



The Economic Landscape in Central
America and the Dominican Republic:

EXTERNAL CHALLENGES AND INTERNAL STRENGTHS

COORDINATORS Arnoldo López Marmolejo y Marta Ruiz Arranz





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CONTENTS

The Economic Landscape in Central
America and the Dominican Republic:
EXTERNAL CHALLENGES,
INTERNAL STRENGTHS

	Acknowledgements	IV
	Foreword	V
	Executive summary	VI
1	A resilient region in the face of uncertain international conditions	10
	Box 1.1. The impact of the Nicaraguan crisis on the CADR economies	11
	Is the region prepared for a decrease in capital and investment flows?	17
	Pending tasks in an uncertain environment	20
2	Food inflation in Central America: promoting local supply to mitigate external price volatility	22
	Box 2.1. Food inflation in Panama: distributive effects	23
	Evolution and characteristics of food inflation in CADR	26
	Determinants of food inflation	33
	Final considerations	35
3	Banking conditions in the region remain stable despite a more restrictive international financial environment	38
	Macroeconomic performance index	39
	Indices of banking conditions	41
	Final considerations	45
4	The region has maintained foreign direct investment and financial market stability despite the unfavorable external environment	50
	Foreign direct investment	51
	Financial markets	53
	Final considerations	57
	Bibliography	59

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FOREWORD

The Economic Landscape in Central
America and the Dominican Republic:
**EXTERNAL CHALLENGES,
INTERNAL STRENGTHS**

After a long period of high liquidity fostered by the US Federal Reserve, the steady improvement in US economic performance warranted the start of the ongoing process of monetary normalization. At the same time, various economies world-wide have been adopting measures geared to securing trade balances and supporting domestic production.

In this context, the economy of Central America and the Dominican Republic has continued to grow, albeit with substantial variation among the countries. The region has benefitted from the sound economic performance of its main trading partner, the United States, which has been the region's main external channel of economic activity. The economic cycle in the United States might therefore be a favorable source of growth for the region in 2019. The current context, however, also poses significant challenges that arise through the financial channel. Notable at the moment are external incentives for a recomposition of investment flows in favor of developed-country assets, and a differentiation of flows among countries on the basis of their economic fundamentals. This context requires that the countries of the region make efforts to strengthen their economic and institutional fundamentals, with a view to making them more attractive to domestic and foreign investment. That

in turn would help improve the environment in which the population lives, raising their living standards.

For these reasons I am pleased to present this report, which addresses these issues in detail. It describes the region's current circumstances and the prospects for 2019. It analyzes the recent fall in food prices and how that relates to the envisaged higher international prices and local production. Finally, it examines the channels through which the reduction in global liquidity could be transmitted to the region: specifically, banking, foreign direct investment, and financial markets. It is worth noting that, to date, substantial effects have not been apparent in the region. Nonetheless, it is important to keep monitoring how various channels act while strengthening the fundamentals, so that the region is better prepared to face these circumstances or other elements of risk aversion.

This report seeks to make a contribution to the analysis of the challenges posed by the external economic conditions confronting the region. It does so while inviting reflection and debate on possible policies that the region could adopt to tackle those challenges more effectively, simultaneously favoring the international trade and financial integration that it has been pursuing over time.

Verónica Zavala

General Manager

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and the Dominican Republic



EXECUTIVE SUMMARY

The economies of Central America, Panama and the Dominican Republic (CADR) have been facing significant challenges. Notable on the external front is a reduction in the international prices of significant regional exports, such as sugar and coffee; the onset of a cycle of interest rate increases that is still ongoing in the United States; and a cut in US corporate income tax. Moreover, there remains uncertainty about the possibility of an escalation of protectionist trade policies, which could cause a downturn in the global economy and a hardening of US immigration policy. On the domestic front there is less fiscal space, as well as weather-related and sociopolitical events in various countries.

Despite this backdrop, growth has persisted in the region. It is estimated that the region will have grown by 3,8% IN 2018,

SIMILAR TO THE 3,9% RECORDED IN 2017

Part of this resilience stems from the impetus of external demand, a result of the favorable economic performance of the United States, CADR's main trading partners and investor. It is also estimated that 2019 growth in the region will once again exceed 4 percent as the effects of events in 2018 dissipate, and in line with growth in the United States.

Inflation in the region has tended to fall, partly because of the lower oil price and the decline in food inflation after 2010. There has been a narrowing of the gap between CADR's food inflation and inflation in other regions of the world, as well as with underlying inflation. Food prices in the region are determined by external and internal shocks, notably the influence of international food prices and the impact of extreme weather phenomena. As regards exposure to international prices, it is estimated that their impact can be lessened by fostering more active local agricultural production. In this regard, it would be helpful to support the competitiveness and productivity of a sector wherein inflation has a greater effect on those with lower-incomes, widens inequality, and has a significant impact on general inflation.

At the same time, several countries of the region continue to face fiscal challenges, entailing less fiscal space to meet the needs of the population and to implement countercyclical measures in adverse situations. The factors that increase global risk aversion, moreover, might suggest a need for additional fiscal adjustments to strengthen the economic fundamentals. As regards the external accounts, CADR has benefitted from the lower oil price and the rise in remittances. The effect of the oil price has tended to wane, however, and in any case, it is very volatile. With regard to remittances, their sound performance is expected to continue but a more restrictive US immigration policy could reduce them.

Foreign direct investment (FDI) has been another favorable and stable factor in financing the external accounts. The level of FDI has been maintained in recent years, mainly supported by the reinvestment of earnings. This amounts to a vote of confidence in the economy from investors in the region. The share of new investments, however, has tended to decline. There are many determinants of new investment, including macroeconomic, institutional and external factors. The region is preserving favorable conditions for investment, such as low inflation and trade openness. Nonetheless, it should continue to make efforts to improve regulatory quality and ensure economic stability by consolidating its fiscal position. All this helps foster new investment, both foreign and local—the latter being low in comparison to the rest of Latin America. Macroeconomic stability is a necessary but insufficient condition to increasing growth and widening inclusion, and thus it is important to make efforts to boost productivity. The region still faces the challenge of promoting savings, which would lessen its dependency on external liabilities and strengthen its resilience at times of uncertainty.

As regards financial markets, investment flows discriminate on the basis of economic fundamentals. To date, the effects of monetary

normalization have been small and short-lived in the region, in terms of both exchange rates and the yield on government securities. This circumstance seems to have been positively affected by some improvement in macroeconomic variables, such as inflation and the external accounts, as well as limited exposure to international financial volatility because a significant share of government securities is held in the domestic market.

Finally, it is worth noting that banking conditions have improved or remained stable in most countries. At the regional level, the stability of banking conditions seems to be explained by the relative steadiness of macroeconomic performance. At the moment, **therefore, changes in US monetary policy do not seem to have had substantial regional repercussions** in the banking or macroeconomic spheres. Nonetheless, it is important to keep monitoring the region's banking, macroeconomic and financial market conditions in a world where financial and commercial systems are increasingly interconnected. This is especially true given the reduction in liquidity in the United States, a phenomenon that will probably happen in Europe as well.

1

CHAPTER

A RESILIENT REGION

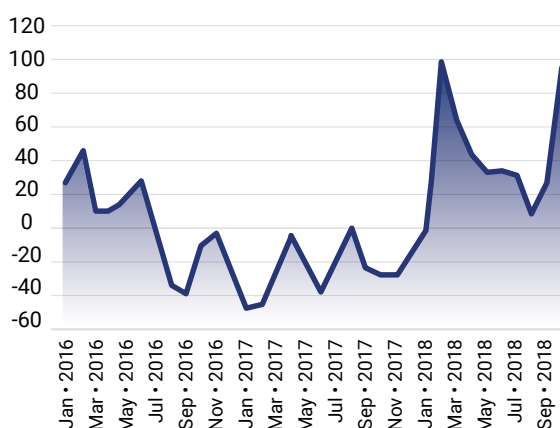
in the face of uncertain international
conditions

For the region of Central America, Panama and the Dominican Republic (hereinafter referred to by the acronym CADR), 2018 was marked by great uncertainty and economic challenges. These include less liquidity, an increase in financing costs, greater fiscal pressure in several countries, migration challenges, and a sociopolitical crisis in Nicaragua that has had negative effects on Central American trade (see Box 1.1). It is estimated that CADR grew on average by 3.8 percent¹, though there are marked differences between countries. This growth is below the 4.5 percent average of the past five years. There are three main reasons for this slowdown: an unfavorable movement in

the terms of trade caused by the fall in prices for coffee and sugar, as well as the rise in oil prices; the sociopolitical crisis in Nicaragua, which is estimated to have caused a 4 percent decline in the country's GDP in 2018; and the softening of growth in Panama, which is estimated at 4.6 percent for 2018², mainly because of the weak performance of the construction sector in the early part of the year. Although CADR's growth exceeds the average for Latin America and the Caribbean (LAC) in 2018, this figure has been consistently revised downwards in the last two issues of the International Monetary Fund's (IMF) World Economic Outlook report.

FIGURE 1.1 | A Year of Uncertainty, Greater Volatility and Less Liquidity

1.1 VIX: Volatility Index (year-over-year percent change)



1.1 b: Global Banking Liquidity (year-over-year percent change)



Source: prepared by CID/IDB using data from the US Federal Reserve and the Bank of International Settlements (BIS).

¹ This is a weighted average of the following rates: Costa Rica (3.3 percent), El Salvador (2.5 percent), Guatemala (2.8 percent), Honduras (3.5 percent), Nicaragua (-4 percent), Panama (4.6 percent) and the Dominican Republic (6.4 percent).

² Compared with the 5.8 percent average of the past five years.

World growth is expected to stand at about 3.7 percent, the same as in 2017. The IMF, however, has stated that an escalation in trade tensions could lead to a decline in world growth of about 1 percentage point. Growth in the eurozone has remained somewhat subdued, reflecting low growth in Germany, France and Italy. In LAC,

growth expectations have been revised downwards because of the performance of Argentina and Brazil. Growth remains solid in China, at about 6.6 percent in 2018. Some slowdown is expected in other Asian economies in 2019, however, because of the trade measures recently adopted by the United States.

BOX 1.1

The Impact of the Nicaraguan Crisis on the CADR Economies

In mid-2018, President Daniel Ortega approved a decree authorizing reforms to the Nicaraguan Social Security Institute (INSS). Among other changes, the reforms include a 0.75 percent increase in workers' contributions, a 2 percent rise in employers' contributions, and a 5 percent cut in pensions. These changes arose in the context of the mounting deficits that the INSS has experienced in the past five years, and the risk that its reserves might be depleted before 2019. The protests organized in the wake of the publication of the reform decree led to violent clashes with the National Police. A few days after these clashes, the decision was taken to revoke the INSS reform; the chief commissioner of police was removed; some prisoners detained during the demonstrations were released; and there was a call for a national dialogue. Despite these measures, demonstrations have persisted, although they have tended to wane.

In late May and June, the protests led to the closure and blocking of highways in 10 of the country's departments, causing a gridlock of about 6,000 trucks from Honduras, El Salvador, Costa Rica, Panama and Nicaragua itself. There have been no mass blockages of highways since mid-July, but it is estimated that the road closures in June affected goods valued at US\$6.3 billion, or 2.6 percent of regional GDP.

This is equivalent to more than half the trade in the Central American isthmus. It is estimated that the most affected countries, given the volume of their goods that pass through Nicaragua, were Costa Rica, Panama, and Guatemala.

The exports that might have been most affected are chemicals, foodstuffs, footwear, clothing and textiles, because these are the products most traded in the region. Panama is the country most affected by the decrease in chemicals and related products, since it is the source of most such products. With regard to foodstuffs, the most affected countries are El Salvador (US\$355 million or 23.2 percent of the country's total food imports), Nicaragua (US\$342 million or 42.9 percent), Guatemala (US\$301 million or 14.1 percent), and Costa Rica (US\$236 million or 14.1 percent).

With regard to the financial sector, there is a limited number of banks holding a substantial amount of Nicaraguan capital (the biggest percentage of Lafise and Promerica is 7.4 percent and 4.4 percent of the system's assets in El Salvador and Honduras, respectively). This suggests that there is only a small risk of contagion to the region's other banking systems.

Source: prepared by CID/IDB with data from Comtrade, SECMCA, WDI

The United States, the region's main trading partner and the leading source of remittances for the CADR countries, has had a robust growth in the past year, driven by a procyclical fiscal expansion. This performance has had a positive effect on external demand and economic activity in several CADR countries. Moreover, unemployment is at historically

low levels, and the consumer inflation rate is above the Federal Reserve's (the Fed) inflation target of 2 percent. This combination of factors induced the Fed to raise its reference rate seven times between 2017 and 2018. Recent statements by Fed Chairman Jerome Powell, however, suggest that the Fed might not raise rates in 2019 because of

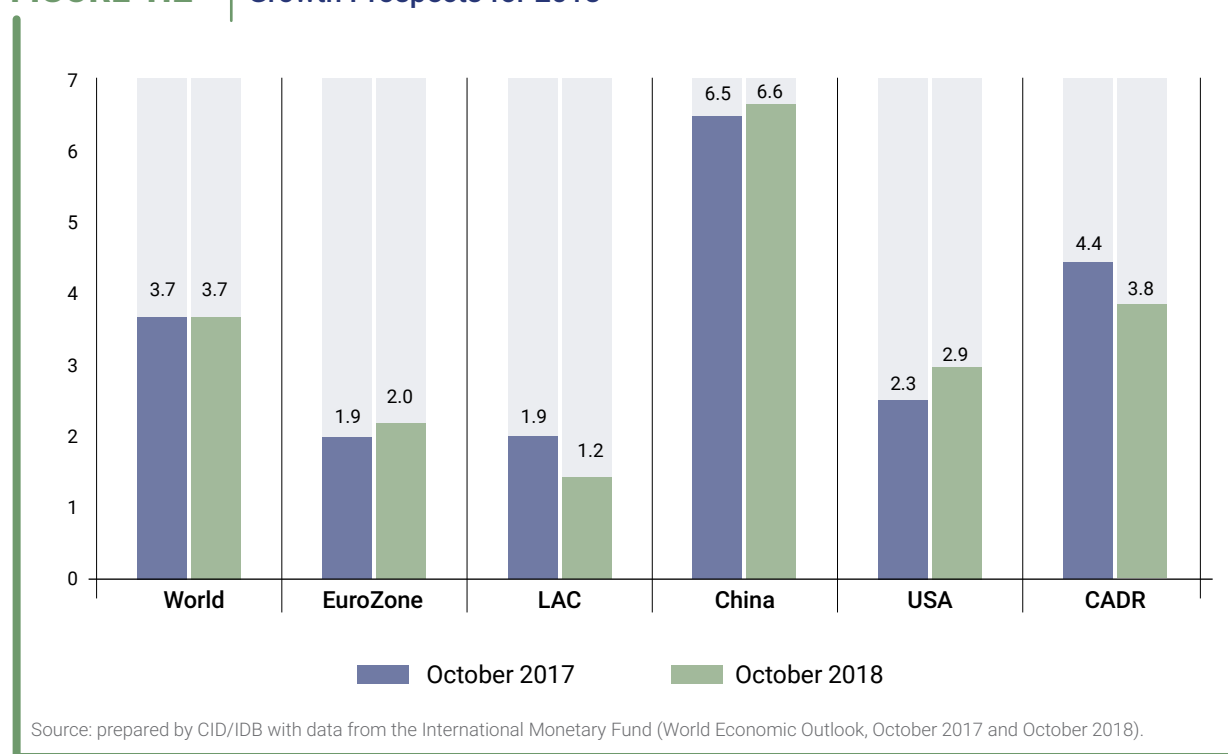
three possible challenges: a) a downturn in foreign demand; b) the weakening of the fiscal stimulus in the United States; and c) the delayed economic impact of previous rate increases.

Despite these looming challenges, the US dollar has strengthened since April 2018. This could continue to have a positive effect on the economies of the Northern Triangle because of the large volume of remittances they receive from the United States. According to Druck et al. (2015), a stronger dollar is also associated with a better trade and tourism performance in CADR overall. Greater US demand for these services will yield higher dollar revenues, and thus greater domestic demand in the CADR countries. In line with the argument in Druck et al. (2015), this greater domestic demand could offset the fall in commodities prices³ (especially the decline in coffee and sugar prices mentioned earlier), and could encourage consumption of various goods, including imported products. For

the region's dollarized economies, El Salvador and Panama, this strengthening would mean an increase in purchasing power relative to the rest of the world, but it would also entail a loss of competitiveness for their goods and services because of the increased cost, thereby affecting their trade deficits.

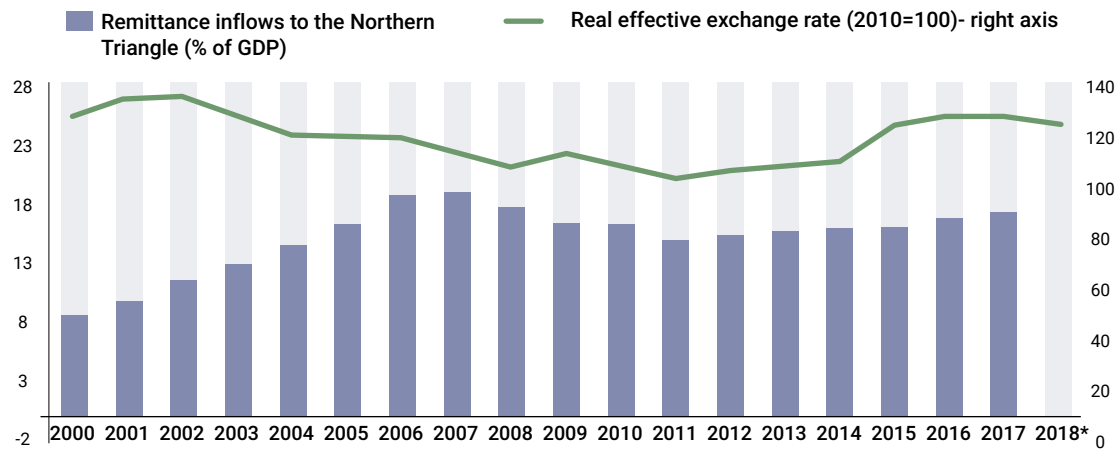
A stronger US economy is associated with benefits for CADR growth, but it is important to recall that recent hikes in interest rates have translated into reduced liquidity, thereby making CADR debt costlier. Note, moreover, that several episodes US monetary policy hardening in the past have been followed by risk aversion to emerging markets and declines in capital and investment flows. CADR's capacity to withstand a fall in such flows is discussed in more detail at the end of this chapter. In CADR, however, the impact of US growth performance takes primacy over the effect of greater risk aversion (for an analysis of these shocks, see IDB, 2018).

FIGURE 1.2 | Growth Prospects for 2018



³ Because commodities are priced in US dollars, the strengthening of the dollar affects any asset, including commodities. For more information see Frenkel (1986) for a theoretical model, and Akram (2009).

FIGURE 1.3 | Relation between the Real Effective US Exchange Rate and Remittances to the Northern Triangle



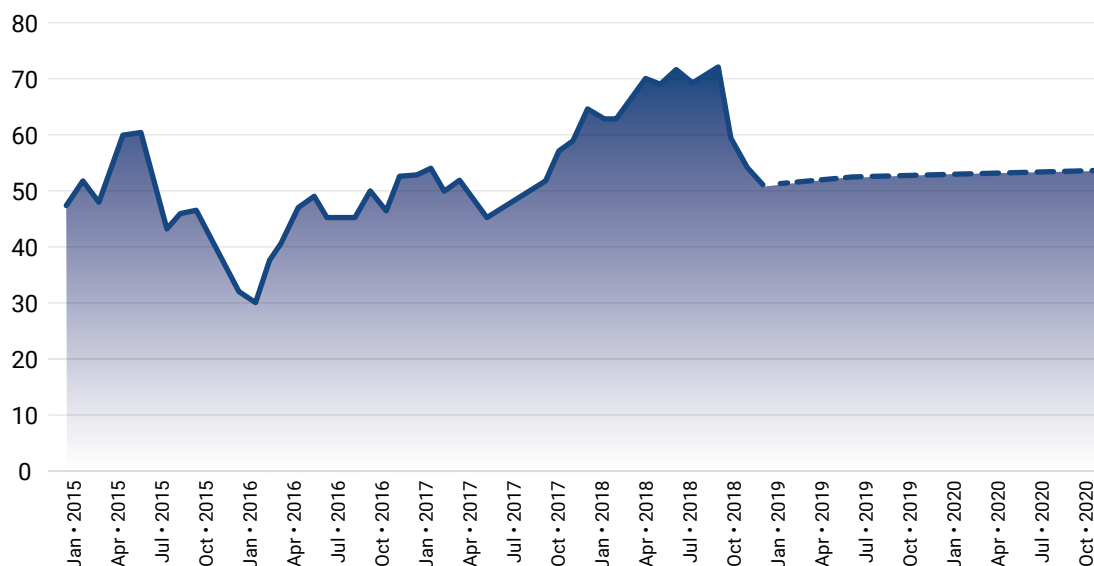
Source: prepared by CID/IDB with data from the US Federal Reserve and the World Bank.

Note: increases in the real effective exchange rate indicate depreciation, while declines indicate appreciation. Northern Triangle refers to Guatemala, Honduras and El Salvador.

As regards trade, economic activity and CADR's growth prospects have been affected by an unfavorable performance of its terms of trade. In the past year, there has been a decline in the

prices of CADR's main commodity exports; prices for coffee and sugar, in particular, have fallen substantially. At the same time, the price of oil—a commodity that exerts pressure on the current

FIGURE 1.4 | Oil Price (US\$ per barrel)



Source: EIA (historical prices) and CME Group (futures). Last update: Tuesday, December 11, 2018.

EXTERNAL CHALLENGES, INTERNAL STRENGTHS

account in the countries of the region, since they are not producers—has risen on average by an annual 27.2 percent since 2016. Nonetheless, this is still below the historically high prices between 2011 and 2013. Certain factors, such as an even more dramatic drop in Venezuelan production and a fall in crude exports from Iran as a result of US sanctions, could put pressure on oil prices. These factors, however, could be offset by an increase in US oil production, which would boost supply and thus lead to a fall in prices. In December 2018, futures contracts were estimating a fall in prices relative to the 2018 average, followed by a price stabilization up to December 2020.

With regard to the fiscal sector, on average the region faces a fiscal deficit and mounting debt, and therefore ever less room for public spending adjustments. The region's average fiscal deficit narrowed in 2015 but widened between 2016 and 2018, and the IMF expects this trend to continue until 2022. Gross debt will follow the same path. It should be stressed that the region is marked by heterogeneity in the performance of these indicators: few countries have a debt above 50 percent of GDP, and the fiscal deficit in most CADR countries is below 3 percent of GDP. A deterioration in fiscal conditions is common in several countries,

however, and thus there is ever less capacity to react to adverse circumstances.

Moreover, new factors—such as the aforementioned rise in US interest rates—could require further fiscal adjustments. It has been estimated that an increase of 100 basis points (a medium-term scenario) would be associated with an additional increase in debt service of between 0.3 percent and 0.9 percent (IDB, 2018).

With regard to the external sector, CADR managed to reduce its current account deficit between 2015 and 2017, bringing it down to 1.6 percent of GDP in the latter year. The deficit began to widen in 2018, however, reaching levels of about 3 percent of GDP. This was mainly because of the widening of the trade deficit, followed by the increase in the primary deficit. CADR's terms of trade deteriorated with the increase in the oil price and the aforementioned fall in prices of agricultural exports. As regards the widening of the primary deficit, this is to be expected in a region that receives high levels of foreign direct investment (FDI). Much of the investment consists of reinvested earnings and, since these have been used to pay dividends, there is a deficit in the income account.

FIGURE 1.5 | CADR's Fiscal Performance

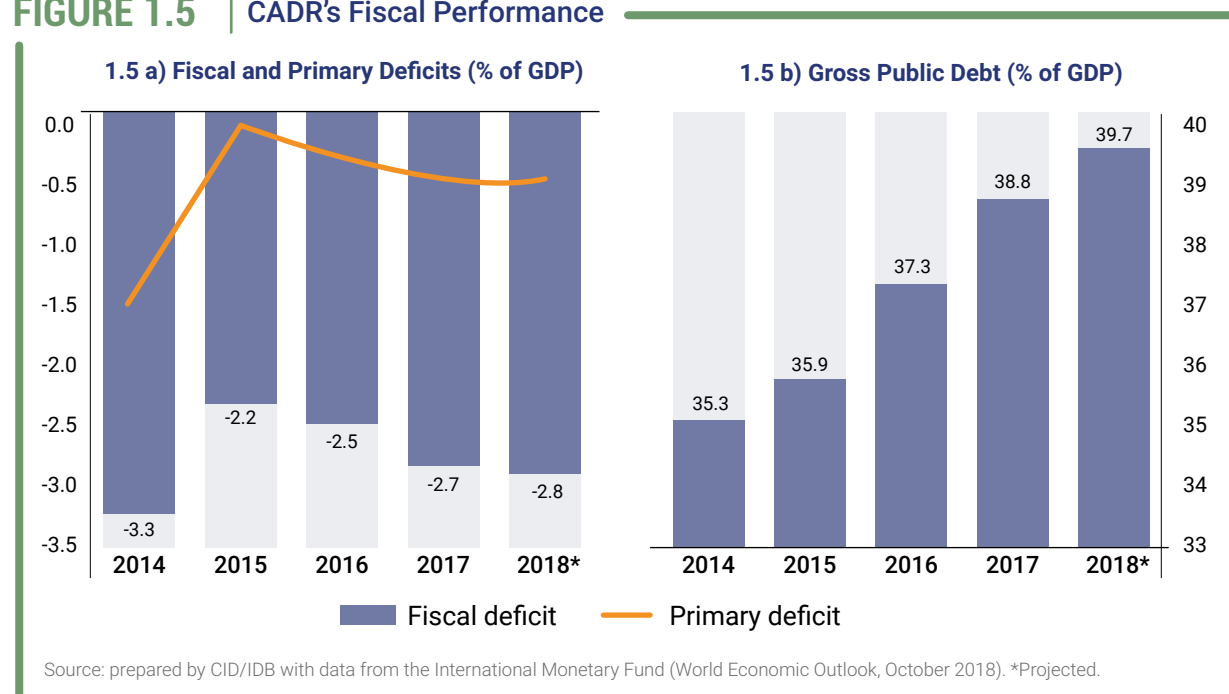
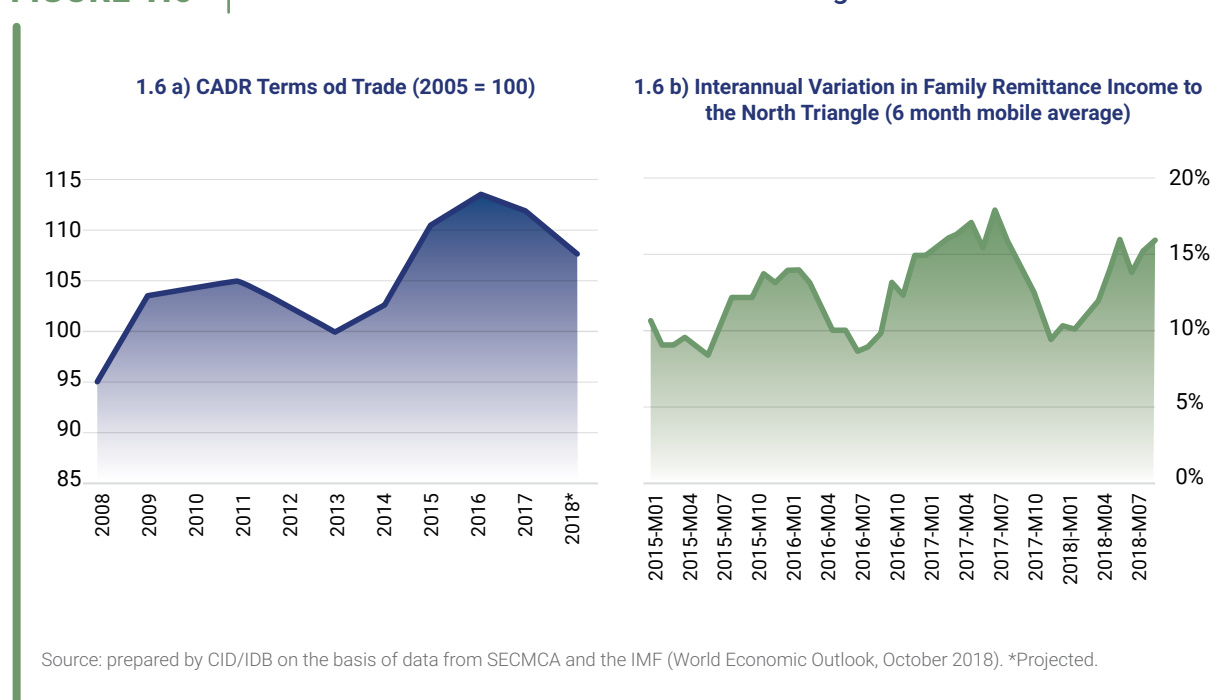


FIGURE 1.6 | Performance of Some External Sector Headings



For more than 15 years, CAGR's current account deficit has been mitigated by two "cushions:" remittances and FDI. The former accounts on average for 10.1 percent of the region's GDP and the latter is equivalent to 4.4 percent of GDP (although, as with the fiscal situation, these figures vary substantially among countries). Hence it is important to monitor their performance and the factors that might affect them.

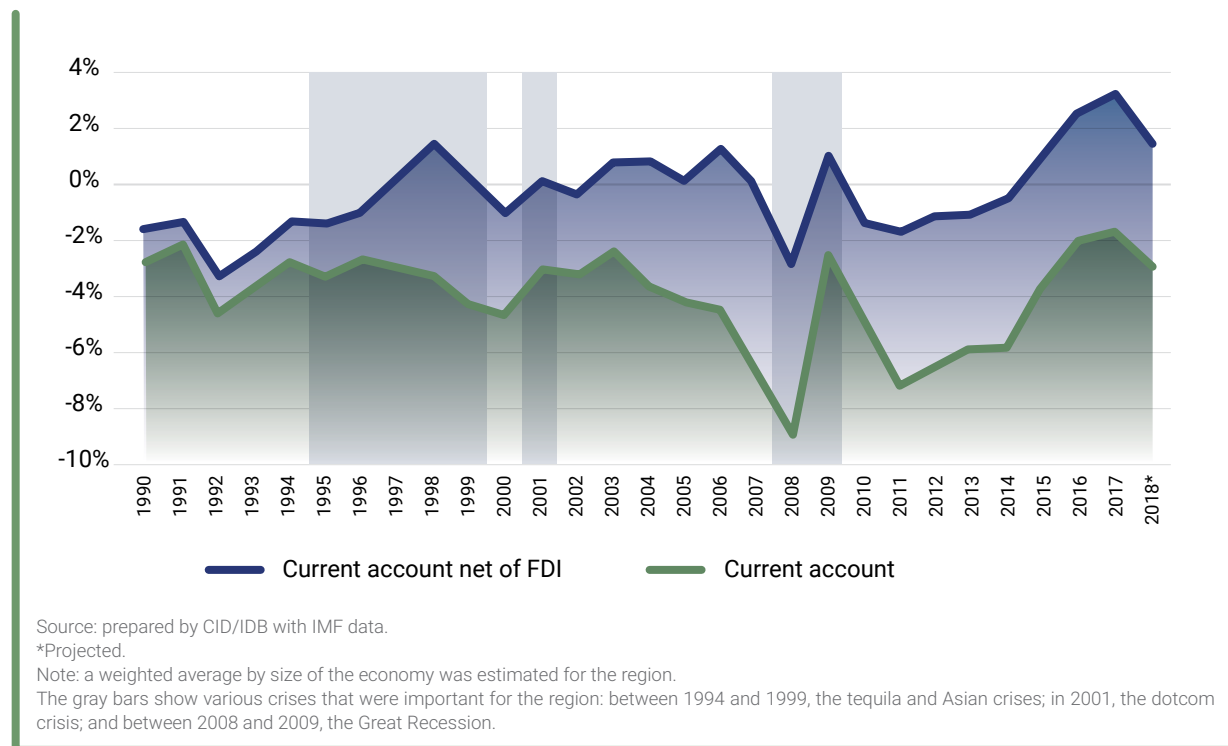
A series of possible changes to US immigration policy could directly affect the transfer of remittances to CAGR countries, especially the Northern Triangle countries. The available data on remittances to the region reveal an acceleration since the start of the year. The reason for this is a matter of debate. It is not clear whether it stems from the favorable performance of the US economy and its positive effects on unemployment among Latinos; or whether it has been influenced by fear among Latino families and the consequent transfer of higher volumes of remittances in preparation for their possible "return home." This possible fear could spring from uncertainty about the future of the Temporary Protection Status (TPS) and Deferred Action for Childhood Arrivals (DACA) programs in the United States.

It is estimated that if those programs were brought to an end, remittances to the Northern Triangle could fall by about 7 percent between 2019 and 2020—assuming the documented migrants from those countries now living in the United States do not offset the decline by increasing the amount they send in remittances (Abuelafia, 2018). As a reference, during the Great Recession of 2008, remittances fell by 10 percent.

With regard to FDI, most CAGR countries seem to have been successful in attracting such investment, which continues to finance more than 100 percent of the current account balance in five of the region's seven countries. FDI has been a cushion for the region, including at times of various crises (such as the Great Recession of 2009, the tequila crisis of 1994–1997, the Asian financial crisis, the Russian crisis and Argentine crisis between 1997 and 2002, and the dotcom crisis in 2001). Subtracting the percentage financed by FDI from the current account, the widest current account deficit in CAGR since 1990 has been barely 2.8 percent of GDP.

Nonetheless, the current international context of greater uncertainty and a lower return on investment—in conjunction with the reduction in

FIGURE 1.7 | Current Account Net of FDI (% of GDP)



US corporate income tax that entered into force in 2018—might be associated with a moderation or fall in FDI flows to emerging economies, and therefore to the region. The most recent World Investment Report from the United Nations Conference on Trade and Development (UNCTAD) forecasts an increase in world flows, but flows could be affected by an escalation of trade tensions, the implementation of protectionist policies, and uncertainty about certain emerging markets. According to UNCTAD, moreover, the rate of return on investment has fallen at the global level, with greater declines in Africa and LAC.

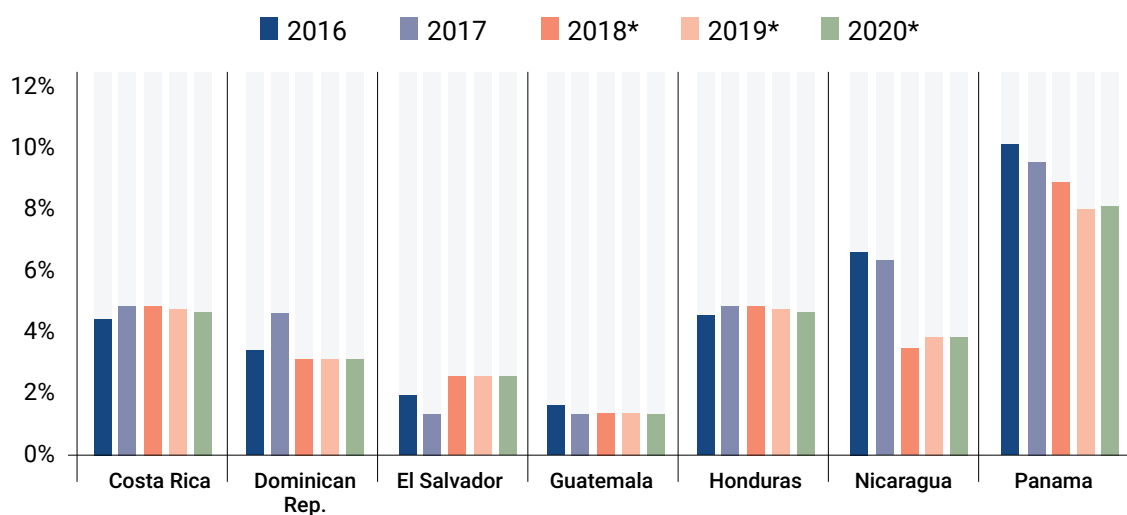
World-wide FDI trends are also consistent with the performance of national savings net of investment, which is now positive. A constant moderation is expected in the coming years, reflecting a lesser propensity for real investment (IDB 2017). These trends have important implications for the financing of the CADR countries' current account deficits, which have widened in the past year, as explained earlier.

In its most recent projections, the IMF only expects an increase in FDI flows to El Salvador and Honduras in 2018. Although FDI flows to the region will remain high relative to the rest of LAC, it is important to view this trend in the context of a recent widening in the CADR countries' current account deficits. Note, moreover, that FDI flows vary significantly by country. Additionally, most flows in the region consist of reinvested earnings and, to a lesser extent, new investments (as explained in Chapter 4 of this study).

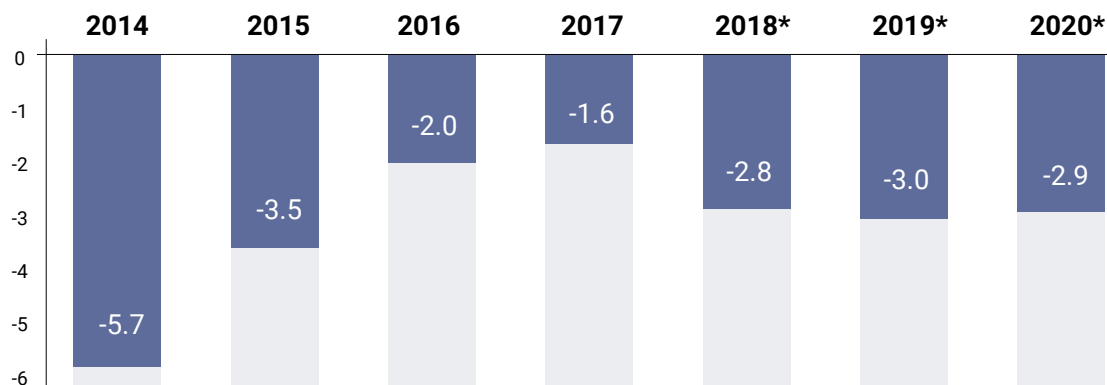
The rest of the flows that make up the financial account, such as portfolio and other investments, together account for less than 3 percent of regional GDP. The portfolio investment consists almost entirely of debt securities, and it is ever less important as a percentage of GDP. Indeed, the IMF expects it to account on average for about 0.7 percent of GDP in 2019 and 2020.

GRÁFICO 1.8 | FDI Slows Down, Current Account Deficit Widens

1.8 a) Foreign Direct Investment Trends in CAGR (% of GDP)



1.8 b) Current Account Deficit (% of GDP)



Source: prepared by CID/IDB with IMF data (World Economic Outlook, October 2018).

* a 2018, 2019 and 2020 Projected.

¿IS THE REGION PREPARED FOR A DECREASE IN CAPITAL AND INVESTMENT FLOWS?

The current context of a declining financial account and a widened current account deficit in

CARD, the hardening of US monetary policy, and general uncertainty in the markets, prompts us to consider whether CAGR is prepared to tackle episodes of smaller capital and investment flows. The authorities of the region have little influence on such episodes. Indeed, an extensive literature (Fratzcher, 2011; Forbes and Warnock, 2012; Ghosh et al., 2014) indicates that the main factors associated with capital outflows are global in nature,

EXTERNAL CHALLENGES, INTERNAL STRENGTHS

especially those linked to economic uncertainty, as well as shifts in risk aversion and global growth. It is hard for the governments of the CADR countries to avoid these factors.⁴

The repatriation of assets accumulated abroad could play an important role in offsetting such outflows (Adler et al., 2014; Cifuentes and Jara, 2014). According to Cavallo et al. (2017), during the Great Recession of 2008, repatriation of capital by Latin American investors helped offset the fall in capital inflows from foreign investors. This showed that, under the right conditions, local investors would be willing to repatriate their funds to take advantage of the opportunities left behind by foreign investors. Part of the reason for this is that, at times of crisis, investors become more risk-averse and opt to place their investments in their own countries, since they can be assessed at a lower cost because there is less asymmetry of information (Gianetti and Laeven, 2012). Moreover, local investors can benefit from exchanging their foreign currency holdings for weakened local currency, thereby increasing the return on their investments.

According to Cavallo et al. (2017), there are two kinds of declines in capital and foreign investment. The first refers to outflows of such capital and investment. The second refers to those episodes wherein—in addition to outflows from abroad—there are no inflows of local capital held abroad to offset the outflows. We call these episodes “net outflows of capital and investment”. The latter kind of outflow is costlier than the former in terms of GDP losses, because this requires a swift and short-term adjustment in the current account balance, which might pose a serious challenge to countries with high levels of dollar indebtedness. This would be less abrupt if there were an offsetting inflow of local funds held abroad.

Is CADR currently exposed to net outflows of capital and investment? Cavallo and Powell (2018) mention the following four factors—all of them closely related to liquidity—that are associated with a greater probability of such episodes: a) a high fiscal deficit, since this makes a country very dependent on creditors; b) a high current account deficit, which exposes a country to foreign credit; c)

a high rate of dollarization of bank liabilities, since these can be harder to cover in the event of a large depreciation against the dollar, which is a common consequence of sudden stops; and d) limited international reserves, because a shortage of them is a lost opportunity for liquidity at time of capital outflows. For this last factor, Calvo et al. (2012) explain that reserves should be regarded as a country’s insurance against outflows of capital and investment, and that the optimum level of reserves is the one that strikes a balance between reducing the probability of such outflows and the opportunity cost of having the reserves.

To assess CADR’s exposure, we compared the aforementioned factors in five-year periods (see Table 1.1). Doing this comparison by five-year periods makes it possible to smooth out any year in which performance was unusual. In most countries, the fiscal balance deteriorated in the period 2008–2012, which was likely related to the Great Recession of 2008 and 2009. Nonetheless, four of the seven CADR economies reduced their fiscal deficit between 2013 and 2017. As regards the current account deficits, all countries experienced a reduction in the periods 2008–2012 and 2013–2017. Notable are El Salvador, Guatemala and Nicaragua,⁵ which consistently narrowed their current account deficits over the three periods.

With respect to the dollarization of liabilities, all countries have experienced an increase as a percentage of GDP. This exposes them to depreciation of their currencies relative to the dollar. Although this is the measure used in Cavallo et al. (2017), we also calculate these values as a percentage of total liabilities. This method reveals progress in Costa Rica during the last five-year period. The situation in Guatemala remained practically unchanged in that period. In the other countries, conditions worsened.⁶ The average regional result is the same when calculating it as a percentage of GDP: the dollarization of the region’s liabilities has increased, and thus it is increasingly vulnerable to currency depreciations.

Finally, the result for net international reserves varies by country: Costa Rica, Nicaragua and the Dominican Republic experienced a constant

4 This does not mean that foreign investors are indifferent to local conditions, but rather that they are more sensitive to global conditions than local investors (Cavallo et al., 2017).

5 It is important to recall, however, that in many countries (especially Nicaragua) the current account deficit grew again in 2018.

6 El Salvador and Panama are dollarized. Nicaragua is practically dollarized, with dollarization levels of about 90 percent. For more information, see Bannister et al. (2018). The level of dollarized liabilities exceeds 90 percent.

increase in the three five-year periods; in El Salvador and Panama there was a fall in the last period relative to the previous one; and the situation in Guatemala was practically unchanged in the last two periods.

OUTFLOWS MIGHT BE INEVITABLE, BUT RESILIENCE IS HOME-MADE

According to Cavallo et al. (2017), internal conditions to obviate net outflows of capital and investment are related to fundamentals: solid institutions and an inflation target regime, low levels of foreign-currency liabilities, and low inflation. The presence of such conditions will create, *ceteris paribus*, greater trust among local investors to repatriate their assets to their own countries. Table 1.3 illustrates CADR's performance with respect to these factors during the same five-year periods (except for foreign-currency liabilities, since US dollar liabilities already appear in Table 1.1). All countries experienced a marked improvement in consumer inflation in the last two periods. Notable are Costa Rica and the Dominican Republic, where inflation exceeded 10 percent a year between 2003 and 2007 but fell below 3 percent on average between 2013 and 2017. With respect

to trade openness, the countries' total combined trade exceeds 50 percent of GDP. In some countries such as Costa Rica, Guatemala, Honduras and the Dominican Republic, there was a fall in the last two five-year periods, but in several cases, this was because GDP grew faster than trade. With regard to the quality of institutions, the PRS Group's Political Risk Index⁷ indicates that, on average, CADR has experienced a slight deterioration in political risk perception.

Finally, a floating exchange rate is another factor that helps build resilience. This is the case for all the countries of the region except El Salvador and Panama, which are dollarized. A floating rate allows them to boost their exports and limit imports at times of depreciation, thereby correcting the effects on the trade balance and, therefore, the current account. Lastly, it is important to highlight the role of national savings in building resilience during episodes of capital outflows. The CADR countries have an average savings rate of 20 percent of GDP (2017), which is above the average for Latin America (18 percent). This has remained practically unchanged in the past 10 years, however, since it was at 19.9 percent of GDP in 2007. Higher savings would reduce the cost of external financing and lessen the need to accumulate external liabilities.

TABLE 1.1 Performance of Sudden Stop Risk Factors by Five-Year Periods (% of GDP)

County	Fiscal Balance			Current Account Balance			Dollarization of Liabilities			International reserves		
	2003-07	2008-12	2013-17	2003-07	2008-12	2013-17	2003-07	2008-12	2013-17	2003-07	2008-12	2013-17
Costa Rica	-2.2	-3.5	-5.7	-4.6	-4.8	-3.7	26.4	25.1	29.5	12.4	12.8	13.8
El Salvador	-3.3	-4.8	-3.3	-5.2	-4.9	-3.9				13.1	14.8	12.2
Guatemala	-1.8	-2.6	-1.6	-4.9	-2.0	-0.4	17.0	15.7	18.1	13.6	13.3	13.4
Honduras	-1.8	-3.0	-2.0	-6.1	-8.0	-5.1	12.5	14.4	17.8	20.5	15.8	18.3
Nicaragua	-0.2	-0.3	-1.3	-13.2	-11.4	-7.9				9.7	16.3	18.3
Panama	-1.6	-1.1	-2.2	-5.3	-8.8	-8.2				7.0	8.4	6.9
Dominican Rep.	-2.2	-3.7	-2.5	0.0	-7.1	-2.1	5.3	4.6	7.1	3.5	5.6	7.8
CADR*	-1.9	-2.7	-2.7	-5.6	-6.7	-4.5	19.1	18.8	22.8	11.4	12.4	12.9

Source: prepared by CID/IDB with data from the IMF (World Economic Outlook, October 2018) and SECMCA.

Notes: We used general government fiscal balance as reported by the IMF.

Panama and El Salvador are dollarized economies. More than 90 percent of Nicaragua's liabilities are in dollars, but SECMCA reports 100 percent during the three periods. The remaining 10 percent could be córdoba debt with maintenance of value, and therefore SECMCA treats it as dollars. In any case, the rate of dollarization is very high and is thus a vulnerability factor.

International reserves = net international reserves (NIR) of the Central Bank (or equivalent, in Panama's case).

For the latter two factors (dollarization of liabilities and NIR), we used the amount at the end of each year.

* Simple average of previous values.

7 A weighted index of the following subindices: economic stability, socioeconomic conditions, investment profile, internal conflicts, external conflicts, corruption, military in politics, religious tensions, law and order, ethnic tensions, government accountability, and bureaucratic quality. The first five subindices have a greater weight.

TABLE 1.2 | Credit in US Dollar (as % of total credit)

Country	2003-07	2008-12	2013-17
Costa Rica	49.8	41.4	39.7
Guatemala	37.6	33.9	34.8
Honduras	25.0	23.2	25.5
Dominican Rep.	17.6	16.3	20.9
CADR*	46.0	43.0	44.2

Source: prepared by CID/IDB with data from SECMCA.

Note: using the amount at the end of each year.

* Simple average of previous values.

TABLE 1.3 | Fundamentals to Prevent Net Sudden Stops

Country	Inflation (Annual Variation)			Trade Opening (% of GDP)			Quality of Institutions (0-100)		
	2003-07	2008-12	2013-17	2003-07	2008-12	2013-17	2003-07	2008-12	2013-17
Costa Rica	11.3	7.3	2.4	87.2	72.6	65.5	72.8	72.6	71.5
El Salvador	4.0	3.2	0.6	71.8	75.4	75.5	66.5	67.3	64.4
Guatemala	7.1	5.4	3.8	67.2	61.7	51.8	64.4	61.2	61.5
Honduras	7.4	6.7	4.2	132.5	117.1	107.9	60.1	59.0	60.1
Nicaragua	8.7	8.8	4.9	76.3	102.2	101.8	63.7	62.9	61.7
Panama	2.0	5.2	1.7	132.3	154.9	110.9	73.9	73.8	71.0
Dominican Rep.	19.4	6.1	2.7	70.6	57.1	54.7	64.1	66.1	67.9
CADR	8.6	6.1	2.9	91.1	91.6	81.2	66.9	66.1	65.0

Source: prepared by CID/IDB with data from the IMF, World Bank and PRS Group.

PENDING TASKS IN AN UNCERTAIN ENVIRONMENT

This chapter has shown that CADR faces an international environment where there is greater uncertainty and less liquidity, and where the smaller fiscal space in several countries of the region clouds the financing outlook. Despite this international environment and domestic challenges (such as the sociopolitical crisis in Nicaragua and electoral cycles in several countries of the region), CADR has experienced reasonable growth: an average of 3.8 percent in 2018, which is a slight decline relative to 2017 (3.9 percent). Part of the region's resilience stems from the positive performance of the United States, its main trading partner and leading source of investment. Nonetheless, some looming

challenges related to a fall in foreign demand and US trade tensions could put pressure on growth in 2019.

One of the region's most important challenges is to improve its fiscal performance. Levels of fiscal deficit and public debt are diverse, but in several countries, the fiscal situation has worsened during the past five years. Fiscal space is therefore increasingly constrained, and there is less capacity to react to adverse circumstances. New factors, moreover, might require additional fiscal adjustments.

With regard to the external sector, CADR has proven itself resilient in periods of world economic contraction because of high inflows of remittances and foreign direct investment, its two cushions against external shocks. These cushions might face

challenges in the short term. Remittances could be affected by changes in US immigration policy, which might force Latino migrants who send funds from the United States to return to their home countries. As to FDI, this is forecast to be stable as a share of GDP in the coming years, while the current account deficit has widened and is expected to remain at a similar level.

CADR has an opportunity to seek improvements that would lessen its vulnerability to a decline in capital and investment inflows, such as reducing the dollarization of its liabilities and fiscal deficit. To that end, there could be an assessment of greater spending effectiveness, including targeting social programs and reforms in several energy subsidies.

As regards the factors that make a country attractive for the return of local residents' investment abroad, in general CADR has done a good job of reducing its levels of inflation in recent half-decades and remaining open to world trade. Nonetheless, it would be helpful if the region continued to improve the quality of its institutions. Progress on this front is very important to promoting both foreign and local investment, the latter being low compared with the rest of LAC. Finally, CADR still has to work on fostering savings. Boosting savings would allow the region to depend less on external liabilities, making it more resilient in uncertain times such as the present.

2

CHAPTER

FOOD INFLATION

IN CENTRAL AMERICA AND DOMINICAN REPUBLIC

**promoting local supply to mitigate
external price volatility**

Food inflation is an important variable of social wellbeing, mainly in countries where relative food consumption is high. Within countries, moreover, people with lower incomes devote a higher percentage of their spending to foodstuffs than rich households (see Figure 2.1). Changes in food prices therefore affect them more. Consumption of foodstuffs is inelastic for everybody inasmuch as basic needs are met, but the poorest are more affected by changes in relative prices of food. It is important to consider the consumer basket among the different income levels, so as to determine the inflation facing each group (see Box 2.1). When there is a sudden increase in food prices, for example, people can react in two ways: devote the same budget to the consumption of these products and reduce the quantity demanded;

or maintain the quantity demanded by increasing the budget spent on food, thus reducing the budget allocated for other goods or savings. In either case, total real consumption declines and so does people's wellbeing. This dilemma affects lower-income households to a greater degree. A rise in food prices thus increases the depth and incidence of poverty, since the decline in consumption causes some households to fall below the poverty line. As regards poverty, Martin and Ivanic (2016) estimate that a 10 percent increase in food prices causes a net increase in the poverty rate of 0.8 percentage points.⁸ These results, however, vary in significance and scale according to the country characteristics⁹. Similarly, higher food inflation brings about a rise in inequality because of the distinct impacts on households according to their income levels.¹⁰

8 The effect of food prices at the household level depends on whether they are net buyers or sellers of food. An increase in food prices has a positive effect on households that are net sellers. The findings of the study by Martin and Ivanic (2016) indicate that more households are harmed than helped by increases in food prices. They also find evidence, however, that an exogenous increase in food prices can lead in the long term to a net reduction in poverty world-wide, because the price increases lead to a rise in wages for unskilled workers in many countries. This has a positive effect on poverty.

9 Countries such as Albania, Cambodia, China, and Vietnam have experienced a reduction in poverty when food prices increased. Among the Central American countries considered in the model, there was an increase in poverty but with differences in scale. A 10 percent price increase led to an increase in poverty of 0.3 percentage points in Panama, 0.5 in Belize, 1.1 in Nicaragua, and 1.4 in Guatemala.

10 Suppose there are two families in our economy, one with an income of 100 dollars and the other with an income of 200 dollars, and whose income is equal to consumption. The low-income household devotes 35 dollars to food and the rest to other goods, while the rich household devotes 50 dollars to food and 150 to other products. Suppose there is a shock that leads to a doubling in the price of food, without affecting other goods. To maintain food consumption, the poor household's spending on other goods would shift from 65 dollars to 30 dollars—a decline of more than 50 percent. The rich household's spending on non-food consumption would fall from 150 to 100 dollars, a decline of 33 percent. This shows that the two families are negatively affected by the shock, but especially the lower-income household, thereby increasing inequality. The rich household's consumption ratio of other goods relative to the poor household's rose from 2.3 before the shock to 3.3 after the price increase.

BOX 2.1

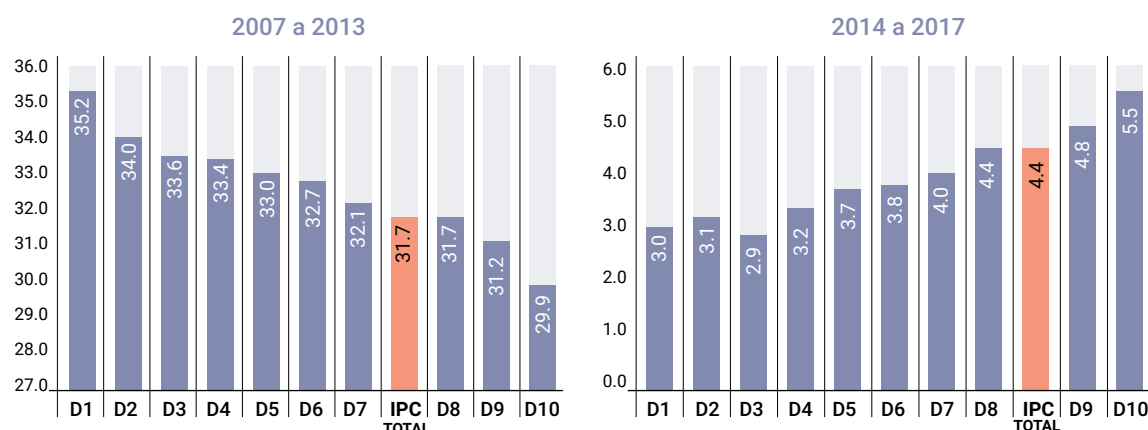
Food inflation in Panama: Distributive Effects¹¹

Compared to other countries of the region, Panama has had low and stable inflation rates. Between 1989 and 2017 the average rate in Panama was 2 percent, compared to the 9.8 percent average for the CADR countries. Despite this, inflation and the cost of living have been increasingly important concerns for Panamanians in recent years. In some later years of the past decade and the early years of this one, the inflation rate was around 6 percent and even 9 percent, but even in June 2016, a survey by Dichter and Neira (2016) indicated that up to 20 percent of the population regarded the cost of living as the country's main problem—at a time when inflation for that month was barely 0.1 percent and the average for the year was 0.8 percent.

While inflation has generally been relatively low in Panama, there are significant differences among the various products in the consumer basket. That circumstance helps us understand why there is a marked discrepancy between inflation as perceived by citizens and the overall consumer price index (CPI). The latter measures movements in prices of the average consumer basket. Citizens with different incomes, however, have different consumer baskets, and therefore the inflation affecting them will be different if the prices of the various goods do not follow the same pattern. In particular, if food prices rise above other prices, inflation for the households whose consumer basket has a greater share of foodstuffs (the poorest) will be higher than inflation for households where that share is smaller (the

richest). We estimated the particular CPI inflation rate for each group of households by income decile in Panama. According to the estimates, in the past 10 years the inflation rate for the poorest 10 percent of the population was 2.3 points above that for the 10 percent richest, and 1.9 points above the overall rate. The reason is that—apart from transport—food and beverages has been the only part of the consumer basket to have experienced annual average growth above the consumer price index in that period. In reality, there is a very sharp difference between the two subperiods. Between 2008 and 2013, the inflation rate was clearly falling as household incomes were rising. The effect was such that the overall inflation rate was barely representative of that of 30 percent of Panamanians: those with highest incomes. For the other 70 percent, inflation was higher. From 2014 onwards, the situation was reversed, and inflation had more effect on households with greater purchasing power. The reason for this change lies in the Panamanian government's price control policy, which set retail price ceilings on 22 products in the basic family food basket. Before this was implemented, the average differential between the poorest and richest deciles was 0.9 percentage points a year; after its implementation, it was -0.6. Without question, food inflation has had a significant dual effect in Panama, especially up to 2014: on the one hand, the official rate ceased to be representative for a large part of the population; and on the other, these food-related inflation differentials hurt the poorest households.

Panama: Cumulative Inflation Rate by Income Decile



Source: prepared by the authors.

¹¹ By Carlos Garcimartín and Jhonatan Astudillo.

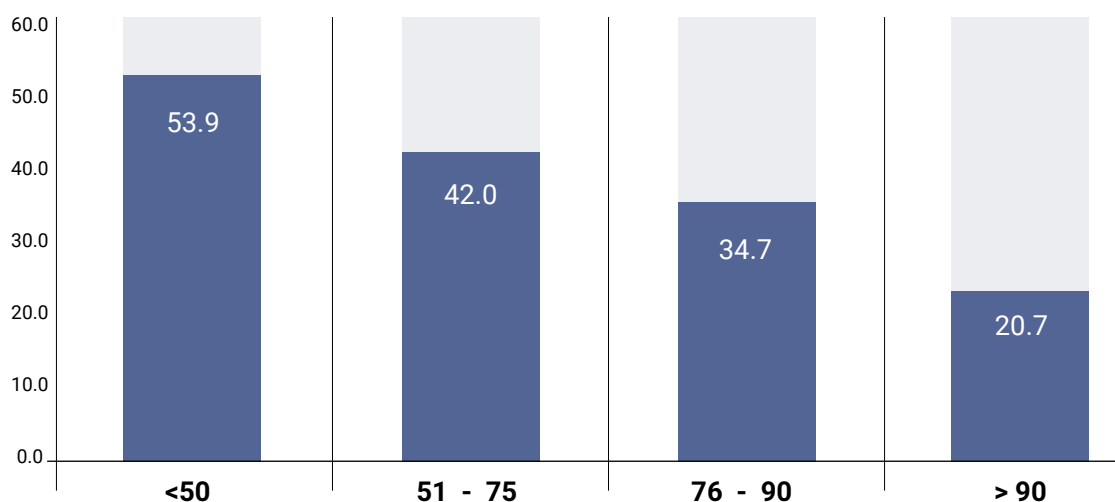
Often, food price increases are related to supply shocks—that is, to shortages. In extreme cases such shortages mean that part of the population has no access to food, causing hunger and humanitarian crises, sometimes involving social unrest. According to Lagi et al. (2011), several violent protests in North Africa and the Middle East in the 2008–2011 period coincided with high international food prices. The authors identified more than 60 protests during 2008 in 30 different countries and estimated that there is a more than 94 percent probability of the unrest in North Africa and the Middle East occurring in periods of high food prices. Bellemare (2014) shows that outbreaks of social unrest are associated with food price increases, while no association can be determined between these events and price volatility.

Food inflation also has macroeconomic consequences. It has direct and indirect effects on general inflation. In the direct effect, general

inflation depends on the weight of foodstuffs in the national consumer price index basket.¹² The indirect effect is manifest through the impact on the prices of the other consumption categories. The effect on the rest of inflation can be evident in the impact on wages that are usually indexed to price variations. According to the IMF (2007), in an analysis of different income groups in 10 countries, food inflation in advanced countries does not seem to affect inflation in other categories. In emerging and low-income economies, a percentage point increase in food inflation can trigger a rise of between 0.1 percent and 0.6 percent, and of between 0.1 percent and 0.9 percent in inflation in other categories, respectively.

At the same time, food prices can have consequences for the real, external and fiscal sectors, depending on the countries' productive structures. With regard to the real sector, price increases generally have negative effects because of the fall in consumption.

FIGURE 2.1 Food Consumption as a Proportion of Total Consumption
by Percentiles in Developing Countries,* 2010 (%)



Source: prepared by the authors on the basis of data from the World Bank's Global Consumption Database.

Note: * average of 92 countries, totaling about 4.5 billion people

¹² According to analysts from the Nomura financial services group, the rise in food prices has a greater impact in emerging economies than in advanced economies because of the greater weight of foodstuffs in the consumer price index (CPI). In developed countries they account for between 10 percent and 20 percent; in Nigeria and Bangladesh they account for 64 percent and 58 percent, respectively (<http://uk.businessinsider.com/how-food-prices-impact-inflation-in-different-economies-2015-8>).

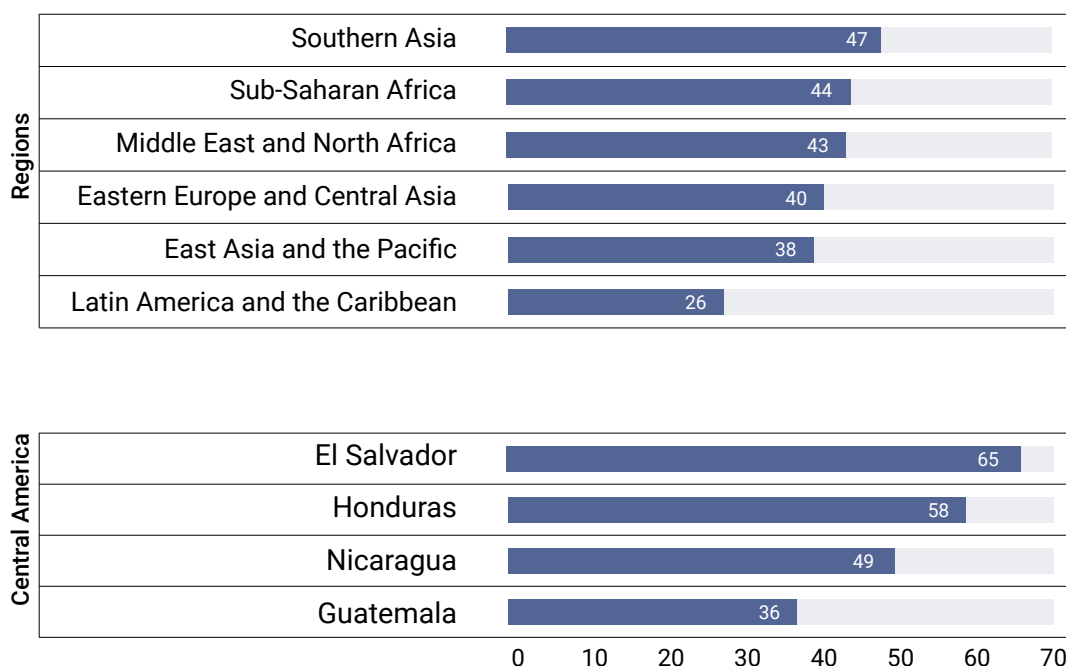
The impact of a price increase, however, can also be positive. In net food-exporting countries, prices drive production, attract foreign direct investment,¹³ encourage exports,¹⁴ and therefore spur higher economic growth. According to a simulation by UNEP (2016), the sudden doubling of commodities prices negatively affects GDP in 101 of the 110 countries analyzed, while for the nine others—which include Paraguay, Uruguay, Brazil and the United States—it is beneficial.

With regard to the external sector, the effect depends on each country's food trade balance. In net importing countries, an increase in food prices worsens the terms of trade, negatively affecting the balance of payments. According to the World Bank

(2018), in the median of low-income countries (of which more than three-quarters are net importers), the terms of trade declined by 2 percent and 4 percent in the periods 2007–2008 and 2010–2011, respectively.

Additionally, food prices have fiscal implications, depending on the price stabilization policies applied. An increase in food prices can prompt implementation of consumption subsidies, while a reduction can bring about production subsidies. According to the IMF (2008), between 2006 and 2008 taxes on foodstuffs were reduced, mainly on imports in 84 countries, and food subsidies were increased in 22 countries between 2007 and 2008.

FIGURE 2.2 Foodstuffs Consumption as a Share of Total Consumption (%)



Source: prepared by the authors on the basis of data from the World Bank's Global Consumption Database.

13 According to the FAO (2014), price increases in the period 2007–2008 caused food import-dependent countries to invest in countries with abundant land and natural resources. The kind of investment, moreover, has been shifting—from investment designed to ensure market access or cheap labor to the acquisition of land and production management.

14 According to the World Bank (2014), Latin America and the Caribbean, a net food-exporting region, increased its share of world agricultural exports from 11 percent in the period 1995–1999 to 14 percent in the period 2006–2009.

Food inflation is an important issue for the CADR countries because food consumption accounts for a substantial share of total consumption in the region (see Figure 2.2). The region faces challenges in combatting poverty and inequality and, as mentioned earlier, changes in food prices could make those challenges more acute.

The relation between movements in local food prices and their related factors—such as international prices and production characteristics, as well as trade in food—are important for devising public policies that build resilience to shocks, and for the quantity of food available nationally. For these reasons, this chapter seeks to analyze the behavior of food inflation in the region. To that end:

- i) We identify stylized facts of this variable and other indicators of this sector in CADR during the past 15 years. The emphasis of this descriptive analysis is on the evolution of food inflation and its volatility in the region, as well as its performance relative to other regions of the world and underlying inflation. We illustrate the evolution of real variables of the food sector, such as production and foreign trade, which provide information on each country's food dependency.
- ii) Among other variables, we estimate the determinants of food inflation in the countries of the region. Particular attention is paid to international food prices, the level of internal production, and weather-related shocks.

Finally, in our concluding remarks we discuss the implementation of potential public policies that would allow the countries to mitigate variations in domestic food prices.

EVOLUTION AND CHARACTERISTICS OF FOOD INFLATION IN CADR

This section presents some characteristics of the evolution of inflation and other indicators of the food

sector in CADR. The analysis covers the evolution of volatility and makes a comparative examination of food and beverage inflation relative to other groups of countries and to inflation in another group of goods and services, especially underlying inflation. We also present statistics on the behavior of the real sector and the food sector's foreign trade in each country to illustrate the kind of challenges and opportunities that are apparent at the individual and aggregate levels.

1. Food inflation has fallen in the region

CARD's food inflation¹⁵ fell from 10.5 percent in 2003–2009 to 4.5 percent in 2010–2017, and peaked in 2008. In the period of analysis, one of the highest inflation rates occurred in mid-2004 because of a particular situation in the Dominican Republic, which was undergoing a financial crisis that affected GDP and general inflation, and led to a currency devaluation.¹⁶ Later, in the final quarter of 2008, there was a widespread increase brought about by the sharp rise in international oil and food prices. In 2011 there were renewed inflationary pressures caused by the increase in international food prices. Finally, in late-2017 there was an acceleration related to the recovery of oil prices (see Figure 2.3)¹⁷.

This trend has been apparent in all the countries, although the declines have been of different magnitudes. Of note are the Dominican Republic, where inflation fell from 17.9 percent to 4.9 percent; and Costa Rica, where it fell from 14.2 percent to 3.3 percent (see Figure 2.4). Both countries experienced declines in the rate of their currencies' devaluation against the dollar.¹⁸ Countries such as Panama and Guatemala, on the other hand, saw more modest declines.

The average of the first period is influenced by the 2008 figure of 18.5 percent caused by the shock of high international prices, but it remains true that the inflation rate of these products has been falling: the average for 2003–2009, excluding 2008, is 9.1

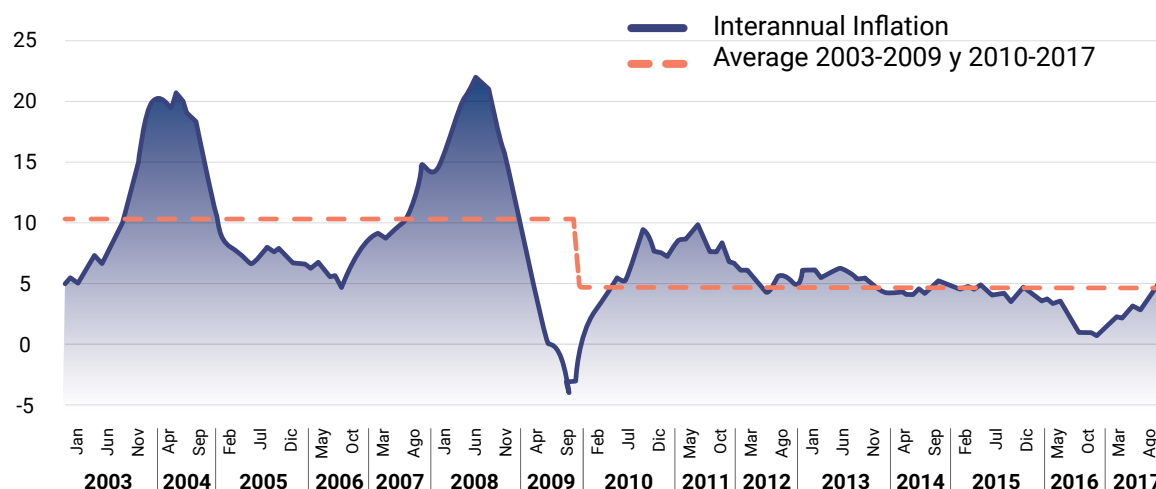
¹⁵ Throughout, this chapter uses interannual inflation, which compares the CPI in each month relative to the same month of the previous year.

¹⁶ <https://acento.com.do/2016/opinion/8372550-la-crisis-del-2003-2004-modelo-acumulacion/>

¹⁷ SECMCA (2018).

¹⁸ A simple correlation analysis shows that, among the five non-dollarized economies, only Costa Rica and the Dominican Republic have a positive correlation between food inflation and the annual devaluation.

FIGURE 2.3 | Interannual Food Inflation in CADR (%)



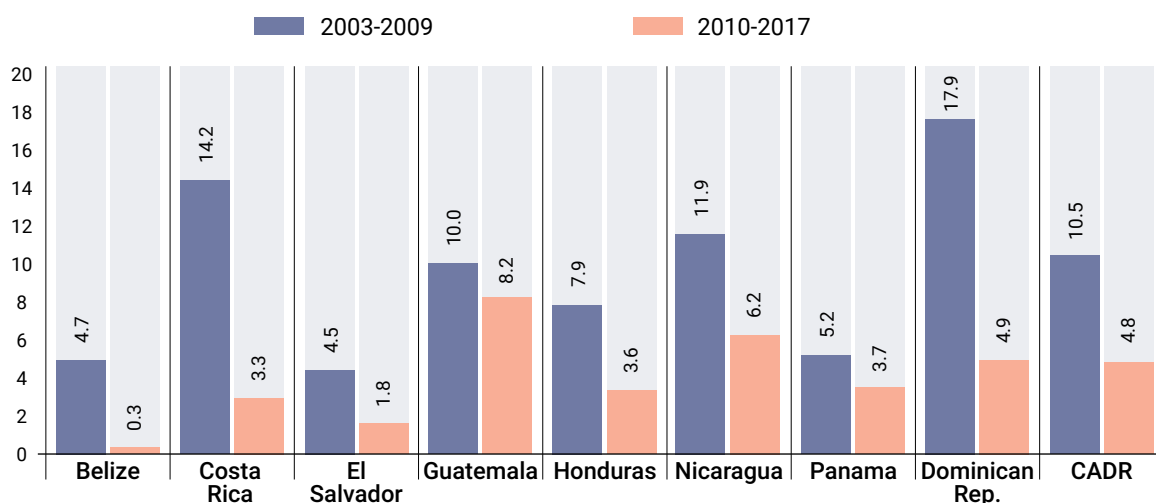
Source: prepared by the authors using data from CEPALSTAT and SECMCA.
Note: excluding Belize because of a lack of continuous information before 2011

percent. If we exclude the Dominican Republic, moreover, the average is 9.4 percent, more than double the average inflation rate in 2010–2017.

Despite the common behavior of trends in food inflation in the region, two groups of countries can

be distinguished by their average inflation levels. The countries with the highest inflation rates are Guatemala, Nicaragua, Costa Rica, and the Dominican Republic. Each of these countries has been among the three with the highest inflation during more than 45 percent of the period. On the

FIGURE 2.4 | Annual Inflation by Country, Average by Period (%)



Source: prepared by the authors on the basis of data from CEPALSTAT and SECMCA.

EXTERNAL CHALLENGES, INTERNAL STRENGTHS

other hand, the countries with lower food inflation rates are Honduras, Panama, El Salvador and Belize.¹⁹ Each of these has been among the three countries with the lowest inflation during more than 46 percent of the period. This suggests there are structural differences between the countries as regards the factors that determine prices, such as the exchange rate regime—notably the dollarization of El Salvador and Panama.

This decline is also apparent at the international level, particularly in the developed economies. Average food inflation in the OECD countries fell from 2.9 percent in the period 2003–2009 to 1.9 percent in 2010–2017. It should be noted that these countries' inflation rates are lower because they are more anchored in economic agents' inflation expectations, and because of the bigger share of processed products in the food basket (Furceri et al., 2015). Debrew (2008) indicates that, in developing countries, processed products account for only a small share of the food basket. Hence there is a bigger proportion of unprocessed products, which are more susceptible to increases in the international prices of primary products.

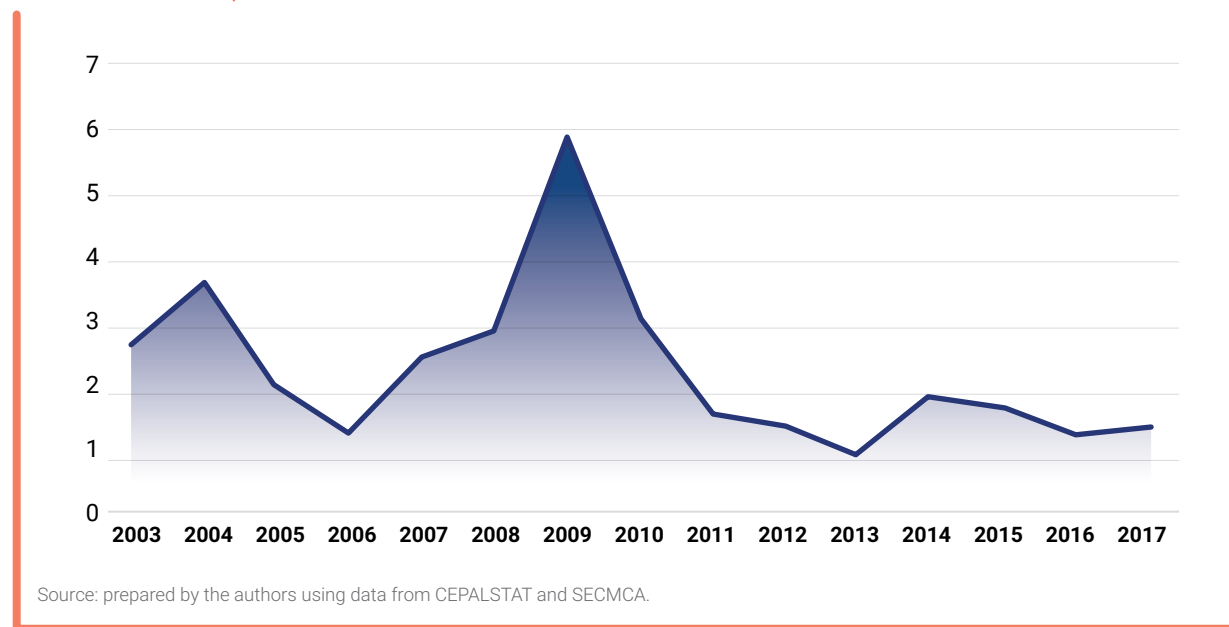
In Mexico, Colombia and Ecuador, food inflation fell between these periods, following the trend apparent in the developed countries and CARD. In countries like Brazil, Chile and Peru, inflation increased slightly, and in Argentina such inflation more than doubled.²⁰

2. Food inflation is volatile, though it has fallen

The volatility of food inflation in the region—measured as the average of the countries' standard deviations in each year, relative to the annual average—has fallen since its 2009 peak (see Figure 2.5). In that year the volatility was high because inflation in almost all the countries of the region fell from two digits in the first quarter of the year to deflation by the end. Since 2011, the degree of volatility has stabilized at a level lower than that recorded before 2009.

The volatility of each country—measured as the standard deviation of the periods 2003–2009 and 2010–2017, relative to their respective averages—fell in all cases (see Figure 2.6). Note the large

FIGURE 2.5 Average Standard Deviation of Food Inflation by Country (percentage points)



¹⁹ Belize is not comparable because the monthly inflation series is only available until 2011, but in this period the country has one of the lowest inflation rates and even has episodes of deflation.

²⁰ This less typical inflation in the rest of Latin America is concentrated in the South American countries and stems from at least two factors. First, the frequency of climate shocks has increased since 2014 (Banco Central de Reserva del Perú, 2017), impacting food inflation. Second, high food inflation in Argentina has been related to currency depreciation, especially as of 2016.

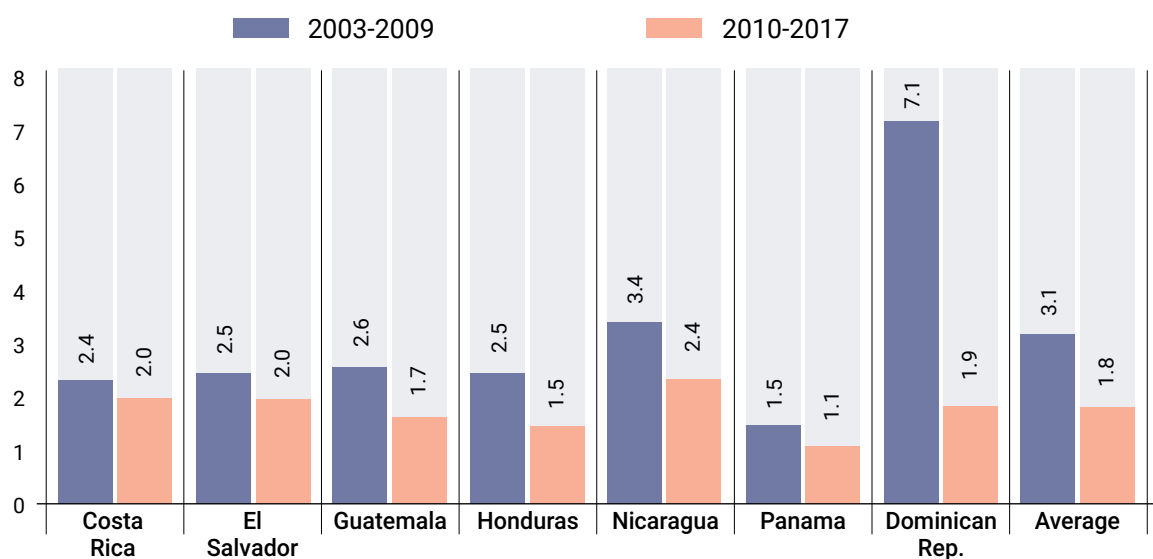
fall of five percentage points in the volatility of the Dominican Republic between the two periods, while Costa Rica experienced a modest reduction of only 0.3 percentage points. Regional average volatility fell by almost half, from 3.1 to 1.8 percentage points. The aggregate and country-specific results hold true if we exclude 2009, the most volatile year in the period analyzed. The biggest reductions were in the countries that experienced the most volatility in 2003–2009, highlighting a convergence in this indicator.

The decline in volatility is also an international phenomenon. In the OECD countries, the standard deviation of inflation fell by almost half, from 0.9 to 0.5 percentage points. In all the other countries of Latin America, moreover, there was a downward trend in this indicator. On average, the variability of inflation in the region fell from 2.7 to 1.5 percentage points. Of the three regions analyzed, CADR's food inflation has had the greatest variation. This contrasts with the level of inflation, since the region has a lower rate than the rest of Latin America.

3. Food inflation is correlated in the region

The countries have different levels of food inflation, but they seem to move in the same direction. This indicates that there is significant correlation among the countries, which could be determined by common factors. As regards these factors, it would not be surprising to discover that international (extra regional) food prices are important, but the countries also share other features such as weather phenomena. The trading relationship between the countries is also a factor that could determine the synchrony of fluctuations in food inflation. This synchrony is evident in the calculation of correlations of this variable among the countries of the region between 2003 and 2017 (see Table 2.1). Most of the bilateral correlations are above 0.5, and their highest value is 0.93 between Honduras and Nicaragua. The Dominican Republic, the only country that has no border with any of the others, only has a correlation of about 0.3 with Costa Rica and El Salvador. On average, Honduras and Nicaragua are the countries

FIGURE 2.6 Standard Deviation of Food Inflation by Country (percentage points)



Source: prepared by the authors on the basis of data from CEPALSTAT and SECMA.

that have the highest correlation with their regional counterparts (0.68 in both cases); the Dominican Republic and Panama have the lowest average correlation at 0.14 and 0.48, respectively.

The correlation between each country's food price increase and the international price index calculated by the FAO, in turn, is lower than the countries' correlation with their neighbors, except for the Dominican Republic. This substantiates the assertion that other factors, apart from international prices, determine the relation between prices in the countries of the region.

4. Food inflation has been higher than underlying inflation, but the gap has narrowed

A comparison of food inflation and underlying inflation reveals several patterns. First, food inflation has usually been higher. In CADR this is true for all countries except Honduras in the period 2010–2017. As food inflation has fallen, however, the gap between the two has narrowed. On average, in CADR the difference fell to almost a third, from 3.7 to 1.3 percentage points between the two periods analyzed (see Figure 2.7).

Analyzing the countries individually, however, we can discern distinct trends in this indicator. While

Costa Rica closed the gap between the two forms of inflation, the gap in Honduras moved from positive to negative—that is, underlying inflation was higher than food inflation. In other countries, such as El Salvador and Guatemala, the gap widened between food price inflation and underlying inflation

The gap between the two has also narrowed at the international level. In the rest of Latin America, it narrowed by almost two percentage points, from 3.3 in 2003–2009 to 1.4 in 2010–2017. The difference also declined in the OECD, from 0.9 to 0.2 percentage points in the same period. In this case, food inflation almost matched underlying inflation.

5. There is regional diversity in food production and food trade balances

The price of food, like any other price, is determined by supply and demand factors. Hence the importance of analyzing the real sector of the countries examined here. The farming sector plays an important role in the CADR countries' production and foreign trade. In 2017 the sector accounted for 6.9 percent of GDP in the region,²¹ in contrast to the average for LAC (4.8 percent) and the world (3.5 percent). CADR's food exports stood at US\$13,973 million, which is 46 percent of the region's total exports. Between 15 percent and 30 percent of

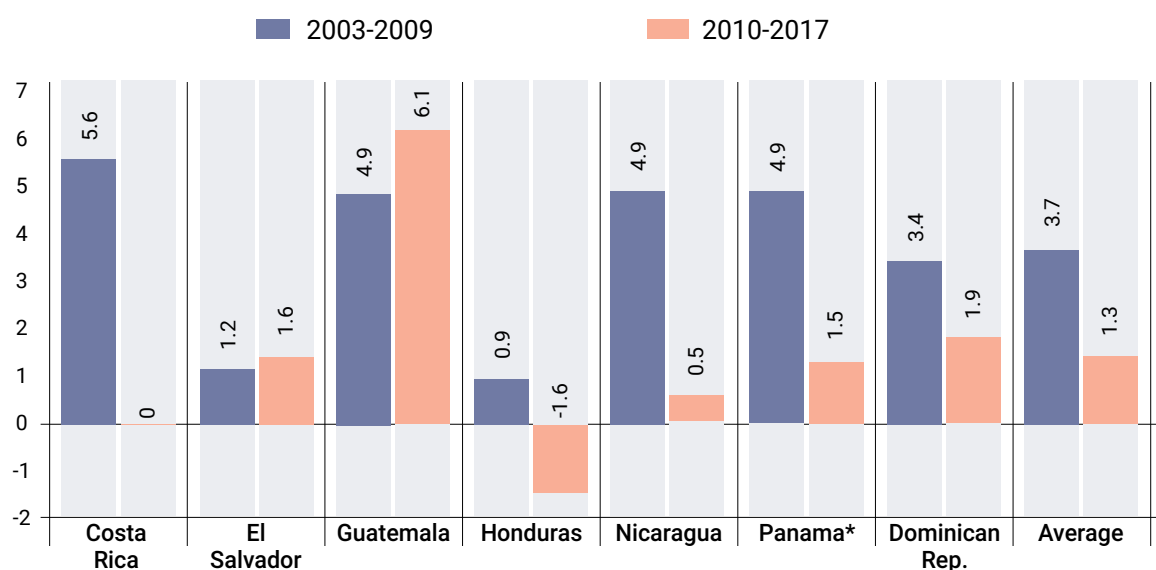
TABLE 2.1 Matrix of Annual Food Inflation Correlation

	Costa Rica	El Salvador	Guatemala	Honduras	Nicaragua	Panama	Dominican Rep
Costa Rica	1,00	0,60	0,46	0,72	0,70	0,57	0,25
El Salvador	0,60	1,00	0,83	0,86	0,83	0,48	0,27
Guatemala	0,46	0,83	1,00	0,74	0,71	0,41	0,16
Honduras	0,72	0,86	0,74	1,00	0,93	0,70	0,13
Nicaragua	0,70	0,83	0,71	0,93	1,00	0,78	0,12
Panama	0,57	0,48	0,41	0,70	0,78	1,00	-0,08
Dominican Rep.	0,25	0,27	0,16	0,13	0,12	-0,08	1,00
Average	0,55	0,65	0,55	0,68	0,68	0,48	0,14
Index of international food and agriculture prices (FAO)	0,48	0,58	0,39	0,38	0,45	0,25	0,21

Source: prepared by the authors using data from CEPALSTAT and SECMCA.

21 The sector accounts for more than 10 percent of GDP in Belize, Guatemala, Honduras, and Nicaragua (the latter country being prominent at 15.5 percent).

FIGURE 2.7 Gap between Food Inflation and Underlying Inflation (percentage points)



Source: prepared by the authors using data from CEPALSTAT and SECMCA.
Note: because of data availability, the first period for Panama is 2005–2009.

jobs in these countries are in the agricultural sector. That sector, however, faces challenges that affect food production and, therefore, local prices. The following challenges are notable:

- **Low agricultural productivity.** CADR has low agricultural yields relative to world averages, a circumstance related to lack of financing for the sector, institutional weaknesses and low investment, among other factors.²² In 2011, for example, the region produced 1.8 tons of corn per hectare, while world-wide the figure was 5.2 tons per hectare (ECLAC, 2013).
- **Climate vulnerability** As well as being exposed to storms and hurricanes, the countries of the region are affected by the dry corridor.²³ According to Germanwatch's Global Climate Risk Index 2018,²⁴ between 1997 and 2016 Honduras was the country most affected by extreme weather events; Nicaragua and the

Dominican Republic occupy the fourth and tenth place on the ranking, respectively. ECLAC (2013) argues that in a scenario of growing emissions and global inaction, by the end of this century the Central American region's yields of corn, beans and rice will fall by 35 percent, 43 percent and 50 percent, respectively.

Dependence on food imports also affects food inflation. In general terms, this exposes the region to external shocks such as shifts in oil prices. In the case of foodstuffs in particular, greater market penetration would increase the pass-through of international prices into local prices in certain categories. According to ECLAC (2017), in CADR the dependency rate—that is, imports as a percentage of apparent consumption—grew from 22 percent to 54 percent in 1980–2014 for corn; from 12 percent to 38 percent for rice; and from 16 percent to 18 percent for rice.

²² <http://www.fao.org/in-action/agronoticias/detail/es/c/508096/>.

²³ A group of ecosystems that merge in the ecoregion of Central America's dry tropical forest, between Chiapas in Mexico and Guanacaste in Costa Rica. There are cyclical droughts in this area (FAO, 2012).

²⁴ Available at: <https://www.germanwatch.org/sites/germanwatch.org/files/publication/20432.pdf>.

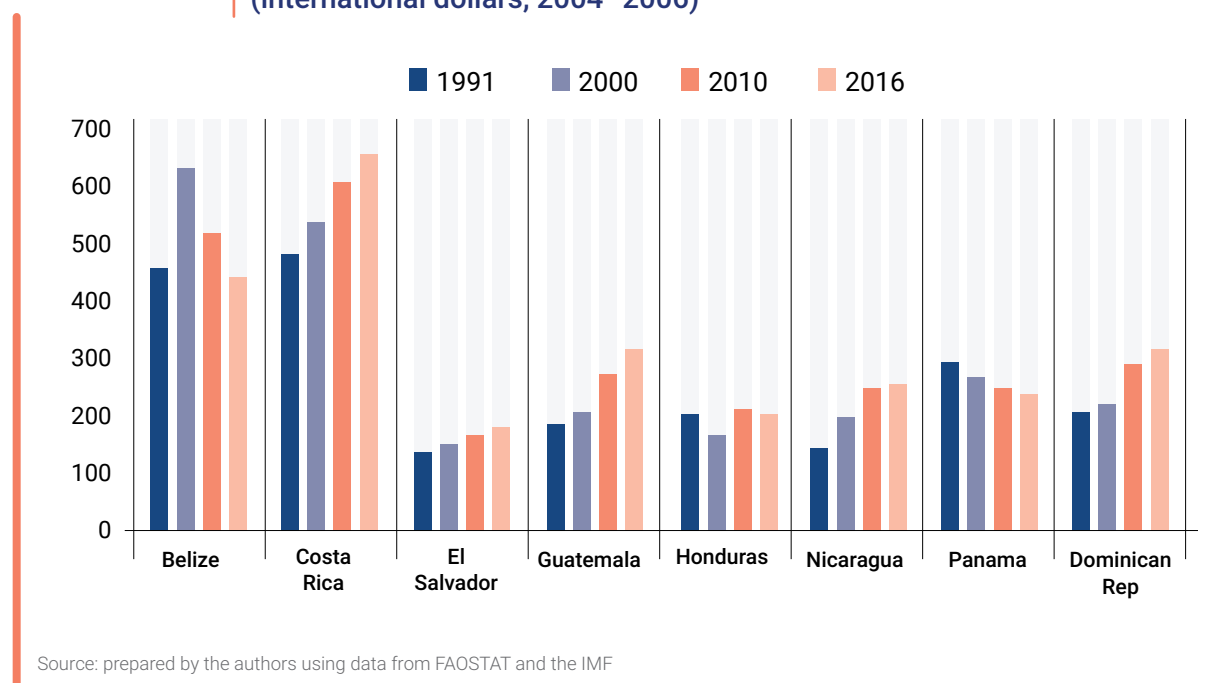
There is a wide diversity in food production in the CADR countries, in terms of both quantity and trends over time. Costa Rica and Belize are the countries that historically have produced the most food in per capita terms (see Figure 2.8). Moreover, there is a divergence in the evolution of food production among the countries. In Nicaragua, Guatemala, the Dominican Republic, Costa Rica and El Salvador, such production increased in 1991–2016 by 78.5 percent, 72.4 percent, 52.3 percent, 36.4 percent and 32 percent, respectively. In Panama it fell by 18.9 percent in the same period. In Belize and Honduras, it fell by less: 3.3 percent and 2 percent, respectively.

With regard to the trade balance, which can be an indicator of surpluses or deficits in local production to meet domestic demand, in the case of foodstuffs

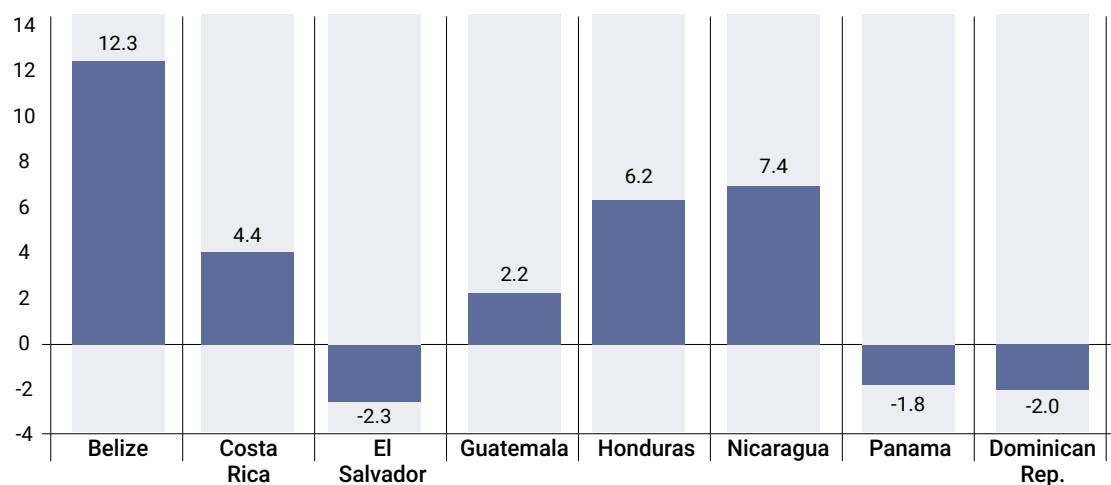
there are differences between the countries (see Figure 2.9). Belize, Costa Rica, Guatemala, Honduras and Nicaragua had food trade surpluses ranging from 2.2 percent to 12.3 percent of GDP in 2017. El Salvador, Panama and the Dominican Republic had deficits of 2.3 percent, 1.8 percent and 2 percent GDP, respectively, suggesting greater dependence on foreign trade to meet domestic consumption.

A surplus, however, does not necessarily indicate limited dependence on trade. For example, Belize is the country with the highest level of food imports relative to GDP, at 15.4 percent. Nicaragua's imports are above the average, even though it has the second biggest trade surplus. This is because, among the group, these two countries exported the most in 2017 as a percentage of GDP.

FIGURE 2.8 Per Capita Food Production
(international dollars, 2004–2006)²⁵



²⁵ The production calculated by the FAO uses the weighted volumes produced and international prices based on the period 2004–2006, calculated by the institution.

FIGURE 2.9 Food Trade Balance in 2017
(% of GDP)

Source: prepared by the authors using data from SIECA, SECMCA, INTRACEN and SIB.

DETERMINANTS OF FOOD INFLATION

This section analyzes the explanatory variables of food inflation in CADR²⁶ during the period 2003–2017.²⁷ The database is monthly. The data source and the estimated model are described in Annex 2.1. The methodology is a panel data model using the available data for the CADR countries. The panel combines cross-sectional and longitudinal data. This means that, in the case of inflation for example, data are available for each country of the region and for each time period in the sample.

The empirical evidence suggests that the determinants of food prices usually include international food prices,²⁸ as well as supply and demand factors such as market size, the cost of inputs, and climate shocks. Thus, the model's dependent variable is food inflation for each country in a given month, and the independent variables are as follows:

- **Variation of international food prices.** This variable's coefficient is expected to be positive because higher international inflation will lead to a rise in domestic prices, either because of the opportunity cost for local producers or a direct cost in the value of the imported food.
- **Interaction term between international price variations and agricultural production.** A negative coefficient is expected, since higher agricultural production could mean that there is less transmission of international prices to local prices. This is because the country would be more resilient to external shocks, since production could indicate less dependence on the external market to meet domestic demand for food. In other words, the hypothesis is that food inflation in countries with greater food dependence would be more sensitive to international fluctuations in the corresponding price.
- **Food imports as a share of GDP.** The coefficient must be positive because a higher share of imports in consumption would have a direct effect on inflation.

²⁶ Excluding Belize because of the limited availability of data

²⁷ Depending on the availability of data, the series for some variables begin after 2003

²⁸ Various studies examine the impact of global food prices and domestic inflation. For example, Furceri et al. (2015) estimate the impact of international prices and determine that the impact is greater on the domestic inflation of emerging economies than advanced economies. These authors also conclude that there is a significant pass-through of primary commodity prices to local consumer prices in the eurozone. Moreover, Bekkers et al. (2013) find that the pass-through of international prices to final consumer prices is greater in low- and medium-income countries than in higher-income countries.

- **Natural disasters.** A positive coefficient is expected because natural disasters affect food production, thereby reducing supply and leading to higher food prices. The variable to be used is binary, with a value of 1 if there was a weather phenomenon in that period, and zero otherwise.²⁹
- **Variation in the price of diesel.** A positive coefficient is expected because the price of this fuel affects food transport costs, and therefore the final price of food.

The nature of the relevant variables rules out endogeneity in the econometric specification, since neither natural disasters nor international prices (given that CADR is not an international price-setter in these products) are determined simultaneously by local prices.

The panel estimation considers a fixed effect by country, so as to include differences among them that are not captured by the explanatory variables—such as market structure, exchange rate regime, food consumption structure and others. The results of the estimates are presented below.

TABLE 2.2 | **Determinants of Food Inflation in CADR**

	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5
External food inflation (t-6)	0.199*** (0.006)	0.235*** (0.013)	0.229*** (0.013)	0.229*** (0.013)	0.222*** (0.014)
External food inflation (t-6)* Agricultural production		-0.0002*** (0.000)	-0.0002*** (0.000)	-0.0002*** (0.000)	-0.0002*** (0.000)
Food imports to GDP			0.828*** (0.206)	0.842*** (0.206)	0.819*** (0.206)
Natural disasters (t-2)				0.815** (0.395)	0.816** (0.394)
Variation in the price of diesel					0.012* (0.007)
Constant	5.350*** (0.120)	5.639*** (0.130)	1.419 (0.951)	1.223 (0.954)	1.327 (0.954)
Observations	1,260	1,122	924	924	924
R2	0.433	0.447	0.485	0.487	0.489

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

²⁹ Annex 2.1 presents more details on this database.

The results corroborate the stated hypotheses:

i) there is significant pass-through of international food prices; ii) this pass-through of international prices to local prices is smaller, depending on the level of production; and iii) atypical weather events affect the foodstuffs prices facing consumers.

With regard to the pass-through of international prices, the results indicate that a 1 percentage point rise in international inflation leads to an increase of about 22 base points, on average, in domestic food inflation, without considering a country's level of production. Taking that into account, and, taking as a reference the regression's sample average of 193.6 million international dollars, the pass-through falls to 18 base points. Moreover, this coefficient indicates that if the average rises by a standard deviation, the pass-through would fall even more, to 16 base points.

A rise of 1 percentage point in the share of imports to GDP would increase food inflation by about 0.8 percentage points. It should be noted that the 1 percentage point rise in imports is a substantial increase, since food imports account on average for 6 percent of GDP. A natural phenomenon entails a rise in inflation of 0.8 percentage points. By contrast, the coefficient of diesel price variation indicates a more limited effect on inflation.

Table 2.2 shows that lags have been used for the international inflation and natural disasters variables, given that these variables do not have an immediate impact. The number of lags was determined by testing different lags and leaving the one that allows the model to be best adjusted, using the Bayesian information criterion (BIC). The lag for international inflation is six months, which might be related to contractual rigidities or available stock, among other factors. The two-month lag for natural disasters indicates that the effect is much more immediate.

FINAL CONSIDERATIONS

Food inflation in CADR fell after 2010, and the gap narrowed with inflation in other world regions and with underlying inflation. Nonetheless, because of the social and economic importance of this subgroup of inflation, we need a better understanding of its determinants and should assess public policy measures.

The results of the analysis show that food prices are determined by external and internal shocks, notably the influence of international food prices and the impact of extreme weather phenomena.

As regards exposure to international prices, it is estimated that their impact can be lessened by fostering more active local agricultural production. A solid agricultural and agro-industrial sector would help reduce fluctuations in food production and therefore in final prices. Hence it is advisable to support productivity and competitiveness.

Some of the policies to meet the challenges of agricultural productivity are related to the availability of and access to agricultural inputs, such as improved seeds and fertilizers. It is crucial that the governments of the region implement policies on access to agricultural technology. Additionally, strategies geared to the implementation of irrigation systems could help improve productivity, especially in those Central American countries affected by the dry corridor. It is also vital to improve productive and road infrastructure. In addition to boosting the competitiveness of agricultural exports, this would also ensure local supplies. In this regard, efforts should be made to foster road connectivity, not only between productive areas and ports and border crossings, but also with local distribution centers.

Exposure to weather phenomena poses an additional challenge to mitigating abrupt variations in food prices. In this regard, trade policy has a key

role in limiting the impact. The countries of the region need flexible trade policies that respond swiftly to such eventualities. Similarly, it would be helpful to identify international suppliers to ensure a speedy import process and avoid shortages.

There is also a need to strengthen disaster monitoring and prevention systems, especially early warning mechanisms and weather information services. The information created by these systems helps in devising policies and programs geared to mitigating the effects of natural disasters. In the medium and long terms, moreover, this information helps improve production resilience. The programs that could be implemented include technical assistance for producers in programs geared to good farming practices and plans for the management of productive resources such as seed for planting and water catchment systems.

In addition to ensuring agricultural production, strategies could be implemented to guarantee food consumption. In this connection, measures should center on mechanisms for storage and supply to local markets. It is especially important to build and upgrade storage facilities with features that are appropriate for the product being stored. These measures will reduce price volatility by sustaining a level of food supply that can meet demand. Complementary measures that make it possible to mitigate the economic and social impact of abrupt fluctuations in food prices include financial instruments for agricultural production insurance, and social support mechanisms at times of high food prices.

ANNEX 2.1 |

The estimated fixed-effects panel model is as follows:

$$\pi_{it}^{AL} = \alpha + \beta_1 \pi_t^{AL,M} + \beta_2 P_{it} \pi_t^{AL,M} + \beta_3 X_{it} + \beta_4 I_i + v_{it}.$$

- π_{it}^{AL} : food inflation in country i during month t .
- $\pi_t^{AL,M}$: food inflation at the international level in month t .
- P_{it} : agricultural production in country i during month t .
- X_{it} : matrix of control variables: imports, fuel costs, weather shocks.
- I_i : fixed effect for each country
- v_{it} : estimation errors.

Data:

Food inflation is calculated using consumer price index (CPI) data available in the CEPALSTAT database. For Belize, the data was extracted from the Statistical Institute of Belize (SIB). Before 2012, the CPI data for Belize are often monthly. The international inflation data correspond to the variation in the FAO's food and agriculture price index.

The monthly agricultural production indicator was built using annual FAO data on yearly agricultural production for 2006 or 2007, depending on the availability of country-specific information. This production was adjusted to a monthly amount and then the movement of the Monthly Index of Economic Activity for the agricultural sector, published in the SECMCA, was used to extrapolate the indicator in the other periods. For Panama, the Dominican Republic and Belize, instead of the Monthly Index of Economic Activity, the movement of quarterly GDP in the sector was used.

Quarterly GDP data for the countries on the basis of the SECMCA were used. SIB data were used for Belize. In all cases the quarterly data were adjusted to monthly data. With regard to fuel prices, the dollar price of a gallon of diesel was used for all countries, using information collected by Guatemala's Ministry of Energy and Mines.

Finally, the natural disasters variable is binary, taking a value of 1 if there was a weather event in the period and zero otherwise. The variable was built using information from the Emergency Events Database (EM-DAT) developed by the Centre for Research on the Epidemiology of Disasters (CRED). This holds data on more than 22,000 disasters and their effects world-wide since 1900. The weather events taken into account for this variable were storms, floods, droughts, and extreme temperatures.

3

CHAPTER

BANKING CONDITIONS

**IN THE REGION REMAIN STABLE
despite a more restrictive
international financial environment**

Monetary policy in the United States has begun to be normalized. The monetary target rate has thus begun a cycle of increases. As one might expect, these increases have been passed through to the yield on medium- and long-term US government bonds, indicating less lax financing conditions in the country. In this context, the external financing that some markets or sectors receive from the United States could face higher rates. Moreover, financing costs denominated in local currency could increase because of a depreciation of the currency against the US dollar, given the decline in dollar liquidity.³⁰

CADR's banking sector could be exposed to this rise in interest rates for dollar financing. The sector has

as many dollar liabilities as assets,³¹ and might also be exposed through liquidity credit lines or medium-term funding with foreign financial institutions. Potential pass-through of these more restrictive global conditions to local bank financing conditions could affect economic activity.

For these reasons, this chapter analyzes the recent performance of banking conditions in the region and explores their determinants.

An assessment of macroeconomic conditions is expected to play an important role in determining banking conditions. To that end, we calculated a synthetic index of macroeconomic performance, as described below.

FIGURE 3.1 | Effective Rate of US Federal Funds



Source: CID/IDB using data from the St. Louis Federal Reserve

FIGURE 3.2 | Yield on 10-Year US Bonds



Source: CID/IDB using Bloomberg data

³⁰ For an estimation of the effect of the liquidity created by the Federal Reserve's monetary expansion on an emerging currency, specifically the Mexican peso, see López-Marmolejo and Ventosa-Santaulària (2018).

³¹ For example, credit in foreign currency as a percentage of total credit stands at 48 percent in the region. At the same time, it is important to consider the wide heterogeneity among the countries.

MACROECONOMIC PERFORMANCE INDEX

Several aspects of macroeconomic performance affect the financial system. For instance, the pace of economic activity and inflation can directly impact some banking indicators such as profitability, financial margins or the percentage of past-due portfolio. Financial decisions, moreover, are influenced by perceptions of the present state and future of the economy, which depends partly on the state of the economic fundamentals. The assessment of economic performance that is related to banking conditions should therefore regard matters such as growth and inflation, as well as the fiscal and external balances, as economic fundamentals.

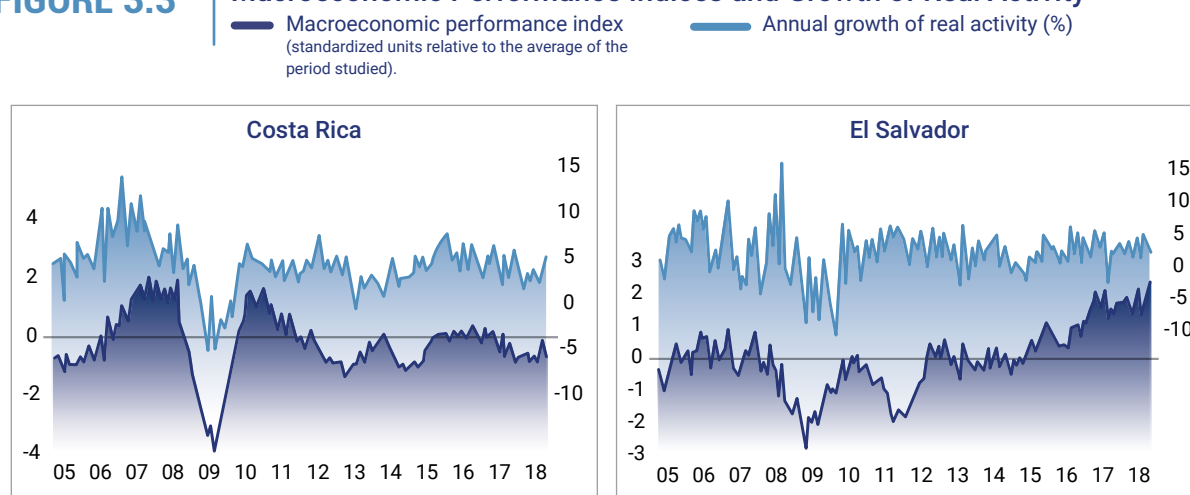
The macroeconomic performance index summarizes the information from a set of standardized macroeconomic variables related to the average of the period studied (January 2005 to March 2018). These are combined to result in a negative or positive assessment of economic performance. The assessment might be highly positive if the economy grows, inflation falls, and the trade and fiscal deficits narrow simultaneously. On the other hand, the assessment might be extremely negative if activity contracts, inflation increases,

and the trade and fiscal deficits widen. A rise in the index above zero therefore reflects an improvement in economic performance relative to the average of the period studied, while a fall indicates a deterioration.³² Economies will tend to have a stable performance—around zero—inasmuch as they grow at an average rate, their inflation fluctuates little, and their trade and fiscal deficits do not worsen substantially.

Methodologically, the macroeconomic index seeks to represent, in brief, perceptions of the economy with respect to its average performance. Annex 3.1 provides details of how the index was built. Below we present the macroeconomic indices for the countries and the region, and their relation to the growth of real activity.

Figure 3.3 shows in broad terms that the macroeconomic indices describe a similar, but not identical, story to the growth of real activity. Greater economic dynamism in general translates into better macroeconomic performance. This relation is very clear, for example, in the period 2008–2009, when the sharper contraction of economic activity coincides with a worsened performance for most countries. In countries like Nicaragua and Panama, the deterioration in performance was recorded months before the slowdown in economic activity

FIGURE 3.3 Macroeconomic Performance Indices and Growth of Real Activity

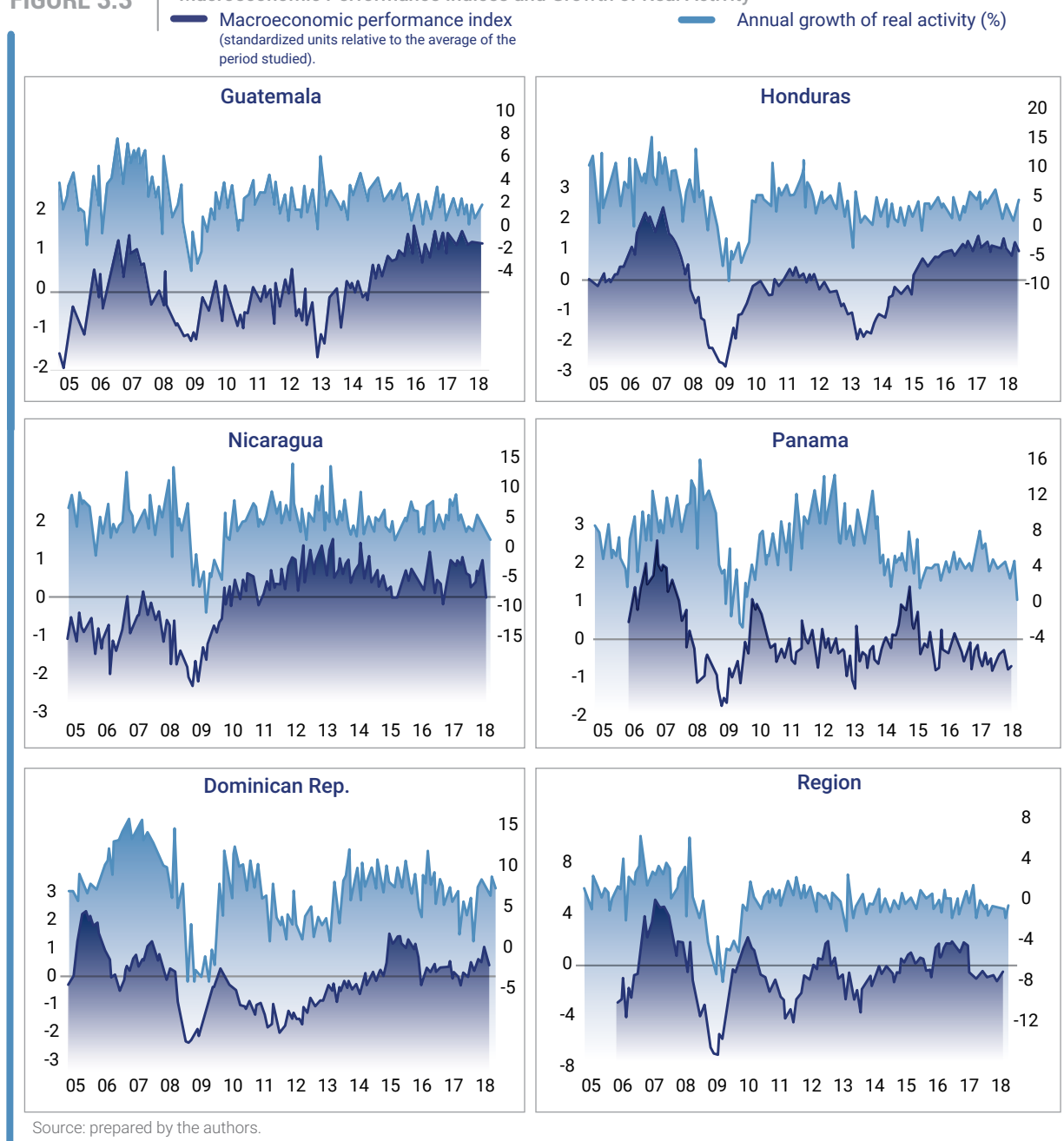


³² The index thus captures changes relative to the average of January 2005–March 2018, depending on data availability by country. It does not, however, include a numerical assessment of the level of the variables—for example, if inflation or the deficit in the country have generally been very high throughout the period.

EXTERNAL CHALLENGES, INTERNAL STRENGTHS

FIGURE 3.3

Macroeconomic Performance Indices and Growth of Real Activity



became apparent, because of significant trade deficits posted in 2008. Since 2015, moreover, countries like El Salvador, Guatemala and Honduras have experienced substantial improvements in their performance indices, despite maintaining relatively constant rates of real activity growth and inflation. This is because of significant improvements in their trade and fiscal deficits. In El Salvador during 2011, higher activity growth was accompanied by a rise in inflation, causing a fall in the performance index

that had no counterpart in real activity. The recent deterioration in Panama was influenced by a slower growth and a higher fiscal deficit.

All these examples illustrate that the relation between activity growth and macroeconomic performance is positive, but not strictly linear. This is because very high growth rates are usually accompanied by higher inflation rates, or by higher trade and fiscal deficits. Annex 3.3 shows the

relation between growth and the performance index using a scatter chart that plots the adjustment of a polynomial regression line. As intuition suggests, higher growth tends to improve macroeconomic performance, but decreasingly. Indeed, very high growth rates can lead to significant reductions in the performance assessment. This indicates that the mix of policies that countries use to attain or manage rapid economic growth is very important in ensuring good economic performance.

At the regional level, the macroeconomic performance index has been more stable since 2009. The best years in this regard were 2010, 2012, and the period 2015–2016. Performance was weaker in 2011, 2013 and the last year of the sample (2017–2018). The recent decline in the region's performance seems to originate in the diverse movements of the countries' trade and fiscal balances.

The link between economic performance and financial conditions is always a complex phenomenon that features causal repercussions or relations in both directions. As seen during the subprime crisis, a deterioration in financial conditions can weaken the growth of economic activity and even cause it to collapse. Weak economic performance, moreover, can create adverse financial conditions or lead to financial crises. As described in financial accelerator models,³³ a contraction in demand for goods can lead to a reduction in loans from financial creditors and deepen a recession. Even in periods of relative macroeconomic stability, however, adverse financial conditions can arise that have significant consequences in the real economy. Jiménez and Saurina (2006) point out that strong growth in activity, for example, can lead to the relaxing of credit standards, nurturing credit booms. Similarly, at times of economic upturn and lax monetary conditions, financial institutions can engage in riskier behavior.³⁴

For the purposes of our analysis, these findings can be summarized as follows: poorer

banking conditions generally tend to degrade macroeconomic performance. The appearance of unfavorable banking conditions, however, can be fostered by a bad or good macroeconomic performance. As described below, the methodology for estimating the indices of banking conditions takes account of this. It should be stressed that these indices of banking conditions bring together many banking variables. This facilitates the analysis for the region as a whole and for each of the countries.

INDICES OF BANKING CONDITIONS

The synthetic index of banking conditions was built using the growth rates of the main items in the general balance of the aggregate banking system, as well as the indicators of profitability, capitalization and risk typically used in traditional banking analysis.³⁵ Methodologically, the indices were estimated by combining the main components of the total set of banking indicators, such that the resulting indices are dynamically related—through a structural vector autoregressive model—to the macroeconomic performance index.³⁶ The methodological details of building the indices of banking conditions are presented in Annex 3.2.

The way in which the indices of banking conditions were devised ensures that the index's positive values reveal a deterioration in conditions relative to the average of the period. Negative values reflect an improvement in conditions. For example, a worsening of banking conditions can be associated with lower growth of deposits and credit, less leverage, higher operating costs as a proportion of assets, less liquidity, a higher share of past-due portfolio and other factors, relative to the averages for the period.

In the region as a whole, economic performance is important in explaining banking conditions, and thus macroeconomic stability will tend to maintain stable

33 Bernanke and Gertler (1989), and Kiyotaki and Moore (1997).

34 Examples of this case may be found in Adrian and Shin (2014) and Altunbas et al. (2010).

35 The variables considered are all available in the Executive Secretariat of the Central American Monetary Council, covering the period January 2015 to May 2018.

36 The dynamic relations between the banking indices and the macroeconomic index are represented by the SVAR's impulse-response functions. The estimated banking indices meet the following conditions: an unexpected deterioration in banking conditions worsens macroeconomic performance; unexpected improvements in macroeconomic performance can improve or worsen banking conditions, as the case may be in each country.

EXTERNAL CHALLENGES, INTERNAL STRENGTHS

banking conditions.³⁷ Specifically, macroeconomic performance explains about 40 percent of such conditions. The other 60 percent is explained by changes in the financial variables originating in the banking system. It is worth mentioning that we also carried out estimates to determine the impact of US interest rates on the behavior of the regional banking index.³⁸ These variables were not significant, and thus to date there is no evidence that the normalization of the monetary rate in the United States has had significantly adverse consequences for banking conditions in the region. A reason for this might be that the region's banks fund themselves primarily through deposits, or even pursue changes in the composition of the financial catchment that increase their funding. Other reasons might be a substantial diversity in conditions among countries that is not captured in the exercise, and the banking system's capacity to absorb higher costs for a certain time, which would indicate a lagged effect.

The estimated regional index of banking conditions suggests that such conditions have remained stable

in recent years. Figure 3.5 shows the estimated indices of banking conditions for each country.

The biggest fluctuations on the index of banking conditions can be seen from the start of the sample to about late 2012. These fluctuations tend to reflect the significant changes in macroeconomic performance that were also apparent between 2005 and 2012. Since 2013, banking conditions have been steady or have improved in most countries of the region. El Salvador and the Dominican Republic have experienced the most improvement. In those countries, the strengthening of banking conditions is attributable to the improved macroeconomic performance attendant on a reduction of the external and fiscal deficits. The countries that have experienced deterioration are Panama and, more recently, Costa Rica and Honduras. In Panama and Costa Rica, a worsening of banking conditions is associated with the lower growth of deposits and credit, higher shares of past-due portfolio, smaller provisions, and less profitability. In Honduras, the slight deterioration in conditions is related to higher leverage because of the growth of credit,

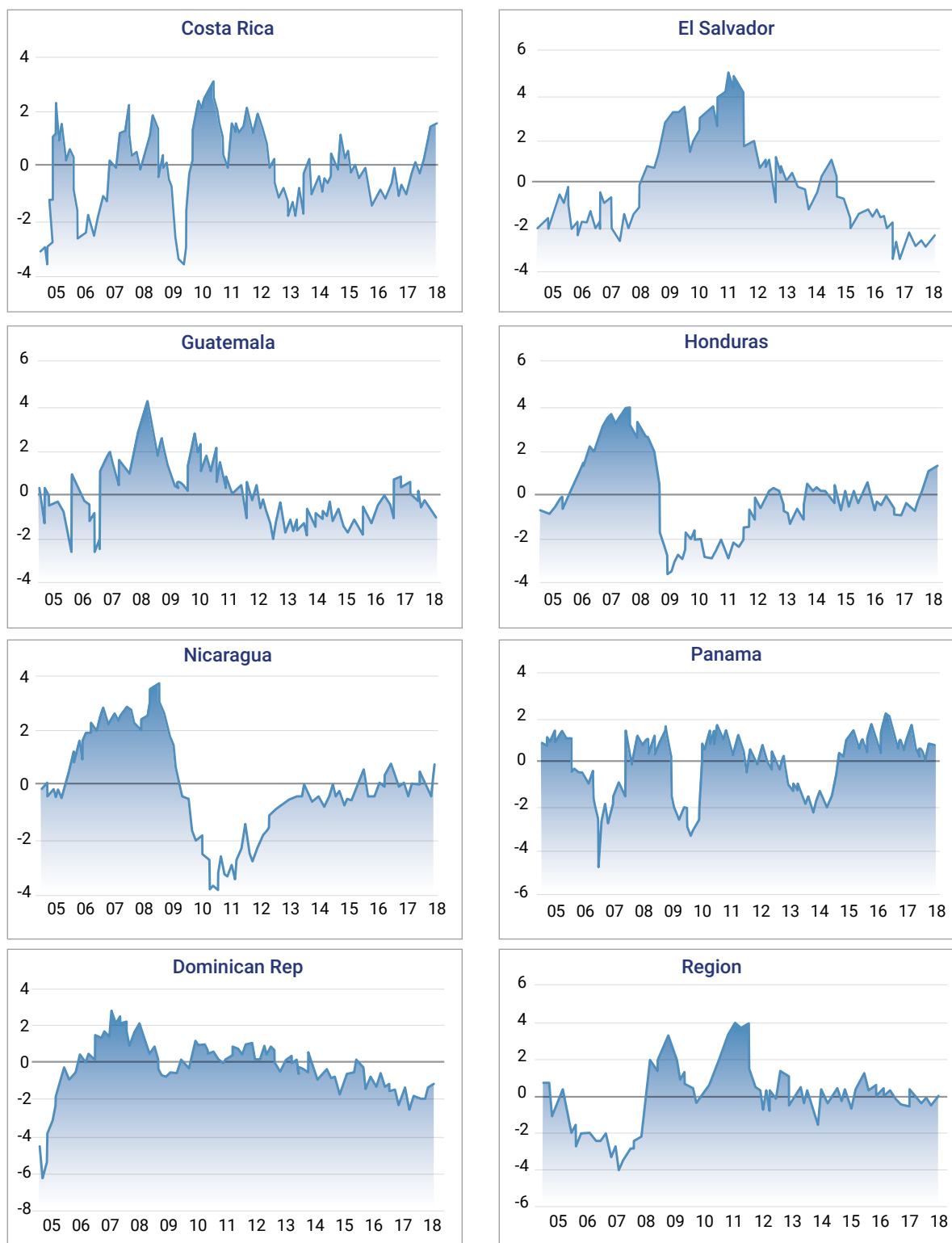
FIGURE 3.4 | Regional Index of Banking Conditions in CADR



³⁷ It is important to note that this analysis is based on indices that solely contain bank accounting information. Account is not taken, therefore, of the repercussions of price movements in the countries' real estate markets, stock markets or debt markets. This is because such information is generally hard to obtain in the region.

³⁸ As proxies for US interest rates we use the shadow rate, as estimated by Leo Krippner and available on the website of the Reserve Bank of New Zealand. Alternatively, we use the yield on 10-year Treasury bills.

FIGURE 3.5 | Indices of Banking Conditions by Country



Source: prepared by the authors. Index values above (below) zero indicate a deterioration (improvement) in conditions relative to the average for the period.

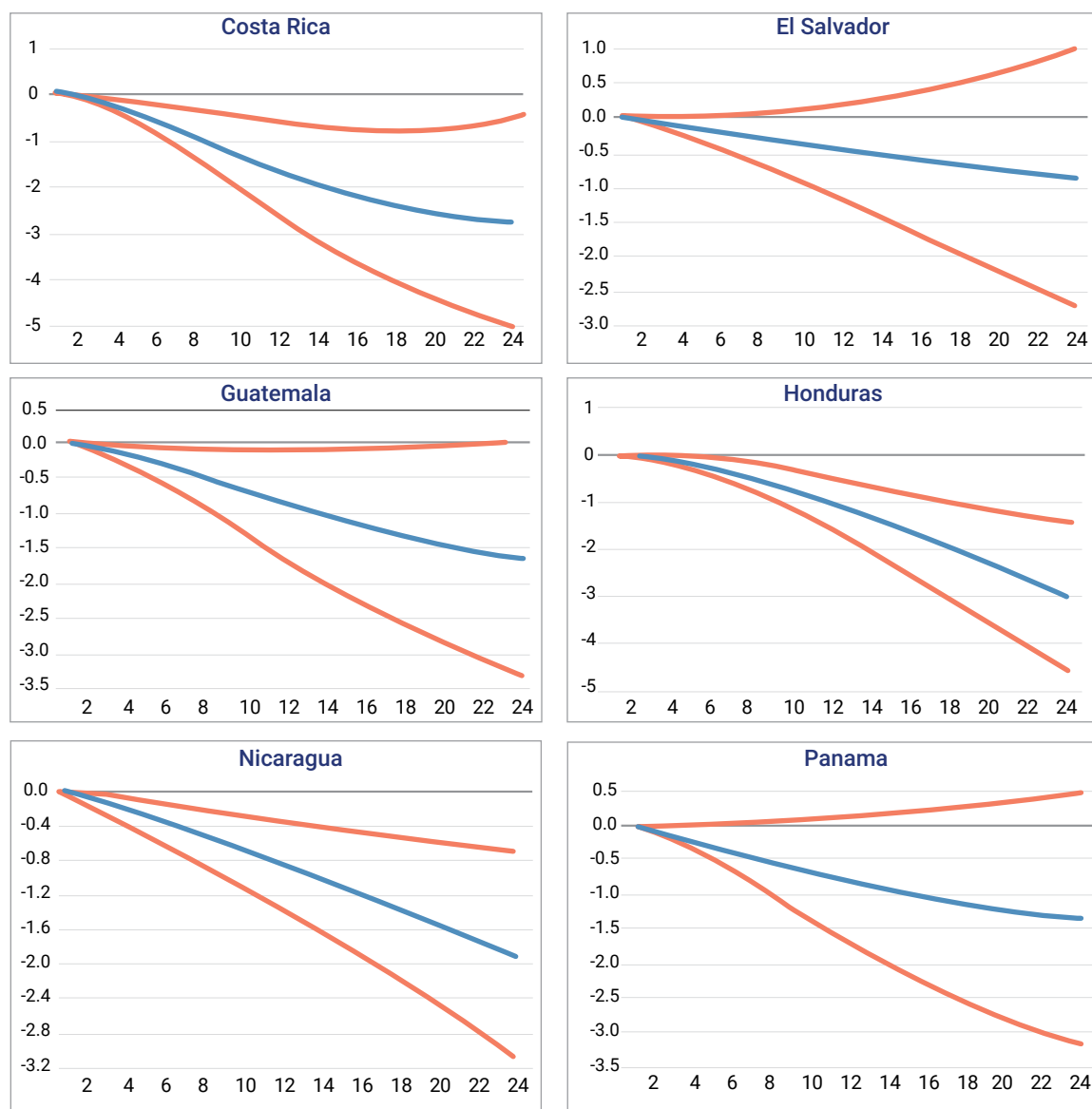
EXTERNAL CHALLENGES, INTERNAL STRENGTHS

less liquidity, and smaller financial margin.³⁹ These increases in the indices, however, do not seem to be substantial. The diagnosis for CADR is that banking conditions have remained stable since 2013.⁴⁰

Figure 3.6 shows that a decline in banking conditions always worsens macroeconomic performance. Nonetheless, there is a high degree of

diversity in the region as regards the scale of these effects. The analysis suggests that an unexpected deterioration in banking conditions would have greater repercussions in Costa Rica, Honduras, and the Dominican Republic. In CADR, however, the effects tend to be small (with little statistical significance) and short-lived.

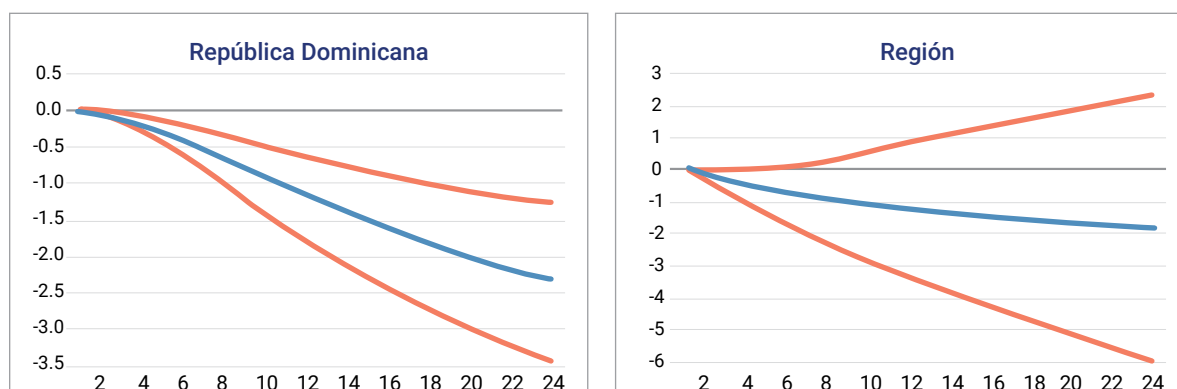
FIGURE 3.6 | Effects on Macroeconomic Performance
(24-Month Cumulative Impulse-Response) of a
Deterioration in the Index of Banking Conditions (Standard Unit)



³⁹ This scenario is theoretically related to the possibility that the expansion of credit in times of economic growth leads to a reduction in credit standards. This can increase future risk factors for bank management and degrade banking conditions. This possibility is included in the estimation of the indices by allowing the effects of economic performance on banking conditions to be favorable or unfavorable.

⁴⁰ It is worth mentioning that the data used in this analysis are up to May 2018. Subsequent movements are not captured and must be monitored over time.

FIGURE 3.6 | Effects on Macroeconomic Performance (24-Month Cumulative Impulse-Response) of a Deterioration in the Index of Banking Conditions (Standard Unit)



Source: prepared by the authors.

FINAL CONSIDERATIONS

Since 2013 the US Federal Reserve has embarked on a process of reversing non-conventional monetary policy. In late 2015 the normalization of the monetary interest rate began, with the signaling of the cycle of increases pursued since then.

Despite the diversity among the countries of the region, regional macroeconomic performance has remained relatively stable since 2013. Since 2017, the increase in the international oil price has caused a slight deterioration in the external accounts, and in some cases, there has been a widening of the fiscal deficit. On the other hand, banking conditions—measured through the synthetic indices—have improved or remained stable in most countries. At the regional level, the stability of banking conditions

seems to be explained by the relative stability of the macroeconomic performance index.

Both analyses indicate that, to date, the changes in US monetary policy have not had visible effects on the macroeconomic and banking spheres in the region. Nonetheless, it is important to keep monitoring banking conditions and the changes that could happen as a result of the reduction of foreign currency liquidity or the weakening of macroeconomic performance. This is especially true in the context of the reduction of the Federal Reserve balance, the continuing rise in US rates, and probably the monetary normalization that will also take place in Europe.

ANNEX 3.1 | Building the macroeconomic performance index

Estimation of the macroeconomic performance index takes basic elements of the methodology of Eickmeier et al. (2014), but adapting it to the objectives of this study. The procedure used by these authors shows how to combine (identify) a set of principal components to create a synthetic indicator that meets some behavioral properties.⁴¹

The procedure used to devise the performance index is as follows: Define X as the set of M standardized macroeconomic variables of dimension T , and F^M as the set of the first m main components of X , with $m < M$. Let X_t be a vector of variables of dimension $M \times 1$; F_t^M a vector $1 \times M$ of the main variables chosen; Q^M a rotation matrix $m \times m$, which satisfies: $Q^M Q^{M'} = Q^{M'} Q^M = I$. The column vector q^1 is the first of matrix Q^M . For $t=1,2,...,T$, the macroeconomic performance index (IM) satisfies the following equation:

$$X_t = \gamma IM_t + \zeta_t$$

where $IM_t \equiv F_t^M q^1$, ζ_t is vector $M \times 1$ of idiosyncratic errors and γ is a coefficient of $M \times 1$ that relates the macroeconomic variables with the non-observable IM . Some elements of vector γ must satisfy certain sign restrictions—that is, some $\gamma_i \geq 0$. Because the index IM is a linear combination of the principal components of the macroeconomic variables, finding a vector q^1 that satisfies the sign restrictions in γ is equivalent to finding the rotation of the components that makes IM behave in the expected way. Thus the index IM acquires the properties required to allow us to capture macroeconomic performance in the pre-established way.⁴²

Because several vectors q^1 satisfy the restrictions on γ , each vector generates a different IM indicator. This indicates that there is uncertainty or over identification in the estimation of IM . The indicator IM that we provide is the median estimator of all the possible indicators that satisfy the restrictions on γ .

⁴¹ Eickmeier et al. (2014) have built an index of global liquidity conditions based on a combination of the main components of global liquidity volume and prices.

⁴² In Eickmeier et al. (2014), the authors pre-clean or “control” for the effect that the macroeconomic variables could have on credit, monetary and financial variables, which they use to calculate the principal components. In our case, we did not apply any measure to control for endogeneity among the macroeconomic and banking variables because that relation is considered later in the estimation of the banking indices using the SVAR model.

ANNEX 3.2 | Building the banking conditions indices

For each country, we build two potential indices of banking conditions: the procyclical conditions index (ICP) and the countercyclical conditions index (ICC). The former captures the deterioration in banking conditions when macroeconomic performance worsens. The latter describes the conditions that worsen when the countries experience better macroeconomic performance. For the analysis, we choose the index (ICP or ICC) that has most impact on macroeconomic performance. Below we describe the building of the ICP and ICC indices.⁴³

Let W be the set of N standardized banking variables of dimension T and F^F be the set of the first f principal components of W , with $f < N$. Define W_t as a vector $N \times 1$ of variables; F_t^F a vector $1 \times f$ of the principal components chosen; Q^F is the rotation matrix $f \times f$, which satisfies: $Q^F Q^{F'} = Q^{F'} Q^F = I$.⁴⁴ Denote the first two column vectors of matrix Q^F , as q^1 and q^2 respectively, which represent potential linear combinations of the principal components in F^F . The indices of interest are defined as $ICP_t \equiv F_t^F q^1$ and $ICC_t \equiv F_t^F q^2$. For $t=1,2,\dots,T$, the dynamic of the variables and banking indicators are summarized in the following model:

$$W_t = \alpha ICP_t + \beta ICC_t + \xi_t \quad (2)$$

$$V^{-1} \begin{bmatrix} IM_t \\ ICP_t \\ ICC_t \end{bmatrix} = \Gamma_1 \begin{bmatrix} IM_{t-1} \\ ICP_{t-1} \\ ICC_{t-1} \end{bmatrix} + \dots + \Gamma_p \begin{bmatrix} IM_{t-p} \\ ICP_{t-p} \\ ICC_{t-p} \end{bmatrix} + \epsilon_t \quad (3)$$

where $ICP_t \equiv F_t^F q^1$ and $ICC_t \equiv F_t^F q^2$ are the non-observable synthetic indicators that capture banking conditions; α y β are vectors of parameters $N \times 1$; and IM is the macroeconomic performance index. Equation: $W_t = \alpha ICP_t + \beta ICC_t + \xi_t$ matches the equation of factors in the dynamic factorial models that explain much of the variability in the banking variables through the non-observable indices. The coefficients α and β are analogous to the factor loads and relate the banking variables to the indices of interest. These coefficients represent not only the co-movement between indices and variables, but also the importance of the variables in explaining the indices. Vector ξ_t contains the idiosyncratic errors (weakly correlated) of the financial variables, which can be interpreted as financial noise.

Because the banking indices (ICP and ICC) and IM are mutually endogenous, their dynamic is represented through a SVAR in equation (3). The matrices V and Γ represent the structural parameters of the system and vector ϵ_t contains the structural errors, which by definition are orthogonal and have the same variance. SVAR(p) also has a representation in reduced form:

$$Z_t = A Z_{t-1} + e_t \quad (4)$$

⁴³ For a detailed application of this methodology to Venezuela, see Guarata and Pagliacci (2017).

⁴⁴ Rubio-Ramírez et al. (2010) use a matrix similar to Q to implement the sign restrictions for the identification of structural shocks in a SVAR model.

where Z_t contains the required arrangement of the contemporaneous and lagged variables of (3), e_t is the reduced form error vector with variance and covariances matrix Σ . The impulse-response functions of the SVAR in horizon h can be written as:

$$SIR(h) = A^{h-1} V \quad \text{for } h = 1, \dots, T \quad (5)$$

donde:

$$SIR(1) = V \equiv \begin{bmatrix} \frac{\partial IM}{\partial \epsilon_1} & \frac{\partial IM}{\partial \epsilon_2} & \frac{\partial IM}{\partial \epsilon_3} \\ \frac{\partial ICP}{\partial \epsilon_1} & \frac{\partial ICP}{\partial \epsilon_2} & \frac{\partial ICP}{\partial \epsilon_3} \\ \frac{\partial ICC}{\partial \epsilon_1} & \frac{\partial ICC}{\partial \epsilon_2} & \frac{\partial ICC}{\partial \epsilon_3} \end{bmatrix} \quad (6)$$

Matrix V represents the contemporaneous effects of structural shocks. Structural errors are related to the reduced form errors through V , with $e_t = V \epsilon_t$ and $E(e_t e_t') = VV' = \Sigma$.

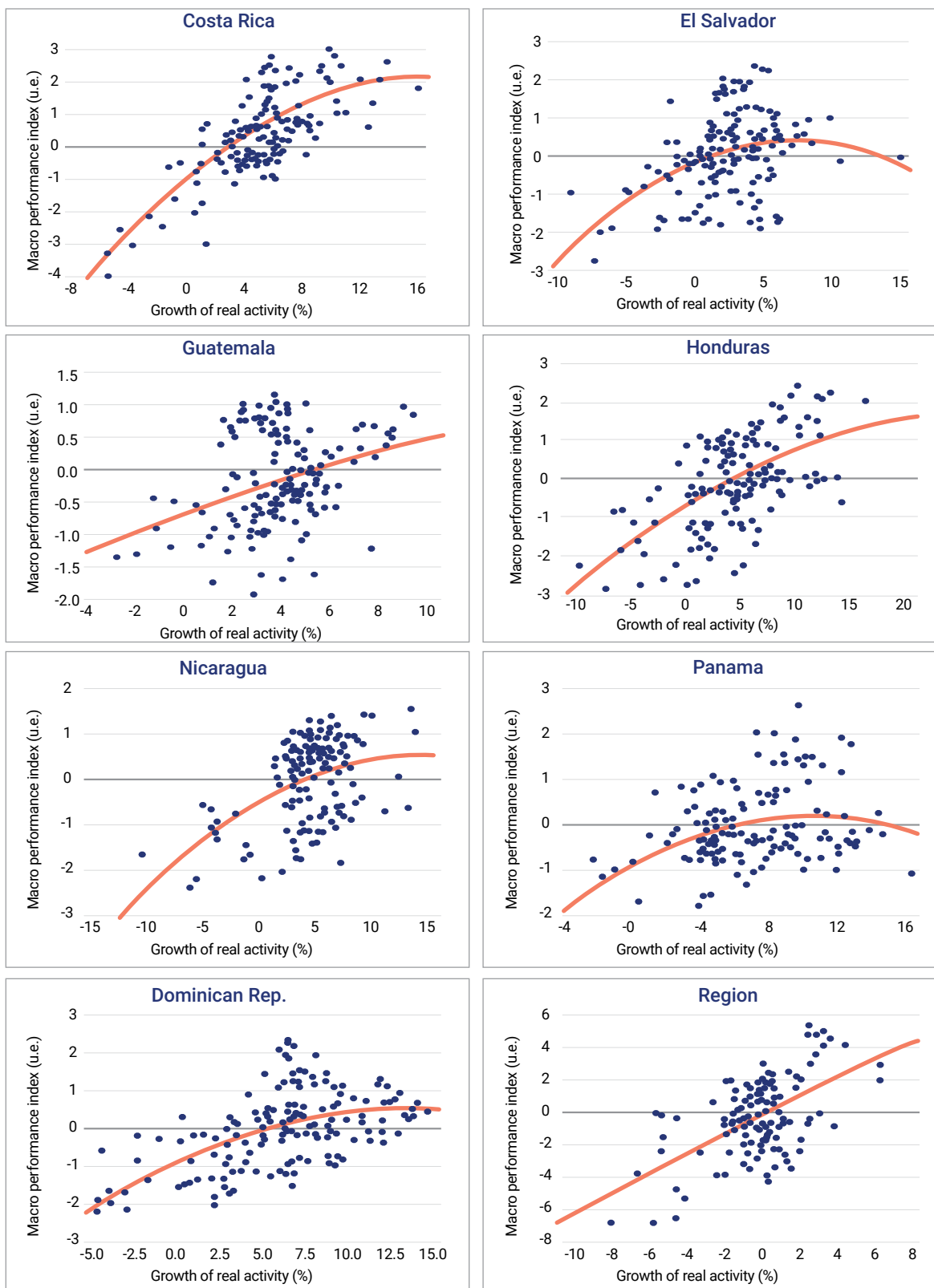
The estimation (identification) of the banking indices (ICP and ICC) is obtained by imposing zero and sign restrictions on the elements of V . This means that the SVAR regressors (ICP and ICC) are selected—the components of F^F are rotated—until all the restrictions are satisfied. The restrictions imposed are:

- a) $\frac{\partial MS}{\partial \epsilon_2}, \frac{\partial MS}{\partial \epsilon_3} \leq 0$: This supposition indicates that unexpected deterioration in banking conditions (created within the banking system itself) will worsen macroeconomic performance. These suppositions also ensure that any increase in ICP or ICC can be interpreted as worse banking conditions.
- b) $\frac{\partial ICP}{\partial \epsilon_1} \leq 0, \frac{\partial ICC}{\partial \epsilon_1} \geq 0$: This supposition is what distinguishes ICP from ICC. It indicates that unexpected improvements in macroeconomic performance will improve the banking conditions captured by ICP, but worsen the conditions captured by ICC.
- c) $\frac{\partial ICP}{\partial \epsilon_3}, \frac{\partial ICC}{\partial \epsilon_2} = 0$: This supposition is not crucial to identification of the banking indices, but it indicates that innovations in each of them does not contemporaneously affect the other index.

Because the *ICP* and *ICC* banking indices are overidentified in the estimation process, the final indices represent the median of all the indices that adequately satisfy the restrictions imposed.

The banking index that serves to analyze each country and region is selected according to the decomposition of the SVAR variances (equation 3), which is re-estimated with the final indices. The choice is for that index (*ICP* or *ICC*) whose innovations have the most impact on macroeconomic performance.

ANNEX 3.3 | Relation between the Macroeconomic Indices and Real Activity Growth



Source: prepared by the authors. s.u. refers to standardized units relative to the average of the period studied.

4

CHAPTER

THE REGION HAS MAINTAINED

FOREIGN DIRECT INVESTMENT AND FINANCIAL MARKET STABILITY

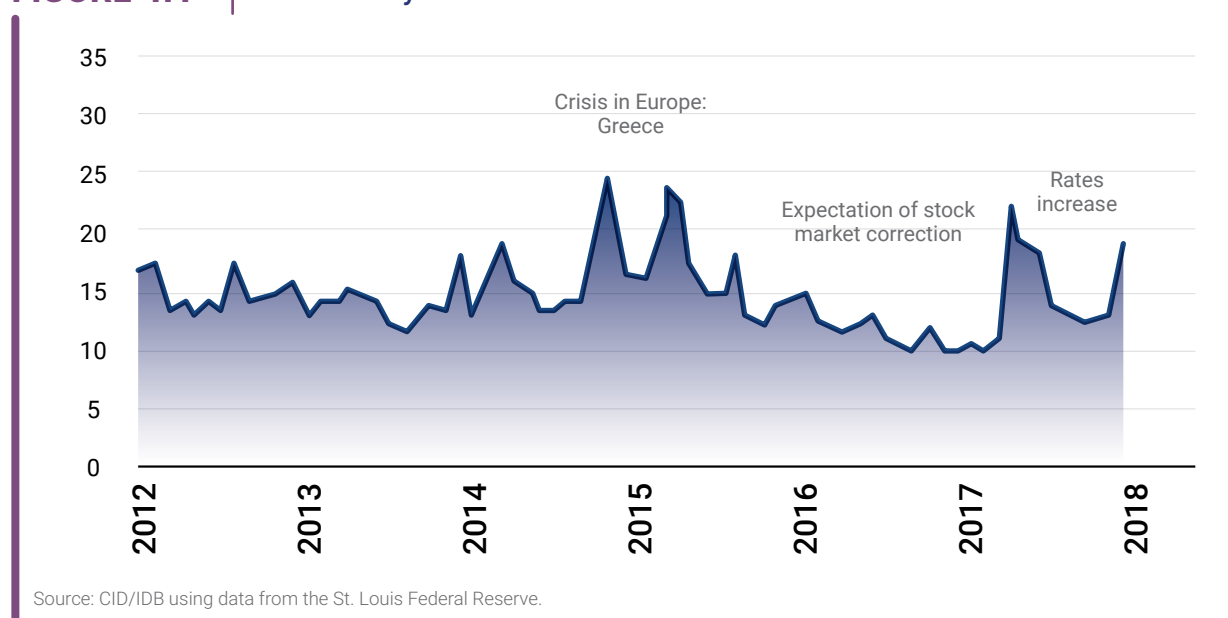
despite the unfavorable external
environment

In the context of the reduction in corporate income taxes and the reversal of quantitative easing in the United States, financial market volatility increased in 2018. In February 2018, for example, the VIX volatility index⁴⁵ rose by more than 100 percent given the uncertainty about a possible correction in US stock markets. This stemmed from historically high values, global geopolitical uncertainty, and the ongoing rise in monetary rates. After some months of financial market stability, volatility returned in October and November because of the renewed perception of

risks in US interest rates. This perception could encourage a readjustment in investment portfolios to reduce the share of higher-risk assets, such as stock markets and emerging markets, in favor of US sovereign debt. Emerging markets are exposed through portfolio and direct investment. CADR is open to trade, investment and external financing, and therefore could be exposed through these channels.⁴⁶

It is estimated that the region's real-economy channel with the US economy (through trade or

FIGURE 4.1 VIX Volatility Index



⁴⁵ An indicator that measures the expectation of market volatility by means of the stock options on the Standard and Poor's 500.

⁴⁶ Banking is another possible channel, as analyzed in the previous chapter.

remittances, for example) is more important than the financial channel.⁴⁷ This suggests that the strength of the US economic cycle could offset the effects of the rise in US interest rates and higher financing costs. As regards financial flows, this chapter explores foreign direct investment and the sovereign debt market.

FOREIGN DIRECT INVESTMENT

The relative amount of foreign direct investment (FDI) is substantial in the region, with annual levels of about 4 percent of GDP. This compares favorably with Latin America and the Caribbean, which records levels of about 2.5 percent of GDP a year. FDI thus makes it possible to finance the region's deficits with the world in goods and services.

FDI is usually divided into new investment, reinvested earnings, and debt and other capital instruments.⁴⁸ This disaggregation reveals that FDI in the region is supported by the reinvestment of earnings, which has increased its share of the total. Investments in previous years have thus been generating returns, and some of those are being reinvested in the economy. The share of new

investments has fallen significantly, while debt and other capital instruments have the smallest share and have been fairly stable.

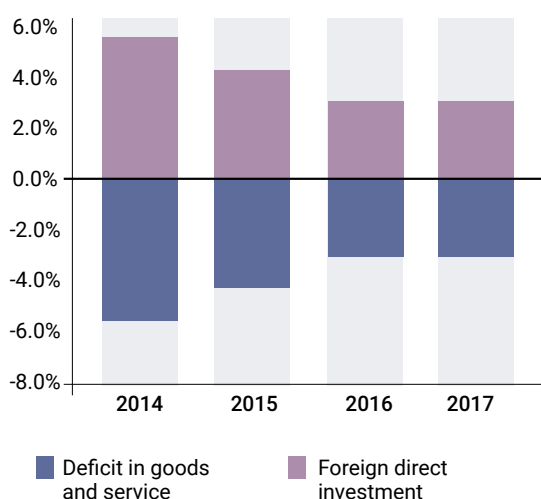
It is positive that the level of earnings reinvested by foreign enterprises has been increasing, but it is important to underline that there is no public information on the target of these reinvestments, nor studies on their stability.

Given the significant shift in the composition of FDI in the region during recent years, it is important to understand what might be behind this change. To that end, this section analyzes the determinants of the components of FDI in the region. This analysis also makes it possible to better assess the risks the region faces in the current context.

There is a substantial literature on the factors that lead transnational enterprises (TNEs) to invest in recipient countries. Those factors can be grouped as follows:

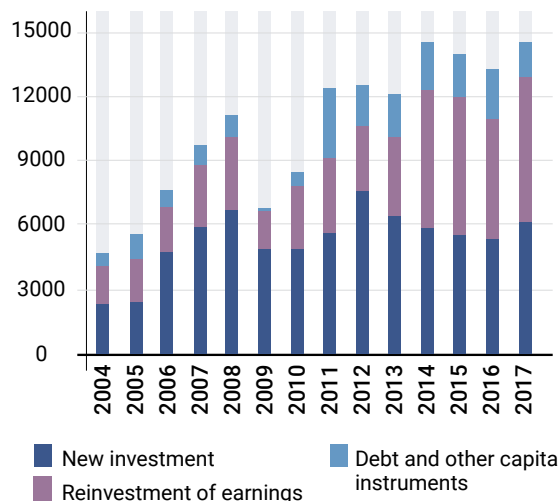
- Economic: macroeconomic conditions in the recipient country or specific characteristics of the recipient sectors (Boateng et al., 2015).

FIGURE 4.2 Goods and Services Deficit and FDI in CADR (% of GDP)



Source: CID/IDB using IMF data.

FIGURE 4.3 FDI by Component in CADR (US\$ millions)



Source: CID/IDB using data from the central banks and finance ministries

⁴⁷ This is on the basis of the significant effect that US GDP growth is estimated to have on regional GDP growth, as well as the smaller effect of risk aversion (IDB, 2018).

⁴⁸ This section records loans and other operations between companies—for example, between the parent company and a subsidiary.

Consideration is usually given, too, to the impact of the economy's foreign investment stock (Sánchez-Martín et al., 2014).

- Institutional: conditions that describe political stability, the state of democratic institutions, the quality and effectiveness of the legal framework, and control of corruption. Cultural proximity between investor and recipient countries has also been studied (Lucke and Eichler, 2017).
- External: notable in this regard are the degree of openness, external vulnerability, and competition for resources in global markets.

Another part of the literature seeks to distinguish among the components of FDI, referring to differences in TNEs' decision-making processes.⁴⁹ It is generally thought that new investments entail a multidimensional assessment of the recipient country, while reinvestment represents a marginal decision that might be more affected by immediate economic conditions in the recipient.

Specifically, we study the determinants of FDI in the region and its two main components—new investment and reinvestment—as a percentage of GDP. The methodology consists of an econometric panel analysis⁵⁰ that includes variables corresponding to the aforementioned factors (economic, institutional, and external). The assessed determinants are:

- Economic: various aspects of macroeconomic conditions are captured, using the synthetic performance index presented in the previous chapter. The effect of the stock of foreign investment (estimated by UNCTAD) is also assessed.
- Institutional: we analyze separately various aspects of the institutional framework, such as conditions for doing business, the quality of regulation, governance indicators, and the economic freedom index.⁵¹

- External: a country's degree of economic openness and its external vulnerability are evaluated using external debt as a percentage of international reserves. We also consider international market conditions using changes in the rates for 10-year US sovereign bonds and the VIX index as an uncertainty measure.

Annex 4.1 presents the results of the estimates for each component. The estimates show that total FDI in the region responds as expected and significantly to various factors (economic, institutional, and external). Better macroeconomic performance and a better regulatory environment attract investment. External conditions are also important. Greater openness attracts more investment, but the greater vulnerability caused by excessive indebtedness can reduce investment. Greater uncertainty and interest rates in international markets negatively affect TNEs' investments. In most of the countries, the significant accumulation of foreign capital negatively affects new investment flows. This could represent declining returns for new investments or scale limitations in local markets, among other factors.

It should be noted that new investment and reinvestment of earnings respond to the determinants in different ways. Decisions on new investments are influenced by various factors (economic, institutional and external), while reinvestment decisions are only affected by a recipient country's macroeconomic performance and uncertainty in international markets.

Identification of the determinants and their recent behavior suggest that the favorable behavior of reinvestments seems to be associated with the relative stability of macroeconomic performance since 2015, and the lessening of uncertainty in international markets up to 2017. The slowdown in new investments might be associated with less trade⁵² and poorer regulation, which on average

49 For example, Polat (2017) finds that reinvestment is positively related to GDP growth, consumer confidence and lower political risk, and negatively with the risk of delay in repatriation payments. On the other hand, Lundan (2006) maintains that the determinants include macroeconomic variables such as GDP growth and exchange rates, as well as corporate governance systems, tax treatment of repatriated earnings, and the use of dividends policy as a control on administration.

50 Fixed-effects panel estimation by country and correcting for correlation of the unexplained part of the investments (estimation errors) among the countries—this latter considering the possibility of non-observable common effects among countries. See Annex 4.1 for more detail on the methodology and the results.

51 The sources of these indices are the World Bank and the Heritage Center

52 Exports plus imports as a percentage of GDP in the region fell from more than 90 percent in 2012 to about 70 percent in 2017.

have been apparent in the region.⁵³ It is estimated that the rise in the rates of US Treasury bills in 2017 also helped curb new investments. Going forward, the December 2017 cut in US corporate income tax could also reduce incentives for new investments.

As regards regulatory quality, the region seems to be lagging. In the area of contract implementation, another factor related to investment, the region is below the Latin American average.

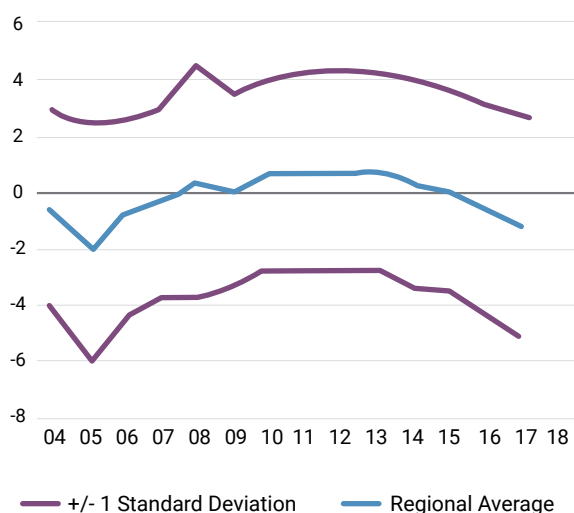
In the context of an adverse external environment—with less liquidity in global markets, greater competition for international financial resources, and potentially more uncertainty—it is important for the region to keep taking steps to promote domestic and foreign investment. Emphasis should be on investments that are under the most immediate control of those responsible for implementing policies such as the quality of the regulatory

environment. There is also a need to preserve a favorable macroeconomic performance—that is, with consistent growth and inflation, and limits on external and fiscal imbalances.

FINANCIAL MARKETS

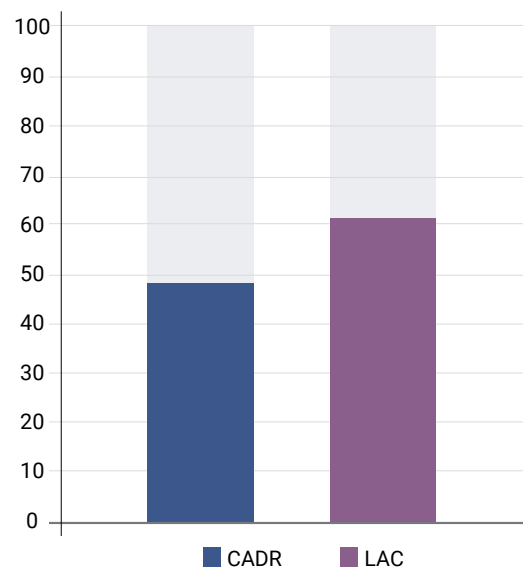
To analyze the possible effects transmitted through financial markets, it is worth assessing how such markets behaved when the first signs of monetary normalization became apparent. Specifically, we should look at the period after May 2013, when the US Federal Reserve announced that it would start to reduce its balance in the coming months, a process known as tapering.⁵⁴ In this period, emerging market economies (EMEs) experienced exchange rate depreciations and higher sovereign rates. The economies facing the sharpest depreciations were those with the greatest economic vulnerabilities.

FIGURE 4.4 Quality of Regulation Index



Source: World Bank governance indicators. This indicator captures perceptions of the government's ability to devise and implement policies and regulations that foster the private sector. Among other things, it includes ease of doing business, barriers to market entry, efficiency of the regulation of competition, and the regulatory burden.

FIGURE 4.5 Contract Implementation Index, 2018 (100=boundary)



Source: CID/IDB using data from Doing Business. LAC = Latin America and the Caribbean.

⁵³ It is important to note that the indicators of regulatory quality include several that are related to the different economic agents' perception of the application of the regulations. Perception thus has significant weight in the behavior of the variable.

⁵⁴ A term used to indicate the US Federal Reserve's reduction of monetary stimulus.

This was confirmed in a replication of a study by the Fed (2014), which calculates an economic vulnerability index using the following variables: (1) current account as a percentage of GDP; (2) gross public debt as a percentage of GDP; (3) annual average inflation in the past three years; (4) change, during the past five years, in bank credit to the private sector as a percentage of GDP; (5) ratio of total external debt to annual exports; and (6) international currency reserves as a percentage of GDP.

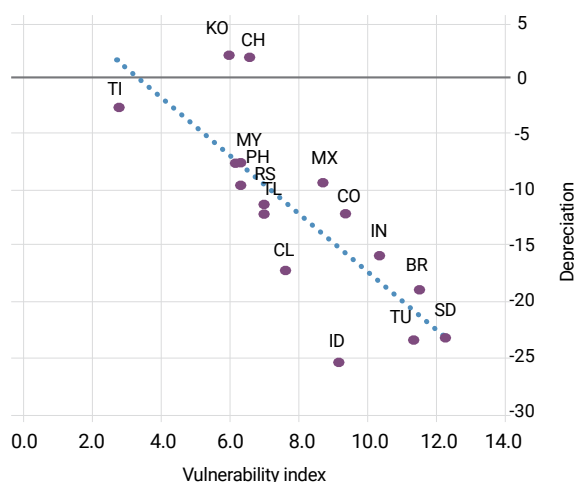
Inclusion of the countries of the region in this analysis reveals that they experienced smaller currency depreciations during the period, relative to the emerging countries studied and their vulnerability indices. This suggests that there are elements in these economies that make them less susceptible to this perception of a reduction in external liquidity, such as the extensive remittance flows that increased as the US economy improved.

As regards government debt markets, with the start of tapering (May 2013) and normalization of the monetary rate (December 2015), CADR experienced temporary (about three months in duration) increases in the yields on sovereign bonds. Since December 2017 the yields have been increasing slightly. The yield on emerging economy sovereign bonds has behaved in a similar way, though as of 2018 the increase has been more pronounced in EMEs than the CADR average.

The data indicate that better macroeconomic performance in the region⁵⁵ is associated with lower sovereign bond yields in international markets. This is usually related to lower country risk.

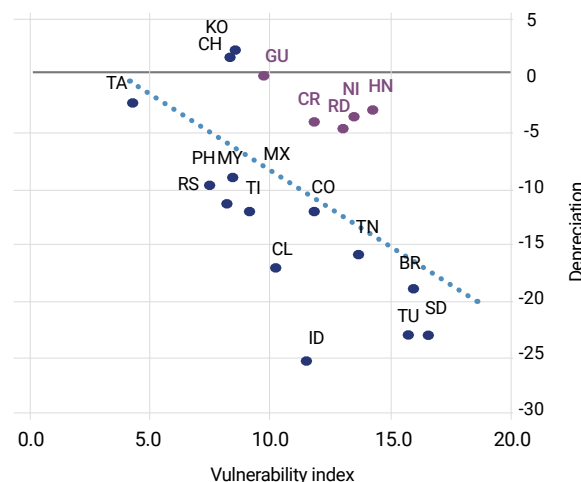
As regards the region's macroeconomic performance between the start of tapering and the onset of US interest rate increases (2013–2016), CARD's external accounts and inflation rates improved. To a large extent, the current account

FIGURE 4.6 Economic Vulnerability Index and Currency Depreciation around Tapering: EMEs



Source: CID/IDB using Fed (2014). Calculation from April 30, 2013 to February 6, 2014.

FIGURE 4.7 Economic Vulnerability Index and Currency Depreciation around Tapering: EMEs and CADR



Source: CID/IDB using Fed (2014). Calculation from April 30, 2013 to February 6, 2014.

⁵⁵ Measured using the macroeconomic performance index presented in Chapter 3.

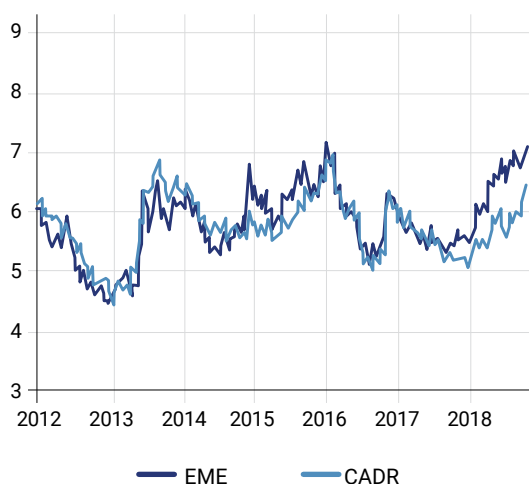
improved because of the pass-through of low international oil prices⁵⁶ to imported gasoline, as well as an increase in remittances; and to a lesser extent⁵⁷ because of exports. Inflation also benefited from low gasoline prices and international food prices. Some countries experienced a deterioration in fiscal indicators such as public deficit and debt, both as a percentage of GDP.

On average, the region's sovereign debt balance is mainly concentrated in domestic debt (45 percent of the total). Foreign debt in international markets accounts for about 30 percent, and the rest consists of foreign debt that is not transacted in international markets, since it comes from bilateral, multilateral or commercial bank loans, among other sources. The foregoing indicates that sovereign debt in

international markets is small, and thus the region has limited exposure to external financial volatility. The exceptions are Panama, and to a lesser extent the Dominican Republic, which have had greater access to international markets.

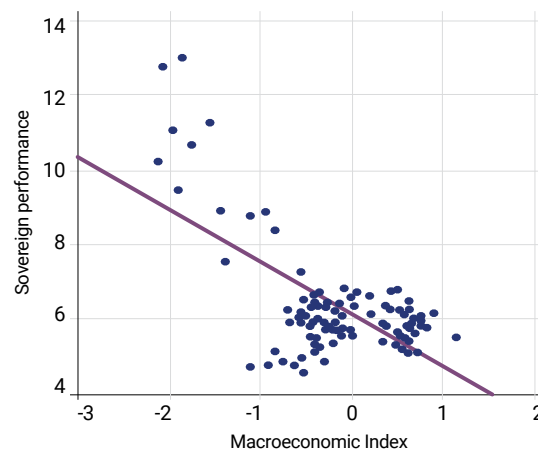
With regard to holders of CADR government securities, about 50 percent of the total is held by the banking sector and other resident financial institutions. The latter holders, added to the non-financial private sector and the public sector, account for about 70 percent of the total. Residents abroad hold the other 30 percent. Apart from yield, the local financial sector's holding of government securities is usually influenced by regulatory and liquidity considerations, which help underpin the stability of the holdings.

FIGURE 4.8 Yield on Emerging Market and CADR Sovereign Bond Yields



Source: CID/IDB using data from JPMorgan Bond Index. CADR: simple average.

FIGURE 4.9 Average Sovereign Yield versus Average Macroeconomic Index for CADR, September 2008 to June 2018



Source: prepared by the authors.

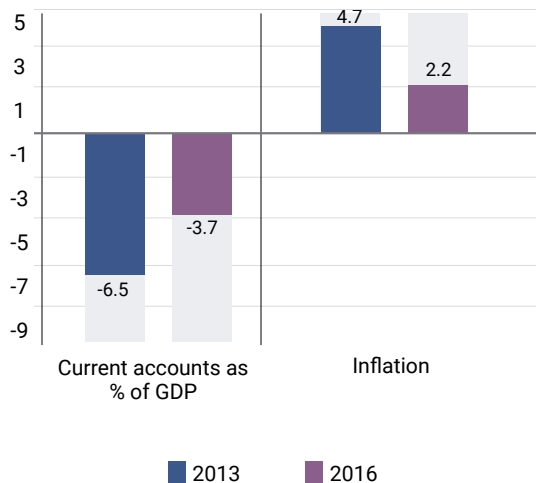
⁵⁶ The international price of a barrel of West Texas Intermediate (WTI) fell by 56 percent between 2013 and 2016.

⁵⁷ The United Nations world index of foodstuffs and agricultural prices recorded a 24 percent decline between 2013 and 2016

EXTERNAL CHALLENGES, INTERNAL STRENGTHS

FIGURE 4.10

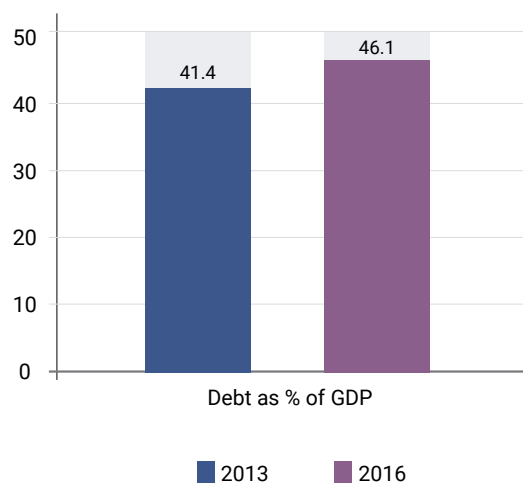
External Accounts and Inflation
in CADR



Source: prepared by CID/IDB using data from the IMF. Simple average.

FIGURE 4.11

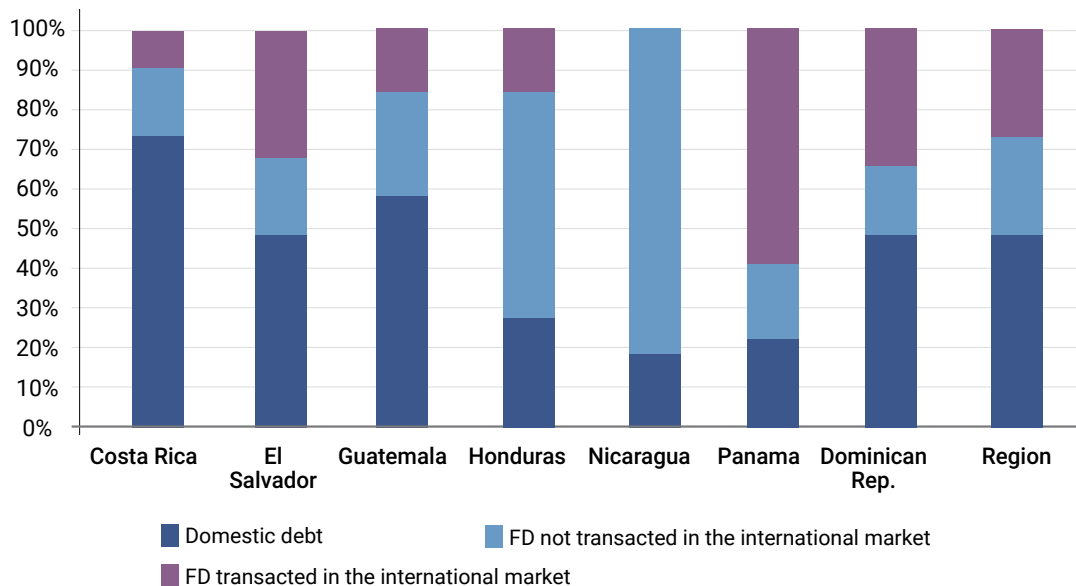
Debt as a Percentage of GDP
in CADR



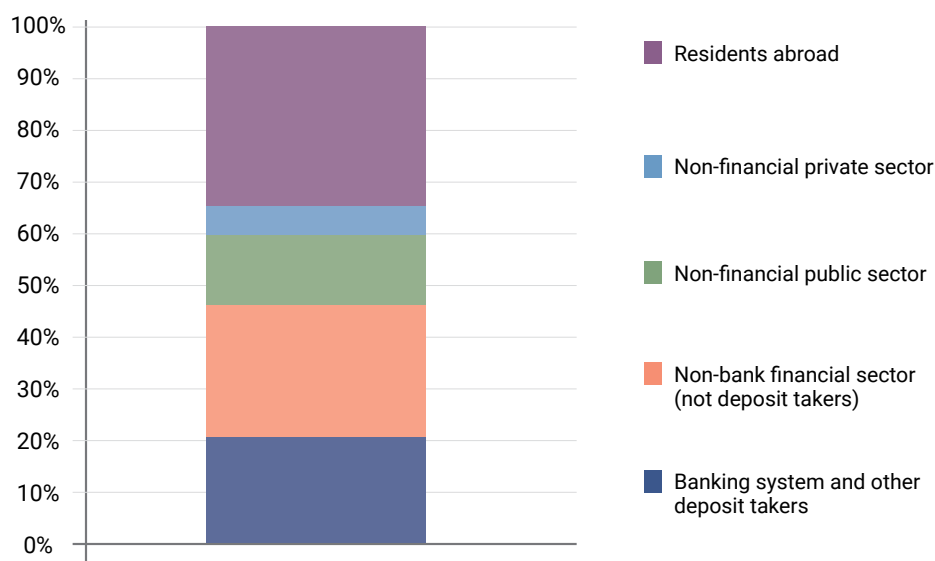
Source: prepared by CID/IDB using data from the IMF. Simple average.

FIGURE 4.12

Composition of Sovereign Debt Balance
by Type of Debt, 2018



Source: prepared by the authors using data from the Consejo Monetario Centroamericano and BIS.
Note: FD = foreign debt

FIGURE 4.13 | Composition of Holdings of Government Securities in CADR, 2018

Source: CID/IDB using data from the central banks and finance ministries. Most recent data available for each country to October 2018.

FINAL CONSIDERATIONS

The US economic cycle is CADR's main channel of economic activity with the world. Nonetheless, at a time when financial conditions in the United States are tending to become tighter after a long period of ample liquidity, the financial channel is a source of transmission that, while limited in the region, tends to be sudden.

The analysis in this chapter suggests that direct investment flows and financial markets discriminate on the basis of economic fundamentals. Historically, FDI has been an important source of resources for the region, allowing the provision of goods and services, as well as the financing of the external accounts. The current context entails risks of a reduction in this regard. Hence the advisability of continuing to implement institutional reforms and strengthening economic fundamentals, especially with a view to attracting new investment from resident nationals and foreigners.

To date, the effects of monetary normalization in financial markets have been small and short-lived in the region. This circumstance seems to have been positively affected by some improvement in macroeconomic variables, such as inflation and the external accounts, as well as limited exposure to international financial volatility because a significant share of government securities is held in the domestic market. Nonetheless, there has been a waning of the favorable effect of the low international oil price on the external accounts and inflation, which are very volatile. Hence it is important to adopt measures that make it possible to keep the country risk low in a context of greater global risk aversion.

ANNEX 4.1 | Estimation of determinants of the components of foreign direct investment in CADR

An estimated generalized least squares panel estimation was carried out for the CADR countries in the period 2005–2017.⁵⁸ The estimation includes fixed effects by country and corrects for the correlation between

estimation errors by country given the possibility of non-observable common effects among the countries. The results of the estimates are presented below.

Explained Variable	Foreign Direct Investment FDI/GDP	New Investment NI/GDP	Reinvested Earnings RE/GDP
Regressors with common coefficient			
Macroeconomic performance index (-1)	0.272	0.273	0.146
Probability	0.003	0.000	0.001
Quality of regulation index (-1)	1.363	1.929	-0.326
Probability	0.109	0.011	0.604
External opening (-1)	0.022	0.032	-0.001
Probability	0.008	0.000	0.734
Foreign debt/NIR (-1)	-0.264	-0.166	-0.029
Probability	0.000	0.013	0.391
Variation in return on 10-year Treasury bills	-0.107	-0.257	0.057
Probability	0.483	0.040	0.488
VIX	-0.022	-0.005	-0.014
Probability	0.100	0.651	0.064
Regressors by country			
Costa Rica capital stock (-1)	-0.088	-0.082	-0.015
Probability	0.0031	0.0083	0.3514
El Salvador capital stock (-1)	-0.236	-0.240	
Probability	0.0033	0.0015	
Guatemala capital stock (-1)	-0.049	-0.021	-0.042
Probability	0.1344	0.4318	0.0957
Honduras capital stock (-1)	0.005	0.060	-0.053
Probability	0.7947	0.0039	0.0111
Nicaragua capital stock (-1)	-0.014	0.010	
Probability	0.5414	0.6602	
Panama capital stock (-1)	0.188	-0.110	0.057
Probability	0.0039	0.0775	0.5787
Dominican Rep. capital stock (-1)	-0.071	-0.057	-0.018
Probability	0.0382	0.0768	0.1111
Fixed effects			
Costa Rica	7.996	3.453	3.184
El Salvador	8.950	7.410	
Guatemala	2.445	-0.526	2.448
Honduras	4.587	-1.364	4.108
Nicaragua	7.172	4.342	
Panama	-6.750	6.090	0.503
Dominican Rep.	6.583	3.479	2.140
Statistics			
R-squared	0.8462	0.8313	0.6464
Mean of the dependent variable	4.9094	3.0162	1.8733
Durbin-Watson statistic	2.2764	2.0945	1.7566
Number of countries	7	7	5
Observations over time	13	13	13
Total observations	89	89	63

Notes: The coefficients in bold are significant, with a level of confidence above 90%. Controlled for fixed effects

⁵⁸ Given the absence of data, we extrapolated the components of FDI for the Dominican Republic between 2014 and 2017, taking account of the historic average composition and using total FDI as published by UNCTAD for that period

BIBLIOGRAPHY

- Abuelafia, E. (2018). "La política migratoria de los EE. UU. y su impacto en el Triángulo Norte de Centroamérica". Washington, D.C.: Banco Interamericano de Desarrollo.
- Adler, G., Djigbenou, M.-L. y Sosa, S. (2014). "Global Financial Shocks and Foreign Asset Repatriation: Do Local Investors Play a Stabilizing Role?" IMF Working Papers 14/60. Washington, D.C.: Fondo Monetario Internacional.
- Adrian, T. y Shin, H.S. (2014). "Procyclical Leverage and Value-at-Risk". *Review of Financial Studies* 27(2): 373-403.
- Akram, Q. F. (2009). "Commodity Prices, Interest Rates, and the Dollar" *Energy Economics*, 31, 838-851.
- Altunbas, Y., Gambacorta, L. y Marquéz-Ibáñez, D. (2010). "Does Monetary Policy Affect Bank Risk-Taking?". Working Paper No. 1166. Fráncfort: Banco Central Europeo.
- Banco Central de Reserva del Perú (2017). *Reporte de Inflación*. Diciembre de 2017. Lima: Banco Central de Reserva del Perú.
- Banco Mundial (2012). *Global Monitoring Report 2012 - Food Prices, Nutrition, and the Millennium Development Goals*. Washington, D.C.: Banco Mundial.
- Banco Mundial (2014). *El alto precio de los alimentos. respuestas de América Latina y el Caribe a una nueva normalidad*. Washington, D.C.: Banco Mundial.
- Banco Mundial (2018). *Inflation in Emerging and Developing Economies. Evolution, Drivers and Policies*. Washington, D.C.: Banco Mundial.
- Bannister, G., Gardberg, M. y Turunen, J. (2018). "Dollarization and Financial Development" IMF Working Papers 18/200, Washington, D.C.: Fondo Monetario Internacional.
- Bekkers, E., Brockmeier, M., Fancois, J. y Yang, F. (2013). "Pass Through, Food Prices and Food Security". GTAP Working Paper 6391. West Lafayette: Purdue University.
- Bekkers, E., Brockmeier, M., Fancois, J. y Yang, F. (2013). "Pass Through, Food Prices and Food Security". GTAP Working Paper 6391. West Lafayette: Purdue University.
- Bellemare, M. (2014). "Rising Food Prices, Food Price Volatility, and Political Unrest". *American Journal of Agricultural Economics*, 97, 1-21.
- Bernanke, B. y Gertler, M. (1989). "Agency Costs, Net Worth, and Business Fluctuations". *American Economic Review* 79(1): 14-31.
- BID (2017). *Cuando los vientos a favor se agotan: oportunidades para fomentar el crecimiento inclusivo en Centroamérica y República Dominicana*. Washington D.C.: Banco Interamericano de Desarrollo.
- BID (2018). *Crecimiento Inclusivo: retos y oportunidades para Centroamérica y República Dominicana*. Washington D.C.: Banco Interamericano de Desarrollo.
- Boateng, A., Hua, X., Nissar, S. y J. Wu (2015). "Examining the evidence of inward FDI: Evidence from Norway". *Economic Modelling* 47 (2015): 118-127. Recuperado de <http://dx.doi.org/10.1016/j.econmod.2015.02.018>
- Calvo, G. A., Izquierdo, A. y Loo-Kung, R. (2012). "Optimal holdings of international reserves: self-insurance against sudden stop" (No. w18219). *National Bureau of Economic Research*.

Cavallo, E. A. y Powell, A. (2018). *A Mandate to Grow: Latin American and Caribbean Macroeconomic Report*. Washington D.C.: Banco Interamericano de Desarrollo.

Cavallo, E., Izquierdo, A. y León-Díaz, J. J. (2017). "Domestic Antidotes to Sudden Stops". IDB Working Paper Series No. IDB-WP-851. Washington D.C.: Banco Interamericano de Desarrollo.

Cecchetti, S. y Moessner, R. (2008). "Commodity prices and inflation dynamics". *BIS Quarterly Review*, 55-66. Basilea: Bank for International Settlements.

CEPAL (2013). *Impactos potenciales del cambio climático sobre los granos básicos en Centroamérica*. Ciudad de México: CEPAL.

CEPAL (2017). *Seguridad alimentaria y nutricional en Centroamérica y la República Dominicana. Explorando los retos con una perspectiva sistémica*. Ciudad de México: CEPAL.

Cifuentes, R. y Jara, A. (2014). "Facing Volatile Capital Flows: The Role of Exchange Rate Flexibility and Foreign Assets". Documento de trabajo 742. Banco Central de Chile.

Dewbree J. (2008). "High food commodity prices: will they stay? Who will pay?" *The Journal of International Association of Agricultural Economists*, 39, 393-403.

Dichter y Neira (2016). Encuesta de Opinión Pública de julio de 2016. pp. 21. Disponible en: <http://www.dichter-neira.com/wp-content/uploads/2016/07/Resultados-DNOP-julio-2016-Versi%C3%B3n-Final-con-articulo-1.pdf>

Druck, P., Magud, N. E. y Mariscal, R. (2017). "Collateral Damage: Dollar Strength and Emerging Markets' Growth". Washington D.C.: Fondo Monetario Internacional.

Eickmeier, S., Gambacorta, L. y Hofmann, B. (2014). "Understanding Global Liquidity". *European Economic Review* 68, 1-18. <http://dx.doi.org/10.1016/j.eurocorev.2014.01.015>.

FAO (2012). *Estudio de caracterización del Corredor Seco Centroamericano*. Tegucigalpa: FAO.

FAO (2014). "Impacts of foreign agricultural investment on developing countries: Evidence from case studies". Research Working Paper No. 47. Roma: FAO.

FED (2014). "Monetary Policy Report". Board of Governors of the Federal Reserve System. Febrero de 2014: 28-30.

Ferruci, G., Jiménez-Rodríguez, R. y Onorante, L. (2010). "Food price pass-through in the Euro Area". Working paper No. 1168. Fráncfort: Banco Central Europeo.

Fondo Monetario Internacional (2008). *Food and Fuel Prices – Recent Developments, Macroeconomic Impact, and Policy Responses. An Update*. Septiembre de 2008. Washington, D.C.: Fondo Monetario Internacional.

Fondo Monetario Internacional (2018). *World Economic Outlook*-Octubre de 2018. Washington, D.C.: Fondo Monetario Internacional.

Forbes, K. J. y Warnock, F. E. (2012). "Capital flow waves: Surges, stops, flight, and retrenchment". *Journal of International Economics*, Elsevier, 88(2): 235-251.

Fratzscher, M. (2011). "Capital flows: push versus pull factors and the global financial crisis". Working Paper No. 1364. Fráncfort: Banco Central Europeo.

Frenkel, J. (1986). "Expectations and Commodity Price Dynamics: the Overshooting Model," *Journal of Agricultural Economics*, 68 (2): 344-348.

Furceri, D., Loungani, P., Simon, J. y Wachter, S. (2015). "Global Food Prices and Domestic Inflation: Some Cross-Country Evidence". IMF Working paper 15/133. Washington, D.C.: Fondo Monetario Internacional.

- Ghosh, A. R., Qureshi, M. S., Kim, J. I. y Zaldueño, J. (2014). "Surges". *Journal of International Economics*, 92(2):266-285.
- Giannetti, M. y Laeven, L. (2012). "Flight Home, Flight Abroad, and International Credit Cycles." *American Economic Review*, 102 (3): 219-24.
- Guarata, N. y Pagliacci, C. (2017). "Understanding financial fluctuations and their relation to macroeconomic stability". IDB Working paper series no. IDB Working Paper 799. Washington D.C.: Banco Interamericano de Desarrollo.
- Jiménez, G. y Saurina, J. (2006). "Credit Cycles, Credit Risk, and Prudential Regulation". *International Journal of Central Banking*.
- Kiyotaki, N. y Moore, J. (1997). "Credit Cycles". *Journal of Political Economy* 105(2): 211-248.
- Lagi, M., Bertrand, K. y Bar-Yam, Y. (2011). "The Food Crises and Political Instability in North Africa and the Middle East". Agosto 2011. Cambridge: New England Complex Systems Institute.
- López-Marmolejo, A. y D. Ventosa-Santaulària (2018). "Why Does the Peso Depreciate against the Dollar? The Role of Productivity Differentials". *Economic Modelling*. <http://dx.doi.org/10.1016/j.econmod.2018.11.004>
- Lucke, N. y Eichler, S. (2016). "Foreign direct investment: the role of institutional and cultural determinants". *Applied Economics*, 48(11): 935-956. <http://dx.doi.org/10.1080/00036846.2015.1090551>
- Lundan, S. (2006). "Reinvested earnings as a component of FDI: An analytical review of the determinants of reinvestment". *Transnational Corporations*, 15(3): 35-66.
- Martin, W. e Ivanic, M. (2016). "Food Price Changes, Price Insulation, and Their Impacts on Global and Domestic Poverty". En *Food Price Volatility and Its Implications for Food Security and Policy* (101-113). Washington D.C.: SpringerOpen.
- Polat, B. (2017). "Determinants of Reinvested Earnings as a component of Foreign Direct Investment". *Knowledge Management Research and Practice* 6(1): 24-45.
- Rubio-Ramírez, J.F., Waggoner, D.F. y Tao Zha (2010). "Structural Vector Autoregressions: Theory of Identification and Algorithms for Inference". *Review of Economic Studies* 77(2): 665-696. <http://dx.doi.org/10.1111/j.1467-937X.2009.00578.x>
- Sánchez-Martín, M, Arce R. y Escribano, G. (2014). "Do changes in the rule of game affect FDI flows in Latin America. A look at the macroeconomic, institutional and regional integrations determinants of FDI". *European Journal of Political Economy* 34(2014): 279-299. <http://dx.doi.org/10.1016/j.ejpoleco.2014.02.001>
- SECMCA (2018). *Informe Macroeconómico Regional 2017*. Mayo de 2018. Ciudad de Guatemala: SECMCA.
- UNEP (2016). "ERISC Phase II: How food prices link environmental constraints to sovereign credit risk". Mayo de 2016. Ginebra: UNEP.
- United Nations Conference on Trade and Development (2018). "World Investment Report 2018: Investment and New Industrial Policies". Génova: Naciones Unidas.
- Walsh, J. y Yu, J. (2010). "Determinants of Foreign Direct Investment: A Sectoral and Institutional Approach". IMF Working Paper 10/187. Washington D.C.: Fondo Monetario Internacional.



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EXTERNAL CHALLENGES, INTERNAL STRENGTHS

