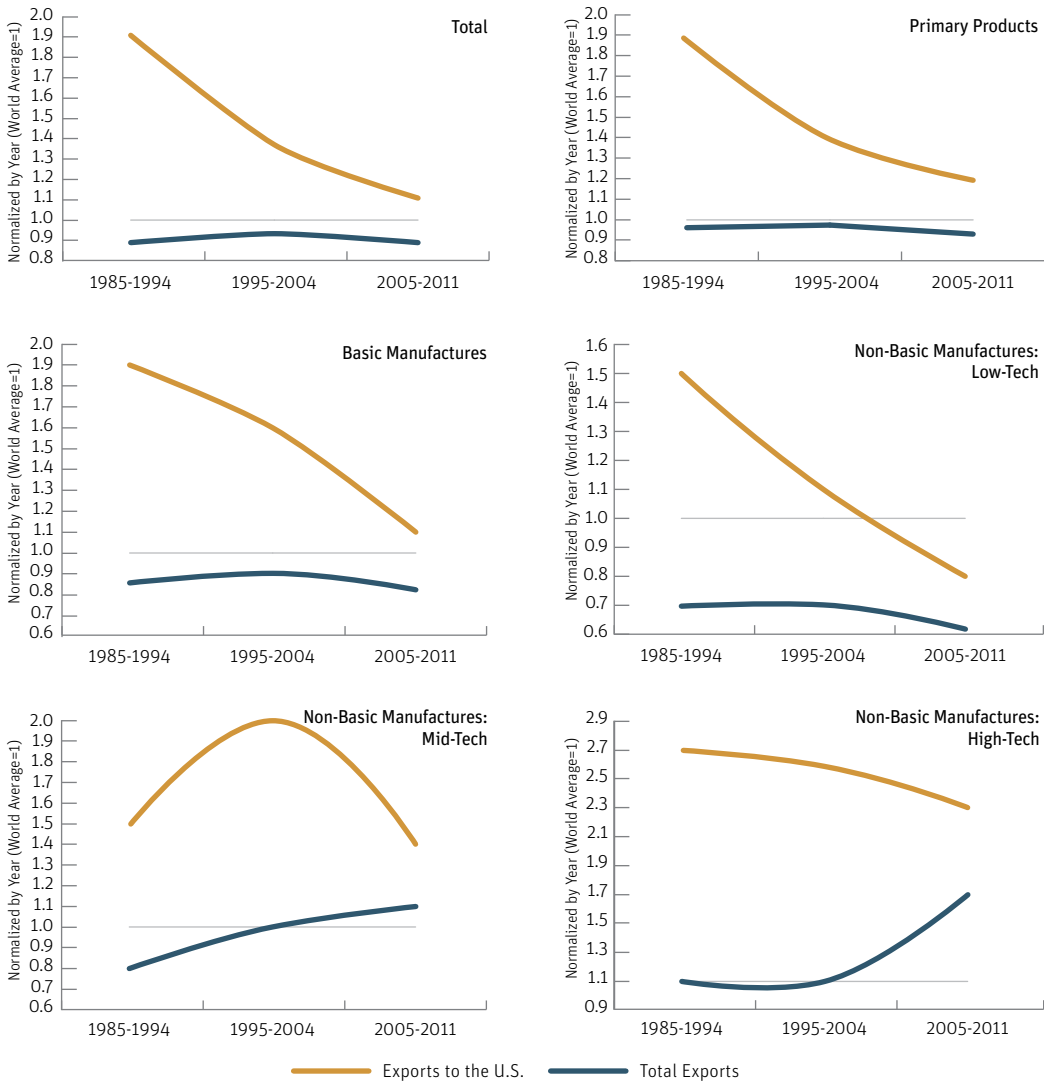
Source: Central Banks, National Ministries, WITS-UN Comtrade and IDB Staff.

Note: Four digit codes were used following SITC rev. 1, excluding non-specified goods. \*Belize and the Dominican Republic are excluded.

This meagre development of competitive advantages is accompanied by a reduction in the relative quality or average “particularity” of the exports of the region (see Figure 2.12). A way of seeing this tendency is to evaluate the relative prices of similar products between the region and other countries

where the difference in values is attributed precisely to the “particularity” of the exported product.<sup>10</sup> It is to remark how the average relative quality of all exported goods has decreased in recent decades. In the period 2005-2011, the relative quality of the CADR’s exports to the U.S. exceeds the associate to the world average; however, the relative quality of its total exports is below the world average.

**FIGURE 2.12** Average Relative Quality, by Technological Classification: CADR\*



Source: Feenstra and Romalis (2014), WITS-UN Comtrade and IDB Staff.

Note: A result greater than one shows products with a higher level of quality relative to global supply; in the contrary case, lower quality. If it is one, the quality of the product is integrally represented in its unit value. \*Belize and the Dominican Republic are excluded.

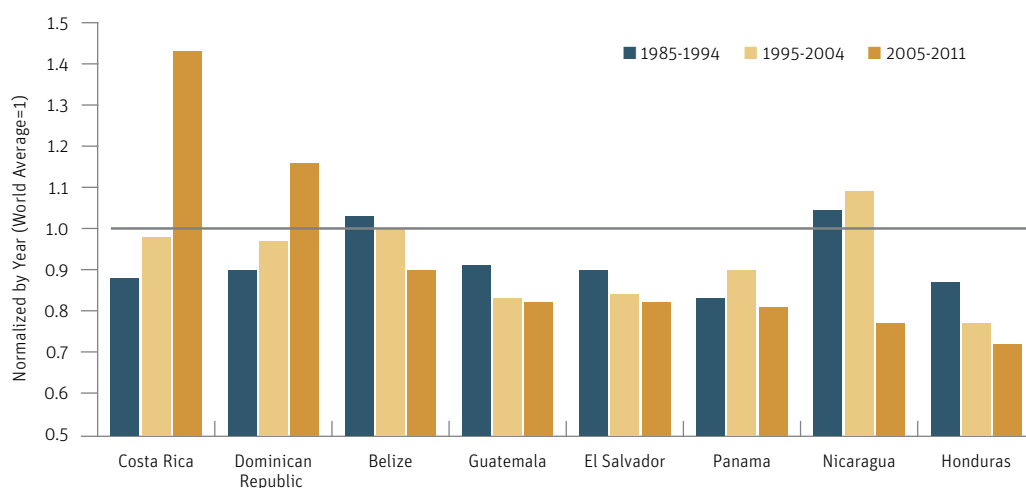
<sup>10</sup> This indicator of quality based, as was explained above, in relative prices (ratio between an index of market unit value of the product and an index of the price adjusted by quality) derives from data published by Feenstra y Romalis (2014). For it the results of SITC rev. 2 were reclassified to SITC rev. 1. Then they were normalized year by year, so that the global average equals one. Subsequently the results were aggregated using a weighted average employing the technological classification described above. Once the corresponding aggregation is made, it is normalized again. Carrying out the calculations for the United States as a trade partner, it is assumed that the quality of the products remains invariable and therefore the results could differ as a function of the value of the exports sent to this country, the basket of products exported to the United States and the countries in the sample that form the world in the normalized average.

Although the region stands out for its competitiveness trading primary products and basic manufactures, the relative quality of its exports to the world remains below that associated with the global supply; and furthermore, it has deteriorated. The region does not appear to export quality, which has reduced the perception of its competitiveness and has revealed new trade challenges, in productivity and growth, in spaces apparently taken. In turn, the relative quality of the exports of these products towards the United States remains above the overall average but after a significant decline in recent decades.

The low technology products of the region also show very low relative quality compared to global supply. However, not all the news is bad. Although medium and high technology products represent less than 15% of the regional total, their relative quality has improved over roughly a decade compared to global supply. The above reflects the regional potential to attract long-term capital investments in these industries, as well as the importance of advancing a framework of policies which promote the widening of market shares and improvement in competitiveness to increase the unit value of these products, affecting the medium and long-term trade balance.

Figure 2.13 shows the relative quality of the total export basket by country. Neither the current relative quality of the exports is similar to the quality of the global supply nor has it remained at constant levels. Costa Rica and the Dominican Republic show to the world a basket of products of higher relative average quality; these two countries have improved the relative quality of their products in a sustained way in recent decades. Regrettably the same cannot be said for the rest of the region, where relative quality has been in frank decline.

**FIGURE 2.13** Average Relative Quality of the Export Basket to the World

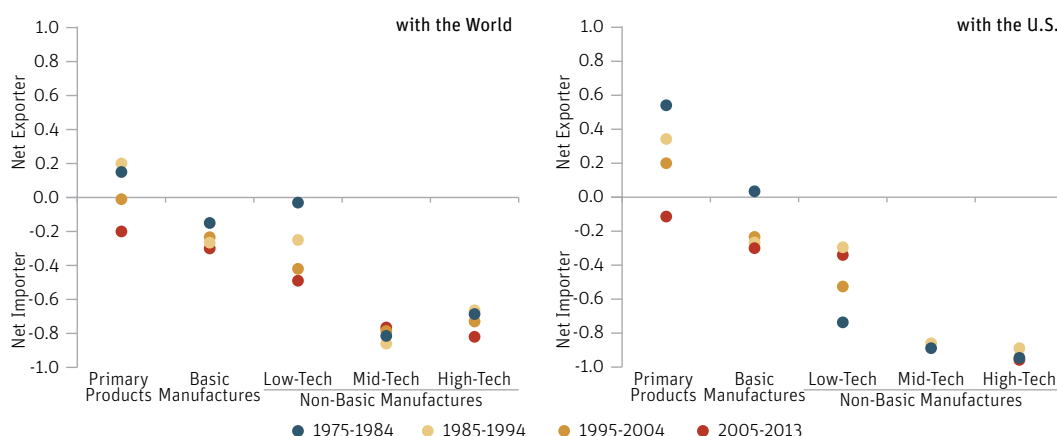


Source: Feenstra and Romalis (2014), WITS-UN Comtrade and IDB Staff.

Note: A result greater than one indicates products of higher quality relative to global supply; in the contrary case, lower quality. If it is one, the quality of the product is integrally represented in its unit value.

Taking account of the results, the region has not found the formula to cease being a net importer of all categories of goods –in some with greater intensity than in others. Figure 2.14 shows the trade specialization of the region.<sup>11</sup> Excluding the basket of products originating in areas of high tax incentives (maquila, free zones, among others), it can be seen that the current trade position of the region is more unfavorable than in former periods, which reveals the high dependency of the trade balance on fiscal trade incentives. This outcome is possible so long as the region only maintains a relevant net export participation in animals and animal products, minerals and vegetables. Consequently, it is vital to reinvigorate the scheme to attract FDI and to encourage the local industry in order not to lose ground in the domains in which the region still has comparative advantages.

**FIGURE 2.14** Trade Specialization, by Technological Classification: CADR\*



Source: WITS-UN Comtrade and IDB Staff.

Note: A result greater than zero indicates that the region is a net exporter of the respective product; a result below zero shows the region is a net importer. \*Belize and the Dominican Republic are excluded.

## THE FUTURE AGENDA

The lack of competitiveness gains in the external sector and the retreat observed in trade indicators which historically favored the region, stresses the importance of the pending agenda.

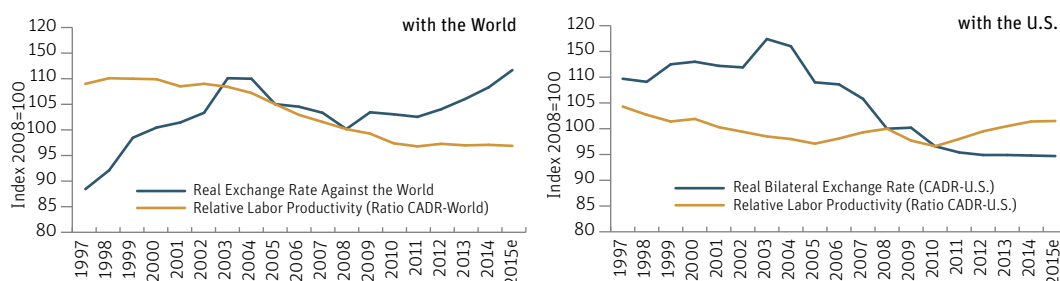
The attraction of long-term investment in domains with high tax incentives does not seem to have facilitated the creation of conditions favoring the development and competitiveness of local industry; on the contrary, it has seemed to strengthen a model whereby the international competitiveness of sectors without incentives lost ground. Consequently, and given the suspension in 2015 of World Trade Organization concessions (that permitted fiscal benefits to be retained), now is the time to call for future trade incentive schemes which generate horizontal spillovers and intra-regional benefits.

<sup>11</sup> The results from this indicator derive from the division of exports minus imports of a product by the total international trade of the region (exports plus imports). Thus the resultant values are normalized.

On the other hand, it must be recalled that the countries of CADR are located in a very compact geographical zone. The internal conditions of the countries create productive scenarios in which competition between them would not necessarily lead to trade improvements overall (Cuevas *et al.*, 2014). Therefore, to seek better regional coordination (for example, through a harmonized tax system) would enable the countries to exploit their complementarities, facilitating a “win-win” intra-regional scenario; i.e. a trade scenario in which all could emerge as beneficiaries.

In addition, there are factors associated with macroeconomic aspects which could be acting as limits to this trade progress. In particular, Figure 2.15 does not show a clear relationship between the real exchange rate and relative productivity.<sup>12</sup> The real bilateral exchange rate for CADR-U.S. might not be aligned with the fundamentals.

**FIGURE 2.15** Relative Labor Productivity and Real Exchange Rate: CADR



Source: World Bank, World Economic Outlook (International Monetary Fund, October 2015) and IDB Staff.

Note: e=expected. The real exchange rate is calculated from the fundamental equation, while the index of labor productivity is based on the quotient between real GDP and the working population.

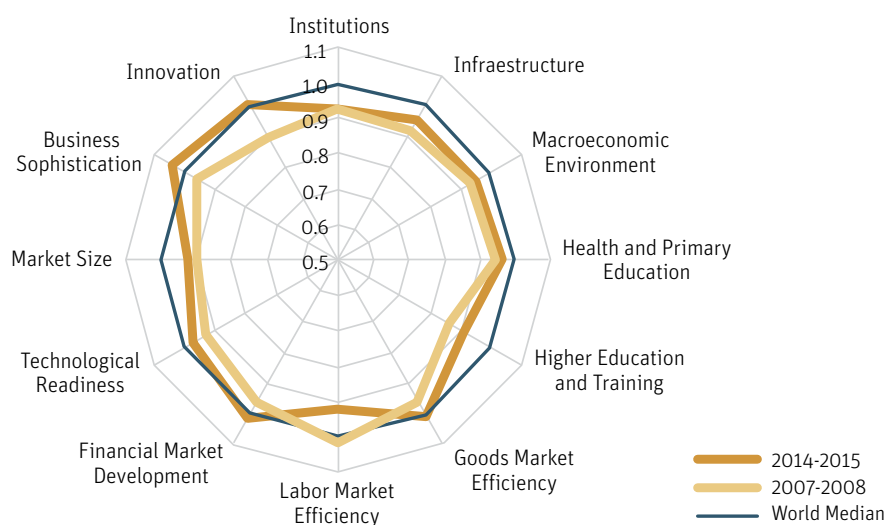
In theory the relative increase in the productivity of the tradable sector ought to displace labor from the non-tradable to the tradable sector, causing scarcity of non-tradable goods. The relative prices of non-tradable goods compared to tradable goods would be higher, and a real currency appreciation should take place to restore the internal balance (Balassa-Samuelson effect). With regional labor productivity relatively stagnant compared to that in the United States, a misalignment of the real exchange rate is observed which could indicate possible inconsistencies between the nominal exchange rate regime and the dynamic of local and/or external prices. The third chapter will review what has taken place in exchange rate policy.

As Izquierdo y Manzano (2012) set out, the capacity to stimulate trade in the region does not depend exclusively on the ability to expand the extensive margin of trade but also on how to complement the above with policies which increase the benefits in the intensive margin (for example, through improvements in infrastructure and in connectivity between countries or regions).

<sup>12</sup> The difference between the real exchange rate against all countries and the real CADR-U.S. exchange rate arises from the price relationship between the world and the United States (with the latter favored).

In this regard, various studies recommend advancing with software and hardware policies to stimulate trade.<sup>13</sup> Given the feedback between these policies, applying them would multiply the positive effects on CADR's countries. For example, the development of physical infrastructure could invigorate the expansive impacts of trade agreements and, in turn, trade agreements would promote the investment in infrastructure aimed at facilitating the trade. Given that the region depends, for the most part, on overland transport to convey its goods, reassignment of resources which seek to expand and improve road infrastructure would appear essential.<sup>14</sup>

**FIGURE 2.16** Global Competitiveness: CADR\* Compared to the World Median



Source: Global Competitiveness Report (World Economic Forum, 2007-2008 and 2014-2015) and IDB Staff.  
Note: \*Belize is excluded.

Based on the World Economic Forum definition of competitiveness, it can be seen that between the periods 2007-2008 and 2014-2015 the 12 pillars that determine the level of average productivity in the region remains relatively stable, with a few exceptions (see Figure 2.16). Moreover, it is worth highlighting that on the majority of the pillars the region is below the global average.

Among these competitiveness pillars, the only retracement seen in the region was for labor market efficiency. This reveals the greater rigidities which persist in CADR labor markets by contrast with other countries in the world. In view of the fact that this pillar is a driver of efficiency, the need to improve workforce incentives (adjusting the price of labor to the productivity of the worker) should be included in the regional agenda, and the progress made in gender equality policies on access

<sup>13</sup> For further information, see Giordano (2012), and Portugal-Pérez and Wilson (2012). The main components of software policies are trade regulations, trade facilitation and export promotion; in contrast, hardware policies seek to close infrastructure gaps and increase connectivity in order to gain competitiveness.

<sup>14</sup> As Izquierdo and Manzano (2012) affirm, there is a widespread perception in the region that its infrastructure is not of sufficient quality.



to work should be defended. In turn, the region showed a relative improvement in technological innovation and product sophistication (pillars strongly associated with long-term effects), which is a new step forward to boost trade in non-traditional products. However, if this progress is not accompanied by a substantial improvement in education and training in countries of the region, the low relative quality and the current competitive challenges will remain in place.

Overall, it is fundamental that the region takes seriously the task of strengthening its trade balance. To do that it is necessary to make concrete structural changes that shield the region from the risks associated with external volatility. To promote the competitiveness of non-traditional products is a task that will have medium and long-term effects and therefore it should be a key point on the immediate agenda. In parallel, it is important not to neglect competitiveness in primary products and basic manufactures, categories in which the region continues to have competitive advantages but in which the relative decline in quality is an adverse factor. In this way, the markets already gained would be maintained in the short-term; the trade would also expand, and the economic growth would be stimulated in the medium and long-term.

## ANNEX 2.1 Revealed Comparative Advantage of the Region

**TABLE 2.1.A** Revealed Advantages of CADR\* Compared with Other Economic Zones, by Technological Classification: Total Exports

Technological Classification		World				LAC-7				High Income				Countries of Low and Middle Income by Region															
														East Asia and the Pacific				South Asia				Europe				Middle East and North Africa			
		1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013
Primary Products		1.9	3.6	3.4	2.4	1.0	1.6	1.9	1.5	3.0	4.8	4.6	3.5	1.0	2.3	3.8	4.5	1.6	2.2	2.1	2.2	1.5	3.3	1.6	1.0	0.6	0.8	0.7	0.6
Basic Manufactures		1.0	1.2	1.9	2.0	0.8	0.7	1.3	1.2	1.0	1.2	2.0	2.0	0.8	1.1	2.3	2.6	1.1	1.7	2.4	1.9	0.8	0.8	1.0	1.4	8.0	3.6	5.2	5.6
Non-Basic Manufactures	Low-Tech	1.4	0.8	0.7	0.8	2.5	1.4	0.9	1.5	1.3	0.9	0.9	1.0	1.2	0.4	0.3	0.4	0.4	0.2	0.2	0.3	0.5	0.3	0.5	0.9	3.5	1.0	0.7	1.3
	Mid-Tech	0.2	0.1	0.2	0.3	0.7	0.3	0.4	0.5	0.1	0.1	0.2	0.3	3.3	0.4	0.4	0.3	0.9	0.6	0.8	0.6	1.5	0.3	0.6	0.7	3.8	0.6	1.6	1.6
	High-Tech	0.3	0.3	0.2	0.2	1.3	0.6	0.3	0.3	0.2	0.2	0.2	0.2	0.8	0.4	0.2	0.2	1.1	1.1	0.9	0.5	5.3	1.1	0.9	0.7	20.9	3.4	1.9	1.0

Source: Central Banks, National Ministries, WITS-UN Comtrade and IDB Staff.

Note: Four digit codes were used following SITC rev. 1, excluding non-specified goods. The advantage (RCA>1) is highlighted in light beige, neither an advantage nor disadvantage (RCA=1) in dark beige, and disadvantage in white. \*Belize and the Dominican Republic are excluded.

**TABLE 2.1.B** Revealed Advantages of CADR\* Compared with Other Economic Zones, by Technological Classification: Exports to the U.S.

Technological Classification		World				LAC-7				High Income				Countries of Low and Middle Income by Region															
														East Asia and the Pacific				South Asia				Europe				Middle East and North Africa			
		1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013
Primary Products		2.1	4.3	4.6	3.4	1.0	1.7	2.9	2.4	4.3	7.2	6.3	4.0	1.2	4.7	13.2	15.8	1.9	2.3	2.9	3.8	4.7	6.8	9.5	2.6	0.7	0.7	0.7	0.7
Basic Manufactures		1.6	1.6	2.1	2.0	1.5	1.3	2.3	2.0	1.4	1.6	2.0	1.9	1.9	1.7	2.9	2.5	2.8	3.3	3.4	2.7	0.4	0.5	0.6	0.7	127.8	17.8	14.2	24.8
Non-Basic Manufactures	Low-Tech	0.2	0.7	0.6	0.9	0.3	1.1	0.7	1.6	0.2	0.9	1.0	1.9	0.1	0.3	0.2	0.4	0.0	0.2	0.1	0.3	0.3	0.3	0.3	1.3	4.7	2.2	0.9	1.3
	Mid-Tech	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.4	0.1	0.1	0.1	0.1	0.3	0.4	0.1	0.5	0.2	0.2	0.1	3.9	1.5	3.0	2.1
	High-Tech	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.5	0.4	0.1	6.4	4.8	0.4	0.2	31.7	2.8	5.9	3.4

Source: Central Banks, National Ministries, WITS-UN Comtrade and IDB Staff.

Note: Four digit codes were used following SITC rev. 1, excluding non-specified goods. The advantage (RCA>1) is highlighted in light beige, neither an advantage nor disadvantage (RCA=1) in dark beige, and disadvantage in white. \*Belize and the Dominican Republic are excluded.

## ANNEX 2.2 Revealed Comparative Advantage by Country

**TABLE 2.2.A** Revealed Advantages of the Countries Compared with CADR\* and the World, by Technological Classification: Total Exports

Technological Classification		Vs.	Belize			Costa Rica			El Salvador			Guatemala			Honduras			Nicaragua			Panama			Dominican Republic		
			1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013
Primary Products		CADR*	0.1	0.2	0.5	1.1	1.2	1.1	1.2	1.2	0.9	0.8	0.6	0.3	0.9	0.9	1.0	1.1	1.2	1.2	1.0	1.1	0.8	1.0	1.2	1.5
		World	0.3	0.7	1.7	2.5	2.3	3.9	3.9	2.9	1.7	3.0	2.0	0.8	1.8	3.1	3.2	2.3	2.2	4.4	3.4	2.5	1.6	3.5	3.9	3.6
Basic Manufactures		CADR*	3.7	3.5	2.3	1.6	0.6	0.6	0.8	0.8	0.9	1.0	1.2	1.2	0.9	1.1	1.0	1.0	1.4	1.1	1.2	1.2	1.0	1.0	1.0	0.8
		World	3.9	4.0	4.3	3.1	0.7	0.8	1.5	1.5	0.9	1.3	2.3	2.3	1.0	1.4	1.8	2.0	1.5	1.2	2.3	2.4	1.0	1.2	2.0	1.6
Non-Basic Manufactures	Low-Tech	CADR*	0.8	1.7	0.8	0.2	0.6	1.1	0.6	0.4	1.6	1.3	2.0	3.3	1.2	1.1	1.1	0.7	0.3	0.3	0.8	0.4	1.7	1.6	0.7	0.3
		World	1.2	1.3	0.6	0.1	0.8	0.9	0.5	0.3	2.3	1.1	1.4	2.6	1.8	0.9	0.8	0.6	0.4	0.3	0.5	0.3	2.4	1.3	0.5	0.2
	Mid-Tech	CADR*	0.9	0.1	0.1	0.1	1.2	1.0	1.0	1.2	1.0	1.5	1.3	1.1	1.1	1.3	1.3	1.3	0.7	0.3	0.8	0.8	1.2	0.7	0.6	0.3
		World	0.1	0.0	0.0	0.0	0.2	0.1	0.2	0.4	0.2	0.2	0.3	0.3	0.2	0.2	0.3	0.4	0.1	0.0	0.2	0.3	0.2	0.1	0.1	0.1
	High-Tech	CADR*	0.4	0.0	0.0	0.0	1.7	1.3	1.2	1.7	1.1	1.2	1.6	1.4	1.6	1.5	1.0	0.8	0.1	0.1	0.4	0.4	0.2	0.1	0.6	0.2
		World	0.1	0.0	0.0	0.0	0.5	0.3	0.3	0.3	0.3	0.3	0.2	0.5	0.4	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.0

Source: Central Banks, National Ministries, WITS-UN Comtrade and IDB Staff.

Note: Four digit codes were used following SITC rev. 1, excluding non-specified goods. The advantage (RCA>1) is highlighted in light beige, neither an advantage nor disadvantage (RCA=1) in dark beige, and disadvantage in white. \*Belize and the Dominican Republic are excluded.

**TABLE 2.2.B** Revealed Advantages of the Countries Compared with CADR\* and the World, by Technological Classification: Exports to the U.S.

Technological Classification		Vs.	Belize			Costa Rica			El Salvador			Guatemala			Honduras			Nicaragua			Panama			Dominican Republic		
			1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013	1975-1984	1985-1994	1995-2004	2005-2013
Primary Products		CADR*	0.0	0.0	0.1	0.9	1.2	1.0	1.2	1.4	1.0	0.9	0.6	0.2	1.0	1.1	1.2	1.4	1.0	1.1	0.8	0.7	0.8	0.7	0.7	1.1
		World	0.0	0.2	0.4	3.1	2.5	4.5	5.6	4.7	2.1	4.1	2.5	0.7	2.2	4.9	5.7	4.8	2.1	4.7	3.5	2.5	1.7	3.3	3.3	3.9
Basic Manufactures		CADR*	2.5	2.9	3.0	1.7	0.5	0.5	0.6	0.6	0.9	0.9	1.3	0.9	0.9	0.9	0.6	0.6	1.0	1.1	1.5	1.9	1.4	2.4	1.6	1.2
		World	3.9	4.5	6.3	3.5	0.8	0.8	1.3	1.2	1.4	1.5	2.8	1.8	1.4	1.4	1.2	1.2	1.5	1.8	3.2	3.9	2.3	4.1	3.4	2.5
Non-Basic Manufactures	Low-Tech	CADR*	13.9	3.9	1.8	0.3	0.9	1.6	0.6	0.1	1.8	1.5	3.6	4.7	1.3	0.6	0.7	0.1	0.8	0.4	1.2	0.4	0.8	1.4	0.8	0.1
		World	2.7	2.6	1.2	0.3	0.2	1.2	0.5	0.1	0.4	1.2	2.0	4.4	0.3	0.5	0.5	0.1	0.2	0.3	0.7	0.4	0.1	1.0	0.5	0.1
	Mid-Tech	CADR*	8.1	0.5	0.5	0.8	1.5	2.0	0.8	1.0	0.5	0.7	1.3	1.0	1.4	0.9	0.9	0.7	0.7	0.2	1.6	1.9	0.8	0.2	1.1	0.3
		World	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
	High-Tech	CADR*	4.6	0.6	1.6	0.2	3.5	2.4	0.9	1.4	0.5	0.3	1.5	1.4	0.3	0.2	0.4	0.7	0.0	0.1	1.2	0.9	2.0	0.2	2.0	1.0
		World	0.1	0.0	0.1	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0

Source: Central Banks, National Ministries, WITS-UN Comtrade and IDB Staff.

Note: Four digit codes were used following SITC rev. 1, excluding non-specified goods. The advantage (RCA>1) is highlighted in light beige, neither an advantage nor disadvantage (RCA=1) in dark beige, and disadvantage in white. \*Belize and the Dominican Republic are excluded.



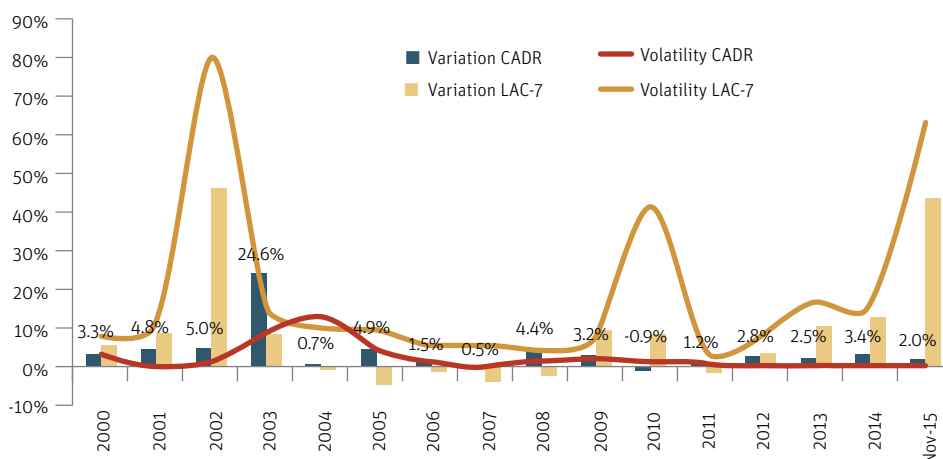
## THE REAL EXCHANGE RATE: WHAT POLICY ROOM IS THERE?

The region's economies face major external competitiveness challenges. Beyond the need to press ahead with the agenda of structural reforms outlined in the previous chapter, and given limited fiscal room for maneuver in the majority of the countries, it is essential to evaluate the role played by exchange rate policy as an instrument to generate conditions to assist insertion into international markets and the reduction of external imbalances.

### A REGION CHARACTERIZED BY NOMINAL EXCHANGE RATE STABILITY

During the last fifteen years, the nominal exchange rates (NER) of the region have evolved in a relatively stable way. The average NER of CADR has depreciated slowly and has shown low volatility (see Figure 3.1). With the exception of 2003, when the Dominican peso depreciated by about 100% owing to the domestic crisis of the banking system, the exchange rates of the region have displayed average annual changes of less than 5% (an average of 4% for the period as a whole). By contrast

**FIGURE 3.1** Evolution of the Average Nominal Exchange Rate: CADR and LAC-7



Source: Central Banks and Latin Macro Watch (Inter-American Development Bank).

Note: Excludes countries with fixed currency arrangements (Belize, El Salvador and Panama). The volatility corresponds to the standard deviation for periods of 12 months. LAC-7 includes Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. Positive (negative) variations correspond to nominal depreciation (appreciation).

the largest economies of Latin America (LAC-7) showed –over the same period, excepting 2002 (Argentinian crisis) and 2015 (fall in commodity prices)– average annual changes of less than 15% (an average of 9.6% for the whole period). After the global financial crisis of 2008-2009, the average change in the currencies of the CADR region has been about 2% per year, while in the case of LAC-7 it has reached 12.6% since 2009. Therefore, with the exception of 2004, the volatility of the NER in LAC-7 has been between 1.7 and 65.8 times higher than that recorded in CADR.

This stability is due to the maintenance of, in practice, inflexible exchange rate regimes. In the region there are two monetary policy frameworks which determine the nature of the exchange rate arrangements: i) anchoring of the nominal exchange rate with the U.S. dollar, and ii) inflation targets (see Table 3.1). In the first group, the exchange rate regimes are strongly anchored, as can be seen in the complete dollarization of El Salvador and Panama, the fixed exchange rate in Belize

**TABLE 3.1** Currency Arrangements According to the Monetary Policy Framework in place

Anchoring of the Exchange Rate with the U.S. Dollar		
	<i>De jure</i>	<i>De facto</i>
El Salvador	No alternative legal tender -dollarization- (colón for accounting purposes)	No alternative legal tender -dollarization- (since 2001)
Panama	No alternative legal tender -dollarization- (balboa for accounting purposes and low denomination coins)	No alternative legal tender -dollarization- (since 1904)
Belize	Fixed exchange rate -conventional peg-	Fixed exchange rate -conventional peg- (since 1976)
Honduras	<i>Crawling peg</i>	<i>Crawling peg</i> (since 2011)
Nicaragua	<i>Crawling peg</i>	<i>Crawling peg</i> (since 1993)
In Transition to Inflation Targeting		
	<i>De jure</i>	<i>De facto</i>
Costa Rica	Administered float	<i>Stabilized arrangement-</i> (since April 2014; previously, from 2007, exchange rate band)
Inflation Targeting		
	<i>De jure</i>	<i>De facto</i>
Guatemala	Free float	<i>Crawl-like arrangement-</i> (since 2005)
Dominican Republic	Free float	<i>Crawl-like arrangement-</i> (since 2012)

Source: International Monetary Fund (2015a) and Central Banks.

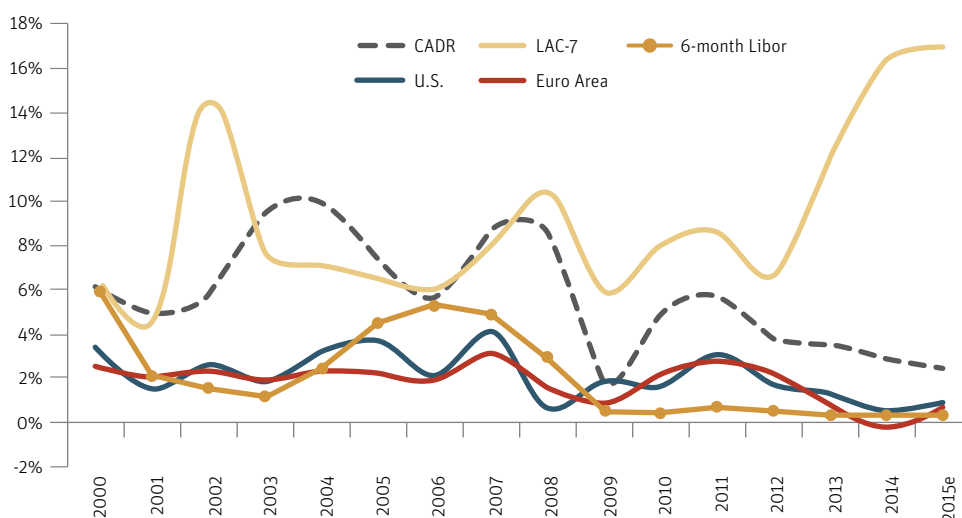
Note: *conventional peg* refers to when the exchange rate is fixed to another currency or basket of currencies; *crawling peg* refers to a currency which adjusts by small amounts to a fixed rate or in response to changes in the selected quantitative indicators; *crawl-like arrangement* refers to when the exchange rate remains within a margin of 2% of a statistically identified trend for six months or more and cannot be considered floating; *stabilized arrangement* implies a market exchange rate which remains within a margin of 2% for six months or more and is not floating.

and the maintenance of a crawling peg system, with underlying targets for international reserve accumulation, in Honduras and Nicaragua. With regard to the countries in transition towards a monetary policy framework based on inflation targeting, such as Costa Rica, or already implementing one, as in Guatemala and the Dominican Republic, flexible exchange rate regimes might be foreseen. But in practice the monetary authorities of these countries intervene regularly in the currency market.

Meanwhile currency stability has favored price stability (see Figure 3.2). The highest peaks in inflation in the last 15 years were recorded between 2003 and 2004, with average regional levels close to 10%. From then and in tandem with the slow depreciation of the region's currencies, inflation exhibits a downward trend, closing 2015 at 2.5%.<sup>1</sup> In LAC-7, by contrast, higher currency volatility has been associated with higher inflation rates, particularly after the 2008-2009 crisis. Therefore, between 2009 and 2015, annual inflation averaged 14.2%, more than four times the average recorded in CADR (3.2%).

However, though inflation in CADR has been low, it has remained above that recorded in the main extra-regional trade partners.<sup>2</sup> Since 2000 the region's inflation has averaged 5.8%, more than double the average price rise in the United States (2.2%) and the Euro Zone (1.9%).

**FIGURE 3.2** Inflation Rates by Economic Zones and 6-month Libor



Source: World Economic Outlook (International Monetary Fund, October 2015).

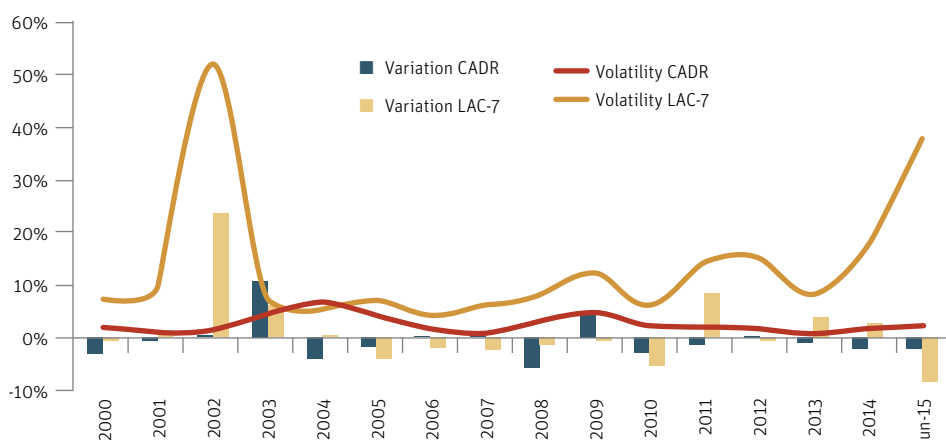
Note: e=expected.

<sup>1</sup> It should be highlighted that inflation in the region is closely related to the evolution of international commodity prices, in particular for fuels and foods, whose recent fall has helped to strengthen the external position of the countries and to reduce upward pressures in nominal exchange rates. This, in turn, has encouraged the fall in domestic prices.

<sup>2</sup> According to data from the Secretaría de Integración Económica Centroamericana (Secretariat of Central American Economic Integration), exports to the United States and the Euro Zone represent 50% of total regional exports.

This has led to the real appreciation of CADR currencies (see Figure 3.3),<sup>3</sup> particularly since 2010, in a context of decelerating inflation and a fall in interest rates in advanced economies. Since 2000, the region has passed through numerous episodes of real exchange rate appreciation, with the exceptions of 2003, the banking crisis in the Dominican Republic, and, in 2009, the period following the global financial crisis. It should be noted that on average since 2010 the currencies of the region have appreciated in real terms by approximately 1.5% per year (with average appreciation of 0.7% per year for the 2000-2015 period). By contrast, in LAC-7 the high volatility of the NER encouraged real depreciation of the exchange rates from 2011; however, recent periods of high inflation in some South American countries have produced real average currency appreciation.

**FIGURE 3.3** Evolution of the Real Average Exchange Rate: CADR and LAC-7



Source: IDB Staff based on data from SECMCA and Bruegel (2015), Latin Macro Watch (Inter-American Development Bank).

Note: The volatility corresponds to the standard deviation for periods of 12 months. The positive (negative) variations correspond to a real depreciation (appreciation).

In principle these periods of real appreciation in CADR could lead to real overvaluation of the exchange rate –that is to say, of misalignment<sup>4</sup>–, whose implications for competitiveness and sustainability in the external position could be substantial. On the one hand, currency misalignment can create distortions in the allocation of factors of production which, in turn, affect productivity, competitiveness and economic growth (Aguirre and Calderón, 2005; Siregar and Rajan, 2006; Bello *et al.*, 2010). And deviations in the real exchange rate (RER) also have implications for management

<sup>3</sup> The RER is approximated by considering changes in the nominal exchange rate and inflation of the main trading partners. Data from the Secretaría Ejecutiva del Consejo Monetario Centroamericano (SECMCA - Executive Secretariat of the Central American Monetary Council) and from the European think tank Bruegel are used (see Box 3.1). The country data are presented in Annex 3.1.

<sup>4</sup> The misalignment corresponds to the percentage difference between the real exchange rate and the real long-term equilibrium exchange rate (see Box 3.1 and Annex 3.2).



of monetary and exchange rate policy. When there is overvaluation, international reserves and the monetary base tend to diminish; in the case of undervaluation, the increase in reserves creates the need to undertake sterilization measures which have costs for the monetary authority. Finally, severe and persistent overvaluation can lead to exchange rate crises and rapid contraction in growth and employment (Edwards, 2011).

The recent exchange rate appreciation has given rise to debates on its causes and consequences between the economic authorities and the private sector in the region, in particular regarding the usefulness of implementing economic policies to ease or reverse the real appreciation of the exchange rate.

In what follows two fundamental questions for the debate regarding real appreciation of the different currencies of CADR will be tackled: which factors affect the real exchange rate?; and how misaligned are the RERs in the region from their long-term fundamentals?

## WHICH FACTORS AFFECT THE REAL EXCHANGE RATE?

A wide number of studies tackle the analysis of the long-term determinants of the real exchange rate in Latin America. Edwards and Losada (1994) study the validity of purchasing power parity over the long term in Guatemala and Honduras.<sup>5</sup> The evidence found suggests that parity is not achieved in either of these two cases. Similarly, Carrera and Restout (2007) analyze the relevance of purchasing power parity for 21 Latin American economies. In general, their results confirm that parity is not fulfilled in the region. Moreover, the fundamental factors determining the long-term RER appear to be geographically specific and include: productivity, public spending, terms of trade, openness to trade and capital flows.

Recently Bello *et al.* (2010) have estimated the real long-term equilibrium exchange rate (REER) for 17 countries in the region for the 1969-2006 period. Their results show that the most relevant variables explaining the trajectory of the real exchange rate in Latin America are: relative productivity, terms of trade, the international investment position and the quotient of current transfers to GDP. The authors highlight the recurring episodes of excessive over-valuation of the exchange rate followed by currency collapses in external crises.

The SECMCA too has carried out estimations of the real equilibrium exchange rate in Central America using vector error correction models (SECMCA, 2003). The study identifies three fundamental variables: productivity, trade opening and fiscal balance.

<sup>5</sup> Purchasing power parity presents two variants: absolute and relative. The absolute refers to the equality between the nominal exchange rate of two countries and their relative price levels, which implies that the real exchange rate is fixed and equal to 1. The relative parity refers to the equality between variations in the nominal exchange rate and relative price variations, which would imply a fixed rate of variation of the real exchange rate.

At country level, studies for Costa Rica (Gutiérrez, 2009), Guatemala (Samayoa, 2004), Honduras (Casco, 2012; García and Quijada, 2015), Nicaragua (Urcuyo, 2012) and the Dominican Republic (Gratereaux Hernández, 2014) identify as the principal determinants of the RER: productivity; external flows; exchange rate differentials; and the fiscal balance.

In summary, various research studies for Latin America and CADR identify four main factors which affect the determination of the real equilibrium exchange rate: productivity, external competitiveness, external flows and fiscal management. The mechanisms through which these factors affect the REER will be set out below.

**Productivity increases tend to appreciate the real exchange rate.** The theoretical mechanism through which this relationship operates is known in the specialized literature as the Balassa-Samuelson effect (Balassa, 1964; Samuelson, 1964).<sup>6</sup> This suggests that, for a given level of prices of tradable goods, more rapid growth in average labor productivity in the tradable sector relative to the non-tradable sector is accompanied by an increase in the real wage. Assuming factor mobility, the increase in the real wage tends to displace employment towards the tradable sector. Consequently, non-tradable production contracts and prices in the sector rise. This, in turn, translates into a real appreciation of the exchange rate.

From an empirical perspective applied to Latin America, the studies of Carrera and Restout (2008), using panel data, and of Bello *et al.* (2010), using specific equations by country, identify significant inverse relationships between productivity and the real exchange rate, corroborating the validity of the Balassa-Samuelson effect in the region.

**Better terms of trade imply real appreciation of the currency.** An improvement in the purchasing power of exports generally implies a real appreciation of the exchange rate. This effect applies under the assumption that an increase in export prices relative to import prices displaces resources from the non-tradable sector. This displacement of supply translates into a relative increase in non-tradable goods prices, which is reinforced by the income effect that the rise in export prices (higher demand for tradable and non-tradable goods) generates. In the long term the RER tends to appreciate. This mechanism is validated for Latin America in the studies by Carrera and Restout (2008) and those of Elbadawi and Soto (2007).

**Higher external flows can make the real exchange rate appreciate.** An increase in external flows suggests an expansion of aggregate demand which, depending on the type of flow and its destination in the domestic economy, affects the relative price of tradable and non-tradable

<sup>6</sup> The Balassa-Samuelson effect assumes the existence of functions of production with constant returns to scale in capital and labor in the tradable and non-tradable sectors of the economy.

goods. When the flow is of remittances, a real appreciation would be expected to the degree that consumption by beneficiary households is oriented principally towards the acquisition of non-tradable services. When an FDI inflow is involved, its impact is more ambiguous. On the one hand, if the FDI translates into improvements in productivity in the tradable sector, the positive effect on national income can lead to excess demand for non-tradable goods, an increase in their relative price and, subsequently, to a real appreciation of the currency (a similar effect to that produced by remittances). On the other hand, if the FDI flows principally towards the non-tradable sector and helps to increase its productivity, the real exchange rate might depreciate. It is important to stress that if the external flows are transitory or reversible, the RER can depreciate over the long term.<sup>7</sup> Additionally, the increase in the differential between national and international interest rates can generate greater capital inflows a priori to the tradable sector, and the subsequent real appreciation of the currency.

In Latin America, the empirical evidence suggests that remittance flows lead to an appreciation of the real exchange rate. López *et al.* (2007) use a database that includes a considerable number of low and middle-income countries, among them 20 Latin American and Caribbean countries. Their results show that there is a significant inverse relationship between the RER and remittances and that this relationship is more robust in the region. Where FDI is concerned, the estimations of Carrera and Restout (2008) support the view that the entry of external flows translates into a real appreciation of the currency.

**Increases in public spending can cause real exchange rate appreciation.** Public spending tends to be concentrated in the non-tradable sector of the economy (the total wage bill, services), so that increases in government expenditures can put upward pressure on the relative price of non-tradable goods and therefore generate an appreciation of the RER. On the other hand, if public spending is low in productivity, that is to say, public services which have a minor effect on private production, an increase in spending can generate a fall in the relative price of non-tradables (owing to reduced internal consumption) and real depreciation of the exchange rate (Tervala, 2006). The effect also depends on the impact of public spending on private agents (income effect, substitution) and on the propensity to consumption of non-tradable goods (Repetto, 1992).

In the case of Latin America, Caporale *et al.* (2008) determine –from vector error correction models– that fiscal shocks can lead to real appreciations (Argentina), and to real depreciations of the currency (Bolivia, Mexico and Chile).

<sup>7</sup> This is verified by Morrissey *et al.* (2004) in the case of Ghana, where the level of real appreciation observed depends inversely on the reversibility of the capital flows.

## ARE THE CURRENCIES OF THE REGION MISALIGNED IN REAL TERMS?

Following the conceptual framework outlined in the previous section and the BEER approach (see Box 3.1 and Annex 3.2), the real equilibrium exchange rate is determined, as well as its level of misalignment, for the countries of the region for the period 2001-2014 (see Figure 3.4).

### BOX 3.1 Real Exchange Rate and Real Long-Term Equilibrium Exchange Rate

The Real Exchange Rate (RER), measured as the relative price of tradable goods in terms of non-tradable ones, is one of the central macroeconomic concepts for the study of small, open economies such as those of CADR.

In practice, the RER is approximated taking account of the changes in the nominal exchange rate and inflation in the main trading partners. Quarterly data from SECMCA and from a European think tank, Bruegel, are used.

The formula employed corresponds to the fundamental equation: 
$$RER = \frac{NER_{loc}/CPI_{loc}}{\pi (NER_{ext}/CPI_{ext})^{\omega O}}$$

Where:

$\pi$  : Geometric mean

$NER_{ext}$ : Index of the nominal effective exchange rate of trading partners

$CPI_{ext}$ : Consumer Price Index of trading partners

$\omega O$ : Weighting of each country, according to the trade structure in the base year

$NER_{loc}$ : Nominal effective exchange rate index of the reference country

$CPI_{loc}$ : Consumer Price Index of the reference country

Increases correspond to a real depreciation and reductions to a real appreciation.

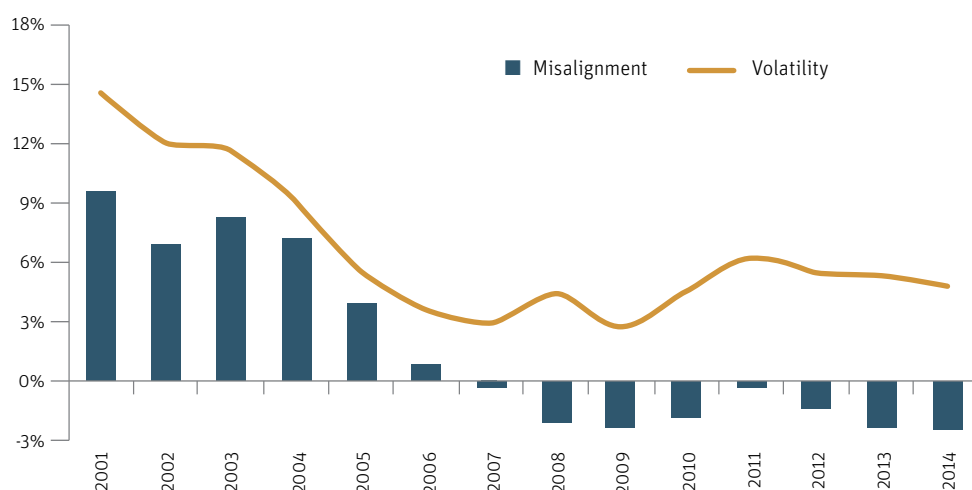
The real equilibrium exchange rate is defined as the one which makes it possible to reach, simultaneously and in a sustained manner over time, internal and external equilibrium in the economy (Nurkse, 1945). Williamson (1983) defines it as the exchange rate where monetary demand and supply are in equilibrium without intervention by the authorities.

Beyond theoretical considerations, the real equilibrium exchange rate is not directly observable, and so has to be approximated. The commonly used approach is that of purchasing power parity, in both its absolute and relative versions. Other approaches usually found in research work are BEER (Behavioral Equilibrium Exchange Rates) and FEER (Fundamental Equilibrium Exchange Rates). The former consists in estimating a reduced form of the behavior of the RER as a function of a set of fundamental variables which theoretically have a relationship with the latter (Baffes *et al.*, 1999; Clark and McDonald, 1998). Following this approach, an equation is estimated using the economic fundamentals of the RER, without including normative elements such as the determination of external equilibrium. In this case the trend value which results from the estimations is used to evaluate the fluctuations of the RER and to determine the variations with respect to its equilibrium value, which constitutes the misalignment of the real exchange rate. By contrast the FEER approach is consistent with internal and external balance in the economy, similar to that suggested by Williamson (1994). Under this approach, to determine

*Continued...*

the equilibrium value, the current account of the balance of payments is modeled using the estimation of two equations: i) the estimated structural current account and ii) the objective current account, which may not be in equilibrium but is sustainable in the medium term. This approach requires normative judgements which imply that the real equilibrium exchange rate varies as a function of the predetermined conditions for medium and long-term equilibrium.

**FIGURE 3.4** Average Misalignment of the Real Exchange Rate: CADR



Source: IDB Staff based on data from SECMA (2015) and Bruegel (2015).

Note: The volatility corresponds to the standard deviation for periods of 12 months. The positive (negative) values correspond to an undervaluation (overvaluation).

In general terms, the real exchange rates of CADR show low levels of misalignment relative to the long-term equilibrium values, which is consistent with the results derived recently by the International Monetary Fund (see Box 3.2). Between 2001 and 2006, on average, a real undervaluation of the currencies is recorded of the order of 6.2% per year; however, from 2007, deviations from the real long-term equilibrium exchange rate tend to be negative, which translates into a real overvaluation of approximately 1.6% per year. It is noteworthy that since 2010, a period during which the region's real exchange rates appreciated by 1.5% per year, the misalignment –that is to say, the overvaluation– was 1.7% per year.<sup>8</sup>

At country level and in line with the aggregate results, the real exchange rates show a tendency towards overvaluation in the years following the global financial crisis. Presently, the range of misalignment does not exceed  $\pm 5.0\%$  (equivalent to a standard deviation of the set of estimated misalignments for each country of the region during the 2001-2014 period).

<sup>8</sup> The average undervaluation or overvaluation per year refers to the average annualized misalignment for each period in question.

**BOX 3.2** Misalignments of the Real Exchange Rate According to CGER Methodologies

The International Monetary Fund (IMF) evaluates the currency arrangements of its member countries on the basis of three complementary methodologies developed by the Consultative Group on Exchange Rate Issues (CGER):

1. The Macroeconomic Balance (MB) approach: calculates the difference between the projected medium-term current account for the exchange rate in place and the estimated equilibrium current account. The equilibrium exchange rate is that which makes it possible to close the gap between the two measures of the current account.
2. The External Sustainability (ES) approach: calculates the difference between the observed current account and that which would stabilize the net external asset position. The equilibrium exchange rate is that which makes it possible to close the gap between the two measures of the current account.
3. The Reduced-Form Equilibrium Real Exchange Rate (ERER): similar to the BEER approach used in this study (see Box 3.1).

According to the latest IMF Article IV reports carried out in the region, the observed misalignment is low (see Table 3.2.A). In Costa Rica, Guatemala, Panama and Dominican Republic it is estimated that the real exchange rate is aligned with its short and medium-term fundamentals. In Belize, El Salvador, Honduras and Nicaragua the misalignment does not exceed 11%.

**TABLE 3.2.A** Real Misalignment of the Exchange Rate According to CGER Methodologies

	Diagnosis	Range (%)	Year
Belize	Moderate overvaluation	5.3 - 9.5	2014
Costa Rica	Aligned with short and medium-term fundamentals	..	2015
El Salvador	Moderate overvaluation	2.0 - 9.0	2015
Guatemala	Aligned with short and medium-term fundamentals	..	2014
Honduras	Moderate overvaluation	7.0 - 11.0	2014
Nicaragua	Moderate overvaluation	1.8 - 7.8	2013
Panama	Aligned with short and medium-term fundamentals	..	2015
Dominican Republic	Aligned with short and medium-term fundamentals	..	2015

Source: International Monetary Fund.

Beyond the estimated level of misalignment, it's crucial for policy design to identify the fundamental factors associated with the real long-term equilibrium exchange rate (see Table 3.2).

**TABLE 3.2** Determinants of the Real Equilibrium Exchange Rate in CADR

		Belize	Costa Rica	El Salvador	Guatemala	Honduras	Nicaragua	Panama	Dominican Republic
<b>Productivity</b>	Difference in real GDP growth compared to the U.S.	-	-	-				-	
	Difference in growth of real GDP per capita compared to the U.S.				-		-		-
	Difference in growth of real GDP per worker compared to the U.S.					-			
<b>External Competitiveness</b>	Terms of trade (export prices/import prices)	-		-				-	
	Real price of goods exports fob				-	-			-
<b>External Flows</b>	Remittances (% GDP)					-			-
	Difference between national interest rates and 6-month Libor		-	-	-	-		-	
	Deposit interest rate	-							
<b>Public Spending</b>	Total debt of the central government (% GDP)	-					+		
	Fiscal balance of the central government (% GDP)		-			-		+	

Source: IDB Staff based on data from SECMCA (2015), Bruegel (2015) and World Economic Outlook (International Monetary Fund, October 2015)

Note: (-) refers to negative coefficients significant to 5%. (+) refers to positive coefficients significant to 5%.

It is notable that the different measures of relative productivity are significant and have a negative sign. Therefore, to the degree that the productivity gap between the countries of CADR and the United States reduces, the real long-term exchange rate will tend to appreciate. In the same way, where external competitiveness is concerned, it can be seen that improvements in the terms of trade and export prices are associated with real appreciation of the currency.

With regard to external flows, what stands out is the importance of the differential between domestic interest rates and the 6-month Libor rate. A higher differential means higher net external flows, which stimulate, in turn, aggregate demand and the consumption of non-tradable goods and services, so that the exchange rate appreciates in real terms. This variable is significant in the misalignment of the real exchange rate in Costa Rica, El Salvador, Guatemala, Honduras and Panama.

Finally, where the fiscal side is concerned, it can be seen that the financial outturn of the Central Government influences the equilibrium exchange rate in Costa Rica, Honduras and Panama, while

for Belize and Nicaragua the total debt level is significantly associated with the long-term exchange rate. It is worth mentioning that for Nicaragua and Panama, the estimated sign is positive, so that lower fiscal discipline translates into depreciation of the real exchange rate. This result is consistent, on the one hand, with the rapid growth in public investment and the orientation of capital spending towards the tradable sector,<sup>9</sup> and, on the other hand, with the existence of structural factors which limit the productivity of public spending (Caporale *et al.*, 2008).

With respect to the relative importance of each determinant, measures of productivity and external flows are generally correlated in a significant way with the equilibrium exchange rate of each country in the region, highlighting the importance of both internal and external factors in determining the real misalignment of CADR currencies. What implications do these results have for policy design and implementation? This question will be tackled in the following section.

## POLICY RECOMMENDATIONS

The results show that in CADR deviations of the real exchange rate from its long-term equilibrium level are low. This means that at present exchange rate policy does not offer wide margins of action to improve international insertion of the economies, so that to close the external competitiveness gaps identified in the second chapter it is indispensable to prioritize the structural reform agenda.<sup>10</sup>

However, the recent real appreciation of national currencies and the uncertainty presented by the evolution of the external environment raise questions about the risks of experiencing significant misalignments in the short and medium term due, for example, to the rise in U.S. interest rates and/or a recovery in fuel prices. According to the empirical evidence on the real exchange rate in emerging economies, these risks are associated both with the appearance of distortions in the allocation of productive factors, which can provoke low levels of productivity and growth, and with the obstruction of efficient management of macroeconomic policy, particularly where the actions of the monetary authority are concerned.

In this regard, it is essential to evaluate the domestic policy room, if any exists, to correct possible future misalignments.

The determinants of the real equilibrium exchange rate and, therefore, of exchange rate misalignment are in part exogenous and beyond the reach of national policy-making. That is the case for the majority of factors associated with external competitiveness, such as the terms of trade and export prices. In other cases, the scope to act domestically is indirect and associated principally with the creation of market and regulatory conditions. This is true for external flows, such as foreign direct investment and remittances. Even domestic factors, such as productivity, require policies whose effectiveness, especially in the long term, depend fully on articulation and coordination with the private sector.

Consequently, the room for action is circumscribed to the fiscal policy and exchange rate spheres, given the characteristics of the region's monetary policy frameworks.

<sup>9</sup> Since 2010, gross capital formation of the public sector has grown on average per year by 6.6% in Nicaragua and 14.9% in Panama. During the 2000-2009 period, these growth rates were -1.0% and 12.5% in Nicaragua and Panama, respectively.

<sup>10</sup> See the future agenda section of the previous chapter.



There are two regional monetary policy frameworks which determine the nature of the currency regimes: i) anchoring of the nominal exchange rate with the U.S. dollar, and ii) inflation targets. In the first group exchange rate regimes are strongly anchored to the U.S. dollar, as is evident in the complete dollarization of El Salvador and Panama, the fixed exchange rate in Belize and the crawling peg systems in Honduras and Nicaragua. In the countries in transition towards a monetary policy framework based on inflation targets, such as Costa Rica, or those that already have such a system, such as Guatemala and the Dominican Republic, there are moderately administered exchange rate schemes.

For countries with policy frameworks anchored to the U.S. dollar, particularly those with complete dollarization such as El Salvador and Panama or fixed exchange rates such as Belize, the policy options are limited to assuring the maintenance of macroeconomic equilibria through responsible and efficient management of fiscal policy, as well as by stimulating productivity and competitiveness through productive transformation policies.

For the remaining countries –anchored but with crawling peg exchange schemes or using or planning to use inflation targets– the range of policy options, besides those enumerated previously, includes actions in the currency market. In both cases greater flexibility in the currency arrangements, that is to say, less intervention in the fixing of the reference price and/or in the quantities offered under the current monetary framework, can facilitate progressive realignment of the real exchange rate.<sup>11</sup>

However, making currency arrangements more flexible does not always guarantee alignment of the exchange rate with its long-term fundamentals (Edwards, 2011). For example, in the years following the global financial crisis, emerging economies recorded large capital inflows thanks to the maintenance of restrictive monetary policies, given the risks of overheating and inflation, which led to an increase in the interest rate differential with advanced economies and the emergence of pressures for nominal appreciation. Recently in CADR the improvement in the terms of trade, thanks to the fall in the oil price, has strengthened the external position of the countries of the region. According to the results derived here, this could affect the long-term equilibrium exchange rate and hence provoke misalignment of the currency, regardless of the currency system in place.

These examples illustrate the room to potentially intervene through monetary and exchange rate policy. However, these interventions can create costs for the monetary authority and the State by impacting negatively on the financial accounts of the Central Bank and leading to the need to finance intervention policy indirectly with fiscal resources.

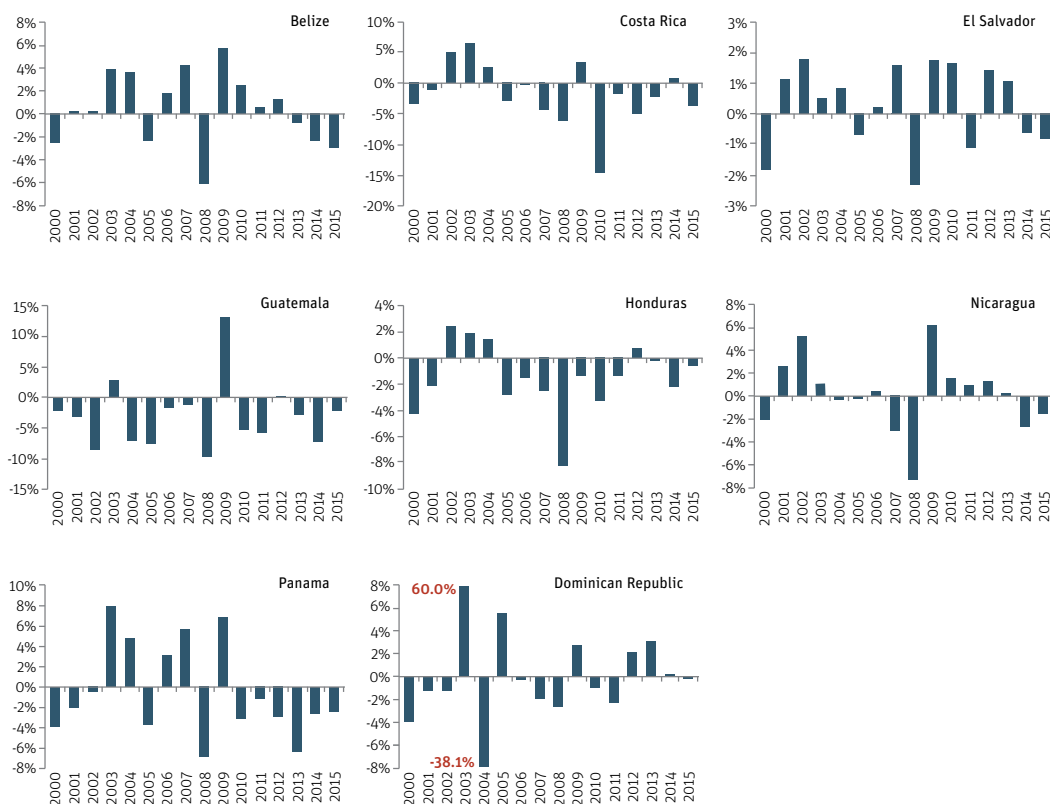
As the moderately managed CADR currency systems become more flexible, and as the international empirical evidence (Edwards, 2011) suggests, it is indispensable that any contemplated interventions are timely and clearly justified, to ensure their effectiveness. If not the “fear of floating” could lead to greater currency imbalances whose implications for the real economy and economic policy would be considerable, as has been explained in this chapter.

<sup>11</sup> The empirical evidence indicates that countries with flexible currency systems assimilate external shocks better than those with rigid systems (Aghion *et al.*, 2009, among others).

### ANNEX 3.1 Evolution of the Real Exchange Rate by Country

At country level the evolution of the real exchange rate has been heterogeneous (see Figure 3.1.A). On the one hand, some countries have recorded a real appreciation since 2000, as is the case for Costa Rica, Guatemala, Honduras and Panama, with average annual appreciations in a range of 0.35% to 3.11%. On the other hand, in the cases of Belize, El Salvador, Nicaragua and the Dominican Republic, the trend has been towards real depreciation, of between 0.46% and 1.30%. It should be pointed out that since 2010 the currencies of the region have tended to appreciate in real terms in a range of 0.1% (El Salvador) to 17.3% (Guatemala), with the exception of the Dominican Republic (a real depreciation of 3.0%).

FIGURE 3.1.A Evolution of the Real Exchange Rate by Country



Source: IDB Staff based on data from SECMA (2015) and Bruegel (2015).

Note: Positive variations (negative) correspond to a real depreciation (appreciation). The values of 2015 correspond to june.

### ANNEX 3.2 Methodology

The selection of the Behavioral Equilibrium Exchange Rate (BEER) methodology, developed by Clark and MacDonald (1998) and Baffes *et al.* (1999) over the Fundamental Equilibrium Exchange Rate (FEER) approach (see Box 3.2), is based on four criteria: (i) it makes it possible to evaluate statistically the validity of the results derived (significance of long-term relationships); (ii) it is subject to fewer normative judgements in terms of the expected evolution of the RER in the long term; (iii) is less intensive in terms of the information required, which enables it to analyze the full set of countries in the region; and (iv) is methodologically more intuitive in that it requires a single equation.

The BEER approach consists in estimating a reduced form model which relates the evolution of the real exchange rate ( $RER_t$ ) with a set of determinants ( $F_t^*$ ):

$$RER_t = \beta' F_t^* + \varepsilon_t [1]$$

where  $\beta$  is the vector of interest parameters, and  $\varepsilon_t$  is a vector of independent and identically distributed residuals. This equation can be estimated in various ways, although its adjusted value does not represent the real equilibrium exchange rate (REER), since theoretically the latter responds to permanent changes in the explanatory variables. Therefore the REER is derived from the long-term values of its fundamentals.<sup>12</sup>

In this case, the trend value of the determinants of the real equilibrium exchange rate is obtained on the basis of the Hodrick-Prescott filter calibrated for quarterly data.

The empirical exercise seeks to estimate an econometric cointegration model. This time series technique assumes the existence of a stable long-term relationship between the dependent and explanatory variables, that is to say the RER and its fundamentals.

Firstly, the order of integration of the variables is determined through Augmented Dickey-Fuller –ADF– (1979) and Phillips-Perron –PP– (1988) stationarity tests, among others, to then analyze, by means of the Engle-Granger (1987) test, the existence of a cointegrating relation between the explanatory variables and the dependent variable. When there is cointegration, this relationship defines the long-term behavior of the variables under analysis.

Subsequently, on the basis of the cointegration relation and the trend values of the explanatory variables, the real equilibrium exchange rate is determined. Finally, the misalignment of the real exchange rate is derived from as the percentage difference between the adjusted valued of the cointegration relation with respect to the real equilibrium exchange rate. It is important to note that this misalignment of the real observed exchange rate in regard to its theoretical long-term fundamentals is equally explained by the effect of the short-term dynamic relationship, which adjusts the value of the RER towards its equilibrium level. In this study, the analysis centers on the long-term relationships.

<sup>12</sup> These long-term values are obtained using statistical filtering methods which make it possible to differentiate short-term fluctuations from trend changes.



# IV

## BYSTANDERS OF EXTERNAL SWINGS?

The countries of the region had a good year in 2015. In the first place, as has been set out previously in this report, the region benefited from the economic growth recorded in the United States, the main trade partner. At the same time the drop in international energy prices favored CADR since the region is a net importer of hydrocarbons. Thus the external environment helped to create a virtuous circle of conditions, generating a fall in the current account deficit. Looking ahead, the external environment could have ups and downs that will continue to bring advantages to the region – or the contrary. However, given the volatility of the international economy, there is always the chance that current conditions are not maintained, complicating CADR's economic performance. This makes it sensible to consider whether the countries of the region have the economic structure and enough policy room to cope well in less favorable times. The aim of this chapter is to study the economic performance of CADR in conditions which might test the state of its economy.

The extent to which external fluctuations can help or hinder the region is related to the degree of financial and trade opening. Financially the region does not have a high degree of integration in international capital markets. This is evident in the degree of opening of the financial account in which Central American countries rank 52nd of 192, behind countries like Mexico, Chile, Colombia and Brazil.<sup>1</sup> Thus portfolio investment is secondary –though still important– for the financing of the external accounts.<sup>2</sup> Where trade opening is concerned, the countries of the region have bilateral free-trade agreements. For example, the CAFTA-DR of the Dominican Republic, Central America and the United States. On the strengths side of the ledger, there is evidence that since the conception of the CAFTA-DR the aggregated value of exports has seen significant rises. (The factors which explain this are various, but productivity improvements have permitted more competitive export prices in

<sup>1</sup> Measured as the sum of inward and outward portfolio investment flows in 2011, reported in the updated and extended database of "External Wealth of Nations" constructed by Lane and Milesi-Ferretti (2007).

<sup>2</sup> Portfolio investment in the region grew, on average, by around 60% annually in 2010-2013. To a large degree, monetary stimulus in advanced economies created excess liquidity which was exploited by CADR countries. Thus portfolio investment contributed, on average, 24.5% annually to financing of the current account in this period.

some products<sup>3</sup>). However, there are a range of agricultural products whose output has not achieved productivity gains. These productive sectors are those that find themselves more exposed to external shocks in the CAFTA-DR tariff elimination process. At the same time the matrix of export goods has not diversified sufficiently, which may have contributed to the amplification of some shocks, especially in countries such as Guatemala, Honduras, El Salvador and Nicaragua.<sup>4</sup> These facts suggest that, in spite of the advances in the region's export sector, big challenges remain. Consequently it is essential to understand the possible economic trajectories for the region if it remains just a spectator of the external environment, and to debate which policies might supply the most durable benefits and lead the region towards a better range of options to respond to external ups and downs.

In this chapter some simulations are prepared of shocks which could undo the favorable environment of 2016. The results are presented in terms of GDP growth and the impacts on the current account, with the aim of comparing the simulated trajectories with current expectations.

## CHANGING EXTERNAL CONDITIONS PLAYING IN CADR'S FAVOR

CADR has benefited from recovery in the United States. A large part of the resilience seen in that country, above all in private consumption, can be attributed to sustained creation of employment and an increase in personal income.<sup>5</sup> It is notable that the fall in oil prices has helped to improve households' disposable income, stimulating private consumption.<sup>6</sup> However, this positive demand impetus has been neutralized by a reduction in oil-related investment, given that oil prices have fallen below the equilibrium thresholds for many wells. In these circumstances IMF growth forecasts for the United States in 2016 and 2017 are around 2.6%.

On the other hand, although the evidence shows the U.S. recovery is going ahead, conditions are changing. Firstly, the corrections seen in stock markets in recent months are a reflection of the shifting external environment in which there is: i) uncertainty about the Chinese economy, ii) uneven performance in European countries, and iii) weakness in commodity prices which, overall, could increase risk aversion. Secondly, it is possible that the dollar continues to appreciate given the cyclical divergences between the U.S. economy and that of the principal trading partners, which will weaken profitability and production in the domestic tradable sector and also increase the trade deficit. In turn, the possibility that the fall in oil prices has been advantageous must not be forgotten, in that it has increased households' disposable income and reduced costs in productive chains. In any case, the external environment could prolong uncertainty and depress private sector confidence, generating effects in the real economy.

<sup>3</sup> See IDB (2015, draft), where, in an analysis of state agricultural policies for Central America and Dominican Republic in the framework of the CAFTA-DR, this possibility is set out in a descriptive way.

<sup>4</sup> The case of Panama is atypical: it is a country whose trade balance is backed by exports of services and, to a lesser degree, by exports of goods.

<sup>5</sup> The unemployment rate has fallen to 5.1% and real disposable income is growing at close to an annual rate of 3% (IMF, 2015b).

<sup>6</sup> This was observed as from the second semester of 2014.

The beginning of 2016 has been turbulent in many regards. China continues to show signs of weakness, oil prices have fallen still more with the dropping of sanctions on Iran, the Euro Zone economy continues to receive stimulus, and market indices have suffered unceasing corrections. Despite these realities, it is possible that the forecasting risks for the baseline case for the U.S. economy lie to the upside. Indeed, taking account of both the volatility and the new fall in oil prices during January 2016 with respect to December 2015 (32.7% and -15.2%, respectively), our projections point to U.S. growth rising by up to 0.15 and 0.08 percentage points of GDP in 2016 and 2017, respectively. This potential increase breaks down into the following elements: 14.5% as a result of the fall in West Texas Intermediate (WTI) crude oil prices, 22.4% from appreciation of the real exchange rate, 12.3% due to the increase in volatility, 6.5% as a result of the incipient improvement of the European economy, 4.2% as a result of reduced economic activity in China and 40% associated with domestic country conditions.

What, then, does this mean for CADR? Undoubtedly, so long as the United States keeps growing, this will be helpful to the region. But the current external scenario combines a series of elements which can act for or against the region's economic performance. On the one hand the fall in the global level of energy prices at the beginning of the current year is a key element in this balance. Similarly the continuous strengthening of the dollar is potentially beneficial to the region's export sector. By contrast, developments in the financial sector could generate greater uncertainty among investors and thereby affect the flow of funds to the region. Combining these factors, the balance for CADR is positive. According to our estimations, the region could see its growth rate improve by 0.2 percentage points of GDP for 2016 and maintain that improvement in relation to the IMF projections for 2017.

**TABLE 4.1** Baseline Projections: CADR and U.S.

	International Monetary Fund		Inter-American Development Bank (Macroeconomic Report)	
	2016	2017	2016	2017
<b>U.S.</b>				
GDP growth	2.6%	2.6%	2.7%	2.7%
<b>CADR</b>				
GDP growth	4.0%	4.1%	4.2%	4.1%
Current account (% GDP)	5.2%	5.3%	5.1%	5.3%

Source: World economic outlook (International Monetary Fund, October 2015 and January 2016) and IDB Staff.

## WHAT MIGHT LEAD CADR TO LESS COMFORT ZONES?

This virtuous circle of conditions is not necessarily without risks. For example, our estimates indicate that the region will grow by 4.2% in 2016, which is certainly positive if it is compared with the rest of Latin America.<sup>7</sup> However, while this growth rate is higher than the previously projected it remains below potential. Consequently, it is likely to observe upward pressure on inflation during 2016. Meanwhile, in the external accounts, it is expected that the smaller deficit in current accounts is partially reversed in the medium term. This is due to a slight recovery in global energy prices and to the dissipation of the precautionary saving of extraordinary earnings in the private sector. Similarly there are pockets of vulnerability given that external financing needs continue to be considerable (at a time when FDI is expected to moderate in some countries). Finally, it is improbable that the favorable external environment itself translates into fiscal improvements in all CADR countries. For example, the share of import taxes on products derived from oil, which are relatively easy to collect, will fall to the extent that the value of the imports declines. This fall in revenues might not be compensated by domestic taxes on economic activity, which are more difficult to collect. This is of great importance given the major role the public sector plays in the countries of the region.

Meanwhile, changes in international financial market conditions might have implications for the region. Financial markets have shown themselves to be receptive to changing global conditions. In particular, the beginning of 2016 has been characterized by sustained falls in global stock markets and a marked increase in volatility, in response to the economic performance of China and lower oil prices.

Global uncertainty has reverberated in the region, and this is reflected in country risk indicators. Just in January 2016, spreads on sovereign debt interest rates rose, on average, by as much as almost 13% (a similar size to the cumulative increase between 2014 and 2015 of 17%). In the same vein, the recent increase in interest rates in the United States might have a negative influence on the behavior of investment flows, wherever the risk premium is not high enough to retain them. Finally, with higher global interest rates, it is probable that domestic credit markets will also become dearer and affect lending patterns and use of bank credit on the part of the private sector.

Lastly, there is the possibility that the tradable sector is affected by a turnaround in external conditions. Among the scenarios which might lead to this are, both, a new slowdown in the U.S. economy or an unfavorable evolution of the terms of trade. These two factors, combined with a less flexible monetary policy, could affect the external accounts negatively.

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<sup>7</sup> For 2016 the IMF estimates that Latin America and the Caribbean will grow, on average, by -0.3%.



## PROJECTIONS UNDER ALTERNATIVE SCENARIOS

To analyze the impacts of alternative scenarios, simulations are carried out which consist of the reversion of some of the factors that have contributed to the current favorable environment. In the first place a situation is considered in which the behavior of global goods demand induces significant increases in CADR's import prices. Secondly, an event is simulated in which the U.S. economy sees an abrupt fall in its rhythm of growth for domestic reasons, setting in train a series of impacts on other external variables which subsequently affect the region. Finally, consideration is given to recent increases in the volatility of markets as a response to a series of external events, such as current developments in China, Europe and the oil market. Below these cases will be elaborated in detail.

The first scenario is built on the basis of a sudden change in the patterns of global consumption which provoke an abrupt increase in import prices. This could be the case if there was a recovery in external demand from China and/or if European countries were to show signs of greater uniformity in their economic recovery.<sup>8</sup> This panorama would generate fresh increases in demand for goods and, with that, the possibility of new rises in commodity prices (including oil). The key assumption is that imported goods see rises in their prices in relation to those for exports.

How do CADR's growth prospects change if the region's import prices rise? In the absence of domestic production to provide the goods bought overseas, higher import prices would affect the real disposable income of households. Perhaps the simplest example would be a cost spiral induced by the recovery in hydrocarbon prices or some similar event which affects the import goods chain. It should not be forgotten that the increase in the price of energy would have a negative impact on U.S. growth. In fact, a large enough increase in oil prices and in other goods capable of taking the import prices (composite index) back to the levels seen at the end of 2013 (a rise of approximately 7.6%) would mean a GDP growth of about 3.9% in 2016, below the baseline estimate of 4.2%. By 2017 growth would have practically recovered, approaching 4.0% compared to the 4.1% in our current estimate. At the same time the broadening of the trade deficit would affect the current account deficit, which would rise to 5.6% of GDP in 2016 and 5.5% of GDP in 2017.

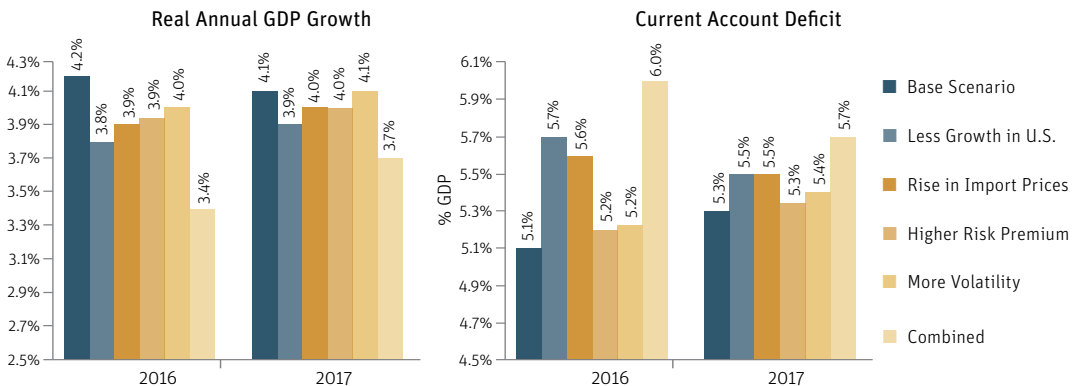
A second scenario considers a negative shock coming from a reduction in U.S. growth prospects. This panorama is based on the long and at times uneven process of recovery seen since the financial crisis. Certainly, performance indicators for economic activity in this country have been optimistic: consumer credit has grown, retail sales have returned to positive territory, unemployment has fallen and households' disposable income has risen thanks to low fuel prices. Furthermore, the Federal Reserve has recently raised interest rates, signaling a new favorable cycle of economic activity.

<sup>8</sup> Within the countries of the European Union growth rates are widely dispersed. Some, such as Spain, are growing by around 3%, while others, such as France or Italy, are growing close to 1%.

However, the adjustments being faced by the Chinese economy, instability in the Middle East, the thin economic recovery in Europe, and even the downgrading of Brazil's sovereign debt can by themselves cause greater risk aversion. This, in turn, could translate into a weakening of aggregate demand and lower growth.

The panorama described assumes that the United States grows in 2016 by 2.5% instead of our current estimate of 2.7%. The estimations based on this scenario suggest that a less optimistic growth context in the United States has important negative impacts on CADR, presumably through the channel of exports (see Figure 4.1, left panel). For example, in response to this reduction in growth, U.S. imports from Central America would fall by 6.5%. This would affect average growth in the region, which would be revised down (from 4.2% to 3.8% in 2016). The effect would extend until 2017, when growth would be close to 3.9%, below the 4.1% currently forecasted. A second effect which would emerge is a deterioration in the current account (see Figure 4.1, right panel). Lower demand for imported goods in the United States would affect the trade balance. In the absence of a flexible exchange rate policy the majority of the trade deficit would be reflected in a higher current account deficit too. How would this dynamic alter current forecasts? According to our projections, the average deficit on current account would rise from 5.1% to 5.7% in 2016 and, in 2017, would remain 0.20 percentage points above the our current account deficit estimate of a 5.3% of GDP.

**FIGURE 4.1** Effects of Selected Shocks: CADR\*



Source: IDB Staff.

Note: \*The base scenario relates to the estimations carried out in this report.

Meanwhile the possible effects of fluctuations in financial markets are open to debate. As is usually accepted,<sup>9</sup> market changes are reflected, in good measure, in volatility in financial assets. In addition, after the financial crisis, it is known with certainty that financial markets can magnify real sector shocks and can thereby cause a favorable environment to unravel.

<sup>9</sup> There is an entire branch of research into valuation of financial assets which addresses this theme; one example is Cochrane (2009).

Reviewing recent trends, it can be seen that global volatility measured by the VIX index accumulated an increase of 17.6% in 2015. Moreover, in one month, January 2016, the index grew by 32.7% compared to the average level of December 2015. This latest peak internalizes, among other things, the recent instability in the Chinese stock market. However, it also picks up an indirect impact: the expectations of economic agents in other countries on the negative impact of China on global demand for raw materials and other goods. This would transmit the volatility to multiple sectors of the global economy.

For the purposes of this chapter, the question consists of knowing how this volatility might harm CADR, especially given that its countries are not highly integrated into the global financial system.<sup>10</sup> To represent this possibility, the VIX is used and it is assumed that it experiences movements similar to those of 2015 when it recorded an increase of 17.6% compared to 2014. Unsurprisingly the impact on growth is limited: expansion in 2016 is estimated to slip to 4.0% and by 2017 it has practically recovered. This outcome is consistent with the relatively low integration between the majority of CADR countries and global financial markets. Similarly the current account deficit seems not to deviate much from the baseline (0.10 and 0.08 percentage points above the estimates for 2016 and 2017, respectively).

A second way in which financial volatility can have impacts on the region is through the risk premium. The risk premium (in relation to U.S. Treasury bonds) reflects the market's perception of the country's ability to respond to shocks of an economic nature. It is relevant for the region since it determines, in a broad sense, the cost of funds for loans, investments and public deficit financing. To characterize this event, a rise in the risk premium of a similar size to that seen between 2014 and 2015 (an increase of 17%, on average, for CADR) is simulated. As in the earlier case, limited impacts are seen on growth in the region and the current account. This reflects two possible factors: on the one hand, a higher risk premium increases the costs of debt and loans, thereby reducing economic activity; on the other hand, a higher margin paid attracts more investments in the short run, counteracting to a certain degree the negative impact assimilated in the shock. In this way, the change in rates would keep growth between 3.9% and 4.0% for 2016 and 2017, respectively. Finally, the current account would rise by between 0.14 and 0.10 percentage points over the base estimation for 2016 and 2017, respectively.

<sup>10</sup> A first possibility can be related to agricultural product markets, especially where there is greater financial integration in the region. One example lies in the possibility agricultural exporters have of agreeing contracts at fixed prices during plantation periods which eventually prove prejudicial at the time of executing the sale since it may be that the agreed price is less than the market price (the spot price). A recent study (Robe, 2015) suggests that changes in the prices of this type of product internalize factors such as stock variations, climate events and macroeconomic volatility. However, Panama is the country with the greatest links from the capital account perspective and could therefore be the exception.

## LOOKING FORWARD: ACT OR STALL?

The results of the alternative scenarios confirm the importance of external conditions for CADR. What stands out is the less good level of economic activity when conditions turn less favorable, which would lead to GDP growth rates below an annual 4% in the next two years. This is due to the high correlation between the export sector and the performance of different economic sectors in each country. In similar vein, a less favorable panorama would affect the current account deficit, which would deteriorate to levels close to 6% of GDP. Of the alternative scenarios the two events which would have the biggest impact on the region are economic slowdown in the United States and an increase in import prices. Similarly the persistence of volatility in financial markets or increases in interest rates could affect growth as a result of the reduction in investment flows to the region.

Given the current external panorama, countries in the region must take advantage of the favorable winds and seek to orchestrate policies which help to improve conditions in both the short and medium term. It should not be forgotten that given the tariff removal stipulated in CAFTA-DR, the execution of policies which improve productivity, especially in those sectors whose current comparative advantages are limited, will be indispensable to reduce the vulnerability to external shocks. In any case it is essential to seek to improve the risk rating of the region. This would require, in turn, the implementation of policies which reduce the harmful effects of global market volatility. To this end it is crucial to ensure that macroeconomic and monetary stability remain in place and that the public finances are managed responsibly.

In summary, the global economy has generated a virtuous circle of conditions for the region, beginning in the middle of 2014 and persisting through 2015. It is hoped that the favorable environment extends through 2016 and that it translates into a great opportunity to reflect on regional strengths and weaknesses in the face of external fluctuations. The actions the region takes in these favorable periods will make the difference between being policy protagonists or mere spectators of the ups and downs of the global economy.

### ANNEX 4.1 Estimation of External Shocks: Assumptions and Methodology

The methodology consists of an estimation based on Hsiao (2003) applied to a dynamic panel of auto-regressive (stationary) vectors for CADR countries with annual series from 1999 to 2014. The series are expressed in a single currency and in real terms, which makes it possible to do without the inclusion of inflation and the nominal exchange rate.<sup>11</sup> The estimation for each country  $i$  and year  $t$  utilizes the change in the logarithm of real GDP ( $Y_{i,t}$ ), the current account as a percentage of GDP ( $CC_{i,t}$ ), export prices ( $P_{i,t}$ ) and/or imports ( $NP_{i,t}$ ), the interest rate differential ( $r_{i,t} - r_{i,t}^{US}$ ), the proxy for the performance of external demand and the VIX, all included in vector  $Y$ . The independent variables include control characteristics, among them complexity of exports and capital account opening. These are represented by the matrix  $X$ . To strengthen the estimation of the demand shock for tradable goods, first use is made of the logarithm of real GDP for the United States and, subsequently, of the volume of imports coming from each country in the sample. The general equation to estimate would have the following form:

$$AY_t = BY_{t-1} + CZ_t + DX_t + Ev_t,$$

where  $A$ ,  $B$ ,  $C$ ,  $D$  and  $E$  are coefficient matrices.

The shocks are realized by means of the calculation of the response impulse (IR). The size of the shock was of 1 standard deviation and then rescaled to make it compatible with the units of the growth and current account series. The assumptions used are summarized in the Table 4.1.A.

**TABLE 4.1.A** Assumptions

Assumptions for the Shocks	Change in Relation to 2015
Import prices	Increase of 7.6%
Fall in U.S. GDP growth	From 2.7% to 2.5%
Fall in U.S. imports	6.5%
Interest rate effect (EMBI)	Increase of 17%
WTI oil price	Increase to 52 dollars per barrel
Change in the VIX	Increase of 17.6%
Initial baseline values for GDP growth and current account	U.S. GDP: 2.6% in 2016 CADR GDP: 4.0% and 4.1%, 2016 and 2017 CADR current account: -5.2% and -5.3% of GDP, 2016 and 2017

Source: Bloomberg, FRED of the Federal Reserve Bank of St. Louis, World Development Indicators (World Bank), and World Economic Outlook (International Monetary Fund, October 2015 and January 2016).

<sup>11</sup> A more robust system could include these two monetary variables but this exercise is confined to considering the real impacts.



## REFERENCES

- Aghion, P., P. Bacchetta and R. Ranciere (2009). "Exchange Rate Volatility and Productivity Growth: The Role of Financial Development." *National Bureau of Economic Research Working Paper*, 12117.
- Aguirre, A. and C. Calderón (2005). "Real Exchange Rate Misalignments and Economic Performance." *Working Paper* no.315, Banco Central de Chile.
- Baffes, J., I. Elbadawi and A. O'Connell (1999). "Single Equation Estimation of the Equilibrium Real Exchange." In L. Hinkle and P. Montiel (eds.). *Exchange Rate Misalignment. Concepts and Measurement For Developing Countries. The World Bank Research Publication*.
- Balassa, B. (1964). "The Purchasing Power Parity Doctrine: A Reappraisal." *Journal of Political Economy*, 72: 584-96.
- Balassa, B. (1965). "Trade liberalisation and Revealed Comparative Advantage." *The Manchester School*, 33: 99-123.
- Bello, O., R. Heresi and R. Pineda (2010). "El tipo de cambio real de equilibrio: Un estudio para 17 países de América Latina." Santiago de Chile: División de Desarrollo Económico, CEPAL.
- Bruegel (2015). Real effective exchange rate database. Available at <http://bruegel.org/publications/datasets>.
- Caporale G. M., D. Ciferri and A. Girardi (2008). "Fiscal Shocks and Real Exchange Rate Dynamics: Some Evidence from Latin America." *Working paper* 2228. CESifo.
- Carrera, J. and R. Restout (2007). "Determinantes de largo plazo del tipo de cambio real en América Latina." *Documento de Trabajo*. Banco Central de Argentina.
- Carrera, J. and R. Restout (2008). "Long run determinants of Real Exchange Rates in Latin America." *Working paper* GATE 08-11 2008.
- Casco, E. (2012). "Tipo de cambio real de equilibrio y desalineamiento en Honduras." *Unidad de Investigacion Económica del Banco Central de Honduras*.
- Clark, P. and R. McDonald (1998). "Exchange Rates and Economic Fundamentals: A Methodological Comparison of BEERs and FEERs." *Working Paper*, No.98/67. Washington, DC: International Monetary Fund.
- Cochrane, J. H. (2009). *Asset Pricing: (Revised Edition)*. Princeton university press.

- Cuevas, M., O. Manzano and C. Rodríguez (2014). “Promoviendo la transformación productiva: políticas de desarrollo productivo en Centroamérica y República Dominicana.” Washington, DC: Banco Interamericano de Desarrollo.
- Dickey, D. and W. Fuller (1979). “Distribution of the Estimators for Autoregressive Time Series With a Unit Root.” *Journal of the American Statistical Association*, 74 (366): 427-431.
- Elbadawi, I. and R. Soto (2007). “Theory and Empirics of Real Exchange Rates in Developing Countries.” *Documentos de Trabajo* 324, Instituto de Economía. Pontificia Universidad Católica de Chile.
- Edwards, S. (1989). “Real Exchange Rate in The Developing Countries: Concepts and Measurement.” *NBER Working Paper* 2950.
- Edwards, S. (2011). “Exchange Rates in Emerging Countries: Eleven Empirical Regularities From Latin America and East Asia.” *NBER Working Paper* 17074.
- Edwards, S. and F. Losada (1994). “Fixed Exchange Rates, Inflation and Macroeconomic Discipline.” *NBER Working Paper* No.4661.
- Engle, R. and C. Granger (1987). “Co-Integration and Error Correction: Representation, Estimation and Testing.” *Econometrica*, 55(2): 251-276.
- Executive Secretariat of the Central American Monetary Council (2003). “Estimación del Tipo de Cambio Real de Equilibrio en Centroamérica.” San José, Costa Rica: SECMCA.
- Feenstra, R. C. and J. Romalis (2014). “International Prices and Endogenous Quality.” *Quarterly Journal of Economics*, 129 (2): 477-527.
- Ferchen, M., A. García-Herrero and M. Nigrinis (2013). “Evaluating Latin America’s Commodity Dependence on China.” *Working Paper* 13/05. BBVA Research, Hong Kong.
- García, Y. and J. A. Quijada (2015). “Estimación del tipo de cambio real de equilibrio de Honduras.” *Resumen de Políticas* IDB-PB-247. Washington, DC: Banco Interamericano de Desarrollo.
- García-Herrero, A., E. Dos Santos, P. Urbiola, M. Dal Bianco, F. Soto, M. Hernández, A. Rodríguez and R. Sánchez (2014). “Competitividad del sector manufacturero en América Latina: tendencias y determinantes.” *Documento de Trabajo* 14/10. BBVA Research, Madrid.
- Giordano, P. (2012). “Investing in Integration.” *Integration and Trade*, 34(16). Washington, DC: Inter-American Development Bank.
- Gratereaux Hernández, C. (2014). “Tipo de cambio real de equilibrio, fundamentos y desalineamiento en una economía pequeña y abierta: metodología BEER adaptada al caso dominicano.” Banco Central de República Dominicana.
- Gutiérrez, C. (2009). “Tipo de cambio real de equilibrio de Costa Rica: enfoque ‘*Behavioral Equilibrium Exchange Rate*’ (BEER) Período 1991q1-2009q2.” *Documento de Investigación* O8-2009. Banco Central de Costa Rica.
- Hsiao, C. (2003). *Analysis of Panel Data*. Cambridge University Press.
- Inter-American Development Bank (2015, forthcoming). “Análisis de políticas públicas agrarias para Centroamérica y la República Dominicana en el marco del DR-CAFTA.” *Background Paper*. Washington, DC.



- International Monetary Fund (2015a). "Annual Report on Exchange Rate Arrangement and Exchange Rate Restrictions". Washington, DC.
- International Monetary Fund (2015b). "Western Hemisphere: Adjusting Under Pressure." *Regional Economic Outlook October 2015*. Washington, DC.
- Izquierdo, A. and O. Manzano (2012). "El mundo cambió: ¿cambiará el crecimiento en Centroamérica? Desafíos y oportunidades." *Reporte Macroeconómico CID/BID*. Washington, DC: Banco Interamericano de Desarrollo.
- Kitson, M., R. Martin and P. Tyler (2004). "Regional competitiveness: An elusive yet key concept?" *Regional Studies*, 38(9): 991-999.
- Lagarda, G., O. Manzano and J. Prat (2015). "El legado de la crisis: Opciones de política en un entorno favorable." *Reporte Macroeconómico CID/BID*. Washington, DC: Banco Interamericano de Desarrollo.
- Lall, S. (2001). "Competitiveness indices and developing countries: an economic evaluation of the Global Competitiveness Report." *World development*, 29(9): 1501-1525.
- Lane, P. R. and G. M. Milesi-Ferretti (2007). "The external wealth of nations mark II: Revised and extended estimates of foreign assets and liabilities, 1970–2004." *Journal of International Economics* 73, November, 223-250.
- López, H., L. Molina and M. Bussolo (2007). "Remittances and the Real Exchange Rate." *Research Working Paper 4213*. Washington, D.C: World Bank.
- Morrissey, O., T. Lloyd and M. Opoku-Afari (2004). "Real Exchange Rate Response to Capital Inflows: A Dynamic Analysis for Ghana." *CREDIT Research Paper 04/12*, School of Economics, University of Nottingham.
- Nurkse, R. (1945). "Conditions of International Monetary Equilibrium." *Essays in International Finance*, 4, Princeton University.
- Phillips, P. and P. Perron (1988). "Testing for a unit root in time series regression." *Biometrika*, 75 (2): 335-346.
- Porter, M. (1990). *The competitive advantage of nations*. New York: Free Press, MacMillan.
- Portugal-Pérez, A. and J. S. Wilson (2012). "Export Performance and Trade Facilitation Reform: Hard and Soft Infrastructure." *World development*, 40(7): 1295-1307.
- Repetto, A. (1992). "Determinantes de largo plazo del tipo de cambio real: una aplicación al caso chileno." *Colección de Estudios CIEPLAN*, No 36.
- Robe, M. A. (2015, forthcoming). "Fundamentals, Derivatives Market Information, and Central American Commodity Price Volatility".
- Samayoa, H. (2004). "Tipo de cambio real de equilibrio y análisis de la dinámica del tipo de cambio real en Guatemala." *Banca Central*, No 51. Banco de Guatemala.
- Samuelson, P. A. (1964). "Theoretical Notes on Trade Problems." *Review of Economics and Statistics*, 46: 145-54.

- Siregar, R. and R. Rajan (2006). "Models of Equilibrium Real Exchange Rates Revisited: A Selective Review of the Literature." *CIES Working Papers*. University of Adelaide: Centre for International Economic Studies.
- Tervala, H. (2006). "Productive Government Spending and the International Transmission of Fiscal Policy." *Discussion paper* 120. Helsinki Center for Economic Research.
- Urcuyo, R. (2012). "Deslizamiento cambiario y su impacto en crecimiento económico e inflación." *Documento de Trabajo* DT-025. Banco Central de Nicaragua.
- Williamson, J. (1994). Estimating Equilibrium Exchange Rates. Peterson Institute for International Economics.



