Partners or Creditors?

Attracting foreign investment and productive development to Central America and Dominican Republic

Editors:

Sebastián Auguste,
Mario Cuevas y
Osmel Manzano

IDB

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Foreword

The countries of the region are beginning to emerge from a period dominated by the international financial crisis and its legacies and are glimpsing a more favorable economic scenario. The improved environment spurs optimism, but also provides an opportune moment to prepare for the challenges of the future. External financial conditions have allowed Central American countries to attract unprecedented levels of investment. But this has also proven a perverse incentive to put off necessary adjustments to government policies.

Promotion of foreign direct investment has been a central goal of economic policy in Central America, Panama and Dominican Republic for the last twenty years. It has been implemented mainly through the provision of fiscal benefits, whose effectiveness is now debated. This publication examines the importance of foreign direct investment as a source of financing for the external deficit and as a promoter of economic growth. It reviews the findings of international academic research and evaluates the efficacy of fiscal incentives to attract investment, and its impact on development. In addition, the book examines investment promotion policies from the viewpoint of the Investment Promotion Agencies which were created alongside fiscal incentive policies. Finally it underlines the importance of reorienting investment attraction policy, through the adoption of instruments which complement productive development policies, with the ultimate goal of generating positive spillovers in the entire economy.

This book seeks to spur dialogue and the rethinking of investment attraction policies in Central America, Panama and Dominican Republic. The improved environment and the imminent need to adapt the free trade zones to an evolving framework set by the WTO, provides an opportunity to renew the approaches

employed to attract investment to the region, thereby facilitating an acceleration in economic growth, the creation of more and better jobs, and an improvement in social conditions.

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Introduction

Osmel Manzano and Sebastián Auguste

Foreign direct investment (FDI) has played a very important role in the region[1] analyzed in this publication, both from the point of view of job creation and growth, and from that of external macroeconomic equilibrium, since FDI helps to finance the current account. For governments of the region, FDI promotion has been a priority policy goal for the last twenty years and they have put in place fiscal benefits, among other measures, to attract more FDI. The investment flow has made growth in employment and development possible in an outward-looking growth strategy, a model which was consolidated in the 1990s and allied in general to structural reforms and greater deregulation and economic opening.

The model, followed for the past three decades, seems to have been fruitful in attracting FDI. For the eight countries together—Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama and Dominican Republic—, FDI reached US$ 12.7 billion in 2013, the highest figure in history and four times more than in 2000 and 23 times more than in 1990. This external investment currently represents almost 5 percentage points of annual regional GDP and 27% of gross fixed capital investment. It's notable that in the 1990s it represented just 1.3% of GDP.

The globalization of the 1990s and of the first decade of the new millennium accelerated the flows of FDI globally, especially in developing countries. The latter have gained more weight in the total and in 2013 exceeded the share of developed countries for the first time. In the region FDI grew still more, gaining share in global flows and even in the flows that headed to Latin America. In the 1990s the region analyzed here represented on average 0.27% of FDI at global level, 1.6% of the FDI

[1] The region includes Central America, Panama and Dominican Republic.

directed to developing countries and 6.9% of the FDI received by Latin America. In the last two years the region represented 0.9%, 1.65% and 7.1%, respectively. In an international context in which FDI collapsed at the time of the financial crisis and has still not recovered its pre-crisis level, the region was able to capture more funds and to gain share, especially in recent years, although a great part of this investment comprised of mergers and acquisitions by developed country multinational firms which were restructuring and reducing their stakes in the region. This has raised a question mark about how FDI will perform in future, above all if the region's tendency to fall into a current account deficit is considered.

There are no arguments about the importance of FDI in the region. It has financed major works and generated fresh exports. But there is debate over whether it has realized its potential in terms of increasing economic growth—and whether the benefits that have spilled over into the countries of the zone warrant the FDI subsidies that have been granted.

The present book analyzes in depth the state of play with FDI in the region. In Chapter 1, Osmel Manzano examines the importance that FDI has for the countries of the region as a source of financing for the current account and reflects on what the considerations should be for the future.

Chapter 2, written by Laura Alfaro, analyzes and reviews the main findings of international economic research on the impact of FDI on growth and the main factors which attract it. The evidence of the chapter is that FDI does not necessarily have a positive impact on the recipient economy, and FDI's benefits, far from being established fact, are not guaranteed and depend on complementary factors which are often not present in the region.

Chapter 3, by Sebastián Auguste, analyzes the recent evolution of FDI in the world and in the region in particular, where the good performance of recent years stands out, with strong growth of FDI in the services sector and a smaller weight in manufactures. In addition, multinationals of Latin origin have become increasingly important, displacing Europe as the second source of FDI financing in the region and placing themselves very close to what the United States and Canada together supply.

Chapter 4 studies the always controversial effectiveness of fiscal incentives in the free zones, which are a tool the region has used intensively to promote FDI. It has not been simple to gauge the efficiency of these incentives. Technical difficulties stand in the way of a scientifically rigorous proof, leaving in the end only partial methods. In this chapter Artana and Templado follow an innovative technical approach, based on firm level data, which brings fresh evidence. Once again, no definitive verdict is found, although whether the free zones have unequivocally had a net positive impact on the development of economies of the region is called into question.

In Chapter 5, Adolfo Taylhardat studies FDI promotion policies, putting special emphasis on the Investment Promotion Agencies (IPA). Through surveys and cautious information gathering, he analyzes the functioning of the IPA of the region and their performance relative to that of leading agencies in the world. The chapter shows that many of the countries of the region have performed quite acceptably, although there are some elements which must be improved.

Finally, in Chapter 6, Cuevas, Manzano and Porto present the prospects for FDI attraction after the sunset of strategies centered on offering fiscal incentives. Everything points to the need for a new strategy to achieve sustained growth in investment based on creating new skills and capacities, new rules of the game, and an institutional design engaged in the goal of promoting investment. This could be achieved through instruments designed to harmonize with and complement productive development policies, so that FDI which benefits from incentives has real potential to create positive spillovers for the rest of the economy.

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1

The importance of foreign direct investment in the macroeconomy of Central America, Dominican Republic and Panama

Osmel Manzano

Central America has run a structural current account deficit for the past thirty years. As can be seen in the graph below, this deficit has measured, on average, 5.8 percent of GDP. This tendency differs from that of the larger countries of Latin America.[1] As can be seen in Graph 1.1, both groups of countries had similar deficits in the 1980s and, after the debt crisis at the end of that decade, both continued to run deficits, though that of the larger countries was smaller. But subsequently, with the new cycle of high prices for primary products, the larger countries of Latin America began to record a surplus while the countries of Central America, Panama and the Dominican Republic continued to record substantial current account deficits.

From the economic point of view, to record current account deficits is not negative in itself, especially in developing countries. Theoretically, these are growing countries which are accumulating capital and therefore they can have an imbalance between domestic savings and investment. Consequently, the important thing is to analyze whether the deficits, and their financing, are sustainable or not. In this regard, foreign direct investment (FDI) plays an important role. The current account balance, in the larger countries of Latin America as well as in the sub-region, after various crises, converges on the level of foreign direct investment (see Graph 1.1). In the debt crisis of the 1980s and the Asian crisis

[1] The large countries of Latin America (LAC-7) are Argentina, Brazil, Chile, Colombia, Mexico, Peru and the Bolivarian Republic of Venezuela.

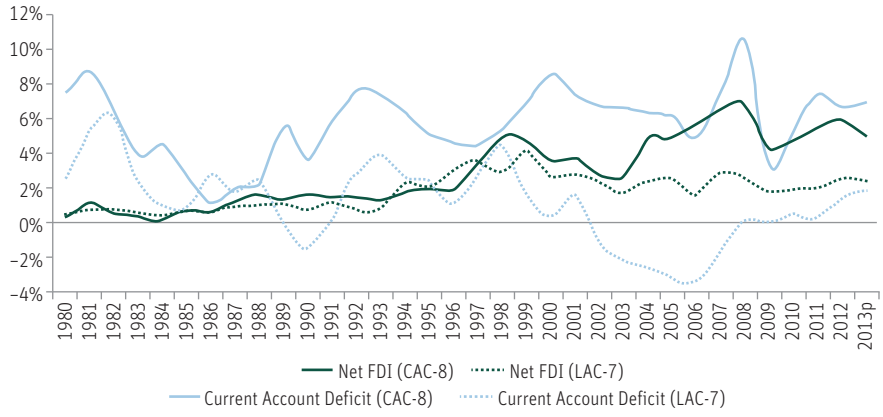
of the 1990s and the U.S. financial crisis of the last decade, the current account deficit diminishes until it is financed in its totality by foreign direct investment, with the exception of the most recent financial crisis in which the larger countries of Latin America were already recording a surplus.

This phenomenon reflects the fact that when these crises occur short-term financial flows contract and, as a result, the current account has to adjust. These adjustments tend to have undesirable impacts, in that they imply significant changes in relative prices and in the levels of economic activity. In this regard, FDI is a more stable form of financing and to a degree acts as a brake on the extent of adjustment in the current account (see Graph 1.1).

In the graph it is apparent that the region has been attracting more FDI inflows and, from 2003, these flows have continued growing as a proportion of the economies, compared to the case of larger Latin American countries. Yet, despite attracting higher FDI inflows, the current account has remained in deficit. It's therefore important to consider the possibilities for a new adjustment in the current account and the continuity of FDI flows.

In this section the recent macroeconomic performance of the region will be surveyed. Following that the chapter focuses on the external sector, analyzing, in the first place, the current account and then its financing. The chapter concludes with some final reflections.

GRAPH 1.1 **Current account and foreign direct investment (% of GDP)**



Source: IMF WEO (October 2014).

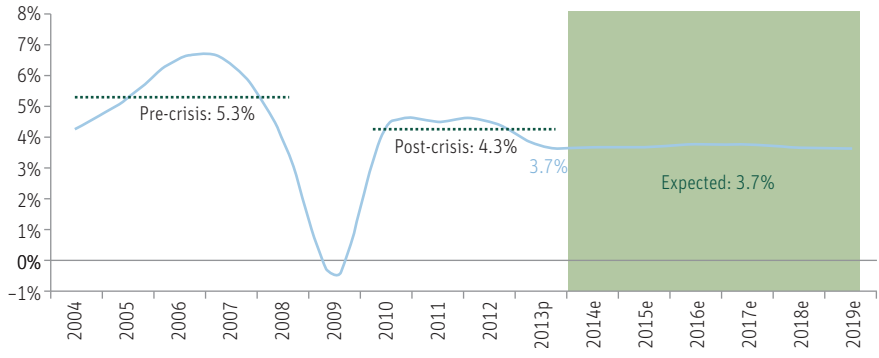
The recent performance of the economy of Central America, Panama and Dominican Republic

The region of Central America, the Dominican Republic and Panama is at a significant point in economic policy terms. After the international financial crisis the region would seem to be converging on a new equilibrium of low growth with substantial deficits in the fiscal and external accounts.

Following the economic and financial crisis, the countries have returned to growth but at lower rates than those recorded before the crisis. Preliminary figures for 2014 show average regional growth in growth domestic product (GDP) of 3.7%, and in the next six years a similar pace of growth is forecast on average (see Graph 1.2). This figure is the same as the historical (1980–2013) average for growth in the region of 3.7%, which implies real per capita growth of 1.5%, not enough to draw closer to per capita income in developed countries.

This low growth environment makes fiscal deficits more difficult to address. In spite of the tax reforms which took place some years ago, Central American governments still have not achieved the levels of tax collection that prevailed before the crisis. To this must be added an important increase in public spending as a reaction to the global economic environment. Public spending has risen from an average of 21% of GDP in 2004–2008, the period prior to the crisis, to 23% of GDP at the end of 2013, with the biggest contribution coming from an increase in its rigid component. In these circumstances, at the end of 2013, the average fiscal deficit of the region

GRAPH 1.2 **Annual average GDP growth (%): Central America, Dominican Republic and Panama**



Source: IMF WEO (October 2014).

rose to 3.5% of GDP, equivalent to 1.9 percentage points higher than the average level in the period 2004–2008.[2]

Another source of macroeconomic vulnerability faced by Central America, Dominican Republic and Panama is the region's external deficit. The marked opening of the countries of the region means that they are vulnerable to shocks in international markets, particularly in the case of food and oil prices. Between the years 2001 and 2013, the region ran an average current account deficit of 6.6% of GDP (with the biggest deficit, of 10.5% of GDP, in 2008).[3]

The running of these deficits was possible given the expansive monetary policy of developed countries which created an international environment characterized by excess liquidity. Therefore the region has evolved towards financing the external deficit with a greater volume of external debt (particularly with a maturity greater than five years).[4] Equally, the availability of liquidity has permitted financing of the current account deficit in a certain manner: while FDI grew, it did not grow enough to maintain its relative importance in financing of the current account.

The present environment brings opportunities and dangers. An eventual improvement in the economies of developed countries, especially the United States, would imply greater demand for the region's exports. In addition, if the world moves towards an equilibrium of lower prices for primary products, the region's import expenditures could be lower. However, this improvement in the economic activity of developed countries would pave the way for the withdrawal of monetary stimulus and, in consequence, the risk of possible increases in global interest rates, creating doubts about the sustainability of the region's public debt. In this environment the region faces great challenges, such as how to respond to the problem of financing the current account deficit in coming years and how to address a possible 'sudden stop' in the inflow of capital, which has affected the region in the past. At the moment the region has a window of opportunity to put in place gradual reforms that will prepare countries faced with a highly uncertain international environment.

Macroeconomic literature affirms that the dollarization of domestic liabilities increases the probability that a sudden drop in capital inflows may occur, given currency disparities in the composition of the debt, highlighting the reduced capacity

[2] As is analyzed in Izquierdo and Manzano (2012), changes in the price of primary products have relatively small impacts. Consequently if the global economy moves towards an equilibrium of low primary product prices, the fiscal gain is reduced.

[3] In 2008, Nicaragua, Honduras and Panama stood out in the entire region in reaching current account deficits of 17.7%, 15.4% and 10.9% of GDP, respectively.

[4] Although the proportion of public debt in Costa Rica, Honduras, Nicaragua and Dominican Republic is composed of a range of between 40% and 50% de less than five year debt, the region counts, on average, with practically 35% medium and long-term debt.

TABLE 1.1 **Initial conditions of vulnerability to *sudden stops***

	1997			2007			2013		
Country	DPD	CAD	Fiscal Deficit	DPD	CAD	Fiscal Deficit	DPD	CAD	Fiscal Deficit
Belize	11.1%	4.9%	2.7%	4.2%	4.0%	0.7%	3.9%	4.5%	2.3%
Costa Rica	6.6%	3.6%	2.7%	17.0%	6.3%	–0.3%	21.0%	5.1%	5.6%
El Salvador	N/A	0.9%	1.8%	N/A	6.1%	1.3%	N/A	6.5%	3.7%
Guatemala	4.1%	3.9%	0.8%	11.1%	5.2%	1.4%	16.3%	2.7%	2.1%
Honduras	13.1%	3.1%	1.0%	20.2%	9.1%	1.6%	19.5%	9.0%	7.6%
Nicaragua	17.2%	19.2%	0.6%	23.6%	16.5%	–1.6%	25.1%	11.4%	0.6%
Panama	N/A	–0.7%	0.8%	N/A	8.0%	–3.4%	N/A	11.9%	3.0%
Dominican Rep.	1.9%	0.8%	1.1%	5.5%	5.0%	–0.1%	9.2%	4.0%	3.6%
CAC-8	9.0%	4.5%	1.4%	13.6%	7.5%	–0.1%	15.8%	6.9%	3.5%
LAC-7	9.8%	2.8%	1.7%	6.8%	–1.5%	–0.3%	8.0%	1.8%	3.7%

Sources: Central Banks, Secretaría Ejecutiva del Consejo Monetario Centroamericano, E.L. Yeyati Database (2010), FMI PEM (2014).
Note: * DPD = Dollarization of domestic liabilities. CAD = Current account deficit. N/A = Not applicable. CAC-8: Central America, Dominican Republic and Panama. LAC-7: Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.

to take on longer maturity debt in local currency.[5] Similarly, studies such as that by Efremidze (2009) and Efremidze y Tomohara (2011) suggest that a worsening of the double deficits, fiscal and in the current account, can generate exchange rate pressures leading to devaluation, so that investors tend to withdraw their capital from the country. Taking account of these indicators, it can be seen that there is currently greater fragility in the region of Central America, Dominican Republic and Panama in terms of the dollarization of domestic liabilities and a larger fiscal deficit than at the beginning of the crisis of 2008, and a general situation that is more serious than that prior to the crisis of 1998 (see Table 1.1). In addition, the credit extended in foreign currency by other depositary institutions, distinct from the Central Bank, show an increase in the region during the last two years (reaching an estimated level close to 19%), which highlights the reduced ability of the region to stabilize its net external assets.

Comparing with other Latin American countries (represented in LAC-7), it can be seen that the current situation is more fragile for Central America, which was not so clearly the case in 1997. Consequently it's essential to reflect on the action needed

[5] See, for example, Calvo *et al.* (2008) y Caner *et al.* (2009).

to confront possible external shocks as well as on the effects that a slowdown in quantitative stimulus by the United States would have on external financing flows to the region. Now the possibility of a reversal in capital flows could threaten the room for maneuver achieved by the region in terms of financial leverage; in addition, in broad terms the fiscal and current account conditions of these countries have deteriorated compared to their position at the time of former financial crises.

Previous IDB studies have discussed the fiscal situation in detail.[6] Faced with unfavorable economic environments, it's ideal that immediate fiscal responses are effected through flexible expenditures.[7] However, the evidence confirms that in response to the financial crisis of 2008, the countries of the region implemented spending that was relatively rigid, that's to say that they mostly increased wages and current transfers. With the exception of Panama, on average 80% of the increase in fiscal spending in the region between 2007 and 2010 was of an inflexible nature, at a time when investment spending was lower. Although the fiscal response cushioned the negative impacts of the crisis, it left the region with a level of spending that was difficult to bring back down and without a clear exit strategy.

The current fiscal scenario, together with the possible improvement in developed countries, creates the need to implement a fiscal adjustment process in order to regain room for counter-cyclical policy and to guarantee debt sustainability. This does not only imply generating higher tax revenues but also achieving an efficient targeting and redistribution of fiscal spending in the near future. This points to the need for careful planning of an adjustment which considers the impacts on the public finances and the quality of the supply of public services. At the same time the adjustment needs to be adapted to the circumstances of each country, improving institutional arrangements and bringing more transparency to spending, reducing its rigid components and improving its targeting in order not to reduce social welfare.[8]

Similarly the position of financial markets has been analyzed. Given the sudden absence of financing, the region reduced abruptly its external deficit during the last financial crisis, exposing the inadequacy of its financial regulation, whose aim is to assure the solidity of individual financial institutions. Given the potential risk of being exposed to 'sudden stops' and the positive correlation between financial flows and credit trends, it has been suggested that it might be beneficial for the region to introduce or deepen macro-prudential measures such as dynamic contra-cyclical

[6] See, for example, Izquierdo and Manzano (2012); Izquierdo *et al.* (2013); Cuevas *et al.* (2014); and Gutiérrez y Manzano (2014).

[7] Easily removed once the negative impact dissipates. In principle, that is the function of the so-called automatic stabilizers (scarce instruments in the region).

[8] Some estimates indicate that the potential efficiency gains through better targeting of spending are equivalent to approximately 2% of regional GDP (equal to 9% of central spending).

provisions and reserve requirements. Even then these instruments will not be fully effective by themselves. The greatest advantage would be obtained if the region had at its disposal timely and adequate information on the loan books of the banks and could adopt complementary measures to reduce bank incentives to retain liquidity in circumstances in which they ought to channel it into lending. For now it remains crucial that countries in the region retain access to international sources of liquidity as a preventative measure.

However, a topic that cannot be ignored is the position of the external sector. As was mentioned previously, the region tends to run large current account deficits which traditionally were financed with FDI. The state of the current account and what financing can be expected requires consideration.

The dynamics of the current account

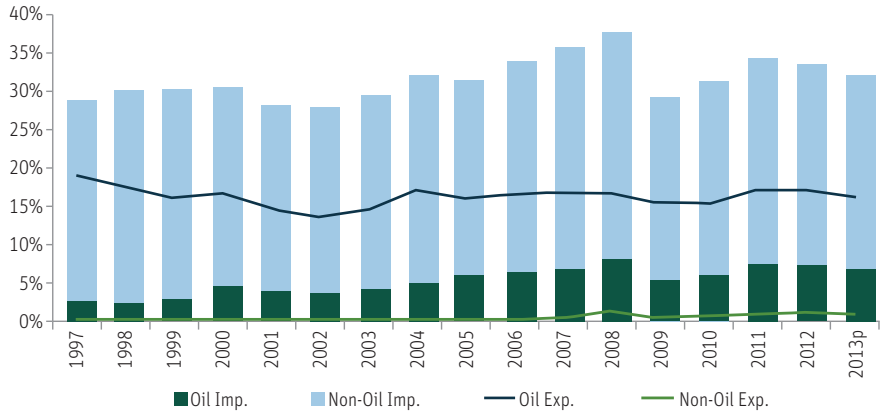
One of the factors which explain the negative balance in the current account, which in 2013 averaged 6.9% of regional GDP, is the deficit in the goods trade accounts; this deficit has gone from representing 11.7% of regional GDP in the year previous to the financial crisis of 1998 to 20.8% of GDP in 2007 and 17.4% of GDP in 2013. This has happened because, between 1997 and 2013, the value of the region's goods exports rose by only 70% of the growth seen in the value of its goods' imports.

In the trade balance primary goods play a predominant role which leaves the region highly exposed to volatility in the international markets for these goods. In this regard, the rising trend in oil imports stands out; it has risen from representing, on average, 2.8% of regional GDP in 1997 (7.9% de total import spending), to a current level of as much as 7% of regional GDP (17.9% of regional imports). For its part, the region's goods trade earnings are in non-petroleum exports, which in 2013 were equivalent to 15.5% of regional GDP. In particular, in the last decade, the region has continued to derive more than two thirds of its trade earnings from the sale of primary products (which account for 42%) and basic manufactures (which account for 26%). Consequently, if the world moves towards a new equilibrium of lower primary product prices, the effects on the region will be mixed, given that there will be an impact on both export earnings and import expenditures.[9]

However, the fact that income flows from remittances have not recovered to the levels seen prior to the crisis has also affected the external balance. Usually, the transfers recorded as earnings from remittances go some way to offsetting the trade balance. But since the financial crisis of the end of the 1990s until 2013 it's estimated that approximately 9.8 percentage points of the weight of the trade

[9] This scenario has been strengthened by the marked fall in the oil price since the middle of 2014.

GRAPH 1.3 **Oil and non-oil trade balance (% of GDP): Central America, Dominican Republic and Panama**



Source: IMF WEO (October 2014).

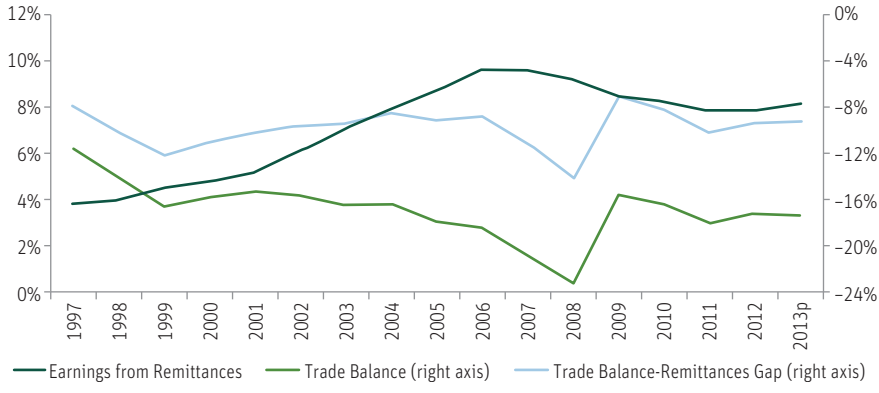
balance on regional GDP has not been compensated by these earnings. This trend has been practically unchanged in recent times, except in the midst of the 2008 crisis.

On the other hand, earnings from remittances have indeed increased. They have risen from representing 3.8% of regional GDP in 2009 to 8.1% in 2013. This demonstrates that the increase in the trade balance has been absorbed to a considerable degree by this item. Given the still important dependency on remittance transfers, the fragility of the region's external accounts would be exacerbated if in coming years less dynamism became evident in the employment of Hispanics and Latins in the United States.

Given the situation described above, it's clear that there are grounds for ever greater concern about the lack of dynamism in the composition of the export basket; and this concern is made still more acute by the strong geographical concentration of the region's export destinations (see Cuevas *et al.,* 2014). The degree of complementarity that exists between countries' patterns of export specialization, the size of the destination market, geographical proximity and preferential trade policies, have influenced the export orientation of the region.

For the year 2012, the export share from Central America and Dominican Republic towards countries which are members of the North American Free Trade Agreement (Canada, the United States and Mexico) represented around 48% of total exports; intra-regional exports accounted for 24% of the total and 12.4% del total went to the European Union. Beyond the issue of trade concentration, an aggravating factor is that the main export destinations are markets in relative decline, since, even in the period prior to the crisis, imports from these markets (the United States, the

GRAPH 1.4 **Trade balance and earnings from remittances (% of GDP): Central America, Dominican Republic and Panama**



Source: IMF WEO (October 2014).

European Union and the region itself) grew at an annual average rate of 15% which was lower than the global pace. This implied diminishing global market share for the region. Given this reality, it is noteworthy that the opportunities offered by trade treaties signed by Central American countries in recent years have not yet been fully exploited; and the design of a new trade map in which the region integrates itself more profoundly with markets in Asia and South America would appear pertinent.

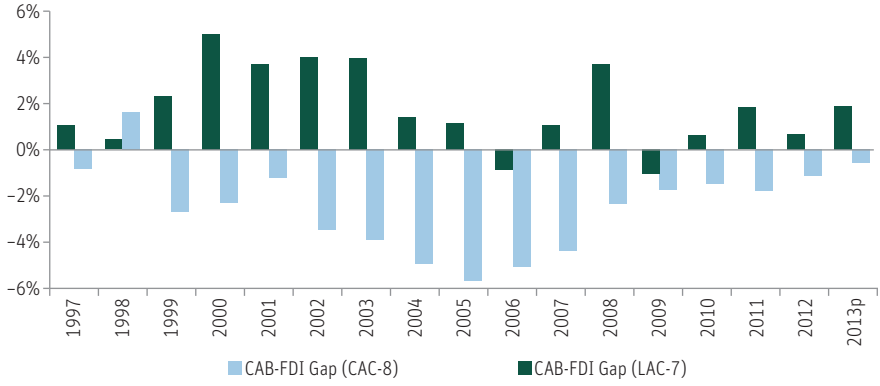
Financing of the current account

For many years and above all when the export-led development model was adopted in the 1980s and with the improvement in the global economy at the beginning of the 1990s, the main source of current account financing for the region was FDI. This in fact suggests the risk of a 'sudden stop' is reduced. If the risk variable of Table 1.1 is recast as the difference between the current account and FDI it can be seen that the gap is smaller (see Graph 1.5).

In 2013, the gap between the current account deficit and FDI increased, reaching a regional average level of 1.9% of GDP compared to the 1% level at the time of the financial crises of 1998 and 2008. In recent years (2010–2013) the gap between the current account deficit and FDI has averaged 1.3% of regional GDP; consequently FDI was able to finance around 80.7% of the external deficit in the period following the crisis. However, this figure is 8.6 percentage points lower than the external deficit financed by FDI before the crisis (between 2004 and 2007).

As a result, Central America, Dominican Republic and Panama find themselves with greater external vulnerability to short-term capital flows compared to the initial

GRAPH 1.5 Current account balance and FDI (gap as a % of GDP)



Source: IMF WEO (October 2014).

years of the former crises when the deficit gap was smaller. Moreover, if the same criteria are applied to the seven largest countries of Latin America (LAC-7), it can be seen that they, on average, can count on FDI that fully offsets the external deficit. Thus Central America has particular characteristics which require special attention and which distinguish the region from the other countries of Latin America.

The widening of the part of the deficit not financed by FDI has tended to complicate the picture for the Central American region compared with other Latin American countries. The vulnerability to short-term capital flows is greater at present, creating dangers of a sudden interruption in capital flows that would be most pronounced in Central America, especially if there were to be an increase in interest rates greater than that recorded in developed countries or if a new global financial crisis were to occur. Just as happened in 2009, developments of this kind could oblige Central American governments to reduce their current account deficits drastically, further weakening regional growth.

In Table 1.2, a reclassification in the external financing position from the period previous to, during the crisis (2006–2009) and after it (2010–2014) can be seen.[10]

[10] The results shown in Table 1.2 derive from an analysis of conglomerates or clusters using data series showing the proportion of the balance in portfolio investments and other investments in the balance of payments on GDP and their volatility. The volatility is measured through the cyclical component given by its observed value minus its trends, using the Hodrick-Prescott filter. In order to obtain the clusters, the first step was to find the relative Euclidian distances between each country and/or group. Then the countries and/or groups were linked with their nearest neighbour. The former was performed recursively until each country had its neighbouring association.

TABLE 1.2 Clusters according to portfolio and other investments, and their volatility

2006–2009			2010–2014		
Clusters	Portfolio and other investments (% GDP)	Volatility (pp)	Clusters	Portfolio and other investments (% GDP)	Volatility (pp)
Belize, Costa Rica, El Salvador, Guatemala, Panama and Dom. Rep.	0.3%	6.0%	Belize, Costa Rica and Panama	–1.8%	4.9%
Honduras and Nicaragua	–5.8%	17.5%	El Salvador, Guatemala, Honduras and Dom. Rep.	2.6%	4.7%
			Nicaragua	6.1%	6.1%

Source: IMF WEO (October 2014).

In 2006–2009, the volatility and short-term investment balance of Honduras and Nicaragua were distinct from that of the other countries of the region (who had a greater similarity in their financial accounts, in that they counted on similar external financing characteristics to offset the impact on current account). Since the crisis changes in the external financing dynamic are clear. In Belize, Costa Rica and Panama there has been on average a reduction in their use of capital inflows, consonant with a lower external deficit in the first two of these countries; however, they still face increased volatility. In the cases of El Salvador, Guatemala, Honduras and Dominican Republic, there continues to be high volatility while they make greater use of their short-term investment accounts, possibly as a result of the fall that they have experienced, on average, in net inward capital transfers. Moreover, it's evident that Nicaragua continues to undergo the greatest volatility and dependency on short-term capital flows, in part because from 2006 to the present day it has run the highest external current account deficit in the region, at 12.6% of GDP, as well because it has a high level of capital transfers and greater concessional resources.

These data show that differences in access to external assets and to the capturing of short-term investment led to a realignment in external debt, bringing particular financing conditions that make a regional response to the deficits more difficult.

For now the entry of capital into Central America, Dominican Republic and Panama has enabled them to achieve a better relationship between their external

reserves and short-term debt (the so-called Guidotti-Greenspan indicator),[11] giving to understand that there are reserves capable of cushioning, to some degree, a withdrawal of short-term foreign capital. (In particular, the region's reserves in 2012 were equal, on average, to 2.9 times the region's short-term debt, excluding Belize).[12] However, this figure for the region is lower than that seen in other Latin American economies such as, for example, Brazil, Colombia, Mexico and Peru, which have sufficient reserves to back up to six times their debt. In other words, there is a certain degree of room for maneuver in the availability of external assets, but this result needs to be interpreted cautiously. These indicators need to be improved and necessary precautions to cope with a possible fall in capital entry must be taken.

On the other hand, the need to understand FDI better is also underlined. Efforts to promote FDI by the region have encountered difficulties that are in no way trivial. The continuous active and passive effort to attract FDI on the part of the countries of the region has been made through tariff reductions, proposals to change guideline regulations, attempts to improve competitiveness, dissemination of local opportunities (channeled through the creation of specialized investment promotion agencies), the signing of free trade treaties (to widen access to markets), tax incentives and the creation of free zones, with the aim of boosting economic growth within a dynamic of integration and leveraging of processes of productive development.

In the first decade of this century intra-regional trade consolidated while opportunities to invest in local markets were created. Relatively more FDI was captured than in the immediately previous period but little is known about the quality and the development impacts of the investment that was attracted. Therefore, in a difficult economic and political environment, and a violent one, it is questionable whether it will be possible to attract FDI on a larger scale, permitting the current account deficit to be offset, as well as demanding higher quality FDI.

The challenges ahead

Beyond the role that FDI plays in the financing of countries' external sector, there is the notion that attracting it contributes to economic growth through stimulus of higher productivity and the development of new physical and human capacity (transfers of new physical capital and investment in human capital, among others). However, FDI has collateral impacts that are not always at all clear. To mention

[11] This indicator establishes that the reserves of a country ought to be at least equivalent to its short-term debt of one year's maturity or less in order to have sufficient reserves to deal with a huge outflow of foreign capital. This began to be seen as a rule when Pablo Guidotti and Alan Greenspan proposed the idea publicly in 1999 (see Greenspan, 1999).

[12] See Gutiérrez y Manzano (2014).

one example, the active promotion of FDI through tax incentives (as in the case of the free zones) continues to be a general practice in the region nowadays but there is evidence that the cost of this mechanism can exceed the value, worth and investment of the recipient businesses; and given the elimination of traditional export promotion incentives in 2015 (within the framework of the World Trade Organization agreements), it's necessary to reflect on the effectiveness of this instrument.

In this context, the countries of the region are obliged to observe the international rules established by the WTO. However, together with the dependence on FDI as an input to maintain the export-led development model, the regional desire to want to offer tariff breaks has created fiscal dangers which create a new challenge. Although the positive effects of FDI could justify the use of tax incentives, the recipient country ceases to collect tax income. In the case of a region where tax collection continues to be insufficient to finance fiscal spending, the incentive schemes to subsidize exports could become quite costly and an increase in the number of incentives applied could lead to a greater erosion of the tax base. Moreover in economies where tax expenditures on income tax are important but where, at the same time, tax burdens are very low, the impact of these fiscal losses is exacerbated.[13] Therefore it is essential that the region begins to give the deserved importance to a model adapted to the new norms which can maximize local synergies (for example, through improving the agencies that promote investment), as well as examining openly the more accurate application of productive development policies.

Reflection on what ought to be the priority from now on to improve competitiveness, achieve growth through FDI and promote productive links, will be a topic of great interest in the near future.[14] Central American countries must begin to take on serious local policies to assure linkages, complementarity and integration along with the attraction of FDI. One option is that the region joins in the wave of the so-called 'multilatinas' (multinationals which originate in Latin America), a phenomenon that has become relevant recently in the generation of FDI flows.[15] What is interesting about the 'multilatinas' is that the evidence suggests that they do not always invest in sectors which benefit from tax incentives (which would seem to imply that they can survive in the new international context), and their investment in sectors with high linkages could generate efficiency gains, with a positive impact on the region's competitiveness. The lag that Central America, Panama and Dominican Republic

[13] For example, see Barreix y Velayos (2012).

[14] This book focuses on the attraction of foreign direct investment and does not consider certain common business practices, such as joint ventures, strategic alliances or franchises.

[15] In the first five year of the decade beginning in 2000, Latin American countries invested more overseas than in the twenty previous years (1980–2000). In the second half of the decade, FDI originating in Latin America tripled (while worldwide it doubled).

suffers where this phenomenon is concerned is an alarm signal; the region should take on the challenge of increasing the flow of FDI coming from them, actors with a significant level of maturity and able to undertake large scale investments.

In this global context, a deeper analysis of the net benefits of FDI must be effected. The principal message is that it is not possible to assume that the attraction of FDI is, in itself, fully advantageous. The empirical evidence suggests that a combination of local and external factors are what finally determine its advantages (see Cuevas *et al.*, 2014; Gutiérrez y Manzano, 2014). Trade opening, the promotion of human capital, the creation of infrastructure, innovation, the development of financial markets and improvement in the business climate must accompany policies to attract FDI. These conditions are under the control of policy-makers who can draw on the recommendations and lessons learned in this topic, and can profit from more accurate information on the steps that need to be taken, given economic expectations. But the region cannot ignore the risk associated with the weakness that developed economies have shown and the drag that the international economic environment is tending to have on small economies.

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Annex

Competitiveness and productive development in Central America, Panama and Dominican Republic

The region faces the need for increasing harmonization and integration in an ever more globalized world. At the same time, economic opening and globalization offer opportunities to promote economic growth and reduce poverty. The adoption of a competitiveness strategy at regional level is essential to take advantage of the opportunities available, so that the efforts of the countries are mutually self-reinforcing. In addition, the approach must be systemic, identifying and promoting factors, which, woven together at social, economic and cultural level, encourage competitiveness. A systemic focus on competitiveness seeks to respond to the crucial question: what type of organizational structure, set of social norms, limits and forms of functioning of the market, State-social relationship and generating conditions of productive efficiency are necessary to encourage competitiveness in the region?

Competitiveness, then, is correlated with a set of factors that determine the level of productivity and which, in turn, establish the level of welfare that can be achieved. This influence occurs through multiple channels, although one of the most prominent is the return on investments in an economy, which is in itself a determining factor of the rhythm of growth. Highly competitive economies tend to grow more rapidly and consequently create the room necessary for a rise in welfare and fall in poverty. It follows from this that the systemic approach to competitiveness has both static and dynamic aspects.

After developing the concept of competitiveness, the challenge of measuring it comes next. The World Economic Forum has developed a competitiveness measurement methodology which makes it possible to follow the evolution of countries through time and at the same time make comparisons between countries. The World Economic Forum's index has twelve pillars which seek to capture the systemic character of competitiveness in its distinct facets. In addition the index puts the said pillars into three groups: (i) those that are considered basic and are associated with the possibility of accumulating factors of production in the economy; (ii) those that affect economic efficiency; and (iii) those which determine sophistication and possibilities for innovation in the economy.

The basic pillars include institutions, infrastructure, the macroeconomic environment, and health and primary education. The drivers of economic efficiency include education and higher education, the efficiency of the goods market, the efficiency of the labor market, the development of the financial market, the degree of technological preparation, and the size of the internal market. Finally, factors for

TABLE A.1.1 Position of the countries of the region in the Global Competitiveness Index of the World Economic Forum

	Global Competitiveness Index	Basic Requirements	Institutions	Infrastructure	Macroeconomic Environment	Health and Primary Education
Panama	48	53	71	40	52	79
Costa Rica	51	62	46	73	93	48
Guatemala	78	84	109	67	64	100
El Salvador	84	80	99	57	100	80
Nicaragua	99	96	114	99	67	95
Honduras	100	107	105	102	123	85
Dominican Republic	101	106	116	98	94	107

	Efficiency Enhancers	Higher Education and Training	Goods Market Efficiency	Labor Market Efficiency	Financial Market Development	Technological Readiness	Market Size
Panama	55	66	41	87	22	53	80
Costa Rica	56	37	52	57	92	40	82
Guatemala	76	103	45	85	45	88	78
El Salvador	96	94	55	125	86	93	90
Nicaragua	118	114	125	108	106	113	102
Honduras	99	100	91	130	59	97	93
Dominican Republic	90	99	94	107	99	84	68

(*continued on next page*)

TABLE A.1.1 **Position of the countries of the region in the Global Competitiveness Index of the World Economic Forum** *(continued)*

	Innovation and Sophistication Factors	Business Sophistication	Innovation
Panama	46	54	40
Costa Rica	35	32	34
Guatemala	62	52	95
El Salvador	45	37	51
Nicaragua	125	129	123
Honduras	70	64	74
Dominican Republic	90	73	103

Source: World Economic Forum (2014).

sophistication and innovation consider the level of sophistication in the business environment and the systems in place for innovation in the public and private sector.

In the countries of the region the general orientation of pro-competitive reforms should be based principally on the application of productive development policies (PDP) of a horizontal nature, using vertical policies only exceptionally. Horizontal PDP are policies that seek to influence the totality of economic activity, without distinguishing between sectors. However, the selective use of vertical PDP which seek to influence pre-determined economic sectors cannot be completely ruled out. This recommendation derives, in part, from the level of institutional development of the countries, since experience indicates that the institutional framework required to implement horizontal policies tends to be simpler and less vulnerable to capture by interest groups than is the case with vertical policies.

Another important finding is related to the deficiencies of public infrastructure in the region. In this regard, two important restrictions are identified: the limitations on fiscal resources and the under-development of local financial markets. The experience with privatization and deregulation showed that private sector involvement in investment and management facilitates infrastructure supply. However, legal and regulatory frameworks are still weak. In addition, authorities are lacking to mobilize funds in order to complete successfully big infrastructure projects.

One area in which there are significant transversal weaknesses in some of the countries of the region is public safety. At times the problem is tackled from a vertical perspective, as in the case of the creation of specialized police forces (for example, the tourism police), and the provision of security services dedicated to special economic zones. However, the theme of security deserves a transversal approach, congruent with the nature of the failure that needs to be solved.

In countries of the region there is also a too restrictive framework for labor market operations; and at least two aspects must be reviewed: costs and flexibility. In addition, the results of PDP related to labor training and the need to strengthen national training systems should be stressed. There are numerous market failures which would justify training policies which, in any case, have as their backdrop the structural weaknesses of the education system.

One of the most common deficiencies in the national competitiveness agendas of countries of the region has been the weakness of institutional mechanisms for investment and export promotion. For example, there is not always an effective coordination forum which can count on the participation of all the pertinent governmental organisms. The need to facilitate coordination between the public and private sectors also stands out, for example to promote identification of opportunities for innovation and reforms. It's also necessary to broaden the vision of the efforts directed to facilitate exports; the narrow view that exporting is simply the final

phase of production must be abandoned since, in reality, the competitiveness of exports depends on the conditions in all phases of production.

A significant aspect that deserves to be emphasized is that the model of maquilas with special tax exemptions is becoming exhausted. Not only have they ceased to be attractive instruments for the more desirable forms of FDI, but also the tax benefit promotion regimes linked to exports have to be revised in line with the conditions demanded by the World Trade Organization (WTO). In any case, the priority from now on should be improving competitiveness in order to achieve growth through attraction of high quality FDI with the potential for productive linkages.

In this regard, the congruence of FDI attraction policy with the general framework of the PDP acquires singular importance. In particular, an innovative measure in the region would be the granting of fiscal incentives only for investment which provokes positive spillovers and productive linkages. The design of new instruments for the promotion of investments would directly attack market failures, such as failures of coordination in the provision of infrastructure or externalities in investment in training, innovation and development. This mechanism rests on a logic by which the objectives are defined in terms of the intended impact of investments (positive spillovers), and then indicators for the objectives are defined as well as a points system which is related to the quantity of benefits to be granted. In this way, the greater the impact of the investment, the greater will be the points' tally and the fiscal benefit eventually granted.

It follows then that a new PDP framework for the region would recognize that there are multiple factors which influence competitiveness, although one of the most prominent is the private and social profitability of investment, as a determinant of the rhythm of economic growth. The central purpose is to accelerate growth in the economy through improvement in competitiveness, creating in this way the necessary space for increased welfare and reduced poverty.

2

Foreign direct investment: effects, complementarities and promotion

Laura Alfaro[1]

Introduction

Throughout its history, foreign direct investment in the region of Central America and the Dominican Republic has followed a series of cycles driven by a combination of external and internal factors (*push and pull factors*), advantages provided by geography and locality, and a variety of strategies and development models. As will be analyzed in chapter 3 of the current publication, foreign direct investment in the region was initially associated with exploitation of geographical advantages linked to agricultural production and the extraction of minerals, with multinationals behaving as enclaves. Subsequently, towards the middle of the 20th century, the region embarked on a period of import substitution in which FDI headed into textiles, food and drinks, and light industry. After the debt crisis of the 1980s, a new cycle began with an export-led model as the driver. Central American countries created various mechanisms with the aim of attracting investments and promoting exports of manufactured goods with tax and financial incentives, often via the creation of industrial free zones.[2]

In the region, just as in many other parts of the world, FDI was seen as an engine of growth that was almost guaranteed to drive forward the development of

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[2] See Economic Commission for Latin America and the Caribbean (2010).

the recipient country.[3] It was expected that a transfer of knowledge and know-how would occur between domestic and foreign companies that would bring increases in productivity, technology transfer, new organizational models and improvements in both management and technical skills.[4] Foreign investment, by complementing domestic savings, could create employment, contribute to export diversification, transform the productive structure of the economy and improve technology levels and the methods of production, thereby nurturing growth, which, in its turn, would help to foment development.

These supposed positive externalities led many governments, in developed countries as well as developing ones, to design policies that would attract FDI. They sought to reduce barriers to the entry of FDI and offered special incentives, while also encouraging relationships between multinational corporations (MNCs) and local companies.[5]

Despite this positive vision of FDI among policy-makers, its impact in recipient countries is hard to evaluate. Indeed, empirical evidence that FDI generates the hoped for positive effects is not conclusive, at either the micro or the macro level.[6] In his analysis of the literature, Hanson (2001) argues that the evidence that FDI generates positive effects in recipient countries is significantly weak. In their reading of the literature at the microeconomic level, Görg and Greenaway (2004) conclude that the externalities produced by foreign enterprises on domestic ones are, in their great majority, negative. In an empirical investigation at the macro level, Lipsey (2002) points out that there is no consistent relationship between the volume of the flow of FDI and the level of GDP or economic growth.

Blomström and Kokko (2003) arrived at the conclusion that the secondary effects are not automatic, given that local conditions exercise an important influence on the reception of technology and the skills of the foreign enterprises. Alfaro *et al.* (2010) also found conditional effects, which shows that not all countries fulfill the necessary conditions to profit from the potential benefits of FDI. The size of the externalities derives from the existence of foreign enterprises depends on the

[3] The academic literature on FDI is vast and has been surveyed often. See Markusen (1995), Caves (1996), Blomström and Kokko (1998), Hanson (2001), Lipsey (2002), Markusen (2002), Alfaro and Rodríguez-Clare (2004), Barba-Navaretti and Venables (2004), Görg and Greenaway (2004), Moran (2007), Alfaro, Kalemli-Ozcan, and Sayek (2009), Harrison and Rodríguez-Clare (2010), Kose *et al*. (2009, 2010), and Alfaro and Johnson (2012) for studies on determinants, effects, channels of transmission and empirical findings. See also Yeaple (2013) and Antras and Yeaple (2014) for recent revisions on multinational enterprises.

[4] See Caves (1996) and Blomström and Kokko (1998) for studies on technology transfer.

[5] In the debate on incentives to attract foreign direct investment, consult Hanson (2001) and Blomström and Kokko (2003).

[6] See Section 3 for a general overview of the empirical literature.

capacity of national enterprises to respond to the new competitors, new technologies and new competition. These conditions are, in their turn, determined to a certain degree by the characteristics of the country, such as the levels of human capital and economic development. Deficiencies in these areas can reduce the capacity of national industries to absorb new technologies and to respond to the challenges and opportunities presented by the new participants or, in other words, to benefit from FDI. The conclusions obtained by Moran (2007), Nuno and Fontoura (2007), Meyer and Sinani (2009), Bruno and Campos (2013) and Iršová and Tomáš (2013) are similar.

The type of investment attracted could be, by itself, a sign of the limitations of the host countries. For example, countries that are high in resources with low per capita income frequently report quite high inflows of FDI. In these cases, multinationals often behave as enclaves, importing all their inputs and restricting their local activities to the hiring of labor, which, broadly, does not contribute in a meaningful way to economic growth nor to development.

There appears to exist a significant gap between what the agents of economic policies think they are doing and what academics see is happening. Do the different empirical results suggest that national policies to attract FDI are unjustified? In Central America, FDI seems to have been important for the creation of the textile maquiladora industry and for the diversification and expansion of exports. But does this mean special treatment for FDI is justified?

Multinational corporations (MNCs) are the main drivers of FDI, but they have also generated great controversy in their own as well as in recipient countries. In the countries of origin, the debate stretches from those who have a negative view of FDI and who are concerned about the loss of wages and the impacts on entrepreneurial initiative and local communities to those who argue that enterprises ought to invest overseas more, with the aim of maintaining their competiveness in an ever more international environment. Recipient countries also have ambiguous attitudes towards the MNCs. Some of those responsible for state policies argue that FDI can play an important role in accelerating the development efforts of their countries through incorporation of capital and technology, besides the employment that is created. Others consider that MNCs are monopolistic entities which grow through exploitation of their competitive advantage in technology and which bring economic delocalization and dependency, exploitation of natural resources and threats to culture and to local sovereignty. Can both these views be right at the same time? Can FDI and the MNCs have different impacts depending on the sector and the type of investment involved?

To respond to these questions, it's useful to understand the evolution of studies of FDI. One line of study recognizes that the benefits generated by FDI are not exogenous but rather are conditional upon the presence of complementary

policies and conditions that assist enterprises, regions and countries to absorb those benefits. This academic branch does not find a positive exogenous effect from FDI on growth or economic development but rather positive impacts that are conditional on local characteristics, above all environmental policy and the quality of institutions (Balasubramanayam *et al*., 1996, Bénassy-Quéré *et al*., 2007), human capital, (Borensztein *et al*., 1998), local financial markets (Alfaro *et al*., 2004, 2010), the characteristics of the sector (Alfaro and Charlton, to be published), sectoral composition (Aykut and Sayek, 2007), and the market structure (Alfaro *et al*., 2010).

A second line of study tries to understand, besides, how FDI affects development, giving special attention to the impacts on the labor market and to the links generated between foreign and national enterprises. A body of work related to this line of study examines the different impacts on growth of different types of FDI, analyzed by investment sector, type of investment and capital origin.

The rest of the chapter is organized in the following way: section 2 presents definitions and sums up the possible motives for foreign direct investment. Section 3 sets out the general potential impacts of FDI on the local economy and provides a summary of the recent findings of the literature on complementarity between FDI and local policies, conditions and institutions. Section 4 sums up the new efforts to understand the mechanisms and channels through which recipient countries can benefit from multinational activity and the different types of FDI. Section 5 describes the role of regional factors of attraction and promotion strategies and sets out the debate on the use of incentives to attract foreign enterprises. Finally, section 6 presents the chapter's conclusions.

Definition of the terms and motivation for foreign direct investment and multinational activity[7]

A multinational or transnational corporation is an enterprise that possesses and controls assets that enable it to carry outs activities in more than one country.[8] The acquisition of such assets involves a foreign investment, whether through the acquisition of foreign stocks and bonds (portfolio investment) or by way of foreign direct investment in new productive installations (commonly known as *greenfield* investments), or the acquisition of existing enterprises (*brownfield* investments or

[7] For recent trends, consult the UN Conference on Trade and Development (2013).

[8] The more specific term of multinational enterprise refers to an enterprise which controls and manages establishments or production plants in at least two countries. Caves (1996:1) uses the term 'enterprise' rather than 'company' to direct attention to the superior level of coordination in the hierarchy of entrepreneurial decisions; a subsidiary can be in itself a multinational.

mergers and acquisitions). Another important aspect is reinvestment of utilities in destination countries. The headquarters is the entity in the country of origin which controls the productive installations, which are called subsidiaries.

As Graham and Krugman (1995) have shown, the definition of FDI itself presents serious problems, as happens if one attempts to measure the degree to which foreign enterprises control the production, installation and assets of the host country.[9] That is, it is not easy to define with precision the concept of control and even the nationality of the entity in an increasingly globalized world. According to Desai (2009), historically production or distribution was transferred overseas, but the key management decisions continued to be taken in the headquarters. This has been changing rapidly; nowadays enterprises are shedding functions in the head office and reassigning them all over the world. The characteristics which define an enterprise's membership of a country (where it was constituted, the nationality of its investors or the location of its central offices, among others), are no longer circumscribed by a single country, nor are they unified.

Given that control may be exercised in many different ways, measurement of FDI poses some difficulties. International institutions, like the majority of national organisms, such as the United States Department of Commerce, classify an investment as direct if a foreign investor owns at least 10% of the capital de a local enterprise.[10] This arbitrary threshold is intended to reflect the idea that large share-holders, even if they do not have a majority share, will have a strong weight on the enterprise's decisions and will be able to influence how it is managed. When a foreign investor acquires titles or bonds in a local enterprise, without exerting control over it, the

[9] "Direct investment is ownership that carries with it real control over what is owned, which is the aspect that distinguishes direct investment from portfolio investment, establishment of a right over a good with the aim of obtaining returns" (Graham and Krugman,1995: 9).

[10] UNCTAD defines FDI as an investment that implies a long-term relationship, which furthermore reflects an enduring interest and signifies the desire of control of a resident enterprise in an economy distinct from that of the investor. A parent enterprise is defined as an enterprise which controls the assets of other entities in countries distinct to its country of origin, normally as owner of a certain share in the capital (10% or more). A foreign subsidiary is an enterprise incorporated or no, in which a resident investor from another economy possesses a share that permits a lasting interest in the management of the enterprise, that's to say, a share participation of 10% in the case de an incorporated enterprise or its equivalent for an unincorporated enterprise (UNCTAD, 2013). The International Monetary Fund (IMF) defines the net inflow of FDI as the inflow that is produced with the aim of acquiring final management (10% or more of voting rights) of an enterprise in an economy different to that of the investor. The World Bank defines foreign direct investment (net inflows in the declaring economy, in current US$) as the investment that is made to acquire lasting management control (generally 10% of voting rights) in an enterprise that operates in a country other than that of the investor (defined according to residence), the goal of the investor is to have an effective participation in management of the enterprise.

investment is considered a portfolio investment. Independently from the difficulties of measurement, it is the desire for partial or total control over the activities of an enterprise in another country that distinguishes FDI from portfolio investment. Foreign direct investment is characterized by the ownership by residents of one country of assets in another country with the aim of controlling those assets.

Given the diversity of multinational enterprises and the different motives for investing abroad, the patterns of investment are complex. Enterprises can invest overseas to serve a market directly; to gain access to inputs, raw materials or manpower; to increase operational efficiency; or simply to prevent competitors from acquiring strategic assets (see Desai, 2009). An alternative categorization, based on motivation, recognizes FDI through the search for resources or supplies, designed with the aim of obtaining access to natural resources such as minerals or unqualified labor; the search for markets or FDI oriented towards demand, designed to satisfy one or various foreign markets; the search for efficiency or FDI rationalization, designed to promote more efficient division of labor or specialization in the portfolio of external and internal assets of a multinational enterprise; or the search for FDI-strategic assets, designed to protect or increases the specific advantages of an enterprise and/or reduce those of its competitors.[11]

Beyond the motivation, the fundamental question that underlies FDI activities is always the same: why is an investor disposed to acquire a foreign enterprise or construct a new factory overseas? After all, there are additional costs associated with doing business in another country, including costs of communication and transport, spending to employ staff overseas, barriers of language and local customs, and exclusion from networks of local enterprises and governments. Many enterprises could be multinational but choose not to be. And besides, there are countries that do not create multinational enterprises and others which create many.

It may seem that the answer is simply the usual search for profit: the multinational hopes to be able to enjoy greater annual cash flows or a lower cost of capital. However, how can a foreign enterprise compensate for the advantage of the local

[11] For analytical simplicity, FDI generally has been classified as horizontal or vertical. An enterprise dedicates itself to horizontal FDI when a subset of its activities, or production processes, are replicated in another country; in other words, when the same state (horizontal) production process is duplicated. See Markusen (1984), Brainard (1997), and Markusen and Venables (2000). Enterprises dedicate themselves to vertical FDI when the fragmentation of production is by function; that's to say, when the added value chain is broken, often motivated by cost considerations derived from differences in factor costs. The FDI export Categories of Helpman (1984), in which the output of subsidiaries is (in large part) sold to a third market, have been reviewed increasingly. Empirical evidence on the different types is included in Brainard (1997), Carr *et al*. (2001), Hanson *et al*. (2001, 2005), Markusen and Maskus (2002), Yeaple (2003, 2006), Ekholm *et al*. (2007), and Alfaro and Charlton (2009).

enterprise, with its superior knowledge of the market, juridical and political systems or language and culture?[12]

One explanation known as the cost of capital theory argues that foreign enterprise which invest, thanks to their size or structure, have access to finance at a lower cost and this is not available to local enterprises. From this point of view, multinationals achieve profits through arbitrage by moving capital from countries of low return to those with a high return. However, if the lower cost of capital were the only advantage, why would a foreign investor tolerate the headaches involved in running an enterprise in a different political, legal and cultural environment rather than simply making a portfolio investment (assuming the "country risk")? The evidence shows that often investors do not bring all the investment capital when they take control of a foreign enterprise; instead they tend to finance an important part of their investment in the local market. FDI flows—particularly within developed countries and increasingly in emerging markets—tend to head in both directions, and often, this is the case within the same industry. As the economic historian Charles Kindleberger of MIT pointed out, "direct investment can, then, be a capital movement, but it is more than that".[13]

Given the limitations of applying the traditional international-finance approach, Hymer (1960) proposed a more broadly accepted framework, derived from the industrial organization literature, in which real (as opposed to financial) factors explain the location decisions of multinational firms.[14] This point of view suggests that an enterprise undertakes a foreign investment not because of differences in the cost of capital, but because certain assets are worth more under the same property umbrella than when they are under local control, which permits an enterprise to compete in unfamiliar environments. An investor's decision to acquire a foreign enterprise or construct a foreign plant instead of exporting or participating in other forms of contractual arrangements with foreign enterprises therefore involves (a) ownership of an asset; (b) the location of production; and (c) the option to keep the asset within the enterprise or not.

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12 It is not always clear that when a corporation confronts different institutional environments, with financial market flaws and different tax systems, that it will be possible to add value through financial decisions. The possible methods are diverse: tax and interest rate arbitrage, financing at lower real rates, or the channeling of resources to countries with high growth and strong currencies while keeping lost in regions with devalued currencies. In principle, if the financial markets were perfect, the multinationals could not add value through the financial route

13 Kindleberger (1969: 3).

14 This theoretical approach to multinational enterprises is known as the OLI framework (Dunning, 1981). The Hymer approach was later refined by various authors, among them Kindleberger (1969) culminating in 1981 in the OLI framework of Dunning. See the description in Antràs and Yeaple (2014).

In the first place, an enterprise can possess ownership advantages, such as the ownership of an asset specific to the enterprise (for example, patents, technology, processes and managerial or organizational know-how) which enable it to perform better than local enterprises. Secondly, locational factors, such as opportunities to take advantage of local resources, can bring access to low cost inputs, cheap labor or the possibility of skirting tariffs that protect a local market from imported products. Thirdly, internalization of global transactions may be preferable to market transactions between independent parties. In general, the more "imperfect" a market is, the greater are the transaction costs and the benefits to be obtained through the internalization of certain transactions instead of setting up, for example, an association or *joint venture* with a local firm or simply obtaining the concession of advantageous permits over specific assets from a national enterprise.

According to this point of view, the genesis of FDI is investors' possession of some asset, such as technology or *know-how* that offers an important benefit to the investing enterprise. This, in turn, suggests that FDI can play an important role in the modernization and promotion of economic growth in the recipient country.[15] However, there can also be offsetting costs for the recipient country. Since the asset or patented technology gives its owner some market power or cost advantage over national producers, the foreign enterprise will try to exploit this power.

Foreign direct investment and recipient countries: impacts, absorptive capacity and complementarities

Multinationals, diffusion of knowledge and linkages: potential impacts

Given that FDI brings together capital, technology and know-how, there is a possibility that recipient countries can benefit from its positive externalities. However, it's important to note that there are also potential disadvantages arising from FDI.

Among the externalities is the direct transfer of knowledge through association and the chance to learn from the innovation and experience of foreign enterprises, as well as through interaction and movement in labor markets. If foreign enterprises introduce new products or processes to the domestic market, national enterprises can

[15] Often Third World multinationals are closer to first world multinationals than recipient countries from the geographical, cultural, economic and political point of view. Thus their know-how and technologies (intangible assets) can be particularly well adapted to the other emerging markets in which they invest, and they may possess competitive advantages that enable them to avoid or exploit local institutional voids (see Khanna and Palepu, 2004).

benefit from the diffusion of this technology.[16] In some cases, national enterprises can benefit simply from observing the activities of foreign enterprises. In other cases the diffusion of new technology can happen when local employees of foreign enterprises move to national enterprises. There is also the possibility that links will be created between foreign and national enterprises.

One of the mechanisms through which FDI could generate positive externalities depends on the flow of workers from multinational enterprises. The multinationals devote more resources to employee training that national enterprises do. Given that a large part of this training requires no payment by workers and, besides, is not completely specific to the firm itself, this constitutes a positive externality which leads to higher wages for these workers and/or higher productivity on the part of enterprises which later hire these workers. Similarly, there are positive impacts if workers increase their knowledge no only through formal labor training but also through training in the workplace, learning by doing, or apprenticeship through observation. The transfer of knowledge can also take place through *spin-offs*; that's to say, when workers leave the multinational to create their own enterprises and benefit from the know-how acquired in the MNC. The spread of knowledge can also take place without formal flows out of multinational enterprises; it's likely that knowledge of a production process passes from one enterprise to another simply through the shared interactions of people who do a similar job for different enterprises.

Linkages, according to Hirschman (1958), involve pecuniary externalities. Unlike the diffusion of knowledge, pecuniary externalities take place through market transactions. For example, if an enterprise introduces a new product, there will be a positive pecuniary externality from the firm to consumers. The same phenomenon happens when, instead of inventing a new product, the enterprise simply introduces production of a good in a developing country. Multi-directional linkages are associated with pecuniary externalities in the production of inputs. If there are transport costs, when inputs are produced with growing returns and benefits from specialization, backward linkages are said to arise if an enterprise increases its demand for inputs, leading to the introduction of new types of inputs. Thanks to specialization, the introduction of these inputs increases the productivity of manufacturers. Forward linkages occur when the introduction of new inputs reduces the cost of production of certain goods, making their production profitable for manufacturers.

Rodríguez-Clare (1996) elaborates a formal treatment of these channels. For example, multinational enterprises can create backward linkages and thereby give rise to the production of a greater variety of intermediate goods; this, in turn,

[16] See Caves (1996) and Blomström and Kokko (1998) for studies of technology transfer.

enables the economy to obtain a comparative advantage in the production of more sophisticated final goods. Ultimately the economy acquires greater productivity and higher wages thanks to forward and backward linkages generated by multinational enterprises.

In accordance with this view of linkages, the multinationals could even generate a negative impact deriving from the backward linkages, as Rodríguez-Clare (1996) shows. For example, if multinationals behave like enclaves, importing all their inputs and restricting their local activities to the hiring of manpower, demand for inputs decreases as multinationals increase their relative importance compared to national enterprises, thereby reducing the variety of inputs and their specialization. This would be a negative horizontal externality. It's noteworthy that following this argument, multinational enterprises displace national ones in the market, either because of restrictions in the labor market or through direct competition, as in Markusen and Venables (1999).

The work of Melitz (2003) and Helpman *et al*. (2004) highlight how multinational activity can also lead to greater competition in product markets and to the reallocation of resources from less productive national enterprises towards more productive foreign ones, which leads, in turn, to the exit of some national enterprises. Another impact of reallocation, however, is that national enterprises can bring themselves up to speed with the competition (Bao and Chen, 2013).

Another mechanism through which FDI can affect the economy of the recipient country is related to failures in credit markets. Razin and Sadka (2007) put forward a model according to which some technical or managerial know-how, which the authors call 'intangible capital', give foreign direct investors an advantage over national ones in the identification of the best projects. Their analysis adds a new twist to the argument on the benefits of FDI, since they enjoy this unique advantage, and the benefits could be transferred to the national economy, depending on the level of competition between investors, through the acquisition prices that foreign direct investors pay for projects. Ownership is modeled as the transmission of more rapid access to information about the productivity of the enterprise, which gives the owner planning benefits. However, given that this information is private to the foreign investor, it can also lead to a "lemon" problem; that's to say, if an investors needs to sell an enterprise, the potential buyers might suspect that the sale is motivated by privately held information on its true productivity, more than from a genuine need for liquidity. The local firm can then sell for less than would have been the case. Accordingly, the analytical framework of Razin and Sadka shows the tendency for FDI to be more stable than portfolio capital flows, but also less liquid. Given that FDI is liquidated only at a significant cost, countries prone to liquidity crises tend to attract less FDI than portfolio investments.

Empirical findings

A firm conclusion is that multinational enterprises tend to have higher productivity than national ones in the same sector (Haddad and Harrison, 1993; Blomström and Wolff, 1994; Kokko *et al.*, 1994; Helpman *et al.*, 2004; Arnold and Javorcik, 2009). More important, however, is the possibility that multinational enterprises improve the productivity of local ones through the diffusion of knowledge.

A first generation of cross-section found a positive correlation between the foreign presence and sectoral productivity. For example, the pioneering work of Caves (1974) find positive effects from FDI in Australia; Blomström (1987) and Blomström and Wolff (1994) find positive effects in Mexico; and Sjöholm (1999) finds positive effects in Indonesia.

But in their analysis of plant level data in the Bolivarian Republic of Venezuela, Aitken and Harrison (1999)—in one of the most influential contributions to the literature on FDI—find that foreign direct investment increases productivity in plants that receive the investment while it reduces that of nationally owned plants, so that the net effect on the productivity of the sector is quite small. The authors interpret this result as an effect of market robbery, through which foreign multinational enterprises capture the market share of national enterprises.[17]

The paper by Aitken and Harrison immediately generated many empirical studies. Hanson (2001), Görg and Greenaway (2004), Meyer and Sinani (2009), Pessoa (2009), and Bruno and Campos (2013) conclude that the effects of FDI are mostly negative; or, in the best of cases, that the evidence of its benefits is weak, especially in developing countries. Evidence of positive secondary effects tends to be more favorable in developed countries. Haskel *et al*. (2007), for example, find positive effects from the influence of foreign enterprises on local ones in a set of data from firms in the United Kingdom, while Görg *et al*. (2011) find more heterogeneous effects; Görg and Strobl (2003) find that the foreign presence reduces the exit and encourages the entry of national enterprises in the high technology sector in Ireland; and Keller and Yeaple (2009) show strong evidence of positive effects from the presence de foreign multinationals on national firms in the United States.

Pessoa (2009) reviews the arguments and the empirical conclusions on the positive effects of FDI on the enterprises of recipient countries. He is struck by the diversity of the results, which suggests that the effects of FDI will depend on "technological coherence" and the "social capacity" of the economy of the recipient

[17] This does not necessarily represent an adverse social result if consumers benefit sufficiently from the restructuring of supply in the market.

country, the familiarity of the recipient enterprises with the products and technology of the multinational as well as the adaptive capacity. Meyer and Sinani (2009) find that local enterprises can benefit from the positive effects on productivity derived from the entry of foreign investors; however, the benefits vary according to the local firm's ability to anticipate the entry of foreign enterprises and their reactive capability.

In parallel with the microeconomic evidence, a series of documents, based on growth regressions across countries, found weak support for a positive exogenous impact of FDI on economic growth (Borensztein *et al.*, 1998; Alfaro *et al.*, 2004; Carkovic and Levine, 2005). Using careful econometric techniques, this literature has not been able to find positive productive externalities for developing countries and, on the contrary, has found evidence of negative externalities.

The majority of the empirical studies on the effects of FDI have regressed the productivity of local enterprises on FDI activity within one particular sector. Although the evidence of horizontal effects is difficult to obtain, especially in developing countries, the empirical work at the intra-industrial level cannot capture the broadest impacts on the recipient economy, such as those created between multinational enterprises and their suppliers. An explanation for the lack of evidence of the existence of externalities is that multinationals have an incentive to minimize leakages of technology to their competitors but would like to improve the productivity of their suppliers. Therefore if FDI is understood to generate externalities through the transfer of knowledge, it is more likely to be vertical than horizontal.

In this regard a series of studies has explored the positive externalities of FDI for local enterprises in the manufacturing industry sector (suppliers). Here, the results are more encouraging. In a much cited article, and using data from 1996 until 2000 for Lithuania, Javorcik (2004) examines whether the productivity of national enterprises is correlated with the presence of multinationals in intermediate sectors (potential customers). The empirical results are consistent with the existence of productive externalities from foreign direct investment that take place through contacts between foreign subsidiaries and local suppliers. However, there are no indications of externalities within the same industry. In the same way, using a panel data set of Indonesian manufacturing establishments from 1988 to 1996, Blalock and Gertler (2008, 2009) find evidence of positive vertical externalities. They also find that FDI increases the enterprise's production and value added, while it reduces prices and market concentration. Evidence consistent with positive intra-industrial externalities can be found too in Colombia, Romania, Ireland; and in the studies by Kugler (2006), Javorcik and Spatareanu (2011), and Görg *et al.* (2011), respectively. In general, these studies find a positive correlation between

the presence of the multinationals in downstream industries and the performance of national suppliers.[18]

Complementarities

An important part of the recent literature on the relationship between FDI and economic growth has focused on complementarities; that's to say, on the conditions and local policies that are prerequisites if the indirect impacts of FDI are to materialize.

At macro level, the literature finds evidence that the impact of FDI on growth is not exogenous (explained purely by the foreign investment), but that it is conditional on local conditions and policies. For example, Kose *et al*. (2009, 2010) list a series de macroeconomic and structural policies that need to be in place in order for countries to obtain the maximum benefit from financial globalization. The authors place stress on the fact that capital account policies must be seen as part of a much broader set of policies. In the same way, Harrison and Rodríguez-Clare (2010) place special emphasis on the relevance de complementary aspects of a trade policy regime—such as labor market policies and ease of entry and exit for enterprises—in order to ensure the success of this policy. As Rodrik and Rosenzweig (2009) point out, the most appropriate development policies are characterized by being complementary.

Morán (2007) points out the role of a competitive environment. Meanwhile the work of Balasubramanayam *et al.* (1996) asserts that FDI flows are associated with more rapid growth in countries with an externally oriented trade policy. Many of the first and second generation studies, which found that the relationship between FDI and growth was negative, were carried out in countries such as India, Morocco and the Bolivarian Republic of Venezuela, with policies oriented towards the internal market. For example, the results of the study by Aitken and Harrison (1999), which found a small impact from FDI on growth in Venezuela, were based on data from the period 1976–1989, when the Bolivarian Republic of Venezuela followed policies oriented towards the internal market and very closed to the world. Morán (2007) reaches the conclusion that the existence of reasonable competitive conditions makes it more likely that FDI in the manufacturing sector has a positive impact on an economy's value added.

Borensztein *et al*. (1998), using a data set for FDI flows from industrialized countries to 69 developing countries, find that FDI is an important vehicle for the transfer of technology and for generating higher growth only when a recipient country has a minimum threshold of human capital. Similarly, Xu (2000) uses data

[18] See Section 4.3 for more information on the role of linkages.

from U.S. multinational enterprises and find that (i) a country must have reached a minimum threshold for human capital to benefit from the transfer of technology from multinational enterprises and (ii) la majority of developing countries do not meet this threshold. These results suggest that FDI is an important vehicle for technology transfer, that there are strong complementarities between FDI and human capital, and that FDI is more productive than national investment only when the host country has a minimum threshold of the stock of human capital. Bruno and Campos (2013) also indicate that the effects of FDI are conditional and depend, at the macro level, on minimum levels of human capital or economic development and, at micro level, on the type of linkage (forward, backward or horizontal).

In a comparative analysis between countries, Alfaro *et al.* (2004) examine the intermediary role that local financial institutions play in channeling the contributions from FDI into economic growth. In particular, they argue that a lack of development in local financial markets can limit the economy's ability to take advantage of possible indirect effects of FDI. Their results show that FDI *per se* does not have a positive impact on growth. However, when the authors include the interaction term it is positive and significant for some aspects of the financial sector. Therefore the authors find convincing evidence that a country needs a strong financial sector in order to harvest the benefits of FDI.

Alfaro and Charlton (2013) provide industry level data for countries of the Organization for Economic Cooperation and Development (OECD) and show that the relationship between FDI and growth is stronger for industries that are most dependent on external financing. These results, besides being consistent with the existing macro literature and the hypothetical benefits of FDI, are another proof of the differences in the effects of FDI on different industries. Hermes and Lensink (2003) and Durham (2004) provide yet more evidence that a country with a well-developed financial market benefits significantly from FDI. Prasad *et al.* (2007), who also focus on correlations, find that for financially dependent industries in countries with weaker financial systems, foreign capital does not contribute to growth.

Alfaro *et al.* (2009) find that the financial channel through which FDI is beneficial for growth operates through total factor productivity (TFP) more than through the accumulation of physical or human capital, even when their analysis considers the threshold and interaction effects with the absorptive capacity of the economy.

Meanwhile it has been demonstrated that the good functioning of financial markets reduces transaction costs and brings more efficient allocation of capital, which improves growth rates.[19] In addition, as McKinnon (1973) points out, the development

[19] See, among others, Goldsmith (1969), McKinnon (1973), Shaw (1973), and King and Levine (1993a,b).

of capital markets is "necessary and sufficient" to develop the "adoption of better technological practices and of learning-by-doing". In other words, if limited access to credit markets restricts entrepreneurial development and if entrepreneurship encourages assimilation of best technological practices made available by FDI, then the absence of well-developed financial markets limits the potential for positive FDI externalities. Although some local enterprises might be capable of financing new needs internally, the more the gap in technological knowledge between its current practices and the new technologies, the greater will be its need for external financing, which is restricted in many cases to internal sources of financing.

Javorcik and Spatareanu (2009b) find that among Czech enterprises the multinational suppliers tend to have less liquidity restrictions than others. This micro evidence suggests besides that without the existence of adequately functioning financial markets local enterprises can have difficulty initiating commercial relationships with multinational enterprises and benefiting from foreign investment. This mechanism is consistent with the growth effects found in Liu (2008) and with the formalization in Alfaro *et al*. (2010).

Nowadays, the majority of the barriers to foreign investment affect services rather than goods. Although there is considerable empirical evidence on the impact of FDI on industrial productivity, a nascent empirical literature studies the effects of services liberalization on industrial productivity. Arnold *et al*. (2006) find a positive relationship in the Czech Republic between reform of the service sector and the productivity of local enterprises in related industrial sectors. Arnold *et al*. (2008) find the same effect in India. The impacts and the complementarities of the reduction of barriers to services and goods continue to be an important topic for future investigation.

In general, studies on complementarity have found that some countries lack the necessary prior conditions to harvest the potential benefits of FDI, which helps to explain the ambiguity of the conclusions on the relationship between FDI and growth. The positive externalities that FDI can generate on national enterprises depend, to a considerable degree, on the capacity that these national enterprises have to respond successfully to the new participants, the new technologies and the new competition. That success is determined in part by local characteristics, such as the level of human capital and the development of local financial markets, as well as by the general institutional level of the country. Deficiencies in these areas can reduce the capacity of national industries to absorb new technologies and respond to the challenges and the opportunities presented by foreign participants. Variation in these capacities of absorption between countries (and between industries within countries) is a promising line of investigation that might produce a synthesis of the contradictory results from the current literature.

Channels, mechanisms and sources of differences

Empirical studies have focused on demonstrating the existence of externalities, analyzing principally if the greater presence of multinational enterprises in a market is associated with an increase in the productivity of local enterprises. However, to consider policies that might maximize the impact of FDI, this is not sufficient and the channels, mechanism and sources of differential impacts must be investigated.

Factor markets

FDI could contribute to the development of a host country through factor accumulation; that's to say, through an increase in physical and/or human capital in a country. Foreign capital injected into the economy of the recipient country can contribute to the formation of physical capital, while employee training can contribute to the development of special abilities, increasing human capital. But the empirical evidence shows that in neither of the two cases can a positive outcome be assumed.

Labor market. Some studies have evaluated the impacts on factor markets of multinational production. In terms of human capital, foreign direct investment can increase national welfare if the MNEs pay higher wages than national enterprises, but this is not necessarily the case. As was mentioned previously, a firm conclusion is that the productivity of multinational enterprises tends to be higher than that of national enterprises within the same sector, which leads to higher aggregate productivity and higher growth. Being more productive, they can pay higher wages; but if the MNEs pay market salaries (at the same rate as national firms) the productivity gains are captured by them and not by workers.

There is ample evidence, however, that MNEs pay more than the market wage (Blomström, 1983; Haddad and Harrison, 1993; Aitken *et al.*, 1996; Girma *et al.*, 1999; Lipsey and Sjöholm, 2001; Sjöholm and Lipsey, 2006). It is then very probable that the fruits of higher productivity are shared with national firms, which could in turn justify government incentives for multinational enterprises.

Aitken *et al.* (1996) investigate the impact of foreign-owned plants on the wages paid by locally owned establishments in Mexico and the Bolivarian Republic of Venezuela. Their analysis suggests there is an increase in industrial wages, especially for qualified workers, thanks to foreign multinational production. Similarly, Feenstra and Hanson (1997) find that a higher level of maquiladora activity leads to a greater proportion of total wages in the economy goes to qualified workers in Mexico, which they interpret as a result of higher demand for qualified manpower from foreign multinational enterprises.

Harrison and Rodríguez-Clare (2010), reviewing the literature on FDI and wages, arrive at the conclusion that, after adjusting for the characteristics of enterprises and workers, foreign enterprises pay a small wage premium of between 5% and 10%.

There is ample evidence that multinational enterprises engage in important efforts to educate local workers and that they offer more training to technical workers and managers than local enterprises do.[20] In some cases, multinational enterprises also cooperate with local institutions in training. For example, Intel and Shell-BP have made contributions to local universities in Costa Rica and Nigeria, respectively; in Singapore, the Economic Development Board has collaborated with multinational enterprises to establish and improve training centers.[21] However, in an empirical analysis of a group of countries, Velde and Xenogiani (2007) find that FDI increases the development of skills (particularly secondary and tertiary education) only in countries that are already relatively well endowed with skills. The finding that the contribution of FDI to the development of skills is conditional on a threshold of human capital illustrates the growing understanding of importance of complementarity, analyzed in the previous section.

Financial markets. There is an emerging literature on the effect of FDI on local capital markets. One of the reasons responsible politicians give for promoting foreign investment is the scarcity of capital for new investments. This argument is based in the hypothesis that foreign investors bring additional capital when they establish new enterprises in local markets. However, Kindleberger (1969), Graham and Krugman (1995), and Lipsey (2002) show that investors do not transfer their entire investment when they take control of a foreign enterprise; they tend instead to finance an important part of their investment in the local market.[22] Furthermore, given rising exchange rate volatility, many foreign investors have found ways to protect themselves by borrowing in local capital markets. If foreign firms seek credit from local banks, instead of bringing the capital from abroad, they can increase the financing restrictions for national enterprises by increasing excessively the number of foreign enterprises tapping national capital markets.

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[20] See Fosfuri et al. (2001) and the arguments in Alfaro and Rodríguez-Clare (2004) and Alfaro et al. (2009).

[21] Banco Mundial (1995), Spar (1998), and Larraín et al. (2000).

[22] As was mentioned previously, industrial organization literature suggests that enterprises dedicate themselves to foreign direct investment because of differences in the cost of capital, and not because certain assets are worth less under foreign control than under local control. If lower cost of capital were the only advantage of a foreign enterprise over national enterprises, it would not explain why a foreign investor would bear the problems of running an enterprise in a different political, legal and cultural environment, instead of simply making a portfolio investment.

Harrison and McMillan (2003) and Harrison *et al.* (2004) investigate this possibility. The former analyze the behavior of multinational enterprises (most of them French) which operate in Ivory Coast and find not only that national enterprises face more restrictions on credit that foreign enterprises do, but also that the taking on of debt by foreign enterprises exacerbates the credit restrictions on national enterprises. Harrison *et al.* (2004), using a database at enterprise level from a series of countries, obtain results which suggest that in a country like Ivory Coast, with numerous market imperfections and with access to credit rationed due to the application of limits on interest rates, foreign investors effectively displace national enterprises from local credit markets. By contrast, in their panel of countries they found that foreign investors do not displace local enterprises. That's to say, as foreign investment increased, the quantity of credit available to national enterprises actually increased. Harrison and Rodríguez-Clare (2010) argue that these quite disparate results point to the complementarity of policies, such as those cited between FDI and local financial markets (see Alfaro *et al.*, 2004, 2010). Imperfections in the credit market of a country with the characteristics of Ivory Coast are seen to be exacerbated by FDI. The importance of such complementarities is developed further in the following section.

Besides the above, there are the effects of foreign direct investors in the financial sector and specifically the banking sector. On average, the share of bank assets in the control of foreign banks in developing countries has increased in the last two decades. In Central America, the percentage of foreign banks is about 40% (Claessens *et al.*, 2008), with a range that goes from 25% in Guatemala (2006) to about 70% in El Salvador and Panamá, while the participation of foreign banks in assets ranges from around 10% in Guatemala to around 80% in El Salvador.

There is an important debate about the implications of foreign bank participation in developing countries. On the one hand, some recognize that foreign banks can bring capital as well as technical know-how and product innovation to developing countries—just like other forms of foreign investment—with potential benefits in terms of growth in competitiveness and improvements in the efficiency of the banking sector. On the other hand, critics of the entry of foreign banks argue that they can lead to a reduction in access to financing for the majority of national enterprises and consumers if these banks only focus on an upper, select segment of the market.

The greater part of the debate regarding FDI in the financial sector revolves around the possible increases in efficiency induced by changes in the competitive structure of the industry: foreign entry reduces the monopoly excesses of national banks. Mergers, acquisitions and bank exits have generated unprecedented changes in local competitive structures compared with other sectors that have received FDI. Globally the financial sector is very concentrated: the fifteen biggest multinational

banks supply more than 20% of private lending in the world (see De Blas and Russ, 2013). Therefore when countries contemplate liberalization of their banking sector to permit foreign participation, a natural tension emerges. There is the hope, on one hand, that the foreign participation will reduce the interest rates charged by lenders thanks to improved technical efficiency or greater competition. On the other hand, there is the worry that big foreign banks can accumulate enormous market power and end up increasing interest rates.

Overall, FDI in the banking and financial sector poses concerns and distinct benefits for the host country, in particular where financial regulation and crisis prevention are concerned. Foreign operators could introduce a more diversified supply of funds and, in principle, a less pro-cyclical one. But also foreign funds can be more sensitive to external fluctuations, implying risks that foreign shocks and contagion will be imported.

One branch of investigation has concerned itself with topics related to foreign investment in the financial services and banking industry (see Goldberg, 2007; and Cull and Martínez Peria, 2010 for recent studies). In general, the evidence on the consequences of foreign bank participation is also ambiguous.

A series of studies show that the presence of foreign-owned banks is associated with greater efficiency and competition in the national banking sector. In various studies the presence of foreign banks is reflected in reduced net interest margins, profitability, and lower coefficients for costs and non-financial earnings on the part of national banks in developing countries (Claessens *et al.*, 2000, 2001; Claessens and Laeven, 2003; Claessens and Lee, 2003). This evidence suggests that national banks are obliged to become more efficient after the entry of foreign banks, above all in the lines of business in which the foreign banks choose to compete. For example, Claessens *et al.* (2000) use data from a sample of 80 countries to demonstrate that foreign entry reduces the profitability of national banks and improves their efficiency. Country studies that use mostly data from the banks arrive at similar conclusions in Colombia (Barajas *et al.,* 2000) and Argentina (Clarke *et al.*, 2000). A study of Argentina, Chile, Colombia, Mexico and Peru reveals that the increase in the foreign banking presence coincided with reductions in operating costs (Martínez Peña and Mody, 2004).

Other studies which compare the relative profitability of foreign and national banks, find that foreign banks have relatively higher margins and interest profitability and lower general costs (Demirguc-Kunt and Huizinga, 2000; Claessens *et al.*, 2001). In a study of five Latin American countries, Martínez Peña and Mody (2004) find that net financial margins are the same of higher for foreign owned banks compared to the national counterparts. The margins are greater for banks which enter through mergers and acquisitions and, above all, the effect diminishes with the duration

of the fusion. Barajas *et al.* (1999) find an increase in margins when the number of foreign participants in the Colombian banking sector increased in the 1992–1996 period, but they also find that the increase reflects, in large measure, a rise in market power. Another study of Brazil, Costa Rica and El Salvador arrives at the conclusion that the presence of foreign banks weakens the competition (Levy-Yeyati and Micco, 2007).

As for the entry of foreign banks and access to credit, Cull and Martínez Peria(2010) conclude that the impact of the presence of foreign banks on loans to small enterprises and general credit levels could be positive or negative. The result depends on the level of competition in the national banking sector and the capacity of the banks to avoid information problems.

Selection, competition and reallocation

The selection decisions of multinational enterprises that choose to invest in high growth countries, sectors or enterprises suggest that the greater the productivity of the recipient country, the higher the level of multinational activity. In contrast, diffusion of knowledge implies that multinational activity provokes (and is not caused by) an increase in internal aggregate productivity. Greater multinational activity can also lead to increased competition in product and factor markets, as well as to the reallocation of resources from less productive national enterprises to more productive foreign ones, which leads to the exit of some national enterprises. Once more, multinational activity appears as the cause (not the result) of greater aggregate internal productivity. The impacts of the last two mechanisms are compensatory: harder selection means a contraction in local production while technological diffusion reflects positive externalities.

Recent studies carried out by Arnold and Javorcik (2009) and Guadalupe *et al*. (2011) explain the endogenous acquisition decisions of foreign multinational firms and find that national firms have better results. These studies also show that even after dealing with acquisition decisions, foreign ownership leads to significant productivity spillovers in acquired plants. Fons-Rosen *et al*. (2013), on the contrary, find little evidence of this improvement in productivity.

Using a propensity index combined with an difference in difference analysis to control both the non-random sampling and the unobservable variables, Arnold and Javorcik (2009) find, on the one hand, that manufacturing plants in Indonesia which become foreign-owned invest more in fixed assets, above all in machinery, that national enterprises with similar characteristics; and, on the other hand, that they increase the import intensity of their inputs and the intensity of export production. Curiously the authors also find that these plants implement organizational changes which improve the output from workers. These findings can help to explain the robust

relationship between foreign ownership and TFP. The organization of multinational enterprises will be set out in a later section.

Although these results offer relevant information on how FDI leads to greater TFP in the recipient plants, that's to say, at micro level, the exercise that sheds light on the mechanism through which FDI generates growth at macro level for the recipient country is different.

An attempt at answering this question can be found in new trade theories that stress the heterogeneity of enterprises, as is seen in Melitz (2003). En his model, the gains from trade are generated by shifts in market share from less to more productive enterprises. This cannot take place, however, when there are barriers to the exit of firms and to their growth, which confirms that FDI must be accompanied by complementary policies, such as the availability of credit and low barriers to the entry or exit of enterprises and reallocation of factors.

In order to understand the mechanisms by which an economy responds to multinational production and to evaluate the effect of foreign investment and define the appropriate economic policies, it is necessary to distinguish between market reallocation and the diffusion of know-how.[23] If diffusion of know-how is the main source of productivity gains, special treatment for foreign enterprises, often in the form of tax rebates and financial incentives can be justified and sufficient. However, if the productivity gains are also thanks to market reallocation, it would then be important to improve local market conditions, such as the supply of labor and access to credit, and to eliminate the obstacles to this reallocation.

Although there is extensive study of the effect of the spillover of know-how from multinational enterprises, there has been very little examination of the role played by market reallocation on the aggregate production of the multinational and of the different ways in which market reallocations and diffusion of know-how influence the potential benefits from multinational competition. Evidence on the effect of national selection effect of multinational production is very limited. Analyses which separate the relative importance of secondary effects and the selection of know-how are still more scarce.

Alfaro and Chen (2013) separate the roles de selection and diffusion of know-how to determine the aggregate impact of multinational production on the productivity of the host country. Using a micro theoretical basis that captures simultaneously these two aspects of multinational production, they develop an empirical strategy to distinguish its relative importance, taking account of self-selection by multinational

[23] Although the role of market reallocation is underestimated in the evaluation of the gains derived from multinational production, its function is well established in the evaluation of productivity gains derived from trade liberalization (see Melitz and Redding, to be published) for a recent review.

enterprises. The paper by these authors also provides a structural framework with which they quantify the size of the productivity gains associated with each effect and undertake a comparative analysis. The analysis of this work offers new evidence on the market reallocation impact of foreign direct investment and of the cross heterogeneity of the gains derives from opening to multinational production.[24] These results suggest that an appropriate policy ought to have as its objective to facilitate the gains derived from competition and the reallocation of resources through improvement in local conditions, including access to domestic credit and the labor supply (especially qualified manpower), while eliminating regulatory barriers.

Linkages

Another promising investigation on the growth-inducing mechanism of FDI has been the effort to discover the potential for secondary effects through formal analysis of how foreign enterprises generate meaningful linkages with national enterprises, whether in an intra-industrial (horizontal) way or an inter-industrial (vertical) one. As was proposed earlier, given that multinational enterprises are motivated to provide technological spillovers to their suppliers, but not to their competitors, the majority of studies have focused on the mechanism involved in vertical, rather than horizontal, linkages.

An important questions is whether all the vertical (supply) relationships have the potential to convert into positive linkages and generate positive externalities derived from FDI. The selective behavior of many foreign enterprises towards local one that can supply goods (Javorcik and Spatareanu, 2005) is not associated with potential positive externalities. Once more, the fact that foreign enterprises appear to help some suppliers to improve their performance implies an externality only if these benefits are not completely internalized by the foreign enterprise.

Interviews with suppliers and multinational enterprises in Costa Rica revealed few cases in which a clear transfer of positive technology from the multinational enterprise to the supplier had occurred (see Alfaro and Rodríguez-Clare, 2004). The interviews also revealed that the MNEs often lacked technical know-how of the production processes of the inputs they were using. When they had this knowledge, it tended to relate to production processes for sophisticated inputs which, as they were unlikely to be supplied by local firms, in general were obtained from highly

[24] Ramondo (2009), using a panel of national and foreign plants in the manufacturing sector in Chile, finds how the entry of foreign plants was negatively correlated with the market shares of traditional national operators; however it was positively correlated with their productivity. Kosová (2010), analyzing the exit and the sales growth of national enterprises in the Czech Republic, finds evidence consistent with displacement and technological diffusion.

specialized international suppliers. While the interviews did not bring relevant proofs on the diffusion of knowledge through technology transfer, they did reveal that local enterprises had decided in many cases to improve their production processes with the aim of becoming suppliers of multinational enterprises.

Given the ambiguity of this survey, an integrated approach is needed that links theory and evidence to eliminate the possibility of secondary effects. The theoretical work of Rodríguez-Clare (1996) suggests that, under certain conditions (specialization advantages, increasing yields and high transport costs), the increase in the demand for the specialized inputs could lead to local production of new types of inputs, generating positive externalities for other national enterprises that may use them. Following this point of view of linkages, multinational enterprises could even generate a drag on national enterprises. If, for example, they behave as enclaves, importing all their inputs and restricting their local activities to the hiring of labor, the demand for national inputs could diminish as the relative importance of multinational enterprises over national ones grows, leading to a reduction in the variety and specialization of inputs (see also Markusen and Venables, 1999).

However, as Alfaro and Rodríguez-Clare (2004) explain, it is important to take account of the key assumptions of the model and how a failure to fulfill them could affect the potential for multinationals to create linkages. The first important assumption is that intermediate inputs are not tradable and, by extension, that supply behavior of inputs for national plans and foreign ones are not identical. If they were perfectly tradable goods, that's to say, if there were no transport costs, there would be no sense in speaking of the introduction of a good by an enterprise to a developing country. Given the demand, all existing goods would be available automatically everywhere. Only the demand for non-tradable inputs generates meaningful linkages. On the other hand, given the greater import intensity for imports on the part of foreign-owned enterprises, the assumption of non-tradability is too restrictive.

As Barrios *et al.* (2011) mention, the assumption that input supply behaviors are identical contradicts the hypothesis that foreign multinationals have a different way of organizing themselves for production than national enterprises.[25] Arnold and Javorcik (2009) provide evidence that enterprises which become foreign-owned firms import a greater proportion of their inputs than if they had remained nationally-owned. In the best scenario, researchers would take account only of non-tradable input purchases, but in general data limitations make such precision impossible.

[25] See also Girma *et al.* (2008); and Görg and Seric (2013).

A second critical issue is that only the demand for intermediate goods which show increasing returns (unlike, for example, constant returns to scale) implies linkages. A third key aspect is that the demand for inputs with low substitution elasticity generates linkages with a bigger effect on productivity than demand for inputs that have good substitutes. A fourth aspect is that the multinationals appear to contract more qualified workers than national enterprises. The effects of multinationals'' positive linkages could be less visible given the greater competition between enterprises for scarce qualified labor.

With these four issues in mind, how can these linkages be measured? The traditional interpretation of a frequently reported finding in empirical investigation (that the participation de inputs bought in the country is less for multinational enterprises than for local enterprises, as signaled by Barry and Bradley, 1997; and Görg and Ruane, 2001) has been that multinational enterprises generate less links than national ones. The theory, however, suggests that the proportion of inputs bough in the country is not a valid indicator of the linkages that MNEs can generate. Barrios *et al.* (2011) show that when measuring if multinational enterprises generate positive linkages, the results depend, to a considerable degree, on the choice of the retroactive measure. A more appropriate measure is the relationship between the value of the inputs bought in the country and the number of workers contracted by the enterprise, which can also be defined as the proportion of inputs of national origin in relation to the intensity of the workforce (inputs per worker). While multinational enterprises can have a lower quota (given that they are more liable to import inputs), they can also be more liable to have higher coefficients.

Alfaro and Rodríguez-Clare (2004) found, agreeing with the earlier evidence, that the proportion of inputs of national origin was less for foreign enterprises than for national ones in Brazil, Chile, Mexico and the Bolivarian Republic of Venezuela, but also that the coefficient of intensity for foreign enterprises was higher. The linkage coefficient was highest for foreign enterprises in Brazil, Chile and the Bolivarian Republic of Venezuela, whilst in Mexico the authors could not reject the hypothesis that foreign and national enterprises had similar linkage potentials. Another important result was that newly entering foreign enterprises tended to have a lower linkage coefficient but that the linkage tended to increase over time, highlighting the importance of the duration of study (as well as the deadlines, given that the studies effected closest to the various liberalization efforts were more likely to produce negative results).

Curiously, a positive retroactive effect does not necessarily imply a positive externality from multinational enterprises to suppliers. On the contrary, a positive linkage should lead to a positive linkage on the part of the multinational enterprises to other enterprises in the same sector; that's to say, a positive horizontal externality.

In a theoretical framework, Alfaro *et al.* (2010) elucidate this idea, developing a model in which the presence of positive linkages depends on the level of development of the local financial sector. They model a small and open economy in which the production of final goods is undertaken by foreign and national enterprises which compete for qualified labor, unskilled labor, and intermediate products. In order to operate an enterprise in the intermediate goods sector, an entrepreneur must develop a new variety of intermediate good, a task that require an initial capital investment. The more developed the local financial markets, the easier it will be for entrepreneurs who face credit limitations to start up their own enterprises.[26] The increase in the variety of intermediate goods leads to positive consequences for the final goods sector. As a result, financial markets permit backward linkages between foreign and national enterprises which become indirect impacts of FDI. However, this model implies fundamentally that the secondary effects must be horizontal rather than vertical.

Nonetheless, evidence of horizontal spillovers from FDI has remained elusive. Iršová and Tomáš (2013), in a meta-analysis of the literature, find that, on average, horizontal spillovers are zero.[27] Why is a positive externality from multinational to other enterprises in the same sector not seen? The quality of the data, errors in the measurement of productivity and aspects endogenous to the presence of multinationals are possible responses to this enigma. Another response is that there could be some negative horizontal externality which offsets the positive one; for example, the competition effect provoked by the entry of multinational enterprises, as argued by Aitken and Harrison (1999) and shown by Alfaro *et al.* (2010); and Alfaro and Chen (2013). Iršová and Tomáš (2013) also find this effect and determine too that the sign and the magnitude of the horizontal effect depend systematically on the characteristics of the national economy and the foreign investors.

Therefore an important challenge for the literature which studies this topic is control of competition effects. Data availability poses an important restriction on efforts to employ econometric models, particularly in developing countries. En some recent works, Alfaro *et al.* (2010) combine theory and a calibration method with the aim of formalizing the mechanism through which the trickledown effect of FDI through backward linkages depends on the level of local conditions (including

[26] Hirschman (1958) argues that the linkage effects are realized when one industry can facilitate the development of another by improving production conditions, thus establishing a step towards more rapid industrialization. He also argues that, in the absence of linkages, foreign investments could have limited or even negative effects on an economy (so called enclave economies).

[27] In an earlier meta-analysis, Havranek and Iršová (2011) examine 3,626 estimations of secondary effects and find the average spillover economically significant for the suppliers and statistically significant but small for buyers.

market structure, the financial markets and competition for skilled and unskilled labor) and in order to quantify the properties of the model for realistic parameters.

Of course, externalities and secondary effects are, by their very nature, difficult to measure. Improvements in quality, worker training, and improvements in the entrepreneurial environment and in organizational practices are some of the factors which can also have positive impacts on the economy of the recipient country. Furthermore, multinational enterprises can form global clusters to benefit from this interaction. Enterprises which have agglomerated in, for example, Silicon Valley and Detroit now have subsidiary plants that have formed clusters in Bangalore and Slovakia, known as the Silicon Valley of India and the Detroit of the Este, respectively.

The agglomeration of economic activity, long recognized by regional and urban economists, and by economic historians, is one of the most salient aspects of economic development. An ample body of investigations analyzes the distribution of production and population across space and in spatial concentrations. Understanding these emerging spatial concentrations of multinational production throughout the world, and the driving forces behind these new concentrations when compared to their national equivalents is crucial for the design and improvement of policy-making.

Alfaro and Chen (2014) investigate the patterns and determinants of the global economic geography of multinational enterprises. Their analysis shows that the emerging extra-territorial clusters of the multinationals are not a simple reflection of national industrial clusters. That's to say, within a recipient country, the multinationals follow patterns of agglomeration which are different to those of their national counterparts. The location decisions of multinationals reflect location fundamentals, such as market access (to avoid trade costs) and comparative advantage (to seek abundant factors with lower costs), but also reflect economies of agglomeration. Agglomeration economies underline the benefits of geographical proximity between enterprises, such as lower transport costs between suppliers of inputs and final goods producers (vertical relationships), the labor market and externalities of the goods and capital markets which reflect the high capital needs and the intensity of innovation of the MNEs and the diffusion of technology. In addition the multinationals show a stronger tendency to group together with predominant multinational firms than with local plants. Once more, this is the case when the externalities of the capital and goods markets as well as the benefits of technology diffusion are strong.

The role of institutions

North (1995) describes institutions as the rules of the game in a society, defining them as the humanly defined limits that in a more formal manner political, economic and social interaction. There is an important difference between policies and insti-

tutions: policies are decisions taken within a political and social structure; that's to say, within a body of institutions.

Institutions consist, on the one hand, of informal restrictions such as traditions and customs, and, on the other hand, in formal rules, such as constitutions, laws and property rights. They provide the incentive structure of an economy. The early work of North (1981) and later contributions, such as that de Acemoglu *et al*. (2001, 2002) and Acemoglu and Johnson (2005), show that the social, legal and political institutions of a society shape its economic results. For example, they influence investor decisions through the protection offered to the property rights of entrepreneurs against the government and other sectors of society, and by preventing elites from blocking the adoption of new technologies. In general, weak property rights, owing to poor institutions, can lead to a lack of productive capacity or uncertainty over economic returns.

The relationship between institutions and capital flows—especially flows of foreign direct investment—can be a channel through which institutions promote growth through capital formation and secondary effects. Bénassy-Quéré *et al*. (2007) enumerate various reasons why the quality of institutions can be important in the attraction of FDI. Good institutions can attract foreign investors, while weak institutions can load additional costs, such as costs from corruption, on investors (Wei, 2000). Given the high sunk costs of FDI, it is especially vulnerable to uncertainty, including uncertainty derived from bureaucratic inefficiency, policy changes, the weak application of property rights and a legal system that is generally weak. Antràs *et al*. (2009) show that weak protection of investors limits the scale of multinational activity.

Alfaro *et al*. (2007, 2008) use an empirical framework to examine different explanations for the lack of capital flows from rich countries to poor ones—the Lucas paradox. The authors find evidence that institutional quality is the most important variable explaining the lack of flows (particularly of FDI) especially to poor countries. The study considers inverse causality, examines the determinants of volatility in capital flows, and investigates whether institutions and policies play a role in reducing the instability in international financial markets. The evidence suggests that both low institutional quality and bad policies—bad monetary policies, in particular—help to explain the long-run volatility of capital flows.

Bénassy-Quéré *et al*. (2007) implement transversal estimations, panel data estimations, and control for the correlation between institutions and GDP per capita and the endogeneity of institutions. The authors find a wide range of institutional aspects (bureaucracy, corruption, transparency and the quality of judicial institutions) which affect the entry of FDI, independently of the level of the GDP per capita. The institutional proximity of countries of origin and destination

countries is also important, but the authors find little impact from institutions in the country of origin. Buchanan *et al.* (2012) also find a positive relationship between institutional quality and foreign direct investment and a negative relationship between institutional quality and volatility. As the authors assert, these results suggest that efforts to improve institutions can help developing countries to receive more foreign direct investment, independently of the indirect impact of higher GDP per capita.[28]

FDI, volatility and crisis

At times it is argued that FDI is inherently less volatile than portfolio investment. However, various studies conclude that FDI has a significant negative effect on the survival and stability of production plants. Moreover, the impartial nature of multinational enterprises makes them more volatile than purely national enterprises. Görg and Strobl (2003), for example, find that in Ireland foreign-owned establishments are more likely to abandon the market, adjusting for specific characteristics of plants and of the industry. Gibson and Harris (1996) and Bernard and Sjöholm (2003) reach similar conclusions for New Zealand and Indonesia, respectively. Bernard and Jensen (2007) focus on multinationals present en the United States and judge that they are more likely to close installations in their country of origin than purely American national enterprises.

There are few studies which have examined the way in which multinationals respond to a crisis compared to local enterprises, and how the behavior of a locales, and how the behavior of the establishment of a multinational enterprise is related across the countries in which it operates. Álvarez and Görg (2007) investigate the response of multinational enterprises and national ones to an economic recession in Chile and find that multinationals react to economic crisis in a different way to that seen in national enterprises. Desai *et al*. (2008) evaluate the response of multinational and local enterprises (outside the United States) a acute monetary depreciations, and find that sales, assets and investments increase substantially more for subsidiaries of U.S. multinationals than for local enterprises.

While these studies focus on regional economic slowdowns and currency depreciations, Alfaro and Chen (2012) investigate the responses at micro level to a crisis through an examination of the differences of performance of establishments during the recent global financial crisis, stressing the way in which foreign ownership affects resilience to negative shocks. The authors examine the global reach and great heterogeneity of that crisis to explain the role that FDI plays in microeconomic results. To separate the effects of foreign ownership from other effects the authors use a

[28] See also Nunnenkamp (2004) and Alfaro *et al.* (2014).

global dataset, with detailed information on industry and location and with data from more than twelve million establishments. In order to control for observable and non-observable differences between foreign subsidiaries and local establishments, they matched each foreign subsidiary with a local establishment in the same country and industry and with similar characteristics and functions. The impact of foreign ownership is inferred from the divergence in performance. The authors explore the variation of the data over time and consider the period that was free from crisis (2005–2007) and the crisis period (2007–2008) separately. Comparing the effect of foreign ownership during the crisis with its effect in the years without crisis makes it possible to identify the role of the production function and financial linkages in the increase in foreign subsidiaries' resilience to negative demand and financial shocks.

The results suggest that, on average, foreign subsidiaries responded better to the global financial crisis than plants under local control with similar economic characteristics. However, while foreign ownership gave a pronounced advantage during the crisis, that was not the case during normal economic periods. Foreign subsidiaries with strong vertical productive linkages with their parent enterprises performed better than establishments under local control during the crisis, while those with horizontal linkages did not do so. Once again, this pattern is not seen in non-crisis years. Similarly, foreign subsidiaries that operate in industries with greater intra-enterprise financial linkages had a greater advantage over local parents only during the period of crisis, and especially in recipient countries where credit conditions worsened.

These findings have important implications for academic and policy debates on the role of foreign direct investment. In many countries, there is a growing fear that FDI is more volatile than national investment and that it leads to greater vulnerabilities, especially during times of crisis. The analysis of Alfaro and Chen (2012) suggests that while the disinterested behavior of multinationals could lead to greater volatility, vertical production and financial linkages between foreign subsidiaries and parent enterprises could alleviate the impact of a crisis in a recipient country.

Multinationals and organization

Despite the extensive recent theoretical and empirical literature, the productivity of enterprises continues to be in large measure a black box, as Melitz and Redding note (soon to be published). Empirical investigation on the role of technology adoption, innovation, management practices, organization of the enterprise and the return on foreign investment from foreign direct investment continues to be thin.

A small number of recent studies explore the choice of location by multinational enterprises and how this affects their productivity. The studies have demonstrated that German and British enterprises with strong links to the United States in research and development, measured by the share of patents with inventors who reside in

the United States, benefit more from the growth of research and development in the United States than do less well connected competitors. For enterprises based in the United Kingdom, the know-how spillovers from foreign investment in research and development brings a productivity increase of 5% on average to national firms (Griffith *et al*., 2006), while German firms enjoy an increase in productivity of 15% (Harhoff *et al*., 2012). The downside to this literature is that it captures only a small fraction of patent activity and therefore only the total activity of innovation. On the other hand, the patents data does not make clear that the innovative activity actually occurred.

Recent investigations aim to understand the role fulfilled by management practices in the huge productivity differences between firms and between countries, which are broadly recognized (Caselli, 2005; Syverson, 2011). Researchers have sought to explain why some countries and some firms in these countries can use their factors of production in a more efficient way and draw more yield from them than other countries and firms do. The traditional approach to this disconcerting question has been to explore the slow diffusion of new technology on the assumption that the differences are due to "hard" technological innovations which take shape in patents or the adoption of new advanced equipment. A growing body of research focuses instead on the misallocation of resources across plants (Alfaro *et al*., 2009; Hsieh and Klenow, 2009). That's to say, the differences are not uniquely a question of the level of accumulation of factors but also of the way in which these factors are assigned across the different production units. Echoing these studies, Alfaro and Chen (2013) suggest that reallocations of capital and labor as a consequence of an increase in production could give rise to important productivity gains.

However, another more recent explanation of productivity differences, which utilizes data from firms, reflects variations in management practices. The recent work of Bloom *et al*. (2013), based on a study of management practices in more than 30.000 plants in the United States, indicates that the most structured management practices are associated with higher productivity and performance, and to higher rates of innovation and to more rapid employment growth. Multinational enterprises tend to have more structured management practices.

Bloom and Van Reenen (2010) find that management practices vary widely between countries, sectors and enterprises. They find not only that multinationals are generally better managed in each country but also that multinationals transplant their styles of management to foreign countries.[29] The authors also discover that

[29] In a related article, Bloom *et al.* (2012) examine the productivity differences related to Information Technologies (IT) between U.S. multinational-owned establishments and ones that are either property of multinationals outside the United States or are purely local. The authors find that foreign subsidiaries of U.S. multinationals seem to obtain higher productivity from capital

exporting firms are better managed than non-exporters and that exporting is dominated by multinationals. Finally they observe that in general competition tends to improve management practices through selection, the exit of badly managed firms and innovation.

Heterogeneity

There is no doubt that the quality of foreign direct investment can be affected by any of the characteristics of the project and of the industry, such as the means of entry (greenfield versus mergers and acquisitions) and the country of origin.[30]

Greenfield versus mergers and acquisitions. Calderón *et al.* (2004) distinguish the feedback and macroeconomic effects of foreign direct investment in new installations from mergers and acquisitions (M&A). The latter, although more frequent in industrialized countries, have also taken place in developing countries, especially in those carrying out extensive privatizations. For a vast sample of countries, industrialized or developing, the authors find that during 1987-2001, un greater number of mergers and acquisitions were followed by a greater level of investment in new installations, while uniquely in developing countries a greater investment in new installations was followed by a larger number of mergers and acquisitions. Both in industrialized countries and in developing ones, the two types of FDI lead to national investment, but the national investment does not lead to foreign direct investment of any type.[31] Finally, none of the types of FDI seems to precede economic growth in developing countries or industrialized ones, although economic growth has a positive effect on FDI.

More recently Neto *et al.* (2010) study the differential impact on growth of using greenfield investment rather than mergers and acquisitions, based on a panel of 53 countries in the 1996-2006 period. The authors find evidence de bidirectional causality between FDI, mergers and acquisitions, and growth. In their view, investment in new installations (greenfield) has a positive impact on economic

invested in IT than national enterprises and subsidiaries of non-U.S. multinationals and, in addition, they make more intensive use of TI. This is true both for a set of data from the United Kingdom and for a set at European firm level. The authors also show that U.S. enterprises have higher scores in "people management" practices, which are defined in terms of promotion, compensation, hiring and dismissal practices.

[30] Javorcik and Spatareanu (2011), for example, find significant differences between the effects associated with foreign investors of different nationalities in Romania. Our data, however, do not allow control of these differences.

[31] However, in mergers and acquisitions where both firms are foreign, there are not necessarily capital flows to the country of the target company. Equally, this type of transaction should not enjoy FDI incentives.

growth in both developed and developing countries, while the effect of M&A on economic growth is negative in developing countries and insignificant in developed ones. Harms and Méon (2011) find that while FDI improves growth substantially, M&A does not do so. The problems common to all these studies are data availability and the sample selection bias of different forms of investment. Future work that uses long time period data ought to be able to help us to understand better the different impacts.

Country of origin. Research has revealed that the country of origin is an important factor. Girma and Görg (2007) differentiate acquirers by country groups in their research on wage stimuluses; and Javorcik and Spatareanu (2008, 2011) examine the impact of investor origin on vertical spillovers from foreign direct investment.

Javorcik and Spatareanu (2011), in particular, use panel data at firm level in Romania to examine if the nationality of the foreign investor affects the extent of vertical spillovers. In this case, the Association Agreement between Romania and the European Union (UE) implies that inputs coming from the EU are subject to a lower tariff that those coming from the United States or Canada. Consequently American investors can have, on average, a greater incentive than EU investors to invest in Romania. This creates greater potential for vertical spillovers. Empirical analysis supports this hypothesis showing a positive association between the presence of American enterprises in final product production sectors and the productivity of Romanian enterprises in supply industries, but there is no sign of a significant relationship in the case of European subsidiaries. The findings also indicate that Romanian enterprises in sectors whose products are expensive to transport benefit more from the presence of the U.S. subsidiaries than from Romanian enterprises in sectors with low con low shipping costs. No such pattern is found for European subsidiaries.

Sectors.[32] Alfaro (2003), using an UNCTAD database to investigate the impact of FDI on growth, finds evidence of a positive impact on the manufacturing sector, but only ambiguous evidence for the services sector. On the other hand, the effects of FDI in the primary sector tend to be negative. Although it could seem natural to argue that FDI can transmit great advantages to host countries, such gains vary from one sector to another (primary, industrial and services sectors). The UNCTAD World Investment Report (2001:138) argues, for example, that "in the primary sector, the scope for linkages between foreign subsidiaries and local suppliers is

[32] In Section 4.1, in the subsection regarding financial markets, the literature related to direct investments in the financing and banking sector is presented.

often limited [...]. The manufacturing sector has a broad range of activities with intensive linkages. [in] the tertiary sector the scope for the division of production in discrete stages and sub-contracting of a large part to independent national firms is also limited." A stereotyped contrast can be drawn between FDI directed towards natural resources, as exemplified by the United Fruit Company (Chiquita in Central America) and FDI directed to labor intensive manufacturing sectors, such as those in Singapore.

Time. Merlevede *et al.* (2013) find that foreign entry initially affects the productivity of local competitors in a negative way but that once majority foreign ownership has been in place for a time, this fall is compensated by the positive impact on local competitors. The effect on the productivity of local suppliers, by contrast, is transitory: the entry of enterprises with majority foreign capital increases the productivity of local suppliers after a short period of adaptation, but this improvement fades. The positive impact of minority foreign owned enterprises on local suppliers is immediate, but smaller and also transitory.

Evolution of FDI in Central America: push-pull factors and promotion[33]

The determinants of capital flows have been widely examined in the economic literature. Calvo *et al*. (1996) differentiate between the role of external (push) factors and internal (pull) factors. The external factors include the global economic cycle, integration of global capital markets, diversification of investments at international level, contagion effects and the diminution of global interest rates which improve the solvency and reduce the risk of default of developing countries. The internal factors include political and economic stability associated with monetary, fiscal and trade policies and with the capital markets. But the more important drives of flows of foreign direct investment, besides technological advances and the political and macroeconomic environment, have been the attitudes of recipient countries to the costs and potential benefits of FDI.

Foreign direct investment is highly controversial in the countries from which it originates and in recipient countries. In the countries of origin, some fear that foreign investment reduces national wages, destroys local jobs and erodes technological leadership, while others believe that firms must invest abroad in order to maintain their competitiveness in an ever more globalized environment. In recipient countries,

[33] For a historic view of international trade, see Jones (1996).

some insist that FDI speeds up economic development by bringing new capital and technology while others fear that foreign control of factors and local assets creates enclaves and economic dependence.

Policy instruments such as incentives, trade barriers and direct restrictions against foreign control of resources or local sectors have paralleled the prevailing political climate towards FDI. During the last three decades of growing global financial integration, much governments have adopted policies of financial liberalization and promotion with the aim of attracting more capital flows.

Trends: evolution and changes

During the 20th century, the attitude towards foreign direct investment has shown notable changes.

Direct international investments increased vertiginously from the 1880s until the beginnings of the 20th century, spurred by economic growth and improvements in transport and communications. They were highly concentrated (55%) in natural resources, such as oil, coal, iron and agricultural products. Throughout this period, governments did not try to control or restrict international private transactions in a systematic way. FDI enjoyed this liberal entrepreneurial environment until the end of the 1920s. In Central America, this first phase is that of the banana firms (for example, the United Fruit Company) and enclave gold producers. According to Bulmer-Thomas (2003), FDI in the seven countries of the region climbed to approximately US$ 200 million; a large part of this sum was invested in the rail network.

The First World War and the nationalization of foreign property in Russia in 1917 were serious setbacks for FDI; however, the beginning of the Great Depression in 1929 was the event that marked the end of FDI's golden age. Stagnation of the global economy and the collapse of the international financial system reduced the number of opportunities for attractive investments. Of still greater importance was the reduction in receptivity to FDI during the 1930s when restrictions increased throughout the world as governments worried about its possible impact on their economies and on national sovereignty. Many countries tried to regain control of natural resources and denounced the "extractive" nature of FDI, reflecting the large participation of multinationals in the exploitation of natural resources.

The 1960s brought a slow resurgence in foreign direct investment thanks in large part to a positive macroeconomic environment. This new wave of foreign direct investment, by contrast with the former one, was concentrated in manufacturing in developed countries. Western Europe, the United States and Canada received around two thirds of inward FDI. Even then some multinational manufacturing firms found new opportunities in countries which were applying development strategies based on import substitution. Countries which kept high tariff barriers to

protect national industries allowed multinational firms to carry out "tariff jumping" investments and to establish factories to supply local markets. In Central America, the import substitution model and the formation of the Central American Common Market paralleled global trends.

The seventies and the beginning of the eighties brought a new wave of difficulties for FDI. Rising oil prices and developing countries' debt crisis slowed down the flow on foreign direct investment both in developed and developing countries as its merits were questioned. After many years of skepticism, the pendulum swung back in favor of FDI at the end of the eighties. An ample consensus began to advocate the potential benefits of FDI for recipient economies. FDI began to be portrayed as a means to improve social welfare through the provision of capital, technology and know-how.

This change of attitude may have been due to the fact that the debt crisis of the eighties cut developing countries' access loans and portfolio investment. Meanwhile, sectors in which multinational enterprises were active (high tech and services) made FDI much more attractive to developing countries, as a possible promoter of technology absorption. As the relationships between multinational enterprises and host countries improved, governments began to lift restrictions on foreign direct investment and increased the incentives offered to attract investment and integrate in the globalized economy. One of the most dramatic policy changes took place in China as the government opened its national market little by little to foreign firms.

In Central America, the debt crisis of the eighties marked a break from the State-direct industrialization model to the adoption of a model based on export development. With a new attitude towards FDI, now seen as a motor of growth and employment, came important plans to promote FDI. Countries also liberalized trade and negotiated bilateral and multilateral free trade agreements. During the decade of the eighties, FDI in Central America was concentrated in the manufacturing sector, especially in textiles and clothing, and was channeled towards export activities, largely in search of lower labor costs (export platforms to serve the market in the United States). Operations were carried out, essentially, under a system of free zones or similar arrangements.

FDI increased throughout the world during the 1990s and the first half of the 200s and its growth reached 50% in 2006. The growth of FDI diminished during the sub-prime mortgage crisis and the recession that followed, with different rates of growth in the most recent years (see Table 2.1).

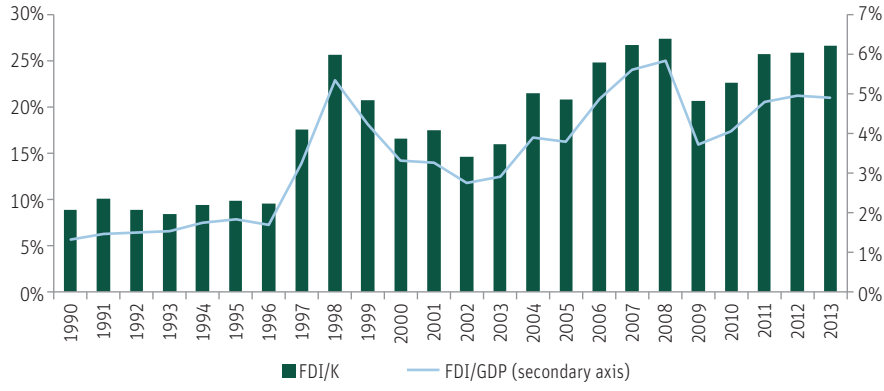
FDI increased in Central America during the 1990s through demand and supply factors, such as privatization of state-owned energy and telecommunications industries (except in Costa Rica). Flows also increased due to an improvement in the business climate, greater economic and political stability, and specific

TABLE 2.1 Selected indicators of FDI and international production, 1990–2012: Central America and Dominican Republic

	Value (billions of dollars)							Annual Growth Rate (Percentage)									
	1990	2007	2008	2009	2010	2011	2012	1991–1995	1996–2000	2005	2006	2007	2008	2009	2010	2011	2012
FDI Inflows	207	1,979	1,697	1,198	1,490	1,652	1,351	22.1	39.4	32.4	50.1	35.4	−14.2	−29.4	24.4	10.9	−18.2
FDI Outflows	239	2,147	1,858	1,175	1,505	1,678	1,391	16.5	35.6	−5.4	58.9	53.7	−13.5	−36.8	28.1	11.5	−17.1
FDI Inflows Stock	1,942	15,660	14,909	18,041	20,380	20,874	22,813	8.6	16.0	4.6	23.4	26.2	−4.8	21.0	13.0	2.4	9.3
FDI Outflows Stock	1,786	16,277	16,206	19,326	21,130	21,442	23,593	10.6	16.9	5.1	22.2	25.3	−0.1	19.3	9.3	1.5	10.0
Foreign Affiliates Sales	6,026	31,764	30,311	23,866	22,574	24,198	25,980	8.8	8.1	5.4	18.9	23.6	−4.6	−21.3	−5.4	7.2	7.4
Foreign Prooduction Affiliates	1,477	6,295	6,020	6,392	5,735	6,260	6,607	6.8	6.9	12.9	21.6	20.1	−4.4	6.2	−10.3	9.2	5.5
Foreign Affiliates Total Assets	5,938	73,457	69,771	74,910	78,631	83,043	86,574	13.7	18.9	20.5	23.9	20.8	−5.0	7.4	5.0	5.6	4.3
Foreign Affiliates Exports	1,498	5,775	6,664	5,060	6,320	7,436	7,479	8.6	3.6	13.8	15.0	16.3	15.4	−24.1	24.9	17.7	0.6
Foreign Affiliates Employment (000)	24,476	80,396	77,386	59,877	63,043	67,852	71,695	5.5	9.7	8.5	11.4	25.4	−3.7	−22.6	5.3	7.6	5.7
GDP (current dollars)	22,121	55,115	60,780	57,920	63,468	70,221	71,707	5.9	1.3	8.4	8.2	12.5	10.3	−4.7	9.6	10.6	2.1
Gross Fixed Capital Formation	5,099	12,399	13,824	12,735	13,940	15,770	16,278	5.4	1.1	11.8	10.9	13.8	11.5	−7.9	9.5	13.1	3.2
Exports	4,141	17,321	19,990	15,196	18,956	22,303	22,432	7.9	3.7	13.8	15.0	16.3	15.4	−24.0	24.7	17.7	0.6

Source: World Investment Report (UNCTAD, 2013).

GRAPH 2.1 **Central America and Dominican Republic: foreign direct investment, net inflows, 1990–2011**



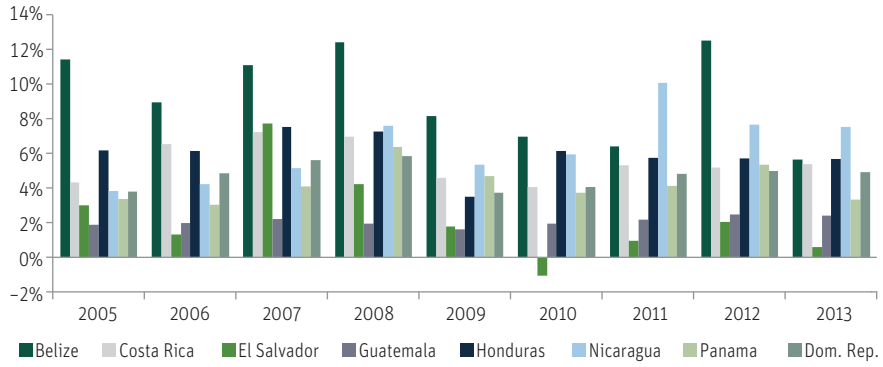
Source: World Bank Development Indicators (2013).

policies favorable to FDI. With the prohibitions associated with the Agreement on Subsidies and Countervailing Measures, the end of the Agreement on Textiles and Clothing, and greater competition from China and India, Central America lost its competitiveness in the textile and clothing sector. Instead foreign firms began to invest increasingly in service industries, including tourism and business services. Flows have reached around 6% of regional GDP and around 25% de capital formation (see Graph 2.2).

In the last decade, FDI flows to Panama as a percentage of GDP have exceeded those to other countries in the region (see Graph 2.3). These are associated, in large measure, with services related to the Canal, transportation, logistics, tourism and financial services, the real estate sector and the creation of special economic zones, such as the Panama-Pacific Special Economic Area and the Colón Free Zone.

Costa Rica, unlike other countries in Central America, realized early that the textile industry was losing ground and put in place policies to train local workers. As is set out in Spar (1998), at the end of the 1980s, CINDE, the investment promotion agency of Costa Rica, decided explicitly to reduce the priority of textile fabrication (as a result of the increase in wages in Costa Rica and strong competition from emerging markets with lower wages) and to focus on the electronics industry. The MNEs responded by investing in mid- and high- technology sectors. In 1996, Intel corporation announced the construction of a semi-conductor assembly plant in Costa Rica. Production from the plant began two years later. Intel's investment that year was six times greater than what had been the annual level of foreign direct investment in this Central American country of 3.5 million people (see

GRAPH 2.2 **Central America and Dominican Republic: FDI inflows as a percentage of GDP by country, 2005–2011**



Source: World Bank Development Indicators (2013).

Spar, 1998) and marked the expansion of FDI into the electronics sector, medical equipment and business services thanks in large measure to investments by firms such as Boston Scientific, Hewlett Packard, IBM, and Procter & Gamble. During the last decade, FDI flows which in general range between 4% and 6% of GDP have been a constant source of inward foreign capital in the country. In 2014, Intel announced a restructuring of its installations. Intel's Global Services Centre and Centre for Engineering and Design will keep their current location in Costa Rica. These operations will increase their relevance to Research and Development operations. As part of its global strategy the company will relocate its assembly and test operations to Asia, where these activities will be concentrated. Personnel who work in Research and Development services has reached 1,200 people and the opening of new posts was recently announced.

FDI inflows into Guatemala have historically been weak by comparison with the rest of the region, above all given the size of the country's internal market. In the last decade they have amounted to about 2% of GDP. The biggest investments were the result of privatizations, in particular of the electricity network and telecommunications services. Textiles and clothing have traditionally been the most attractive export manufacturing sector for investors.

El Salvador shows great variability. FDI reached almost 8% of GDP in 2007, but in recent years has been close to 2%, which is low for the region.

As they are low income countries, Nicaragua and Honduras have preferential access to the United States market through the Central American Free Trade Agreement (CAFTA). Furthermore, low wages have also enabled these countries to

maintain their positions as principal exporters of clothing the United States. Both countries have been able to attract FDI flows at an average of more than 5% of GDP throughout the decade. Honduras has also attracted foreign direct investment to a series of sectors, besides textiles and clothing, such as light manufacturing (basic assembly of parts for the automotive and electronics industries), agriculture and business services. The effects of the recent strategic debate about attracting investment through the creation of Hong Kong-style model cities is not yet clear.

FDI inflows to the Dominican Republic owe much to its proximity to the United States, the size of its internal market and its reforms in the telecommunications and energy sectors. FDI has predominated in the export firms that operate in the economic zones of the country. In addition the foreign firms which produce goods and service for the internal market have invested recently. In general, FDI has fluctuated at between 4% and 6% of GDP in the last decade.

Promotion of FDI and incentives

Developed and developing countries have tried to attract foreign investors by designing incentives with the aim of increasing investment incomes and/or reducing (or transferring) the costs or risks. An incentive is any quantifiable economic benefit granted to specific firms by (or under the direction of) a government with the aim of stimulating certain behaviors.

Fiscal incentives for FDI have been designed to reduce the fiscal burden on foreign investors while financial incentives include government grants, credit at subsidized rates, government equity participation, government guarantees and insurance at preferential rates. Other incentives include subsidized, dedicated services and infrastructure (often through free export zones), exchange rate privileges and even monopolistic rights. The incentives can be granted at state, municipal or national level. In addition, efforts to attract FDI can be directed at specific sectors. Direct subsidies are often granted case by case. In 2005, in the Census of Investment Promotion Agencies, 68 de 81 developing countries questioned reported offering fiscal or other incentives to foreign investment (Harding and Javorcik, 2007).

Some FDI recipient countries require multinational enterprises to set up their productive installations in certain sectors or specific regions (such as industrial free zones or special economic zones) and to export their output. Alfaro and Charlton (2013) identify the sectors selected by OECD countries between 1985 and 2001. The most chosen sectors included machinery, computers, telecommunications and transport equipment. The most targeted sectors in developing countries are similar, including the wholesale trade, transportation equipment and oil.

There are various types of special economic zone (SEZ), including free trade zones, industrial free zones, free zones, industrial parks, free ports and urban

industrial zones.[34] The majority of countries offer incentives that range from tariffs, taxes and infrastructure to rationalized administration, with the aim of encouraging firms to locate in this type of zones.

In the last two decades, many developing countries have set up special economic zones to attract investment to their economies. These special economic zones have different objectives: to provide foreign exchange earnings, promote non-traditional exports, supply employment and attract FDI in an effort to stimulate technology transfer and the diffusion de know-how. Many were created to provide an internationally competitive environment, relatively free of regulatory burdens, for exports. Others were seen as a way of developing the manufacturing sector and creating employment. Their characteristics have changed over time and now, in general, they include tariff-free access, generous fiscal exemptions, financial incentives, les bureaucracy and better infrastructure than that in the rest of the country. Until the 1970s, the SEZs were normally government owned, but now there are an ever increasing number of private SEZs.

In limiting the combination of financial incentives, reduced bureaucracy and trade liberalization to a subset of the economy, such policies can be less than optimal from the economic point of view, because the allocations of resources can be distorted and the benefits be shared among only relatively few. However, special economic zones can still play a useful role in the development of a country if they serve as a catalyst for a process of reform that is part of a global national strategy. Up till now, studies of the costs and benefits of special economic zones have not presented conclusive results. Some zones have attracted FDI and have promoted exports and job creation, others have not. In some cases, FDI has increased but it has given rise to little or no technology transfer, nor has it generated productive linkages. In many cases, special economic zones which have had moderate success have served as safety valves and not as catalysts of reform and have led countries to put off necessary structural reforms.[35]

The World Trade Organization (WTO) formally prohibited the concession of export subsidies after the 1st of January 2003. However, it was considered that special economic zones met WTO rules provided that the incentives offered were not dependent on export performance; there was no restriction on sales to the internal market.[36]

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[34] Although the urban entrepreneurial zones, like other special economic zones, provide favorable fiscal treatment and other advantages, they differ in not receiving treatment as foreign territory (see Alfaro *et al.,* 2013).

[35] For a general view of the tests, see Madani (1999) and Engman *et al.* (2007).

[36] "Export Processing Zones at risk? The WTO rules on subsidies: what options for the future?" UNCTAD press release, January 23, 2003, http://www.unctad.org/Templates/webflyer.asp?docid=3154&intItemID=2261 &lang=1, accessed November 2008.

Although the WTO agreement on subsidies goes back to 1995 and export subsidies through export promotion regimes were eliminated, no Central American country removed the fiscal incentives in its free zones. On the contrary, given that tax exemption was considered one of the principal attractions to FDI from Central America under the export promotion regimes, these countries, together with other small and developing countries, managed to obtain a five year extension to the deadline for dismantling export subsidies, followed by another extension of two years. They were therefore permitted to keep their subsidies in place until 2009. Before the 2009 deadline, however, a further extension was given to them, this time until December 2015, but countries of the region were obliged to accept that the new deadline could not be extended.

Costa Rica, Dominican Republic, El Salvador, Guatemala and Panama have drawn up proposals to reform their incentive regimes. Honduras and Nicaragua will not have to modify their incentive schemes provided that they remain low per capita income countries. A common characteristic in all the free zone regime reforms approved or in discussion is the concession of a total or partial income tax exemption. Furthermore, sectors in which incentives are granted now include strategic sectors (such as high-tech activities and intensive research and development) and relatively less developed areas within each country.

Are FDI incentives needed?

Despite the fact that some studies minimize the role of government incentives in foreign investment decisions, developed and developing countries try to attract foreign investors through the granting of special treatment for FDI. Many policy-makers and academics argue that developing countries must seek to attract foreign direct investment as a way to generate higher economic growth and as a source of direct capital financing and of valuable productivity externalities for national firms. However, the existence of an environment that is more favorable to FDI has now triggered a new debate concerning the concessions that are offered to foreign firms. Does FDI deserve special treatment that is not given to other forms of investment? What range of incentives are available to policy makers? And what are the costs and benefits associated with this competition between countries to attract foreign firms and how do multinational enterprises respond to these incentives?

In the policy debates, at times it is argued that incentives to attract FDI are justified as a way of creating employment, but when there is full employment, this is not a valid argument. Even when there is unemployment, it's not clear that higher investment will help, for this depends on the causes and nature of the unemployment. A more sophisticated argument is that FDI incentives are a valid way to increase social capital and, therefore to allow wages to rise. For this approach to be profitable,

however, the rate of return on capital in the recipient country must be higher than in the countries of origin. But if that were the case, the incentive would not be necessary.

A related and valid argument is that fiscal incentives for FDI are justified as part of an optimal tax policy if the investment elasticity to taxes is greater for FDI than for national investment. The problem with this approach is that it could ultimately prove counter-productive as countries would transmit rents to the multinationals.

If foreign capital is more mobile than local capital it could be argued that governments may want to tax incomes from foreign capital, whether FDI or portfolio investment, at lower rates. In general, however, economists argue that for special treatment to be warranted for FDI as opposed to other forms of investment, there needs to be some type of market failure, such as externalities and secondary effects.

Defenders of incentives argue that foreign direct investment, by its very nature, has important positive effects in recipient economies beyond the direct capital financing that it supplies and the jobs it creates. FDI can help to introduce new processes, management skills and greater know-how to the national market, promotion of entrepreneurial networks and access to foreign markets, which generate valuable impacts on productivity. The increased competition resulting from the entry of foreign firms can oblige national ones to modernize, introduce new technologies and be more efficient. FDI can also generate linkages with local firms and help to kick-start an economy. Finally, countries might want to promote foreign direct investment because it is less volatile than portfolio investment flows.

Others disagree and question whether the potential benefits of FDI justify special treatment. This skeptical viewpoint has been influenced by empirical studies, both at the firm level and the national one, which show inconclusive results on the externalities and growth that FDI might generate. But as was mentioned previously, the evidence that FDI generates positive effects in recipient countries suggests that the capacity of a country to take advantage of these externalities could be limited by complementarity and local conditions, such as infrastructure and education levels and the political environment. Equally the growing preoccupation over “national investment” that adopts a “foreign flag” with the aim of tapping special benefits also calls into question this special treatment for FDI as opposed to measures favorable to all investment.

Some politicians and government officials are concerned because, amid the competition to attract foreign direct investment, the concession of benefits by one country or region within a country can set in train similar responses by other possible recipient countries, which could precipitate a “race to the bottom” where the incentives granted to FDI end up by exceeding the social gains and become, in fact, a net loss for a “winning country.”

Conclusions

New research perspectives on the role of complementarities and of the mechanisms through which FDI induces growth (when it does so) have represented an important step forward in reconciling the ambiguous evidence on the capacity of FDI to generate growth in recipient countries. Research on complementarity has demonstrated that the positive impacts of FDI are not exogenous but instead depend on the presence of certain local conditions. Research on the mechanisms and channels through which FDI can create positive externalities goes a step further, illustrating how complementarities such as a competitive environment which guarantees that market share is allotted to the most productive firms or most developed financial markets and assure that vertical supply relationships translate into meaningful linkages, can act as "shock absorbers" to facilitate the benefits of FDI. New research into the relationship between organization and productivity, on the one hand, and the impacts of multinational enterprises, on the other hand, aim to understand these questions better.

What are the policy repercussions of this research? FDI can play an important role in economic growth, very probably through suppliers, but local conditions are important and can limited the degree to which the benefits of FDI materialize. It is not clear that incentives to attract multinational enterprises are warranted. The most sensible policies might involve the elimination of barriers which prevent local enterprises from establishing satisfactory linkages; improving the access of local enterprises to inputs, technology and financing; and speeding up of the processes associated with the sale of inputs. Countries could also try to seek to improve national conditions, which would have the additional effect of attracting foreign investment (Alfaro *et al.*, 2007, 2008) and would allow the economy of the recipient country to maximize the benefits of that investment. Fiscal incentives that remain in place must be assessed in terms of their impact on the public finances and should be considered as one of the possible instruments through which FDI can be established and linked to the local economy as a means of transfer of know-how and technology, in addition to the spurring of entrepreneurial linkages. To understand the inter-dependence of the localization of multinational enterprises and the way in which they agglomerate is fundamental to the design of these economic policies (Alfaro and Chen, 2012). However, research suggests that the most appropriate policies will also have as an objective the improvement of internal conditions, including access to credit and the labor supply (particularly the supply of qualified manpower), while regulatory barriers are eliminated so as to provide the gains derived from competition and the reallocation of resources.

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3

Recent evolution of foreign direct investment in Central America, Panama and Dominican Republic

Sebastián Auguste

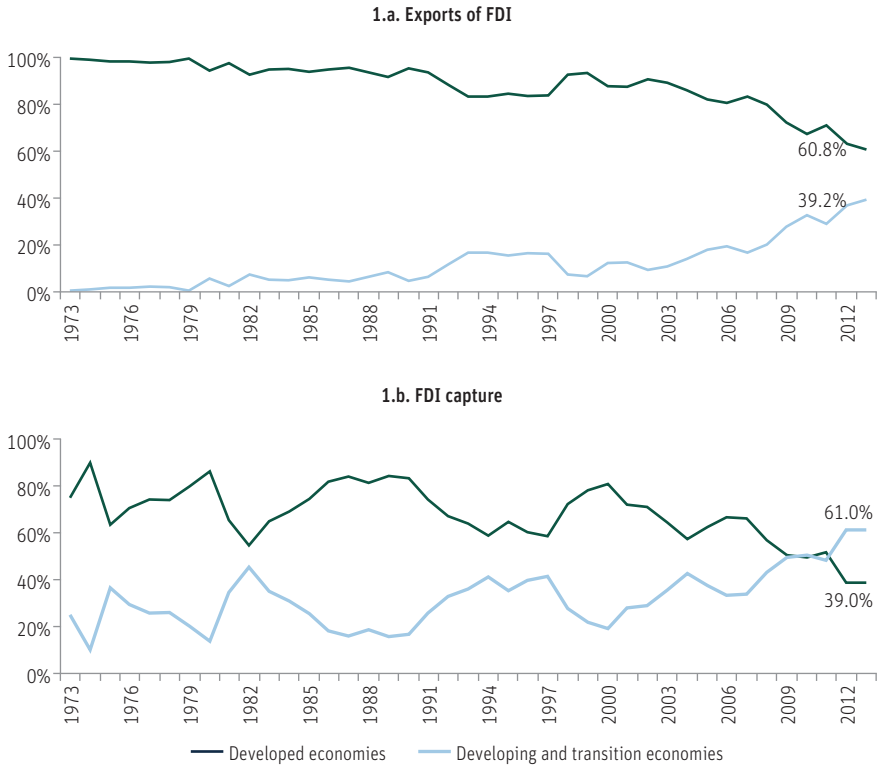
The current trend in foreign investment

Flows of foreign direct investment (FDI) to developing countries rose in the 1990s to become the main source of external financing. So far this century growth has accelerated still further and emerging countries attracted recognition when in 2012, for the first time in history, they attracted more FDI than developed countries. In 2013, developed countries managed to attract only 39% of global FDI while in the 1970s and 1980s they received between 75% and 77% (see Graph 3.1b).

An interesting development in recent years is that developing countries, in addition to attracting investment, have also become exporters of FDI. Multinational based in emerging countries, which in Latin America tend to call themselves *multilatinas* keep acquiring a greater share in FDI flows. According to the most recent UNCTAD data (September 2014), developing countries and countries in transition generated 39% of overseas investments in 2013, far above the 12% for which they accounted at the beginning of the previous decade, showing that a new pattern of internationalization has emerged (see Graph 3.1a).

It may be the stage which multinationals of different origin have reached that explains differences in the direction of FDI. Multinationals from developing countries direct the majority of their flows as new contributions to greenfield investments or the purchase of firms, while multinationals from developed countries mostly reinvest earnings. In 2013, almost two thirds of investment by developed

GRAPH 3.1 **Gross FDI flows by mega-regions, 1973–2013**
(% of the global total)



Source: UNCTAD (2014).

country multinationals was directed at other developed countries, especially to buy subsidiaries of developed country multinationals (almost half the investment is to this end). This shows that more than a sectoral structural change, what is occurring is a change in those who are shareholders of developing country firms, who are becoming increasingly multinationals of other developing countries. In this trend, the *multilatinas* direct the majority of their investments towards other Latin American countries and mostly to groups built up with purchases which were often made from American or European multinationals.

Besides the multinationals there is also the rise of *private equity* firms based in developing countries that are not only carrying out transactions in their regions of origin but also in developed countries.

It is worth stressing that within this recent trend state-owned multinationals have gained weight. These enterprises account at present for barely 1% of the total of multinationals, but generate 11% of global FDI.[1]

This structural change has been observed since the beginnings of the current millennium but strengthened with the international crisis of 2008. The crisis provoked a very marked fall in global FDI flows, but mainly in flows to developing countries. In 2007, the year before the crisis, global FDI had reached its historic peak of US$2 trillion. The crisis brought a descent from this peak, with global FDI falling in 2008 and 2009, to US$ 1.21 trillion (a fall from the pre-crisis peak of almost 40%); it recovered slightly in 2010 and in 2011, but fell again in 2012, to US$ 1.31 trillion, and finally in 2013 it showed signs of recovery, climbing to US$ 1.45 trillion. Thus FDI did not manage to regain its pre-crisis level and is at present 27.5% below that level and represents only 1.95% of global GDP, when in 2007 it represented 3.53%.

The fall in total FDI globally from the 2007 peak by 27.5% is explained above all by what happened in developed countries, where the contraction amounted to 57.2%, while in developing countries there was a contrary trend, with growth of 31.7%. This change in composition meant that for the first time in history developing countries captured a higher share of global FDI. Developed countries went from taking almost 70% of total FDI in the pre-crisis years to only 39% in 2012 and 2013. Among the regions with highest growth South America stands out. Between 2007 and 2013 it managed to increase its FDI by 86%. Developing countries in Asia lost momentum, with an increase of 16.5%, but Asia remained the developing world region which attracts most FDI. (In 2013 Asia received 55% of total FDI in developing countries and 29% of total global FDI).

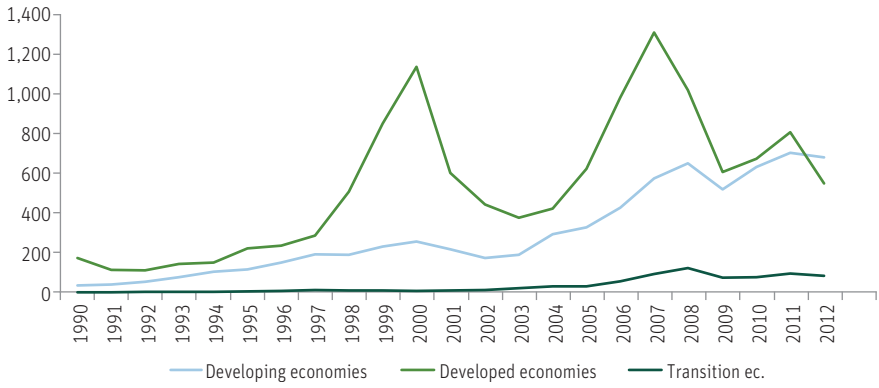
Faced with a scarcity of resources and the need to keep up investment levels in low-growth economies, countries have become more aggressive. The most recent UNCTAD data show that many have redoubled their efforts to attract FDI. Investment incentives have been the main tool, in spite of criticisms that these policies are distorting and inefficient. At the same time other countries have added measures that restrict the exit of capital as a means to cling on to investment. France, for example, imposed penalties on firms which close and Greece made it more difficult for multinationals to relocate outside the country. South Korea and the United States for their part launched incentives to encourage multinationals to repatriate capital.

[1] UNCTAD estimates that there are at least 550 state-owned multinational firms, both in developed countries and in developing ones, with more than 15,000 foreign affiliates and foreign assets worth more than US$ 2 billion.

TABLE 3.1 Gross FDI in the world

	Gross FDI accumulated by decade				
	1970	1980	1990	2000	2010–2013
Billions of dollars					
World	240	933	4,032	11,744	5,905
Developing	59	208	1,192	3,714	2,881
Region	3.1	2.8	17	55	44
South America	17.2	35.8	267	492	502
Asia	19.0	118.4	701	2,299	1,681
Others	20	51	206	869	653
In transition	0	0	40	441	358
Developed	180	725	2,800	7,590	2,666
Share in global total					
Developing	25%	22%	30%	32%	49%
Region	1.3%	0.3%	0.4%	0.5%	0.7%
South America	7.2%	3.8%	6.6%	4.2%	8.5%
Asia	7.9%	12.7%	17.4%	19.6%	28.5%
Others	8.2%	5.5%	5.1%	7.4%	11.1%
In transition	0%	0%	1%	4%	6%
Developed	75%	78%	69%	65%	45%

FDI inflow in billions of current dollars



Source: UNCTAD (2014).

UNCTAD's World Investment Prospects Survey shows that both multinationals and investment promotion agencies are optimistic about FDI prospects in coming

years.[2] But UNCTAD estimates that this growth will be moderate and that it will only reach the levels prior to the recent crisis by around 2017 or 2018. There will probably be more room for FDI to grow in developed countries, which were the most affected by the crisis. On the other hand investment will be much more selective, given that the scope for returns in emerging countries will no longer be as ample. There will be less resources, more selectivity and more competition. The fall in commodity prices, in an economic cycle in which a stronger dollar is expected, is affecting the growth of Latin America and therefore its level of FDI, even though the outlook remains favorable.

Although in future FDI flows may expand more in developed countries, it is unlikely that the structure seen before the first decade of this century will return. The changing of hands in the ownership of enterprises in developing countries is a phenomenon that seems set to last, given that multinationals from emerging countries have done well to weather the international financial crisis. It's likely that their advance is indeed related to the ability these multinationals have to survive in more volatile and riskier environments—the sort of environments in which they were born and are now growing rapidly. It's true that multinationals of some emerging countries such as China or Brazil are also expanding their investment in developed countries, but this is not yet a generalized phenomenon nor one that is as strong as their growth in emerging countries themselves.

The UNCTAD World Investment Prospects Survey reveals interestingly that investors foresee that outsourcing will not be a major target for FDI flows; rather, its two principal motors will be re-investments in existing localities (brownfield) and investments that seek to exploit exportable products. New investment (greenfield) seems more important than mergers and acquisitions, but neither of these two will be the principal motors. Mergers and acquisitions have moderated in recent years. However, private equity funds, which were involved in 31% of mergers and acquisitions activity in 2007, have been accumulating capital and so in their case greater activity might be expected. Since the end of the global crisis, most acquisitions made by private equity funds have been concentrated in Europe and the United States.

Another interesting finding of this survey is that multinationals plan to make their research and development activities, which historically have been head office functions, more international. It's noteworthy that by regions Latin America is reported the second most attractive group among emerging economies, with 44% of multinationals judging the region important or very important for their investment

[2] UNCTAD (2013b).

TABLE 3.2 FDI and international production, selected indicators
(in billions of dollars)

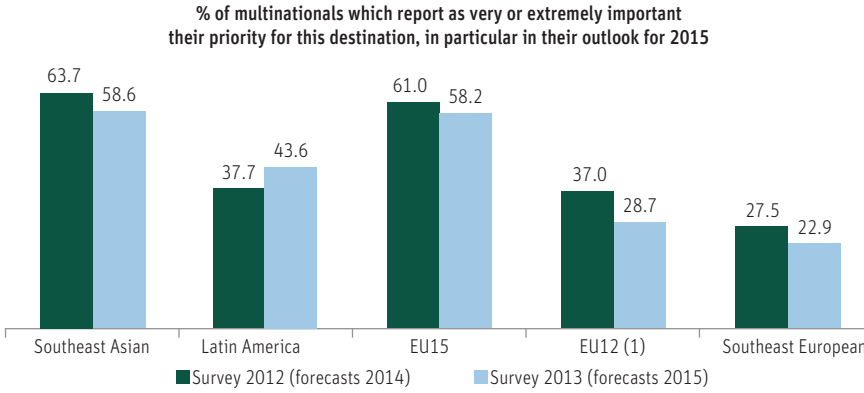
	1990	2005–2007 (pre-crisis)	2011	2012	2013
Inflow of FDI	208	1,493	1,700	1,330	1,452
Outflow of FDI	241	1,532	1,712	1,347	1,411
Stock of FDI received	2,078	14,790	21,117	23,304	25,464
Stock of FDI exported	2,088	15,884	21,913	23,916	26,313
Inflow generated by FDI in destination countries	79	1,072	1,603	1,581	1,748
Rate of return on FDI received	3.8%	7.3%	6.9%	7.6%	6.8%
Inflow generated by FDI Exported	126	1,135	1,550	1,509	1,622
Rate of return on FDI exported	6.0%	7.2%	6.5%	7.1%	6.3%
Amount in Merger and Acquisitions *(Cross-border M&As)*	111	780	556	332	349
Sales generated by foreign affiliates	4,723	21,469	28,516	31,532	34,508
Value added generated by foreign affiliates	881	4,878	6,262	7,089	7,492
Total assets of foreign affiliates	3,893	42,179	83,754	89,568	96,625
Exports of foreign affiliates	1,498	5,012	7,463	7,532	7,721
Employment of foreign affiliates (millions)	20.63	53.31	63.42	67.16	70.73
Data for comparison					
GDP	22,327	51,288	71,314	72,807	74,284
Gross fixed capital formation	5,072	11,801	16,498	17,171	17,673
License and royalty payments	29	161	250	253	259
Total exports of goods and services	4,107	15,034	22,386	22,593	23,160

Source: UNCTAD (2014).

objectives in 2015. The most optimistic prospects were seen in primary sectors, while the service sector was seen as neutral.

The main source of FDI will continue to be developed countries but developing ones continue to grow faster as suppliers of global capital. Brazil and Chile stand out in Latin America, China—the most promising country in terms of growth in FDI to other countries—in Asia. It emerges from the survey that developed country multinationals are more cautious in their growth outlooks for 2015 than multinationals from developing countries.

GRAPH 3.2 **Attractiveness by region**



Source: UNCTAD (2013b).

The CARD region

The region analyzed in this publication—Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama and the Dominican Republic—which we call CARD in this chapter, has not been untouched by these global trends. FDI has been high and very influential, accounting in the last twenty years for a large part of gross capital formation. In 2013 FDI in CARD reached a historical peak in nominal terms, at US$ 12,741 million, equivalent to 4.9% de regional GDP, somewhat lower than the pre-international financial crisis peak of 5.82% in 2008 but among the five highest years as a percentage of GDP in recent history (since 1970). FDI is equivalent to 26% of Gross Fixed Capital Investment (GFCI) in the region, a very high percentage compared to the global average of 10% or the 11.4% for developing countries and higher too than the figure for the rest of Latin America, with FDI in South America equivalent to just 14% of GFCI.

Between 1990 and 2013, FDI in CARD grew at an annual average rate of 15%, almost double the global annual average rate of 8.8%, but close to the 15.3% rate for FDI in South America and the 14.4% for all developing countries. And so CARD's FDI growth rate, though good, is not exceptional among emerging economies. In spite of this FDI has exceptional importance in la region, as debates on economic policy and the effort to attract more investment show. FDI is seen, in general, as a stimulant of employment and growth and as an essential ingredient to promote exports. As will be analyzed in section 2 of this publication, emphasis on FDI in the region is longstanding, though it has passed through various cycles before arriving at its current state. This section proposes an analysis from a historical perspective

to understand better how the present situation sits within the evolutionary process of the region. Section 3 analyzes more deeply the current position of FDI in CARD. Section 4 elaborates its evolution by country. Section 5 addresses the *multilatinas* phenomenon. Section 6 addresses myths and truths about FDI in the region, and Section 7 presents the conclusions.

FDI in the region from a historical perspective

The region has a long tradition as a recipient of FDI which has been very influential at different phases of its history since the agro-exporting period at the end of the 19th century.

FDI has followed a series of cycles driven by a combination of external and internal factors (push and pull factors), advantages provided by geography and locality, and a variety of strategies and development models which have changed over time. Therefore, rather than a pattern of stability there have been different phases with different factors in play. The recent history of FDI in the region can be divided into three phases with different characteristics. The agro-export model, in which FDI was oriented to enclaves and not linked with the rest of the economy, other than through hiring of labor; the import substitution phase, in which FDI played a less influential role and turned towards other economic sectors, often being forced to do so in order to avoid losing internal markets given the shackles placed on imports; and the third phase, which begins with the birth of maquiladoras or free zones in the 1980s and which is consolidated in the 1990s when privatizations help to generate strong FDI inflows.

The first cycle of FDI associated with the agro-export model, at the end of the 19th century and beginning of the 20th century, is mostly related to the region's geographical advantages in agriculture and mineral extraction. This FDI was undertaken by big multinational corporations which exploited primary products from enclaves, with few spillovers to the rest of the economy. In this phase, foreign companies developed their own infrastructure, including by building and operating railways, ports, energy generation, communications and related services (Rosenthal, 2006). The relative size of the foreign enterprises and their role in local economies was so influential that they became an important political force. One example from this time is the United Fruit Company (UFC), a multinational of U.S. origin with a strong presence in Central America. From 1899 until 1930 this firm bought or merged with thirty American companies which controlled 80% of the tropical fruit market in the United States. Similarly it accumulated a lot of land in Central America and was accused of buying at low prices thanks to its monopoly

of commercialization. Its banana export monopoly and UFC's need to assure for itself a "favorable business environment" meant that this company was involved in the internal politics of Central American countries, helped by its position as the biggest employer in the region and the social influence this gave it.

In the literature on this period, emphasis is often placed on the behavior of the transnational enterprises, but as Bucheli (2008) argues regarding the case of UFC what was seen was an implicit strategic alliance between the transnationals and local governments which was purely opportunist and which lasted so long as these enterprises helped local governments to achieve economic stability. The legacy of this phase was a negative social perception of FDI which was associated with imperialism and many abuses.

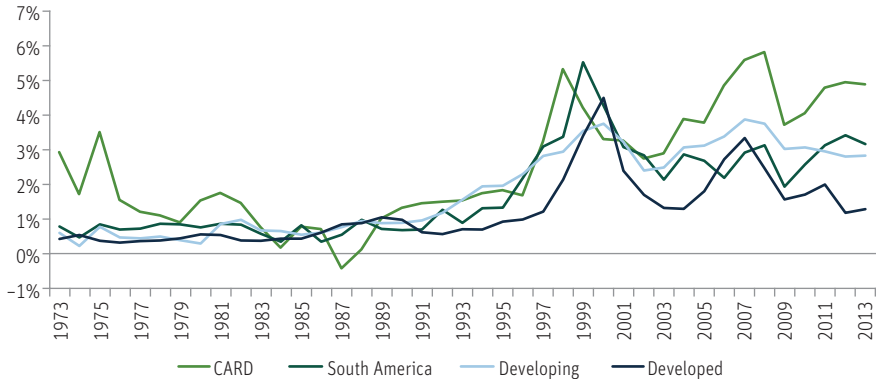
After the Great Depression and stagnation of the global economy, a second phase began in which FDI was spurred by import substitution. Between 1950 and until the 1970s, the majority of countries in the region embarked on a development strategy based on import substitution which boosted FDI in food and drink, textiles and light industry. FDI in this phase played a more limited role, seeking to enter an internal market which would otherwise have been closed off to it, rather than exploiting countries' competitive advantages to ship products around the world. In this phase FDI was less influential. The supposed benefits of the import substitution strategy did not materialize in the region and this investment driven by high tariff barriers tended to be inefficient, creating uncompetitive sectors which did not survive when economies were opened to international trade.

The third phase of FDI in the region began in the 1980s with consolidation of the maquiladoras or free zones, though at different speeds. The 1980s were a lost decade in terms of growth in the region and in Latin America in general. In some countries large-scale internal civil conflicts made matters worse. Faced with the sharp fall in FDI inflows, which dropped from 4% of the combined GDP of CARD in 1970 to 0.9% of GDP in 1979, the countries began to strive for a more aggressive policy to seek FDI, offering generous fiscal benefits. This process strengthened in the region in the 1990s, with the help of reforms to liberalize trade and deregulate the economy, which attracted FDI to private enterprises, besides the flows that had already been entering maquila export industries in the free zones.[3]

In the 1990s FDI reached 2.7% of regional GDP, more than three times the amount recorded in the 1980s and above the 1.7% average of the 1970s. Panama received the highest relative inflows, followed by de Belize, Costa Rica and Nicaragua. In

[3] In this historical perspective significant milestones cannot fail to be mentioned, such as the disappearance of the planned economies, the opening of the Chinese economy and the development of South-East Asia.

GRAPH 3.3 **Gross FDI flow as a percentage of GDP, 1973–2013**



Source: UNCTAD (2014).

El Salvador, Guatemala, Honduras and Nicaragua there were strong FDI inflows generated by the privatization de state enterprises, above all in telecommunications and electricity. In Costa Rica significant privatizations of state enterprises did not take place but meaningful investments in the free zones did occur, especially in electronics, medical equipment and service industries (Rosenthal, 2006).

FDI in the region has climbed to new levels in the current decade, which might even be seen as a fourth phase that began in the middle of the first decade of the 2000s as CAFTA-RD[4] came into force, although it does not represent a radical change of model compared to the 1990s. In this most recent phase, however, it can be seen that maquiladoras are losing weight in FDI, as are sectors which were deregulated in the 1990s, given that the wave of privatizations is over. Meanwhile other sectors are gaining weight, with mergers and acquisitions taking place in banking and the domestic retail trade (supermarket chains). In the most recent period, and despite the international crisis that began in 2007, FDI has risen to high levels in all the countries of the region.

Since the strengthening of the FDI attraction model in the 1990s, the region's policy on FDI has not changed much. On the contrary, everything points to its promotion, especially with the aim of fostering exports, as part of a strengthened development strategy which has survived changes in political colors in the majority of the countries and which without doubt will remain in place and transcend the free zones.

[4] The acronym CAFTA-DR refers to the Central American—Dominican Republic Free Trade Agreement.

FDI's recent evolution in CARD

The latest data (September 2014) show that in spite of the international crisis and its negative impact on investment, FDI has strengthened in the region to high values in all the countries, with Guatemala and El Salvador the laggards. CARD, in aggregate, achieved record foreign investment in 2013 of US$12,741 million, representing 0.88% of global FDI, significantly more than the 0.42% in the 1990s, or the 0.44% of the first part of the last decade. CARD is also raising its share among Latin American countries, where it has gone from representing 5% of total investment, on average, during the 1990s, to 7% now (and to 10% in 2006).

FDI into CARD also increased its share among all developing countries, rising in 2013 to 1.6% of all FDI into these countries when in the 1990s its share was just 1.4%. To put this comparison with developing countries into context, the participation of CARD as a region in global GDP is much lower than its share in global FDI.

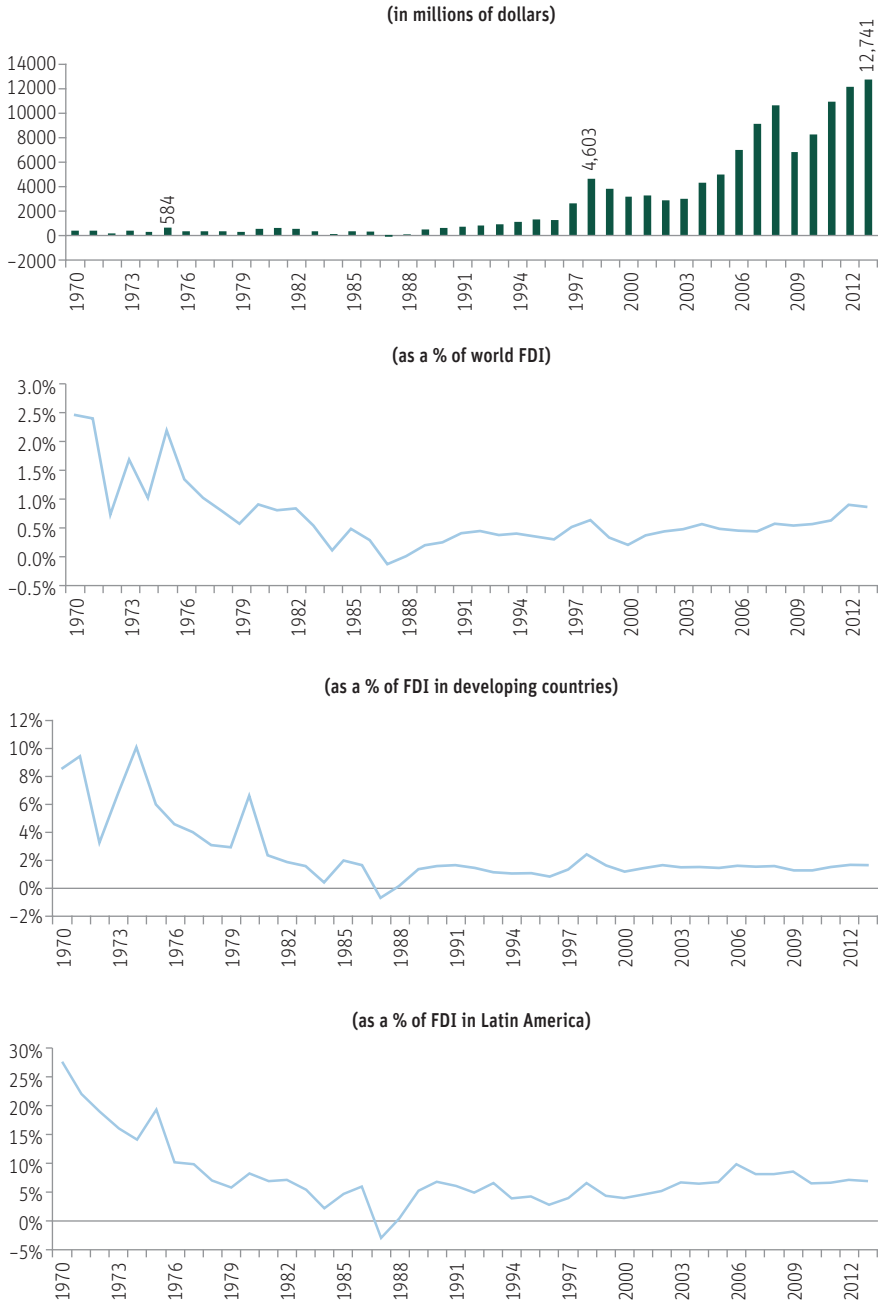
From a longer-term perspective what the region has gained in market share in the present century is not enough to return it to the relative weight it had in the 1970s. In that decade CARD captured 15% of FDI in Latin America, 5.9% of FDI in developing countries, and 1.43% of global FDI, far above the 7%, 1.6% and 0.9%, respectively, for each region in 2013.

One distinctive aspect of CARD is that—with the exception of the lost decade of the 1980s when the majority of these economies closed themselves to the world and suffered recession—the FDI flow represents a high percentage of GDP and of Gross Fixed Capital Formation (GFCF). FDI in 2013 represented 4.7% of GDP and 26.5% of GFCF. The latter is above the international average of 18.5% for all countries and close to the 75% percentile of 28.5%.

The countries with the highest percentage of FDI in GFCF are Belize (47.1%), followed by Panama (39.9%). It's notable that both countries have needed significant investments: in the case of Belize to exploit oilfields found in recent years, and in that of Panama to expand the Canal. Previously, in the 1990s, the share of FDI in GFCF in each country was considerably lower at 15% for Belize and 12.6% for Panama.

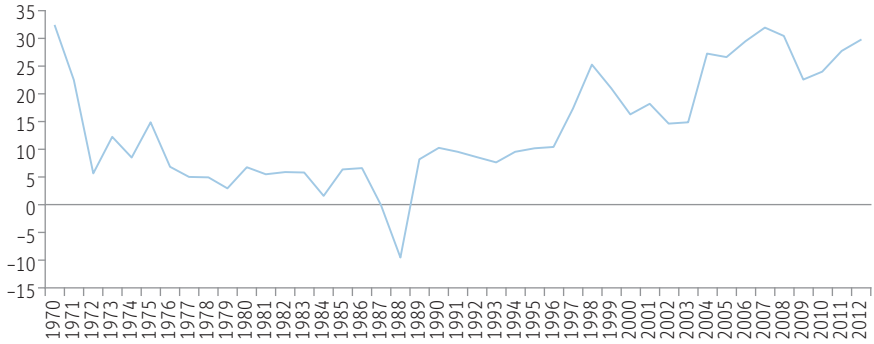
The countries that depend least on FDI to finance their investment are Guatemala and El Salvador. The remainder finance between 20% and 25% of their investment with FDI. There is no sign of a relationship between the proportion of GFCF financed by FDI and the level of economic development or growth. There are countries with a very high level of FDI inflows financing a high percentage of their investment, and very good rates of growth, such as Singapore. But the relationship between economic size (measured by GDP) and the percentage of GFCF financed with FDI is weak.

GRAPH 3.4 Gross flow of FDI in the CARD region, 1970–2013



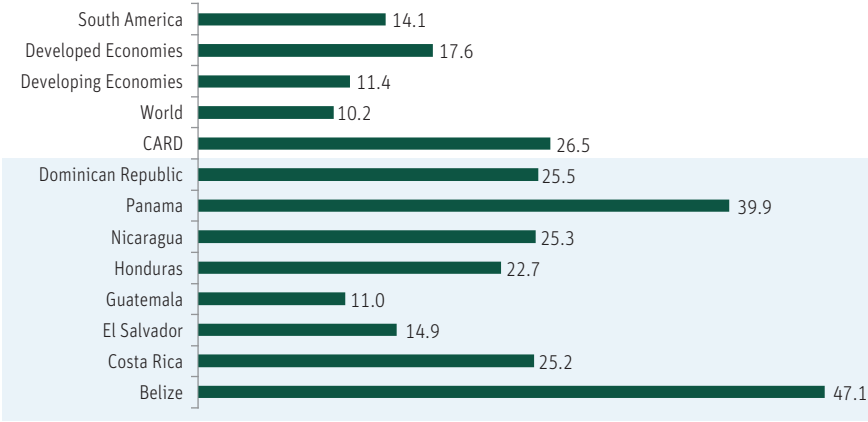
Source: UNCTAD (2014).

GRAPH 3.5 **Gross flow of FDI as a percentage of Gross Fixed Capital Formation in the CARD region, 1970–2013**



Source: UNCTAD (2014).

GRAPH 3.6 **Gross flow of FDI as a percentage of Gross Fixed Capital Formation, average of the past 10 years**

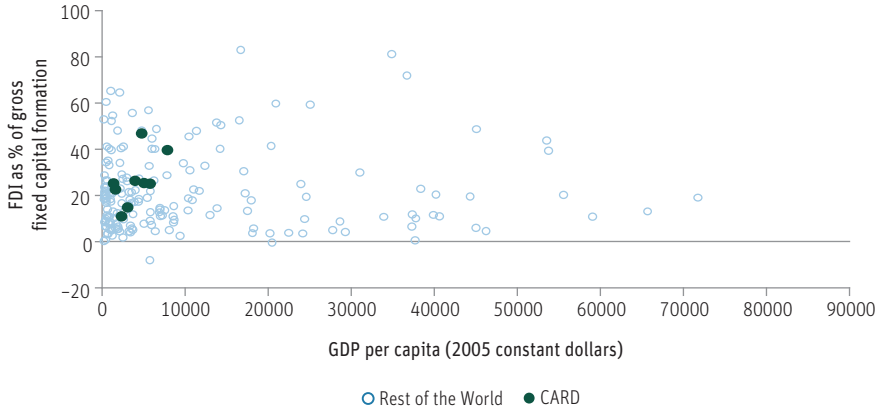


Source: UNCTAD (2014).

Although Central America is a small region it is not homogeneous. By quantity of FDI, Panama is the biggest recipient in Latin America as a proportion of GDP. Costa Rica and Nicaragua also receive substantial quantities of FDI, while El Salvador and Guatemala are laggards in the sums they attract.

There are certain common characteristics, such as emphasis on the use of fiscal incentives to promote investment, the use of free zones or maquiladoras and the

GRAPH 3.7 **Dependence on FDI to finance Gross Fixed Capital Formation, an international comparison**



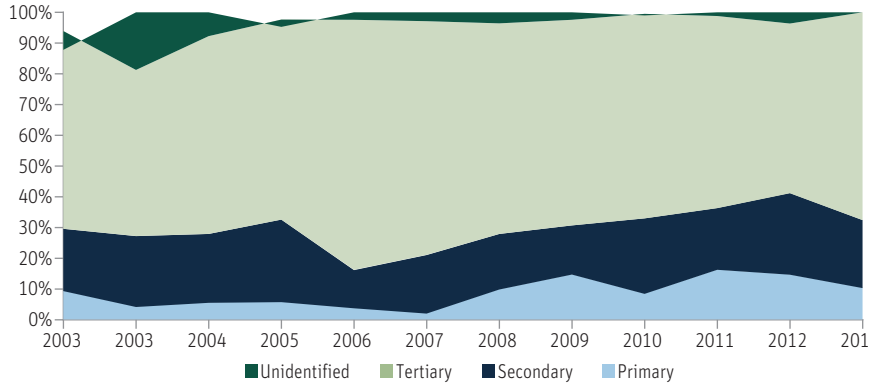
Source: UNCTAD (2014).

influence of the United States through its proximity. But even in these generalities there are differences. Costa Rica, for example, reacted early to limits placed on textile and clothing industries fostered by the maquiladoras and set itself up as the leader in CARD in product diversification and the attraction of mid- and high- technology sector companies. In Panama, the Canal has served as a platform for the flow of FDI in particular in the transportation and logistics sectors, as well as in financial services. Belize, on the other hand, is attracting capital through oil development. El Salvador and Guatemala are aiming to diversify their investments through the attraction of services, while Honduras and Nicaragua continue to attract low-skill manufacturing companies. Finally, Dominican Republic receives investments in the textile sector, tourism and intermediate technology sectors.

Unfortunately scope to analyze the composition of investment by sectors is limited owing to the lack of homogeneity in the way in which the data is reported internationally. For countries of the region, use has been made of Intracen data which reaches as far as 2012 by economic sector (with the exception of El Salvador and Guatemala where the latest data is from 2010; and Panama, where the latest data is for 2011).[5]

[5] There is more up-to-date information at country level (see CEPAL, 2013), but our objective is an international comparison and therefore this cross-country database has been used.

GRAPH 3.8 **Evolution of the flow of gross FDI by sector**



Source: Own elaboration using data from Intracen (2014) and CEPAL (2014).

Table 3.3 shows the aggregated evolution by sector from which it can be seen that in CARD the tertiary sector dominates attraction of FDI. It includes public services, business services, construction, trade, transportation, finances, tourism and other private and public services. This sector captured almost 70% of FDI in the course of the past ten years. The growing weight of services contrasts with a fall in the relative importance of manufactures.

In an analysis by countries (see Table 3.4), the primary sector has weight as a recipient of FDI only in Belize, Guatemala and Dominican Republic. In Belize, after the oilfield discoveries in the middle of the 2000s, the primary sector went from representing scarcely 10% of FDI to 51% in 2012. Something similar occurs in

TABLE 3.3 **Flow of FDI by sector and country, accumulated 2006–2013**

	Primary	Secondary	Tertiary
Belize	21.6%	8.4%	69.9%
Costa Rica	4.5%	31.2%	64.4%
El Salvador	1.5%	15.1%	83.4%
Guatemala	26.3%	19.8%	53.9%
Honduras	5.3%	34.1%	60.6%
Nicaragua	14.2%	24.7%	61.1%
Panama	–0.1%	7.4%	92.7%
Dominican Rep.	22.7%	19.6%	57.7%

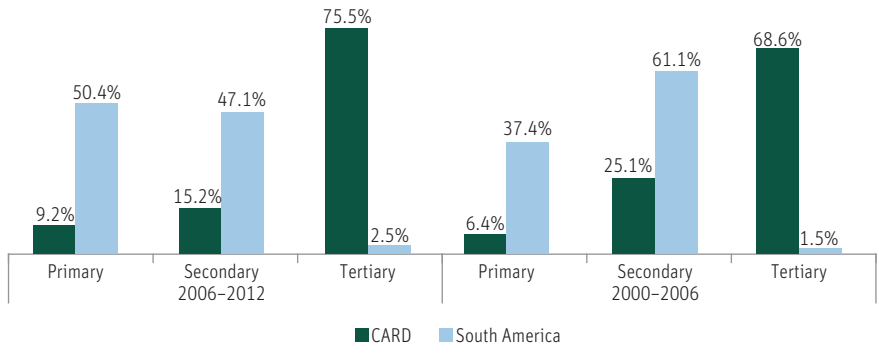
Source: Own elaboration on Intracen and CEPAL data.

TABLE 3.4 Multinationals in CARD. 2012

	Number of foreign subsidiaries	Number of firms with subsidiaries in the country	Annual sales (millions of US$)	Number of employees	Multinational subsidiaries set up in the country since 2000	Largest multinational
Belize	35	31	1,099	1,548	15	Whitehouse Falls Corporation, VGB
Costa Rica	396	305	32,338	101,323	126	Alamo Rent-A-Car Management LP, USA
El Salvador	188	145	6,319	29,816	55	América Móvil, S.A.B. de C.V., MEX
Guatemala	309	258	7,403	58,379	72	TELEFONICA, SA, ESP
Honduras	192	157	2,633	42,666	52	SABMILLER PLC, GBR
Nicaragua	113	101	1,631	19,285	29	América Móvil, S.A.B. de C.V., MEX
Panama	728	425	29,525	149,422	209	NIPPON YUSEN KABUSHIKI KAISHA, JPN
Dom. Rep.	307	231	6,843	75,107	69	The Episcopal Church Foundation, USA
CARD	**2,268**	**N/A**	**87,790**	**477,546**	**627**	

Source: Intracen.
Note: Data to 2012 or most recent.

GRAPH 3.9 FDI by sectors



Source: Intracen (2014).

Dominican Republic, with a strong flow of investments to the mining sector which, in 2011 and 2012, captured US$ 2,200 million in FDI, or 40% of the cumulative

TABLE 3.5 Characterization of multinationals in CARD

	Accumulated stock of FDI by subsidiary	Average size of the subsidiary (number of employees per subsidiary)	Average size of the subsidiary (millions of US$ in sales per subsidiary)	Annual sales per employee (in thousand US$)	Accumulated stock of FDI per worker (in US$)
Belize	43.8	44.2	31.4	709.8	989,664
Costa Rica	47.5	255.9	81.7	319.2	185,634
El Salvador	43.6	158.6	33.6	211.9	274,953
Guatemala	28.9	188.9	24.0	126.8	152,932
Honduras	47.0	222.2	13.7	61.7	211,503
Nicaragua	57.3	170.7	14.4	84.6	335,805
Panama	36.8	205.3	40.6	197.6	179,103
Dominican Rep.	80.3	244.6	22.3	91.1	328,079

Source: Own elaboration on Intracen data.

total in those two years. Honduras, Nicaragua and Costa Rica are the countries which FDI in the manufacturing sector.

The country with the highest sector concentration of FDI is Panama, where almost 93% of FDI heads towards services, dominated by three sub-sectors: transportation and communications, financial services, and trade. These three sub-sectors account for 60% of cumulative FDI in the period analyzed.

CARD has a pattern of attraction for FDI that is very different from that of the rest of Latin America. In South America the primary sector is currently the largest recipient of FDI while in CARD services predominate. Moreover in both regions the pattern has strengthened in recent years: South America attracts more investment in the primary sector and CARD more in services.

Intracen also presents information for foreign subsidiaries located in each country (see Table 3.5).[6] It is defined as a subsidiary of an enterprise, incorporated or not, in which a foreign investor has management control (majority shareholder); this company can be a subsidiary, associate or branch.

It is difficult to make an international comparison with this information, given that there is a lot of variation between countries in the quality and coverage of the data. This clarification is valid for CARD too, although, as the majority of the

[6] Dun & Bradstreet (www.dnb.com) collects this information.

TABLE 3.6 Capital intensity in multinationals, an international comparison

Percentile (148 countries)	Range of FDI per worker (148 countries)	Countries of the region by their percentile
25%	less than US$ 180,622	Guatemala, Panama
50%	US$ 180,622 a USD 401,374	Costa Rica, El Salvador, Honduras, Nicaragua, Dominican Rep.
75%	US$ 401,374 a US$ 751,530	
100%	more than US$ 751,530	Belize

Source: Own elaboration using Intracen data

multinationals which operate in the country are big, it's probable the degree of error is not that high. According to Dun & Bradstreet, there are 2,268 foreign subsidiaries in CARD which collectively employ about 500,000 people and generate annual sales of US$ 87,790 million (in 2012). Of these 2,268 subsidiaries, 627 set up in the region in recent years (since 2000). The number of enterprises with subsidiaries is lower because some have more than one subsidiary in each country and subsidiaries in more than one country.

The average size of the multinationals, whether measured by number of employees per subsidiary or by the annual level of sales per subsidiary, is heterogeneous in the region and so is the quantity of annual sales per employee. Honduras and Nicaragua generate least sales per employee, while Belize generates the most, followed by Costa Rica. Sales are not an indicator of value added and so this should not be associated with differences in productivity or intensity in the use of factors although, clearly, there are differences in these areas. In particular, textile maquiladoras tend to be labor intensive, which implies less added value per worker and therefore lower sales. At the other extreme the oil industry creates much more value added and sales per worker.

The stock of accumulated FDI per worker is a better measure of the intensity of use of factors by multinationals in these countries. This indicator shows that Guatemala, with US$ 153,000 per employee, is the country whose multinationals have the lowest capital use intensity (or the most intensive in employment). They are probably low value added industries given that the sales per subsidiary are also low. The remainder of the countries in CARD, though they have a stock of FDI per subsidiary somewhat higher than that of Guatemala, are also not intensive in capital use, with the exception of Belize. If one compares the countries of the region with the rest of the world in this indicator (stock of FDI per employee) it can be seen that the countries of CARD, with the exception of Belize, are all below the international average of US$ 400,000 of FDI per employee, which shows that multinationals in CARD tend to be less capital intensive than the global average.

TABLE 3.7 Accumulated gross FDI for different recent periods

	1990–1999		2000–2005		2006–2012	
	millions of US$	% of the regional total	millions of US$	% of the regional total	millions of US$	as a % of the regional total
Belize	206	1.19%	432	2.01%	956	1.47%
Costa Rica	3,513	20.24%	3,758	17.51%	12,677	19.49%
Dominican Rep.	3,823	22.02%	5,594	26.06%	15,568	23.93%
El Salvador	1,473	8.48%	1,939	9.03%	4,079	6.27%
Guatemala	1,515	8.73%	2,001	9.32%	5,729	8.81%
Honduras	860	4.96%	2,510	11.69%	6,154	9.46%
Nicaragua	1,004	5.78%	1,313	6.12%	4,015	6.17%
Panama	4,965	28.60%	3,920	18.26%	15,867	24.39%
Region	**17,359**	**100.00%**	**21,466**	**100.00%**	**65,044**	**100.00%**
Region as % of Latin America	4.74%		5.61%		7.81%	
World	0.43%		0.41%		0.60%	

Source: UNCTAD (2014).

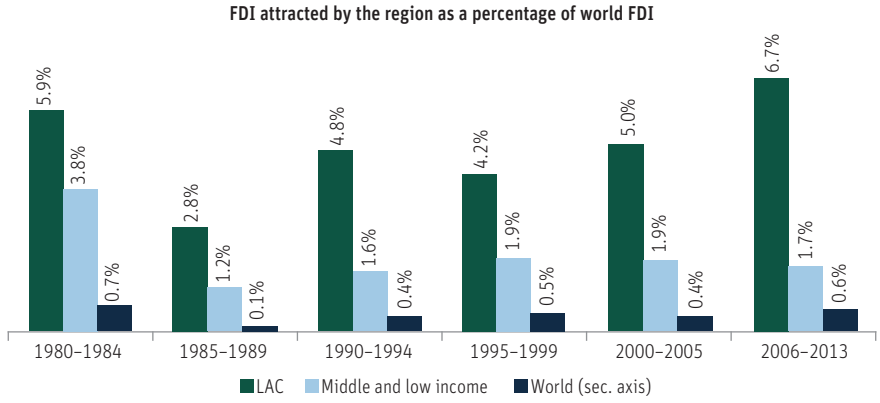
Recent trends

In recent years CARD's weight in terms of attraction of FDI has not changed much. Panama (24.4%), Dominican Republic (23.9%) and Costa Rica (19.5%) obtained almost 70% of total FDI in the region in the 2006–2012 period and this was also the case before (70.9% in the 1990s). The only important change is that Honduras has practically doubled its share in the total, while El Salvador has lost the most.

As a percentage of GDP, regional FDI practically doubled, rising from 2.7% to 4.8%; Belize and Panama showed the greatest increase, reaching in the current phase 9% and 9.6% of their GDP, respectively, which represents a very high percentage of their gross domestic capital formation. From this point of view the region the region appears much more dependent on FDI to maintain its levels of investment than countries of similar income, as well as South America or Mexico. For example, CARD's average is 21.4% while that of South America is 13.8%.

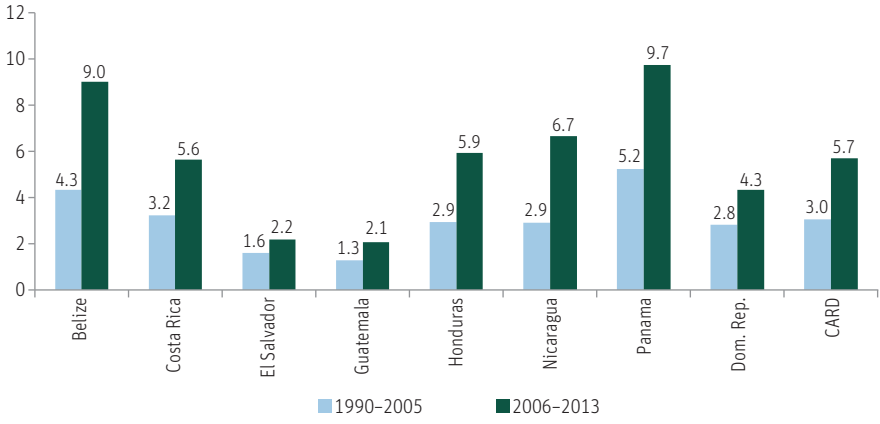
In the introduction to this chapters it was mentioned that since the middle of the past decade a change in the process of attraction for FDI had been observed in that the investments generated by privatizations in the 1990s and the maquilas no

GRAPH 3.10 Share of regional FDI



Source: UNCTAD (2014).

GRAPH 3.11 FDI as a percentage of GDP



Source: UNCTAD (2014).

longer had so much weight. As can be seen in Graph 3.11, this new phase shows a deepening of FDI, increasing its relevance in terms of GDP for all the countries.[7]

[7] However, by aggregated sectors it does not represent a substantial change from the 1990s. The primary sector is still unattractive for FDI, with some exceptions.

TABLE 3.8 FDI inflow performance index

	1970–1989	1990–2005	2006–2013
Belize	1.77	3.19	3.52
Costa Rica	3.95	2.27	2.21
Dominican Rep.	2.50	1.69	1.88
El Salvador		0.79	0.99
Guatemala	2.72	0.78	0.82
Honduras	1.28	1.89	2.36
Nicaragua	1.20	1.98	2.72
Panama	1.05	3.21	3.61
Mexico	3.28	1.20	0.68
Argentina	1.62	0.59	0.23
Bolivia	0.07	0.02	0.01
Brasil	3.47	1.39	1.19
Chile	0.48	0.16	0.13
Colombia	0.77	0.23	0.17
Ecuador	0.18	0.05	0.04
Paraguay	0.06	0.02	0.01
Peru	0.35	0.12	0.09
Uruguay	0.14	0.04	0.02
Venezuela, RB	1.08	0.19	0.21

Source: Own elaboration from UNCTAD and WDI data.

An interesting aspect for the region is the growth in the relative importance of FDI, measured by the index of inflow performance, which is calculated as the coefficient between the share in global FDI and the share in global production. A figure higher than 1 indicates that FDI is greater that the relative size of the economy, or that a country is more intensive in FDI. Table 3.8 shows this indicator for sub-periods and different countries of Latin America and it can be seen that the weight for South America fell while that for CARD countries stayed the same or rose.

In conclusion, the region has managed to maintain its attractiveness for foreign investments and this has been affected by the international financial crisis. An interesting change is the fall in FDI originating in Europe was compensated for by higher investment by *multilatinas*, the firms which have expanded most in the region and which deserve special consideration—which we undertake in the next section.

The phenomenon of the *multilatinas*

The growth of multinationals which originate in Latin America, often called *multilatinas*, is a recent phenomenon that deserves comment. Many of these companies had long histories in their country of origin before launching themselves on the world and they did so in stages. They began in adjacent markets, then went regional, and more recently have taken a step towards extra-regional internationalization. Some, however, such as the Chilean firm, Sigdo Koppers, or the Brazilian one, WEG, have burst on the world stage in a more vertiginous manner, making bold purchases in different geographical zones.[8] And Tenaris, an Argentine firm, has become the global leader in seamless pipes.[9] Another example is Camargo Correa, which has succeeded in achieving global reach specializing in a product that, en general, is not very tradable given its low value per metric unit.[10]

The phenomenon of the *multilatinas* has spread to all countries in Latin America, with Brazil leading the process, followed by Mexico and Chile. Chile, in particular, is striking given the volume of its external investment compared to the size of its economy and in this regard it the most internationalized of Latin America's countries.

The expansion of the *multilatinas* has strengthened considerably in the current millennium with the acquisition of foreign companies and investments, creating jobs and growing in sectors as diverse as oil, gas, mining, cement, steel, foods, drinks and high-tech. In the first five years of this millennium Latin American countries invested more abroad than in the twenty previous years (1980–2000). And in the second half of the first decade FDI which originated in Latin America tripled while globally FDI doubled.

In attracting FDI from *multilatinas*, Brazil seems today to be the favorite country. América Economía Intelligence reveals Brazil has 74% of the 50 biggest

[8] Sigdo Koppers acquired for US$ 790 million the Belgian firm, Magotteaux, present in five continents, which enabled it to expand its reach to 25 countries. Brazil's WEG acquired the Austrian firm Watt Drive Antriebstechnik (a firm in the energy supply sector with operations in Europe and with industrial units in Germany and Singapore) and the American firm EM (Electric Machinery), which develops engines and generators for the oil and gas sectors. With these operations, WEG now has industrial units in Brazil, South Africa, Argentina, Austria, China, the United States, India, Mexico and Portugal; it is present in 16 countries.

[9] This company was born in 1948 as a supplier for the national oil production firm, YPF, and began its internationalization strategy in the 1990s with strategic purchases of firms in other countries. Now it has plants in 16 countries, has a turnover of around US$ 11,000 million and employs about 27,000 people.

[10] Camargo Correa was formed in Brazil in 1939 and after some decades of consolidation entered the international market with purchases that have made it a global leader in its sector, with 61,000 employees and a turnover of US$ 9,200 million.

multilatinas, followed by (71.4%), Mexico (68%), Peru (61%), Chile (57.3%) and Colombia (53.2%). Flows to Central America represent a low percentage of the total that *multilatinas* are investing but the region has a growing importance in the total amount of FDI that it is receiving and growing interest from the South American *multilatinas* can be seen. In recent years approximately 20% de the FDI that CARD managed to attract came from Latin America, with Mexico investing most (between 11% and 12%), followed by Venezuela (3%) and Colombia (2%). The presence of Brazil and Chile is still low.

The objective of the *multilatinas* is not only to grow by obtaining resources but also to win markets and diversify. They are in many different sectors and strong in services. Some have taken advantage of the European and American crisis to acquire assets in these markets. According to Santiso (2008), the *multilatinas* emerged thanks to classic push and pull factors. However, in the last decade, they were driven by the fall in the cost of capital (low international interest rates, low country risk premiums and liquidity in Latin American stock markets), which is driving the jump from sales overseas to acquisitions overseas, a phenomenon that can be seen to a greater degree in Brazil, Colombia and Chile. The strong growth in the region was also a decisive factor: strong companies could take advantage of opportunities to acquire developed country companies in difficulties, above all in Europe.

CEPAL (2014) notes that besides the opportunity that crisis may have created, Latin American firms have improved their access to capital markets significantly. In 2012 and 2013, Latin American companies issued more corporate bonds overseas than ever (mostly in the United States), which allowed them to expand their activities outside their countries. This report stresses that FDI by the *multilatinas* will continue on a rising trend since these companies are accumulating capacity (financial, management and technological) which, given that their domestic markets are limited, can only be exploited to the maximum through FDI.

FDI data reveals, albeit with a margin of error, the origin of the investments. The most recent Intracen data (for 2012), show that in the CARD region North America (the United States and Canada) continues to be the main investor but Latin America has been the region which has increased its investment most since 2001, quintupling its annual investment flow (see Table 3.9). In 2012, the United States and Canada invested US$ 3,895 million in CARD and the *multilatinas* a slightly smaller sum of US$ 3,477 million. The comparable figures for 2006 are US$ 2,603 million and US$ 840 million respectively, which shows that the *multilatinas* have narrowed the gap very rapidly.

What is interesting is that the flow of investments by *multilatinas* has accelerated greatly since 2007, where a structural break is seen. Between 2001 and 2006, the *multilatinas* invested US$ 2,382 million in CARD, while in the next 6 years they

TABLE 3.9 **CARD. Evolution of the flow of gross FDI by country of origin**
(in millions of dollars)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2012 vs 2001
Europe	620	551	276	730	1,378	2,538	2,117	2,713	1,491	1,583	2,180	1,453	134%
EE.UU. and Canada	934	1,056	1,114	1,379	1,613	2,603	2,911	3,177	2,558	3,645	4,136	3,895	317%
Developing Asia (*)	63	13	87	161	296	181	255	191	137	181	354	235	271%
Latin America	600	253	249	108	331	840	1,451	2,617	1,424	1,179	2,295	3,477	480%
Unspecified	136.4	238.9	191.3	74.9	166.1	205.9	297.9	138.7	188.7	299.1	245.4	740.6	
Others	−43	−163	491	817	226	−5	103	19	83	974	416	865	

Source: Intracen (2014).
(*) includes China, South Korea, Hong Kong, Taiwan, Singapore, and India. Excludes Japan.

invested 5 times more, for a total of US$ 12,442 million. In 2012 alone they invested more in CARD than in the first six years of the first decade of this millennium.

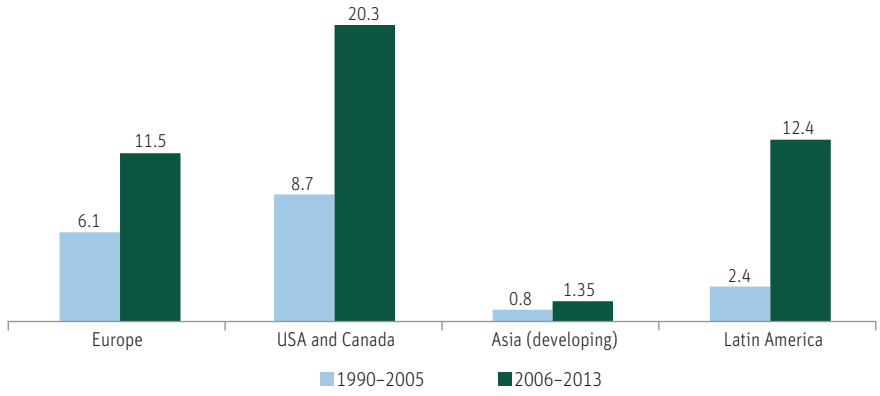
The fresh flow of FDI from Latin America offset the fall in European investment, which dropped from a peak of US$ 2,538 million in 2006 (before the crisis) to US$ 1,453 million in 2012. In the last three years, Latin America and North America account for almost 70% of the FDI in CARD. The remaining regions have less importance. Asia in particular only represents 3% of total FDI in CARD and furthermore its investment has been growing considerably less than that by North America and Latin America.

Where the origin of *multilatina* investment is concerned, Mexico has been leading the way, with an accumulated sum between 2010 and 2012 of a little more than US$ 1,500 million. Colombia, which has been acquiring banks in the region, follows close behind, with US$ 1,450 million. In third place is Brazil, with around US$ 1,300 million.

Mexico stands out in the region in the telecommunications sector, through América Móvil and América Telecom, Cemex, FEMSA and Grupo Bimbo. From Colombia, the interest has been in the banking sector, in which large acquisitions have been made. Grupo Aval, the biggest in Colombia with 30% of bank assets, acquired in 2010 for US$ 1,900 million Banco Centroamericano BAC Credomatic—owned by the American multinational General Electric—and in 2012 both the private pension fund Horizonte from Spain's BBVA, for US$ 530 million, taking advantage in both cases of the effects of the international financial crisis. Davivienda, the third biggest Colombian bank by assets, also began to expand in Central America, taking advantage of the fact that one the largest financial groups in the world, HSBC, was retiring from the area, and buying the operations of this British bank in Costa Rica, Honduras and El Salvador. Finally, Bancolombia bought in 2007 Banco Agrícola de El Salvador for US$ 900 million and, at the end of last year, acquired 40% of Grupo Agromercantil Holding of Guatemala for US$ 216 million. Other Colombian groups in the region are Cementos Argos, which controls 49% of cement market in Panama, and Grupo Mundial which has 30% of the paints business in Central America.

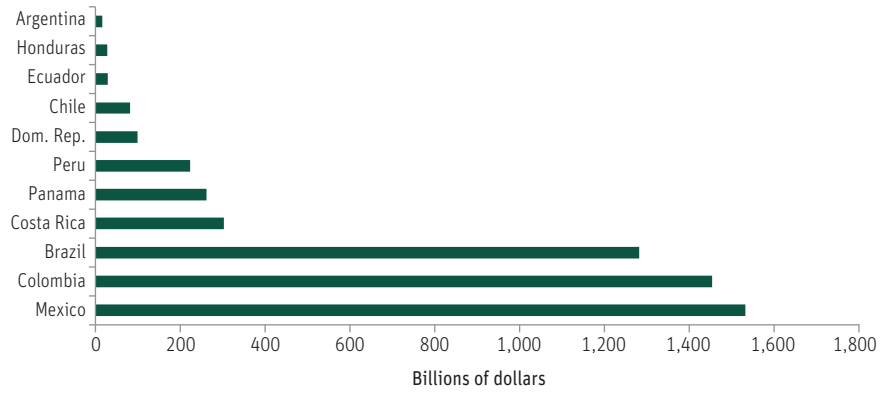
Intra-regional investment is important. Costa Rica, Panama and Dominican Republic are the country which are investing most in the CARD region. CARD multinationals are small and tend to place their investments within the region. According to the ranking of América Economía magazine, among the biggest 65 *multilatinas* there are only two from CARD: Copa Airlines of Panama and Grupo Multi-Inversiones from Guatemala. A third *multilatina* that might be considered from CARD, among the 65 biggest, is the merger of Avianca with Taca, but Avianca is of Colombian origin.

GRAPH 3.12 **Gross flow of FDI to CARD by place of origin**
(accumulated by period, in billions of dollars)



Source: Intracen (2014).

GRAPH 3.13 ***Multilatinas:* Accumulated flow of gross FDI to CARD**
(2010–2012, in billions of dollars)

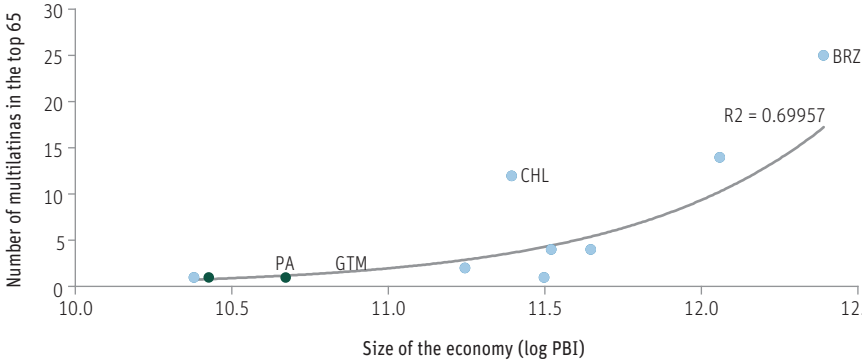


Source: Intracen (2014).

Of course, given the relative size of the economies under study, it is not to be expected that there are many big *multilatinas* in the region. But large CARD multinationals such as Grupo Poma de El Salvador are very important within the region.

The empirical evidence shows that there is a (non-linear) relationship between the number of *multilatinas* and the size of the economy, measured by its GDP (see

GRAPH 3.14 **Size of the economy of origin and number of large *multilatinas***



Source: Own estimations.

Graph 3.14). An exception in this regard is Chile which, with a GDP 20% greater than that of the entire CARD region, has more *multilatinas* than its income would predict (12). The Chilean case is special and cannot be extrapolated across the region. Besides have achieved a higher level of development in terms of GDP per capita, it has many factors which have simulated the transnationalization of its industrial groups, such as: the early beginning of economic reforms, a small and saturated national market, the availability of cheap local financing for foreign investment and state help.

The non-lineal relationship suggests we should expect between 2.5 and 5 big *multilatinas* in CARD and in fact there are 2 or 3—a not bad performance.

Where the amount of FDI that CARD's *multilatinas* generate is concerned, however, the panorama is rather discouraging: it has grown little compared to the global average or what has taken place in South America. In the last five years, FDI that originated in CARD grew by 66% with regard to the first five years of the last decade while in South America this figure tripled, rising by 232%. In the 1990s CARD exported capital of US$ 8,417 million compared to Mexico's capital exports in the same period of US$6,142 million. But in the last five years Mexico exported US$ 44,707 million in capital and CARD only US$ 14,357 million. This shows that the region has gone backwards where the *multilatina* phenomenon is concerned, with a level of internationalization that has grown little, above all in terms of investing in countries outside CARD.

It is interesting to note that *multilatinas* investing in CARD do so mainly in sectors that are not beneficiaries of government incentives, such as fiscal benefits for the maquiladoras. Many of the *multilatinas*' investments have been drawn to the

region by mergers and acquisitions, just as in the case of the Colombian banks, rather than for new *greenfield* projects. The post-crisis jump in *multilatina* FDI in CARD would seem to indicate that opportunistic purchases have been part of the logic. This does not imply, however, that the *multilatinas* may have a bigger role in greenfield investment in the future. If the logic of the mergers and acquisitions is efficient management of these companies in more volatile environments, the change of hands may be good for the economies of the region, above all as many of the sectors concerned are linked, such as telecommunications, banking, energy or retailing. If there are efficiency gains in these sectors, competitiveness improves. This potential impact of FDI is a difference from investors in enclave sectors, such as the textile maquiladoras, which give employment but do not tend to improve the systemic efficiency of these economies.

In the future the challenge for the region is to maintain or increase FDI by the *multilatinas*, actors which have arrived and will remain, have a significant degree of maturity and are capable of taking on large-scale investments. *Multilatinas* are used to the Latin American economic environment (its labor culture, the institutional weaknesses, the high level of corruption, among others), and seem to have better chances of success, so that the argument for giving them fiscal incentives loses support.

Myths and truths of FDI promotion

So far the numerical evolution of FDI has been studied, but also important is what has happened behind the numbers, above all in terms of policies and promotion—topics which will be examined at greater depth in other chapters of this publication.

From a conceptual point of view, promotion of FDI can be conducted in a passive or active way. Passively this can be done through improvement in the business environment, the reduction of tariffs, greater competitiveness, the signing of bilateral or multilateral investment treaties, improvement in regulation of capital entry and exit, and other regulatory changes, as well as unspecific measures that help to attract investment. This is passive because the aim is to promote FDI in an indirect way, through improvement in the business climate and profitability. At the same time this tends to be horizontal since it does not seek to benefit one sector in particular but rather improve the conditions that not only affect FDI but investment and competitiveness in general, so that these measures cannot be considered as being specifically FDI-attracting. Active promotion refers to measures that aim specifically to attract FDI and which have some degree of discretion in the way in which they are designed or implemented. In the region these active policies have been channeled mostly through investment promotion agencies, fiscal incentives and free zones.

In the particular case of Central America, external resources were sought from FDI to finance a faster process of structural change. CARD economies understood that being small their best development strategy was to open up and integrate with the world. The policies of trade opening and deregulation in the 1990s followed this model. To attract FDI, countries of the CARD region, in a similar way to other Latin American countries, implemented policies which emphasized the following: (i) proactive promotion of investments through the creation of specialized promotion agencies or dedicated offices within state institutions; (ii) the signing of free trade treaties which widen access to markets; (iii) initiatives to improve competitiveness and facilitate FDI, such as the creation of dedicated offices for investment procedures as well legal and institutional reforms; (iv) design and implementation of fiscal policies which include different types of incentives and the creation of free zones or special economic zones.

Active policies entail costs and it's worth asking if they have been effective in attracting investments and if these investments would have occurred anyway in the absence of the incentives. This, however, is difficult to determine in practice, given that the effectiveness of the policies depends not only on the effort to implement them but also on broader conditions in each country. Countries such as China, Brazil and Russia have attracted a lot of FDI without significant promotion activity while countries such as Ireland and Singapore have promotion agencies which are considered internationally as examples to follow. When it's decided to promote actively the "what to promote" and "how" must be chosen. The former is the most critical decision and is a difficult one in a world of imperfect information, and it's crucial to know how the promotion will be instituted and at what point the decision might be revised over time.

The use of fiscal incentives to attract FDI is controversial given that there are serious doubts in the academic literature regarding its benefits. Yet countries do use them in a generalized way. The most usual economic justification for fiscal incentives for FDI is that it generates externalities in the recipient economy and therefore the country obtains an indirect benefit. Among the potential indirect benefits are, among other things, access to new technologies, access to international markets in which the multinational operates, and benefits in the national productive chain through the multiplier effect that investment has on employment and income. The list of potential externalities is long, the problem is that often they cannot be verified in practice, or when they are, they are not sufficiently big to justify the enormous quantity of subsidies granted.

The offsetting of externalities with fiscal incentives is not the only justification for the existence of FDI subsidies. Another justification that has been widely used in Central America is that the subsidy compensates investors for weaknesses in the

countries, such as the lack of infrastructure or human capital. In this way the fiscal incentive is conceived as a compensation for the government's failings (through action–past political errors–or omission–not correcting market failures). Understood in this way, the fiscal incentive is an economic palliative which brings profitability to the firm, by compensating for other inefficiencies. The problem with this logic is that with the palliative in place the underlying failures of the State, such as inadequate infrastructure, poor institutions and an unsatisfactory climate for business, are not tackled. These failings remain latent, and masked by the subsidy. Meanwhile the State cedes tax collection capacity, which is precisely what is needed to address these deficiencies. If there is waste in this policy, that's to say, if companies who would anyway have invested in the country receive subsidies, a vicious circle occurs in which fiscal resources are lost in order to compensate for failings which require fiscal resources. There are also impacts on the functioning of economic policy. Firms attracted by incentives become those who depend least on the public inputs that are lacking (that's to say, they are the most suited to survival in this environment). They are therefore unlikely to demand or press for improvements in public inputs. But once installed in the country they will apply pressure for the subsidy to be maintained because it directly affects their profitability. In this way a dynamic develops in which there are power groups, influences and specialized lobbying.

Fiscal incentives for FDI

Maquiladora or free zone policy has been an important part of the development strategy of the region, particularly since the 1990s. Much weight has been given to incentives as an attraction mechanism. In this regard the international academic literature indicates that in general these incentives are not what principally determines the arrival of foreign investment. Rather, the existence of infrastructure, economic opening and growth are the most important elements. This certainly explains why some countries in the region have had more success than others in attracting high quality FDI, despite the use of relatively similar incentives. In other words, the incentive must be put into the context of what the country offers the international investor.

Just as the fiscal expert Richard Bird[11] emphasizes, fiscal incentives are very popular instruments but they have a high cost in that they reduce fiscal revenues and complicate tax policy, and therefore their real impact must be measured. In addition, an incentives war is created in which countries compete with one another in a very aggressive way to offer better fiscal benefits.

[11] Bird (2008).

A fiscal incentive can attract FDI by changing the cost-benefit relationship of the firm, but the relevant thing is whether this has an impact on growth sufficient to compensate for its costs. A prerequisite for a positive impact is that the investment comes to the country, which effectively has happened in the entire region. The other aspect of the investment is its quality and the degree to which it brings positive externalities to the whole economy. This is key to assessing FDI attracted by the region which is very centered on textiles—with the exception of Costa Rica and Panama—, and has a low level of interaction with the rest of the economy.

Results of the diverse cost-benefit analyses of the maquiladoras are mixed, so that instead of offering evidence of a positive impact, they create controversy. However it is also true that the great majority of the studies do not take account of all the possible effects and in particular do not incorporate properly the replies of the agents and all the costs and indirect benefits. Chapter 4 of this book, makes an effort to analyze the impact with microeconomic data, yielding interesting but only indicative results, so that they cannot be considered a definite proof. Consequently a detailed cost-benefit analysis for the region remains to be done in order to obtain more robust conclusions showing if fiscal incentives have had the desired return or not.

In the region there are multiple incentives which, in many cases overlap and generate confusion. Control does not seem to be applied with an adequate level of rigor and transparency and there are no signs of assessment of the impacts.

The lack of evaluation of these policies means that, in certain cases, they can generate perverse situations that are contrary to the initial aim, such as when the main beneficiaries are local investors (who would very probably have invested without the incentive) or when a temporary incentive becomes permanent since the beneficiaries apply again or change their name to receive the incentive again. This is the case in Guatemala, where there has been growing criticism of the 29/89 incentives scheme under which it is estimated that 80% of the firms that benefit are of Guatemalan origin and, in some cases, members of the largest corporate groups in the country.

The future of the free zones or maquiladoras is undoubtedly under analysis, above all through the need to adapt the rules to the agreement with the World Trade Organization. To date all but two of the countries have adjusted their FDI incentive in preparation for 2015.

The challenge for the region is to marshal better its strategy and place the emphasis on the lacking fiscal inputs in order to boost long-term growth, rather than resorting to short-term palliatives: fiscal incentives which become systemic and could prove a harmful circle.

Investment promotion agencies

In the world there are around 250 investment promotion agencies (IPAs), representing some 160 countries. They are institutions whose main objective is to create and market a country brand and improve the investment climate. In general they have structured themselves as independent units with their own legal identity or as a department within a ministry. The CARD region is no exception to the trend and today every country in the region has its investment promotion agency, although much improvement is needed. In particular, although the IPAs of the region are no longer young they still have institutional, operational or financial weaknesses which dilute their effectiveness and the impact of their actions.

There are cases in which the agencies lack their own legal identity and functions as programs financed by local or outside entities or as departmental ministries, such as Invest in Guatemala, Pronicaragua and Proinvex, which are governmental programs or units which are highly vulnerable to political changes. By contrast, agencies considered international models are InvestHK, Austrade and CzekInvest, all of which have their own solid legal identity.

As to financing, governments in the region contribute, on average, little or nothing to the budget of the agencies. Most of the agencies operate thanks to contributions and programs financed by the UNDP, the IBD, the World Bank and some European donors. (The case of Costa Rica's CINDE is special since it is financed with private funds).

In spite of the lack of financing the region's agencies do relatively well in the Global Investment Promotion Benchmark (GIPB) of 2012, which is a ranking elaborated by the World Bank every three years. It measures the quality of the assistance by evaluating the web page the way in which requests are dealt with. Pronicaragua scores among the ten best in the world the IPAs of CARD score higher, on average, than those of Latin America and the Caribbean). Of course this ranking measures only a minor aspect of the process but it is evidence of capability which needs to be seen too in other services of the IPAs. One area in which the region lags others is in post-investment support.

A final not unimportant aspect is the role IPAs play in the global policy of governments. There are question marks over the degree to which they are integrated in broader policy-making and about their ability to get governments to consider changes that they advise. This is a problem in the region. In many cases legislation fails to advance due to a lack of political will. Governments invest in export promotion but do not implement necessary changes. They prefer to hide behind costly fiscal incentives rather than drive forward institutional and regulatory reforms that would make the country more attractive and competitive.

Chapter 5 analyzes in depth the functioning of the IPAs in the region via a study which involved visits to the different agencies and other bodies. From the study it

emerges that governments of the region should rethink their relationships with the IPAs and strengthen them with more resources and skills so that they can succeed in their mission—as well as taking steps to improve the countries' attractiveness.

Future policies

The region has placed emphasis on promotion agencies, fiscal incentives and improvement in the business environment. The IPAs have been positive in general terms, even if there is room for improvement. Fiscal incentives have been large and have probably attracted investment and employment but the still unanswered question is whether the benefits have compensated for the fiscal costs. Finally, countries have tried to improve the business environment but have often not attacked the profound problems, such as the institutional challenges provoked by corruption and violence. Instead of attacking problems at their roots, make up is applied to improve scores in international rankings. Of course the region's problems are not easy to resolve but a combination of fiscal incentives and what the region has to offer has molded FDI in recent years. To attract FDI with more impact on growth, all aspects must be worked on as part of a long-term strategy.

Conclusions

The region has been able to attract capital since the turn of the century, gaining share in world and Latin American FDI, and there's no reason to suppose that this will change soon. North America (the United States and Canada) continue to be the main investor in the region and the *multilatinas,* who have most increased their investment in CARD, have gained weight, displacing Europe from second place. The fall in global FDI global since the crisis did not affect the region which remained in line with developing countries who continued to attract FDI as the fall is explained only by what happened in developed countries.

The economic recovery in the United States is a boost for the region. But the weakness of Europe and the slow exit from crisis for the world economy are warning signs. In this context the struggle for FDI will be tough. Although multinationals intend to resume their expansionary path, the FDI context will be more competitive, with originating countries trying to hold back capital and a flow that will be mostly one of reinvestment. Seen in this light it's likely that the structural changes will be small. For the region what the United States does with FDI is especially important, but other sources such as the growing *multilatina* phenomenon should not be neglected. *Multilatinas* have greatly increased their investment in CARD but it's true that this recent increase seems to be influenced by merger and acquisition opportunities.

The *multilatinas* continue to expand throughout the region and many are going still further afield. The challenge for the region is to attract *multilatina* FDI which enters projects that expand local productive capacity.

The fall in the prices of primary products that has been seen in the past year is not something that affects negatively the FDI the region attracts. Only in Belize is exploitation of natural resources an important factor.

Policy-makers' seem to have been more concerned that FDI generate employment and finance the current account rather than generate spillovers which would assist long-term growth. Insufficient attention has been paid to the quality of FDI and the externalities it produces, or to how this effect might be achieved. In practice much of the FDI attracted by the free zones has focused on industries which have had little spillover effect on the rest of the economy.

FDI promotion policies for the region can be improved and optimized. IPAs must be strengthened to improve their effectiveness and ability to facilitate FDI. Political will must be garnered to carry out reforms and changes that produce a better business climate. Finally the results obtained by fiscal incentives must be evaluated to make their role more satisfactory and adapted to the current needs.

The future challenge is to keep attracting FDI but, above all, to improve its quality and impact on the countries' competitiveness.

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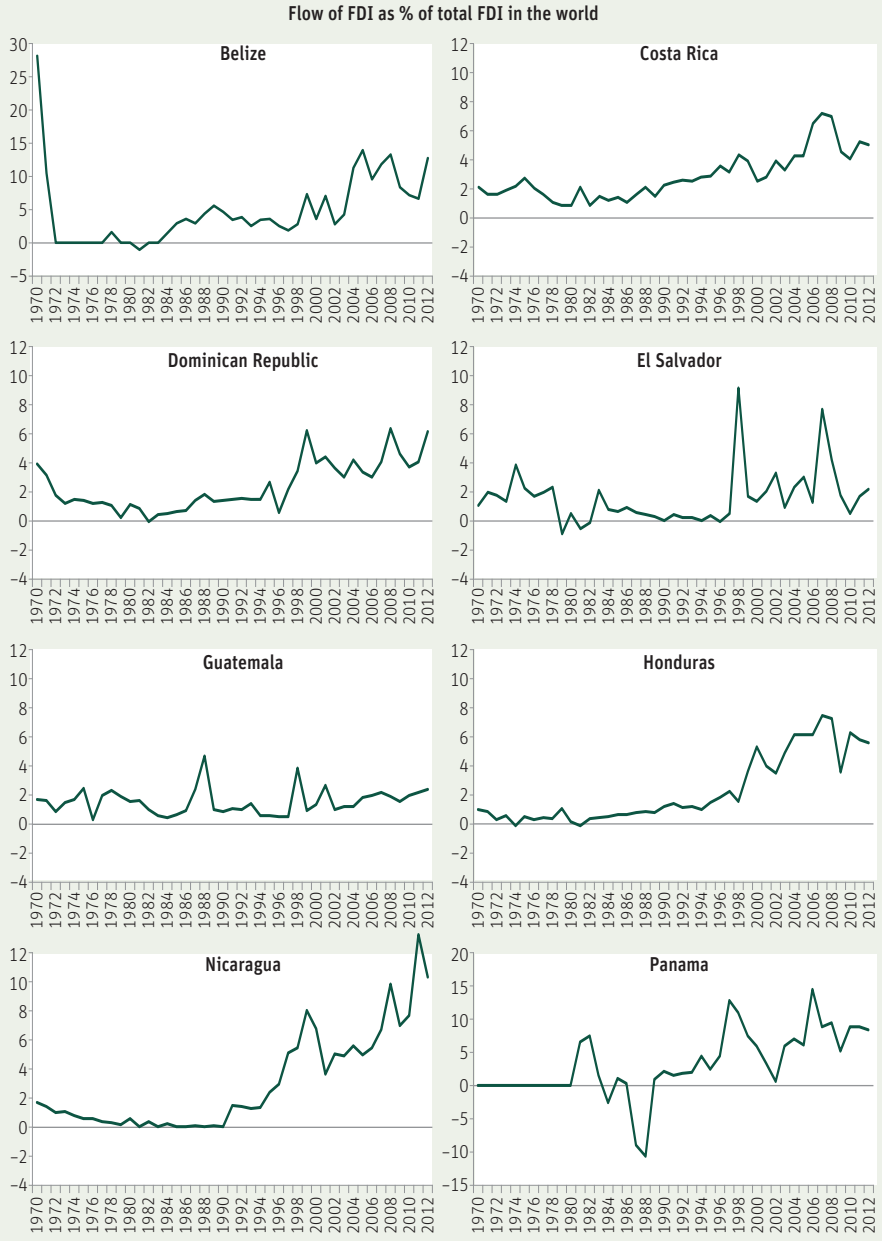
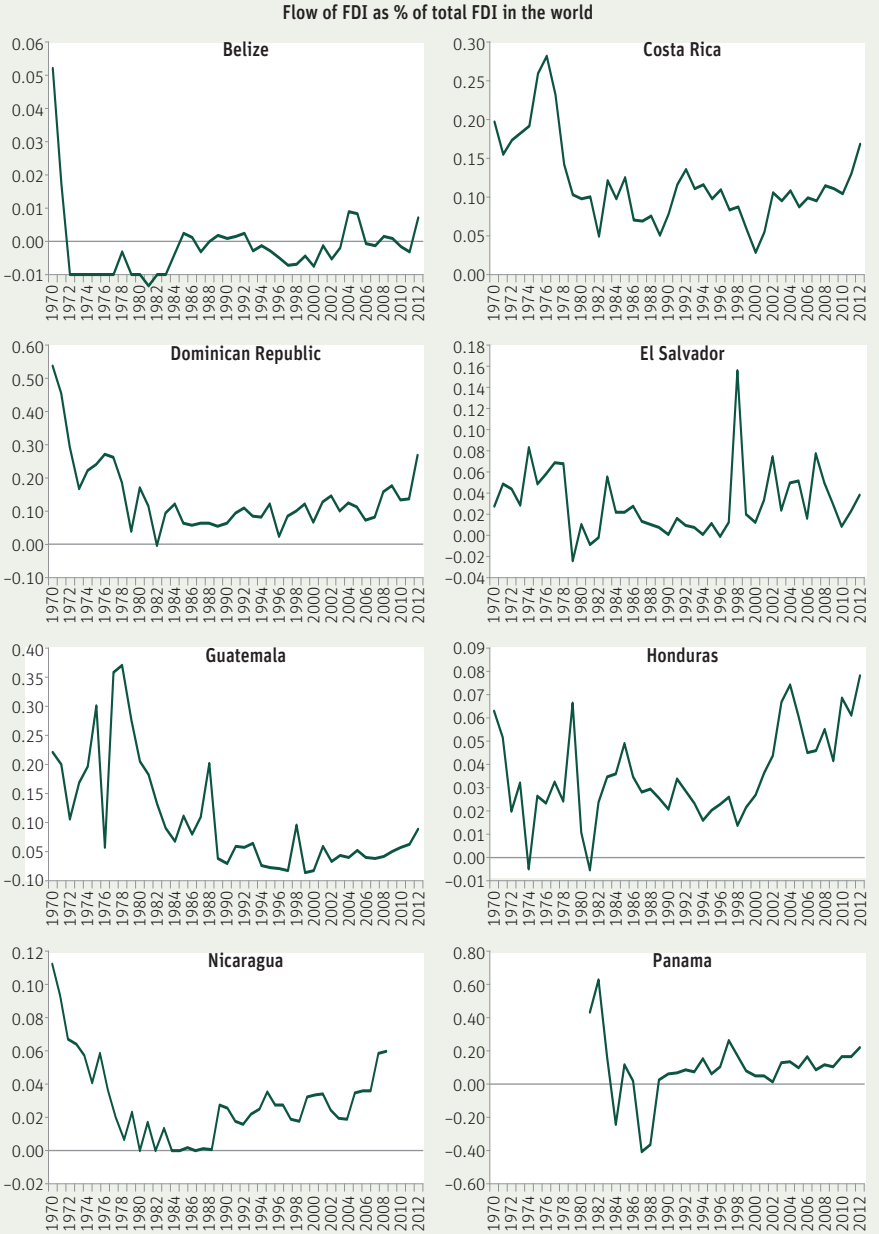
Statistical annex

GRAPH A.1 Recent evolution of FDI in the region



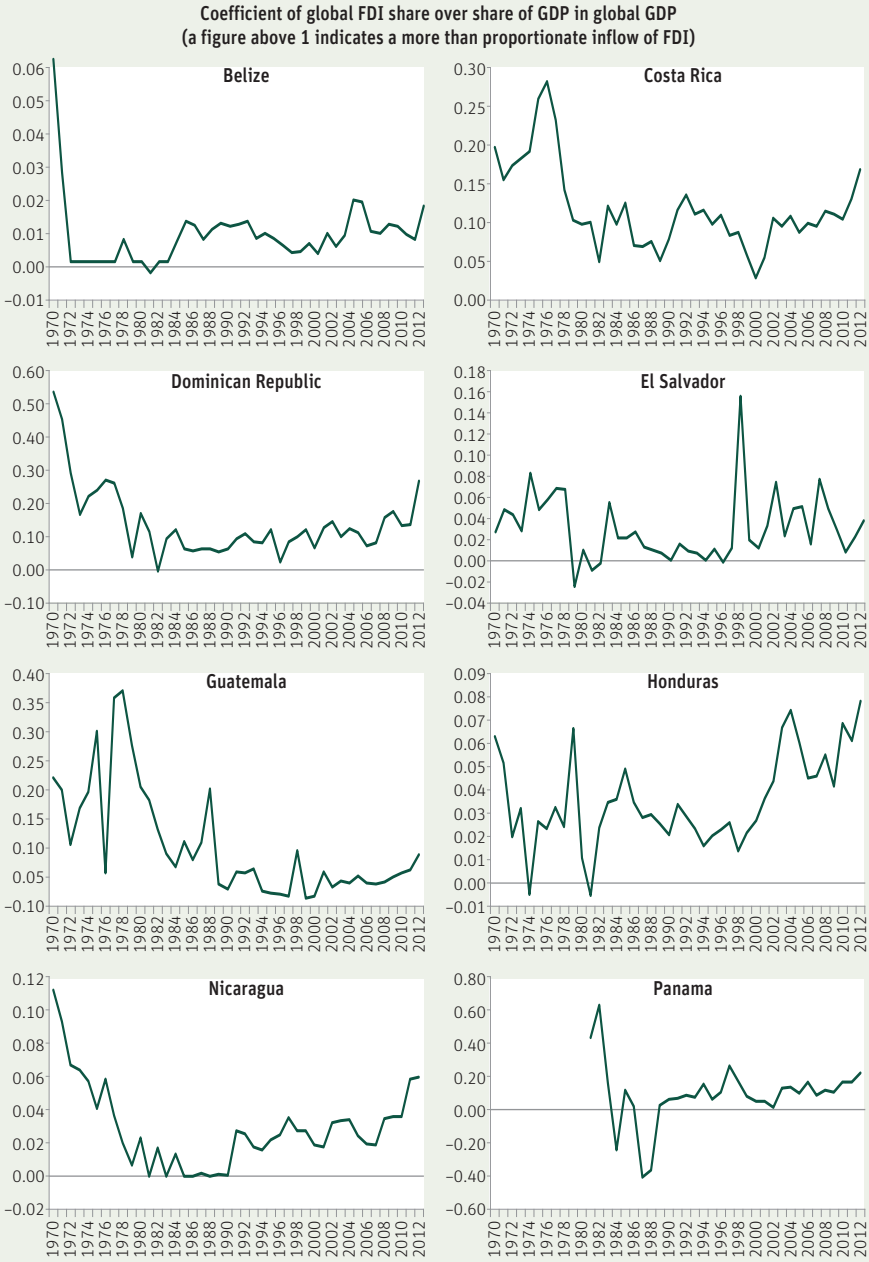
Source: UNCTAD (2014).

GRAPH A.2 FDI attraction in the region, 1970–2013



Source: UNCTAD (2014).

GRAPH A.3 Inflow performance index, 1970–2013



Source: UNCTAD (2014).

TABLE A.1 Gross FDI flow by year

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Belize	(10.9)	111.5	126.9	108.8	143.1	169.7	108.8	97.2	95.3	194.2	89.3
Costa Rica	575.1	793.8	861.0	1,469.1	1,896.1	2,078.2	1,346.5	1,465.6	2,176.1	2,332.3	2,652.0
El Salvador	141.7	363.2	511.1	241.1	1,550.6	903.1	365.8	(230.3)	218.5	481.9	140.1
Guatemala	263.3	296.0	508.3	591.6	745.2	753.8	600.0	805.8	1,026.1	1,244.6	1,308.9
Honduras	402.8	546.7	599.8	669.1	927.5	1,006.4	508.8	969.2	1,014.4	1,058.5	1,059.7
Nicaragua	201.3	250.0	241.1	286.8	381.7	626.1	434.2	508.0	967.9	804.6	848.7
Panama	770.8	1,003.9	962.1	2,497.9	1,776.5	2,196.2	1,259.3	2,723.3	3,132.4	2,887.4	4,651.3
Dominican Rep.	613.0	909.0	1,122.7	1,084.6	1,667.4	2,870.0	2,165.4	1,896.3	2,275.0	3,142.4	1,990.5
CARD	2,957.0	4,274.1	4,933.0	6,949.0	9,088.2	10,603.5	6,788.9	8,235.1	10,905.8	12,145.9	12,740.5

Source: UNCTAD (2014).

TABLE A.2 FDI as a percentage of Gross Fixed Capital Formation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Belize	(5.8)	59.7	61.5	48.3	59.0	52.0	42.5	45.5	42.0	65.8	29.3
Costa Rica	17.1	22.9	23.0	32.8	33.1	29.5	20.8	20.4	26.8	25.6	26.4
El Salvador	5.6	14.7	19.6	8.0	47.3	27.7	13.2	(8.1)	6.6	14.3	4.0
Guatemala	6.4	6.7	10.2	9.7	11.2	10.7	10.5	13.2	14.6	16.9	16.4
Honduras	21.3	22.8	24.7	22.4	23.3	21.6	15.8	28.4	23.4	23.5	23.2
Nicaragua	18.8	20.1	16.6	18.0	20.8	30.9	24.8	28.7	44.5	30.0	29.5
Panama	34.9	42.7	37.0	79.7	39.0	36.0	21.2	41.0	38.3	28.9	41.8
Dominican Rep.	20.7	28.6	20.5	16.6	21.7	34.9	31.7	22.8	25.2	32.8	20.1
Simple Average	14.9	27.3	26.6	29.4	31.9	30.4	22.6	24.0	27.7	29.7	23.9

Source: UNCTAD (2014).

TABLE A.3 Number of new greenfield projects by year

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Belize	–	–	–	–	–	–	1	1	–	6	3
Costa Rica	13	7	14	23	41	22	69	43	41	25	44
Dominican Rep.	10	10	9	10	10	18	13	10	17	13	27
El Salvador	5	6	4	5	9	13	19	13	17	16	10
Guatemala	5	6	3	3	16	19	20	14	12	7	16
Honduras	7	6	3	2	11	11	7	9	12	2	14
Nicaragua	8	2	2	3	5	8	8	10	13	7	14
Panama	7	12	8	4	27	35	48	43	43	20	30
Region	55	49	43	50	119	126	185	143	155	96	155
World	9,504	10,414	10,818	12,825	12,974	17,214	14,738	15,141	16,064	14,215	13,919
South America	533	557	371	371	495	683	707	794	991	830	838
Mexico	170	167	143	197	234	373	332	262	295	294	447
Developing Economies	4,538	4,927	4,629	5,620	5,446	8,083	6,955	6,771	7,585	6,572	6,299
Developed Economies	4,216	4,812	5,312	6,443	6,733	7,946	6,951	7,483	7,646	6,935	6,934
Percentage											
World	0.6%	0.5%	0.4%	0.4%	0.9%	0.7%	1.3%	0.9%	1.0%	0.7%	1.1%
South America	10.3%	8.8%	11.6%	13.5%	24.0%	18.4%	26.2%	18.0%	15.6%	11.6%	18.5%
Developed Economies	1.2%	1.0%	0.9%	0.9%	2.2%	1.6%	2.7%	2.1%	2.0%	1.5%	2.5%

Source: UNCTAD (2014).

TABLE A.4 Value of new greenfield projects by year

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Belize	–	–	–	–	–	–	3.2	4.9	–	240.8	99.5
Costa Rica	220.3	166.4	746.3	795.7	2,156.9	569.5	1,426.5	1,981.3	3,364.3	475.8	825.0
El Salvador	534.1	329.0	77.9	765.4	355.9	561.9	716.1	276.2	462.0	170.6	862.6
Guatemala	593.9	439.1	356.8	66.6	978.7	904.8	1,330.5	963.1	208.9	53.1	1,059.4
Honduras	744.3	425.1	162.6	58.5	950.9	1,088.7	125.7	225.9	551.3	43.3	548.7
Nicaragua	1,544.9	287.8	80.7	163.3	61.5	185.2	876.9	279.5	273.7	135.2	40,601.5
Panama	49.1	380.0	1,106.1	518.4	3,282.4	3,113.7	2,390.8	1,484.5	2,013.4	696.8	1,616.5
Dominican Rep.	1,400.3	417.3	1,496.0	826.9	748.5	2,044.1	1,398.5	330.1	5,143.3	584.1	2,683.6
Region	5,086.9	2,444.7	4,026.4	3,194.8	8,534.8	8,467.9	8,268.2	5,545.4	12,016.8	2,399.6	48,296.8

Source: UNCTAD (2014).

4

The effectiveness of fiscal incentives: The case of the export free zone of Costa Rica, El Salvador and Dominican Republic

Daniel Artana

Introduction

Fiscal incentives are a very important component of the export free zones. In the region under study they involve income tax, exemptions on imports of inputs and capital goods, and incentives that compete with those of neighboring countries' free zones. The use of fiscal incentives to promote investment, employment or exports has always provoked fierce debate, weighing the extent of the fiscal sacrifice versus their influence on investment and economic growth. The differences of opinion are difficult to resolve as it is not easy to isolate the impacts of a fiscal incentive on firms' decisions. On the one hand, the tax rebate not only reduces the cost of capital, for income tax incentives can result in a transfer to foreign treasuries, or can have a smaller impact on debt-financed investments, since it is usual that the latter has preferential tax treatment. On the other hand, the investment depends on elements such as the availability of satisfactory labor, the business climate or the quality of infrastructure.

The available evidence suggests that some of the problems mentioned in the academic research on fiscal incentives are present in the cases of firms based in the free zones of Costa Rica, El Salvador and Dominican Republic.

One criticism that applies to "tax holidays" in firms' income tax is that they can favor high yielding projects that would anyway have gone ahead. Estimates of rates of return in Dominican Republic and Costa Rica made in this chapter suggest that this risk may be high. Furthermore, the analysis with micro data for Dominican Republic and El Salvador makes it possible to conclude that firms with tax incentives

will have equal or superior earnings to those of firms which do not enjoy incentives within the country.

In the case of El Salvador, the econometric analysis carried out suggests that firms included in the free zone regime did not have a better performance (measured by the evolution of sales) than other firms, but in the case of Dominican Republic, they did grow more in sales and labor intensity. Unfortunately the available information does not make it possible to compare the performance in terms of investments or employment generation, nor to respond to the question of whether the incentives are justified from a social cost-benefit point of view.

Critics of fiscal incentives highlight other risks: that the projects are only suitable provided the incentives are maintained, that a destructive competition is provoked between countries offering tax privileges, or that global tax evasion is facilitated through the use of transfer prices. There is some anecdotal evidence to suggest that these problems are also present in the three countries.

In 2015 there is a new challenge for the strategy of granting income tax incentives to firms based in the free zones. The World Trade Organization (WTO) will no longer permit differences in tax treatment in this burden. That opens up two extreme paths for countries: eliminate the tax for all economic activities or tax at an equal rate to that given to firms based in the free zones.

Recent changes in legislation in some countries and reform proposals in others suggest that various Central American countries will take the first alternative. However, this decision ignores the problems mentioned previously and generates in turn other problems, beyond assuming that the countries from which the investment originates will remain passive.

The panorama becomes more complicated for tax administration not only at firm level but also where controlling personal income tax for high income families is concerned. To the degree in which the rate for societies is lower than that for individuals, an incentive is given for people to "park" their income in companies. Rescuing the free zones runs the risk of sinking the main tax instrument that gives a certain degree of tax progressivity in the countries of the region.

To convert the country into a big free zone also assumes naively that multinational companies will not exploit the low or zero income tax collection to park part of their global earnings in their free zone subsidiaries. In a global context of ever more restrictive action against fiscal paradises, a new wave of reactions cannot be ruled out, in this case not from the WTO but from the finance ministries of developed countries.

Therefore it would have been preferable to explore a threshold based incentives regime. A way of achieving it is to concentrate the incentives uniquely on new investments and limit them to a "normal" return on capital. In this way, projects

with extraordinary incomes, such as old projects in which no new investments are involved, would pay some income tax.[1]

The incentive to achieve these aims is instantaneous amortization of new investment. As is explained in section 2, in which different research on fiscal incentives is analyzed, this benefit eliminates income tax at the margin. In other words, the new investments that obtain a "normal" return do not pay taxes. A simple exercise based on typical regional projects suggests that a firm which invests annually the equivalent of between 15% and 20% of its assets in user goods would not pay income tax. However, that remains the case only if there are investments each year and extraordinary incomes do not occur.[2]

The remainder of this chapter is organized in the following way: in section 3 the recent results of empirical studies are reviewed, with special emphasis on the cases of free zones or of laggard zones. In section 4 there is an empirical analysis of such zones in Costa Rica, El Salvador and Dominican Republic. In the final section some options for regimes that are satisfactory given the WTO ruling are analyzed.

Investment promotion. Conceptual aspects

Income tax. Conceptual aspects[3]

Tax collection on capital

The Mirrlees Report (2011), which makes a diagnosis of and proposes reforms to the tax system of the United Kingdom, distinguishes different ways of taxing capital. From this report a typology of ways of taxing capital can be derives that can be applied with some generality to the analysis of tax collection:

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[1] In this context, it's worth remembering that accounting normally assumed the depreciation of tangible assets. Investment in intangible assets, for example research and development, is not usually capitalized but instead forms part of the firm's current spending. Therefore the proposed scheme encourages investments in tangible assets, but would not necessarily stimulate investment in human capital or research and development. In addition, it's important to underline that the markets determine the demanded profitability in accordance with the risk of the investment, so that it is not clear what would constitute "normal" profitability in the case of a particular project.

[2] The exoneration on income tax extends to the entire return that the company obtains (including extraordinary earnings). That does not happen with instantaneous amortization of investment. Both schemes favor capital intensive projects and therefore are less effective at promoting employment than a fiscal benefit directly related to higher labour hiring.

[3] This section is based on Auerbach (2013), Auerbach *et al.* (2008) and various references cited in these works.

- The TEE (*Tax, Exempt, Exempt*) approach in which saving is fully taxed, but the accumulation and withdrawal of that saving are exempt. In this case, the return on existing assets is not taxed, nor are extraordinary earnings taxed.
- The EET (*Exempt, Exempt, Tax*) approach, by which saving and accumulation are exempt but withdrawals are fully taxed. Thus the return on existing assets is taxed and therefore also extraordinary earnings, although only when withdrawals are made.
- The TTE (*Tax, Tax, Exempt*) approach, by which savings and accumulation are fully taxed but withdrawals are exempt. This is the traditional burden that applies at the moment the income on the work and/or capital is generated and which includes the return on existing assets within the basis of the income tax.
- The TtE (*Tax, Tax, Exempt)* approach which is that suggested by the Report and which is different from TTE in that it permits to deduct as spending the "normal" return on capital. In this case only extraordinary capital earnings are taxed, as well as saving.

Research on optimal taxation concludes that capital taxes ought to be zero because the efficiency cost increases with the tax rate, added to the fact that if the planning horizon is infinite, the effective rate increases with time.[4] Beyond this it concludes that taxes on consumption are better from the point of view of efficiency. Following this reasoning, only earnings from work should be taxed, a tax that, under simplified assumptions, is equivalent to one that falls on consumption and extraordinary capital returns. In the framework of this analysis, the TtE approach would be the suitable one.[5]

Finally, the research on the best application of taxes does not take account of economic policy restrictions which would make it difficult to allow a complete exemption for capital earnings.

Tax on corporate income

In the case of the United States, there is double taxation of dividends (on the society and its balance, and on shareholders). This taxation has frequently been analyzed

[4] This does not preclude that it may be efficient to tax capital in the short term to extract quasi-rent, which raises the problem of inter-temporal inconsistency, mentioned in the literature on optimal capital taxation.

[5] However, there are various qualifications to this conclusion. For example, Golosov *et al*. (2003) argue that the most capable individuals can hide their work incomes to the degree to which they have assets which allow them to sustain consumption. Sáez (2002) justifies capital taxes as an indirect way of taxing the income of people of greater capacity, in that they have a preference for saving. In this framework, taxing capital is an indirect way of reaching hidden earnings.

as a surcharge on the capital invested in limited companies (Harberger, 1962). However, this double taxation disappears or is attenuated when the company finances itself with debt (Stiglitz, 1973) or when dividends are reinvested and the return to the shareholder materializes via increases in the value of the company (Auerbach, 1979). In the extreme, if investment is financed with debt or if the dividends are reinvested permanently, the tax becomes one that bears uniquely on extraordinary income or new investments.[6]

Fiscal incentives complicate the analysis still more because they can be oriented towards new investments (for example, fiscal loans for investment or expensing) or also favor existing capital (for example, reductions in the tax rate).

In economies open to trade in goods and services (including capital movements) other problems appear, because both firms and governments have additional options to those that exist in a closed economy. Firms can choose where to locate their production and where to finance their investments, and governments can choose between taxing the income generated within their borders (the source criterion) or tax income that their national companies obtain anywhere in the world (the residence criterion). For small countries it is difficult to tax income from a factor that can rapidly be moved, even if they can do it up to a value similar to that which is paid in the rest of the world (in particular, in the country of origin of the investment). However, to achieve this goal without deterring investments becomes more complicated when the treasuries of developed countries allow earnings obtained overseas "to be parked" in countries of low tax collection and when they only tax at the moment that dividends are repatriated (this is the case of the United States).[7]

The conceptual analysis therefore alters in open economies with multinational companies that have the ability to move their activities, sales and spending, or their incentives, the aim of saving on taxes. In its turn, this decision is influenced by the tax system of the country in which the investment is located and of the country of origin of the capital. Unlike what happens in a closed economy, tax competition to attract investments becomes relevant. Ultimately, shareholders of the company are habitually citizens of different countries to that of the head office,

[6] To limit interest deductions has become more complex given the greater facility to alter the debt-equity relationship through the use of financial derivatives. For example, Auerbach *et al.* (2008) highlight the growing participation of "hybrid" debts which, under certain circumstances, become equity capital but which, for tax purposes, are seen as debt.

[7] There is some empirical evidence to suggest that in open economies with high capital mobility the burden of income tax is transferred to the workers who have less chance to move themselves to another country (see, for example, Gravelle, 2011).

which complicates the analysis when taxes on the company and its shareholders are contemplated.

In addition, the multinational company must decide where to locate its production, where to invest to expand its production capacity and, within certain limits, where to show the profitability, since it is dealing with different tax rates for each one of these decisions. For example, the choice of location depends on the average effective rate of tax, the investment on the marginal effective rate and the assignation of benefits on the legal rate of each country in which it has related businesses. This complicates the design of a neutral system, that's to say, a system which does not alter the decisions of the company through the characteristics of the taxes. In principal, these system demands a zero marginal effective rate and requires that the average rate and the legal one be the same. In addition this can only exist given much cooperation between countries, something which does not happen at present. Besides, each country can act in an opportunistic manner, in order to attract investments or achieve higher tax collection.

At the extreme it could be argued that the optimal rate of tax is zero when a small country chooses on the criterion of source. However, this conclusion would be equally valid for all investments in the economy, not only for activities which are based in the free zones. Obviously, this posture supposes that the loss of fiscal earnings can be offset with taxes that do not cause substantial distortions and that, besides, there is not transfer to foreign treasuries.[8] In addition, a zero tax on companies complicates control of income tax on people who could park their revenues in countries that are "foreign" only for tax purposes.

Therefore, taking account of the fact that other taxes also generate distortions, that at least a part of the benefits can end up being taxed in the country of origin of the investment, and that personal income is necessary to meet the goals of fiscal policy, it cannot be concluded that it is best for a small country to offer complete exemption from tax on income from new investments, whether they are domestic or foreign. In the case of old investments, the arguments in favor of exoneration are still weaker, because any such decision would translate into an extraordinary gain for the owners of the assets.

Definitively, no clear recommendation emerges from the conceptual analysis of income tax, on fiscal incentives and, even less, on special treatment of companies based in the free zones.

[8] A transfer to foreign treasuries will be recorded unless there is *tax sparing* in the country of origin of the investment. In general terms, *tax sparing* is granted when tax credits are recognized through the taxes that would haev been paid overseas in the absence of investment incentives.

Advantages and disadvantages of fiscal incentives for investment[9]

Defenders of fiscal incentives for investment justify these incentives on (i) the positive externalities that the investment generates, especially if it is foreign, through improvements in the skills of the workforce or through "anchor investments" that generate linkages with the rest of the economy; (ii) the need to respond to tax rebates or other special treatment offered by countries that compete for investments in a world of high capital mobility; (iii) the increase in employment in zones of high unemployment; and (iv) the possibility of compensating for faults in the investment climate through tax reductions. At the extreme some argue that there is no fiscal cost because the investments would not have materialized without the incentive, or because the cost is offset by a multiplier effect on employment and economic activity.

The argument that positive externalities are generated by the investment, especially in industry, has been the subject of debate in the field of tax and tariff policy. Those who support State intervention argue that, to be able to grow, the "nascent" industry needs initial support through protection of the domestic market, export subsidies, or tax help. This would lead to transitory measures to offset the lack of experience of national companies or to convince multinationals that the country is attractive.

Some of these measures have provoked skepticism because they have attracted investments that in the long term had difficulty competing, leading to permanent assistance or sectoral crisis, which showed the State's difficulties in "picking winners." Even the rebirth of "doomed to choose," which Hausmann and Rodrik (2006) have popularized, does not lead to advocating tax instruments or traditional tariffs, but seeks to compensate the lack of some essential public good (information, for example) or to coordinate between the public sector and the private one.[10,11]

In his analysis of the industrial policies applied by developing countries, Harrison and Rodríguez-Clare (2010) focus on non-tax measures, such as protection. However, some conclusions of the study are also relevant for the case of tax incentives, among them:

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[9] This section is based on Artana and Templado (2012) and in the references cited in that work, in Harrison and Rodríguez-Clare (2010) and in Caiumi (2011).

[10] See Hausmann y Rodrik (2006). It is difficult to associate the suggestions of these authors with fiscal incentives. Indeed, the practical recommendations incline towards maintaining a competitive real exchange rate, which is a clear "horizontal" measure for the tradable sector, in a clear counter-proposition to focused measures, such as tax incentives.

[11] Some authors suggest that small countries have a disadvantage versus large ones because, for example, externalities from capital agglomeration are not relevant. This would justify a lower rate of income tax throughout the country, instead of sectoral benefits. However, Keen (2002) argues that the fiscal loss from a generalized rebate explains the decision to concentrate incentives in activities with more mobile capital. These models of "tax competition" assume that investment responds positively to a rebate in the cost of use of capital.

- To be successful, the stimulus policy requires that countries which apply it have at least a latent competitive advantage in the protected activity, and that there be spillovers on other sectors.[12]
- The trade liberalization must be accompanied by other reforms to increase growth, especially reducing barriers to the entry of firms, because this permits more efficient firms to gain market share at the cost of less efficient ones.
- It is more likely that increasing exports stimulate growth when it occurs in non-traditional sectors or those that require skilled labor.

Those who criticize fiscal incentives point out that: (i) they are redundant because the investment would have gone ahead without incentives; (ii) they generate a fiscal cost in assisting evasion, complicating tax administration; (iii) they oblige an increase in tax pressure on the rest of the economy; (iv) they generate distortions by altering investment options instead of correcting market failures, and are inequitable because they favor high-income individuals; (v) they lack transparency and provoke a loss of resources for the economy because of the lobbying generated to obtain them; (vi) they provoke "unfair" competition for other firms which have not been able to obtain them; (vii) they favor capital intensive activities through being based on incentives on income tax; and (viii) even in cases in which they have a positive impact on investment, it isn't clear that this translates into higher economic growth because they can make low productivity projects profitable.

Bolnick (2004), Clark et al. (2007) and James (2009) conclude that the non-tax elements which shape the investment climate are more important than fiscal incentives in determining the level and quality of investment. Besides, it is important that incentives are harmonized within an economic bloc or between neighboring countries in order to avoid a "race to the bottom", that's to say, that companies achieve successive rounds of tax rebates which end up having a high fiscal cost.[13]

Fiscal incentives and welfare

To analyze the effects of incentives on productivity and efficiency it is at least as important to measure the impact on total investment. More investment does not necessarily mean higher growth since it also needs to be of high productivity.

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[12] Essentially this requires that at some moment the favored sector can survive amid international competition without relying on incentives. Therefore the fact that the sector may be growing more than the average does not itself prove that the intervention has improved social well-being.
[13] The country that remains with the investment ends up being the loser in a phenomenon similar to the so-called "winner's curse" in tenders to the highest bidder, in which a good with an uncertain value is offered.

Analysis of tax incentives often ignores the impact that they have on welfare. If the investment generates positive externalities it would correct market failure only if it is of a magnitude equivalent to the difference between the social and private return, but it's rare that this difference is analyzed to establish the size of the incentive. Besides it's reasonable to expect that the gap is modified over time, which makes follow up on tax incentives difficult.[14]

Compensation of supposed failures in the investment cannot be tested either because it acts in an indirect way instead of tackling the problem directly. For example, suppose that a country has deficiencies in human capital which discourage private investors and the government decides to reduce taxes on investment in order to compensate the investors. The problem is that the lack of human capital does not affect all economic activities equally and nor do the benefits of the incentives. For example, if they are focused on taxes on earnings or on the investors in the project, they will tend to favor capital intensive activities more, without being associated with demand for human capital. In other words, an indirect mechanism is an imperfect substitute for necessary improvements in human capital. The same can be said of flaws in the business climate or infrastructure, because some activities suffer from them more than others do.

It's important to clarify that, to the degree that taxes generate distortions, a generalized reduction in taxes on capital ought to improve welfare.[15] In return, when it's decided to promote a sector or region, a welfare cost is generated (unless an externality is being offset), because the social yield of the capital (which is the net marginal productivity of taxes) differs between sectors and regions.[16]

Income tax as center of analysis in developed countries

Investment incentives have been analyzed from a microeconomic viewpoint, given that taxes tend to increase the cost of use of capital. As companies in their

[14] This problem is similar to the one that exists with Pigouvian taxes in discouraging the consumption of goods with negative externalities. Even when there is information to estimate the externality and calculate the best tax (which is highly improbable), and how the demand and supply curves move, it would be necessary to modify the tax periodically.

[15] It's obvious that tax resources must be generated in some way. As usually taxes without distortions are not applied, it would be necessary to penalize the loss of resources for the tax authority through the social marginal cost of public funds, and that would approximate the loss of efficiency of the generalized rebate on capital taxes.

[16] In other terms, unless the externalities which are sought to correct with incentives are given only in one region or sector of the country, it will always be possible to have an investment objective given at a lower efficiency costs, if the rebate on taxes is general and not focused on one sector or region. In Latin America, as is analyzed below, incentives are usually concentrated in regions or sectors.

process of profit maximization tend to make the value of the marginal productivity of capital equal to the cost of capital, however great that may be, less investments will materialize, to the extent that investment demand has some price sensibility.[17]

It is natural then that the literature on fiscal incentives focuses on the income tax that companies and/or those who provide them with funds must pay, and this is explained possibly by the weight that of the imposition on the income in the tax collection of developed countries, or because it is natural to analyze first the effects of the taxes that affect investment decisions in a direct way. However, this focus on income tax and on instruments to reduce it[18] is an incomplete description for developing countries which complement incentives on capital taxes with other additional taxes.

For example, reductions in taxes that on use of labor have a priori a direct effect on employment, but they can also fuel new investments as a consequence of the impact that this tax rebate has on the firm's flow of funds. The same can be said for incentives which reduce the cost of some inputs (for example, exemptions on import duties) or that improve the net sale price that the firm receives (for example, reductions in company sales taxes which enable it to charge the same price to the consumer but obtain net income higher than that of its competitors).

Therefore the analysis must adapt in such a way that the impact of all the fiscal investment incentives used in developing countries can be seen. Besides, it should be kept in mind that:

- access to credit is not fluid and investment is financed with more own equity;
- inflation is higher than in developed countries, which creates a bias towards financing with debt if nominal interest is allowed to be deducted;
- in cases in which there is no tax compensation for income tax left to pay in the destination country of the investment owing to the existence of investment incentives (that's to say, there is no *tax sparing*), the lower tax paid in the destination country can end up being paid for by the firm in its country of origin, with zero effect on the investment;

[17] In a world without capital taxes (tc), firms which finance their investments with their own funds will equalize the value of the marginal productivity to the cost of capital (r+d), where r is the real return and d the rate of economic depreciation. When income tax is used, the cost of use of capital increases to r/(1-tc) + d and this means less investments materialize. An intuitive way to understand this conclusion is the following: all the spending which the firm incurs is deducted in the year in which it is spent, while the cost of use of capital (economic depreciation) is deducted in interest free quotas, which reduces its value measured in current value.

[18] Fiscal investment credits, accelerated amortization, exemption or reduction of the tax rate, benefits for the investors in the project.

- the investment decision depends on other characteristics of the tax system, either involving new investments or expansions by already installed firms. For example, an income tax incentive is less powerful for firms that can have earnings which allow it to absorb losses which usually emerge in the first years of operation of a new project.[19]

Different types of incentives

Among the instruments used to promote investments through income tax rebates, those that distort least treat a part or all the investment as additional spending. Instantaneous amortization (expensing),[20] partial or total, of the investment has the advantage of placing a lower limit on the rate which can be attractive for a private investor who receives the incentive and be neutral regarding the useful life of the assets. The possibility of gross distortions in the allocation of resources that appear with instruments such as fiscal investment credits is eliminated In the same way, accelerated amortization of investments distorts little, but it discriminates between assets if the proportional fiscal benefit for each one of the investments does not emerge.

Fiscal credits for investment[21] favor assets with a short useful life because the benefit is received before each investment decision which, for a certain number of years is more repeated in short assets, and because it does not put a limit on the rate that private investors receive. Harberger (1980) shows how projects with a negative rate of social return can be very attractive for those who receive fiscal credit.[22]

"Tax holidays" exempt firms from income tax for a determined period and are one of the principal incentives granted to those who set up in free zones. Zee et al. (2002) mention that this benefit causes many distortions because it favors high return projects that, probably, would have been carried out in the absence of the

[19] In the absence of incentives and to the degree to which laws permit projects to be combined, the firm with earnings has a natural inducement to invest and pay lower taxes through discounting losses from the new project. In the same way the *carry forward* regime for losses is important: countries which limit it excessively increase the effective rate of the tax and therefore the exemptions have a higher value.

[20] Instantaneous amortization of investment allows deduction as spending of a percentage (100% if it is total) of the investment realized in each year that it is realized. The remainder (0% if it is total) depreciates normally.

[21] Fiscal credit for investment allows the investor to receive a percentage of the cost of the investment from the government and then amortize normally the good for tax ends. It allows more than 100% of the capital cost of the good to be deducted.

[22] However, various authors prefer fiscal credits because the benefit is tied to the amount of the investment, while in "tax holidays" the fiscal sacrifice depends on the profit of the firm, and so the benefit can be disproportionate relative to the invested sums.

benefit. This mechanism also encourages operations via transfer prices between related firms, seeking to concentrate earnings in those favored by exemption. Besides this, it leads to the redefinition of old projects so that they can qualify as new investments and favors activities with low sunk capital, which can be moved rapidly when the exemption period is over. Overall quantifying the fiscal sacrifice becomes especially difficult.

In the case of incentives through other taxes, what stands out are exemptions to import duties on inputs or capital goods, which is very common in the free export zones, and special treatment in value added tax or sales taxes.

Exemptions on imports of inputs and capital good, when they are aimed at exporting firms, do not constitute an additional benefit because they act in the same way as temporary import admission regime that, according to WTO rules, can be granted to exports. Nevertheless, the benefits often favor firms that also sell in the internal market. It increases their effective protection and can result in very high benefits in relation to the value of the firm or of the investments. In principle this increase in effective protection ought to be neutral between factors but, if wages paid by the firm tend to be equal to those paid in the rest of the economy the impact on the return on capital can be very significant.[23]

In the case of benefits in generalized consumption taxes, such as value added tax (VAT), there are exemptions which aim to cheapen some goods and others that seek to motivate investments in some sector sectors or regions. Exemption from VAT at intermediate stages increases the fiscal burden because the unpaid tax on these stages ends up being received by buyers who, in their turn, do not have fiscal credits to discount their purchases to these suppliers. On the other hand, in the case of liberation from the tax, the firm that buys can discount the credit, even when the vendor has not received any tax from the treasury.

This benefit increases the relative value of sales, to the degree to which competitors must pay the tax fully. In principle the sum ought to be proportionate to the added value but, for the same reasons noted regarding import exemptions, wages arbitrage in the labor market allows an increase in firms' earnings.

In other consumption taxes, nurturing attempts can be hidden. For example, tax collection on alcoholic drinks deviates from a uniform tax depending on the type of

[23] Reductions in import taxes may pursue different objectives and have different consequences. In some cases, it is a question of subjective exemptions which aim to cheapen access to certain final goods for some groups in society. In these cases problems of fiscal fraud are created (through the resale of goods to other buyers who do not enjoy the exemption), or a budgetary reinforcement is hidden (for example, when a division of the State or some beneficiary entities enjoy it), and often the special treatment is regressive because habitually subjective exemptions do not include families with low resources.

alcohol, with the aim of favoring drinks produced in a country. Some examples are the higher tax on beers and win compared to rum in Jamaica or Dominican Republic. Similar situations are seen in the exemption on the natural juices content of fizzy drinks in Argentina, or the bias towards ad valorem tax on cigarettes in France, where local production leans towards black cigarettes which are normally of lower quality and a lower price net of taxes.

The effectiveness of incentives

Harrison and Rodríguez-Clare (2010) elaborate an analysis of the impact on foreign direct investment (FDI) on different stimulus measures, including fiscal incentives. The empirical evidence shows that there are vertical spillovers (to suppliers) but not horizontal ones (to competitors), which awakens doubts on their net benefit. The principal conclusions of the authors' review of the evidence are as follows:

- Most countries grant FDI incentives in some economic sectors.
- Alfaro and Charlton (2008) find that FDI flows are greater in the chosen sectors and that these sectors grow more than the rest. However, Harrison and Rodríguez-Clare mention the econometric difficulty identifying that the incentives were effective given that FDI could have been attracted precisely by the high growth potential of these sectors.
- The empirical evidence regarding the relationship between FDI and economic growth is mixed. The relationship improves when it is accompanied by conditions such as trade opening, availability of human capital and developed financial markets. As in many cases it promotes new firms, diminishes the problem of benefitting sectors or firms in decline.
- Foreign firms have higher productivity,[24] but there is no evidence of positive horizontal spillovers. However it is debatable that the FDI incentives are justified by these vertical spillovers since, in principle, the same result could have been achieved by giving incentives to suppliers directly. Even in these cases, it is debatable whether the incentives are justified, especially with the generosity observed in practice (Pack and Saggi, 2006), because they can affect local competitors who do not receive equal fiscal treatment, or can result in a transfer of incomes to foreign investors.
- The conclusion of Harrison and Rodríguez-Clare is that it's preferable to avoid policies that distort prices, such as tariffs, tax incentives or export subsidies.

[24] This results in higher wages, which suggests that the supply of labor which foreign firms face is not perfectly elastic. In any event the evidence does not allow the conclusion that there is a wage difference, once correction is made for the characteristics of workers and firms (size, economic sector to which it belongs, for example).

Rather the role of government is to promote certain clusters, increasing the supply of human capital, improving the quality of infrastructure and regulations, and encouraging the incorporation of new technologies.

Another habitual approach to fiscal incentives is to approximate their effectiveness through concepts such as "redundancy", fiscal cost, etc.[25] One part of the research aims to define as "effective" incentives which can motivate more investment. Using this reasoning, fiscal investment credits tend to appear first on the list. However, the risk with this instrument is high, as was mentioned in the earlier section, since the State ends up bearing a part of the investment without any right to receive benefits, so that bad projects can become attractive for the investor. Paradoxically, an incentive that has a big influence on a decision to invest can be the most harmful from the social point of view.[26]

Social cost-benefit analysis of tax incentives is rarely carried out with the techniques normally used to evaluate public investment projects or other elements of state spending. Estimation of costs is relatively simple but, just as in other valuation exercises, the benefits are more difficult to weigh.

Social cost-benefit analysis values the generated product, as well as the inputs and factors utilized, at social prices ("shadow prices") which differ from private or market ones, because they consider the existence of distortions and externalities. For example, the increases that the project generates in tax collection are an extra benefit for the social evaluator that the private investor does not compute as such. In its turn while the latter calculates the cost of the borrowed funds or the wages paid by the enterprise, including taxes, the social evaluator considers that the shadow price of the capital and the work can be different to that of the market. Finally the private businessman will invest taking account of the benefits that the project brings him while from the social point of view there can be benefits to third parties (externalities) from that investment.

In developing countries, the government is not accustomed to weighing estimates of shadow prices and, besides, frequently estimates of benefits are made that are not based on economically rigorous criteria. For example, the jobs generated by

[25] An incentive is redundant when it does not affect an investment decision that would have gone ahead anyway. In this case the fiscal cost is high and the additional investment meager. A particular case is the partial redundancy that appears when the incentive is greater than that necessary to make an investment viable.

[26] One example is the Effectiveness Index developed by Bolnick (2004) which compares reductions in the cost of use of capital with the present value of the taxes that are expected from the project. The problem is that measurement of the cost arises from private and not social data. It explains why fiscal investment credits appear the most effective, both in the work of this author as well as Zee *et al* (2002).

FDI were accounted for as a benefit for the country when in reality they are a cost of the project.[27] In any event, the creation of employment can give rise a social benefit above that computed by the firm if the social wage is lower than that of the market. This can happen when there is high unemployment but not to the extreme of assuming that the social wage is zero. Another error is to consider foreign exchange as a social benefit. The bringing of foreign exchange will be able to generate at most an additional benefit if the social rate of exchange is higher than that of the market and it occurs, for example, if the value of the additional goods that can be imported through the greater availability of foreign exchange is greater than the cost to the country of generating them. In other words, inputs, work and capital are a cost which makes it possible to produce and export.

Artana (2007) uses a simple general equilibrium model in which investments can be made in three sectors: one taxed at the general rate, another with incentives and a third to which incentives will be granted. Given that the information necessary to make an estimate of the social cost benefit of the incentives is not available, it is a question of approximating how great would be the positive externalities for the rest of the economy to justify the incentives for industrial investment that existed in that time in Dominican Republic. Artana (2007) concludes that the externality should exceed 82% of the value of the marginal productivity of capital before taxes, a value that is very high and that can only with difficulty be justified for a measure applying to the whole industrial sector.

Another important point to take into account is that some incentives which are much more susceptible to abuse than other; for example, when sums of money are granted in cash the temptation for fraud seems to be greater.[28,29]

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[27] For example, Monge *et al*. (2005) estimate as a social benefit of the free zones based in Costa Rica the wages paid, employment and local purchases when in reality they are costs since real resources are used. The assumption that in the short term there would be no demand for the inputs and factors utilized in the free zones is wrong as a basis for evaluating investments that receive benefits for several years and extreme because it supposes, contradicting all the specialized research on social evaluation of projects, that the social prices of the work and of the raw materials are zero. Céspedes-Torres (2012) makes a similar critique of the approach of Monge *et al.* (2005), and proposes a related methodology for social evaluation of projects.

[28] This can be explained because, in the cases of allowances, the most that can be "lost" is the tax that would have been charged if valued had not been distorted to abuse the incentive. In a cash refund the end is to draw attention to the civil servant in charge of dispensing them who often acts in connivance with the recipient of the benefit.

[29] Another example of fraud is the exemptions in the page of specific consumption taxes which favor a region of the country. Cigarette smuggling, alcoholic drinks and fuels have been a problem even at the borders that separate developed countries; therefore it need not be surprising that, when tax differences are seen within the same country, where there is not even border control, fraud is favored.

Estimation of fiscal cost

In the estimation of the fiscal loss generated by incentives different approaches are used. The most usual in the region is one that aims to approximate the benefit perceived by the recipient of the allowance, without taking into account his reaction to losing the special treatment or the economic or social justification for this exemption.[30] This is consistent with items of budgetary spending, since by including authorization to spend in the budget, it is not corrected by the eventual reaction of the recipient or by the effects not spending could have on the economy. In other words, no social cost-benefit analysis is made of the tax spending or of the traditional item of spending because, in theory, it ought to be done before its inclusion in the budget. In sum, estimation of tax spending seeks to measure how much a certain benefit is favored in relation to others, without broaching on analyzing if it is suitable or not, or if there would have been tax proceeds if the deduction did not exist.[31]

In the case of Costa Rica, the official estimate is that tax spending in 2012 was approximately 5.6% of GDP. Of that total, income tax incentives reached 1.8% of GDP (0.8% of GDP those related to the free zone regime). In Dominican Republic, the official estimate for 2012 showed tax spending of 5% of GDP and that associated with income tax 0.5% of GDP (0.3% of GDP related to the free zones).

Empirical evidence on the effectiveness of fiscal incentives[32]

Caiumi (2011) proposes a simple and useful guide to evaluate the effectiveness of fiscal incentives which poses the following questions: (i) are the benefits consistent with the pursued objectives? (ii) how many inputs were added as a consequence of public policy? (iii) what was the impact in the products objective of the policy (employment, investment, growth, welfare)? (iv) did the behavior of firms change as a result of the incentives? and (v) was the change permanent or temporary?

The principal problem estimating the impact is that what would have happened if the incentive were not present cannot be observed, and so the construction of

[30] OECD rules and the fiscal transparency manual of the International Monetary Fund recommend that tax spending be included explicitly in the budget. Quantification allows budgetary decisions to be made with greater transparency. To measure budgetary spending, first, it is necessary to define it. Therefore the usual course is to employ a "reference" tax system in which there is no special treatment. As the definition of this has subjective elements, it's frequent that there important differences between what is included as tax spending in one country compared to another.

[31] In any event, in some cases the estimates are corrected for tax evasion.

[32] In Annex A the methodology applied and the results found in the most recent empirical studies are summarized.

a valid counterfactual which isolates the effect of incentives from the influence of other variables is key to the analysis.

Zee et al. (2002) point out that the empirical evidence until the end of the 1990s showed that reduction in the cost of investment produced an increase in investment, probably with an elasticity price of around 0.6, although it was not at all clear that even in that case the incentives given by developing countries were cost effective. The authors also point out that multinational firms do not stress that tax issues in developing countries deter them from deciding to invest.

More recent studies, cited in Bolnick (2004), find that FDI is more sensitive than before to tax changes, which seems logical given the increasing international mobility of capital. The evidence cited by this author refers to investment flows between developed countries. As these countries have become more homogeneous in infrastructure, regulations and other important determinants of investment, it's natural to expect that the tax variable has greater weight. Therefore these results cannot be extrapolated to developing countries.

De Mooij and Ederveen (2003) make a meta-analysis reviewing 25 studies of tax incentives in developed countries and conclude that the elasticity of FDI to the tax rate is very high (–3.3). Feld and Heckmeyer (2009) extend this meta-analysis by adding 21 more studies to the 25 used in the earlier work and conclude that the high sensitivity result holds up although the elasticity reduces by around a half. In addition the results do not change if fixed effects by countries, agglomeration effects of the existence of other public policies, such as infrastructure spending, are introduced.[33]

The successful experience of Ireland in attracting investments before the international financial crisis has been explained by its membership of the European Union and the abundance of English-speaking skilled labor (Clark et al., 2007). It is interesting to mention that, in this case, the most convincing benefit is the low rate of tax on corporate earnings, complemented by fiscal losses that can be put off to future years in an undefined way, and not the exemptions granted to some sectors or regions of the economy.[34] This would be an example of a horizontal benefit that favors all investment and that ought not to generate distortion a priori.

[33] This high elasticity is striking because it suggests that countries had exceeded in the capital taxes prevailing before introducing the incentives, going beyond the Laffer point of maximum tax collection. With elasticity higher than unity, reduction of the tax rate would result in higher tax collection. It must be remembered that the empirical evidence is contrary to the Laffer curve and it ought to have attracted the attention of authors of the meta-analyses.

[34] The exception is that there is also accelerated depreciation.

Chirinko y Wilson (2008) analyze the evidence within the United States with fiscal credits for investment granted at state level,[35] and they make an estimation of their own. Controlling for variables that may have influenced the investment decision, the authors find that investment reacts to the incentives that a state offers, but also to those that neighbors who react by granting incentives offer, undoing in large measure the initial impact on the capital of the first state. In the same way, Chirinko and Wilson (2010) find that the employment incentives that some states grant have a positive though limited effect which, in its turn, tends to be diluted by time.

Jorrat (2009) analyzes a sample of firms with incentives in Ecuador, using as a control group firms with fiscal losses that have been able to utilize the incentive. The differential impact on investment and employment is low compared to firms in each group of similar size.[36]

Klemm and Van Parys (2010) mention that the different existing research shows that investment responds to fiscal incentives as a result of the competition between countries which reduce their taxes. In this study the authors analyze the relative effectiveness of reductions in the la rate of corporate income tax, in comparison with "tax holidays" or special deductions associated with investment in developing countries.[37]

The authors show, in the first place, the existence of fiscal competition through incentives, controlling for the characteristics of each country with macroeconomic variables (GDP per capita, openness of the economy, population and government consumption). They take account of the distance between countries to incorporate the fact that reductions in the taxes of neighboring countries should have more impact than ones made by distant ones. The findings reveal that countries react to changes in the rates of income tax or in the generosity of "tax holidays" conceded by other countries, but not to fiscal credits.

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[35] Chirinko and Wilson (2008) mention that fiscal credits in state taxes on profits are used in around 40% of the states and averaged 6% of the investment in 2004. As they were practically non-existent in the 1970s, there is an interesting database within a single country, with variability over time and between states.

[36] This work has some important limitations: firms with losses in the year in which Jorrat makes the measurement could benefit from the incentive in future ones. Although it's probable that the benefit is lower in present value, the difference will depend on the discount rate. Besides the author estimates employment from information on total wages and does not carry out *diff in diff* analysis but only a comparison of averages between firms of similar size.

[37] The authors highlight that the findings of the studies available in developed countries cannot be extrapolated to developing countries because the effectiveness of incentives to attract investments depends on the degree of development of the country (they tend to be larger the higher the level of institutional quality or if there are externalities from agglomeration). See, for example, Devereux *et al* (2007).

In a second model, they analyze the influence on FDI and private investment of the three fiscal incentives. Reductions in the tax rate or ten additional years of "tax holidays" increase FDI by 0.3% and 0.7% of GDP, respectively, but fiscal credits do not improve it. This might reflect the fact that favored firms have extraordinary profits, which makes more useful an incentive that reduces the tax rate or extends the tax-free period. On the other hand, the authors do not find evidence that any of the incentives increases private investment. This could be because the incentives are attractive for purchases of firms by foreign capital or because FDI that receives benefits displaces local investments, which would put in doubt its effect on economic growth. Finally the effects of incentives on FDI are observed in Latin America and the Caribbean, but not in Africa, which leads the authors to conclude that in environments of low institutional quality something more than incentives is needed to stimulate investment.[38]

Van Parys y James (2010a) analyze the impact of fiscal incentives for tourism granted in the Caribbean in the 1997–2007 period. In 2003, Antigua and Barbuda extended from 5 to 25 years exemptions on income tax for firms in the sector, establishing a clear difference from other countries. This allows the authors to conduct diff in diff analysis focused on investment, controlling for factors that might have influenced investment in tourism (for example, the holding of the Cricket World Cup). The authors carry out a panel analysis with fixed effects per country which allows them, unlike previous studies, to evaluate the impact not only between countries but also within each one of them.[39] Therefore they obtained a database for investment in the tourism sector, unlike earlier studies that only accessed aggregate investment in the economy. The analysis shows that investment in tourism in Antigua and Barbuda increased in the country and much more than in the other six countries included in the study. The authors highlight that their analysis does not allows conclusions to be drawn on the impact on welfare because they did not measure the costs.

There are various studies for free zones or firms based in backward zones in developed countries which compare the performance of firms which received incentives with others that did not. Caiumi (2011) uses information from sworn statements for Italian firms income tax in the periods 1998–2000 and 2001–2005, which contain investments realized and access or not to the regional incentive. This base is complemented by information at firm level from other public sources. The incentive is very generous, between 8% and 65% of the investment, increases in

[38] This result is consistent with previous work by the same authors. See Klemm and Van Parys (2010).

[39] Van Parys and James (2010a) focus on the impact on investment and not on measurement of the effect of the incentives on the cost of use of capital as in Sosa (2006) or on the effective rate. They also take advantage of the similarities between the seven islands included in their work.

inverse proportion to the size of the firm and for determined regions reduces over time. A priori, this ought to spur an important increase in investment and the findings confirm that expectation. In addition, the incentive was most potent in small and medium-sized firms which presumably had lacked cash for investment. The short-term elasticity of investment to the cost of use of capital without incentives is –0.15 and the long-term one, –0.42. Elasticity doubles when incentives are considered. The author concludes that this might be due to the bringing forward of investments, given that the incentive regime is temporary.

The study by Caiumi (2011) is interesting because, besides estimating the impact of incentives on investment, it measures the impact on productivity, which draws nearer to the impact on welfare. She finds a positive impact on Total Factor Productivity, especially in firms which had low productivity before the program. In spite of the positive results on investment and productivity, the author arrives at a pessimistic conclusion because the fiscal sacrifice is greater than the increase in investment.

Bronzini and De Blasio (2006) use Propensity Scores between firms favored by regional incentives in Italy and control group of firms without incentives, and find that investment increased with the incentives.

Kolko and Neumark (2010) stress that incentives granted in the United States to firms based in free zones varied in magnitude and objectives (employment, promotion de activities in depressed zones, or both). This prevents extrapolation of the findings from one free zone to another. In any event they conclude that the previous evidence suggests that there was no positive impact on employment. The authors analyze the 42 free zones in the state of California in 2005 with the aim of measuring the impact of the different characteristics of the zones of that state.[40] It is worth noting that as the incentives are the same throughout the state, analyzing the differences between free zones the authors focus on non-fiscal factors.

In an earlier study, which did not consider the different characteristics of each zone, the authors had found a zero effect on employment. The evidence in the 2009 study shows that the impact on employment is greater in the zones where the weight of manufacturing industry is lowest,[41] and where the administrators of the zone do most marketing and advice for the firms. Therefore, administration of the incentives could be improved to increase the impact on employment.

[40] According to the authors, the main fiscal benefit in California is a fiscal credit for employing disadvantaged workers (for example, the unemployed, those on low incomes, among others) which consists of a contribution from the state of up to 150% of the minimum wage per worker. In addition here are other less important benefits such as accelerated depreciation, longer periods to transfer losses into the future, and some financial benefits. Credit for additional employees explains two thirds of tax spent.

[41] This could be due to the greater capital intensity of the industry in relation to other activities.

Bondonio and Greenbaum (2007) evaluate the impact on employment, investment and sales of incentives granted to firms based in free zones in eleven American states, seeking to exploit the differences in the incentives granted by each state. Information available in four U.S. economic censuses allows them to capture firms which are founded and others that disappear, in order to investigate the results found in earlier studies which concluded that there was zero impact on employment. The size of the incentives is estimated as the difference in the rate of return with and without incentives within the same state.

The estimates show that the positive impact of new firms on employment is offset by firms which close or leave the free zone. This can be explained because many programs give incentives only to new firms and, as a consequence, they gain a competitive advantage over existing firms which do not obtain the incentives. In addition the evidence suggests that unskilled labor is created.

Bondonio and Greenbaum (2012) analyze the impact of the European Regional Development Fund with the aim of detecting its impact on employment in the north of Italy. Using a date base of firms enrolled in different nurturing programs (national, regional or of the European Union), they exploit the heterogeneity between the different programs and the firms that can access one or more of these nurturing schemes. They analyze the impact within a period of three years to prevent the non-incentivized firms' employment data being "contaminated" by the employment generated by the firms which receive incentives.[42]

These authors find that the impact on employment increases with the amount of the subsidy: from approximately two additional workers per firm with benefits below 10,000 euros to seven workers per firm with benefits greater than 70,000 euros.

Givord (2011) analyzes the impact of fiscal incentives given to firms based in depressed zones in France. The incentives are quite generous, especially for firms which employ fewer than fifty workers. They include exemption for five years from taxes on profits and property, and from the local business tax. In addition, there is an exemption from the payment of contributions to social security for wages lower than 1.4 times the minimum wage. She uses microdata for the 2002–2007 period to check the impact on the quantity of firms located in the areas with incentives, their evolution over time and the impact on employment. The author finds that the incentive had a modest effect on employment, explained by the setting up of new firms in the areas with incentives.[43] However, she finds that in most cases they were transferred from firms based in other parts of France. She also stresses that

[42] If they are contaminated, the control group is no longer that.

[43] Givord mentions that the impact on the employment of firms already based in the depressed zones is much lower and concentrated in the smallest (Givord, 2011).

the effect of the fiscal incentives is weak, in line with the findings of Kolko and Neumark (2010) in California.

In summary, the empirical evidence suggests that incentives to firms based in free zones increase investment or employment somewhat but are not conclusive on whether growth and welfare improve. This conclusion is obtained both from studies that use aggregated information and from those that use microdata.

The free zones in Costa Rica, El Salvador and Dominican Republic

The incentives granted

The free zone laws of the three countries analyzed contain similar incentives and some differences. Box 4.1 sums up the current position of the incentives in each country. In general, all taxes on imports tax on the income generated by the firm and other minor taxes are exempt.

For a long time Costa Rica has had a time limit on income tax exemption, but recent modifications in the legislation allow the deadline to be extended with incentives, depending on whether the firm makes additional investments. In addition, the law allows a fiscal credit for investment which would be redundant when the firm is exempt for 100% of the payment of income tax.[44]

To approximate the generosity of the incentives granted in the three countries, the flow of funds of a "typical" firm was projected under the assumption that it benefits from no special treatment, and it was compared with the flows of funds when there are incentives, assuming that the firm can use them fully. The cost structure of the "typical" firm was assumed to be similar to what emerges from the information reported for Costa Rica and Dominican Republic (see following section).[45]

[44] From Procomer reports it has been interpreted that the fiscal credit is 10% of the investment or of the spending on staff training and that the deduction is made on the taxable base of the firm's income tax. In this case, the incentive is not relevant if the firm is exempt for 100% of the payment of income tax because this would be the maximum benefit to receive. Doubt arises because it could be interpreted that the benefit applies on the investor's profits.

[45] With the data from "typical" firms the free flow of funds for 10 years was projected and then the value at perpetuity was added (rising to a zero real annual rate). It is assumed that annually the firms invest a sum equivalent to annual depreciation. An annual discount rate of 10% was used which, in the exercise, makes the present value of the free cash equal to the value of the assets. The fiscal benefit generates a greater flow for the beneficiary firm. For incentives to investors in Dominican Republic, the equivalent fiscal credit was estimated on the basis of the value of assets in machinery and equipment, since the incentives of this type, in general, are related to that part of the assets of the firms (and not with inventories, for example). To simplify, benefits in other taxes were not included in the comparison.

TABLE 4.1 Benefits for users of the free zones

Country	Norm	Import duty incentives	VAT on imports incentives	Corporate income tax incentives	Incentive for investors in the project	Other tax incentives	Observations
Costa Rica Export firms	Law Nº 7210/1990 and Law Nº 8794/2010	100% without time limit	100% without time limit	100% first 8 years, 50% following 4 years for firms based in the Enlarged Metropolitan Area. The deadlines extend to 12 and 6 years for firms based outside that zone. Firms which reinvest, fulfilling certain conditions, obtain up to 4 additional years exemption. The 80% and the 50% for processing firms which do not export, based in the GAMA zone and of 100% for 6 years, 83% for the next 6 years and 50% during the following 6 years.	Fiscal credit of 10% for reinvestment of profits in new fixed assets and staff training. Cannot exceed 10% of the Taxable Income. This benefit is redundant if the firm is exempted in 100% of the payment of income tax.	100% on taxes on imported fuels only if they are not produced in the country. 100% for 10 years of taxes on capital and the net assets, of the payment of land tax and of the transfer of property tax. 100% for 10 years of municipal patents. Firms outside the GAMA area: reimbursement of 10% of wages paid in a year, decreasing 2 percentage points per year until disappearing in year 6.	Wording of the fiscal credit for reinvestment of profits and staff training is not clear. From Procomer reports, it has been interpreted that the fiscal credit is of 10% of the investment, but the limit fixed by the law is 10% de the taxable income, so that the fiscal credit could be 100% of the investment, provided that it is less than 10% of the taxable income of the investor.

(*continued on next page*)

TABLE 4.1 Benefits for users of the free zones *(continued)*

Country	Norm	Import duty incentives	VAT on imports incentives	Corporate income tax incentives	Incentive for investors in the project	Other tax incentives	Observations
El Salvador	Legislative Decree Nº 405/98 and Legislative Decree Nº 318/13	100% without time limit	100% without time limit	100% without time limit. In 2013 for firms based in the metropolitan area it was limited to 100% for 15 years, 60% for the next 10 years and 40% for the next 10 years. Outside the metropolitan area, the deadlines rise to 20 years, and then two periods of 15 years each one. The benefits extend 5 years more if the initial investment at least doubles. Distributed dividends are taxed from year 13.		100% on municipal taxes on assets and equity. 100% on property transfer tax. In 2013 the total exemption on municipal taxes was limited to 15 or 20 years and then is established in periods with reduced taxation.	
Dominican Republic	Law Nº 8–1990	100% for 15 years. 20 years for Free zones in border areas.	100% on ITBIS on imports for 15 years. 20 years for Free zones in border areas.	100% for 15 years. 20 years for free zones in border zones. From 2011, 3.5% of sales to the domestic market are paid as income tax.	Fiscal credit for investment of between 24% and 30%, depending on the zone if the income tax rate is 30% and the investment does not exceed 50% of taxable income of the investor's income tax	100% on construction, loan contracts and property transfer. Establishment of companies. Municipal taxes. Taxes on patents or on assets. Income tax would not be deducted from staff of the firm.	Can sell 20% to the domestic market, previous payment of ITBIS and import duties if there is national production and up to 100% if there is no local production or national raw material is 25% of the total.

TABLE 4.2 Fiscal incentives for investment in free zones

	Value with benefits/Net equity of the firm[a]	Value with benefits/ Value of the firm (without incentives)[b]	Value with benefits/ Investment in fixed assets	Present value of the benefits/ Investment in fixed assets	Percentage of the benefit attributable to:	
					Exemption in income tax	Fiscal credit for investments
Costa Rica[c]	1.97	1.50	2.18	73%	100%	0%
Costa Rica[d]	1.72	1.31	1.91	46%	100%	0%
El Salvador	1.88	1.43	2.08	63%	100%	0%
Dominican Republic	2.02	1.55	2.29	81%	66%	34%
Plan Chile Invierte	1.59	1.02	1.51	3%	100%	0%

Notes:
[a] The discount rate is 10%.
[b] The value of the firm is calculated as the present value of the free cash flow for 10 years plus a perpetuity value that grows at a real 0% per year.
[c] It was assumed that the firm will be exempt from payment of income tax every year, before the possibility of extending the benefits and using fiscal credits.
[d] It was assumed that the firm will be exempt from payment of income tax for 8 years and then pays 50%.

Box 4.2 sums up the findings. The most important incentive originates from exemption in the payment of income tax for the totality of years of the project (the most usual case).[46] The potential incentives granted by the three countries for firms based in the free zones are very generous. By way of comparison, the effect of the fiscal incentive included in the Plan Chile Invierte (Chile Invests Plan) is simulated; it foresees an expensing of the investment of 50% (that's to say, it's permissible to amortize half the investment in the first year) and the remaining 50% is amortized normally. Adopting the same assumptions for the "typical" firm and assuming that the benefit only applies to investments in fixed assets, a Company Benefits-Value relationship is reached of 1.02. In other words, in the Chile the present value of the benefits represents 2% of the value of the firm without incentives, while in the cases of the free zones it is of the order of 50% of the firm's value. Another interesting comparison is to relate the present value of the incentives with the investment in

[46] Exemptions from import duties and from VAT for raw materials and machinery were not included, since exports in an ideal system would be taxed at a zero rate in VAT and firms could receive a return of the tariffs paid via an efficient draw back system. In other words, the exercise tries to measure the effect of incentives which represent an advantage for the firm which adhered to the regime. In any event, if firms based in free zones can sell in the domestic market a part of their production and enjoy exemption from payment of import duties on raw materials their effective protection and, therefore, the magnitude of the benefits, would increase appreciably.

fixed assets. While in Chile the benefits represent 3% of the fixed assets, in the free zones analyzed they represent between 46% and 81% of that investment. That's to say, the State takes charge of an important part of that investment.

Analysis from aggregated data

With the aggregated information available for Costa Rica and Dominican Republic, it's possible to carry out an aggregated analysis for the "typical" firm (given the quantity of firms based in free zones in each year, as well as other relevant variables).[47]

Table 4.3 shows a summary of indicators, in which it is observed that:

a. In Dominican Republic there are around double the firms involved in the free zones incentives regime than in Costa Rica (around 600 firms, compared with somewhat less than 300 firms) and employment is also approximately double; but exports from the firms under the regime are 60% greater in Costa Rica than in Dominican Republic.
b. Exports per worker in Costa Rica are approximately three times higher than those in Dominican Republic. This difference is not explained totally by differences in the sectoral composition of activities based in the free zones.[48] In Costa Rica the textile sector, which would be more labor intensive than other activities, represented in 2012 scarcely 2% of free zone exports, a figure that reached 26% in that same year in Dominican Republic. In any event, in both countries the participation of the textile sector fell appreciably, a trend that has been deepening since 2004, when at the global level trade liberation in these products was advancing.
c. Exports from the free zones have grown their share in total exports by Costa Rica, reaching two thirds in 2010, but the opposite is seen in Dominican Republic where in 2012 they accounted for 55% of total exports, far from their maximum of 85% in 2001.

[47] For Costa Rica and Dominican Republic there are official entities (PROCOMER y CNZFE) which collect information on the evolution of firms favored by free zone regime incentives—exports and imports, spending realized in the country, employment and wages paid, accumulated investment and sectoral data—. In addition, in Costa Rica there are firms which have partial exemptions for income tax; information on the tax paid and on the levy charged by PROCOMER is collected. In the case of El Salvador, information is scarcer and is aggregated by the chamber of textile sector firms (CAMTEX), but the aggregated data for foreign trade and employment differ from the official statistics (since in the official ones a part of the maquila exports is reclassified as general exports). Given that for El Salvador the information is not so complete, it was not included in this sub-section.

[48] This finding could be moderated to the degree that firms in Dominican Republic have a higher share of sales to the internal market. In any event, the information provided by the DGII of the country suggests that sales to the internal markets are not very relevant.

TABLE 4.3 Annual economic indicators for the free zones of Costa Rica and Dominican Republic

	Dominican Republic																
	No. Firms	Jobs	Exports FZ (million US$)	Imports FZ (million US$)	X–M FZ (million US$)	Local Costs FZ (million US$)	Textile Expo (million US$)	Textile Participation in Expo FZ	% FZ in GDP	% FZ in Total Expo	Expo FZ/L (thousands of US$ per worker)	Added Value FZ (million US$)	AVFZ/L thousands of US$ per worker	AV FZ/ Expo FZ	Estimate Wages (million US$)	AV capital (million US$)	Investment million US$[a]
1995	469	165,571	2,907	2,006	901	509	1,731	60%	4.2%	77%	17.6	392	2.4	13.5%	388	5	N.A.
1996	436	164,639	3,107	2,146	961	545	1,754	56%	4.0%	77%	18.9	416	2.5	13.4%	419	–3	673.8
1997	446	182,174	3,596	2,417	1,180	701	2,185	61%	4.2%	78%	19.7	479	2.6	13.3%	479	0	0.7
1998	496	195,193	4,100	2,701	1,400	827	2,349	57%	4.9%	82%	21.0	573	2.9	14.0%	494	79	114.0
1999	484	189,458	4,332	2,834	1,497	887	2,393	55%	4.9%	84%	22.9	610	3.2	14.1%	489	121	101.9
2000	481	195,262	4,771	3,063	1,708	1,019	2,555	54%	5.1%	83%	24.4	690	3.5	14.5%	509	181	331.9
2001	512	175,078	4,482	2,826	1,655	978	2,314	52%	5.1%	85%	25.6	677	3.9	15.1%	480	198	42.6
2002	520	170,833	4,317	2,600	1,717	887	2,227	52%	5.4%	84%	25.3	831	4.9	19.2%	448	382	–50.6
2003	531	173,367	4,407	2,531	1,876	811	2,196	50%	7.5%	81%	25.4	1,065	6.1	24.2%	334	731	115.3
2004	569	189,853	4,685	2,520	2,165	863	2,121	45%	7.3%	79%	24.7	1,302	6.9	27.8%	306	996	360.6
2005	556	154,781	4,750	2,503	2,247	1,005	1,905	40%	4.8%	77%	30.7	1,241	8.0	26.1%	403	838	299.4
2006	555	148,411	4,679	2,615	2,064	974	1,734	37%	4.5%	71%	31.5	1,090	7.3	23.3%	386	704	482.1
2007	526	128,002	4,525	2,500	2,026	1,011	1,367	30%	3.8%	63%	35.4	1,015	7.9	22.4%	348	667	–14.4
2008	525	124,517	4,354	2,429	1,925	954	1,167	27%	3.6%	65%	35.0	971	7.8	22.3%	364	607	153.9
2009	553	112,618	3,794	2,350	1,444	959	934	25%	3.0%	69%	33.7	485	4.3	12.8%	346	139	126.9
2010	555	121,001	4,218	2,464	1,754	1,123	964	23%	3.0%	62%	34.9	631	5.2	15.0%	368	263	143.5
2011	578	125,117	4,885	2,955	1,929	1,164	1,296	27%	3.2%	57%	39.0	766	6.1	15.7%	388	377	32.1
2012	584	134,226	4,988	2,845	2,143	1,298	1,278	26%	3.1%	55%	37.2	845	6.3	16.9%	451	394	220.3

Source: Own calculations based on data from Annual Reports CNZFE for the years 1995–2012.

[a] The first entry is the aggregate investment in previous years.

(*continued on next page*)

TABLE 4.3 Annual economic indicators for the free zones of Costa Rica and Dominican Republic (*continued*)

	Costa Rica																
	No. Firms	Jobs	Exports FZ (million US$)	Imports FZ (million US$)	X–M FZ (million US$)	Local Costs FZ (million US$)	Textile Expo (million US$)	Textile Participation in Expo FZ	% FZ in GDP	% FZ in Total Expo	Expo FZ/L (thousands of US$ per worker)	Added Value FZ (million US$)	AVFZ/L thousands of US$ per worker	AV FZ/ Expo FZ	Estimate Wages (million US$)	AV capital (million US$)	Investment million US$[a]
1997	168	16,678	892	736	155	99	338	38%	N.A.	21%	53.5	56	3.4	6.3%	123	–66	161
1998	179	24,287	1,965	1,539	426	233	368	19%	N.A.	36%	80.9	194	8.0	9.9%	148	46	66
1999	194	26,362	3,625	1,858	1,767	228	431	12%	N.A.	54%	137.5	1,539	58.4	42.4%	190	1,349	400
2000	214	28,201	2,998	1,795	1,203	139	419	14%	N.A.	51%	106.3	1,064	37.7	35.5%	243	821	331
2001	217	34,086	2,381	2,015	366	207	404	17%	N.A.	47%	69.9	159	4.7	6.7%	276	–117	102
2002	222	35,121	2,666	2,211	455	245	425	16%	N.A.	51%	75.9	210	6.0	7.9%	301	–91	44
2003	213	34,342	3,327	2,231	1,095	269	347	10%	N.A.	55%	96.9	826	24.1	24.8%	312	514	90
2004	204	35,613	3,242	2,490	751	335	334	10%	N.A.	51%	91.0	416	11.7	12.8%	337	80	315
2005	203	39,179	3,699	3,190	509	368	328	9%	N.A.	53%	94.4	141	3.6	3.8%	365	–224	249
2006	221	45,201	4,966	3,696	1,271	482	311	6%	N.A.	61%	109.9	789	17.5	15.9%	506	283	67
2007	254	49,969	5,880	3,417	2,463	596	277	5%	N.A.	63%	117.7	1,866	37.3	31.7%	646	1,221	223
2008	259	52,788	5,943	3,625	2,318	646	201	3%	N.A.	62%	112.6	1,672	31.7	28.1%	769	904	364
2009	246	52,344	5,790	2,852	2,938	933	153	3%	N.A.	67%	110.6	2,006	38.3	34.6%	810	1,196	193
2010	256	58,012	6,281	3,415	2,865	1,080	145	2%	N.A.	67%	108.3	1,785	30.8	28.4%	1,060	725	709
2011	275	65,186	7,338	3,858	3,480	1,633	177	2%	N.A.	N.A.	112.6	1,847	28.3	25.2%	1,323	524	727
2012	295	69,166	8,132	4,132	4,001	2,036	160	2%	N.A.	N.A.	117.6	1,964	28.4	24.2%	1,534	430	475

Source: Own calculations based on data from PROCOMER 2006 and 2011 and information provided by PROCOMER for the years 2011 and 2012.

[a] The first entry is the aggregate investment in previous years.

TABLE 4.4 Economic indicators (average for each period) for the free zones of Costa Rica and Dominican Republic

		No. Firms	Jobs	Exports FZ (million US$)	Imports FZ (million US$)	X–M FZ (million US$)	Local Costs FZ (million US$)	Textile Expo (million US$)	Textile Participation in Expo FZ	% FZ in GDP	% FZ in Total Expo	Expo FZ/L (thousands of US$ per worker)
1997–2004	DR	505	183,902	4,336	2,686	1,650	872	2,293	53%	5.5%	82%	24
1997–2004	CR	201	29,336	2,637	1,860	777	219	383	17%	N.A.	46%	89
2005–2010	DR	545	131,555	4,386	2,477	1,910	1,004	1,345	30%	3.8%	68%	34
2005–2010	CR	240	49,582	5,426	3,366	2,061	684	236	5%	N.A.	62%	109
2005–2012	DR	554	131,084	4,524	2,583	1,941	1,061	1,331	29%	3.6%	65%	35
2005–2012	CR	251	53,981	6,004	3,523	2,481	972	219	4%	N.A.	62%	110

		No. Firms	Jobs	AVFZ/ thousands of US$ per worker	AV FZ/Expo FZ	Wages paid (million US$)	AV capital (million US$)	Investment million US$	Wages Paid / Exports	AV Capital / Exports	Participation Wages in AV	Participation Capital in AV
1997–2004	DR	552	778	4	17.8%	442	336	127	10.3%	7.5%	58%	42%
1997–2004	CR	240	558	19	18.3%	241	317	189	9.7%	8.6%	53%	47%
2005–2010	DR	584	905	7	20.3%	369	536	199	8.4%	11.9%	42%	58%
2005–2010	CR	400	1,377	27	23.8%	693	684	301	12.5%	11.3%	52%	48%
2005–2012	DR	584	880	7	19.3%	382	499	180	8.5%	10.9%	44%	56%
2005–2012	CR	387	1,509	27	24.0%	887	632	376	14.0%	10.0%	58%	42%

Source: Own elaboration on the basis of data from PROMOCER and CNZFE.

d. The value added of the free zone firms can be estimated assuming that earnings from domestic market sales are unimportant. This value added is defined as exports less imports[49] and local spending.[50] In its turn this value added can be shared out between labor and capital. Wage information figures in the PROCOMER reports and, in the case of Dominican Republic, were estimated by multiplying the quantity of operators by the average wage and that of technical staff by their average wage.[51] It can be observed that:
   - The value added/exports relationship is of the order of 20%, similar for both countries if averages for the 1997–2004 y 2005–2012 are considered (see Table 4.4).
   - Firms in Dominican Republic were more intensive in labor use than those of Costa Rica in the 1997–2004 period (approximated by the share of wages in value added), but that relationship inverts in the 2005–2012 period. In broad terms, the added value is shared in equal parts between labor and capital.
   - Considering the investment realized in each period, defined as the difference in accumulated investment in each year, and the estimation of added value of capital, which is a good approximation to the flow of funds that increases that factor, an annual internal rate of return (IRR) in dollars can be estimated.[52] That calculation gives 22% in Dominican Republic and 39% in Costa Rica.[53] These rates of return are higher, for example, to those estimated by Ecocaribe for the industrial sector of Dominican Republic, of the order of 15% in dollars approximately a decade ago. It's possible that the true rates of returns are somewhat higher for two reasons: on the one hand, the initial investment is estimated as that accumulated in the year previous to the first in which the capital flow was estimated (1995 in Dominican Republic and 1996 in Costa Rica), and it is considered that that investment was all made in that year. That

[49] In Costa Rica, the difference between exports and imports has marked jumps which might reflect capital goods imports for big projects.

[50] In the region national spending is considered a benefit of the incentive regime and a way of approximating backward linkages. This is a way of over-estimating the benefits because it supposes that the factors employed by suppliers of the free zones would not have alternative employment and that therefore their opportunity cost is zero.

[51] For the administrative staff it was assumed that the wage is the simple average of the other categories. In addition, as in some years total employment is higher than the sum of the three categories mentioned, because the staff of the zones had been excluded, the payment of wages through the share of total employment was increased to the sum of the quantity of operatives and technical and administrative staff.

[52] This is an aggregated estimation, where the flow is negative in the first year for the sum of accumulated investment and for subsequent years is the difference between the value added of the capital and the annual investment.

[53] In this case, both the income tax paid and the duty to PROCOMER were subtracted.

reduces the IRR, because the investment certainly was made over several years and because an earlier flow of capital was not included. On the other hand, to the degree to which in the future they may have positive values for the flow of "old" capital, the estimated IRR will increase.

- This calculation is a weighted average approximated IRR which includes projects with sill higher individual returns.

These data suggest that firms in free zones, especially in Costa Rica, have high profitability. If this is the case, it's worth considering whether the fiscal incentives were necessary or if countries are sacrificing fiscal income to favor projects that would have gone ahead anyway. Another possibility is that the real profitability is lower, since multinationals would have incentives to "move" sales and profits towards its plants based in a low tax zone. If this were the case, the genuine activity and the benefits for the country of the free zones would be lower than those recorded by official bodies.

Analysis with microdata[54]

In the cases of El Salvador and Dominican Republic, this study has information at firm level from sworn income tax declarations. In principle it makes it possible to compare the performance of the firms which have enjoyed incentives under the free zone regime with that of firms in the same country and ideally the same economic sector which have not enjoyed such incentives. This comparison gives another response to the above-mentioned question on the results obtained through granted exemptions, besides the aggregated analysis of the earlier section.

By dealing with same country firms, the effects of fluctuations in the economy on performance is in good measure corrected. In any event, to the degree to which free zones firms are more oriented to external markets, their relative performance could have been influenced by events in export destination countries.

El Salvador

In the case of El Salvador, the available information at firm level was obtained from sworn income tax declarations for firms in the free zone regime, and for a group without incentives selected by functionaries of the Finance Ministry and Dirección General de Ingresos (DGI or General Revenue Office). The information has some limitations:

a. In the econometric analysis the years 2005–2012 were included, to deal with the period of the sample with the most complete information for both types of

[54] This part of the work was carried out in conjunction with Ivana Templado.

firm. The comparison focuses on total sales and an approximation of the profit, given the information available.[55]

b. Sales and total expenditures are open out in taxed earnings and spending related to those earnings, exempt earnings and expenditures associated with those earnings, and earnings that do not constitute income. For example, exempt earnings include incentive for exports of 6% of FOB, which it is better to include in a comparative exercise between firms with and without fiscal incentives, because perception of them depends on the habitual cycle of the firm. Earnings which do not constitute income include interest on government securities, profit from the sale of property, insurance compensation, and dividends which already paid income tax, which it is better to exclude because they are not part of the normal activities of the firm. In this case associated outgoings were also excluded.
c. The variable, total earnings, is the sum of the tax sales and the exempt sales. In total outgoings both these concepts were also added together. The profit was estimated as the difference between total earnings and outgoings. This estimate is better than the profit which emerges from the fiscal database, as some firms without incentives do not report it because they don't pay taxes. Unfortunately, there is no information at firm level which makes it possible to follow over time variables such as payments for salaries or investments. Annex B includes a detailed description of the data.
d. In some cases the information has inconsistencies, with a higher incidence in firms with incentives. For example, earnings are not reported, but expenditures are. This reflects problems reporting information, such as their omission or erroneous classification. To correct this problem, years in which the information was considered inconsistent were eliminated, but data for other years from the same firms were kept in the database.[56]
e. For some cases, information from tax reports presented by the firms. This information is more detailed and free from errors. It would be useful to make a more precise comparison since it makes it possible, for example, to estimate labor costs. The problem is that there are only about ten in each tax regime, which is insufficient for an econometric analysis.

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[55] The database has information for both types of firm in 2004–2012, but is more complete from 2005. Information on different types of spending, such as labor costs, appears uniquely for the last year.

[56] For example, those years in which the figure for earnings minus expenditures was negative and outside the historical range for the firm were eliminated from the study. Years in which the calculated profit (earnings minus expenditures/earnings) were higher than +/-100% and the years with excessively high or close to zero data for earnings or expenditures, also out of the historical range of the firm, were also eliminated.

Given that the exemption form income tax in the free zones has been applied since before the beginning of the sample for which data is taken, it is not possible to compare the performance of the companies before and after the incentive was applied. In other words it is not possible to do diff in diff analysis. It is only possible to compare the performance of firms which always had the incentive with those that never had it. Therefore the interest lies in the statistical significance and sign of the variable indicated by the tax regime to which the firm belongs. The statistical significance would indicate if, effectively, firms with different tax treatment can be considered different, while the sign would say which has the better performance.

Comparison of firms with and without fiscal incentives was carried out through analysis of three variables: the level of sales of the firms, the level of inter-annual growth they had and the profit level.

The first analysis compares the level of earnings after stratifying for size, to be sure that similar firms are compared. This exercise has the aim of quantifying and verifying if differences in sales are statistically significant or not. (see Graph B 1 de Annex B).

A second exercise seeks to determine if the evolution of earnings has been different for the group of firms with incentives compared to the control group (without incentives). For that a regression with inter-annual rates of variation was carried out.

In third place, as another approximation that may help to evaluate if the performance was different in one group to the other, the profit obtained by the firms is analyzed (see Graph B 2 of Annex B).

In all cases, the function which is postulated has as explicative variables the zone of the firm, the share of the total of taxed earnings on the total of sales and the economic sector of the firm, as well as variables which control for each one of the years included in the analysis. As will be seen below, the evidence suggests that firms with incentives have not had a better performance than firms without them. Indeed, the evidence for small firms suggests the opposite.

Analysis for level of sales and profit

The proposes relationship is the following:

$$Y_{it} = \alpha + \beta_1 Zona_i + \beta_2 Coefficient\ Taxed\ Sales_{it} + \beta_3 Sector_i + \beta_4 Year_i + u_i + \varepsilon_{it} \qquad \text{(Equation 1)}$$

Para i: firms t: years

It is assumed u_i iid$(0,\sigma_\alpha^2)$ y ε_{it} iid$(0,\sigma_\varepsilon^2)$

Each dependent variable is defined in the following manner in the equations:

- Total sales in real terms: taxed sales plus exempt sales deflated by the CPI, its logarithm.
- Profit: expressed as a percentage and defined as total sales minus spending, over total sales.
- Rate of growth of sales, defined as their inter-annual change.

And each independent variable is defined in the following form:

- Zona: dummy variable which takes value 0 for the firms without fiscal incentives and value 1 for firms in the free zone regime.
- Coefficient of taxed sales/total sales: the quotient of taxed sales over total sales.
- Sector: dummy variables which identify the agriculture, trade and industrial sectors.[57]
- Year: dummy variables are incorporated for each year, to capture common questions for both zones which can vary through time.

Given the structure of the database, a panel analysis can be carried out, given that each firm has been observed for eight years (2005–2012).[58] The question that follows is if it is suitable to estimate for fixed effects or random effects. Recall that fixed effects are used when there non-observable effects in entities, firms in this case, which can be correlated with explicative variables and which, therefore, invalidate the consistency of the estimates. Such non-observable characteristics are assumed invariable over time. Fixed effects are used when one wants to study the causes of changes in a same firm and therefore ought not be used to investigate variables which are invariable over time in a same firm.[59]

On the other hand, in the case of estimation with random effects, the non-observable characteristics of the firms are assumed to be random and not correlated with the explicative variables; in our case the non-observable characteristics of the firms would not be related to the zone, sector or percentage of taxed sales that they have. In their turn, the random effects have the advantage of being able to

[57] As these sectors group 96% of the firms, the three are specified in the equation, leaving services and other sectors as a base.

[58] The Breusch and Pagan test indicates the usefulness of employing panels instead of a common regression (see Annex D).

[59] An estimate could be reached which is equivalent to the estimate of panels with fixed effects using LSDV (Least Square Dummy Variables Model); this is not a good alternative given the loss of efficiency of the estimate, since a dummy would have to be included for each firm.

measure specific effects of the firms, for example, if the fact of belonging or not to the free zone implies a better performance.

In annex D, the results for tests on the inherent assumptions in the model are shown. The over-identification test of Arellano[60] would indicate that the random effect of the panels is not rejected.[61] On the other hand, the absence of serial correlation is rejected, so that standard efforts for the effect of auto-correlation must be corrected. Finally, the existence of heteroscedasticity is also verified, so that more solid estimation procedures must be used for this problem.

It is interesting to highlight that firms without incentives have few exempt sales, but firms based in the free zones have an average of 20% of taxed sales. This percentage varies over time and with the size of the firms and is lower in the biggest (see Graph B 5 of Annex B). For a comparison of the relative performance between firms with and without incentives, the taxed part of firms with incentives must be controlled so that the Zone variable captures the difference between one group and the other. This is done by including the Coefficient Taxed sales/Total sales variable.

Table 4.5 sums up the findings for the total sample for the two strata of small and large firms from the sales level analysis. A panels estimate with random effects is carried out, and with standard errors corrected for heteroscedasticity and serial correlation. Two results are shown for each group, a product of including or not the effect of the taxed sales on total sales coefficient, as an additional explicative variable for economic sectors and the fixed effect of years. The omission of this variable produces a brusque change in the estimate of the variable of interest, since the estimate of the impact of the Zone variable would go from being negative to having no statistically significant impact.

The results of Table 4.5 (column 1) show that a free zone regime firm has sales 50% lower than firms without incentives;[62] in turn, if the taxed sales increase their share in earnings by 0.1, it translates into a reduction of 5.5% of the sales.[63]

The agricultural sector is the only one that appears as significant and with a positive coefficient, indicating that firms in this sector have higher sales than

[60] Arellano, M. and S. Bond (1991).

[61] For the characteristics of the variables, this test only takes into account the coefficient of taxed sales over the total, since other variable are fixed by firm, so that they cannot be estimated by fixed effects and, therefore, cannot be included in the comparison.

[62] For a dummy variable, the percentage from the coefficient is obtained as (exp(–0.698)–1). It gives a reduction of 50%.

[63] The results obtained suggest that the level of sales of firms with benefits is lower than that of firms without benefits. At the same time, the variable which measures the percentage of taxed sales has a negative sign in an apparent contradiction with the former result. However, Graph B 6 and Graph B 7 of Annex B show the evolution by zone and size of firms of the coefficient which measures the quantity of taxed sales on total sales. In them it can be seen that almost the total-

TABLE 4.5 Dependent variable. Total sales

	Total firms		Small firms		Large firms	
	Dependent variable: total sales (logs)					
	Random effects panel (*cluster robust*)					
Dzona	−0.698***	−0.27	−1.114***	−0.751***	−0.25	0.166
	(−2.661)	(−1.288)	(−4.411)	(−4.056)	(−0.813)	(0.875)
Coefficient taxed sales/total sales	−0.555***		−0.494**		−0.501*	
	(−2.627)		(−2.028)		(−1.888)	
D. Trade	0.206	0.262	0.518	0.623	0.209	0.176
	(0.35)	(0.42)	(1.266)	(1.427)	(0.5)	(0.406)
D. Agriculture	1.729***	1.800***	0.814*	0.915**	0.764*	0.753*
	(2.813)	(2.77)	(1.895)	(2.005)	(1.766)	(1.679)
D. Industry	0.331	0.381	0.608	0.704*	0.596	0.581
	(0.576)	(0.624)	(1.564)	(1.686)	(1.461)	(1.364)
2005 Base year						
2006.	0.179***	0.203***	0.144***	0.168***	0.249**	0.265***
	(4.275)	(4.753)	(3.956)	(4.428)	(2.523)	(2.662)
2007.	0.230***	0.258***	0.192***	0.221***	0.306***	0.325***
	(4.888)	(5.437)	(4.126)	(4.75)	(2.975)	(3.094)
2008.	0.237***	0.271***	0.181***	0.218***	0.347***	0.366***
	(4.616)	(5.285)	(3.391)	(4.161)	(3.231)	(3.337)
2009.	0.119**	0.155***	0.0646	0.101*	0.226**	0.251**
	(2.122)	(2.771)	(1.063)	(1.692)	(2.014)	(2.179)
2010.	0.214***	0.253***	0.161**	0.199***	0.321***	0.349***
	(3.533)	(4.132)	(2.431)	(3.009)	(2.634)	(2.795)
2011.	0.224***	0.255***	0.144*	0.172**	0.372***	0.400***
	(3.364)	(3.876)	(1.87)	(2.29)	(3.011)	(3.166)
2012.	0.213***	0.243***	0.119	0.144*	0.392***	0.422***
	(3.076)	(3.533)	(1.45)	(1.774)	(3.15)	(3.357)
Constant	10.10***	9.467***	9.236***	8.615***	11.39***	10.89***
	(16.7)	(15.48)	(18.81)	(20.05)	(21.99)	(25.06)
Observations	**2,284**	**2,284**	**1,483**	**1,483**	**801**	**801**
Firms	**294**	**294**	**192**	**192**	**102**	**102**
R-sq overall	**0.0917**	**0.0781**	**0.115**	**0.114**	**0.0587**	**0.0647**
R-sq between	**0.0944**	**0.0861**	**0.132**	**0.144**	**0.0524**	**0.0668**
R-sq within	**0.0555**	**0.0315**	**0.0484**	**0.0208**	**0.0848**	**0.0686**

The robust z-statistics are in parentheses.
*** p<0.01, ** p<0.05, * p<0.1.

those in the sector taken as a base, which is the one that groups together services (housing, property, professional services and other services). On the other hand, the positive sign observed in every year shows that the level of earnings in all of them was higher than the base year (2005), confirming the positive trend in observed sales in the period.

The results for different sizes of firm indicate that in small firms the most marked difference is seen between the two groups; in this case, sales of firms with incentives in the free zones are 67% lower than those of firms of similar size without incentives. Agriculture continues to be the sector with greater differential over services. For big firms, on the other hand, significant differences are not observed in the levels of sales of both zones (the coefficient of the Zone variable is not significant), although the significance and magnitude of the coefficient of taxed sales on total sales is maintained.

Table 4.6 shows the results taking as a dependent variable profit instead of sales. The Zone variable loses significance, as does the variable that measures the proportion of taxed sales, which ceases to be significant in all the estimations. On the other hand, none of the sectors shows evidence of a profit level superior to the sector taken as a base.[64]

In summary, regressions in levels shows that firms which received free zone regime incentives have lower sales than firms in the control group, but differences are not observed in profit/sales. The difference in size is explained by the small firms, since in big firms differences in the size of sales or the profit rate were not detected. The result found for profitability (before income tax) measured as a percentage of the sales is interesting because, to some degree, it contradicts one of the arguments used in the region to justify incentives: that firms need the exemption in income tax because they have low profitability.

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ity of the earnings are taxed in the group without benefits while, as was to be expected, the percentage is much lower in the free zone companies. Looking at Graph B 7, the great dispersion of free zone firms is evident, because although a certain accumulation of data can be appreciated at the lower level, the coefficients cover almost all the interval [0,1], that's to say that this group is much more heterogeneous in this dimension. This difference in the amplitude of variation of the coefficient is what leads to estimate that the greater the percentage of taxed sales, the lower the total sales.

64 It should be pointed out that interpretation of the results depends on the way in which the "profit" is defined. In this sense, distinction must be made between the return on investment and the margin, since the latter does not reflect the profitability per unit of investment. In addition, this could affect at any time the levels of statistical significance. The sensitivity to the definition of profit also increases since, on average, firms that are intensive in capital use require greater margins to obtain a certain return on the investment. These considerations extend to the case of Dominican Republic, considered later in this chapter.

TABLE 4.6 Dependent variable. Profit as % of sales

	Complete panel		Small firms		Large firms	
	Dependent variable: Profit					
	Random panel effects (*cluster robust*)					
dzona	−0.021 (−0.815)	−0.00467 (−0.339)	−0.0224 (−0.674)	0.00343 (0.164)	−0.00754 (−0.277)	−0.00971 (−0.606)
Coefficient taxed sales/ Total sales	−0.0214 (−0.733)		−0.0358 (−0.955)		0.0026 (0.0855)	
D. Trade	0.013 (0.394)	0.0151 (0.453)	0.0237 (0.476)	0.031 (0.619)	−0.0186 (−0.527)	−0.0184 (−0.524)
D. Agriculture	−0.0199 (−0.619)	−0.0173 (−0.537)	−0.013 (−0.260)	−0.00601 (−0.120)	−0.0206 (−0.606)	−0.0205 (−0.604)
D. Industry	0.00734 (0.237)	0.00913 (0.294)	0.00678 (0.144)	0.0133 (0.286)	−0.000151 (−0.00441)	−0.0000824 (−0.00241)
2005 Base year	0	0	0	0	0	0
2006.	−0.0102 (−1.136)	−0.00927 (−1.048)	−0.00353 (−0.349)	−0.00186 (−0.189)	−0.0232 (−1.342)	−0.0233 (−1.322)
2007.	−0.0233** (−2.222)	−0.0222** (−2.166)	−0.01 (−0.824)	−0.00804 (−0.702)	−0.0479** (−2.444)	−0.0480** (−2.398)
2008.	−0.00949 (−0.981)	−0.0082 (−0.850)	−0.000535 (−0.0500)	0.00206 (0.198)	−0.0263 (−1.360)	−0.0264 (−1.349)
2009.	−0.0272*** (−2.601)	−0.0258** (−2.518)	−0.0137 (−1.111)	−0.011 (−0.945)	−0.0537*** (−2.810)	−0.0538*** (−2.770)
2010.	−0.0111 (−0.997)	−0.00971 (−0.862)	−0.00376 (−0.262)	−0.00114 (−0.0797)	−0.0262 (−1.480)	−0.0264 (−1.463)
2011.	−0.0174 (−1.533)	−0.0162 (−1.428)	−0.0102 (−0.744)	−0.00814 (−0.594)	−0.0305 (−1.545)	−0.0306 (−1.540)
2012.	−0.00625 (−0.532)	−0.00511 (−0.441)	0.00351 (0.243)	0.0052 (0.365)	−0.0238 (−1.202)	−0.024 (−1.199)
Constant	0.111** (2.457)	0.0861*** (2.648)	0.117* (1.796)	0.0721 (1.512)	0.103** (2.169)	0.105*** (2.684)
Observations	**2,244**	**2,244**	**1,449**	**1,449**	**795**	**795**
Firms	**293**	**293**	**191**	**191**	**102**	**102**
R-sq overall	**0.00718**	**0.00736**	**0.00847**	**0.00912**	**0.0196**	**0.0197**
R-sq between	**0.00398**	**0.00594**	**0.000948**	**0.00392**	**0.018**	**0.0189**
R-sq within	**0.00672**	**0.00547**	**0.00576**	**0.00189**	**0.02**	**0.0198**

The robust z-statistics are in parentheses.
*** p<0.01, ** p<0.05, * p<0.1.

Analysis for inter-annual variation in sales

Using the variable Inter-annual Variation in Sales, it's possible to analyze if average growth in firms with incentives was different to that observes in the group of firms without incentives. Table 4.7 sums up the results for the total of firms in the first column and for the small and big firms in the subsequent ones. Observe that controlling the interest variable (Zone) for the percentage of taxed sales of the firms, for the sector and for years, the result indicates that free zone firms have growth less than others, although for big firms this differential is not significant. The international crisis year (2009) appears always significant and with a negative sign, although it is in 2006 that the greatest positive difference in favor of the free zone is seen. In 2012 a fall of sales for big firms is also seen (see Graph B8 of Annex B).[65] The percentage of taxed sales on total sales is significant and negative in the regression of the complete sample, although it loses significance when the sample in big and small firms is separated.

Table 4.8 shows the results of the regressions year by year in the strata of small firms in order to have a more complete idea of the general result obtained in the panel. Although the most extreme data (which are 34) were previously discarded, given the great asymmetry of the distributions (see Graph B.9 of Annex B), a robust estimation with outliers is realized. According to these results, in the years 2005, 2009 and 2010 evidence is found of significant differences between firms without incentives and those located in the free zones; for the remainder of the years the differences are (statistically) zero. The year 2009 is the one which shows the greatest differential in relation to the zone without incentives, this being the year of the crisis; here the fact that the international crisis had a major impact on the free zone firms is corroborated. Also in 2005 and 2010 sales of small firms without incentives grow more than those that are in the free zone regime. In the remaining years, statistically significant differences are not seen. It can be concluded then that the result observed in Table 4.7 for small firms is explained by what happened in three years of the sample.

Analysis for the reduced sample at two moments: beginning and end of the period

The aim of this section is to simplify the analysis, observing only growth accumulated between points—even with the cost of the loss of information that this implies—and to study what happened with the firms with and without fiscal incentives between

[65] Annex B includes an analysis of the data. The greater dispersion observed in the free zone is determinant in the estimation of the parameter given that even if the averages of the growth rates of the free zone are above those of the zone without benefits, they have a greater dispersion and this means that, comparing both distributions, a contrary (or zero) sign is revealed to that derived by the graphs.

TABLE 4.7 Dependent variable: rate of variation of sales (% inter-annual)

	Total sample	Small firms	Large firms
	Dependent variable: rates of variation of sales		
	Random effects panel (*cluster robust*)		
Dzona	−0.126** (−2.529)	−0.137** (−2.310)	−0.0656 (−0.695)
Coefficient taxed sales/ Total sales	−0.114** (−2.028)	−0.088 (−1.267)	−0.1 (−1.019)
D. Trade	−0.0523 (−0.690)	0.000756 (0.0064)	−0.114*** (−2.834)
D. Agriculture	−0.0428 (−0.559)	0.00687 (0.0553)	−0.0973** (−2.356)
D. Industry	−0.0682 (−0.900)	−0.00849 (−0.0721)	−0.120*** (−2.884)
2005 Base year	0	0	0
2006.	0.0742* (1.874)	0.105* (1.901)	0.0241 (0.512)
2007.	0.0000665 (0.00166)	0.0283 (0.502)	−0.0437 (−0.937)
2008.	−0.0262 (−0.753)	−0.0133 (−0.280)	−0.0391 (−0.825)
2009.	−0.162*** (−4.267)	−0.128** (−2.471)	−0.215*** (−4.432)
2010.	0.06 (1.534)	0.0805 (1.458)	0.0323 (0.755)
2011.	−0.0404 (−1.018)	−0.0159 (−0.299)	−0.0765 (−1.458)
2012.	−0.0648 (−1.518)	−0.0444 (−0.745)	−0.0929* (−1.929)
Constant	0.231** (2.119)	0.135 (0.83)	0.291*** (2.766)
Observations	**2,181**	**1,450**	**731**
Firms	**285**	**191**	**94**
R-sq overall	**0.0409**	**0.0354**	**0.0975**
R-sq between	**0.0115**	**0.0201**	**0.108**
R-sq within	**0.0475**	**0.0378**	**0.095**

The robust z-statistics are in parentheses.
*** p<0.01, ** p<0.05, * p<0.1.

TABLE 4.8 **Dependent variable: annual variation in sales. Robust regression for outliers year by year for the smallest firms**

	2005	2006	2007	2008	2009	2010	2011	2012
dzona	−0.226***	0.0842	−0.0745	−0.00459	−0.335***	−0.193***	0.0741	0.0733
	(−3.321)	−1.417	(−1.279)	(−0.0778)	(−4.917)	(−3.001)	(1.202)	(1.357)
Coefficient taxed sales/ Total sales	−0.0174	0.0988	−0.0352	−0.0177	−0.334***	−0.177***	0.0501	0.101*
	(−0.225)	−1.53	(−0.574)	(−0.287)	(−4.731)	(−2.628)	(0.769)	(1.711)
D. Trade	0.0979	0.0394	0.0371	0.0751	−0.00222	0.314***	0.0302	−0.174*
	−0.494	−0.387	(0.394)	(0.828)	(−0.0206)	(3.203)	(0.285)	(−1.872)
D. Agriculture	0.166	−0.0155	0.0187	0.241**	0.0248	0.211	−0.0329	−0.176
	−0.75	(−0.117)	(0.152)	(2.035)	(0.175)	(1.646)	(−0.237)	(−1.502)
D. Industry	0.141	0.0175	0.0886	0.098	−0.0319	0.303***	−0.00862	−0.149
	−0.726	−0.178	(0.975)	(1.121)	(−0.307)	(3.195)	(−0.0840)	(−1.627)
Constant3	−0.0214	−0.0201	0.022	−0.0885	0.299**	−0.0535	−0.00379	0.113
	(−0.0999)	(−0.160)	(0.19)	(−0.780)	(2.25)	(−0.434)	(−0.0289)	(0.937)
Observations	**164**	**181**	**185**	**185**	**187**	**184**	**187**	**177**
R-squared	**0.129**	**0.017**	**0.023**	**0.03**	**0.143**	**0.125**	**0.013**	**0.048**

the beginning and end of the period of observation. A simple analysis of the data shows that when the total of the firms is taken, the accumulated growth of sales in the period has been very similar for both groups; however, this changes when the evolution of sales is observed differentiating between firms by size. In small firms a different evolution is visible, in that the accumulated growth of firms without incentives is higher than that of free zone firms: by contrast, for big firms, the slope of both lines is very similar (see Graph B 10 of Annex B).

To verify if the differences of the trends observed are statistically significant, the following model is postulated:

$$y = \beta_0 + \beta_1 t + \beta_2 Zona + \beta_3 t.Zona + \delta X + e \qquad \text{(Equation 2)}$$

where β_1 captures the temporal change (for the zone without incentives);
β_2 captures the differential impact of the two zones, in base year y
β_3 indicates if the growth observed in the free zone is different to that of the zone without incentives.

The parameter d is that which estimates the impact of any control variable (X) that is considered relevant. In this case, economic sectors and the coefficient of taxed earnings will continue to be included as additional controls.

The information from the database available does not make it possible to isolate the direct effect that the tax regime of the free zones could have, given that it is not possible to identify a moment previous to and after the intervention; nor can firms which never received the benefit be related to firms which did, as the database does not have the wealth of information needed to characterize the firms well. In summary, the concrete effect cannot be isolated, and so a specific impact cannot be assigned to the tax regime. It will only be possible to conclude whether the firms of the free zone have evolved in a different way to those of the zone without incentives in the period studied.

Table 4.9 shows the results of the model for the total sample, the sample of small firms and the sample of large firms. The results were estimated by ordinary least squares (OLS) and with robust methodology for outliers. The results are similar and in line with what has been concluded, that it, that the levels of sales are different (measured by the variable dzona) and that growth has been observed throughout these years (measured by the variable t, with positive sign). However, when it touches

TABLE 4.9 **Dependent variable: increase in sales between 2005 and 2012**

	Total sample		Small firms		Large firms	
	OLS	OLS (Out. Rob)	OLS	OLS (Out. Rob)	OLS	OLS (Out. Rob)
dzona	−1.099*** (−3.768)	−1.196*** (−4.922)	−0.875*** (−3.195)	−1.005*** (−6.010)	−0.627 (−1.112)	−0.435 (−1.154)
t	0.257 (1.637)	0.325* (1.962)	0.237* (1.756)	0.329*** (2.813)	0.293 (1.583)	0.284 (1.321)
Zona*t	−0.238 (−0.817)	−0.32 (−1.239)	−0.263 (−0.990)	−0.398** (−2.147)	−0.0283 (−0.0947)	0.0126 (0.038)
Coefficient taxed sales/ total sales	−1.482*** (−4.891)	−1.627*** (−6.640)	−0.674** (−2.333)	−0.954*** (−5.720)	−0.976* (−1.655)	−0.744* (−1.820)
D. Trade	0.0591 (0.154)	−0.08 (−0.220)	0.538 (1.347)	0.342 (1.221)	0.319 (0.961)	0.284 (0.681)
D. Agriculture	1.418*** (3.426)	1.337*** (3.269)	0.769* (1.824)	0.597* (1.661)	0.805** (2.285)	0.804* (1.836)
D. Industry	0.0408 (0.109)	0.0864 (0.245)	0.41 (1.057)	0.514* (1.88)	0.644* (1.95)	0.685* (1.682)
Constant	11.24*** (22.44)	11.43*** (24.58)	9.450*** (17.55)	9.883*** (27.78)	11.93*** (16.85)	11.65*** (20.06)
Observations	**543**	**543**	**361**	**361**	**182**	**182**
R-squared	**0.125**	**0.156**	**0.113**	**0.205**	**0.109**	**0.096**

The robust z-statistics are in parentheses.
*** p<0.01, ** p<0.05, * p<0.1.

the parameter of interest, which measures the interaction between the zone and the passage of time (the variable Zona*t), the negative sign of the coefficient indicates that the growth observed in firms with incentives is lower than that of the firms without incentives, although the significance of this parameter for the strata of the small firms differs under both methods: according to OLS it is statistically zero and according to the robust for outliers estimation, on the other hand, the growth observed in the free zones is significantly less than that of the group without incentives. However, for the complete sample or that of large firms, this parameter can be considered equal to zero, indicating that the growth rates of both zones were similar, although at different levels.

Analysis with information from tax reports

Tax reports include greater detail on accounting data of the firms; in particular, the evolution of their labor costs and of their equity position can be observed. The problem is that information is available for only 17 firms without fiscal incentives and for 13 in the free zone regime. The data cover the period 2003–2012, but information for all this group of firms is only available for the years 2008, 2009, 2011 y 2012.

In each one of the sub-groups there is a firm of great size which distorts the average values. Although information is scarce, a panel data exercise was carried out. In this case, the Free Zone variable appears with a positive sign (the level of sales is higher), but statistically significant differences are not seen in the level of labor cost or the labor cost to sales quotient.

Dominican Republic

In the case of Dominican Republic, the information available at firm level was obtained from sworn income tax declarations for all the firms in the free zone regime and for a group with incentives selected by officials of the Dirección General de Impuestos Internos (DGII—the general internal taxes office). The original database includes 34,735 firms without incentives and 2,786 in the free zone regime. However, the information has some limitations:

a. The data for both types of firms takes in the 2005–2012 period and includes, for the group of firms without incentives, total sales, the profit declared in the form and labor costs. In the case of firms with incentives, it has more information (exports, domestic sales since 2011).
b. The values expressed in pesos were converted to dollars, using the average exchange rate for each year.
c. In several cases the information has gaps. From the total data those firms which remained in the sample for 4 years or more, or those that remained for 2 or 3 years, but including the years 2011 and 2012 are maintained.

d. In addition some inconsistencies were detected. For example, a great quantity of firms do not report or report very small values for total sales, and so firms which reported sales of less than US$100 in a year were eliminated from the sample. On the other hand, that firms maintain a certain consistency between the values for Total Sales, Profit and Labor Cost is also controlled, and firms for whom the difference between earnings and labor cost plus profit were negative were eliminated, because that would supposes that other spending was negative. Also eliminated are all the data of firms whose labor costs exceed more than 10 times their earnings. There exist, in turn, precise data in some firms (earnings excessively high for the observed history of the firm) which it was also decided to eliminate. With all these reductions made, the sample has 7,300 firms in the zone without incentives and 491 in the free zone.

Just as in the case of El Salvador, it is not possible to do a diff in diff type exercise because the income tax exemption for firms located in the free zone has been applied since long before the beginning of the sample for which data are available. It is only possible to compare the performance of firms which always had the benefit with those that never had it.

The comparison of firms with and without fiscal incentives was then carried out through analysis of four variables: the real level of earnings of the firms, the inter-annual growth that they had, the profit level and the labor intensity measured as the quotient of Labor Costs to Total Sales.

In the case of Dominican Republic, there are important differences in the size of the firms with and without incentives. Therefore the firms were put in four groups, but the first, with sales up to US$ 100,000 per year is left only for information because there are practically no firms with that level of sales in the free zone regime. The greater availability of data in both groups is seen in the sizes comprised of between US$ 100,000 y US$1 million in sales per year and between US$ 1 million and US$ 10 million. Consequently the results of the regressions would be more representative in these cases, although the fourth group, with sales above US$ 10 million, has something more than 60 firms in each group. Appendix C includes an exhaustive analysis of the database.

Analysis by levels for sales, profit and labor intensity

An equation is posed in which the sales of the firms depend on the tax treatment in which they perform and the economic sector to which they belong, and variables are also included which control for the year in order to capture economic factors prevalent at the time or of other nature, but common to all firms. The estimation will be carried out through panels, given that we have firms which have been observed several times in the period 2005–2012, some throughout the period and others only

in some years. As it is interesting especially to measure the effect of the incentives granted to firms in the free zone regime (which is a constant dummy variable for each firm during the whole period) on the different variables, the estimation will be done with random effects.[66] The equation posed is similar to the Equation 1 estimated for El Salvador, but without including the Coefficient of Taxed Sales variable which is not relevant in this case.

Table 4.10 sums up the estimations realized for the four strata and for the complete sample, this last and that of the strata of small firms are only included for information. In the case of the complete sample, on account of the great heterogeneity in the sizes of the firms in both zones; and in the case of the strata of smaller firms because the comparison includes a very small group of free zone firms.

It is observed that in the three segments with annual sales above US$ 100,000, the level of sales is greater in the free zone than in the zone without incentives (the fictitious variable dzona has a positive and significant to 1% coefficient). They also indicate that the firms of the of the industrial sector have a level of sales significantly higher than that of the sector taken as the base of comparison, that of services.

In Table 4.11 the results are shown for the variable Profit expressed as a percentage of sales. It is seen that there are no significant differences in the coefficient Profit to Earnings in any of the three relevant strata. The significance and the negative sign in all the years for the strata of average firms show that the year with greatest profit was 2005.

The results of Table 4.12 show that firms with incentives are more intensive in the labor factor than those which do not have incentives. The difference is greater for firms with sales between US$ 100,000 and US$ 1 million per year. As for the sectors, industry, such as the textile industry, have levels of labor intensity above those of the base sector, services, while agro has a coefficient of labor cost to earnings lower than that of services. Finally the negative signs corresponding to the years indicates a general negative trend in this variable for the two zones.[67]

Analysis for growth in sales

In Table 4.13 are shown the results obtained when the dependent variable is annual growth in sales. The positive and significant coefficient of the variable dzona shows that firms with incentives have increased their sales more than firms without incentives, controlling for different sectors.

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[66] In this way, in this model of random effects it is assumed that omitted variables common to the firms, correlated with explicative variables of the proposed model, do not exist. In any case, estimation for fixed effects relevant to the purpose of this study cannot be carried out, because the Zona variable takes the same value for each firm every year.

[67] This finding could offer indirect information on relative levels of efficiency.

TABLE 4.10 Variable: earnings in dollars (in logs)

	Total sample	Less than US$ 100,000	Between US$100,000 and US$1,000,000	Between US$1,000,000 and US$10,000,000	More than US$10,000,000
dzona	2.183***	0.262**	0.327***	0.204***	0.334***
	−24.8	−2.02	−5.651	−3.294	−2.582
s_ind	0.636***	0.147***	0.0941***	0.290***	0.383***
	−10.82	−3.296	−2.755	−5.472	−3.343
s_textil	0.0467	0.0434	0.0366	0.0816	0.111
	−0.56	−0.601	−0.686	−0.987	−0.606
s_agro	0.378***	−0.108	0.0969	0.12	−0.0182
	−3.904	(−1.226)	−1.588	−1.471	(−0.0846)
2005	0	0	0	0	0
2006	0.0633***	−0.0667**	0.0753***	0.161***	0.0108
	−3.912	(−2.064)	−3.208	−5.073	−0.133
2007	0.395***	0.198***	0.435***	0.471***	0.348***
	−19.91	−5.24	−15.03	−12.01	−4.204
2008	0.467***	0.188***	0.536***	0.566***	0.498***
	−21.49	−4.648	−17.22	−12.77	−4.602
2009	0.361***	0.0248	0.436***	0.508***	0.435***
	−15.89	−0.59	−13.65	−11.01	−3.891
2010	0.467***	0.102**	0.540***	0.622***	0.614***
	−20.21	−2.418	−16.51	−13.53	−5.455
2011	0.539***	0.120***	0.626***	0.745***	0.605***
	−22.8	−2.868	−18.75	−15.78	−5.325
2012	0.609***	0.217***	0.704***	0.755***	0.758***
	−24.93	−5.055	−20.68	−15.34	−6.458
Constant	11.27***	10.25***	11.93***	13.89***	16.00***
	−417.6	−272.7	−408.6	−300.1	−130.3
Observations	**37,516**	**12,543**	**17,425**	**6,603**	**945**
Number of rnc	**7,791**	**3,285**	**3,320**	**1,038**	**148**
R-sq overall	**0.11**	**0.0083**	**0.0429**	**0.0752**	**0.147**
R-sq between	**0.103**	**0.0036**	**0.011**	**0.0291**	**0.0939**
R-sq within	**0.0594**	**0.0161**	**0.0807**	**0.117**	**0.15**

The robust z-statistics are in parentheses.
*** p<0.01, ** p<0.05, * p<0.1.

TABLE 4.11 Variable: Profit/Sales

	Total sample	Less than US$ 100,000	Between US$100,000 and US$1,000,000	Between US$1,000,000 and US$10,000,000	More than US$10,000,000
dzona	0.0966***	−0.004	−0.0209	0.0219	0.0119
	−5.57	(−0.0301)	(−0.641)	−1.116	−0.572
s_ind	−0.00114	−0.0247	−0.0305***	−0.0078	0.0182
	(−0.108)	(−0.987)	(−2.671)	(−0.581)	−0.938
s_textil	−0.0430**	−0.0596	−0.0314	−0.0343	−0.0313
	(−2.062)	(−1.175)	(−1.283)	(−1.481)	(−1.175)
s_agro	−0.036	−0.0679	−0.0609**	−0.0179	−0.0292*
	(−1.600)	(−1.222)	(−2.252)	(−1.185)	(−1.670)
2005base year	0	0	0	0	0
2006	−0.00758	−0.0084	−0.0192**	0.0127	0.0155
	(−1.090)	(−0.440)	(−2.449)	−1.101	−0.999
2007	−0.00474	−0.021	−0.00842	0.0146	0.0271
	(−0.624)	(−1.036)	(−0.974)	−1.178	−1.397
2008	−0.0427***	−0.0840***	−0.0384***	−0.00438	0.0133
	(−5.031)	(−3.840)	(−3.849)	(−0.297)	−0.626
2009	−0.0531***	−0.104***	−0.0432***	−0.0119	−0.00877
	(−6.287)	(−4.890)	(−4.251)	(−0.805)	(−0.396)
2010	−0.0483***	−0.118***	−0.0353***	0.0153	0.0131
	(−5.811)	(−5.415)	(−3.625)	−1.199	−0.566
2011	−0.0567***	−0.113***	−0.0502***	0.00368	−0.0152
	(−6.734)	(−5.384)	(−4.773)	−0.274	(−0.664)
2012	−0.0548***	−0.119***	−0.0440***	0.0102	0.00433
	(−6.723)	(−5.501)	(−4.803)	−0.776	−0.202
Constant	−0.0565***	−0.110***	0.0108	0.0088	0.0459*
	(−7.814)	(−6.041)	−1.477	−0.678	−1.936
Observations	**36,943**	**12,259**	**17,191**	**6,554**	**939**
Quantity of firms	**7,731**	**3,238**	**3,309**	**1,036**	**148**
R-sq overall	**0.0054**	**0.0054**	**0.0033**	**0.0029**	**0.0219**
R-sq between	**0.0049**	**0.0017**	**0.0054**	**0.004**	**0.0272**
R-sq within	**0.0037**	**0.0086**	**0.0035**	**0.0018**	**0.0141**

The robust z-statistics are in parentheses.
*** p<0.01, ** p<0.05, * p<0.1.

TABLE 4.12 Variable: Labor intensity (Labor cost/sales)

	Total sample	Less than US$ 100,000	Between $100,000 and US$1,000,000	Between US$1,000,000 and US$10,000,000	More than US$10,000,000
dzona	0.043 −0.873	0.626*** −3.792	0.446*** −5.874	0.338*** −4.049	0.125 −0.708
s_ind	0.0355 −1.149	−0.00421 (−0.0810)	0.199*** −4.439	0.196*** −2.903	0.227 −1.073
s_textil	0.281*** −5.519	0.0924 −1.091	0.266*** −3.565	0.628*** −5.557	0.564** −2.087
s_agro	−0.254*** (−3.824)	0.179* −1.831	−0.175* (−1.885)	−0.675*** (−5.754)	0.0417 −0.113
2005base year	0	0	0	0	0
2006	−0.0477*** (−2.876)	0.0399 −1.087	−0.0665*** (−2.833)	−0.129*** (−4.419)	−0.00107 (−0.0143)
2007	−0.134*** (−6.988)	−0.0458 (−1.165)	−0.173*** (−6.091)	−0.168*** (−4.940)	−0.179** (−2.280)
2008	−0.137*** (−6.638)	−0.0603 (−1.414)	−0.168*** (−5.570)	−0.170*** (−4.477)	−0.254*** (−2.985)
2009	−0.0768*** (−3.630)	0.0012 −0.028	−0.108*** (−3.401)	−0.117*** (−3.122)	−0.202** (−2.280)
2010	−0.0768*** (−3.648)	0.0524 −1.231	−0.134*** (−4.256)	−0.127*** (−3.289)	−0.312*** (−3.438)
2011	−0.0443** (−2.105)	0.0996** −2.342	−0.105*** (−3.309)	−0.125*** (−3.449)	−0.241*** (−2.578)
2012	−0.126*** (−5.901)	−0.061 (−1.412)	−0.175*** (−5.451)	−0.109*** (−2.956)	−0.345*** (−3.525)
Constant	−2.109*** (−99.45)	−1.818*** (−47.56)	−2.331*** (−74.29)	−2.524*** (−49.17)	−2.881*** (−13.39)
Observations	**37,502**	**12,534**	**17,421**	**6,602**	**945**
Quantity of firms	**7,788**	**3,282**	**3,320**	**1,038**	**148**
R-sq overall	**0.0068**	**0.005**	**0.0182**	**0.0663**	**0.0272**
R-sq between	**0.0105**	**0.0081**	**0.0344**	**0.107**	**0.0677**
R-sq within	**0.0033**	**0.0055**	**0.0033**	**0.006**	**0.0432**

The robust z-statistics are in parentheses.
*** p<0.01, ** p<0.05, * p<0.1.

TABLE 4.13 Variable: Rate of variation of earnings in dollars (log (1+rate))

	Total sample	Less than US$ 100,000	Between US$100,000 and US$1,000,000	Between US$1,000,000 and US$10,000,000	More than US$10,000,000
1.dzona	0.115*** −5.057	0.336** −2.537	0.108** −2.3	0.107*** −3.613	0.134*** −3.096
s_ind	−0.0340** (−2.384)	−0.0247 (−0.870)	−0.0158 (−0.699)	−0.0894*** (−3.829)	−0.0659 (−1.410)
s_textil	−0.0919*** (−3.784)	0.04 −0.906	−0.172*** (−4.397)	−0.122*** (−2.922)	−0.0929 (−1.178)
s_agro	−0.0773*** (−2.982)	−0.0993** (−2.247)	−0.0854* (−1.937)	−0.0700* (−1.783)	0.226 −1.429
2006base year	0	0	0	0	0
2007	0.261*** −12.55	0.302*** −6.968	0.278*** −9.179	0.187*** −5.232	0.189 −1.614
2008	−0.0621*** (−3.456)	−0.0179 (−0.493)	−0.0731*** (−2.706)	−0.0665** (−2.174)	−0.00296 (−0.0376)
2009	−0.286*** (−15.58)	−0.207*** (−5.624)	−0.325*** (−12.03)	−0.271*** (−7.682)	−0.193** (−2.568)
2010	−0.125*** (−6.920)	−0.0122 (−0.324)	−0.165*** (−6.223)	−0.161*** (−5.257)	−0.00907 (−0.118)
2011	−0.174*** (−9.526)	−0.0770** (−2.048)	−0.206*** (−7.740)	−0.165*** (−4.930)	−0.190*** (−2.611)
2012	−0.226*** (−12.48)	−0.0381 (−1.039)	−0.297*** (−11.12)	−0.296*** (−8.946)	−0.0606 (−0.794)
Constant	0.250*** −16.81	0.114*** −3.77	0.310*** −14.1	0.287*** −10.9	0.172*** −2.617
Observations	**31,366**	**10,258**	**14,709**	**5,600**	**799**
Quantity of firms	**7,319**	**2,974**	**3,184**	**1,016**	**145**
R-sq overall	**0.0261**	**0.0178**	**0.0347**	**0.0414**	**0.0483**
R-sq between	**0.0268**	**0.0002**	**0.0309**	**0.0443**	**0.0183**
R-sq within	**0.0641**	**0.0375**	**0.0791**	**0.0788**	**0.0522**

The robust z-statistics are in parentheses.
*** p<0.01, ** p<0.05, * p<0.1.

Analysis of the industrial sector

The available information allows an estimation uniquely for firms in the industrial sector. The results for industry (see Table 4.14) are similar to those obtained for the aggregate of the economic sectors for growth of sales was higher in firms with free zone incentives in segments of greater size, the coefficient profit to earnings

TABLE 4.14 Estimations for the industrial sector

	Variable: rate of variation of the earnings in dollars (log (1+tasa))			Variable: Profit/earnings			Variable: Labor intensity		
	Between US$100,000 and US$1,000,000	Between US$1,000,000 and US$10,000,000	More than US$10,000,000	Between US$100,000 and US$1,000,000	Between US$1,000,000 and US$10,000,000	More than US$10,000,000	Between US$100,000 and US$1,000,000	Between US$1,000,000 and US$10,000,000	More than US$10,000,000
dzona	0.0768 (1.566)	0.120*** (3.316)	0.152*** (3.405)	−0.0561 (−1.349)	−0.00635 (−0.329)	0.0123 (0.46)	0.536*** (7.107)	0.421*** (4.979)	0.117 (0.581)
2005base year									
2006				−0.0585*** (−3.112)	0.0194 (1.024)	0.00114 (0.0791)	−0.0644 (−1.620)	−0.0810** (−2.258)	−0.0579 (−0.856)
2007	0.287*** (5.739)	0.104** (2.003)	0.196** (2.301)	−0.0370** (−2.112)	0.0285 (1.278)	0.0205 (0.825)	−0.143*** (−2.891)	−0.123** (−2.568)	−0.184** (−2.391)
2008	−0.00127 (−0.0266)	−0.0726* (−1.667)	0.026 (0.494)	−0.0755*** (−3.659)	0.026 (1.096)	−0.0115 (−0.477)	−0.119** (−2.324)	−0.0659 (−1.257)	−0.213*** (−2.632)
2009	−0.280*** (−5.762)	−0.222*** (−4.040)	−0.124* (−1.953)	−0.0672*** (−2.958)	−0.00684 (−0.261)	−0.0226 (−0.845)	−0.0749 (−1.188)	−0.0408 (−0.760)	−0.193** (−2.256)
2010	−0.130*** (−2.742)	−0.0835 (−1.636)	0.0579 (0.893)	−0.0516*** (−2.684)	0.015 (0.606)	−0.0144 (−0.514)	−0.108* (−1.830)	−0.108* (−1.726)	−0.332*** (−3.820)
2011	−0.0755 (−1.501)	−0.0863* (−1.729)	−0.12 (−1.610)	−0.0611*** (−2.819)	0.0225 (0.941)	−0.0292 (−0.995)	−0.135** (−2.440)	−0.128** (−2.486)	−0.255*** (−2.643)

(*contined on next page*)

TABLE 4.14 Estimations for the industrial sector (*continued*)

	Variable: rate of variation of the earnings in dollars (log (1+tasa))			Variable: Profit/earnings			Variable: Labor intensity		
	Between US$100,000 and US$1,000,000	Between US$1,000,000 and US$10,000,000	More than US$10,000,000	Between US$100,000 and US$1,000,000	Between US$1,000,000 and US$10,000,000	More than US$10,000,000	Between US$100,000 and US$1,000,000	Between US$1,000,000 and US$10,000,000	More than US$10,000,000
2012	−0.264***	−0.287***	−0.0336	−0.0707***	−0.00392	−0.0215	−0.179***	−0.0920*	−0.325***
	(−5.323)	(−5.851)	(−0.436)	(−3.710)	(−0.140)	(−0.811)	(−3.070)	(−1.806)	(−3.227)
Constant	0.206***	0.163***	0.0501	0.00743	−0.00349	0.0667***	−2.138***	−2.278***	−2.557***
	(5.346)	(4.617)	(1.186)	(0.641)	(−0.143)	(2.589)	(−40.84)	(−34.28)	(−15.56)
Observations	**3,288**	**1,933**	**493**	**3,817**	**2,266**	**579**	**3,904**	**2,287**	**580**
Number of rnc	**692**	**345**	**86**	**712**	**348**	**88**	**718**	**349**	**88**
R-sq overall	**0.0319**	**0.0276**	**0.0547**	**0.0047**	**0.0023**	**0.0178**	**0.0376**	**0.0416**	**0.0076**
R-sq between	**0.0887**	**0.0176**	**0.0435**	**0.0038**	**0.0004**	**0.0270**	**0.0619**	**0.0615**	**0.0124**
R-sq within	**0.0904**	**0.0508**	**0.0565**	**0.0053**	**0.0045**	**0.0243**	**0.0026**	**0.0053**	**0.0531**

The robust z-statistics are in parentheses.
*** p<0.01, ** p<0.05, * p<0.1.

is similar in both zones (the coefficient is statistically insignificant) and labor intensity is greater for the firms with incentives only in the cases of medium and medium-to-big firms, while no difference is seen in firms of less than US$10 million.

Comparison for growth observed between 2005 and 2012

To evaluate the growth between points of the different dependent variables, the same equation 2 used for the case of El Salvador was estimated. As to the evolution of earnings, the results of Table 4.15 indicate that the accumulated growth of medium

Box 4.1. Empirical analysis of free zone firms in Costa Rica

The database used for the analysis with microdata at firm level in Costa Rica covers the years from 1997 to 2012. It includes variables such as sales, profits, employment, investment and exempt and paid taxes. There are 467 identified firms, but most of them do not report information every year nor for all variables, so that the number of observations which can be used in econometric estimation is lower. Given the heterogeneity of the firms' size, the sample has been stratified to distinguish small firms from medium and large ones.

Within the time period of the sample, the level of exempted taxes shows a growing trend in large and small firms. However, it's found that large firms have an increasing chance of being exempt. Small firms, by contrast, have a more stable level in the percentage of taxes paid. An econometric model has been formulated to investigate if the tax regime affects investment or employment, controlling for the size of the firms and the levels of exemption.

A panel estimation was carried out, with random effects for investment and fixed effects for employment, using robust standard errors. The results suggest that a change in the percentage of exempt taxes does not influence investment. On the other hand it's found that firms which remained exempt during the period of the sample maintain a relatively constant investment level, higher than that of firms with changes in their exemption. It should be noted too that firms which had a level of exemption lower than the maximum permitted, but also constant over time, have higher levels of investment. Where employment is concerned, for each percentage point that exemption rises, employment rises by around one and a half points.

An underlying problem comes from the fact that in Costa Rica carrying out new investments allows new exemptions to be obtained. The level of sales and the quantity of employees can be a consequence of higher investment, and vice versa. This motivates a re-estimation of the econometric panel model, correcting for the endogeneity of the variables in the system. Using this econometric specification, it's found that the level of tax exemption is not significant for investment. By contrast, firms which had changes in the level of exemption and those which were only partially exempt, had relatively lower investment. It should be stressed that, once the endogeneity in the system of equations is corrected, the impact of the level of tax exemption on job creation disappears.

In summary, analysis of the Costa Rican case reveals that the level of exemption does not appear to have an impact on investment but, if such a benefit is granted, stability in the percentages of the exemption should be favored. In addition it's found that correcting for the endogeneity and dynamics of the variables, the impact of tax exemption on employment disappears.

TABLE 4.15 Estimation for the change observed between points

	Variable: Earnings in dollars			Variable: Profit to earnings			Variable: Labor intensity		
	Between US$100,000 and US$1,000,000	Between US$1,000,000 and US$10,000,000	More than US$10,000,000	Between US$100,000 and US$1,000,000	Between US$1,000,000 and US$10,000,000	More than US$10,000,000	Between US$100,000 and US$1,000,000	Between US$1,000,000 and US$10,000,000	More than US$10,000,000
dley	158,698***	538,930*	16,260,000	0.0636***	−0.000691	0.0576	0.0295	0.0438**	0.0513*
	(2.776)	(1.669)	(1.536)	(2.753)	(−0.0202)	(1.074)	(1.002)	(2.348)	(1.758)
t	207,784***	1.526e+06***	1.033e+07***	−0.0339***	0.0026	0.0264	−0.0506***	−0.0372***	−0.0163
	(9.341)	(7.781)	(2.769)	(−3.884)	(0.175)	(0.962)	(−5.563)	(−2.974)	(−0.931)
leyxt	258,076**	881.694**	10,730,000	−0.05	0.0323	−0.0686	0.0358	−0.0112	−0.0734**
	(2.167)	(1.971)	(0.877)	(−1.071)	(0.843)	(−1.210)	(1.052)	(−0.505)	(−2.141)
s_ind	67,408	612.086***	1.257e+07**	−0.00696	−0.0451**	0.0205	−0.00963	−0.0257**	−0.0297**
	(1.527)	(2.661)	(2.575)	(−0.587)	(−2.435)	(0.846)	(−1.109)	(−2.546)	(−1.987)
s_textil	−58,888	−121,214	2,551,000	−0.0365*	−0.0415	−0.0137	0.024	0.0253	0.0296
	(−1.133)	(−0.290)	(0.249)	(−1.766)	(−1.583)	(−0.431)	(0.999)	(1.543)	(1.01)
s_agro	9320	−271,292	−1.103e+07*	−0.0118	−0.0274*	−0.0212	−0.0290*	−0.0860***	−0.0305
	(0.216)	(−0.986)	(−1.805)	(−0.458)	(−1.828)	(−0.744)	(−1.748)	(−7.790)	(−1.384)
Constant	289,969***	1.941e+06***	9.160e+06***	0.00599	0.0323**	0.0323	0.213***	0.173***	0.123***
	(19.03)	(15.98)	(2.984)	(0.851)	(2.333)	(1.107)	(30.12)	(15.03)	(6.633)
Observations	**3,922**	**1,533**	**224**	**3,869**	**1,517**	**221**	**3,922**	**1,533**	**224**
R-squared	**0.031**	**0.072**	**0.135**	**0.005**	**0.007**	**0.019**	**0.010**	**0.028**	**0.109**

The robust z-statistics are in parentheses.
*** p<0.01, ** p<0.05, * p<0.1.

and medium-to-big firms in the free zone was superior to that of the zone without incentives. Differences are not observed in the performance measures by the profit to earnings coefficient in both tax zones for this group of firms, but it is observed in small firms which had a greater increase in profit in the free zone. Labor intensity evolved in a similar way between points, except for medium-to-big firms, in which it increased more in firms with incentives.

Policy options

The available evidence suggests that some of the problems mentioned in the different research on fiscal incentives are present in the cases of the firms located in free zones in Costa Rica, El Salvador and Dominican Republic.

One of the criticisms of "tax holidays" for firms' income tax is that they can favor high profitability projects that would perhaps have gone ahead in any event. Estimations of the rates of return in Dominican Republic and Costa Rica realized in this study suggest that this risk is high. In turn, this conclusion is supported by analysis with microdata carried out for the cases of El Salvador and Dominican Republic, which show that profitability before taxes would be the same or even higher in firms with incentives.

Critics of fiscal incentives highlight other risks, namely that projects readjust only to be able to keep incentives over time, that industries with high mobility are favored in a disproportionate way, or that global fiscal evasion is facilitated, through the use of transfer prices. There is anecdotal evidence that these problems are also present in the three countries.

Restrictions imposed by the WTO can be seen as a problem or as an opportunity to revise the incentive regimes. One extreme option to meet the new rules would be to eliminate the incentives or, at the other extreme, extend them so that all firms can access them, whether they export or sell to the internal market. This second option is the one Costa Rica, Guatemala and Dominican Republic would be likely to follow. However, this path ignores the problems mentioned previously and, in turn, provokes others, besides assuming that the countries from which the investment originates remain passive.

On the one hand, it complicates the task of the tax authority not only at firm level but also where personal income tax for high income families is concerned. To the degree to which the rate for companies is lower to the marginal rate for individuals, it encourages the "parking" of personal income in firms. Seeking to rescue firms in the free zones creates the risk of sinking the main tax instrument that gives a certain progressivity to taxes in countries of the region.

To convert the country into a big free zone naively assumes that multinational firms will not exploit the low or zero income tax collection to park a part of their global profits in free zone subsidiaries. To the degree to which they do so and in a global context of ever more restrictive action against fiscal paradises, a new wave of reactions cannot be ruled out, in this case not from the WTO but from the finance ministries of developed countries.

Therefore it would have been preferable to explore a threshold incentives regime. One way to achieve it is to concentrate the incentives in new investments and limit it to a "normal" return on capital. In other words, projects with extraordinary returns would pay income tax and old projects which are not investing would do so, too.

The incentive to achieve these objectives is instantaneous amortization of new investment. This benefit eliminates income tax at the margin. In other words new investments that obtain a "normal" return do not pay taxes. A simple exercise based on projects typical of the region suggests that a firm which invests per year the equivalent of between 15% and 20% of its assets in fixed goods would not pay income tax. However, that situation remains only if there are investments every year and no extraordinary incomes.

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Annex A. Summary of the results of recent studies on fiscal incentives and free zones

Author	Country-Period	Dependent variable	Policies analyzed	Data	Estimation methodology	Results
Klemm and Van Parys (2010). Model 1	47 developing countries. 1985–2004	Tax incentives	CIT Reduction/Tax Holiday/Investment Tax Credit	Macroeconomic and institutional in each country	Spatial lags model with fixed effects estimated with instrumental variables. Use distance from one country to another to capture that competition should be more acute among neighboring countries.	Countries react to changes in the CIT or on the generosity of the tax holiday but not to changes in investment tax credits
Klemm and Van Parys (2010). Model 2.	47 developing countries. 1985–2004	Private investment/ Foreign direct investment	Reduced rate of tax on corporate income/Tax Holiday/ Investment Tax Credit	Macroeconomic and institutional in each country. Effective rates are obtained from Chen and Mintz (2009)	Dynamic Panel. GMM estimator to contemplate the lagged dependent variable is included	An increase in the CIT of 10 points reduces FDI at 0.3% of GDP. 10 more years of tax holiday increases FDI at 0.7% of GDP. No effect of tax credits on FDI. None of the three incentives increases private investment
Klemm and Van Parys (2010)	80 countries. 2005–2008	Foreign direct investment	Tax rate to the effective income	Macroeconomic and institutional in each country	Dynamic Panel. GMM estimator to contemplate the lagged dependent variable is included	The reduction in the effective rate increases FDI especially when the business environment is better
Van Parys and James (2010)	7 Caribbean countries. 1997–2007	Investment in tourism	Exemptions in the income tax with a focus on expanding 5–25 years Antigua and Barbuda	Tax Data Base PWC. Macroeconomic data. Foreign investment by sector provided by the ECCB	*Diff in Diff.* Panel with country fixed effects	The extension of exoneration on income tax in Antigua and Barbuda increased investment in tourism significantly and differential with other countries

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Author	Country-Period	Dependent variable	Policies analyzed	Data	Estimation methodology	Results
Caiumi A. (2011)	Italy-Piedmont	Investment/ Productivity	Regional investment tax credits	Statutory declarations of tax on business income	*Diff in Diff* (matching and instrumental variables)	Positive effect on investment. Positive effect on productivity laggards.
Kolko and Neumark (2009)	Estados Unidos-California	Employment	Tax incentives. In particular, employment tax credit	Census data of companies	*Diff in Diff* with different control groups in two stages and saturated Regressions	Positive effect on employment in some areas. Fiscal measures do not help. Suggests that it can improve the result with a better design of incentives
Bondonio and Greenbaum (2006)	Estados Unidos. Once estados	Employment, Investment, Sales and Salary expenditure per employee	Tax incentives	Census data of companies	*Propensity* scores conditioned in two stages. Fixed-effects panel by state	The positive effect on employment of new firms is canceled with the loss of jobs
Bondonio and Greenbaum (2012)	Italia-Piamonte	Employment	Cash subsidies	Italy Census Data and Information of the European Promotion Program	*Diff in Diff* conditioned in 3 stages	Positive effect on employment. The positive effect will be bigger how much larger is the benefit
Givord P. et al. (2011)	France	Employment/ Business creation	Exemptions on income tax, property, local tax and social security contributions	Census data and tax statements	*Diff in Diff* conditioned (propensity scores)	Modest impact on employment explained by the transfer of businesses to depressed areas and small businesses

Annex B
Analysis of the microdata of El Salvador

Descriptive analysis of the microdata

Below follows a graphic and descriptive review of the variables relevant to the study, first for the total sample and then for the two strata in which the sample separates according to the size of the firm. The average per firm of total earnings through the two years seems to be consistently higher in the free zone compared to the zone without incentives. Almost uninterrupted growth in total (real) sales is seen for both series, except for 2009, when both show a marked fall, before continuing with recovery (see Graph B 1).

Given that 97% of the firms belong to the industrial, trade and agriculture sectors, these three sectors are those that remain in the analysis, in which it is evident that the evolution of both zones differs from the pattern observed for the total sample: for the industrial sector, the total sales of the zone without incentives have been consistently higher than those of the free zone during the period. By contrast, for trade and the sectors related to agriculture, sales in the zone with the special tax regime have exceeded those of the firms without incentives (see Graph B 1). Continuing with the sectoral analysis, but now for profit (Graph B 2), the industrial sector seems to be superior to the free zone, although much more volatile, with big falls in the years 2006 and 2011; in the case of trade, this relationship inverts and for agriculture a constant pattern in its evolution is not observed. The difference is that greater volatility in general in the free zone versus the zone without incentives is observed.

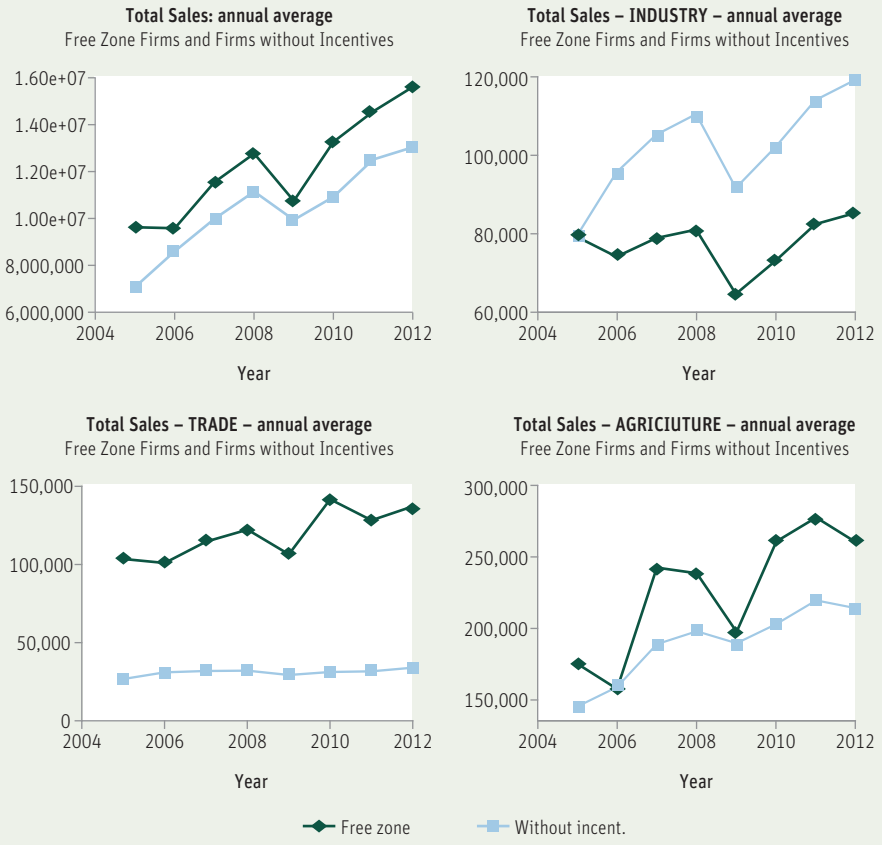
Analysis by size of firm

When the distribution of the earnings variable is reviewed, the great dispersion for both zones becomes evident, with a great accumulation on the left (small and medium-sized firms) and few very big firms, which are the sources of the big tail on the left. Therefore it was decided to segment the sample by the size of firm and then undertake the econometric analysis taking account of this stratification (see Graph B 3).

An arbitrary stratification is made which divides the firms between those with annual earnings less or greater than 5 million pesos (approximately some US$ 150,000). Both zones are similar in quantity of data by size strata, 65% of the observations are in strata 1, with sales less than US$ 150,000 (Table B 1).

Given that the firms are observed in several consecutive years, they repeat more than once in the sample and therefore in each size strata. To get round this problem, and so that each firm is classified in one and only one of the size stratum,

GRAPH B.1 Analysis by total sales in El Salvador



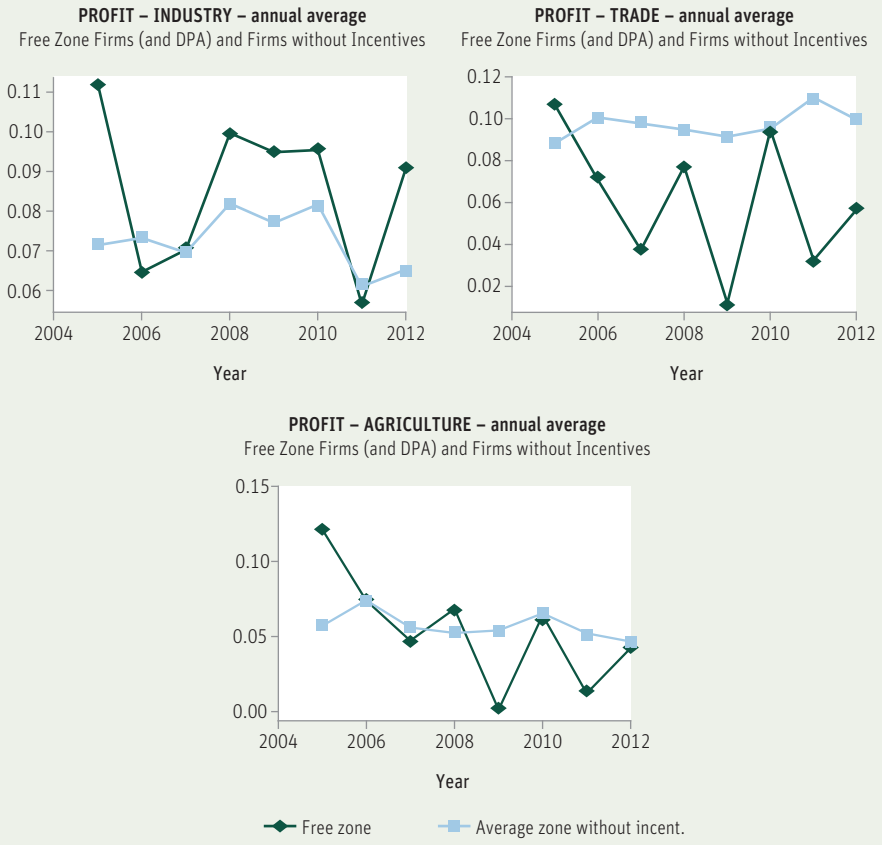
Source: Own calculations.

TABLE B.1 Quantity of observations

Strata	Total income	Zone without incentives	Free Zone	Total	% relativo
1	< 5 million	862	625	1,487	65%
2	> 5 million	428	375	803	35%
Total		**1,290**	**1,000**	**2,290**	**100%**

the firms which were in more than one strata (representing 30% of the sample approximately) are reclassified. The general criterion was assign them to the strata where they remained for the greatest number of years. Table B 2 shows the distribution by size of the firms.

GRAPH B.2 Analysis by profit level in El Salvador



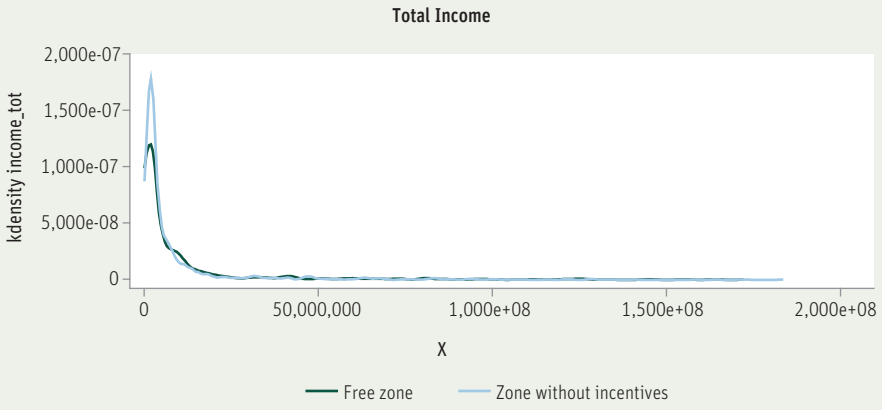
Source: Own calculations.

TABLE B.2 Firms by stratum and zone

Size	Free Zone	Zone Without Incentives
1	84	108
2	48	54
Total firms	**132**	**162**

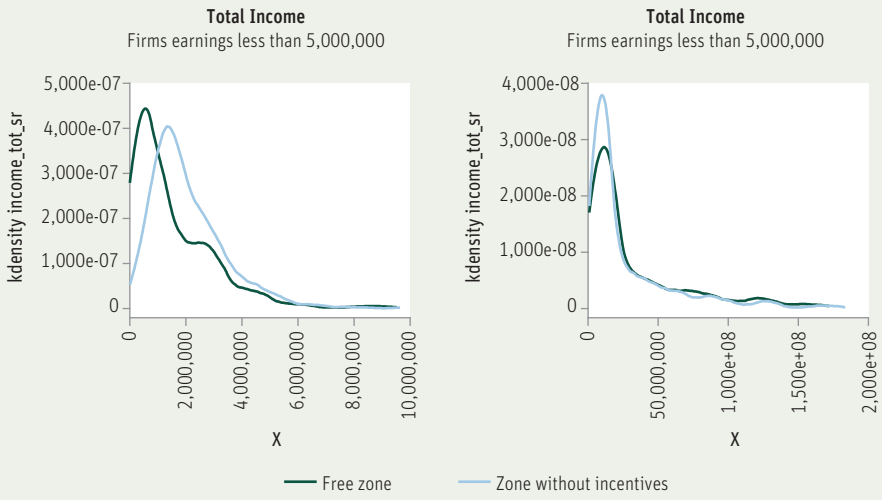
In Graph B 4 are seen the frequencies observed for total sales in both regions (smoothed with the Kernel density), according to the strata to which they correspond. The first Graph on the left, with the smallest firms, reveals the differences in the distributions of the firms in this strata. The modal point of the distribution of the

GRAPH B.3 Empirical density by total incomes



Source: Own calculations.

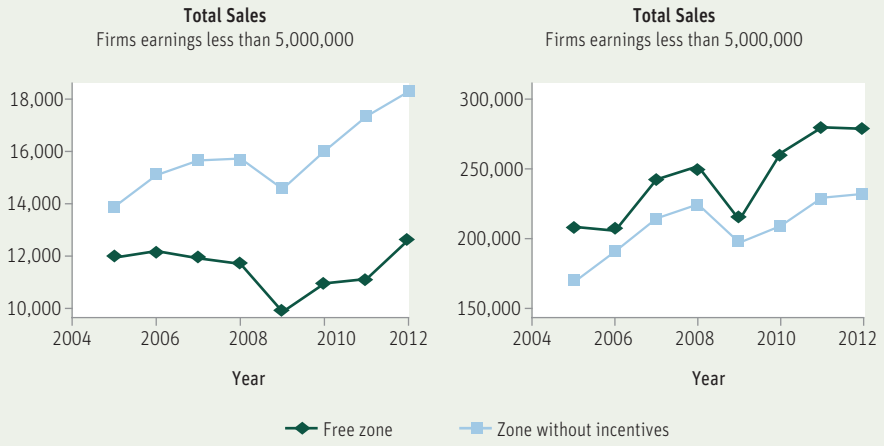
GRAPH B.4 Empirical density by total incomes and enterprise size



Source: Own calculations.

zone without incentives is run towards the right, that's to say, there are more firms with higher total sales in the zone without incentives than in the free zone. In strata 2, of the biggest firms, the asymmetry in both distributions grows, although no displacement of one over the other is distinguished.

GRAPH B.5 **Analysis by total sales and enterprise size in El Salvador**



Source: Own calculations.

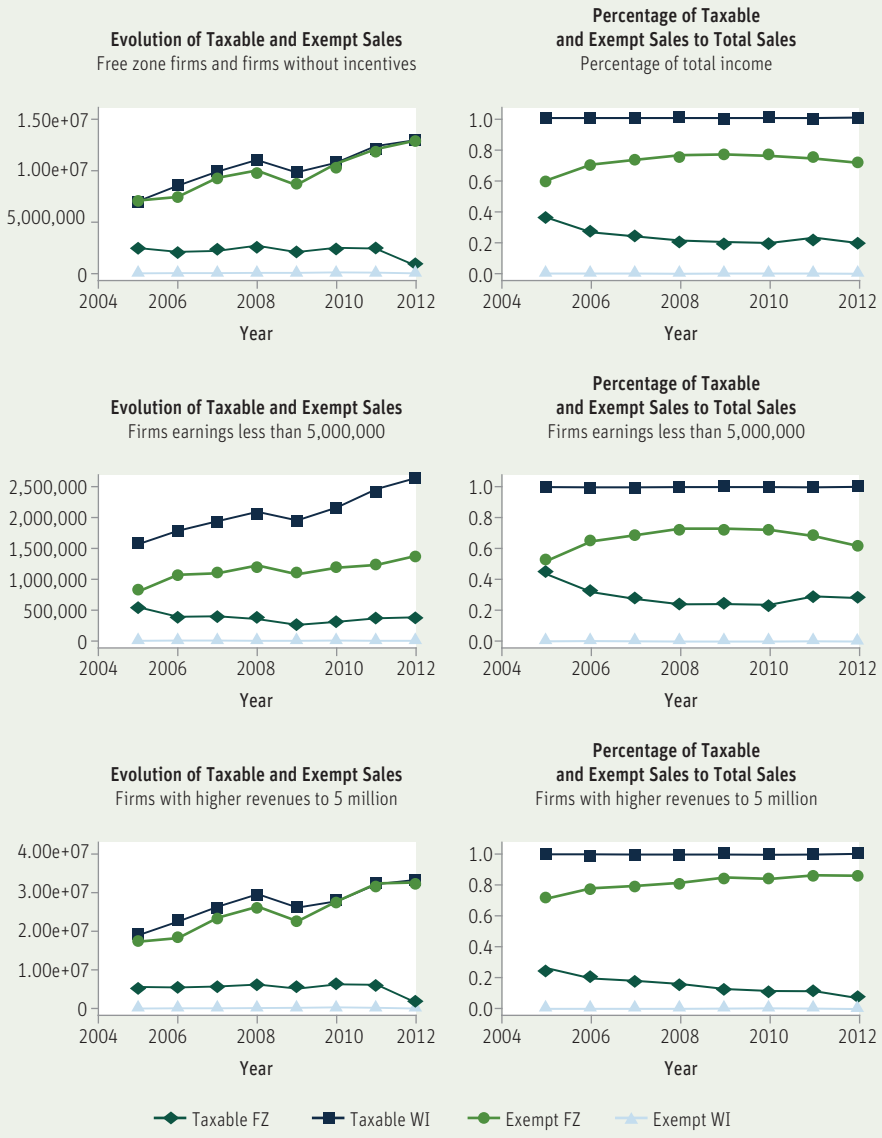
Below will be observed the evolution of sales by size over time. Graph B 5 shows that, at least in the observation period, the evolution of firms without incentives in the strata of the smallest firms—which represent 65% of the sample—has been better than the firms with tax incentives, with a markedly rising trend for the former and more stable for firms of the free zones. In strata 2, on the other hand, the earnings of the free zone firms have been higher, although both have a rising trend.

With regard to the percentage of taxed sales, Graph B 6 shows the evolution of taxed and exempt sales in each one of the zones by size strata, on the right are found the graphs in nominal terms and on the left the coefficient as a percentage of total sales. Note that in the Zone Without Incentives the exempt sales remain constant, very close to zero throughout the period. In the free zone, by contrast, the percentage of taxed sales over the total goes from a value close to 40% and stabilizes around 20%, while the exempt depart from 60%, reach almost 80% and return to 70% towards the end of the period.

The average taxed sales of the firms without incentives is almost identical to the average exempt sales of the firms favored by the free zone regime. The difference in size is explained by the fact that firms in the free zone have taxed sales of a certain importance; meanwhile those that do not have incentives practically do not have exempt sales.

In the strata of the smallest firms, there is no difference between those that do not have incentives compared to what is observed for the total. In the free zone, by contrast, the behavior of concavity/convexity observed for the exempt

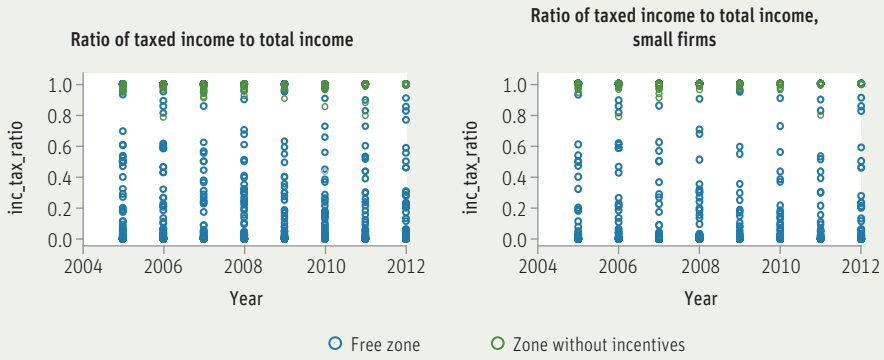
GRAPH B.6 Taxable and exempted sales by enterprise size in El Salvador



Source: Own calculations.

and taxed sales, respectively, is accentuated. In the strata of firms with higher earnings, on the other hand, a divergent behavior is observed in both series, in nominal terms and in the coefficients: exempt sales tend to grow while the taxed ones tend to fall.

GRAPH B.7 **Ratio between taxed and total income in El Salvador**



Source: Own calculations.

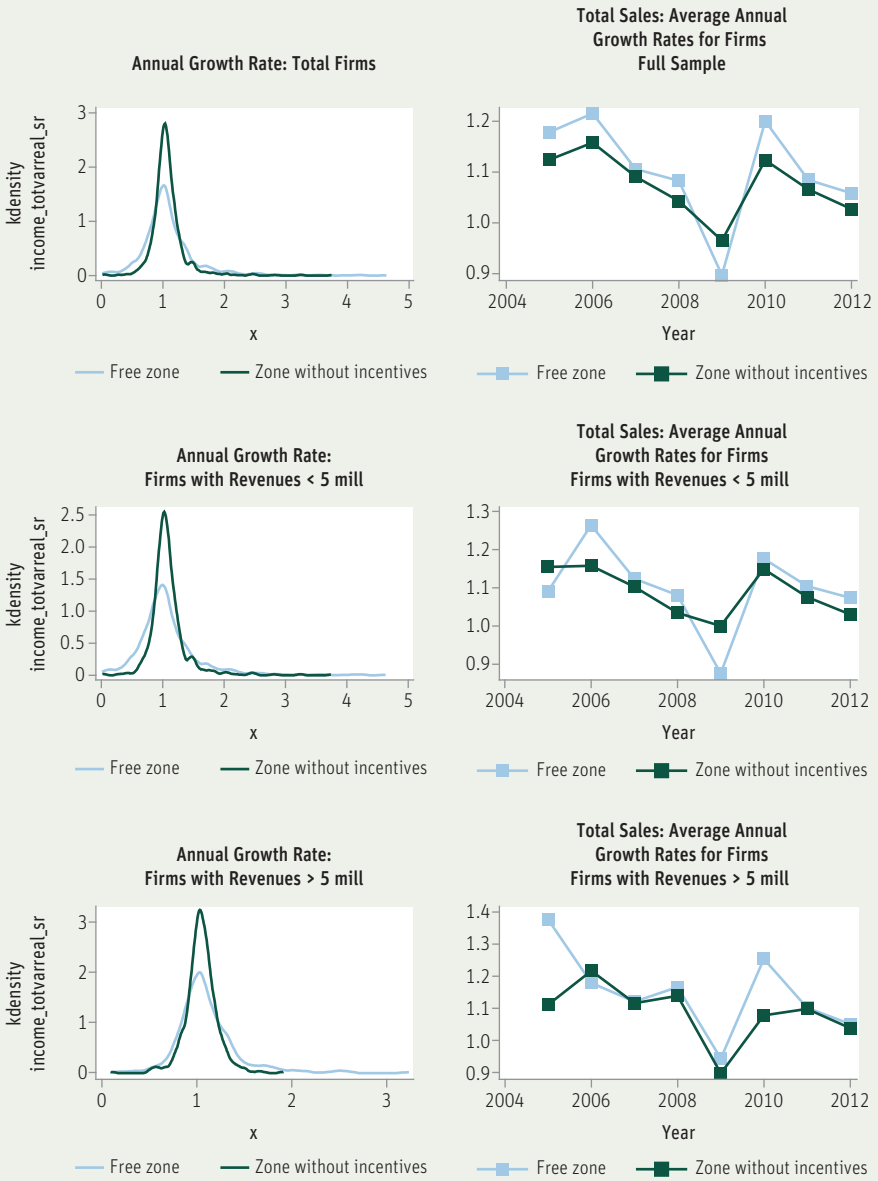
Graph B 8 shows the evolution of the average inter-annual rates of change of the firms. A pattern of deceleration of growth of sales in both zones is observed, although the rebound after the crisis of 2009 temporarily interrupts the pattern. The average annual growth of the free zone remains constantly above the group without incentives, except in 2009, year of the international crisis, when the free zone falls more. However, the comparison of the distributions (Graph B 8) allows a small difference to be glimpsed between the average rates of growth each time that the great dispersion is evident.

The evolution of the strata of the smallest firms has a similar pattern to that observed in the general aggregate, of an average growth of the free zone barely higher than that of the firms without incentives every year (except the years 2009 and 2005). At the distributions level, a greater dispersion in the observed growths of the free zone can be observed again.

For the biggest firms, by contrast, the evolution of the growth rate has been very similar in both groups, only in the years 2005 y 2010 is a markedly higher growth seen in firms with tax incentives. On the other hand, the international crisis affected big firms in both groups almost in the same way, although the exit after 2010 was better for those of the free zone, even if afterwards they returned to having very similar growth.

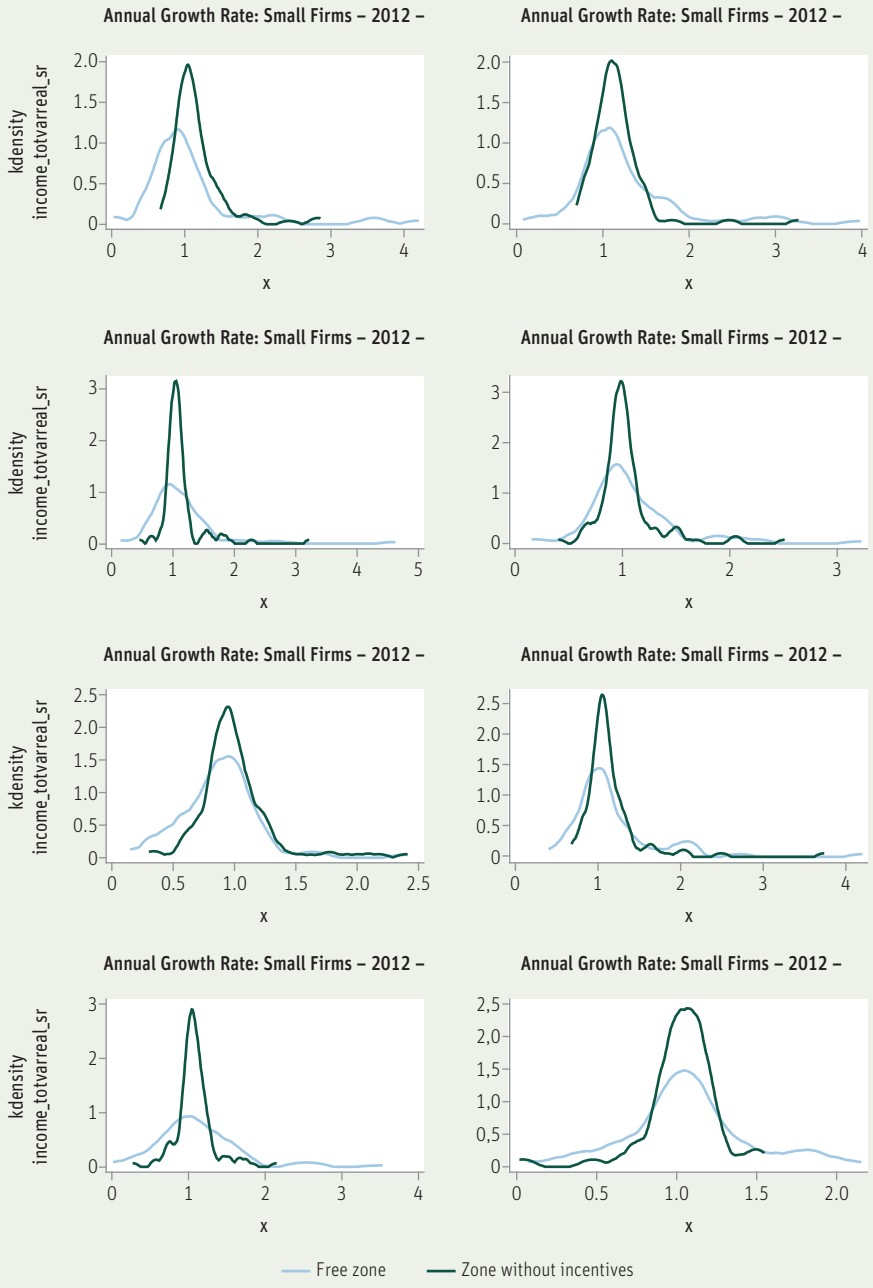
Graph B 9 reviews the distributions of the rates of variation in each one of the years analyzed in the study. The displacement towards the right of the zone without incentives It becomes more evident in some years than in others; however, what is common to all is the greater volatility of the rate of growth of firms in the zone with special incentives.

GRAPH B.8 Variation of total sales by enterprise size in El Salvador



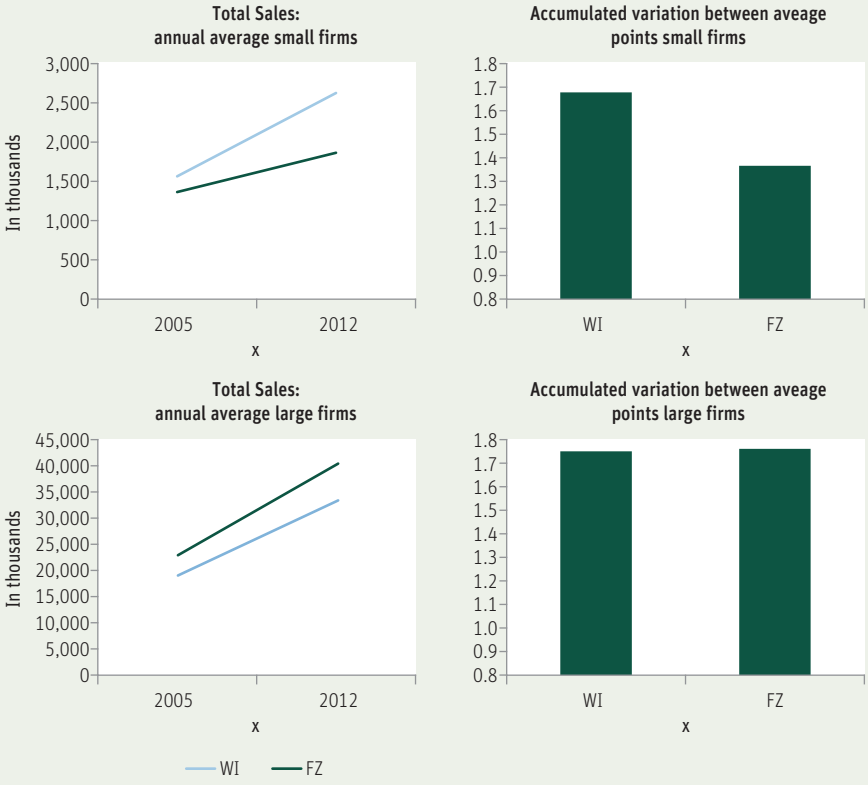
Source: Own calculations.

GRAPH B.9 **Empirical density of the variation of total sales of small enterprises with and without benefits**



Source: Own calculations.

GRAPH B.10 Evolution of total sales by enterprise size in El Salvador



Source: Own calculations.

Annex C
Analysis of the microdata from Dominican Republic

Variables and period of analysis

The sample collects data between the years 2005 and 2012 on the following variables common to the firms of the free zones and outside them: total sales, profit, labor cost and economic sector.

The following variables are also available but only for the free zone firms: quantity of employees, exports, imports, sales in the local market, total taxes to be paid.

Regarding the quantity of data and final sample

From the total data were kept those firms which remained in the sample for 4 years of more, or those that remained for 2 or 3 years, but including the years 2011 and 2012. Reviewing the data for total sales, there are a great quantity of firms which do not report or report very small values for this variable, so that firms which report sales of less than US$100 in a year are eliminated from the sample. In addition, control is made for consistency in firms' values for total sales, profit and labor cost and firms for which the difference between incomes and labor cost plus profit is negative are also eliminated. Also eliminated are all the data for firms whose labor costs exceed their earnings by more than ten times. There is, in turn, data for some firms (excessively high earnings for the observed history of the firm) which is was also decided to eliminate.

With all these reductions made, the sample is left with 7,300 firms in the zone without incentives and 491 in the free zone.

Descriptive analysis of the sample

Table C 1 shows the distribution of the different economic sectors in the sample of firms; in the free zone the distribution of firms by sector is much more similar than outside it, with percentages of around 30% for industry, the textile industry and services; meanwhile, outside the free zone, the services sector gathers almost 80% of the firms.

Graph C 1 compares the evolution through the years of the levels of sales, profit and labor cost (all in real terms) of the different economic sectors. The level of real sales in the free zone is, on average, between 8 and 10 times higher to firms without incentives and this behavior has been stable throughout the period. Labor costs are also higher in the free zone for all the sectors, especially industry and services, which are between five and six times higher than those of the firms outside the special tax regime. And, finally, the profit levels of both groups are also markedly

TABLE C.1 Enterprises by economic sector with and without benefits in Dominican Republic

	Free Zone		Zone without benefits	
Sector	**firms**	**%**	**firms**	**%**
Industry	146	30%	1,065	15%
Textile industry	181	37%	314	4%
Agro-industry	39	8%	308	4%
Services and others	125	25%	5,613	77%
Total	**491**	**100%**	**7,300**	**100%**

Source: Own calculations.

different in size, led by the industrial firms of the free zones, although with a clear descending trend.

The review of these three variables indicates that the sales levels of the firms of the two groups a priori differ greatly from one another. Any comparison which controls for the tax treatment is going to indicate that this is significant, given that the levels are markedly different.

Graph C 2 shows the distribution of real sales of both groups (in logarithms to improve its observation). The graph shows that the distribution of sales of firms in the free zone is on the right for firms without incentives; however, there is a group which, at least by size (measured exclusively by level of sales), could belong to any of the two distributions: it is the one which is seen in the intersection of the two curves and this would then make it possible to set up any classification by size which facilitates comparison of the evolution of firms that are a little more similar to one another.

Stratification of the sample by sales in dollars

This said, it was decided to classify the firms by size. For example, firms with annual earnings in dollars less than US$100,000 can be considered small. Firms with annual earnings between US$100,000 and US$1,000,000 could be considered medium-sized, between US$1,000,000 and US$10,000,000 medium-to-big and greater than US$10,000,000 big firms.[68]

Table C 2 shows the quantity of firms by year and for each size strata following the classification described above. Here it's clear that a great part of the zone firms

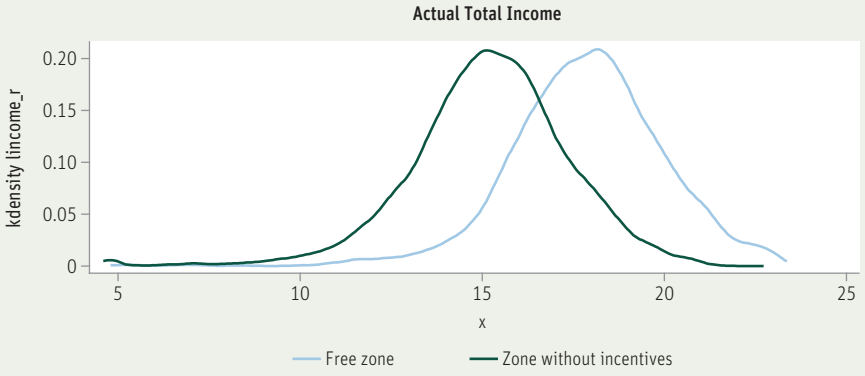
[68] Alternative schemes of classification by size of firm can be considered.

GRAPH C.1 Evolution of key variables between 2005 and 2012 by type of enterprise

Source: Own calculations.

without incentives are the smallest, with earnings below US$100,000, while in the free zone the number of firms with this annual income barely reaches 16. Below how much sense there is in making a comparison in this segment will be evaluated. In the following strata there are a reasonable number of firms in both zones to make comparisons possible, including in that of firms with earnings greater than US$ 10,000,000.

GRAPH C.2 **Empirical density of total incomes of enterprises with and without benefits**



Source: Own calculations.

In Graph C 3 are observed the earnings in dollars by year and by size strata; the evolution of sales in dollars of the smallest firms has been very similar in both groups, even remembering that the sample sizes after these averages are very different. In the average and average-to-high, the free zone begins with similar values to those of the group without incentives, although always above, but takes off from 2010, when the firms of the free zone reach a higher level of sales. In the high income strata, the level of the free zone firms is found to be double that of the level of the group without incentives almost throughout the period. Note that the distributions (of the left panel) of the medium and medium-to-big firms are very similar in mode and dispersion for the two groups and a small displacement to the right is identified for the free zone with tax incentives. The biggest firms, by contrast, have dissimilar distributions, the free zone has a very marked modal double point on the right, which may possibly be the cause of the rise of the average in this strata to double that of the group without incentives.

Give that more than the level of sales reached by the firms, it's interesting to know how was their growth in the period studied, inter-annual rates of variation in sales are calculated. Graph C 4 shows the evolution of average rates of growth by tax group and by size strata. There it can be observed that, for the first two strata, the growth is similar, although it is much more volatile in the free zone. For the two biggest strata the average growth of the free zone firms seems to be higher than that of the firms without incentives.

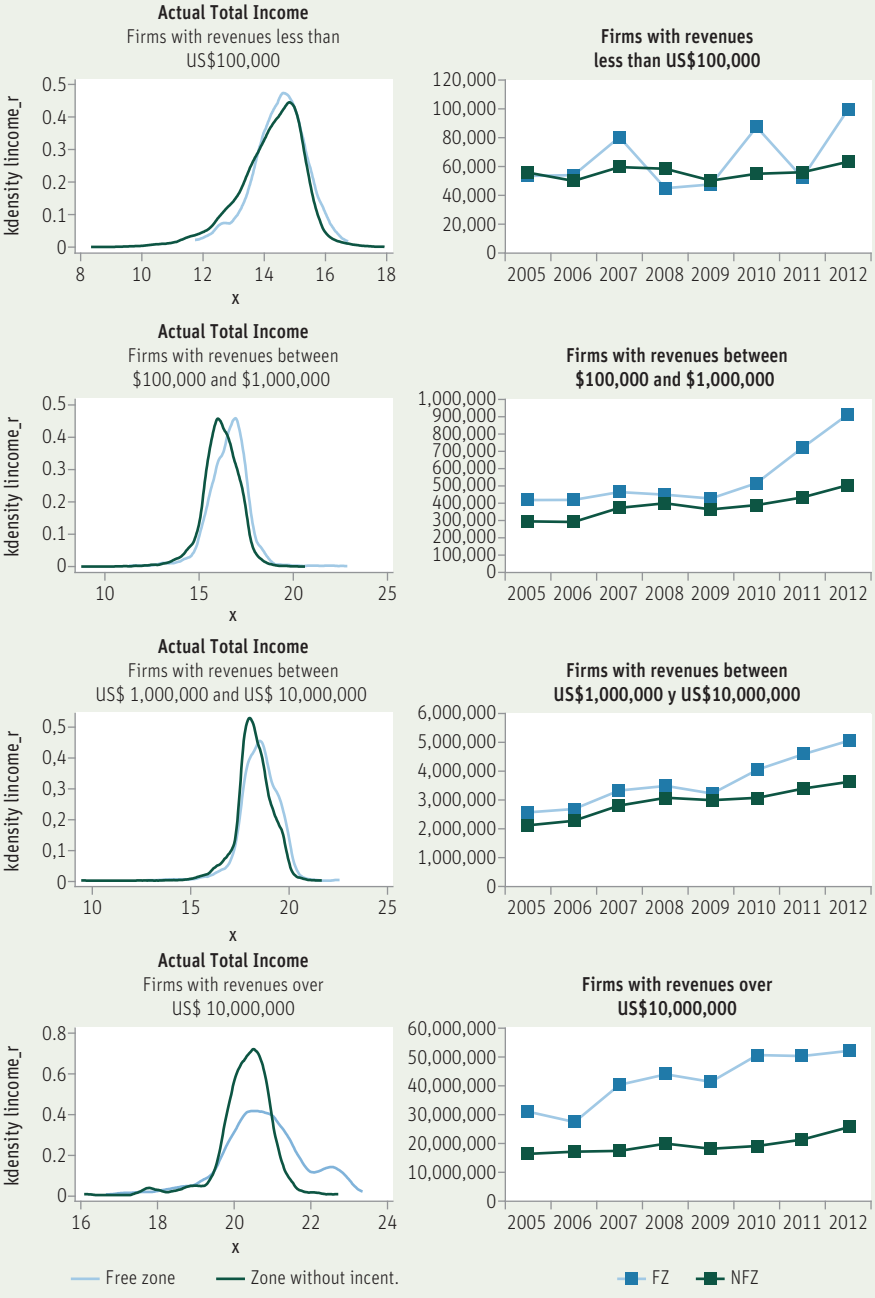
In Graph C 5 the levels of profit in dollars reported by the firms are observed. In the small and medium-sized firms, the great volatility of the free zone firms can

TABLE C.2 Quantity of firms by year and by size strata

	Free zone				Zone without benefits			
Year	Less than US$ 100,000	Between US$100,000 and US$1,000,000	Between US$1,000,000 and US$10,000,000	More than US$10,000,000	Less than US$ 100,000	Between US$100,000 and US$1,000,000	Between US$1,000,000 and US$10,000,000	More than US$10,000,000
2005	4	62	89	31	822	1,356	561	61
2006	6	75	102	40	1,035	1,604	607	62
2007	7	108	149	53	1,453	1,982	654	62
2008	12	126	166	58	1,681	2,160	691	64
2009	14	140	178	60	1,829	2,283	707	63
2010	15	154	191	64	1,838	2,310	713	62
2011	14	167	195	68	1,912	2,399	717	65
2012	16	161	193	68	1,885	2,343	690	64

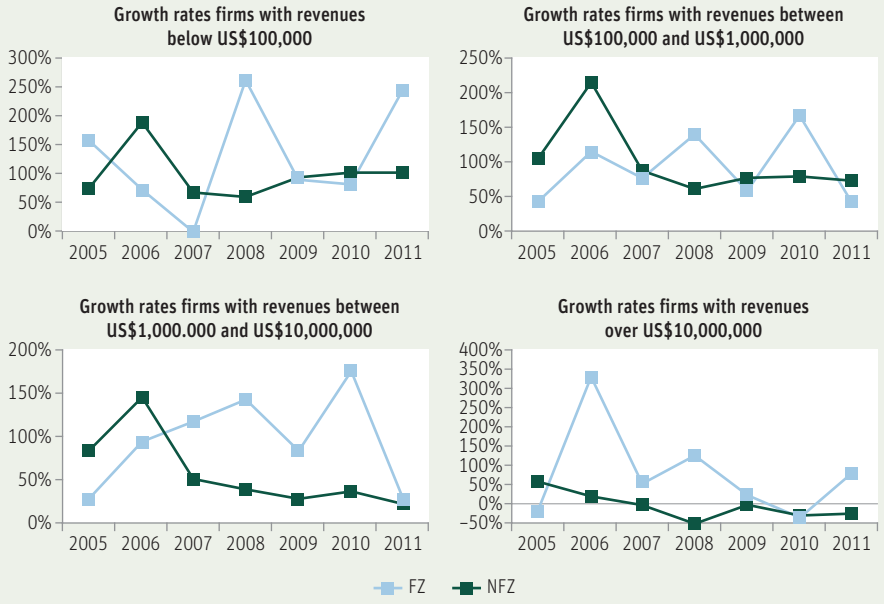
Source: Own calculations.

GRAPH C.3 **Empirical densities and evolution of total incomes by enterprise size in Dominican Republic**



Source: Own calculations.

GRAPH C.4 Evolution of income growth rates by enterprise size in Dominican Republic



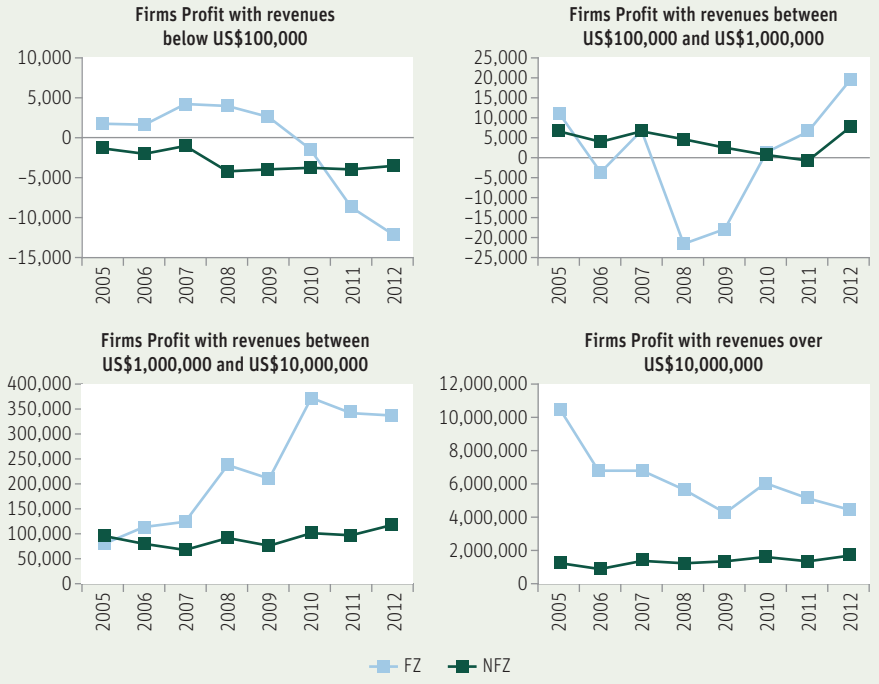
Source: Own calculations.

be appreciated. The difference in the annual average profit observed between the firms of the two biggest free zone strata is notable, while those that are between one and ten million have a growing trend in the period versus a very stable trend for the group without incentives. Firms with sales of more than ten million have a negative evolution with profit averages increasingly small as time passes, against a very stable evolution for firms without incentives.

Graph C 6 shows the profit against earnings coefficient; just as with profit, the coefficient of the two segments which group the smallest firms is very volatile for the free zone. In the strata of bigger firms although the evolution is smoother, a clear supremacy of one group over another is not seen. In the strata of the biggest, it's seen that this coefficient was decreasing for the free zone.

Graph C 7 reflects the evolution of average labor intensity of the firms in each strata (measured as labor cost over sales); there it can be seen that in the segment of middle and middle-to-big firms the labor cost to sales coefficient of the free zone was higher than that of the group without incentives throughout the period; however, the labor intensity of the biggest firms is almost the same for the two groups from 2007.

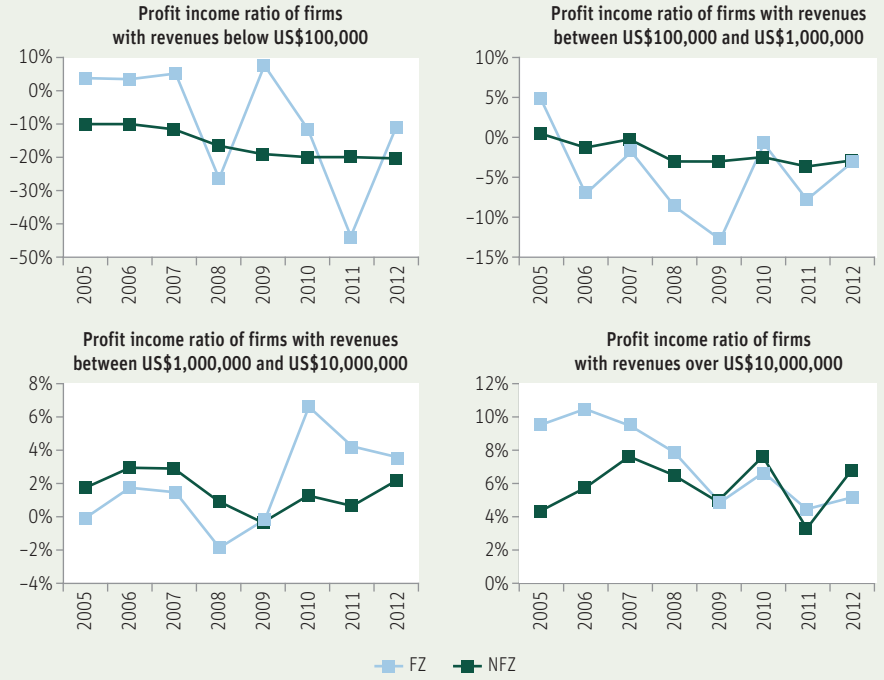
GRAPH C.5 Evolution of profits by enterprise size in Dominican Republic



Source: Own calculations.

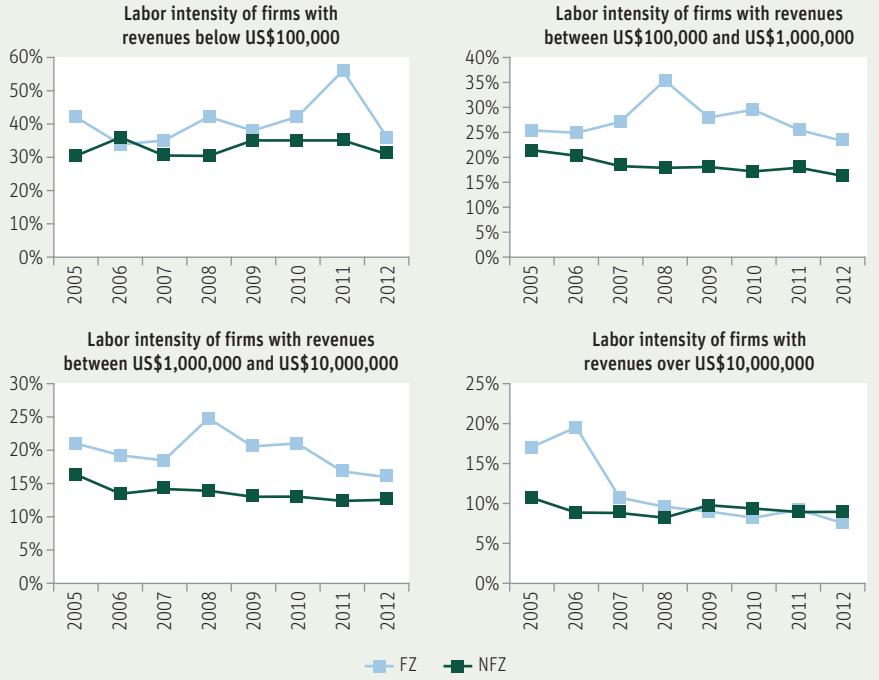
Table C 3 shows the quantity of firms by economic sector, tax treatment and size strata; from here it is deduced that the segments of medium and medium-to-big firms can be investigated also within each sector because they have enough critical mass to be evaluated with more care, if one concludes from the quantity of data. The strata of the smallest firms cannot be analyzed directly by sectors.

GRAPH C.6 Ratio of profits to income by enterprise size in Dominican Republic



Source: Own calculations.

GRAPH C.7 Labor intensity by enterprise size in Dominican Republic



Source: Own calculations.

TABLE C.3 Number of enterprises by size and economic sector, with and without benefits in Dominican Republic

	Agroindustry		Industry		Textile Industry		Services and others		Agro-industry		Industry		Textile Industry		Services and others	
	FZ	WI	FZ	WI	FZ	WI	FZ	WI	FZ	WI	FZ	WI	FZ	WI	FZ	WI
	Less than US$ 100,000								between $100,000 and 1,000,000							
2005		28	1	109	1	37	2	648	1	64	5	217	36	75	20	1,000
2006		32	3	135	1	49	2	819	3	72	11	259	41	84	20	1,189
2007		53	3	186	1	65	3	1,149	4	84	21	314	54	91	29	1,493
2008		62	1	217	8	75	3	1,327	4	85	27	338	60	100	35	1,637
2009		78	2	238	8	82	4	1,431	9	89	29	352	61	106	41	1,736
2010		75	2	219	8	84	5	1,460	12	94	36	343	64	96	42	1,777
2011		69	1	235	7	85	6	1,523	12	101	43	346	69	98	43	1,854
2012		74	4	228	7	79	5	1,504	12	106	43	333	65	90	41	1,814
	Between 1,000,000 and 10,000,000								More than 10,000,000							
2005	12	34	22	150	36	19	19	358			12	33	8	2	11	26
2006	14	35	26	156	38	27	24	389	1	1	16	32	11	2	12	27
2007	18	39	45	166	48	27	38	422	2	1	22	31	17	1	12	29
2008	21	39	52	170	52	24	41	458	3	1	24	32	18	1	13	30
2009	21	40	55	172	60	23	42	472	3	1	26	32	19	1	12	29
2010	21	40	60	172	62	19	48	482	3	1	26	30	22	1	13	30
2011	22	49	61	167	64	15	48	486	4	1	28	31	21	1	15	32
2012	22	50	61	162	62	15	48	463	4	1	28	30	21	1	15	32

Source: Own calculations.

Annex D
Econometric tests

Panel vs. Pooled regression

The model behind an analysis of panel data is the following:

$$Y_{it} = \alpha + \beta_1 X_{it} + u_i + e_{it}$$

Where it is assumed u_i iid$(0,\sigma_\upsilon^2)$ y e_{it} iid$(0,\sigma_\varepsilon^2)$

The Breusch and Pagan Lagrangian multiplier test contrasts the hypotheses of $\sigma_\upsilon^2=0$; if the hypothesis is rejected, then it makes sense to use panels for the estimation of the model; in the contrary case, the data can be analyzed directly as a pooled regression.

TABLE D.1 Tests of suitability of panel data analysis

El Salvador	Dominican Republic
Breusch and Pagan Lagrangian multiplier test for random effects—Test: Var(u) = 0	
chi2(1) = 5817.56	chi2(1) = 60142.05
Prob > chi2 = 0.0000	Prob > chi2 = 0.0000
The test indicates the convenience of using panels over pooled regression, given that σ_υ is distinct from zero	The test indicates the convenience of using panels over pooled regression, given that σ_υ is distinct from zero

Source: Own calculations.

Fixed vs. random effects

To investigate if estimation by fixed or random effects is preferable, the robust Hausman Test is carried out, which uses the implicit assumption in the formulation

TABLE D.2 Tests of fixed versus random effects

El Salvador	Dominican Republic
Test of overidentifying restrictions: fixed vs random effects	
Sargan-Hansen statistic 0.092	
Chi-sq(2) P-value = 0.9550	
The test indicates that the condition of overidentification $(E(x_{it},u_i)=0$ "random effect condition" cannot be rejected, so that the estimation of random effects would be correct.	It is not possible to carry out this test, since all the included variables in the regression are indicators variables 0–1, fixed for each firm every year, so that the contrast against a panel of fixed effects cannot be realized.

Source: Own calculations.

of the model of random effects, where the Cov(Xit,ui)=0, that's to say that there is no omitted variable within the individuals that is correlated with any of the explicative variables of the posed model; if they were so, the estimations would be inconsistent.

Autocorrelation test

Given that the time dimension of the panel under analysis is 8 years, it's important to verify the absence of autocorrelation in the panels and therefore the Wooldridge Test is carried out, which contrasts the absence of first order autocorrelation.

TABLE D.3 Autocorrelation tests

El Salvador	Dominican Republic
Wooldridge test for autocorrelation in panel data	
F(1, 291) = 28.259	F(1, 6547) = 36657.002
Prob > F = 0.0000	Prob > F = 0.0000
The test indicates the existence of autocorrelation.	The test indicates the existence of autocorrelation.

Source: Own calculations.

Heteroscedasticity test

The test in Table D 4 is carried out to verify the absence of heteroscedasticity between groups (of firms). The test denominated W0 is that of Levene, which is robust in the absence of normality in the errors. W50 is a variant of the test proposed by Brown and Forsythe, which uses robust (median) estimators of central position.

Given the results of the tests, all the estimations were realized with robust standard errors for this flaw in the assumptions.

TABLE D.4 Heteroscedasticity tests

El Salvador	Dominican Republic
Levene Test	
W0 = 5.2673851	
df(293, 1996) Pr > F = 0.00000000	
Brown and Forsythe Test	
W50 = 2.4440566	
df(293, 1996) Pr > F = 0.00000000	
The tests indicate the existence of heteroscedasticity in the panels.	The test cannot be carried out because there are too many firms.

Source: Own calculations.

5

Effectiveness of policies and instruments of investment attraction in Central America, Panama and Dominican Republic

Adolfo Taylhardat[1]

This chapter seeks to evaluate the effectiveness of the main policies and instruments used to attract investments to Central America and Dominican Republic in the last two decades. The evaluation focuses on three broad areas of action on the part of governments: (i) the creation and utilization of investment promotion agencies; (ii) measures and policies to improve the regulatory framework for investment and the competitiveness of the country; and (iii) the policies that grant mechanisms of fiscal and financial incentives to the investor.

The chapter is organized following this logic. First, the role that the investment promotion agencies (from here on, IPA) fulfill as an instrument to attract investments is analyzed and the region's agencies are evaluated in the light of what are considered the best practices in investment promotion. Similarly, the successful cases are highlighted and the challenges governments face to make these organisms more successful and effective in their work of promotion are identified.

Secondly, the initiatives and efforts to improve the business climate and competitiveness are reviewed with the aim of evaluating how they have been able to tackle the reduction of country cost and facilitate and energize investment attraction.

[1] This study gathers opinions and contributions from an outstanding group of professionals and experts connected to the topic of investment attraction. It drew on consultations, interviews and a survey of the investment promotion agencies. The study would not have been possible without this valuable collaboration and I therefore wish to thank all of those listed in Annex 1 for their help, time and contribution.

Thirdly, fiscal incentive mechanisms which have been implemented in the region in the last two decades are analyzed. The most notable and controversial factors of these instruments are identified and options to improve their activities are put forward.

The conclusions of the chapter highlight a series of policies and instruments which ought to be part of a new generation of policies and investment attraction instruments (from now on, PIAI) in the region. What is highlighted, among are things, are themes such as education and labor force training policies and the need to strengthen institutions generally and to harmonize the different policy actions in a shared vision of the different organs involved in investment attraction. Similarly, the need to intensify regional coordination efforts is considered with the aim of strengthening the attractiveness of the region and optimizing promotion efforts, an element emphasized by those responsible for these activities in each country.

The methodological approach is analytical and qualitative. The elements presented in the analysis are the product of a review of the extensive specialized literature, complemented by first-hand information gathered through interviews with investment promoters, policy-makers and opinion formers in the majority of the countries of the region. The evaluation does not claim to be an exhaustive analysis of the different policies analyzed nor does it present an econometric study of the impact of the PIAI, but it does aim to share a series of observations and consideration which question the effectiveness of the PIAI and to put forward a set of recommendations regarding the need to develop more specialized, profound and detailed analyses which can serve as a point of departure for a review of the PIAI and their inter-dependence.

On policies and investment attraction instruments (PIAI)

Policies and investment attraction instruments seek to influence investors' decision-making processes in order to position the country in a pro-active way as a location for investments; to improve the value proposition of the country by reducing country cost and making the investment climate better; and to grant fiscal incentives which improve the investor's return.

In the region, countries have assumed that they are in an extremely competitive environment, in which firms have many location options for their investments, so that to be able to turn themselves into an attractive option, it's necessary to improve the country's offer in relation to that of its potential competitors as well as actively promoting the country and facilitating the investment process.

As the Economic Commission for Latin America and the Caribbean (ECLAC—CEPAL in Spanish) highlights, the point of departure for the design of PIAI is to know the

motivations and determinants of the transnational firms (CEPAL, 2006b). The value proposition of a country, that's to say, its offer to investors, must arise from a strategic approach which takes into consideration the investor's decision-making process.

Therefore, it is important to segment investors by their principal motivation at the moment they invest. Experts classify investors in four large categories, according to their main motivations (CEPAL, 2006a):

- Search for natural resources.
- Search for access to local markets.
- Search for efficiency to conquer third markets.
- Search for strategic attractions.

For the countries of Central America and Belize, Panama and Dominican Republic (CARD), which have small economies and mid-range developed levels, investments which are located on grounds of efficiency in productive processes are especially important, since they seek higher labor productivity and lower operating costs. Consequently, promotion of export promotion services (Business Process Outsourcing—BPO, by its initials in English) and of regional centers are part of the agenda for all the countries of the region.

Although each one of these categories has its own determinants, in general term the decision process of investors is very similar and consists in a top to bottom approach which starts with elaboration of a first broad list of interesting investment locations; then the competitiveness of each alternative is evaluated to select the most attractive options and reach a short list; and finally, in a third stage, the analysis is refined to calculate the expected profitability and thus choose the location which corresponds best with the selection criteria established by the firm.

From the perspective of the country which seeks to promote itself as an investment location, this decision-making process implies:

- To achieve visibility so as to appear on the radar of the investor and enter in the long list of locations. For that the advantages of the country are promoted and the investor is assisted in the process of information collection.
- To present an offer of attributes which converts the country into a competitive location option (the short list of locations). It's not enough to be visible, it's indispensable to be competitive, have an attractive business climate and a regulatory framework which enables the investment as well as an operating cost that is relatively competitive.
- To offer incentives which improve profitability levels so that the country is positioned as the most attractive option.

TABLE 5.1 Dimensions of investment attraction

	Visibility	Competitiveness	Profitability
Objective	Appear on the investor's radar. Enter the long list of location options.	Be considered a competitive location. Reach the short list of location options.	Be selected as a location option.
Policy or instrument (PIAI)	Investment promotion agencies or bodies (IPA)	Competitive regulatory framework Legal security Trade agreements Investment protection agreements Infrastructure investment	Financial and fiscal incentives Free zones
Activities/ components	Marketing Information Facilitation Sectoral focus	Reduce country cost Improve competitiveness Elaborate legal reforms Eliminate barriers	Grant/negotiate incentives

Source: Own elaboration.

Parting from this understanding of the determining factors for the potential investors, countries are able to take a strategic focus in the design and implementation of PIAI which succeed in increasing the visibility of the location, improve competitiveness and offer greater profitability to investment projects.

Just as in the rest of Latin America, from the 1990s, the different countries of CARD began to implement PIAI in three main categories:

- Proactive investment promotion policy through the creation of a specialized agency or the structuring, within a public institution, of a specific office dedicated to the subject. These investment promotion agencies (API by their initials in Spanish) sought to generate visibility, present the country's offer to the investor and facilitate the decision-making process through a specialized, sustained and focused effort.
- Initiatives to reduce country cost, improve competitiveness and facilitate FDI, which include reforms to the regulatory framework, such as the creation of special windows for investment procedures. Countries develop PIAI which generate confidence in the investor and afford stability to the rules of the game.
- Design and implementation of incentive policies for the investor which grant financial and fiscal benefits of different types. Besides visibility and competitiveness, it is necessary to achieve attractive profitability conditions for the investor. A positive investment climate with stable and predictable rules of the game are necessary conditions, but in many cases insufficient ones, to convert

the location into the favorite for the investor. Here the PIAI which offer financial and fiscal incentives which improve the business plan and profitability of the investor have their value.

It's important to note that for the countries, the sequence of preparation for FDI is rather different. A country has to achieve competitiveness and make its business climate suitable before promoting itself and that implies giving initial priority to improving the investment climate. After having established "the improved product", the PIAI are implemented with incentives to offset or lessen country cost. Finally, the PIAI for active promotion of investments are rolled out, and their effectiveness is going to be directly linked to the presence of an attractive business climate and competitive rules of the game. The reality is different and frequently we find proactive promotion policies which are carried out without having addressed the factors which increase country cost of which negatively affect the investment climate.

The investment promotion agencies (IPA) in CARD

The importance of the IPA

The investment promotion agencies (IPA) are, without doubt, a country's most important, dedicated and specialized instrument to attract investments. There is practically no country without an IPA, nor region or state of any size which has not set up its investment promotion organism. Now there are around 250 national and regional investment agencies, representing some 160 countries.[2] This translates into an extremely competitive environment in which countries, cities and regions seek to stand out, differentiate themselves and position themselves in front of potential investors. The countries of the region understood very early the importance of the IPA and therefore some countries, such as Costa Rica and Honduras, created theirs in the middle of the 1980s.

The IPA have become a central point in the PIAI, given that their operation and effectiveness depends directly on the PIAI to improve the climate and incentives. Promoting what the country offers, it serves them to develop a value proposition which highlights the country's attributes, takes account of competitive advantages, identifies areas of improvement and stresses the different incentives. The agencies are the meeting point with the investor and are part of the set of other PIAI which aim to influence the investment decision-making process.

[2] World Association of Investment Promotion Agencies (WAIPA).

The functions of the IPA

The role, functions and best practices of the IPA have received much attention since the beginning of the 1990s and have been extensively analyzed in a wide number of publications. The first theoretical framework, which is well recognized, is *Marketing a Country*, published in 1990 by Louis Wells and Alvin Wint, and still valid. For Wells and Wint, investment promotion embraces a set of functions and activities carried out with the aim of:

- Generating and promoting a country image and in this way creating visibility to the investor. This involves both general promotion, which aims to tackle the ignorance of potential investors of the attributes and advantages of a location, and focused promotion of a value proposition specialized in sectors considered priority or strategic.
- Offering services to facilitate investment by supplying relevant information to potential investors and influencing their decision-making process. This seeks to close the gap between the information requirements of the investors and availability, credibility and access to information. Similarly, making known aspects of the regulatory and legal framework as well as access to and cost of factors of production and resources; facilitating knowledge of local idiosyncrasies; and facilitating contact with help and service institutions.
- Improving the investment climate by initiating and supporting initiatives which make the location more attractive for the investor. The IPA become a natural focal point in the area of changes to the regulatory framework, since they know at first hand the needs and opinions of the investor (potential and existing) and have privileged access to policy-makers and opinion-formers.

It's important to point out that these promotion activities are aimed at four very different and specific audiences:

- Investors in general with no special focus (*facilitation*).
- Investors focused in sectors or industries (*outreach*).
- Investors already established in the country (*aftercare*).
- Policy-makers (*policy advocacy*)

The IPA are structured under multiple modalities and there is no standardized model, nor a best practice as regards institutional framework. They can be established as autonomous units with their own legal identity or can be a specialized unit within a ministry or public entity. The agencies can be under the guardianship of the public sector (ProNicaragua or BELTRAIDE, in Belize), can be private institutions

(CINDE, in Costa Rica, or FIDE, in Honduras) or can be mixed institutions, product of an association between the public and private sector.

The institutional status of the IPA is a factor of great relevance, given that a legal identity, an effective relationship between the public sector and the private, and an adequate budgetary structure are factors which guarantee the agencies success. Investors' decision-making cycles can take years and to carry out effective promotion work, a legal identity is required which reduces the risks generated by political changes and which allow it to act with operative autonomy, access policy-makers and be recognized by the private sector.

The IPA in CARD

The eight countries of the region have investment promotion units. Although they have important differences in their institutional form, all fulfill the fundamental functions of promotion: they promote the country to the priority sectors and facilitate investment and help improve the business climate. Some, such as CINDE and FIDE, go back to the 1980s and are well-recognized institutions with a long operating trajectory; others, such as ProNicaragua and Invest in Guatemala, were created after the year 2000 and replaced organizations created in the 1990s but which did not manage to maintain their institutional position. In the case of Panama, Proinvex is a dedicated office within the Ministry of Trade and Industry.

TABLE 5.2 Functions of an IPA

		Functions of an IPA		
		Country image	**Facilitate investment**	**Improve the investment climate**
Audience	**General investor**	General information. Brand statement.	Supply general and specialized information.	Evaluate indices such as *Doing Business* and *Global Competitiveness Report* and identify the agenda for change.
	Potential investor	Value proposition targeted by priority sector. (Outreach)	Supply specialized information with a high level of benchmarking.	Seek to create and maintain a more competitive environment in selected sectors.
	Existing investor. Policy-makers		Maintain contact to attend to the requirements and support new projects. (aftercare)	Identify areas for improvement in the business climate and regulatory framework. Propose reforms (policy advocacy)

Source: Own elaboration.

In the framework of this research, interviews were carried out with each one of the eight IPA, as well as a survey with the aim of gathering information on their structure and functioning, as well as opinions and comments on present and future challenges. This permitted a detailed evaluation of the operation and institutional status of the agencies, as well as identifying aspects which should be addressed to improve their effectiveness in attracting investments.

General evaluation

From the operational point of view, the eight agencies of the region carry out the main investment promotion functions and have specialized and dedicated staff to attend to the investor and facilitate the investment process. In the same way, they carry out focused promotion and activities which seek to improve their countries' attractiveness. Analyzing their operations, it can be seen that all the IPA have carried out all the best practices in the task of attracting investments and have added advisory programs to their operations and training to their organizational structure.

Table 5.3 presents the allocation of resources of the IPA to the main investment promotion functions. These data should not be takes as exact measures, given that they can reflect interpretations which differ for each institution; however, they do make it possible to highlight significant differences in their promotion strategy, financial resources and level of development.

Facilitation of investments: big differences between the IPA

Facilitation is one of the fundamental functions of an investment promotion agency. The facilitation activities and services which the IPA provide seek to create visibility by highlighting the country offer and supplying information which the investor requires in his selection process. It is achieved fundamentally through:

- a comprehensive, effective and attractive website.
- handling of requests for information in an efficient and professional manner.

Facilitation, measured by the quality of the website and by response to requests capacity, has a direct impact on investment attraction. This is the finding of a study by Harding and Javorcik (2012) of the University of Oxford, in which results from evaluation of the IPA carried out annually by the World Bank in the GIPB (*Global Investment Promotion Benchmark*) are crossed with investment attraction results. The GIPB analyzes periodically the facilitation capacity of the IPA through the effectiveness of their website and efficiency responding to requests for help. The study indicates that countries with a quality IPA (measured by the GIPB result) attract more and better FDI flows, as it finds a positive and statistically

TABLE 5.3 The investment promotion agencies in CARD

Country	Agency	Year of creation	Function (1)	Staffing	Legal identity
Belize	BELTRAIDE, Belize Trade and Investment Development Service	1998	Mixed	7	Autonomous public entity attached to the Ministry of Trade and Investment
Costa Rica	CINDE (Coalición Costarricense de Iniciativas para el Desarrollo)	1982	Dedicated	40	Private entity which is financed as the product of a fund and support contracts or the public sector
El Salvador	PROESA (Agencia de Promoción de Exportaciones e Inversiones de El Salvador)	2000	Mixed	14	Autonomous public entity
Guatemala	Invest in Guatemala (Formerly PROGUAT)	2004	Dedicated	10	United Nations program which has no legal identity
Honduras	FIDE (Fundación para la Inversión y el Desarrollo de las Exportaciones)	1984	Mixed	5	Private entity which is financed from the product of a fund and pledges of support to the public sector
Nicaragua	Pronicaragua (Formerly CEI, 1992)	2002	Mixed	34	United Nations Program attached to the Presidency of the Republic
Panama	Proinvex (Agencia de Promoción de Inversiones y Exportaciones)	2010	Dedicated	7	Specialized office of the Ministry of Trade and Industry
Dominican Rep.	CEI (Centro de Exportación e Inversiones)	2003	Mixed		Office of the Presidency

Source: Own elaboration on the basis of a survey of the IPA.
(1) Function: dedicated (exclusively promotion of investments), mixed (promotion of investments and exports).

TABLE 5.4 Budgetary allocation of the IPA to investment promotion functions

	Beltraide	Cinde	Proesa	Invest in Guatemala	FIDE	Pronicaragua	Proinvex	CEI-RD
Promotion and marketing	14%	40%		25%	30%	35%	50%	15%
Facilitation (assistance)	52%*	10%		60%	30%	26%*	30%	30%
Post-investment (aftercare)		25%		10%	10%		10%	20%
Generation (outreach)	34%**	10%		5%	15%	35%	5%	20%
Improving business climate		15%		0%	15%	4%	5%	15%

Source: Own elaboration on the basis of a survey of the IPA.
* Groups together facilitation and Aftercare for Belize.
** Groups together generation and policy advocacy for Belize.

significant relationship between both variables and concludes that good facilitation of the investor has great importance, as does maintaining this effort in a sustained way over time.

The results of the 2012 GIPB demonstrate that the region is achieving good facilitation of the investor and therefore receives a higher qualification that that of all other developing regions.

It's worth highlighting that among the ten best agencies in the GIPB ranking, only one belongs to a developing country: ProNicaragua. The Nicaraguan agency has achieved this level of excellence through effort to strengthen its facilitation, incorporate a system of permanent follow-up and make its organizational structure adequate for the needs of its function. The growth in FDI flows that Nicaragua has

TABLE 5.5 GIPB evaluation 2012

	Combined result	Website	Handling of requests
OECD	64%	84%	43%
Central America	54%	73%	35%
Latin America and the Caribbean*	48%	67%	29%
Europe and Central Asia	44%	66%	23%
East Asia and Pacific	41%	65%	18%
Middle East and North Africa	36%	54%	16%
South-east Asia	32%	54%	10%
Sub-Saharan Africa	25%	41%	10%

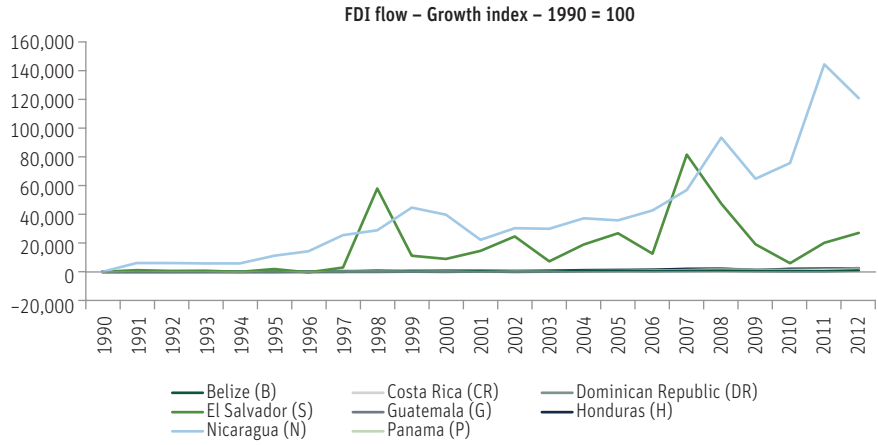
Source: GIPB (2012), World Bank.
* Latin America and the Caribbean includes Central America.

TABLE 5.6 **The best IPA in the world, according to the GIPB 2012 (World Bank)**

1. ABA—Invest in Austria (Austria)	6. Invest in Spain (Spain)
2. Czechinvest (Czech Republic)	7. Investment Support and Promotion Agency of Turkey (Turkey)
3. Austrade (Australia)	8. ProNicaragua (Nicaragua)
4. Germany Trade and Invest (Germany)	9. Department of Investment Services (Taiwan)
5. Invest in Denmark (Denmark)	10. Hungarian Investment and Trade Development Agency (Hungary)

Source: GIPB (2009), World Bank.

GRAPH 5.1 **Evolution of FDI in CARD (millions of US$)**



Source: Own calculations on the basis of data from UNCTAD (2013).

experienced since 2006 seems to confirm the positive relationship between level of facilitation and attraction of investments seen in the Oxford study (Harding and Javorcik, 2012). The results obtained by ProNicaragua in facilitation are a clear signal that an agency of a small country, with modest resources and a compact structure, is able to achieve levels of excellence.

However, not all the countries in the region are in a position to show the levels of excellence of Nicaragua. It's clear that the results of the 2009 GIPB, which publish individual country information[3] presented in Table 5.7, show how the investment

[3] Beginning with edition 2012 the rankings by country are not reported.

TABLE 5.7 Ranking of CARD countries in GIPB 2009

Ranking in GIPB 2009	Country
High	ProNicaragua CINDE FIDE
Average	Proesa Invest in Guatemala BELTRAIDE
Low	
Very low	CEI-RD Dirección de Promoción de Inversiones Panamá

Source: GIPB (2009), World Bank.

facilitating capacity of the agencies differs. It is very probable that each agency has taken corrective measures in the light of these results, but the reality is that not all the agencies of the region offer a high level facilitation service.

With the exception of ProNicaragua and probably of CINDE and FIDE, the countries of the region need to improve the level of facilitation of investment. These countries have their individual results for the 2012 GIPB and therefore have in hand a very detailed diagnosis of the improvements that must be implemented in their processes of attention to the investor in order to be able compete with the best countries in investment facilitation. These differences indicate that it is necessary that certain agencies strengthen their operational capacity to achieve higher levels of assistance to the investor.

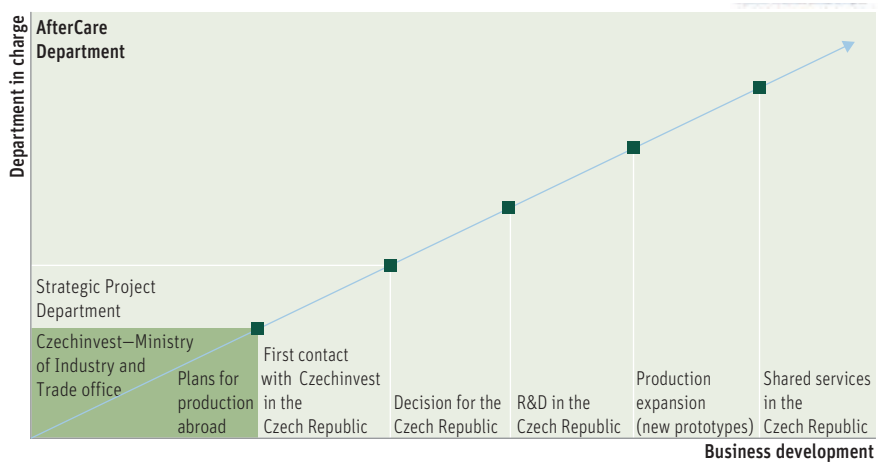
Strengthening attention to the existing investor

The facilitation function focuses on meeting the needs of potential investors but, as the best practices recommend, it's important to look after the established investor too.

Just as ECLAC stresses in its recent analysis of FDI in Central America and the Caribbean (CEPAL, 2013), not all the FDI registered represents a net inflow of capital. Reinvestment of earnings by multinational firms is a component of FDI in the region which has increased in the last decade and which for 2013 represented 38% of total FDI flows. This explains the importance of supporting established investors through aftercare activities; but judging by the allocation of resources by the IPA of the region, the aftercare function is not very outstanding except in the case of Costa Rica which devotes 25% of its resources to it.

The Czech Republic's IPA is considered an example where its aftercare work is concerned. Czechinvest has a unit dedicated to attending to existing investors to

GRAPH 5.2 **Accompanying existing investors, Czechinvest**



Source: Czech Invest (http://www.czechinvest.org/).

which it provides a set of accompanying services so that firms extend, intensify and diversify their presence in the Czech Republic (see Graph 5.2).

It is recommended to check this function and intensify its assistance efforts to the existing investor with the aim of increasing the levels of reinvestment and generating greater credibility among new investors. Countries like Guatemala, Honduras and Panama should evaluation if with the current level of the effort they are assisting reinvestment capacity and new investments by already established investors.

Greater sophistication in targeted promotion of priority sectors

Just as the best international practices recommend, the IPA of the region carry out promotion work focused on priority sectors and are developing value propositions which are increasingly in line with the development and growth needs of their respective countries. This is a reflection of the operational maturity of the IPA and of their capacity to dedicate greater efforts to the generation of investment in priority sectors and which corresponds with the best practice recommendations.

In the task of attracting investments, it is commonly accepted that targeting strategies are particularly effective, as Sacroisky (2009) highlights in his study on FDI targeting strategies. This coincides with the recommendation of institutions specialized in FDI, such as UNCTAD, in its World Investment Reports and CEPAL in its reports on Foreign investment in Latin America and the Caribbean.

All the countries of the region are making an effort at targeted promotion as shown in Table 5.7 which presents the sectors promoted by each IPA on its website. The trend has been to evolve towards sectors with greater impact on economic development. This dynamic has encouraged the prioritizing of sectors with higher value added, the capacity to generate employment at a higher educational level and important productive linkages. Table 5.7 brings out how increasing concentration is being given to the area of services exports or BPO, but also how niches of greater value and sophistication are being created within each area. Now it is not just Call Centers involved but financial services and technological development, maintenance or information technology services.

All the countries promote specific sectors but not all do it at the same level of detail and effectiveness. Differences are apparent in the quality of the value propositions and the level of information that these proposals provide. Analyzing the information available in institutional websites and what the targeted sectors highlight, it can be seen that an agency like CINDE presents a sophisticated proposition with detailed, pertinent and very specialized information, which contrasts with the information of CEI or of Proinvex which do not have the same level of communicative or promotional detail that this type of promotion requires, or a proposal of differentiated value. It is recommendable that before coming out and promoting a particular sector that specialized information is available, as well an understanding of the competitive environment and a strategic approach towards the prioritized segment.

Agencies such as Invest in Guatemala and Proinvex, which are in the initial phases of operational development or restructuring, have not yet begun the true work of investment generation. These agencies are still not allocating resources to the task of outreach. The recommendation is that the agencies strengthen this type of promotional activity. Therefore they must dedicated greater financial resources to it, train their staff in outreach campaigns and develop inter-institutional relationships with the main actors in each sector.

The BPO sector, which is of priority interest for all the countries in this study, serves as a reference to understand that the region is still not at the level of best investment attraction practices. Consulting the ranking of the 100 best locations to invest in BPO 2014, published by Tholons consultancy, only one CARD town figures among the 80 best locations, San José of Costa Rica (placed 13th), and scarcely two more, Managua (87) and Guatemala City (92), manage to appear in the first 100. The region must do a lot to be able to match the offer of the Philippines, India or Malaysia. Factors such as promotional capacity, the business climate, institutional support and the availability of qualified human resources still need to be developed in CARD.

In conclusion, the IPA of CARD provide promotional activities for investment generation, in the way that best practices recommend; however, the evaluation indicates that except for CINDE and to a lesser degree ProNicaragua, they must make their value propositions more sophisticated, developed specialized staff dedicated to this task, and allocate more resources to this activity.

Improvement of the investment climate

Another area of fundamental importance in attraction of investments is improvement in the business and investment climate. Thanks to their proximity and constant contact with potential and established investors, the IPA are in a privileged position to identify and monitor the problems and limitations which face investors at the time that they are evaluating installing themselves in the country or, later, in their operative phase. The IPA are in a privileged position to monitor the business climate and identify the issues that are affecting the country cost.

The majority of the IPA are carrying out, in one way or another, the task of improving the investment climate. The agencies participate in or coordinate inter-institutional forums, such as the Public-Private Sector Dialogue of Belize or the Comisión Presidencial de Seguimiento de Nicaragua (the Presidential Follow-up Commission of Nicaragua); they link themselves to competitiveness improvement initiatives, such as the Programa Nacional de Competitividad de Guatemala (National Competitiveness Program of Guatemala) or the Consejo Nacional de Inversiones de Honduras (National Investment Council of Honduras); and in some cases, they dedicate internal resources to assist improvements in this area.

In spite of linking themselves to these activities and participating in multiple initiatives, the reality is that the issue of improving the climate does not seem to be a strategic priority for the IPA of the region. The resources allocated to this function range between 0% and 15%, while a much bigger portion is dedicated to promotion activities.

Considering the importance that the business climate has in the decision of the investor and the low ranking of some countries of the region in reports such as Doing Business of the World Bank and the World Competitiveness Report of the World Economic Forum, it is recommended that the role and importance of this function in the strategy of the IPA is reviewed, as well as the resources dedicated to it. Less promotion and a better investment climate would seem to be the message for certain IPA. As Table 5.9 shows, the API de la region need to give greater priority to the matter of improving the investment climate and competitiveness.

It should be stressed that the IPA are in a position to drive forward, recommend and promote initiatives to improve the business climate but the reforms and legal, regulatory and procedural improvements are in the control of policy-makers

TABLE 5.8 Priority sectors for investment attraction

Sector	Sub-sector	Belize	Costa Rica	El Salvador	Guatemala	Honduras	Nicaragua	Panama	Dom. Rep.
Agro-industrial	Agricultural production	■		■	■	■	■	■	
	Food processing	■				■	■		
	Forestry production								
	Aquaculture	■							
Mining					■				
Light manufacturing	Automobile parts				■		■		
	Footwear			■			■		
Textiles	Basic textiles				■	■	■		
	Specialized textiles			■					
	Clothing			■	■	■			
Advanced manufacturing	Automotive		■						
	Electronic		■						
	Aerospace		■	■					
Life sciences	Medical equipment		■	■					
	Bio-technology		■						
	Contact centers	■	■	■	■	■	■		

(*continued on next page*)

TABLE 5.8 **Priority sectors for investment attraction** (*continued*)

Sector	Sub-sector	Belize	Costa Rica	El Salvador	Guatemala	Honduras	Nicaragua	Panama	Dom. Rep.
Outsourcing of service (BPO)	Finance, accounts and admin.	■	■	■	■	■	■		
	Entertainment and media		■						
	Shared service		■	■	■	■	■		
	Digital technologies		■						
	Engineering/design		■	■					
	Regional offices		■						
	Aeronautics			■					■
Logistical center				■				■	
Financial center								■	
Telecommunications									■
Tourism	General tourism	■		■	■	■		■	■
	Health tourism	■		■					
Traditional energy					■				■
Renewable energies		■			■	■			
	Wind power		■						
Infrastructure					■				

Source: Own elaboration with information from the websites of the IPA.

TABLE 5.9 Principal challenges for the IPA

	Principal challenges for the IPA							
	Belize	Costa Rica	El Salvador	Guatemala	Honduras	Nicaragua	Panama	Dominican Republic
1	Improving competitiveness of the country	Improving competitiveness of the country	N/A	Country Project to Guide Promotion	Country Project to Guide Promotion	Educational project to improve the quality of the workforce	Educational project to improve the quality of the workforce	Improving competitiveness of the country
2	Improvement of the investment environment	Improvement of the investment environment	N/A	Improvement of the investment environment	Coalition Public Sector Private Sector	Improving competitiveness of the country	Coalition Public Sector/Private Sector	Improving competitiveness of the country
3	Educational project to improve the quality of the workforce	Educational project to improve the quality of the workforce	N/A	Improving competitiveness of the country	Improving competitiveness of the country	Improvement of the investment environment	Improvement of the investment environment	Educational project to improve the quality of the workforce
4	Coalition Public Sector/Private Sector	Improve/ optimize tax incentives	N/A	Improve/ optimize tax incentives	Educational project to improve the quality of the workforce	Country Project to Guide Promotion	Improving competitiveness of the country	Country Project to Guide Promotion
5	Country Project to Guide Promotion	Coalition Public Sector/Private Sector	N/A	Educational project to improve the quality of the workforce	Improvement of the investment environment	Coalition Public Sector/Private Sector	Country Project to Guide Promotion	Coalition Public Sector/Private Sector
6	Improve/optimize tax incentives	Country Project to Guide Promotion	N/A	Coalition Public Sector/Private Sector	Improve/ optimize tax incentives	Improve/ optimize tax incentives	Improve/ optimize tax incentives	Improve/optimize tax incentives

Source: Survey of IPA.

and regulatory institutions. It is a joint effort which requires cooperation and coordination, and it depends on the institutional position of the IPA and their ability to influence policy-makers. The fact that changes and reforms are not in the power of the IPA and, frequently, are much delayed generates a high level of initiative-discouraging frustration.

Just as the following chapter highlights, improvement in the investment climate must become a strategic priority for countries of the region and the IPA are in a privileged position to contribute to this task. Therefore it is recommended to:

- Review agency strategy to evaluate the role and impact that improvement in the investment climate can have in the framework of programs and PIAI.
- Make the institutional positioning of the agency fit to fulfill adequately this role of facilitator and drive of reforms to the business climate as well as coordinator of inter-institutional initiatives and technical support to policy-makers.
- Dedicate more human and financial resources to the task of policy advocacy.

To achieve tangible results improving the investment climate it's necessary on the one hand to strengthen the functioning of the agencies in diagnosis, monitoring and policy advocacy; but it is also indispensable that the State and policy-makers realize that they are the principal promoter of investments and that they must therefore play a more proactive role in improving the regulatory and operational framework for FDI.

Strengthening the institutional framework

Agencies must have the resources, institutional status and political support to permit them to carry out their work in a sustained, effective way. This has not been achieved in any of the API of the region and has translated into weakness and obstacles that reduce their effectiveness, limit their roles as active promoters and put in risk their sustainability over time.

Institutional status is a determining factor in the work of any organism and is of particular importance in the case of investment promotion institutions, given that their task is a long-term one, implying continuous, sustained and specialized action. The institutional weakness of the region's agencies translates into:

- Political vulnerability. The lack of institutional status means that agencies run significant risks when there are changes of government. In some cases the operational capacity that has taken a long time to construct disappears the moment the government changes, as happened with Invest in Guatemala in 2005. The lack of legal status creates risks for operational sustainability even

for successful agencies, such as ProNicaragua, which at present operates as a United Nations program which has a completion date.

- Limited capacity for action. The absence of a true coalition between the public and private sectors at the heart of the IPA lessens the influence and impact that these agencies can have. There are cases in which the agency is perceived by the public sector as a private institution which does not address the country's interests and therefore the idea surfaces of creating a new promotion initiative which duplicates the effort (as is the case of FIDE in Honduras at present). Similarly, the opposite situation occurs, in which the agency attached to the public sector does not have adequate credibility and connection with the private sector and this lessens its operational effectiveness and its institutional credibility (this is the case of CEI in Dominican Republic).

The form in which the agencies are instituted also has implications for access to skilled financial staff. To be able to contract staff with a certain level of private sector experience it's necessary to leave the public hiring framework. Institutions of a public character find alternative hiring mechanisms through cooperation or financing programs with multilateral entities, but this generates risks for medium and long-term operational sustainability.

The case of ProNicaragua is worth highlighting. On the one hand, it involves an agency which is positioned as an international reference point for its handling of facilitation; and from the institutional point of view, as its Executive Director stresses, has the best possible model in Nicaragua's current reality—attached to the Presidency and with direct access to policy-makers—, and at the same time close to the private sector, which trusts in the agency's role. However, from the institutional point of view, ProNicaragua is a United Nations Development Program (UNDP) program and has not formal institutional status, which puts it in a vulnerable position. Just as has happened in other countries of the region, the situation can change drastically with a change of government. An additional, not negligible point is that the lack of legal identity also means that the agency has limited direct access to certain funds or financing. ProNicaragua ought to take advantage of its moment of success to strengthen its institutional status and achieve greater autonomy.

Invest in Guatemala is passing through a similar situation. Through not having its own legal identity, it has been affected in the past by the political ups and down of the region. Between 2009 and 2013 the agency was practically forgotten by the government at the time and was very limited in its operational capacity as it could not count on either financial resources or political support. Consequently the current priority for the management of this agency is to endow it with a legal identity.

TABLE 5.10 Institutional challenges for the IPA of the region

Institutional challenge	Agency
Acquire its own legal identity to achieve greater institutional stability and mitigate the impacts of political changes	Invest in Guatemala ProNicaragua Proinvex
Achieve better institutional positioning to strengthen the bridging function between policy-makers and the business sector	FIDE CEI-RD

Source: Own elaboration.

More resources and greater financial stability

As Morrissett and Andrews-Johnson (2003) set out in an analysis of the effectiveness of investment promotion, the agencies need a certain scale to carry out their functions in an effective way. For these authors, the agencies must be able to count on reasonable budgets in order to be able to promote.

Interviews with different agencies indicate that a lack of resources limits significantly their ability to carry out their work effectively. Governments contribute little to the agencies which end up surviving solely on supports and programs from entities such as the UNDP, IDB, World Bank and some European donors. At present, these supports and donations represent more than 50% of the budget of at least four agencies.

Not even the agencies which have their own funds escape from this reality, given that they have seen their financial capacity diminish and have been obliged to make efforts to obtain resources from the public sector to give them some operational and promotional capacity. This shows the lack of financial stability of some agencies of the region, as well as the lack of commitment on the part of some governments to their investment promotion tools. The survey of the IPA confirms that for the majority of them the question of availability of resources and financial stability is top of their current challenges (see Table 5.11).

It's not enough to create a promotion agency, it must have financial resources fit for its function and this has not yet been achieved in any country in the region. Evaluation de IPA budgets goes beyond the reach of this research, but it's clear that the budget of these agencies limits significantly their promotional activity and puts them in a reactive stance with scarce resources to broadcast what the country has to offer.

Opportunities and benefits of a regional coordination initiative on investment promotion

Questioned on the benefits of greater coordination between them, the vast majority of the IPA showed their approval and enthusiasm. It should be noted that they have already taken a first step, meeting in Managua to share opinions and generate

TABLE 5.11 Ranking of agencies' main challenges

	Ranking of agency`s main challenges							
	Belize	**Costa Rica**	**El Salvador**	**Guatemala**	**Honduras**	**Nicaragua**	**Panama**	**Dominican Republic**
1	Financial stability	Financial stability	N/A	Legal personality	Financial stability	Financial stability	Staff Training	More resources
2	Staff training	More resources	N/A	Financial stability	More resources	More resources	More resources	Financial stability
3	Entailment to the private sector	Entailment to the public sector	N/A	More resources	Staff training	Legal personality	Positioning/ recognition of the agency	Staff training
4	Positioning/ recognition of the agency	Staff training	N/A	Staff training	Entailment to the public sector	Staff training	Entailment to the private sector	Positioning/ recognition of the agency
5	Legal personality	Entailment to the private sector	N/A	Positioning/ recognition of the agency	Entailment to the private sector	Positioning/ recognition of the agency	Entailment to the public sector	Entailment to the private sector
6	More resources	Positioning/ recognition of the agency	N/A	Entailment to the private sector	Positioning/ recognition of the agency	Entailment to the public sector	Financial stability	Entailment to the public sector
7	Entailment to the public sector	Legal personality	N/A	Entailment to the public sector	Legal personality	Entailment to the private sector	Legal personality	Legal personality

Source: Survey of the IPA.

discussion on topics linked to attraction of investments. The survey of the agencies as part of this study reveals there is interest in coordinating on topics such as:

- Positioning and promotion of the region's image
- Exchange and sharing of best practices
- Initiatives to improve the investment climate

This initiative ought to be backed by regional and multilateral entities which currently support investment promotion programs in the region. A step in this direction would be programming of regular coordination meetings. The aim should be to create an agenda to evaluate the possibility of creating a Central American association of investment promotion agencies.

Policies to reduce country cost

Investment climate

The business climate, the quality of infrastructure, operating costs, the quality of the labor force and other components are factors considered of high impact on the ability of a country to attract investments.

Studies and reports, such as Doing Business of the World Bank or the World Competitiveness Report of the World Economic Forum, which regularly publish their rankings, have become points of reference and obligatory reading for investors who are evaluation location options for their expansion plans as well as for countries which want to measure the quality of the business climate.

Perception of the quality of the business climate determines the attractiveness of a country and in many cases precedes any action on image promotion. It's not enough to achieve visibility with potential investors, it's necessary to have an attractive business climate to be able to win over the investor and become part of the short list of location options for investment projects.

Country cost and attraction of FDI

One way to give greater relevance, impact and force to the investment climate is to use the country cost concept. The experience de Brazil shows how the introduction of the term *Custo Brasil* (Brazil cost) has served to highlight the importance of the business climate. The publication, discussion and analysis of *Custo Brasil* is now an integral part of union debates and generates a whole agenda of work and federal and state level. From the point of view of communication, talking about country cost has more impact than talk of improving the investment climate.

GRAPH 5.3 **Correlation between *Doing Business* and *World Competitiveness Report* for countries of the region**

Sources: Own calculations on the basis of Doing Business (World Bank, 2014) and World Competitiveness Report (WEF, 2013).

Country cost is a concept which measures the cost of operating and/or carrying out business in a country and groups together transaction costs which distort and impede competitiveness and attraction of investments for economic development (Penfold-Becerra, 2002). Country cost is clearly a fundamental factor for all the PIAI:

- Promotion agencies consider country cost when they determine their promotion strategy.
- Fiscal incentives are granted as a compensation for high country cost.
- Policies to improve the investment climate are based on country cost and on the design of reform agendas that need to be pushed forward.

Graph 5.3 presents the ranking of the countries of the region in two reports, as well as that of some competitors from the Asian continent. Both indicators are very correlated, as can be seen in the graph.

Policies and instruments to reduce country cost in CARD

Beneath the rubric of policies and instruments to improve the investment climate or diminish country cost can be grouped all those actions and reforms which:

- Seek a reform of the regulatory framework for the investor
- Reduce transaction costs

- Strengthen the institutional framework
- Eliminate administrative barriers
- Reduce labor cost
- Tackle the problem of public insecurity
- Reduce the costs of infrastructure and services
- Reduce legal costs and property duties
- Ameliorate tax cost

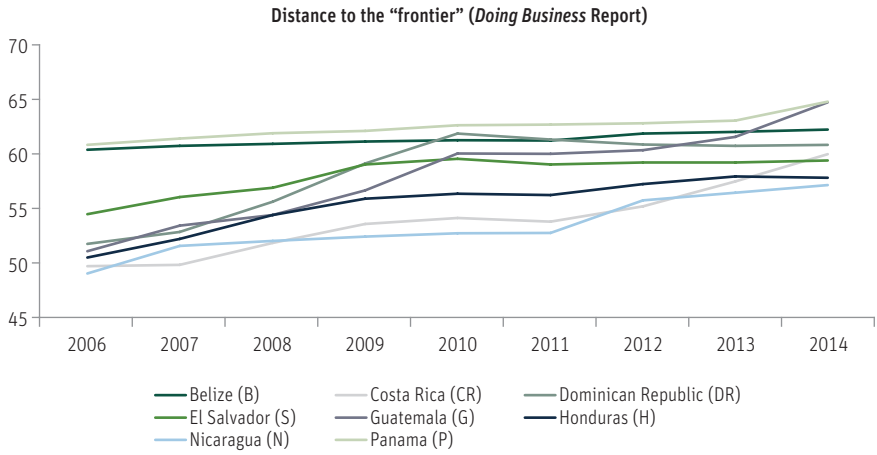
These initiatives to improve the investment climate start from the principal that there is a relationship between country cost and attraction of investments, a link which has been amply analyzed. In the 2012 Doing Business report from the World Bank, it is noted that more than two thousand articles have been published highlighting the relationship between FDI and the index. Equally, an analysis of the evolution of the index in the past four years shows that a better performance in Doing Business is associated with higher investment flows (Jayasuriya, 2011).

Reducing country cost with the aim of attracting more and better investment has been part of the efforts of the PIAI in recent decades. Significant resources have been dedicated to it, with the support and financing of entities such as the World Bank and IBD. Among these efforts it is worth highlighting:

- Competitiveness improvement initiatives which several countries of the region have carried out and which, in some cases such as that of Guatemala, included the putting in place of national competitiveness programs with very complete diagnosis which generated agendas for action.
- Doing Business monitoring mechanisms, as a proxy for the state of the business climate, to then formulate proposals for improvements and reforms.
- Monitoring of the World Competitiveness Report to evaluate the competitive position of the country.

The link between lower country cost and attraction of investments is confirmed by the analysis the World Bank carries out in *Doing Business*. This report stresses the relevance of the "Distance to frontier" indicator, which measures the distance of each economy from the "frontier", which is the economy with the best performance of all included in the *ranking*. The indicator is on a scale of 0 a 100, where 0 represents the lowest performance and 100, the best, which is the "frontier". According to the World Bank, a smaller distance from the frontier means higher investment flows. For example, the World Bank estimates that in the case of Costa Rica the impact of improving the distance to the frontier by 1% would represent an increase of 21%

GRAPH 5.4 Distance to the "frontier"



Source: *Doing Business* (World Bank, 2014).

in annual FDI flows. More importance must be given to these policies and greater help to the proposed changes.[4]

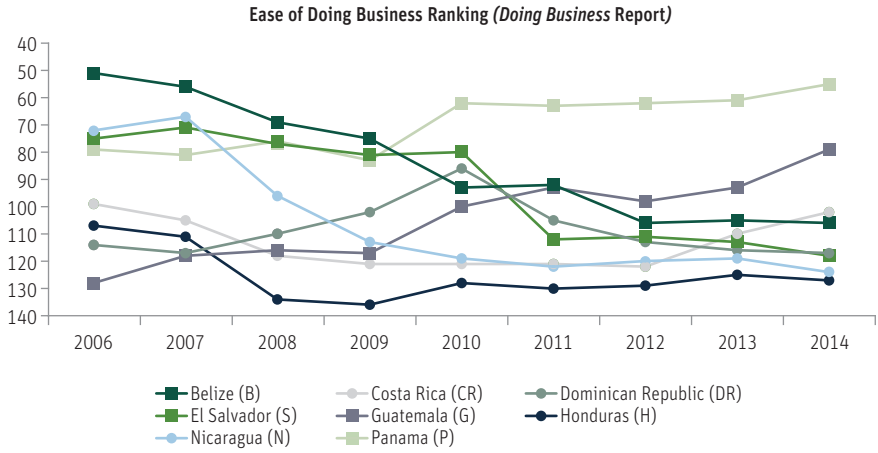
A lot of diagnosis but little effectiveness

In spite of the initiatives to improve competitiveness and improve the business climate, in general terms, the countries of the region have not been able to achieve significant or sustained progress on their country costs. Analyzing the trend of Doing Business and the World Competitiveness Report, it can be seen that the indicators do not show structural improvements in the region and Panama and Guatemala are the only ones who achieved more notable positions in the 2006–2014 period. Considering that the indices represent a ranking, the read-out is that the countries have not improved their position relative to other locations; that's to say, the improvements effected in the business climate were not greater than those which have taken place in other countries.

The fact that countries of the region have not managed to reduce their country cost in a meaningful way raises questions about the PIAI which aim at improvement of the investment climate in particular, as well as the PIAI framework in general. The lack of action and effectiveness on the part of countries in implementing and executing PIAI

[4] On the other hand, it must be stressed that investment flows depend on a multiplicity of internal and external factors, so that the predictive value of changes in "distance to the frontier" on FDI flows over a certain period of time is limited.

GRAPH 5.5 Evolution of the *Doing Business* index 2006–2014

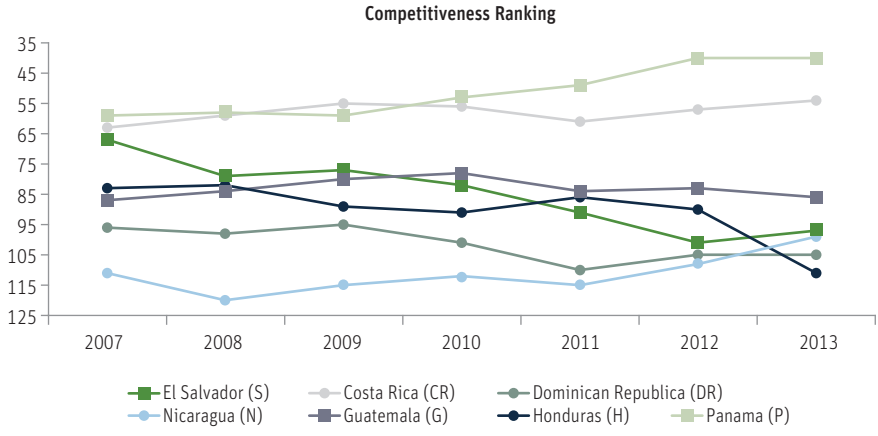


Source: *Doing Business* (World Bank, 2014).
Note: The ranking uses a different methodology and number of economies through the years.

which can diminish country cost reduces the effectiveness of investment promotion policies, on the one hand; and it also obliges more intensive use of fiscal incentives as a compensation mechanism for a country with elevated country cost.

Actions and policies for improvement in the business climate executed in recent decades have generated excellent diagnosis whenever they have led to road maps

GRAPH 5.6 Evolution of the ranking of the *Global Competitiveness Report*



Source: Own calculations on the basis of the *World Competitiveness Report* (WEF 2013).

and recommendations to reduce the gap with the principal competitors; but they have not succeeded in generating the necessary changes to reduce in a significant way the country costs of the majority of the countries of the region.

Attacking country cost requires more and greater efforts

The assessment indicates that the PIAI to reduce country cost have not achieved the desired results and the region has in general high country costs which are obstacles to the attraction of investments and harm competitiveness.

Opinions gathered from interviews carried out for the report indicate that it is necessary to intensify initiatives to improve country cost and, above all, increase efforts to implement the recommendations of the diagnoses that are made. There is a consensus in all the countries on the need to undertake and execute PIAI of greater effectiveness and impact on the business climate. The analysis of the IPA region confirms this need, since they all agree on the need to act to improve the investment climate if greater effectiveness in attracting investments is sought. This requires a strategic refocusing:

- The IPA dedicate, on average, less than 10% of their effort and resources to the theme of improving the business climate (between 0% and 15%).
- On the question of how they should carry out their functions, all those directing the IPA agree that improving the investment climate is a strategic priority. Improving the investment climate and improving competitiveness are in first and second place of the priorities for all the agencies surveyed.

Achieving greater political will

Almost all the agencies of the region stress that their diagnostics and development of proposals does not translate into changes because they do not find the political will required to press ahead with the legal and regulatory reforms that they put forward. Many draft bills stagnate in the anteroom of the legislators responsible and later disappear as political change takes place. The absence of political will has put a brake on the region where country cost is concerned. The fact is that legislators do not appear to assume the role of agents of development and that a high cost for their respective countries in that it slows investments. The opinions of the entities linked to the issue of investments and competitiveness gathered in this study are all that regional competitiveness agenda is limited by the lack of political will which is subject, in its turn, to the positions of the particular interest groups in each country.

It's fundamental that the countries, and in particular its policy-makers, take on the challenge of improving country cost. The task of internal lobbying must be intensified

in order to succeed in turning proposed reforms into State political projects which translate, in their turn, into significant changes and improvements in country cost.

Design of the region's own indicators

The countries of the region tend to measure their country cost on the basis of international indicators which, although they have the advantage of international recognition, do not necessarily reflect the reality of the country, nor its needs. The design and implementation of an evaluation tool made to the measure of its national reality and its development policies would be of great benefit to the countries of the region. The creation of an index of country cost similar to that of Brazil would serve the purpose of refining the PIAI and establishing their own mechanisms for following up on initiatives. This index would permit them to present the theme of competitiveness and the business climate to audiences key for the topic of improving operating costs in the country. Policy-makers, opinion formers, business association and existing and potential investors: all would have the same point of reference for the measurement of the country's performance and the definition of improvement agendas.

It is possible to start with the most used indicators now, such as those of Doing Business and the World Competitiveness Report and "tropicalize them", to adapt them to the realities of each country. Advantage could be taken of the experience of INCAE in competitiveness studies to develop an initial framework of definition shared between the countries of the region which could be adapted, in its turn, to each one, according to its needs.

Regional coordination

Taking account of the efforts carried out, the similar reform agendas, and the difficulty of implementing changes seen in the different countries, there are opportunities for synergies in the coordination of efforts to optimize the PIAI to improve country cost in the region. If the recommendations expressed earlier are adopted, it can be seen that a regional coordination and cooperation effort could generate individual benefits on the way to share experiences and initiatives or reduce the financial cost which developing new instruments and diagnosis implies. The design of a country cost index and coordination to succeed in driving forward regulatory reforms are examples of synergies which can be achieved in improving the investment climate.

Action plan for facilitating investments from the countries of the Asia-Pacific basin

The Investment Facilitation Action Plan (IFAP), proposed by the Asia-Pacific Economic Cooperation forum (APEC) in 2009[5] is an example of an initiative which seeks to

[5] APEC (2009).

address the need for indicators appropriate for regional coordination. The purpose of IFAP is to improve the attractiveness of APEC and increase investment flows.

This initiative allowed a shared methodology for measuring the investment-facilitating efforts of countries of the region to be defined. The IFAP seeks to establish a framework which might serve as a guide for the objectives and development of PIAI and of actions which improve the attractiveness and potential of an economy to attract FDI. It has eight main guides and for each one of them identifies a series of actions,[6] which essentially seek to improve:

- The availability of information necessary for investor decision-making
- The process of formulation of foreign investment policies
- The attractiveness of member economies of APEC to foreign investors, through reduction of country cost and the risks to foreign investment.

A successful case: the Investment Ombudsman office, South Korea

An example worth evaluating is that of the Investors' Ombudsman within KOTRA, the investment and export promotion agency of South Korea.[7] The Ombudsman is an executive designated by the President of the Republic to address the issues, problems and complaints of investors. A specialized structure dedicated to assist with country cost. The Ombudsman's office has professionals who deal with legal, financial, accounting, regulatory and labor topics and who deal directly with investors to identify their needs and guide them to public bodies and policy-makers with the aim of resolving their problems and overcoming the obstacles in their way.

Investment incentives

The third component of the PIAI framework evaluated in this analysis is the incentives and investment benefits granted by governments to investors to promote investments in priority areas, regions or sectors, to create jobs or to increase exports. After creating country visibility through active promotion by the IPA and improving

[6] These are: (i) to promote accessibility and transparency in the formulation and administration of policies related to investment; (ii) to foster stability in the investment environment, property rights and investment protection; (iii) to improve the predictability and consistency of policies related to investment; (iv) to improve the efficiency and efficacy of investment procedures; (v) to develop constructive relationships with all the entities related to the investment climate; (vi) to implement new technologies to improve the investment climate; (vii) to establish monitoring and control mechanisms for investment policies; (viii) to improve international cooperation.
[7] http://www.investkorea.org/ikwork/ombsman/eng/index.jsp

competitiveness through initiatives to reduce country cost, governments seek to improve the expected profitability of the investor through the granting of incentives.

As UNCTAD indicates in its most recent report on FDI,[8] there is no uniform definition of what an investment incentives consists of, but it can be described as any non-market benefit which is used to influence the investor's behavior. Investors can be granted incentives by national, regional or municipal governments and they can be given in many different ways. They are classified, generally, in three categories: financial incentives, fiscal incentives and regulatory benefits.

Fiscal incentives are no more than instruments which seek to reduce the impact of taxes on certain areas of activity and create exemptions to the general tax regime. In the opinion of the main investment-promoting agents, these policies seek to offset high country cost and thereby match the conditions offered by neighboring countries. Recent empirical evidence shows that fiscal incentives are particularly ineffective at attracting foreign direct investment in countries with a poor investment climate, so that the fiscal incentive does not necessarily act to offset high country cost through a bad climate (see James, 2013).

Fiscal incentives include, among others, reduction in income tax or exemptions for a period of time, investment subsidies, tax credits, the possibility of accelerating depreciation of assets or extending the amortization of accumulated losses, and the reduction of barriers on certain imports. In CARD, the PIAI have focused on granting fiscal incentives and financial benefits and regulatory benefits have hardly been used.

It's important to stress that practically all the countries in the world grant fiscal incentives of some sort and in particular those countries whose national markets are small and with low purchasing power. That is the case for CARD countries which are naturally making every effort to create an more attractive value proposition for firms which seek a production base to export to other markets (efficiency-seeking), through the granting of fiscal incentives.

In Central America, the use of fiscal incentives had its origin in the 1960s when import substitution policies began and support was sought for basic and nascent industries. From the second half of the 1980s laws to stimulate non-traditional exports appeared and began to proliferate in the free zones. Practically all the Central American countries put in place incentive policies to attract foreign direct investment and promote exports. The creation of free zones became the favorite tool and the different countries threw themselves into an incentives war to supply the most attractive fiscally beneficial environment. Maquiladora activity emerged

[8] *World Investment Report* (UNCTAD, 2014).

from this and, from the 1990s, become an economic engine for many countries of the region and an activity that proved a big generator of unskilled employment.

Annex 2 provides a list of all the incentives now in force in the CARD countries. As it details, all the countries of the region have fiscal incentive policies focused on fiscal moratoriums (exemption from income taxes and from import barriers) and, to a much lesser degree, on indirect tax incentives.

Controversial instruments and questioned effectiveness

Fiscal incentives are highly criticized and questioned instruments in the world by policy-makers and fiscal experts who doubt their impact and criticize their cost. The empirical evidence is controversial and there is no consensus or unanimity, as Chapters 2 and 4 of this publication shows. Without aiming to undertake a technical analysis of fiscal incentives, the axes of the debate on which the questioning turns with regards to investment incentives are these:

- **Overvalued by investment promoters.** They are designed and implemented on the premise that they represent a fundamentally import element for the location of investment. But many studies stress that the fiscal incentive is a secondary factor in the location decision of the investor and that other factors, such as access to the market, the business climate and competitiveness, have greater weight.
- **Fiscally costly.** The tax spend, that's to say, what the State ceases to receive as a consequence of these special tax treatments, is considered by many policy-makers a too high fiscal cost.
- **Frequently redundant.** Just as the authors of the study, Collection Is Not Enough[9] highlight, the incentives frequently benefit projects which would have gone ahead without them.
- **Technically neglected.** In the region, there is no culture nor follow-up mechanisms for monitoring and evaluation of the incentives. In the best of cases, an ex ante study is carried out to weigh the impact of the project, but after the investment, there is no follow up on its impact nor a cost-benefit analysis of the incentives granted.
- **At regional level, a race to the bottom can be provoked.** Competition in incentives turns into higher costs for the countries as a whole and ends up creating a situation in which the incentive becomes the norm, not an exemption. An incentives war benefits no region and becomes what Kenneth Thomas calls "a race to the bottom which does not generate real benefits and threatens a country's development." (Kenneth, 2011).

[9] Ana Corbacho *et al.* (2013).

- **Regionally uncoordinated.** Policy-makers do not seek shared positions, so that policy frameworks are defined in an individual way in each country and end up being ineffective and generally more expensive. After one country carries out a reforms, all the others are obliged to match it, provoking an incentives war.

Central America does not escape this reality and many consider that the tax systems of the region grant excessive exemptions without measuring exactly the real benefit that these instruments generate for countries (Martínez Piva, 2011). The Instituto de Estudios Estratégicos and Políticas Públicas de Nicaragua (IEEPP—The Institute of Strategic Studies and Public Policies of Nicaragua)[10] points out that what the State gives in benefits it pays for in a higher country cost, given that its capacity to finance its development is weakened and it is obliged to seek complementary financing.

Rethinking the role of fiscal incentives and achieving greater effectiveness

International practices and the opinions received during this evaluation show that it is important to carry out an in depth review of the function that incentives play and the effectiveness of these instruments. In the current competitive environment, incentives end up being a necessary evil. It's known that they are costly and inefficient but it's not possible to get rid of them given that competitor countries outside the region are going to continue granting them. On the other hand, however, countries of the region cannot afford the luxury of continuing to grant incentives without any measure of their efficiency or carrying out a cost-benefit analysis of these policies. The region's lack of fiscal resources risks being made more acute by a fiscal incentives war that become a race to the bottom.

The recent study by the Vale Columbia Center on Sustainable Investment[11] presents an approach segmented by different sorts of investor and highlights that the effectiveness of investment incentives varies depending on the type of business and the motives of the investment (see Table 5.12). Investors which are looking for efficiency to be able to export to third markets are more sensitive to fiscal incentives than other types of investors. A recent survey as part of an evaluation of fiscal incentives in El Salvador confirms this overall result, finding that the Salvadoran textile sector is more sensitive to incentives, since the majority of the managers surveyed indicated that without the incentives they would not have invested in El Salvador.

[10] IEEPP (2010).
[11] Vale-Columbia Center for International Sustainable Investment (2013).

TABLE 5.12 Prevalence of fiscal incentives in the world

	East Asia and Pacific	Eastern Europe and Central Asia	Latin America and the Caribbean	Middle East and North Africa	OECD	South Asia	Sub-Saharan Africa
Number of countries evaluated	**12**	**16**	**24**	**15**	**33**	**7**	**30**
Tax exemption	92%	75%	75%	73%	21%	100%	60%
Reduction in the tax rate	92%	31%	29%	40%	30%	43%	63%
Tax credits	75%	195	46%	13%	61%	71%	73%
Reduction/ exemption of VAT	75%	94%	58%	60%	79%	100%	73%
Fiscal incentives for Research and Development	83%	31%	13%	0%	76%	29%	10%
Mega-deductions	8%	0%	4%	0%	18%	57%	23%
Free zones /special economic zones	83%	94%	75%	80%	67%	71%	57%
Discretionary processes	25%	38%	29%	27%	27%	14%	47%

Source: James (2013).

Countries of the region must evaluate their incentives framework in the light of their own realities and the typology of the investments they seek to attract. Given that it seems impossible to be competitive in attracting investments without incentives, the recommended road is to review the incentives framework and their institutional framework with the aim of adapting them not only to the requirements of the World Trade Organization (WTO) and the competitive environment, but also to the plans and development objectives of the country. The goal is to advance towards a new generation of more effective fiscal incentives and to strengthen the institutions responsible for evaluating the benefit they bring. Some countries of the region are already advancing in their evaluation of the fiscal incentive framework. That is the case for El Salvador which is at present carrying out a cost-benefit analysis as well as measurement of how the incentives impact on the investor's choice of location.

TABLE 5.13 Response of FDI to fiscal incentives by type of investor

Type of investment	Determining factors for the investment	Response to investment incentives
Seeking natural resources	Access to natural resources, raw materials, unskilled labor.	Low response; determined principally by non-tax factors.
Seeking markets	Access to market (size, per capita earnings, consumer preferences).	Low response. They seek fair conditions for firms.
Seeking strategic assets	Access to strategic assets (brands and positioning in the market, *know-how*, technology, distribution channels, human capital).	Low response. FDI is determined by the location of the strategic resources.
Seeking efficiency gains	Lower costs. Access to external markets since generally export-oriented, access to low-cost, qualified labor. Low relocation costs.	High response to fiscal incentives. These investors must be globally competitive, the lower the costs, the greater their capacity to compete.

Source: Vale Columbia Center for Sustainable International Investment (2013).

Adapting to the requirements of the World Trade Organization

Adapting incentive policies to the new WTO requirements is an opportunity to take a more strategic approach aiming to furnish each country with a more effective incentives scheme.

The WTO considers special regimes which regulate the free zones and establish export incentives as export subsidies and, therefore, contrary to the Agreement on Subsidies and Countervailing Measures. To meet the WTO rules, governments and investment promotion agencies in the region have had to proceed to dismantle these special regimes and begin a redefinition of their investment attraction strategies.

New generation incentives are being designed which do not contravene the subsidy regulations. It's an opportunity to achieve a strategic approach and evaluate the results obtained to date.

However, the reality of the recent reforms in countries such as Costa Rica and El Salvador points towards more of the same. Certain adjustments are made to comply with the regulations but the opportunity to modernize the incentive framework and coordinate with other countries is missed. This provokes a vicious circle, since countries like Honduras and Guatemala are "obliged" to follow the path traced by the first reforms and put forward changes which do not necessarily benefit the country nor generate the fiscally sustainable framework required.

The need to monitor and evaluate the real benefit created by the exemptions granted

Within the scope of this analysis it wasn't possible to identify any country in the region with a good measure of the benefits generated by exemptions. This observation is similar to one expressed by ECLAC in an analysis of the effectiveness of incentives in which in a group of fifteen Latin American and Caribbean countries none had ex post evaluations of the impacts of tax exempt projects. It highlights the need to create institutional control mechanisms for incentives granted and exhaustive measurement of the benefits received. At present El Salvador, with World Bank support, is realizing an evaluation of its incentive framework and a cost-benefit study, and could become the first country in the region with an up-to-date view of its PIAI of investment incentives.

Taking advantage of the benefits to some sectors of activity

Besides targeting exemptions on strategic sectors, there are activities which enjoy preferential treatment within international regulations and which therefore should be evaluated by each country as a potential area of attraction for investments. As Martínez Paiva (2011) highlights, there are sectors to which incentives can be given without contravening WTO regulations on export subsidies. Beyond exports of services, Research and Development activities and environmentally related areas stand out as opportunities which should be evaluated carefully when the incentives are updated and when investment generation strategies are reviewed.

Of particular interest is the environmental sector which is not only suitable for granting of fiscal incentives but also represents an important development area.

Taking care of stability for the investor

Investors seek stability and predictability in the rules of the game and therefore it's important that countries are cautious when initiating reforms to the tax regime and seek to maintain a certain tax stability. Changes and reforms must be carried out taking into consideration the agreements already reached with current investors, and in such a way that distortions are not generated in the fiscal framework nor inequalities between different types of investor.

Capturing the benefits of regional coordination to optimize the PIAI for fiscal incentives

Countries of the region define their incentives framework in the light of what their neighboring competitors do, which in practice translates into an incentives war whose main beneficiary is the investor.

This strategy needs to be rethought to abandon individual positions and seek forums for debate which allow tax spending to be minimized, investment attraction methods other than fiscal incentives to be identified, and joint positions to be adopted which strengthen the region in general and each economy in particular. The countries of the region must take on board that they will achieve greater benefits individually if they coordinate reforms to the incentive system at regional level. It should be stressed that this coordination could be of great value now as the region adapts to the WTO requirements.

Incentives and investment climate

Evaluating the effectiveness of policies as PIAI leads on to considering the investment climate as a determining factor in investment attraction. Incentives in general and fiscal ones in particular seek to offset high country cost. Zolt (2014) indicates that governments must focus their efforts on improving the investment climate and reducing country cost and not on simply granting exemptions and fiscal benefits to the investor. Sebastian James of the World Bank has set out in many publications (ser, for example, James, 2013) that the effectiveness of fiscal incentives in attracting investments is directly linked to the investment climate prevalent in the country. James notes that the incentive can be up to eight times more effective in a country with a better investment climate (James, 2010).

Greater attention to the investment climate is the common denominator in evaluation of the effectiveness of the PIAI. The message to governments of the region is that the more they succeed in reducing country cost and improving competitiveness, the more effective they will be in attracting investments.

Evaluating incentives which promote educational initiatives and training

Opinions gathered in the course of this analysis from policy-makers, opinion formers and investment promoters highlight the need to implement education initiatives and labor force training. Comments on the difficulty of supplying a sufficiently trained and generally bilingual resource are increasingly frequent. This subject lack a strategic, priority approach in the PIAI, in spite of its growing relevance for investment attraction.

Evaluation of the incentives granted by countries of the region shows they have been mostly fiscal and that financial ones have not been an important element in the PIAI, and that fostering education and training is not incorporated into the policies.

Quality and availability of human resources has become little by little the Achilles' heel of CARD. It is well-known that in some of the countries it is becoming increasingly difficult to obtain trained labor, and this is now an acute problem in some export

service areas. The fact is that the services sector is the main source of attraction for investments in the region, as the recent UNCTAD report on investments confirms. This implies the countries face an important challenge providing qualified human resources. As was shown above, the IPA seek proactively to attract investors in the BPO area but the growing lack of skilled staff may become a significant limiting factor for the investment value proposition.

To maintain the investment-attracting dynamic in the services sector it's necessary that countries of the region realize that education and technical training must be an integral part of PIAI. Without them, the region is not going to be able to compete in these higher value added areas such as financial services, technological development or health tourism.

Financial or fiscal incentives to promote or support training of human resources has become a priority for the region and therefore it's indispensable and urgent to implement PIAI which spur education and training. Countries such as the Philippines and Malaysia have understood this and have developed a comparative advantage in the service sector area because they have quality human resources available. Malaysia's case is of particular interest in that besides MIDA, the national IPA, the country has another entity, the MST, which specializes in promoting the information technology sector. This body has established a program to nurture human resources called the Malaysia Talent Development Program, which offers financial benefits to firms which invest in education programs for its workers.

It's important to note that Costa Rica has already taken up the challenge of attacking the problem and is carrying out initiatives aimed at improving skills' levels. This is manifest in Development of Human Talent, research carried out by INCAE at the request of CINDE, which identifies training as key to compete for FDI (Trejos *et al*., 2012).

Taking account of the current and future potential which the services sector has for the region, making ready and training human resources becomes a priority, necessary factor and obliges the PIAI to be adapted to stimulate programs, initiatives and investments in this area.

Conclusions and implications for public policies

Evaluation of the PIAI in the eight countries of the region shows clearly that, in spite of the fact that each one of the countries has an extremely complete policy framework in which the actions of the IPA, initiatives to improve competitiveness and a fiscal exemption scheme stand out, reforms and changes could make them more effective.

In the first place, many of the IPA require greater institutional and financial support to carry forward their work. It's not enough to create an IPA, it must be given an institutional identity and financial resources fit for its duties and this is a task that remains pending in some countries of the region.

It's indispensable to strengthen institutions so that they can succeed in their mission and it's therefore important that the region's governments review the role and expected contribution of their agencies. They must also evaluate the impact of the budgetary limitations place on the IPA. The task of promotion is specialized, long-term and very expensive. It must be sustained over time and faces a competitive environment which makes no distinction between small countries and big ones. Both seek to influence the investor and therefore fight in the same ring.

The IPA must also review their strategic priorities and rethink their activities. Improving the investment climate and attending to the already established investor seem to be under-estimated aspects of their work if international experiences are considered. A coordination initiative between the IPA of the region ought to be evaluated, since it could translate into higher efficiency and synergies in the task of attracting investments.

The position with the PIAI and country cost is similar because the results that were hoped for have not been achieved. There have been many high level diagnoses with ambitious agendas to improve competitiveness but few real changes. The commitment and political will needed to drive change ahead and approve reforms suggested by many studies has been lacking. As was said before, improvements in the business climate have a direct and significant impact on the capture of FDI flows. Governments of the region have given active backing to studies and competitiveness programs (generally financed by third parties) but have not garnered the political will to launch the reforms that emerge from the diagnoses.

TABLE 5.14 Principal recommendations relating to the IPA

Agent	Recommendation
Governments	Review the institutional status of the agency and furnish it with a legal identity to reduce its vulnerability to political ups and downs. Increase budgetary endowment. Prepare to replace the supports the IPA receive now from donors and multilaterals.
IPA	Review strategic priorities to improve institutional effectiveness. Give priority to improving the investment climate. Greater attention to the established investor. Evaluate mechanisms of coordination between the IPA of the region.

Source: Own elaboration.

TABLE 5.15 Principal recommendations in relation to country cost

Recommendations
• Greater priority to country cost agendas in order to support investment promotion efforts. • Greater political will to implement the legal reforms that have been identified. • Create mechanisms to incorporate the recommendations and contributions of the IPA. • Develop a country cost indicator which considers the development priorities of the country and complements the *Doing Business* index of the World Bank and the *Global Competitiveness Report* of the World Economic Forum. • Foster regional coordination initiatives to achieve synergies in the improvement of country cost.

Source: Own elaboration.

Fiscal incentive policies have become a very popular instrument but a much questioned one and with unproven effectiveness. Governments must seek to measure the effectiveness of the incentives granted and therefore need cost-benefit studies of projects after the investment has been made. These policies must be reviewed with the aim of evaluating their impact and determining if the fiscal sacrifices conceded in the incentives war make sense.

Analysis of these three components of the PIAI framework reveals that the investment climate does not only have a big impact on attraction of investments but also on the effectiveness of advocacy and fiscal incentives. To succeed in attracting more and better investments, governments must reduce country cost. Initiatives and action which improve the investment climate will have a positive impact on the effectiveness of the IPA activities and on the fiscal incentives that are granted.

Beyond the competitive environment in the region, the absence of initiatives to coordinate and discuss has a strong impact on the effectiveness and efficiency of the different PIAI that the countries implement.

The lack of coordination on PAIA between CARD countries translates into higher costs for promotion and competitiveness initiatives, and benefits investors who obtain higher fiscal exemptions because of the incentive war.

TABLE 5.16 Principal recommendations regarding fiscal incentives

Recommendations
• Take advantage of the opportunity to adapt to the requirements of the WTO in order to optimize their use. • Implement monitoring mechanisms for projects and evaluation of the benefits. • Evaluate incentive schemes used by other countries. • Foster greater regional coordination on fiscal incentive policies.

Source: Own elaboration.

The recommendation is that countries of the region should evaluate the potential benefits of greater coordination and cooperation on PIAI. Further to what was set out in earlier chapters on recommendations for the three pillars of PIAI, an inter-regional initiative ought to form part of high level recommendation for the countries of the region.

There are examples of regional coordination programs, such as the MENA-OECD investment program, between countries of the Middle East and North Africa (MENA, in its English initials) and OECD members. This initiative, highlighted in an ECLAC study on public incentives to attract FDI (Martínez Piva, 2011), aims to raise the region's investment attraction capacity through a forum to exchange information on best practices.

This is an initiative that CARD could emulate, under the auspices of a multilateral organism, and which could create benefits and valuable synergies in areas such as:

- Coordination of promotion initiatives and strengthening of the IPA institutionally in the region.
- Pushing forward reform initiatives to improve country costs, as was highlighted previously.
- Uniting stances on fiscal reforms to make fiscal incentives more effective and create greater institutional capacity to measure the benefits.

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Annex 1
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Annex 2
Principal incentive laws in CARD countries

Law	Fiscal Benefits	Sectors /Focus
Belize		
The Fiscal Incentives Law	• Importation free from taxes for 15 years. • Companies dedicated to agricultural, agro-industrial, food processing, fishing or manufacturing, with intensive labor and export-oriented production will be able to benefit from an exemption period of up 25 years.	
Export processing Zones	• Fiscal exemptions for importation and exportation. • Exemption from Payment of Taxes on Dividends, Property and Land taxes, VAT, Taxes on sales and consumption. • Guarantee of exemption from Import Tax for 20 years, with the option of extending the deadline, and of deduction of losses from the benefits in the following period.	Firms dedicated to exports
Free trade Zones (CFZ)	• Exemptions from taxes on entry of merchandize or other goods. • Exemption on the tax on benefits, capital, earnings or other corporate taxes for the first 10 years. • Exemption on these taxes for the first 25 years of operations for dividends paid by the firm in a free trade zone. • No government taxes on use of foreign exchange. • Deductions on earnings tax after the first 10 years of operation. • Companies with losses in first 10 years de operations can deduct them in the 3 years following the 10 with exemption from taxes.	Firms located in free trade zones
Law of International Business Societies (IBC)	• Total exemption from income tax. • Exemption from taxes on dividends or any other distribution de capital, paid by the company to personas residents in Belize or not. • Exemption from payment of taxes on interest, income, royalties or compensations paid by the company to non-residents in Belize. • In some cases, also exempt from payment of fiscal stamp tax.	

Law	Fiscal Benefits	Sectors /Focus
Costa Rica		
Free Zones Law	• Exoneration of 100% on taxes for imports of raw materials, parts and capital goods. • Exoneration or reduction of taxes on corporate income. • Exoneration of 100% on export taxes, local sales, taxes on specific consumption goods. • Exoneration of 100% on capital taxes.	General. Especially strategic sectors: advanced manufacturing projects, life sciences, research and development, innovative projects
Incentives for tourism (Law Nº 6990)	a. Hotel services: i. Exemption from all tax and surcharges on the importation or local purchase of articles indispensable to new firms or established ones which offer new services. ii. Accelerated depreciation. iii. Exoneration from territorial tax, for up to 6 years from the signing of the contract, for establishments which locate outside the metropolitan region. b. International air transport and national tourist transport: i. Accelerated depreciation. ii. Exemption from all tax and surcharges for importation or local purchase of parts necessary for the functioning of aircraft. c. Aquatic transport of tourists: i. Exemption from all tax and surcharges for the importation or local purchase of indispensable goods, whenever they are not fabricated in the territory of signatory countries of the Convention on the Central American Tariff and Customs Regime ii. Accelerated depreciation. iii. Exoneration from all tax and surcharges, except for import tariff duties (20%). d. Travel agency receptive tourism: exoneration from all tax and surcharges, except for tariff duties for the import of vehicles for collective transport with a minimum capacity of 15 people. If the *ad valorem* tax tariff exceeds 5%, the tax obligation correspondent to this tariff excess will be exonerated. e. Leasing of vehicles to foreign tourists and nationals: exoneration of 50% of the total sum resulting from applying prevailing taxes which affect the importation of automotive vehicles destined exclusively to be leased to tourists.	Tourism sector

Law	Fiscal Benefits	Sectors /Focus
El Salvador		
Law of Industrial and Commercialization Free Zones	• Exemption from income tax; municipal taxes on assets and equity; tax on the transfer of property. • Exemption from tariff duties and other taxes on imports of machinery and equipment, and on imports of raw materials and other necessary goods.	Benefits to individuals and companies, national or foreign
International Services Law	• Exemption from tariff duties and other taxes on necessary importation for execution of incentivized activity. • Total exemption from income tax for earnings coming from incentivized activity, during the period that operations are carried out in the country. • Total exemption from municipal taxes on the assets of the firm, during the period of operations in the country.	National or foreign firms which provide international services. (Strategic services)
Tourism Law	• Total exemption from income tax for a period of 10 years. • Exemption from VAT and tariffs for imported goods. • Total exemption from taxes on transfers of property for the acquisition of property to be used in the project. • Partial exemption from municipal taxes (up to 50%) for a period of 5 years.	• National and foreign investment in the tourism sector. • Minimum investment of US$ 25,000
Law for Incentives to Renewable Energies	• Exemption from tariff duties on importation of machinery, equipment, materials and inputs • Exemption from income tax for a period of 5 to 10 years. • Total exemption from payment of taxes on earnings coming directly from the sale of certified reductions in emissions.	Renewable energies
Guatemala		
Law for Fostering of Export Activity and Maquila (Nº 29–89)	• Temporary exoneration from 100% of tariff duties and charges applicable to importation of machinery, equipment, raw material and others. • 100% exoneration on import tax (ISR) for 10 years. • Temporary exoneration of 100% of VAT.	
Free Zones Law (Nº 65–89)	• 100% exoneration of tariff duties and charges applicable to importation of machinery, equipment, raw material and others. • 100% exoneration of income tax (ISR) for 10 years; 100% exoneration of VAT; 100% exoneration on Unique Tax on Property (ISUI) for properties utilized in the free zones for 5 years.	Firms located in free zones.

Law	Fiscal Benefits	Sectors /Focus
Zolic Law (Public Free Zone).	• Direct Access to the port of Santo Tomás de Castilla. • Exoneration 100% on income tax for 10 years. • Exoneration 100% on import and export of raw materials, inputs, machinery and equipment.	Firms located in free zones.
Foreign Investment Law (Nº 9–98)	Among the principal guarantees and duties contemplated by this law are private property, non-expropriation of investment, free trade, access to foreign currency, investment insurance, double taxation and the solution of controversies.	General
Law of Incentives for the Development of Renewable Energy Projects (Nº 52–2003)	• Exemption from import tariff duties, VAT, charges and consular duties on the import of equipment and materials, for the phases of pre investment and construction. • Exemption on payment of income tax (ISR) for 10 years, for the phase of commercial operation. • Sale of MDL Carbon Bonds.	Renewable energies
Honduras		
Temporary Import Regime—RIT.	• Temporary suspension of payment of customs duties, consular duties and any other tax and charge, including the general sales tax, causing the importation of inputs necessary to produce goods or services which are exported to non-Central American countries, and the importation of machinery, equipment, molds, tools, parts and accessories exclusively to assemble, transform, modify or produce goods or services destined for exportation to non-Central American countries.	
Free Zones Regime (ZOLI)	• The introduction of goods to the Free Zone is exempt from payment of tariff taxes, charges, surcharges, consular duties, internal taxes, consumer and other taxes and levies that are directly or indirectly related to import and export customs operations. • Sales and production which is made within the Free Zone and property and commercial and industrial establishments of the same are exempt from payment of municipal taxes and contributions. • Profits are exempt from the payment of income tax.	Firms located in free zones
Industrial Export Processing Zones Regime—ZIP. Decree Nº 37–87	• Importation free from levies, tariff duties, charges, surcharges, consular duties, international consumption and sales taxes, and other taxes, rates and levies which are related directly or indirectly with import customs operations. • Exemption from income tax for 20 years and Municipal taxes for 10 years.	

Law	Fiscal Benefits	Sectors /Focus
Law de Agricultural Export Zones—ZADE. Decree Nº 233–2001	• Total exoneration from payment of tariff duties, consular duties, charges and surcharges, internal consumption taxes, production, sales and other taxes, levies, rates and surcharges, on goods and merchandize which are imported and/or exported. • Exoneration from payment of state taxes. • Exoneration from payment of income tax on profits obtained from operations.	Agricultural sector
Law of tourist incentives—reformed through Decree Nº 194–2002	• Exoneration from payment of income tax for 10 years from the beginning of operations, exclusively for those tourist establishments which begin operations for the first time. • Exoneration from payment of taxes and other duties on import of goods and new equipment necessary fro the construction and initiation of operations. • Exoneration from payment of taxes and other duties on importation of any printed material for promotion or publicity. • Exoneration from payment of taxes and other duties on importation for replacement for impairment of goods and equipment, for a period of 10 years, upon verification. • Exoneration from payment of taxes and other duties on importation of new automotive vehicles, and those who acquire the leasing of motor vehicles, after evaluation of the activity, type of establishment, capacity, size and location. • Exoneration of payment of taxes and other duties on importation of aircraft or new and used embarkations for air, maritime or waterway transport.	Tourist sector
Nicaragua		
Industrial Export Free Zones (Decree Nº 46–91)	• Exemption from 100% of payment of income tax for the first 10 years, and of 60% from the eleventh year on. • Exemption of payment of taxes on disposal of real estate in any capacity , including Capital Gains Tax, where applicable, provided that the firm is closing its operations in the zone, and the property remains subject to the Free Zone regime. • Exemption from payment of taxes for constitution, transformation, fusion and reform de la society, including Stamp Tax. • Exemption from all taxes and customs and related consumer duties on imports destined to equip the firm for its operations; or which aim to satisfy staff needs.	Firms located in free zones

Law	Fiscal Benefits	Sectors /Focus
	• Exemption from customs taxes on transport equipment destined for normal use by the firm in the zone. In case of disposal of these vehicles to purchasers outside the zone, customs taxes will be charged, with rebates which apply depending on time of use, similar to disposals made by Diplomatic Missions or International Organisms. • Total exemption from indirect taxes, on sales or selected consumers goods; from municipal taxes; from export taxes on products elaborated in the zone, and from fiscal and municipal taxes on local purchases.	
Tax Harmonization Law (Law Nº 822). Export tax benefits	• For exports of goods of national production or services rendered abroad a rate of 0% VAT will be applied. • Exports of goods are taxed at 0% of the Selective Consumption Tax (ISC). • A tax credit can be applied to advances or annual IR con previous approval by the tax authority for a sum equivalent to 1.5% del FOB value of exports.	Exports
Tax Harmonization Law (Law Nº 822). Tax benefits for producers	• The Art. 127 established a list of disposals which are exempt from VAT, some of them related to the agricultural sector. • In addition, Art. 274 exonerates from VAY and ISC the disposals of raw materials, intermediate goods, capital goods, replacements, parts and accessories for machinery and equipment for farm producers and for micro, small and medium industrial firms and fishing, through a non-restrictive list.	Agricultural sector, small and medium firm industry and fishing.
Tax Harmonization Law (Law Nº 822). Fiscal benefits for the forestry sector	• Exoneration from payment of 50% of Municipal Tax on Sales and of 50% on profits derived from use. • Exoneration from payment de Property Tax for areas of properties in which forestry plantations are established and for areas where forestry management is carried out through the Forestry Management Plan. • Firms of any type of business which invest in forestry plantations will be able to deduct as spending 50% of the sum invested for income tax. • Exoneration from payment of duties and tax on the importation by firms of Second and Third Transformation which import machinery, equipment and accessories which improve their technological level in processing wood, excluding sawmills.	Forestry sector

Law	Fiscal Benefits	Sectors /Focus
Temporary Admission Regime (Law Nº 382)	• Exoneration from payment of every class of duties and taxes on the entry of merchandize defined in the law in the national customs territory as well as the local purchase of the same.	General
Law for Promotion of Electricity Generation from Renewable Sources (Law Nº 532)	• Exoneration from payment of Import Tariff Duties (DAI) for machinery, equipment, materials and inputs destined exclusively for pre-investment works and construction works. • Exoneration from payment of VAT on machinery, equipment, materials and inputs destined exclusively for pre-investment works and construction work. • Exoneration from all Municipal Taxes applying to property, sales, fees during construction of the project, for a period of 10 years from the beginning of commercial operations of the project, which will apply in the following form: exoneration of 75% for the first three years; of 50% in the next five years, and 25% in the last two years. Fixed investments in machinery, equipment, and hydro-electric dams will be exempt from all type of taxes, levies, municipal rates, for a period of 10 years from their entry into commercial operation. • Exoneration of all taxes which may exist for exploitation of natural resources for a maximum period of 5 years after start of operations. In the case of hydro-electric projects, construction or operation of a project under Water Administration Permission for a maximum of 10 years. • Exoneration from the Fiscal Stamps Tax (ITF) which can cause the construction or operation of the project or expansion for 10 years.	Renewable energy electricity generation projects
Special Law on Exploration and Exploitation of Mines (Law Nº 387)	• Temporary admission regime—Law Nº 382. • If it is not possible to apply the previous suspension of duties and taxes for reasons of tax administration, the benefits will apply under the devolution procedure after payment of the taxes. • Exemption of the payment of taxes on property of the firm within the perimeter of the mining concession. • 0% rate for exports, applicable to exports in general.	Activities related to exploration and exploitation of mineral resources

Law	Fiscal Benefits	Sectors /Focus
Law of Tourism Incentives (Law Nº 306)	• From 80% to 100% exemption on Income Tax for 10 years. • Exoneration of Property Tax (I.B.I) for 10 years. • Exoneration of VAT applicable to services of designing/engineering and construction. • 100% exoneration of taxes on Importation and VAT in the purchase of non-luxury construction goods, and fixed accessories for building for a period of 10 years. • In case of reinvestment, if at the end of the incentives regime the investor decides to reinvest at least 35% of the value of the approved investment initially, he can receive all the benefits for 10 additional years.	Tourist sector
Panama		
Colón Free Zone	• 0% taxes on profits for operations abroad. • 0% taxes on products imported for re-exportation. • Specific services which supply effects abroad are exonerated.	Firms located in the free zone.
Free Zones governed by Law Nº 32 of 5 April 2011	• Exoneration of taxes and import duties on any good or service required for its operations. • Promoters of free zones are exonerated from tax on income from leasing and sub-leasing. • Services firms, services logistics firms, high-tech firms, scientific research centers, higher education centers, general service firms, centers specialized in supplying health services and environmental service firms will be 100% exempt form Income Tax for their external operations and for operations carried out between them.	Firms located in free zones.
Panama Pacific special economic area—Law Nº 41 of 2004	• Exemption from any tax, rate, tariff, levy or import duty on any merchandize, product, equipment, service and other goods in general which are brought into Panama Pacific. • Exemption from Transfer of Property and Services Tax (ITBMS). • Exemption from any tax, duty, tariff, rate or charge with respect to movement or storage of fuel or other hydrocarbons and their derivatives. • Exemption on any trade or industrial license or registration tax. • Exemption from Stamp Tax.	Firms with strategic activities defined in the Law

Law	Fiscal Benefits	Sectors /Focus
	• Exemption from property tax on plots and commercial/industrial improvements, as well as Property Transfer Tax. • Exemption from the export/re-export tax on any type of merchandize, products, equipment, goods or services. • Exemption of any tax, tariff, duty, levy, retention or other charges of similar nature applied on foreign creditor payments, interest, commissions, royalties and other financial charges generated by financing or refinancing granted to firms of Panama Pacific and for the financial leasing of equipment necessary for the development of activities, businesses and operations carried out within Panama Pacific.	
La Ciudad del Saber—Knowledge City	• Exoneration of import tax, of ITBMS, of property tax. • Exoneration on transfers abroad. • Firms which produce goods or technological services in the TIP do not pay direct taxes nor licenses.	Scientific, technological, human development and cultural activities.
Law Nº 41 of 2007, headquarters of multinational firms	• Exemption from income tax and from ITBMS for services offered to their corporate group outside the national territory. • Exemption from income tax, for executives, when their salaries come from a foreign source. • For services which are provided within the Republic of Panama, half income tax will be paid. • Labor and migratory incentives are also offered.	Multinational firms
Law Nº 36 of 2007, Cinematographic and audiovisual industry	• A single window for procedures • Migratory permit procedures for foreign staff. • Work permits for foreign staff. • Customs: temporary import of equipment without surety. • Fiscal incentives for the designated special area, for the development of the cinematographic and audiovisual industry. • Public location permissions throughout the national territory. • Procedures for public services. • Links with producers, technicians, casting agencies and national staff.	Cinematographic and audiovisual industry
Call Centers and beneficiaries of Law Nº 32 of 2011 for Free Zones	• They will be free of direct and indirect taxes, contributions, rates, duties and national levies and subject to the other benefits established by the Free Zones Law in relation to the realized activity, except for the tax charged by the National Public Service Authority. • Labor and migratory incentives are also offered.	Call Centers

Law	Fiscal Benefits	Sectors /Focus
Certificate of Industrial Promotion (CFI)	• Agro-industrial firms will enjoy a reimbursement of 35% de realized disbursements. • Other industrial activities will enjoy 25%. • The option to import at a preferential tariff of 3% raw materials, semi=elaborated or intermediate products, machinery, equipment and replacements for the same, containers, packaging and other inputs which enter into the composition or in the processing elaboration of its products. • The firm which has such a certificate will be able to use it for payment of all national taxes, rates and contributions	
Law Nº 82 of the 31st of December 2009, Certificate of Promotion for Agro-exports	• It will serve uniquely for the payment of any national tax, with the exception of municipal taxes.	Agricultural or agro-industrial exporting firms.
Dominican Republica		
Promotion of the Export Free Zones—Law Nº 8–90.	Fiscal incentives of up to 100% in: • Income tax payments (ISR) • All taxes on imports, tariffs, customs duties and other connected levies, which affect raw materials, equipment, construction materials, office equipment, etc, destined to construct, equip or operate in the free zones. • All taxes on export or re-export, except which the Law establishes. • Payment of tax on construction, loan contracts and on the recording and transfer of property after constitution of the operator in the corresponding free zone. • Payment of the tax on constitution of commercial societies or of the capital increase of the same. • Payment of municipal taxes.	Free zones. Fabricators of goods and services for export
Special frontier development zone. Law Nº 28–01.	• Exoneration from 100 % of the Tax on Industrialized Goods and Services (ITBIS) as to transfer within the National Territory. • Exoneration of duties and development taxes of that region on imports and further connected levies, including tariffs, unified taxes and those on internal consumption. • Exoneration of 50% on the payment of free transit and use of ports and airports. • Exemption on payment of exchange commission for import of capital goods, machinery and equipment. • Firms which are part of this regulation will have a benefit period of 20 years.	Frontier zone

Law	Fiscal Benefits	Sectors /Focus
Law Nº 56–07, which declares sectors belonging to the textile chain to be of national priority.	• Exemption from payment of Tax on the Transfer of Goods and Services (ITBIS) and other taxes on the import or acquisition in the local market of raw materials, components, machinery and equipment. • Application of a tariff of 0% on the import of all exempt products according to the defined items. • Firms of sector belonging to the textile chain, clothing and accessories; skins, fabrication of shoes and leather manufactures, which close their operations in another special customs regime and therefore are not enrolled in another special customs regime, are exempt from payment of income tax.	Sectors of national priority: textile chain, clothing and accessories; skins, shoe-making and leather manufactures
Renovation and Promotion of exports . Law Nº 84–99	• Reimbursement of the duties and customs levies paid on raw materials, intermediate goods, inputs, labels, containers and packaging imported by the exporter itself or by third parties, when the same have been incorporated for export goods. • Simplified Compensation of Levies, which establishes the compensation of customs levies paid in anticipation, for a sum not greater than 3% of the FOB value of the exported merchandize. • Temporary Admission Regime for Active Improvement, which establishes the entry in customs territory of certain merchandize with suspension of the duties and import taxes, proceeding from the exterior and from free export zones, to be re-exported within a deadline not greater than 18 months after its entry into customs territory.	Exports
Competitiveness and innovation industrial law. Law Nº 392–07	• Establishes the exemption on the ITBIS charge in the Customs Office for raw materials, industrial machinery and capital goods. • Reimbursement to exporters of national and foreign firms of ITBIS tax, Selective Consumption of Telecommunications, Selective Consumption of Insurance, Selective Fuels and the tax on checks, in a percentage equal to that represented by earnings on exports from total sales earnings in a period.	Corporate sector

Law	Fiscal Benefits	Sectors /Focus
Promotion of tourism development. Law Nº 158–01—Law Nº195–13	Exoneration from payment of taxes for 100% of: • Income tax subject to incentives • National and municipal taxes for establishment of societies, for capital increase, national and municipal taxes for transfer on property duties, for sales, swaps, contributions in kind and any other form of transfer on property rights, of the Tax on Luxury Residences and non-constructed lots (IVSS); as well as of the taxes, duties and fees for the preparation of plans, studies, consulting and supervision and construction of works to be executed in the tourist project involved, with this last exemption applicable to the contractors charged with execution of the works. • Of the import taxes and other taxes, such as rates, duties, surcharges, including Tax on the Transfer of Industrialized Goods and Services (ITBIS), which were applicable on machinery, equipment, materials and property which are necessary for the construction and for the initial equipping and putting in operation. • Individuals or corporations will be able to deduct or exempt from net income the sum of its investments in tourist projects, applying amortization on the said investments up to 20% of their net taxable income, each year. In no case will the term of amortization exceed 5 years. • The period of fiscal exemption granted to the firms will be 15 years from the date of termination of the construction works and equipping of the project. • Investments in tourism activities correspondent to hotel installations, resorts or hotel complexes, in existing structures will benefit from exemption of 100% of the tax for the transfer of industrialized goods and services (ITBIS) and other taxes which were applicable on machinery, equipment, materials and property that may be necessary for the modernization, improvement and renovation of said installations, provided they have a minimum of 5 years of construction.	Tourism sector

Law	Fiscal Benefits	Sectors /Focus
Cyberpark	The Law exonerates all taxes on exports, imports, re-export of all goods and services necessary to carry out different types of activities.	Sectors which must carry out activities in the cyberpark
Incentive for development of renewable sources of energy and its special regimes. Law Nº 57–07	• Exemption from 100% of all type of import taxes on equipment, machinery and imported accessories. • Exemption on payment of the Tax on Transfer of Industrialized Goods and Services (ITBIS) and of all taxes on final sales. • Liberation for a period of 10 years from the beginning of operations, and with maximum duration until 2020, from payment tax on income on earnings derives from the generation and sale of electricity, hot water, steam, motive power, bio-combustibles or indicated synthetic combustibles, generated from renewable energy sources. • Reduces to 5% the tax for payment of interest on external financing. • Up to 75% of the cost of investment in equipment is granted, as a unique credit on income tax, to owners or renters of family properties, commercial or industrial housing, which change to or enlarge renewable source systems in the provision of their private energy consumption and whose projects have been approved by the competent organisms.	Renewable energies

6

The future of investment attraction in Central America, Panama and Dominican Republic

Mario Cuevas, Osmel Manzano y Luis Porto

The journey so far

Fiscal incentives and free zones have antecedents in the region which go back even further than the 1980s. As early as 1948 Panama had established the Colón Free Zone, which remains the most dynamic free zone in Central America. And the Dominican Republic set up in 1969 a free zone in the city of La Romana. The crisis of the 1980s led to a transformation of economic models, making foreign direct investment (FDI) a new pillar of Central American development. This change of perspective meant that the number of free zones grew and fiscal incentives were rolled out to attract FDI to the region.

The difficult political and economic environment and the violence generated by armed conflicts which for decades troubled some countries in the region were big obstacles to attraction of FDI on a large scale. It was not until the beginning of the 1990s that FDI flows grew substantially, rising sixfold from the previous decade.

In parallel, the model for attracting FDI with fiscal incentives spread rapidly around the world. This troubled lower income countries faced with competition from countries with much greater fiscal and financial capacity to grant incentives. Subsequently, in 1994, the Marrakesh Agreement underlined the negative impact of export subsidies and in 1995 the Agreement on Subsidies and Countervailing Measures was adopted, prohibiting subsidies on exports, including tax exemption, and giving the newly-created World Trade Organization (WTO) responsibility for supervision. The WTO conceded temporary permission to developing countries,

allowing them time to reform their investment attraction regions and export promotion, and established that fiscal incentives tied to exports would end at the end of 2015. After many years in which the special regimes have been in place in, it can't be claimed that the impact on Central American economies is the one that was expected. The regimes are designed to promote investment and simply hope that this "spills over" into the economy and society. There is no design which relates investment promotion to the desired impact of the investment.

Given the current economic model of the countries, reform to the investment attraction regime is extremely important. Apart from the role that FDI plays in financing the external sector, it's perceived also to contribute to economic growth through the transfer of new forms of physical capital, the development of human capital through employee training and the stimulation of higher productivity. However, experience shows that promotion of FDI with incentive regimes is not a panacea, and the collateral effects are far from clear (as discussed in depth in Chapter 2 of this book).

Nevertheless the urge to attract a greater volume of FDI has led Central American countries to compete by offering incentives. The most common measures include exemptions to income tax, tax exemptions for local products which are used as inputs in the free zones, subsidized credit for exporters, and lower tariffs for non-traditional exports. The fear with fiscal incentives for FDI is that they erode the tax base by losing revenues for investments that would anyway have come to the country. There is no thorough analysis of the costs and benefits for the region and so the true impact of these incentives is unknown.

An insufficiently considered theme in the region for the design of incentive policies for investment is the evolution of the origin and characteristics of foreign investors. *Multilatinas*, Latin American multinationals, have now become the second largest source of FDI (see Chapter 3 of the book), investing a similar sum in the region as the United States and Canada combined. And they are not seeking the fiscal incentives granted by Free Zones. In general terms, the *multilatinas* are driven by a strategy of expanding and diversifying their markets, and therefore a challenge for the Central America region is to make its investment attraction policies fit the new investor priorities.

Finally, another element to take into account is the relationship between investments which are attracted by global value chains and the possibility that Central American economies can insert themselves into these dynamic chains in the global context.

The need to rethink FDI investment attraction policies in the region clearly responds, then, to multiple factors, such as the evolution of economic models and the chance to take advantage of trade treaties signed by the region; adaptation to

the regulatory requirements of international trade and the evolving profile of foreign investors; and reduction of the vulnerabilities that have built up as a result of the spread of fiscal incentives and the consequent erosion of the tax base.

The aim of this chapter is to contribute to the debate on the future of investment promotion in the Central American region, given the foreseeable change to the current investment regions, and using methodological theoretical frameworks which make it possible to design mechanisms which consider the benefits and costs of investment promotion (fiscal stability during the life cycle of the investment) as well as the aligning of incentives to link the fiscal sacrifice to the expected impact of the investments, that's to say, the "spill over" into the economies.

The chapter develops in the following way: the second section presents a conceptual framework for productive development policies; the third proceeds to a conceptual and methodological framework for investment attraction; and the final section reflects on the region under analysis.

Reconnaissance of the territory

Research on the mechanisms by which FDI brings economic growth has taken an important step towards reconciling the apparent ambiguity on the impacts of FDI. One of the central conclusions of the research is that FDI's effects are not exogenous but strongly influenced by the specifics of local conditions. Following this line of argument, the possibility can be explored that investment attraction policy might increasingly use instruments through which FDI is oriented in a growth-generating direction, taking advantage of spillover effects and exploiting the potential of linkages to the local economy.

In other words, investment attraction policy would cease to be conceived in a vacuum and would be considered a complement to productive development policies (PDP). What is meant by PDP is government interventions aimed at promoting productive development through correction of market[1] failures or those of government in a country, such as compensating for asymmetries in assets, resources and skills that may disadvantage a country compared to others in attracting FDI.

[1] In reality, the concept of "failure" refers to the conceptual framework of perfect competition; in real competition the so-called "failures" are no more than the normal conditions in agents in the markets act, hence the quotation markets. Something similar occurs with so-called "imperfections". Nevertheless, just as Khan (2007) recognizes, the "failures" and "imperfections" approach becomes particularly useful when designing reforms in the areas of governability and the business climate or identifying restrictions to growth in order to target policies (see, for example, Hausmann R. *et al., 2005).*

The possible market failures range from the difficulty of identifying sectors with productive potential and the lack of coordination between sectors or elevated costs of self-discovery, to problems with access to credit owing to incomplete financial markets. By contrast, it is said that there are government failures when the distortions are a the result of badly designed or implemented government policies. Inadequate policies in the past can also lead to deficiencies in infrastructure (transport, technology and energy) and in training of human resources, among other things, which create additional costs for FDI location in a country to carry out certain activities compared to doing so in other countries.[2]

A society's set of rules and the State's capacity to fulfill them play a particularly important role when an investment decision is taken. In fact, institutional weaknesses are related to the difficulty both public and agents have fulfilling their contracts—the corruption, violations of property rights, among other things, which reduce the capacity of private agents to appropriate fully the return on investments.[3]

A final aspect which must be considered is that in a country very different production structures can be found, yet all consistent with the underlying characteristics of the country. Strategic interaction between multiple public and private agents determines what particular equilibrium predominates, among the many that are possible. The possible existence of many different equilibriums establishes the margin in which public policies influence the productive structure in different ways, aiming at the achievement of certain development goals.

Governmental interventions within the framework of the PDP can be classified by their most significant characteristics, among which are the channel of intervention, the spectrum of intervention and the level of government in charge of implementation. Frequently the debate has focused around the first two dimensions mentioned. One dimension of the analysis is the channel used, since governmental intervention can be made through provision of public goods or by

[2] Haapanem *et al. (2005), for example, review the literature which recognizes two types of motivation to use investment subsidies: compensation for market failures in access to financing, and regional disparities in the endowment of resources which do not enjoy free mobility.*

[3] North (1991) defines institutions as the rules of the game and norms of behavior which facilitate transactions and exchanges, or make them more difficult. He also argues that the main function of institutions is to reduce uncertainty by establishing a stable structure for human interaction. In addition he affirms that these processes begin with codes of conduct, laws, contracts or even institutions; with these in permanent evolution, individuals' possibilities for choice are altering constantly. In the same way, the interaction is on more than one route, since the codes of conduct, laws, contracts or institutions are also the accumulated result of innumerable individual decisions taken in the past.

directly affecting the market.[4] A second dimension for classifying the PDP is the spectrum of intervention, that's to say, its degree of specificity or transversality with respect to different sectors or economic activities.[5] These classifications can be represented in a matrix with four quadrants.

The first quadrant (horizontal, public inputs) is uncontroversial since it contains the basic public goods which governments generally must provide for productive development, such as basic infrastructure and an adequate business climate. This quadrant gathers the type of interventions that the Washington Consensus emphasized and which the comparisons of the World Economic Forum or Doing Business[6] tend above all to measure.

The second quadrant (vertical, public inputs) includes goods that can be public, but which only benefit certain sectors, such as rural roads which serve mainly agricultural production, or regulations and phytosanitary controls. In a context of budgetary restrictions, it's clear that governments cannot provide these types of specific goods to all sectors. In this quadrant, the priority of transparency and technical criteria in the choice of favored sectors begins to arise.

The third quadrant is more complex (horizontal, market intervention). As a general principle intervention ought to be avoided in relative prices and the allocation of resources in markets. However, it is also recognized that market failures and governmental ones can distort the functioning of markets. An intervention aimed at correcting or compensating for these failures must weigh two factors: in the first place, if there really is a failure; and, secondly, whether the proposed intervention really addresses the identified failure.[7] The answer will depend, no doubt, on the context in the sector and the country.

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[4] Public goods, as their name indicate, can be enjoyed by a group or even by society as a whole, since their consumption by a certain economic agent does not prevent their consumption by others. Examples of these goods are basic infrastructure, education of the labor force and the quality of the business climate, among other things. For their part, interventions in the market affect relative prices and therefore the allocation of resources. Fiscal subsidies or tax exemptions, as well the allocation of market quotas, are examples of these interventions.

[5] On the one hand, horizontal or transversal policies apply to the totality of sectors or economic activities. By contrast, those directed at specific sectors are considered vertical interventions.

[6] In a strict sense, each specific market constitutes an economic mechanism and from the institutional point of view has its rules of the game which affect incentives, so that horizontal interventions in reality cannot be neutral from the sectoral point of view. On the other hand, the business climate can differ from one market to another within a single country. This is particularly important for Latin American countries, where there is a high degree of structural heterogeneity.

[7] For example, if the problem of worker training is considered, is the provision of such training through a public institute the most suitable intervention? Are there other ways of ensuring this training?

TABLE 6.1 Dimensions and examples of productive development policies

	Horizontal	Vertical
Public inputs	• Strengthening the business climate • Training the labor force • Provision of basic infrastructure • Stabilization of exchange rate policy	• Construction of rural roads for certain zones • Implementation of cold storage logistics • Establishment of food hygiene controls
Market intervention	• Provision of subsidies for Research & Development • Implementation of training programs • Granting tax exemptions to capital goods • Approval of tariffs	• Establishment of import quotas for certain sectors • Granting of subsidies for production by specific sectors.

Source: Pagés (2010).

Finally, the fourth quadrant is the most controversial (vertical, market intervention). This contains market interventions specific to certain sectors. These interventions tend to be harder to justify because market failures rarely affect just one sector. Probably for these reasons this type of policy is associated with a high risk of encouraging opportunistic behavior or even opening the way to corruption. Therefore the implementation of policies placed in this quadrant demands a high level of integrity and institutional strength. On the other hand, it should not be forgotten that a sector comprises a wide universe of inputs and products and consequently of markets with their own specificities. In practice, so-called "sectors" can be very heterogeneous.

Several authors show that the productive structure is fundamental to economic growth, that the type of goods produced and exported is also important,[8] and that the economic variables and comparative advantages do not by themselves determine the productive structure. The debated point is whether in the global economy of the 21st century sectoral policies can provoke change in productive structures, and what the downsides to such policies might be.

There is a certain arbitrary element to what a country produces and, to some degree the function of public policies is to assure congruence between the productive structure and the country's development goals. The State can play a role and influence which of the different possible productive structures ends up materializing. For this a State commitment on its future policies in order to influence the other economic agents becomes crucial. This consists essentially of public strategies which reflect

[8] Haussmann et al.(2006).

a credible commitment of resources, so that private agents, in a foreseeable way, take decisions that lead to the desired results.[9]

From the point of view of productive development policies (PDP), the free zones have significant elements of market intervention which, depending on the concrete manner in which they are applied, can be both horizontal and vertical.[10] In a similar way free zones can offer certain goods, for example, specialized infrastructure of a special degree of security. The first question that must be answered to justify the existence of a free zone is whether market or governmental failures have been identified. If the question has an answer in the affirmative, it should then be asked where a free zone with certain characteristics is the most suitable instrument to address the identified failures.

From a broader perspective, investment attraction policy would aim to complement the PDP framework. The general objective of the PDP should be, in the face of market or governmental failures, to take advantage of comparative advantages in industries or sectors with the aim of creating an economic transformation.[11] The challenge does not necessarily hinge on identifying sectors or industries con potential but on embracing a continuous search for opportunities, technologies and processes which can act as catalysts of productivity and pave the way to the development of new productive enterprises. The choice of the concrete instruments will depend on the resources available to achieve a certain objective, as well as the market or governmental failures present in the country.

Tracing a route for investment attraction

The strategy required to achieve sustained growth in investment must lean on a suitable combination of the generation of new skills and productive capacities, the putting in place of new rules of the game, and the establishment of an institutional design committed to promoting investment.

A new framework of investment attraction policies should rest on the development of skills, which requires a set of rules, procedures and norms which signal in a clear way the behaviors which are intended to be encouraged, including training,

[9] The role of commitments as a way of influencing the behavior of rivals is a central theme of the industrial economy and has been developed also in strategic trade policy (see, for example, Brander and Spencer, 1985); Neary and Leahy (1999); or Nese and Rune Straume, 2005).

[10] For example, if it is stipulated that they are for exports in general, they are equal to an export subsidy independent of the economic sector.

[11] Presumably this type of instrument would only be used to correct governmental failures which, for some reason, cannot be tackled directly.

know-how and other intangible assets which strengthen firms' competitive position. The development of productive capacities demands likewise a PDP environment that makes it possible to push forward capital accumulation and labor participation in the economy, as well improving productivity and incorporating appropriate technologies.

A new system of incentives for investment implies an integral redesign of the framework of the rules of the game in which firms adopt decisions, in particular those are related to the investment, that's to say, with a decision that is taken in the present but which involves benefits that will only be received in the future.

In this sense, the first aspect that must be highlighted is that there are two types of intervention:

1. Actions which seek to reduce excess costs associated with certain market or governmental failures. These policies are directed, in particular, at the six areas which directly affect the investment decision on the part of firms:
   i. Access to resources such as education, infrastructure or financing.
   ii. Access to markets, influenced by economic opening, multilateral, regional and bilateral negotiations on trade facilitation, technical norms, sanitary and phytosanitary norms, etc.
   iii. The business climate, founded in fulfillment of contracts and of property rights, as well as levels of discretion in the system of rules of the game.
   iv. Policies aimed at fostering competitiveness in firms' supply chain, in order to reduce coordination failures related to investments.
   v. Horizontal policies aimed at the creation and development of firms' capacities, for example through quality certification, innovation systems, and others.
   vi. Policies aimed at reduction of vulnerabilities and risks at macro level, so that uncertainty on relative prices does not prove a barrier to investment.
2. Actions which seek to compensate for these excess costs through some policy instrument which makes investments more profitable.

The first group of actions tends to be connected with structural reforms with a medium and long-term impact, so that in practice the second type of actions appears particularly important for any government that is trying to attract investments, by succeeding in carrying out the indicated reforms.

The second aspect which ought to be highlighted refers to the instrument proposed for compensation of excess costs: the choice of instrument is fundamental. It has to be one that promotes investor behavior among private agents and reduces the risks associated with opportunistic behavior. In this sense the instrument must be chosen in such a way that private agents consider it trustworthy and therefore

assume that it will endure over the proposed time horizon. There has been much investigation, for example, of the usefulness of fiscal exemptions or of the exchange rate to promote competitiveness, compensate for the excess costs mentioned and attract investments. In this context historical examples of one country or another are often used to defend positions.

In the view of the authors of this chapter, the choice of instrument should be connected with the specificity of each country. For example, Central American countries do not seem to fulfill the conditions which assure credibility to the use of the exchange rate as an instrument to attract investments. They are open economies, with little weight internationally, and little ability to wage successfully a "currency war" or confront changes in the global financial system. Businessmen are aware of this and therefore, faced with a currency policy aimed at offsetting excess costs, will take opportunistic, rent-seeking decisions instead of medium and long-term investment ones. A similar conclusion applies to traditional protectionist tariff policies.

With regard to the use of fiscal and tax instruments, it is indispensable to analyze the sustainability of benefits over time. Therefore, as was set out in the introduction, it's important that the fiscal sacrifice maintains a relationship with the direct and indirect fiscal benefits that the investment will create during its life cycle.

The third aspect refers to the specificity of the growth process within different economic sectors. This specificity depends in part on the each production function's endowment of factors and not necessarily on each sector of activity.[12] Structural change depends on the characteristics of the functions of production which firms take forward more than on the characteristics of the sectors. These characteristics determine different "types" of firms and therefore the excess costs associated with structural change are different depending on the type of firm and, even more, on the particular production structure of the firm in question.

The particularities of the production structure in a firm are private information. Therefore to extract useful information on the production structure some alternative ways can be considered. One way would be the introduction of a mechanism obliging firms to reveal information *ex ante,* for example through an auction of subsidies.[13] Another way would be an instrument that compensates for the excess costs associated with structural change on the basis of the results of each company. In this case, the

[12] Each activity of a firm is, in reality, a production function *f(K,L)* and each country will seek to attract the *f(K,L)* which bring more to the development objectives of that country. This point is particularly important to stress that it is not the same that a firm locates its production in a country of one series of products or other, or administration, or its research and development functions.
[13] Feinerman y Gardebroek (2005), for example, present an auction schemed for the granting of subsidies for development of an organic farm.

incentives granted must have certain properties. If that a country seeks is a certain performance by companies on the variables which determined structural change and influence development, the instrument must be related to such variables. Relating the incentive which reduces the excess cost to performance also reduces the chance of moral hazard and adverse selection.[14,15]

The design of incentives supported by this principle constitutes the basis of the most important innovations proposed for investment promotion within the framework of PDP. This mechanism rests on a logical matrix in which the objectives a government pursues are defined in terms of the intended impact of investments (the "spillover" hoped for), indicators are defined for the objectives, and a scoring system that relates to the quantity of benefits granted. In this way, the greater the impact of the investment, the greater will be the points obtained from the indicators and, in consequence, the greater will be the fiscal benefit associated with the investment. This mechanism allows the linking of the private sector's needs in terms of capacities and qualities to a set of initiatives coordinated by a government.[16] In particular, incentives offered for investment must be linked to development variables selected by public policy. It's worth noting that these impact indicators could be modified by the government as their relative importance in the growth process changes.

An additional characteristic of the mechanism is its transparency: the stimuli become automatic and objective, eliminating any discretion connected with the on duty official.[17]

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[14] Moral hazard and adverse selection are not eliminated completely when there is more than one performance variable since each firm will seek to comply with the result that the same incentive presents to it with the least effort, so that each firm will take refuge in the incentives plan without revealing the level of effort it implies to achieve each result.

[15] Relating incentives to performance has besides another effect on agents' behavior: reducing the risk of the "transposition problem." This refers to the problem produced by the transfer of moral judgments to the legal system. Transposition creates problems because it is based on shared principals and not shared intuitions. Translating moral principles into rewards, allocations of resources or concrete sanctions (dollars, years in prison etc.) creates incoherencies and inconsistencies. There are no guarantees that the incentives or sanctions assigned in concrete cases will be considered sensible or just, taking account of a set of individual preferences, in spite of the fact that moral intuitions can be coherent and consistent at individual level. This incoherence is considered a form of injustice which will tend to erode the credibility of the institutions and induce behaviors which seek to interfere in the application of the rules of the game (see Kahneman*et al.,* 2002).

[16] As *Crespiet al.* (2014) point out, productive development policies are not in themselves a panacea. In effect, such policies simply form part of a battery of instruments which those responsible for economic development policies have at their disposal.

[17] The fact that they are transparent automatic benefits, and not discretionary, makes them, in addition, compatible with WTO regulations.

The new investment promotion strategy through the PDP would avoid the creation of institutional structures that are not engaged with promotion activity. In addition the institutional design explicitly assumes that the administration of the regime must be accountable, in order to assure the transparency which must accompany allocation of public resources. In this framework institutional responsibilities could be divided along three main lines: evaluation, control, and follow up, according to the life cycle of the investment.

The new investment framework has to be such that activities which benefit have the potential to create spillover effects on other sectors of the economy. It is difficult to find public interest arguments for granting help to private activity if the latter does not have the potential to create economic and social externalities, facilitating the emergence of complementary investments or generating positive impacts on other sectors. For example, the activities which receive help must exhibit potential spillovers in technology and know-how, from which other firms and even other sectors can benefit.

This new incentives framework is completely neutral with respect to the country of origin of the investments, so that it is also compatible with the trend of increasing participation by *multilatina* (Latin multinational) firms as a source of investment. However, the benefit allocation procedures must take into account the specifics in production functions and the way in which the remuneration of different factors is determined. In this way projects which have a greater impact on development variables that are intended to be bolstered are rewarded. This is based on a conception which understands structural change as a process dependent on the characteristics of production functions, rather than of the inherent characteristics of sectors.

Access and the level of incentives could be calibrated, for example, by a points system obtained for a particular investment project, in proportion to the expected externalities as a function of:[18]

- generation of work places with strategic value,
- execution of skills and training programs,
- location of productive activities in backward geographic zones, with poor infrastructure, social indicators below the national average, or targeted civic security problems,
- the use of clean production technologies,

[18] Box 6.1 presents Uruguay's experience with the type of incentives referred to.

Box 6.1. Results from the experience of Uruguay

In the middle of 2007, Decree 455/007 was issued, regulating the Investments Promotion Law of 1998 (Law Nº 16,906). This Decree introduced significant changes to the regulations in force until then. On the one hand it made access to benefits open to all economic activities, irrespective of the type of firm. On the other hand, Decree 455/007 established some parameters to determine access and the level of benefit to be granted, relating them in an explicit way to an evaluation of the of the investment's contribution to national development goals. Projects approved for benefits receive an exemption on income tax of between 60% and 100% of the amount of the investment. In addition, a deadline is set to usufruct this benefits which ranges from 3 years after the moment in which income is generated to up till 35 years.

The results of the applications of Decree 455/007 can be summed up in the following way:

- Firms which used Decree 455/007 have higher levels of assets and sales, with an average level of investment higher than 20%. The average of the accounting assets and sales of firms which did not qualify for a tax benefits is markedly lower than that of the other firms.
- Access to combined benefits is associated with higher levels of assets. In addition, the average growth rates of the assets are higher in firms which access benefits than in those that never did so.
- The impact of Decree 455/007 is significant, even when benefit to investment coefficients are incorporated as additional control variables. The increase in the rate of investment growth is around 7 percentage points.
- The average number of projects approved annually increased from less than 100 before Decree 455/007 to almost 600 between 2008 and 2011. In addition, under the benefit regime, the accumulated sum of investments increased from less than US$200 million to almost US$1,200 million.

Also defined are control procedures and correspondent sanctions, including loss of the benefits. In the Uruguayan scheme, the Dirección General de Ingresos (DGI—the general revenue office) and the Comisión de Aplicación de la Ley de Inversiones (COMAP—the investment law application commission) are responsible for control of effective execution of the projects and fulfillment of the commitments offered by the beneficiaries.

	Total	Annual average for the period		Average variation	
	2002–2007	2008–2011	2002–2007	2008–2011	2002–2011
Number of Projects	311	2,366	46	592	1186%
Investment amounts (US$ millions)	1,461	4,661	196	1,165	495%

Source: Porto andVallarino (2014).
Note: Information can be found at http://www.mef.gub.uy/comap.php.

- the innovation and development of new technologies (I+D),[19] including associations with knowledge-generating entities,
- generation of productive linkages with the rest of the economy,
- the impact on the level of economic activity, diversification and growth potential that the project can induce,
- other criteria considered of high priority in the country, aimed at correcting or compensating for specific market of governmental failures.

The close relationship of some of the criteria mentioned above with the objectives that some PDP pursue should be noted; it creates the potential for complementary design. However, the purpose of the instruments proposed in this section is the promotion of quality investment, while that of the PDP in general terms is to promote productivity in an economy.

A common error in the design of PDP has been to compensate bad results through corrective interventions, without analyzing in depth whether there is a market or governmental failure that needs correcting or not.[20] Therefore the design of the investment promotion instrument must be in keeping with the general framework of the PDP in the country, and vice versa. This means that the criteria used to "calibrate" the incentives offered to attract investment ought to be compensating for authentic failures. In addition, the error of overcorrecting a certain failure through the application of multiple benefits, so that the value of the incentives exceeds that of the externalities which are being propitiated or corrected, must be avoided.

To guarantee transparency in management of the incentives regime and to make calculation of the levels of the incentives granted as automatic as possible, quantitative or easily verifiable qualitative variables must be used. The characteristics of the incentives would depend on the index of expected externalities obtained by

[19] It must be distinguished from the adoption of new technologies. This type of incentive is aimed at firms which are generators of knowledge, so that a distinction should be made from a focus on firms as users of knowledge. The tax incentive would tend to reduce the marginal cost of I+D. The mechanism is favorable to the market, since firms decide which projects to push forward, although this also implies a certain bias in favor of research and development activities, whose benefits are easily appropriated by the firm. A variant of this incentive would take into account the function which the project could play within the framework of the national system of innovation, thereby stimulating collaboration with research centers, technological institutes and other actors within the innovation system. A problem with this type of incentive is that it creates the temptation to classify as I+D activities which really have no innovatory character.

[20] In connection with this point, *Crespiet al.* (2014) argue that an efficient policy would first make sure that the supposed bad results are really provoked by some market failure. If this does turn out to be the case, they argue that policies must be designed to resolve the failures profoundly rather than seeking to alleviate the symptoms.

the investment project. In the case of income tax, for example, the benefits as a percentage of the amount of the investment, the deadline for eligibility for such a benefit and the applicable rates would depend in the index of externalities calculated according to a predetermined methodology.

At the same time, the instruments for investment promotion which are proposed are in keeping with improvement in the country's competitiveness and with its productive transformation. On the one hand, the concept of competitiveness is based on improvements in efficiency relative to the production of a certain basket of products, through the accumulation of productive factors and the increase in productivity. On the other hand, the transformative aspects hinge on innovation, the development of new firms in emerging sectors or the supply of public goods necessary for the functioning of these sectors. Both facets must be taken into account when instruments to attract investment are designed, within the general context of the PDP.

In addition, the institutional framework for investment promotion, hand in hand with the PDP, must be designed with the aim of promoting apprenticeship. Institutions must develop the capacity to learn and correct errors opportunely, with the aim of facilitating convergence of the policy framework and instruments towards the suitable combination for the concrete circumstances of each country. Instruments must be designed to be evaluated and in this way prevent an effort to correct a market failure from introducing government failures which did not exist before. In connection with the latter, before instigating the adoption of good practices and policies, what is sought is adaptation to the context of each country.

Similarly, the design of a threshold based incentives regime must be kept in mind. One way to achieve it is to concentrate the incentives on new investments and limit the regime to a "normal" return on capital. In other words the projects would always pay taxes on extraordinary incomes. Projects which do not carry out additional investments would also pay income taxes. The incentive to achieve these objectives is instantaneous amortization of new investment which eliminates income tax at the margin; it should be noted that new investments which obtain a "normal" return do not pay taxes.[21]

Evaluation of the results of investment attraction policy should not be done exclusively in terms of the investment sums or the number of projects that it's been possible to attract. To be congruent with the proposed conceptual framework, performance indicators related to the established development objectives must be

[21] A simple exercise based on projects typical of the region suggests that a firm which invests the equivalent of between 15% and 20% per year of its assets in capital goods would not pay income tax. But this remains the case only if there are investments every year and no extraordinary incomes.

employed. More specifically, indicators should be used that measure the externalities generated by the projects or, to use other terms, indicators which measure the "spillover" effects of the investment.[22]

Another aspect that must be considered in the design of investment attraction initiatives is the distribution over time of the granted benefits. It must be recognized that there is a risk of creating schemes from which the current political authorities receive the investment benefits and pass the cost of the incentives to future administrations. This risk grows when the design of the benefits is recurrent. An additional facet of risk with recurrent benefits is that interest is consolidated to extend the benefits, transforming them from something temporary into permanent incentives.[23]

Definitively what is sought is to incentivize productive investment through the transfer of resources for the development of productive capacities in an explicit, transparent and efficient manner, and one that encourages rules of the game which assure the alignment of private incentives with public interest criteria.

Considerations from the Central American experience

The Central American region has been able to attract capital in an impressive way in the last decade, even gaining market share in global and Latin American FDI. However, the region cannot rest on its laurels. Firstly, global financial conditions and the evolution of the regulatory framework for world trade bring important challenges, which could show up in a reduction in FDI flows. Secondly, Central American investment attraction policy has focused in general on bolstering external sector financing and, on some occasions, in creating jobs. Rarely, however, has it given importance to the quality of the FDI in terms of its impact on productivity or the externalities it produces.[24] It has reached the point where the fiscal incentives granted through the region's free zones, far from being justified in terms of externalities and productivity, are becoming inconsistent with the regulatory framework for international trade.

[22] Also, attention must be paid to the evaluation deadline, since the externalities could take time to become concrete and achieve a measurable size. In some cases, the different types of "spill-overs" foreseen could manifest themselves in different time horizons. This means that a balance must be made between carrying out a narrow and frequent measurement of policy performance, on the one hand, and allowing enough "maturation" time for the results, on the other.

[23] Nevertheless, a threshold incentives scheme, with instantaneous amortization of new investment, would tend to avoid the type of complications mentioned here.

[24] This last has meant that the FDI attracted by the free zones has had a limited "spillover" on the rest of the economy.

Box 6.2. Principal lessons learned on promotion of FDI in Central America

- The general investment climate in a country continues to have a central role in investment attraction.
- The effectiveness of active promotion of investment can be strengthened by the application of complementary measures.
- The new productive development policies form a complementary framework appropriate for investment attraction.
- When they are offered, tax incentives must be oriented to achieving development objectives and, preferably, be based on incentive thresholds.
- The measures must be aimed at resolving market failures which cannot be corrected in another way, rather than focusing on compensating for the symptoms.
- The policies must be of eminently horizontal character, although the "verticalization" of some interventions is possible in certain circumstances.
- The policy framework, including instruments such as tax incentives, must be designed to be evaluated.
- The institutional framework must have a transparent and efficient character, helping to resolve the failures of coordination within the public sector, and between the public and private sector.
- By design, institutions must be set up in a learning system capable of correcting mistakes made promptly.

Without any doubt, the current FDI promotion policies of the region can be improved. Among other adjustments it's necessary to strengthen the Investment Promotion Agencies (IPA—Agencias de Promoción de Inversiones in Spanish), to improve their capacity and effectiveness, undertake reforms and changes which create a better business climate and, finally, evaluate the results obtained by fiscal incentive policies to improve their functioning and adapt them to future needs.

In spite of the fact that each one of the countries has an IPA and these have been operating for years, many need greater institutional and financial backing. It is not enough to create a promotion agency, it must be endowed with institutional status and financial resources fit for its function, and this is a pending task in some countries of the region. In addition the IPA must review their strategic priorities and rethink their portfolio of activities. Aspects such as improving the investment climate and attention to the established investor seem to be under-estimated in Central America, if other international experiences are considered. Also, the IPA must assume a leadership role and one of influence in the readjustment of the PDP framework, with the aim that their performance can be felt not only in terms of the volume of investments captured, but also in their quality.

The central challenge is to continue to attract FDI but, above all, to improve its quality, so that the consistency between investment attraction policy and the general framework of the PDP acquires singular importance. This implies a need to

promote a parallel strengthening of the PDP in Central America. In these countries the design and implementation of the PDP has not always enjoyed a clear line of argument on the flaws that must be resolved. In many cases, the interventions aim at compensating for failures of government which it has not been possible to amend in another way and, when really market failures are tackled, the chosen mechanisms have not always been the best. The use of the wrong tools can be explained because the failures that justify interventions have not always been identified precisely; in addition, it has frequently been the case that there has not necessarily been adequate understanding of the policy instruments.

By contrast, the design of new instruments for investment promotion would tackle market failures, such as those in coordination of infrastructure provision or externalities in investments in training, innovation and development, in a more direct way.

Instruments for investment promotion do not exhaust under any concept the universe of PDP that countries can adopt. In addition, the PDP do not constitute a substitute for policy and instruments to attract investments. It is a question here of highlighting those instruments which offer greater compatibility between the new generation of PDP and the trends in FDI promotion.

The restrictions imposed by the WTO can be seen as an opportunity to adjust the incentive regimes. An extreme option for complying with the new rules would be to eliminate tax incentives or, at the other extreme, extend them to that they reach all firms, whether they export or sell to internal markets, as several Central American countries have proposed. However, this path creates problems and assumes complete passivity on the part of the countries in which the investment originates.[25]

The absence to date of systems of follow up and impact measurement has impeded or at least hampered better design systematics and implementation of PDP in Central America. A similar challenge is posed by investment promotion policies. In this regard, the new instruments for promotion of proposed investments would represent a substantial improvement with regard to the potential for follow up and impact measurement, given that operation of the instruments depends precisely on

[25] The evidence suggests that the performance of fiscal incentives in the free zones of Costa Rica, El Salvador and Dominican Republic has been problematic. Estimations of rates of return suggest that projects which would have gone ahead anyway due to their high rate of return have been given incentives. In addition, to the degree to which the rate for corporations is lower than the marginal one for individuals, the latter have been encouraged to "park" their income in firms. To convert a country into a big free zone assumes that multinationals will not exploited the low or zero income tax collection to park a part of their global profits in their subsidiaries and, to the extent to which they do so, a new wave of reactions on the part of countries which are the source of investment cannot be ruled out.

the use of indicators linked, in a direct way, with the achievement of public policy objectives. To guarantee the credibility of evaluations of investment attraction policy results, it's also recommendable that the organ in charge of the evaluation be different to the entity responsible for its design and implementation.

Experience with the implementation of PDP in the region confirms the importance of institutions for long-term economic growth. In this domain the new instruments for investment promotion would also represent a significant advance. The success of export-oriented economic zones has been due in part to the relative strength of their institutions; by contrast, institutional weakness has been the characteristic of the PDP in promotion of production for internal consumption. Consequently, the duality of the national economies has come to reflect, to some degree, the heterogeneous quality of the institutional framework. The new instruments would make it possible to overcome the duality of the economies by opening up the opportunity that any firm which complies with the established criteria can benefit from investment incentives, irrespective of its size, the origin of its capital or the physical location of its assets.

In addition, the possible sources of opposition to reform on the investment promotion regime would be diluted, given that the new promotion instruments are not liable to favor certain economic sectors. Although there may be sectors for which taking advantage of the new investment incentives would in practice be relatively easier, others sectors would not be automatically excluded. The Central American experience shows little opposition to the introduction of reforms directed at taking advantage of national institutional advantages against external distortions but a lot of opposition to reforms when "winners" and "losers" co-exist in the local economy.

Another relevant factor is that the most successful PDP have tended to be derived from identification of opportunities on the part of the private sector which then transmits the information to takers of governmental decisions. By contrast, the PDP which have followed the opposite pattern—public initiatives which are then "sold" to the private sector—have had less success. There is here a parallel with the style of the new instruments for investment promotion, which are mostly compatible with the "exploratory" activity of the private sector, since it is not presumed that governments choose successful markets or products for the incentives granted. On the contrary, the investment incentives would be directed by how the private sector takes advantage of the opportunities it finds.[26]

[26] To employ a specialized terminology, the investment incentives would be granted to the production functions which are identified by the private sector and that have better compatibility with public policy priorities.

The experiences of Central American countries coincide in showing that reforms for the promotion of FDI must have an eminently horizontal character, and vertical policies must only be used exceptionally. The new investment promotion instruments allow a more or less horizontal application, given that the incentives would be available for any firm in all sectors of the economy, provided that the investment plans contemplate the use of technologies and modes of production congruent with the objectives of public policy. In addition the necessary institutional framework to implement horizontal policies tends to be relatively simple and is less vulnerable to capture by interest groups than is the case for vertical policies. In turn, it can be assumed that this would facilitate the congruence between the institutional framework for investment attraction and that for implementation of the PDP.

It must be recognized that in Central America the institutional mechanisms for promotion of investment and exports still lack a solid structure. Each organism tends to be responsible for resolving coordination problems within its area, but there is not always a coordination forum with the participation of all the pertinent governmental organisms, or that forum is ineffective. In this context, it's valid to indicate that the new incentives for investment promotion dilute the need to count on a narrowly coordinated institutional apparatus which embraces many sectors. In addition, the proposed instruments diminish the dichotomy between investment and export promotion relative to the taking advantage of incentives, given that less emphasis is placed on the geographical market at which the production is aimed, while increased priority is given to the concrete way in which the goods and services will be produced to meet market needs.

In some cases there are problems of a horizontal sort which are tackled from a vertical perspective. In the majority of cases, the problems need really a transversal approach, congruent with the nature of the failure to be resolved, a situation which would go beyond the reach of the new investment promotion instruments.[27] However, it's not ruled out that the promotion policy might grant differentiated incentives for investments carried out in areas with particular infrastructure lags or security problems, thereby rewarding the introduction of technologies or robust modes of production in difficult environments.

There also exists in the region a restrictive framework for labor market operations; for example, numerous failures are recorded which justify training policies that in

[27] An example of this can be infrastructure failures and weakness in citizen safety in some countries of Central America. Eager to promote investment, governments have offered specialized infrastructure to benefit a specific sector. Something similar has happened with citizen security, through the creation of specialized police (for example, police for tourism), as well as provision of security services dedicated to special economic zones.

part have as their backdrop weaknesses in the education system. Clearly, solving all the challenges for the operation of the Central American labor market goes beyond the reach of an investment promotion policy. However, the incentives proposed allow recognition of projects whose mode of production facilitates correction of labor market problems, just as is the case with externalities in training. In addition, investment incentives would facilitate the discovery and recognition of productive structures that help to create work and face up to the distorted labor markets that have been inherited.

The investment attraction policies employed until now, although they might have been successful in creating exports and jobs, were not necessarily effective at resolving market failures in the economy in general and, on the country, may have perpetuated the distortions which harm long-term growth. By contrast, the new investment promotion instruments make it possible to grant incentives to those projects that articulate productive chains, diluting the artificial differentiation between special economic zones and the rest of the economy, and boosting the development of productive linkages and industrial clusters.[28]

The conceptual framework for the PDP recognizes that vertical policies can on some occasions be appropriated, so that it is necessary to count on appropriate institutional channels for their identification, application, follow up and evaluation. Experience indicates that if a country decides to "pick winners" in a sector, it must coordinate all institutions to reduce the trapping of some link in the decision-making chain by some interest group. In this regard, it should be noted that investment promotion policy does not exclude the possibility that, in certain countries, vertical PDP are applied, given that the approach of the new instruments rests primordially on the desired characteristics of the modes of production, rather than in the concrete markets which it seeks to supply.

The possibility that instruments are designed to promote investments with some economic sector weighting is not completely ruled out. Although this possibility exists, the weighting granted to the economic sector should not be a determining factor to the point where it changes the character of the instrument from horizontal to vertical. Besides, the more the instrument "verticalizes," the more tensions would grow over the institutional structure in charge of administration of the incentives. Therefore, although the alternative is there, the "verticalization" of the instrument would tend to erode its spirit, focused on promoting modes of production with

[28] A complete convergence between special zones and the rest of the economy might still seem improbable, but the instruments for promotion of investments could form part of a broader strategy aimed at strengthening the general system of production, promoting greater ties between both systems.

desirable properties from a public policy point of view, rather than on particular economic sectors.

Taking account of the institutional challenges of Central American countries, what would appear to be the most appropriate sequence would be to begin with investment incentive instruments that are eminently horizontal in character. This would not prevent the introduction of vertical PDP of a different nature, given that a horizontal instrument would not provoke distortions in the application of policies with a vertical character. On the other hand, the vertical weights that might be applied logically would modify the prospects of projects which could benefit from the horizontal instrument of investment promotion, presumably in a favorable manner, so that this information would have to be internalized in the evaluation of each project that seeks to enjoy investment incentives.

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Summary

Promotion of foreign direct investment (FDI) has been a priority policy goal in Central America, Panama and Dominican Republic for the past twenty years. Fiscal benefits are among the policies that have been used to attract it.

At first sight the model followed has been fruitful. In 2013 the eight countries of the region succeeded in attracting US$ 12.7 billion, the highest level of FDI in their history. But there are question marks about how FDI will perform in future and what the incentives to promote it should be now that World Trade Organization rules on the instruments used to promote FDI in the region have changed. The present book analyzes this situation in depth.

Firstly, it reviews the importance of FDI in the region as a source of financing for the external deficit. Then it reviews the findings of international economic research on the impact of FDI on growth and the factors that attract it. It highlights that far from being assured, the benefits of FDI depend on complementary factors which are often not present in the region.

Subsequently the book analyzes the international evolution of FDI and the growing importance of multinationals of Latin origin. It then tackles the controversial question of the efficacy of fiscal incentives as a means to attract investment, following an innovative technical approach based on firm level data which questions whether the free zones have had a net positive impact on development.

This analysis is complemented by a study of investment promotion policies, which focuses particularly on the Investment Promotion Agencies.

Finally, the book outlines the prospects for FDI attraction now the sun has set on strategies based on providing fiscal incentives. It argues that a new strategy should be based on the creation of new skills and capacities through instruments designed to complement productive development policies and thereby generate positive spillovers in the economy.

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