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The Caribbean Region Beyond the 2008–09 Global Financial Crisis

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The Caribbean Region beyond the 2008-09 Global Financial Crisis

Auguste Kouame & Maria Ivanova Reyes¹

December 27th, 2010

Abstract

The impact of the 2008 global financial crisis on the Caribbean, and specifically on the English speaking Caribbean nations, was deeper than in the rest of Latin America. With the exception of the Dominican Republic, Guyana, Haiti and Suriname which experienced a moderate slowdown from their pre-crisis growth levels, other Caribbean nations exhibited a strong growth contraction during 2009. The large impact of the crisis in these economies is attributable to their high dependence on the United States (and the UK to a lesser extent) as trade partner or source of foreign direct investment, tourism and remittance. Empirical analysis of economic cycles shows that the English Speaking Caribbean countries tend to magnify the effects of booms or contractions that occur in the US. Due to the reduction in global demand for Caribbean exports and services the crisis significantly affected employment levels in some Caribbean countries. Consequently, poverty levels deteriorated; they could not be cushioned by safety nets programs due to lack of fiscal space and weaknesses in the design of these programs. While the non-English Speaking Caribbean region is likely to recover along with the rest of LAC, recovery in the English Speaking Caribbean region has been sluggish so far and is likely to lag behind. An explanation of the sluggish recovery in the English Speaking Caribbean countries is attributable to the economic cycles of these countries not being aligned with large emerging market economies that are driving the global recovery like China, India or Brazil. In order to increase their chances of securing sustained growth rates in the medium to long term, Caribbean countries should seek to develop more their trade and economic relations with the new growth poles of the world economy.

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Acronyms

ATG	Antigua & Barbuda
BHS	Bahamas
BLZ	Belize
BRB	Barbados
CARICOM	Caribbean Community
DR	Dominican Republic
ESC	English Speaking Caribbean
FDI	Foreign Direct Investment
GRD	Grenada
GUY	Guyana
HTI	Haiti
IMF	International Monetary Fund
JAM	Jamaica
KNA	St. Kitts & Nevis
LAC	Latin America & the Caribbean
LA	Latin America (excluding the Caribbean)
LCA	St. Lucia
LCSPE	Latin America & Caribbean Economic Policy Group of PREM
NESC	Non-English Speaking Caribbean
PREM	Poverty Reduction and Economic Management Unit
OECS	Organization of Eastern Caribbean States
SUR	Suriname
TTO	Trinidad & Tobago
VCT	St. Vincent & the Grenadines
WDI	World Development Indicators

The Caribbean Region beyond the 2008-09 Global Financial Crisis

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In 2009 most countries in Latin America & the Caribbean³ experienced a significant economic contraction due to the effects of the global financial crisis, with a sub-group of Caribbean countries being hit much harder than the rest of Latin America and its Caribbean peers. The Caribbean region contracted by only 0.2 percent “cushioned” by the 3.5 percent growth of the Dominican Republic, the largest economy of the group⁴. But growth in the English Speaking Caribbean⁵ countries was as low as -3.6 percent in 2009 below the -2.2 percent growth of the Latin America⁶ region. Consequently, the English Speaking Caribbean (ESC) experienced the most detrimental effects of the crisis in 2009 among LAC nations.

Except for the Dominican Republic, Guyana and Suriname the recovery of the Caribbean in 2010 seems quite behind that of most countries in LAC.⁷ While South and Central American countries are expected to grow positively during 2010, with the exception of Venezuela, only 9 out of 15 Caribbean countries are expected to exhibit positive growth in 2010. The economies that will likely still contract in 2010 will be those of Antigua & Barbuda, Bahamas, Barbados, Haiti, Jamaica and St. Kitts & Nevis. It is estimated that in 2010 the Caribbean will reach an average growth of 1.4 percent, while the English Speaking Caribbean will grow even less (0.8 percent on average). The first figure represents one third of the 4.1 percent growth of the rest of LAC, while the latter is merely one fifth. The figures show that some Caribbean countries are still suffering the persistent effects of the crisis.

While over the medium-term the Caribbean region is expected to recover considerably, the English Speaking Caribbean will likely lag behind the growth of the rest of LAC and its pre-crisis trend. The Caribbean region is forecasted to exhibit a considerable recovery beyond 2010 primarily driven by a growth boost in the Dominican Republic and Haiti, with the latter nation showing a strong post-natural disaster recovery. Weighted average growth during 2011-15 is forecasted at approximately 4.8 percent per year for the Caribbean, slightly higher than the expected growth in the rest of LAC (4.1 percent). But many of the English Speaking Caribbean countries will not show such a dynamic recovery and are

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³ In this paper the Caribbean refers to the World Bank definition for this region, which includes the following 15 countries: Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St. Kitts & Nevis, Saint Lucia, St. Vincent & the Grenadines, Suriname and Trinidad & Tobago. This is the CARICOM group and the Dominican Republic.

⁴ The -0.2 percent growth in 2009 is a weighted average of the growth of the 15 Caribbean countries. Weighted averages in the region are greatly influenced by the weight of the Dominican Republic (approximately 40 percent of the Caribbean GDP), for this reason growth rates of smaller economies are masked by the growth in the DR.

⁵ The English Speaking Caribbean is the term used in this paper to refer to the independent Anglophone Caribbean countries, formerly referred to as the British West Indies. This sub-region includes the following 12 nations: Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St. Kitts & Nevis, Saint Lucia, St. Vincent & the Grenadines, Suriname and Trinidad & Tobago.

⁶ Reference includes countries in Central and South America only.

⁷ Estimations and projections are from IMF-WEO database as of October 2010.

expected to grow on average by 2.5 percent over the medium-term, which is both lower than that of the rest of LAC and below their average annual growth of 5.1 percent 2003-07, just before the crisis.

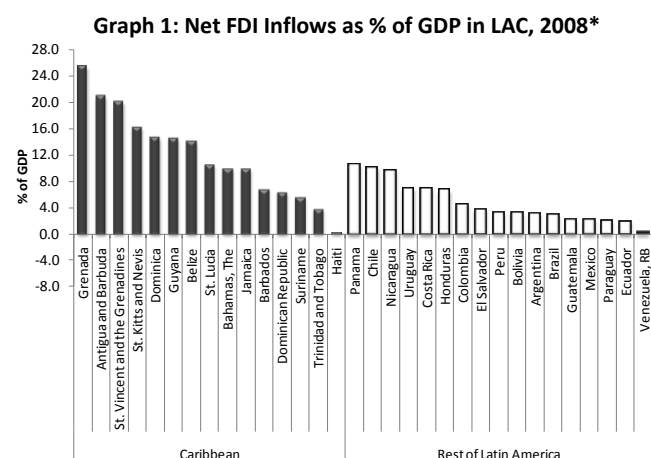
The purpose of this paper is therefore two-fold: it attempts to measure the impact of the crisis in the Caribbean over the short to medium-term and it intends to evaluate the potential reasons behind the sluggish post-crisis recovery in the Anglophone Caribbean. The paper will be structured as follows: **Section I** describes the strengths and vulnerabilities of Caribbean countries to better understand the channels of contagion of the crisis and the reason behind such strong effects of this particular crisis. **Section II** assesses the impact on the Caribbean of the global financial downturn in terms of macroeconomic and microeconomic performances. **Section III** describes the differences of the current crisis with past crisis episodes for the Caribbean and the rest of LAC. **Section IV** relates economic cycles in the Caribbean to cycles in selected economic growth poles of the world, i.e., USA, China and India. This section analyzes if there are differences in the cycles of the English Speaking and non-English Speaking Caribbean countries that could explain the slower recovery of the ESC. **Section V** is dedicated to conclusions and recommendations for the region as an attempt to provide the Caribbean with strategies that help them face future crisis.

I. Strengths and Vulnerabilities of the Caribbean Region

I.A Strengths

In most Caribbean nations the economic structure is strongly dominated by exports of goods and services, which grew at a dynamic pace during 1990-2008. For this period exports represented as much as 42 percent of GDP in the Caribbean and 53 percent in the English Speaking Caribbean, with an average annual growth rate of 4.3 and 4 percent, respectively. The importance of exports in Caribbean GDP contrasts significantly with the 20 percent of the rest of Latin America, where the economic structure is not as export driven. The heavy reliance on exports provides the region with a strong insertion in global markets that demand its products, making it feasible to be integrated into the growth path of other nations of the world.

Among its exports of goods & services, travel services play an important role in the Caribbean providing a diversification of revenue capacity from the production of physical goods. With the exception of Guyana, Suriname, Trinidad & Tobago and Haiti, tourism in the Caribbean region is an important source of revenue. Income from travel services represents as much as 30 percent of GDP in countries like Bahamas and St. Lucia, while the tourism industry employs close to 25 percent of total employment in Jamaica and Grenada (Graphs A.1 & A.2).



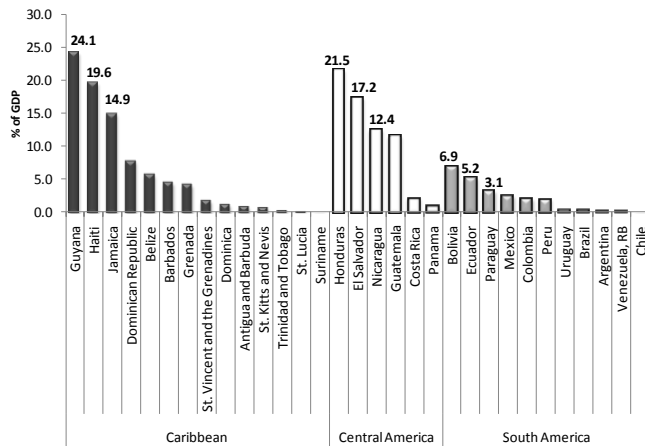
*Except for Suriname, where it refers to gross FDI inflows.

Source: Based on data from WDI and IMF.

The high and increasing FDI flows to the region also constitute an important element to support the production base of Caribbean economies. FDI inflows impact different dimensions and industries of Caribbean economies enhancing growth and promoting further investments. Since the 1990s the average Caribbean country has seen net foreign direct investment more than triple, going from 1.8 percent of GDP in 1990 to an estimate of 6.4 in 2008, which represents more than double the level of the rest of Latin America. Most of the countries

in the Caribbean region are among the highest recipients of FDI as a share of GDP in the LAC region, with net foreign direct investment as high as 25 percent of GDP in Grenada and 21 percent in Antigua & Barbuda during 2008 (Graph 1). Caribbean countries also fair relatively well when compared globally. In fact three Caribbean economies, Antigua & Barbuda, Grenada and St.Kitts & Nevis were among the world's top 10 recipients of FDI as a share of GDP during 2006-2008.

Graph 2: Inflow of Remittances to Latin America & the Caribbean as % of GDP, 2008



Source: Based on data from World Development Indicators.

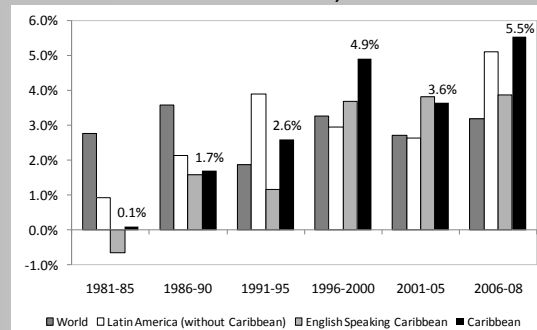
The dynamic flow of remittances to Caribbean countries is a particular strength of the region as it constitutes an important growth and consumption smoothing instrument for an area subject to natural hazards and external shocks. As noted by Fajnzylber and Lopez (2008) remittances help reduce growth volatility and allow countries to have a faster adjustment to external shocks due to their countercyclical behavior. Within the LAC region Caribbean nations are among the most important recipients of remittances as a percentage of GDP, with three of the top 5 recipients: Guyana (24.1 percent), Haiti (19.6

percent) and Jamaica (14.9 percent). This level of remittances receipts is only comparable to that of some Central American countries (Graph 2). During 2005-08 the Caribbean region received remittances amounting to an average of 7.3 percent of GDP versus 1.6 percent for the rest of Latin America. However, countries like Trinidad & Tobago, St. Lucia and Suriname depend relatively less on remittances.

Box 1: Economic Growth in the Caribbean since the 1980s

One common characteristic that the Caribbean countries share is a dynamic economic growth which has surpassed the rest of LAC during the recent years. The Caribbean started to outpace the growth of the rest of LAC since the mid-90s and has grown at impressive rates during the years just before the beginning of the global financial crisis, with the exception of the average growth for the English Speaking Caribbean countries which slightly decelerated in 2006-08 (Graph B.1). During 1996-2008 the Caribbean economy grew at an annual rate of 4.6 percent, while the English Speaking Caribbean countries grew at a rate of 3.8 percent. This represented a faster pace than the rest of LAC and the world which grew at rates of 3.3 and 3.0 percent, respectively. The highest growth Caribbean countries during this period were: Trinidad & Tobago (7.6 percent), Dominican Republic (5.9 percent), Belize (5.2 percent), Antigua & Barbuda (4.9 percent) and Grenada (4.0 percent). In 2006-08 the average growth for the whole LAC region was significantly high, with Latin American countries averaging 5.1 percent per year, the Caribbean averaging 5.5 percent and the English Speaking Caribbean a more moderate 3.9 percent but still higher than the world average of 3.2 percent (Graph B.1 & Table A.1).

Graph B.1: Average Economic Growth in the World, Latin America & the Caribbean, 1981-2008

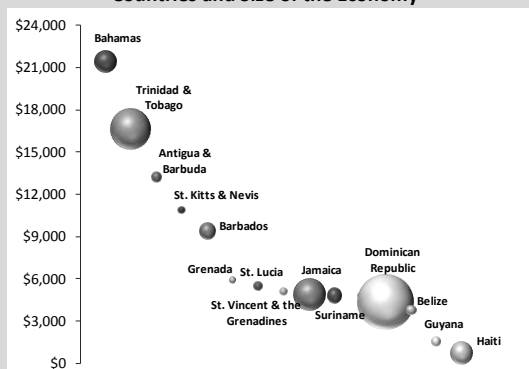


Note: Economic growth refers to real GDP growth. The Caribbean average and the Latin America (without Caribbean) average were computed using GNI PPP weights.

Source: Based on data from WDI, IMF and Government official data.

Box 2. The Caribbean: A Small Sub-Region of LAC with Significant Heterogeneity

Graph B.2: Gross National Income per capita of Selected Caribbean Countries and Size of the Economy*



* The GNI per capita, atlas method corresponds to 2008 or latest year available. The size of the economy is represented by the size of the bubbles for each country and corresponds to the current GDP in US\$ as of 2008 or latest year available. Source: Based on data from the World Development Indicators.

The Caribbean represents a small sub-region of Latin American & the Caribbean (LAC). Approximately 5 percent of the total population of LAC, and just 3 percent of its total economic activity are concentrated in the Caribbean. As a result, regional averages for LAC do not capture the performance of the Caribbean.

Caribbean countries are characterized by a considerable heterogeneity in terms of economic size and level of development. The region ranges from relatively larger countries like the Dominican Republic, Trinidad & Tobago and Jamaica to smaller ones as in the case of Grenada and Dominica, whose annual output represents less than 1 percent of the largest Caribbean economy. In contrast with their economic size, some of the small Caribbean economies exhibit a significantly high level of development, like Bahamas with a GNI per capita as high as US\$21,390, and Antigua & Barbuda with US\$13,200,

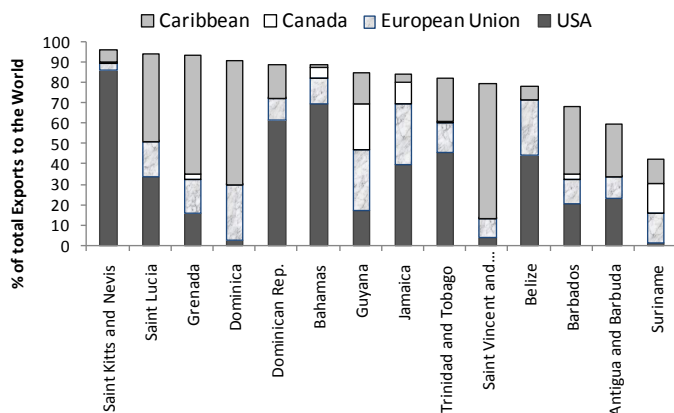
while the Dominican Republic's GNI per capita is only US\$4,330 and in the case of Haiti as low as US\$660.

I.B Vulnerabilities:

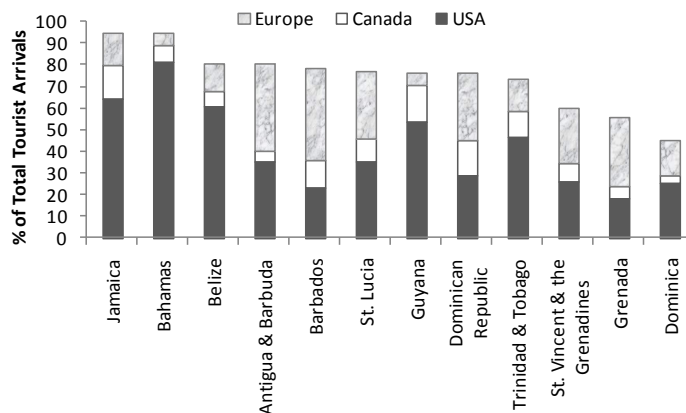
While the Caribbean has performed very strongly in the past few years in terms of economic growth, the region still faces significant vulnerabilities that could jeopardize its achievements, particularly in the presence of global crisis. Three main areas of vulnerability of the region are discussed: (i) limited country diversification in the demand for Caribbean tourism and export services, and in the supply of FDI and remittances flows; (ii) limited space for additional financing and rigidity of fiscal expenditures; (iii) high propensity to natural disasters.

The export and tourism industries of the Caribbean are mostly demanded by a small group of countries in the world which limits the region's capability of risk-hedging when the markets of these economies are facing downturns. Developed countries, and in particular the United States, are the main destinations for Caribbean exports. In most Caribbean countries more than 60 percent of the exports of goods are destined to the European Union, North America and even the same Caribbean region (Graph 3). This makes the Caribbean economies strongly vulnerable to changes in the global demand from the North America and the EU and poses a risk for export production sectors, the labor force in export related areas and future investments. Similarly, the source of tourism inflows to the Caribbean is also dominated by North America and Europe, which represent as high as 95 percent in Jamaica to as low as 45 percent of total tourism in Dominica (Graph 4).

Graph 3: Exports of Commodities of the Caribbean by main Destination, % of total Commodity Exports to the World in 2009*



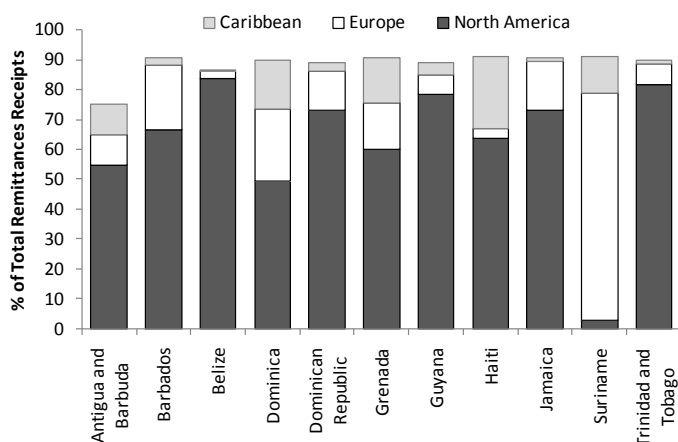
Graph 4: Tourist arrivals in the Caribbean by Origin, % of total Tourist arrivals in 2009+



*Or latest year available. + January-December 2009 or latest available period in 2009.

Source: Based on data from UN COMTRADE database for the SITC Revision 3 and One Caribbean.

Graph 5: Concentration of Remittances to the Caribbean by Region of Origin



Source: Based on estimations from Ratha and Shaw (2007).

Foreign Direct Investment⁸ and Remittances inflows to the Caribbean are also mostly originated in developed nations from North America and Europe. Almost 90 percent of the remittances received by Caribbean countries come from three regions of the world: North America, Europe and the Caribbean itself (Graph 5). Within North America, the United States is the most important sender of remittances to the region, except for Suriname which receives most of its remittances from the Netherlands. Remittances

from the US range from 42 percent of total remittances receipts in Dominica to 79 percent in Belize. In the case of Suriname, remittances from the Netherlands represent 76 percent of its total receipts (See Annex table A.3). This high concentration in the source of FDI and remittance partners, as opposed to an economy where both FDI and remittances receipts were more diversified.

To further increase the vulnerabilities to remittance shocks, some Caribbean nations also receive important flows of remittances from other Caribbean economies. While Haiti receives considerable remittances flows from the Dominican Republic (12 percent of its total remittances), other Caribbean

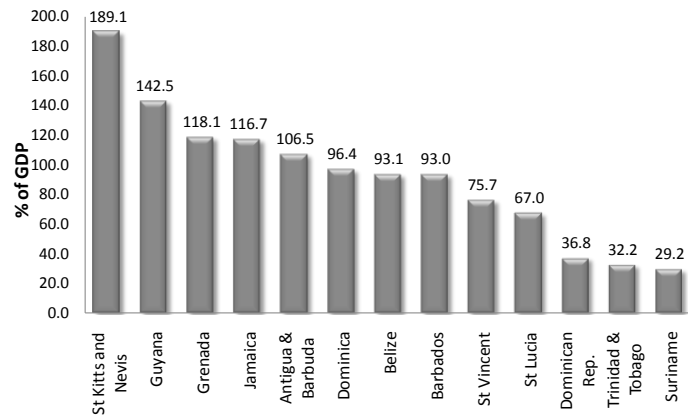
⁸ Data for FDI by country of origin is limited in the Caribbean. In the case of the Dominican Republic, where there is detailed information by country of origin, during 1993-2009 the FDI inflows from North America and Europe accounted for 79 percent of the total FDI received by the nation.

countries also receive significant flows from the region, like Dominica from Antigua & Barbuda (8 percent of total remittances), and Grenada from Trinidad & Tobago (14 percent) (Table A.3). This reliance on remittances from the same region could increase the effects in some countries of exogenous shocks that have regional impacts.

Most Caribbean nations exhibit high debt levels, which limit their capability of accessing further financing.

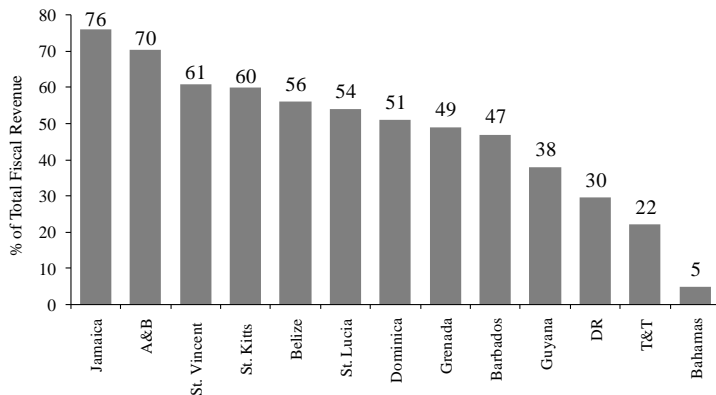
Graph 6 shows that public debt levels in the region range from 189 percent of GDP in St. Kitts & Nevis to 29 percent in Suriname. Indeed, more than half of the Caribbean countries have public debt levels representing almost their annual production and in five of these economies, debt exceeds the country's annual production, as in the case of St. Kitts & Nevis, Guyana, Grenada, Jamaica and Antigua & Barbuda (Graph 6). Many countries in the region have therefore a constrained capability for contracting new debt during crisis, as Caribbean growth prospects might not be able to maintain debt sustainability.

Graph 6: Public Debt as % of GDP in Selected Caribbean Countries (Average 2005-07)



Source: Based on data from LCSPE and WDI.

Graph 7: Fixed Fiscal Expenditures (Wages, Interests and Pensions) as a share of total revenue, 2007



Note: Data refer to 2007, except for Barbados where data refer to FY 06/07
 Note: Fixed expenditures for Jamaica, T&T, Bahamas and Dominican Republic do not include pensions as per availability of data.

Source: Based on LCSPE database and Official Government Statistics.

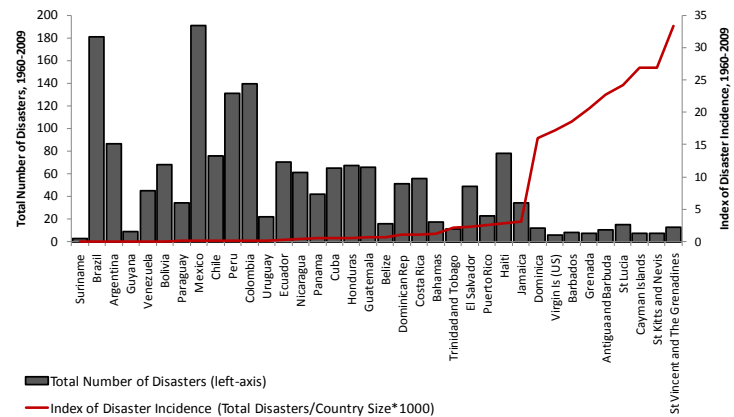
The high debt levels of the region combine with an additional constraint regarding fiscal space.

Fiscal expenditures in many of the Caribbean nations are mostly committed to payroll, interest payments and pensions, which limits the flexibility of allocation towards emergency programs or any related expenditures to counter the down cycle. Graph 7 shows that seven of the Caribbean economies for which data is available have more than 50 percent of fiscal expenditures allocated to wages, interest payments and pensions, leaving

little room for readjustments in expenditures in the event of crisis.

In addition to its limited capacity to cope with external shocks the Caribbean region is an area of the world prone to natural disasters, which can have significant economic impacts and exacerbate the effects of crisis. Caribbean countries are situated in a geographic area prone to earthquakes, hurricanes, floods and even volcanic eruptions⁹. The number of natural disasters that have occurred since 1960 as a proportion of their geographic size (incidence of natural disasters¹⁰) is much higher in most Caribbean countries than in any other country in the American continent (Graph 8). As a result, the relative small size of many Caribbean countries, together with their propensity to natural disasters, implies that the effects of natural shocks can be of relevance.

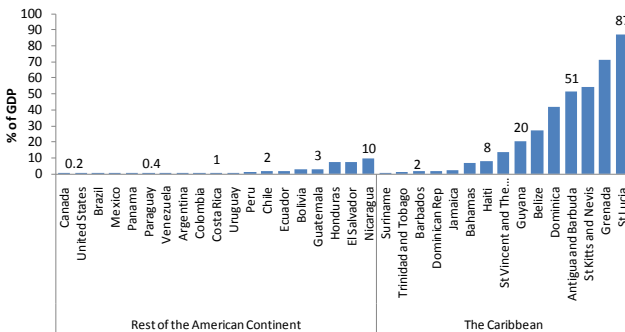
Graph 8: Total Number of Disasters and Index of Disaster Incidence* for the Americas, 1960-2009



Note: The index of disaster incidence has been constructed as the ratio of the total number of disasters over the country size (measured in squared kilometers) multiplied by 1000.

Source: Based on EM-DAT (OFDA/CRED International Disaster Database) and WDI.

Graph 9: Natural Disasters in the American Continent: Damage as a percent GDP, Average 1960-2008



Note: The damage as a percent of GDP refers to the average of the estimated yearly costs to GDP of all natural disasters for which data is available since 1960.

Source: Based on data from EM-DAT (The OFDA/CRED International Disaster Database) and WDI.

Rest of the American Continent, 10 percent; Caribbean countries: St. Vincent and The Grenadines (8%), Guyana (20%), Belize (20%), Dominica (42%), Antigua and Barbuda (51%), St. Kitts and Nevis (51%), Grenada (71%), St. Lucia (87%).

In fact, estimations of the yearly costs of natural disasters for the American continent indicate that most Caribbean countries have experienced high economic losses due to natural disasters. With the exceptions of a few cases, more than half of the Caribbean countries have lost on average more than 7 percent of GDP in the event of a natural disaster (Graph 9). The most dramatic cases have been experienced in the Organization of Eastern Caribbean States (OECS), where losses have reached 87 percent of GDP in St. Lucia, 71 percent in Grenada, 54 percent in St. Kitts & Nevis, 51 percent in Antigua & Barbuda, and 42 percent in Dominica (Graph 9).

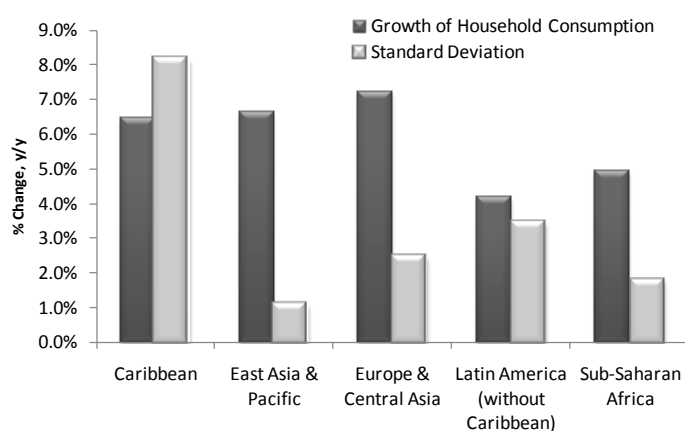
Natural disasters affect the production base of Caribbean economies and have strong effects on household consumption. Given the small geographic size of many Caribbean countries, natural disasters can sometimes have nation-wide effects. Empirical analysis for the LAC region suggests that

⁹ Given the definition of Caribbean used in this paper the reference to volcanoes includes only those of St. Vincent & the Grenadines and Trinidad & Tobago. In addition to these there are other volcanoes in island territories of the Caribbean.

¹⁰ The index of disaster incidence has been constructed as the ratio of the total number of disasters over the country size (measured in squared kilometers) multiplied by 1000.

natural disasters significantly affect the growth of output, consumption and investment (Auffret, 2003). Furthermore, natural disasters affect considerably household consumption in some LAC countries because of failures of adequate risk-coping mechanisms, like insurance, developed financial markets and counter-cyclical fiscal policies (Ibid.).

Graph 10: Growth and Volatility of Household Consumption in the Caribbean and Selected Regions, 2001-08



Source: Based on data from World Development Indicators.

The propensity to natural disasters together with the region's vulnerability to global downturns is a major factor behind fluctuations in household consumption in the Caribbean. Graph 10 shows that the real growth of household consumption in the Caribbean since 2000 has been significantly high, but its volatility has been higher than other regions of the world. The region's propensity to natural disasters is one of the factors behind this, due to the inability of some households to fully insure against them. Fluctuations in household consumption related to natural

disasters are likely to aggravate the already high poverty levels in most Caribbean countries and therefore constitute a strong vulnerability for future development, as exemplified by the recent earthquake in Haiti.

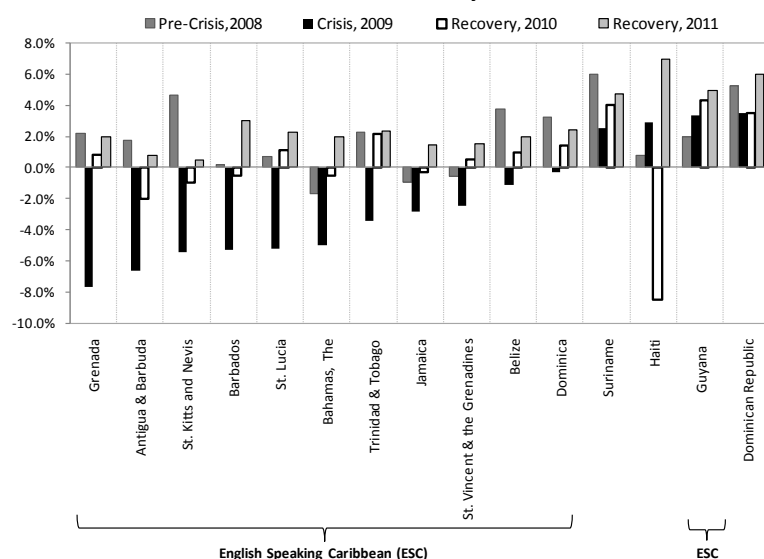
II. Effects of the Crisis at the Macroeconomic and Microeconomic Level

The global financial crisis of 2008-09 had a detrimental impact on growth in the Caribbean region during 2009. Given the strong linkages of the region with the US and Europe, the effects of the crisis through a reduction in the demand for Caribbean exports, the deceleration of the inflow of remittances and the slowdown in FDI generated a growth contraction of approximately 0.2 percent for the entire Caribbean region and of 3.6 percent for the Anglophone Caribbean countries. While the former figure is greatly influenced by the positive growth outcomes of the Dominican Republic, which managed to grow at an impressive rate of 3.5 percent in 2009, the latter reflects much better the reality of most Caribbean economies which grew at negative rates in 2009 and are likely to recover very modestly or not at all in 2010.

The growth contraction that many of these economies experienced in 2009 reflects also the limited space of the region to cope with external shocks. In spite of its historical vulnerability to natural disasters and to fluctuations in the global economy, the Caribbean region has not managed to overcome its constraints in reacting to shocks. As stated by Dutra (2009) fiscal policy remains heavily pro-cyclical in the region; this tendency of Caribbean economies to enhance the positive cycles leaves very limited fiscal space to stimulate the economy through non-debt accelerating mechanisms in times of crisis. In addition the fiscal impact of greater social expenditures is limited due to the scarcity of targeted fiscal

support programs, which tend to provide a rapid response during crisis. Finally, most Caribbean countries are heavily indebted and their access to financial markets is significantly costly especially after the financial turmoil.

Graph 11: Economic Growth in the Caribbean: Estimated Impact from the Crisis and Recovery in 2010-11



Note: Countries ranked according to economic growth rate in 2009.
 Source: Based on IMF-WEO estimations and projections as of April 2010.

In terms of the macroeconomic effects of the crisis, during 2009 the Caribbean saw a sharp growth contraction in most of the English Speaking Caribbean, and a moderate positive growth in Suriname, Haiti, Guyana and the Dominican Republic. With the exception of Guyana which in 2009 grew at approximately 3.3 percent, all of the English Speaking Caribbean countries experienced a negative growth, ranging from an estimate of -7.7 percent in Grenada to -0.3 percent in Dominica (Graph 11).

Economic growth during 2010 is estimated to show a timid recovery of 1.4 percent for the entire Caribbean and 0.8 percent for the ESC countries, a strong contrast with respect to the expected recovery of the rest of Latin America which is estimated at 4.1 percent.¹¹ The economies which are expected to still contract in 2010 are Antigua & Barbuda, Bahamas, Jamaica, St. Lucia, Belize and Haiti, this last country due to the effects of the recent earthquake¹². Grenada, Barbados and St. Kitts & Nevis are not expected to grow with respect to 2009. And a positive recovery is only forecasted for six Caribbean countries: St. Vincent & the Grenadines, Trinidad & Tobago, Dominican Republic, Dominica, Suriname and Guyana (Graph 11 & Table A.4).

All Caribbean economies are expected to exhibit a positive economic growth in 2011. During 2011 the Caribbean region will grow at approximately 4 percent, this is the same rate at which the rest of Latin America is expected to grow during that year. However, this positive recovery in 2011 will be driven by the performance of Haiti, as it recovers from the January earthquake, and the Dominican Republic, while the English Speaking Caribbean countries will still lag behind the rest of LAC and the NESC with an average growth of only 2 percent for that year.

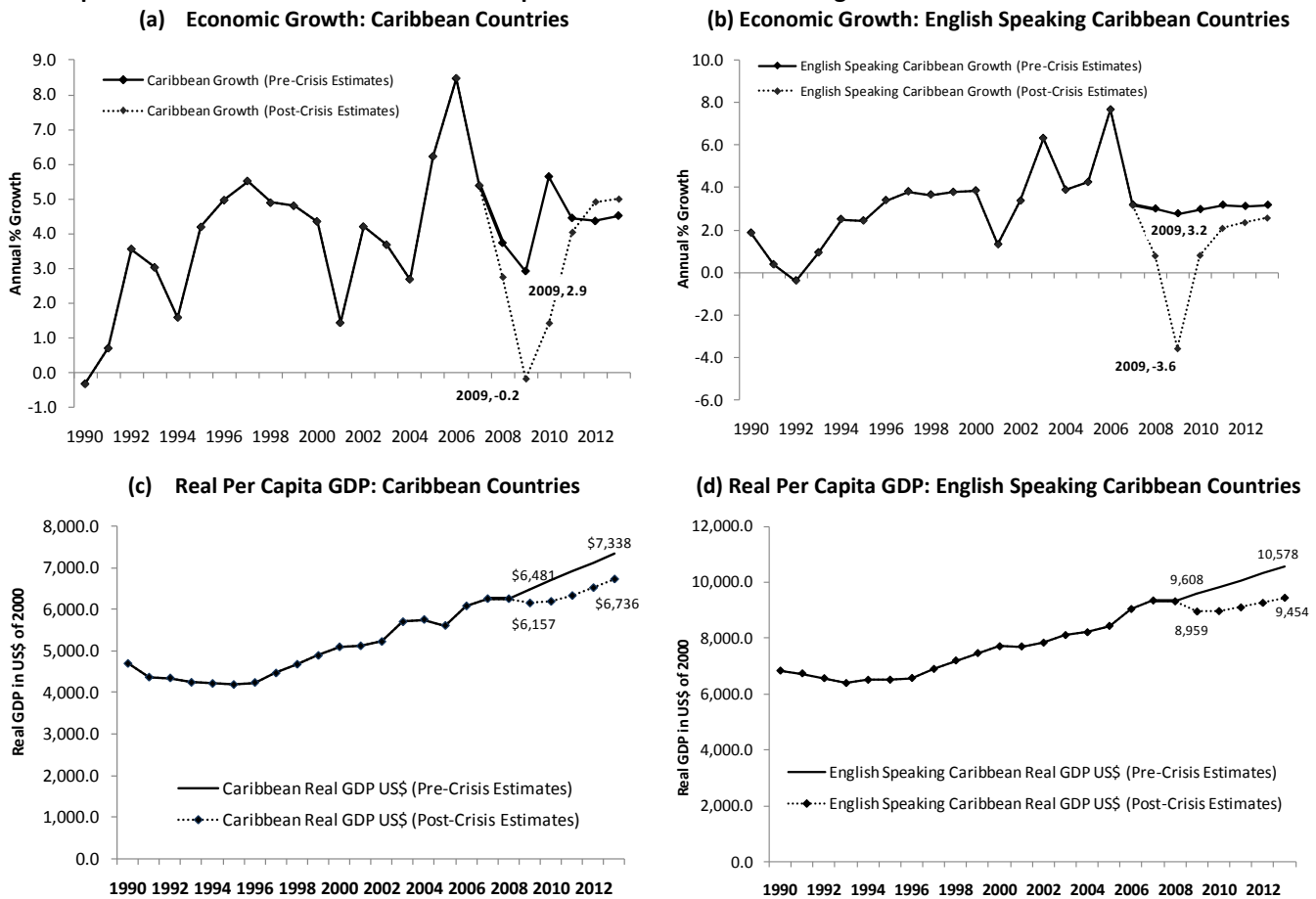
¹¹ Growth estimates are based on data from IMF-WEO database as of October 2010, regional averages are weighted by nominal GDP in US\$.

¹² Before the January 2010 earthquake experienced by Haiti, growth projections pointed towards a 2 percent positive growth in 2010 for this country.

II. Simulating Effects of the Crisis at the Macroeconomic and Microeconomic Level

The growth slowdown in the Caribbean implies a significant loss for the region compared to the trend estimated shortly before the global crisis reached its peak in 2009. As seen in Graphs 12 (a)-(b), in October 2008 it was expected that the Caribbean would grow approximately 2.9 percent in 2009 (3.2 for the English speaking Caribbean).¹³ Recent estimates for 2010 indicate a quite different outlook in which Caribbean countries were much more hit than originally expected with a growth contraction of 0.2 percent for the entire Caribbean and 3.6 percent for the English Speaking Caribbean countries. In addition, the English Speaking Caribbean countries are likely not to catch up with previous trend estimates for the medium-term. As a result of the loss in output caused by the crisis the level of development measured by real per capita GDP has deteriorated significantly, with average per capita GDP falling to pre-2008 levels (Graphs 12 (c)-(d)).

Graph 12. Economic Growth and Real Per Capita GDP in the Caribbean Region: Post-crisis vs. Pre-Crisis Estimates



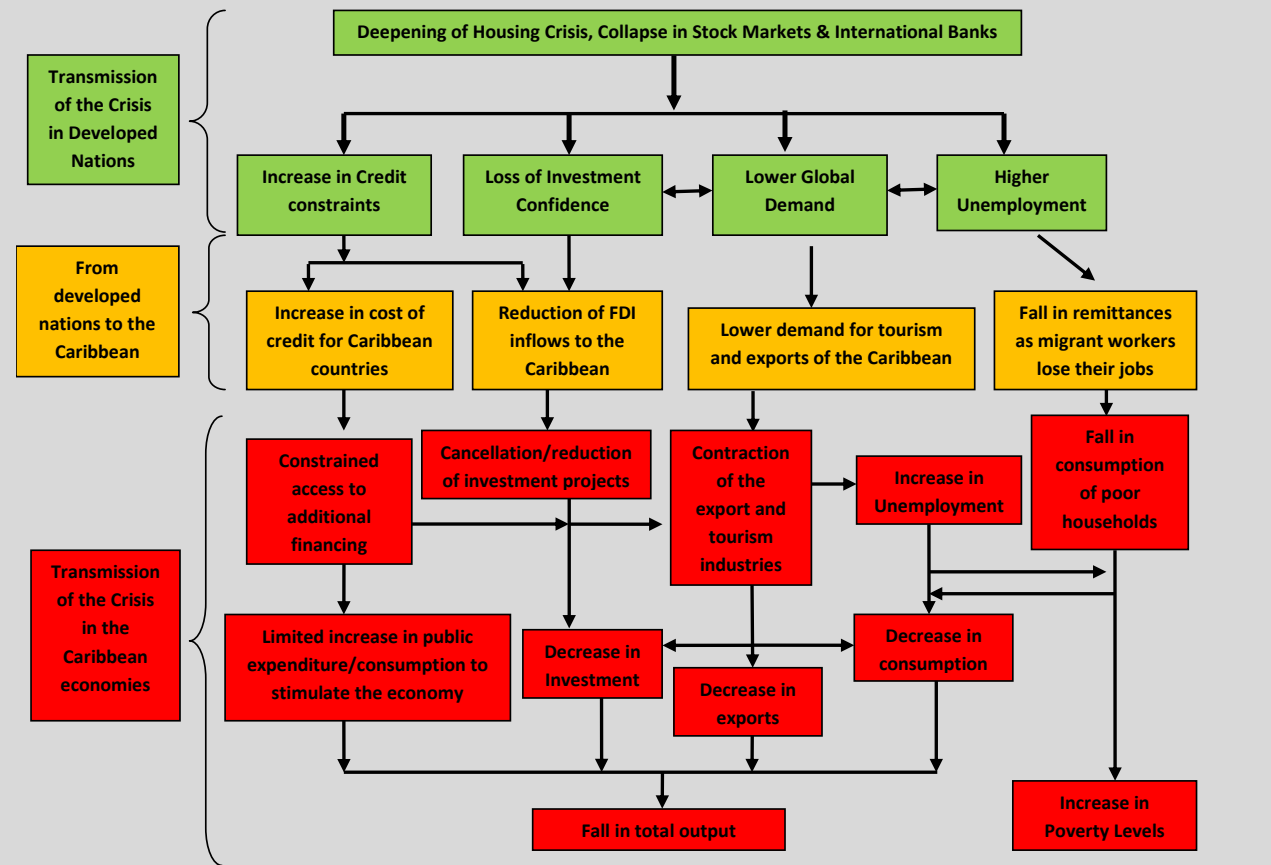
Source: Based on data from IMF World Economic Outlook Databases as of October 2008 (Pre-crisis estimates) and October 2010 (post-crisis estimates).

¹³ Weighted (US\$ GDP) average of IMF-WEO projections for each Caribbean country, as per the World Economic Outlook Database of October 2008.

Box 3. Channels of Contagion of the Global Financial Crisis to the Caribbean

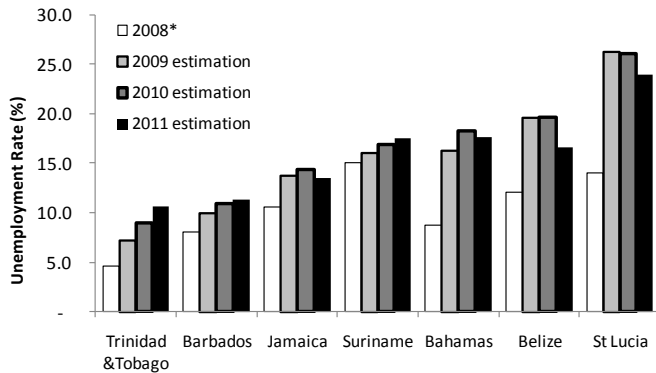
The impact of the recent global crisis in the Caribbean has been transmitted through four main channels: exports, tourism, remittances and FDI inflows. As the crisis deepened in the US and other developed nations, the effects in the Caribbean started to be evident through the strong trade, tourism and income flows linkages of the region with these nations. The reduction in global demand has resulted in a decrease in the demand for Caribbean exports and tourism services. The increase in unemployment in developing nations has impacted the pace of remittances and the increase in credit constraints and investment confidence has affected the flow of foreign direct investment.

Flow Chart 1: "Traffic Light" Transmission Channels of the Recent Economic Crisis to the Caribbean



The transmission of the crisis has been reinforced by the vulnerabilities of the region to exogenous shocks. As discussed in this paper, the concentration in a reduced market of the demand for exports and tourism, and the supply for remittances and FDI reduces the capability of the Caribbean to diversify the effects of global crisis.

Graph 13: Simulations of Impact of the Global Crisis in Unemployment during 2009-10 for Selected Caribbean economies

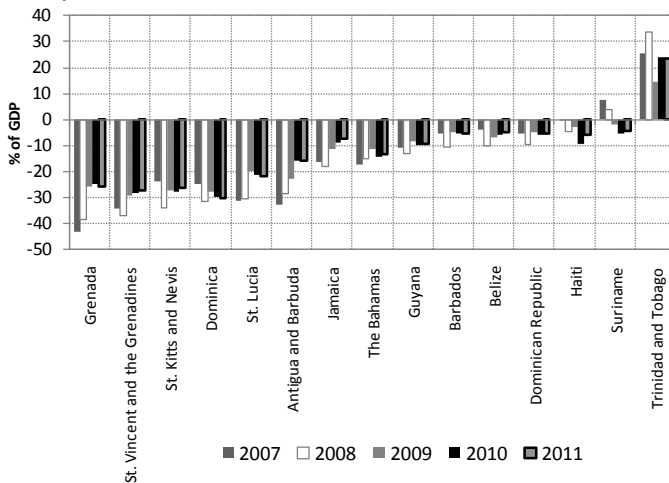


Source: Simulations based on employment-output elasticities estimated in Downes (2009) and on IMF-WEO Projections as of October 2010.

for 2009-11 unemployment rates are estimated to have increased in 2009 and 2010, and continue increasing in 2011 for some Caribbean countries, as the mild recovery of these economies would not be enough to offset the augmenting path of the labor force.

As output in the Caribbean has slowed down, unemployment is estimated to have risen with no signs of recovery in 2010, while some countries will still see increases in unemployment during 2011. With the global slowdown, unemployment rates are likely to increase as the decrease in external demand affects the production industries and therefore employment generation. Simulations based on employment-output elasticities by Downes (2009) indicate that unemployment rates could rise considerably in some of these economies (Graph 13). Indeed, under the recent growth scenarios

Graph 14: Current Account Balance in the Caribbean, 2008 - 2011

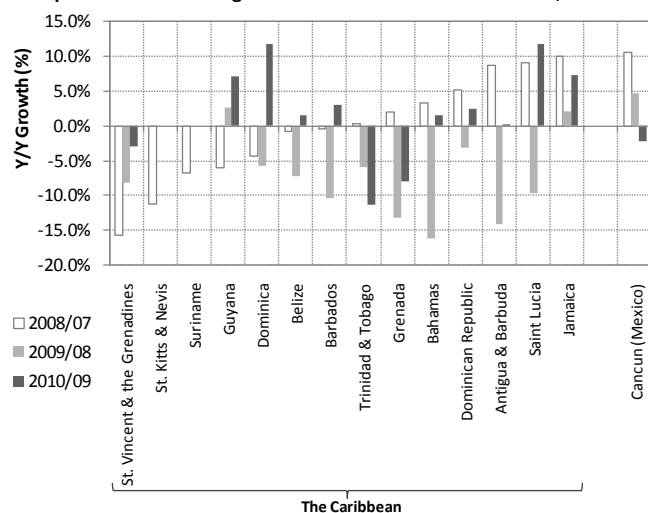


Source: Based on data from WDI and IMF Regional Reports.

countries, Suriname and Trinidad & Tobago, are expected to experience deteriorations in their current account balances as oil prices return to moderate levels in the medium term.

In terms of current account developments, most Caribbean countries are expected to moderately improve their deficits. While it is expected that exports and tourism receipts will deteriorate and that remittances will be reduced, the lower domestic demand is likely to decrease imports, offsetting the negative effects on the current account. In addition, commodity and energy prices declined in 2009 and are expected to remain at moderate levels over 2010-11, reducing the risk of a higher cost of trade imports. However, the oil exporter Caribbean

Graph 15. Caribbean Region: Growth Rate of Tourist Arrivals, 2008-10*



*Refers to latest frequency available: (i) January-February for Trinidad & Tobago; (ii) January-March for Antigua & Barbuda, Bahamas and Cancun (Mexico); (iii) January-April for Belize, Jamaica and St. Vincent & the Grenadines; (iv) January-May for Bahamas, Dominica, Grenada; (v) January-June for the remaining countries.

Source: Based on data from Caribbean Tourism Organization (various reports published in www.OneCaribbean.org).

Jamaica have shown appreciable signs of a recovery.

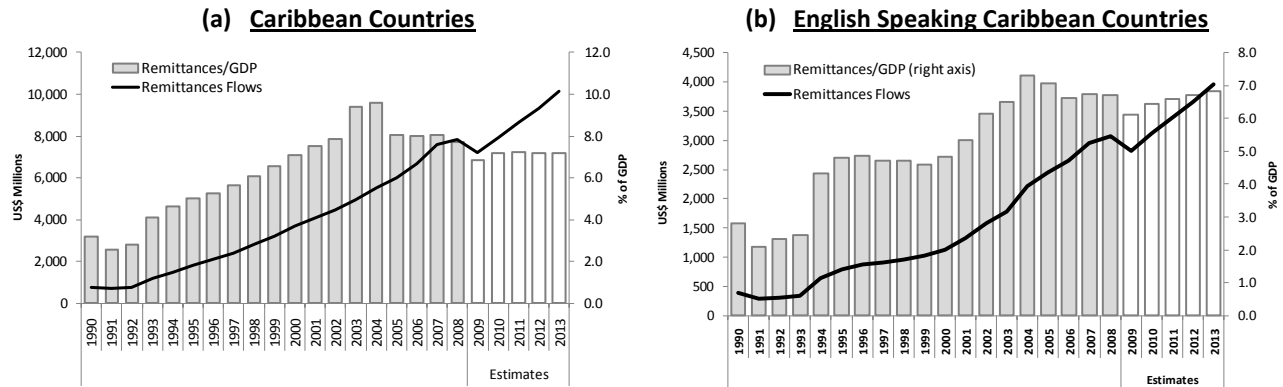
As widely discussed, the tourism sector of the Caribbean has been affected by the crisis during 2008 and 2009, but the signs of recovery in the number of tourist arrivals during 2010 are not that clear. Recent data for the first half¹⁴ of the year show that some countries in the Caribbean still experienced contractions in the number of tourist arrivals during this period (Graph 15). This is the case of St. Vincent & the Grenadines, Trinidad & Tobago and Grenada. This contraction is similar to that experienced recently by Cancun, in Mexico, a tourism competitor for the Caribbean. Other Caribbean economies have experienced a very slow increase in tourist arrivals from 2009, such as Belize, Bahamas, Barbados and Antigua & Barbuda. And only Guyana, Dominica, St. Lucia and

Flows of remittances are positively correlated with the economic pace of host countries. Consequently, remittances to the Caribbean are estimated to have declined in 2009 and are likely to recover in the current year. Empirical studies assess that these monetary transfers tend to be highly responsive to the economic pace of host countries (Cali, 2009). In the case of the Caribbean the year 2009 experienced a moderate decline in remittance flows, with the region losing an estimate of US\$662 millions in 2009 with respect to the estimated level under the previous path¹⁵. It is expected that by the end of 2010, the Caribbean will return to pre-crisis levels in terms of remittances inflows (Graph 16).

¹⁴ The term “first half” is used as a general term to make reference to the months in 2010 up to June for which data is available. It should be noted that not all Caribbean countries are reporting data up to June at the moment of the preparation of this paper. For details on the exact frequency for each country see note in Graph 16.

¹⁵ The previous path refers to that estimated as of October 2008.

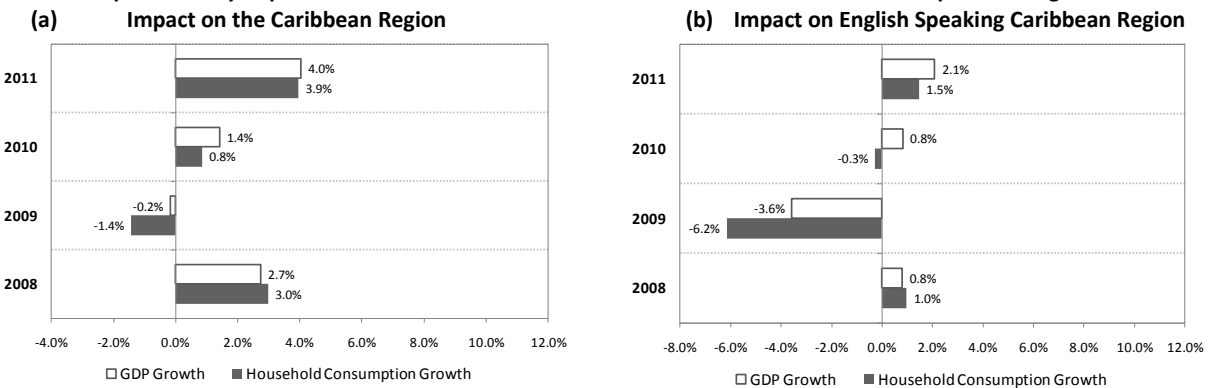
Graph 16: Simulations of Flow of Remittances to the Caribbean region after the Global Crisis



Source: Based on elasticities from Cali (2009), data from WDI and GDP growth estimations from IMF.

Household consumption is expected to have declined relatively more than output during 2009 and will likely still not recover during 2010 for the English Speaking Caribbean countries. Based on a model of household consumption sensitivity with respect to GDP growth¹⁶, it is estimated that household consumption contracted by 1.4 percent in 2009 in the Caribbean region and by 6.2 percent in the English Speaking Caribbean countries as a result of the global financial crisis. During 2010, household consumption growth is expected to be very modest for the Caribbean region, with a mild recovery of 0.8 percent growth (Graph 17a). The English Speaking Caribbean Countries, however, are expected to still experience a negative growth in household consumption during this year (Graph 17 b). Signs of an actual recovery in household consumption for the region are forecasted for 2011, with positive rates of 3.9 and 1.5 percent, respectively, for the Caribbean and the English Speaking Caribbean (Graphs 17 a and b).

Graph 17: Likely Impact of GDP Growth Deceleration on Caribbean Household Consumption during 2009-11



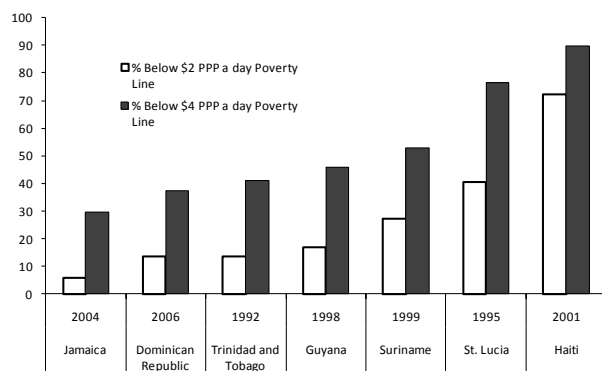
Source: Based on estimations by the authors as detailed in the annex.

Poverty levels in the Caribbean are relatively high and would likely be considerably affected by the recent crisis. The stance in terms of poverty is a major concern for these countries, where moderate

¹⁶ The endogeneity of the model has been addressed using instrumental variables. Please refer to the annex for more details on the model specification and the regression results.

poverty levels range from 30 percent of the population in Jamaica to 90 percent in Haiti.¹⁷ In the case of countries like Haiti the situation is more dramatic with more than 70 percent of the population considered extremely poor. Even countries like St. Lucia, where GNI per capita corresponds to an upper middle income country still have 40 percent of total population in extreme poverty (Graph 18).

Graph 18: Moderate and Extreme Poverty Levels in Available Caribbean Countries



Source: Based on data from World Development Indicators and World Bank PovCalNet databases.

Simulations on the impact of the crisis indicate that extreme and moderate poverty levels would likely increase and not recover to their pre-crisis levels during 2010 for the Caribbean countries experiencing a growth contraction in 2009-10.¹⁸

Based on an estimation of poverty elasticities with respect to economic growth conducted by Azevedo et al (2009) for Latin America & the Caribbean, we estimate the likely impact on poverty in the Caribbean as a result of the global crisis.¹⁹ Data on poverty in the region is limited.

As a result a simulation on the impact of the current crisis on poverty levels is constrained by the latest measures which include only six out of fifteen Caribbean countries: three Non-English Speaking countries represented by the Dominican Republic, Haiti and Suriname and three English Speaking Caribbean countries, Guyana, Jamaica, and St. Lucia²⁰. These six countries account for 95 percent of the Caribbean population. Therefore, the analysis of these selected countries permits to have a general view of the likely impact the recent global crisis may have had on the region's poverty levels.

The results of the simulations indicate that the more affected countries in terms of poverty levels in the region might have been the English Speaking Caribbean countries, which is coherent with their significant GDP growth contraction. While under the pre-crisis growth scenarios the English Speaking Caribbean would have been in a downward trend in both extreme and moderate poverty levels, the crisis pushed the countries off-track and by 2011 poverty levels will likely be at similar levels as in 2008 after having increased during 2008-09 (Graph 19 (a)).

As growth in the Non-English Speaking Caribbean was resilient to the crisis during 2009, these countries might have managed to reduce poverty. However, in the case of Haiti the 2010 earthquake has significantly affected its poverty levels. The Dominican Republic, Haiti and Suriname exhibited a positive growth in 2009, which could have helped to reduce poverty in these nations. This can be seen

¹⁷ This analysis follows Azevedo et al (2009) for the selection of a measurement of poor according to a PPP adjusted poverty line. Following the authors a representative measure of moderate poverty for Latin America is a line of \$4 a day PPP adjusted, while for extreme poverty it is \$2 a day PPP adjusted. In addition, the measurements of poor population considered for this analysis are the latest available data, under the assumption that poverty levels have remained constant since the last poverty measure.

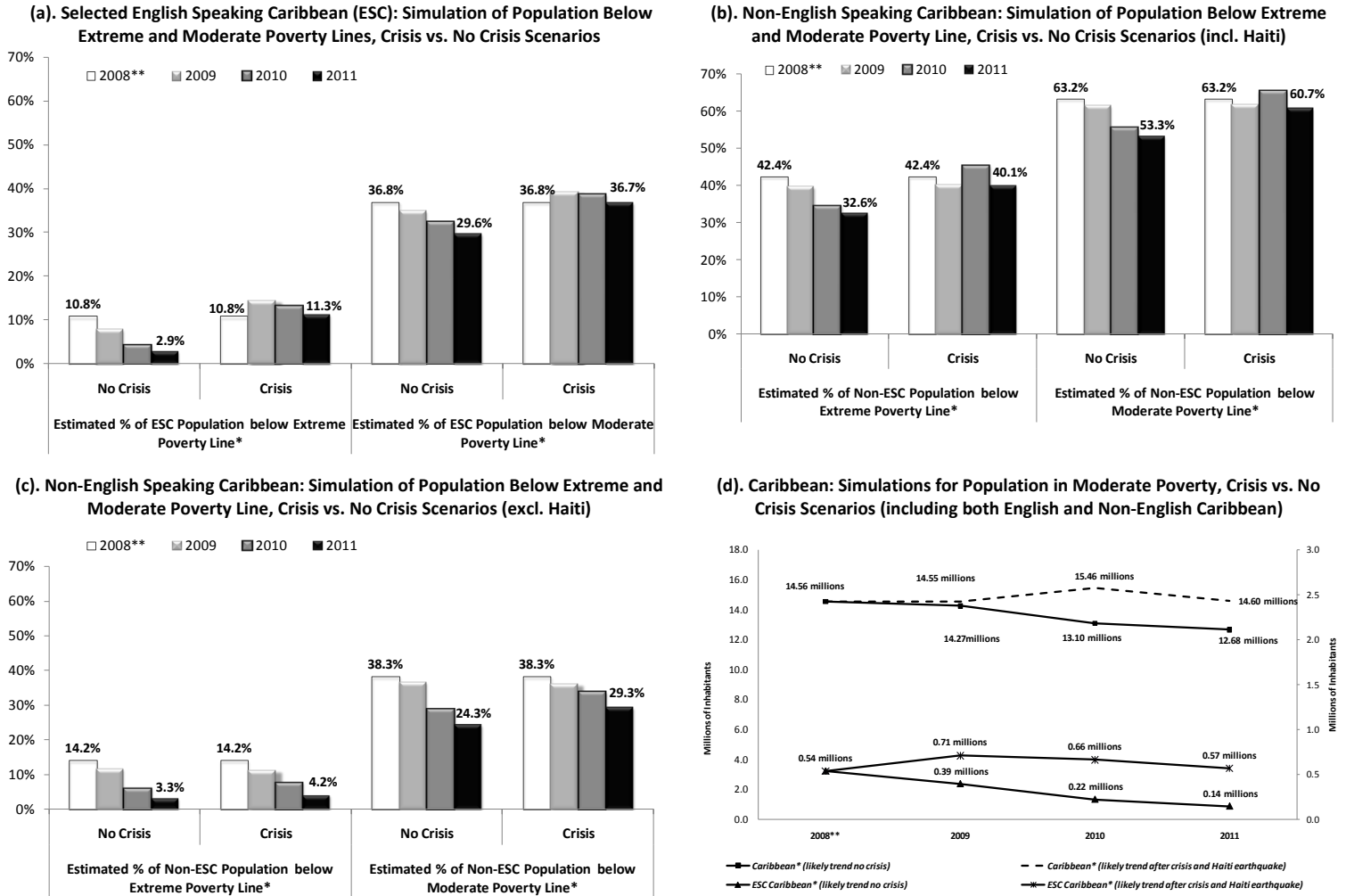
¹⁸ Under the assumption that only growth affects poverty and the benefits of growth are equally distributed among the population.

¹⁹ It should be noted that the analysis of Azevedo et al (2009) does not include many Caribbean economies, due to the limited poverty data across time for these countries. However, the current analysis intends to give a broad measure of the impact and therefore is assuming that the estimated elasticities for the countries in Azevedo et al (2009) are applicable to the Caribbean region.

²⁰ These three countries account for 89 percent of the ESC population.

in the relatively flat trend of poverty in Graph 19(d). After having responded to the crisis relatively well, the January 2010 Haitian earthquake may have increased the number of its poor population by as much as 1 million inhabitants (Graph 19(d)).

Graph 19: Simulations of Extreme and Moderate Poverty Levels for the Caribbean, 2008-11



Note 1: Poverty in the Caribbean accounts for the population below the extreme and moderate poverty line (defined here as below the \$2 PPP and \$4 PPP a day, respectively) for the following countries where data is available: Jamaica, Dominican Republic, Trinidad and Tobago, Guyana, Suriname, St. Lucia and Haiti. These countries account for more than 95 percent of the Caribbean population and have therefore been used as a proxy for the effects in the region of the recent crisis.

Note 2: Because of the important weight of Haiti in the Caribbean and its high poverty levels, in this analysis we are making a distinction of the regional computations of poverty with and without Haiti.

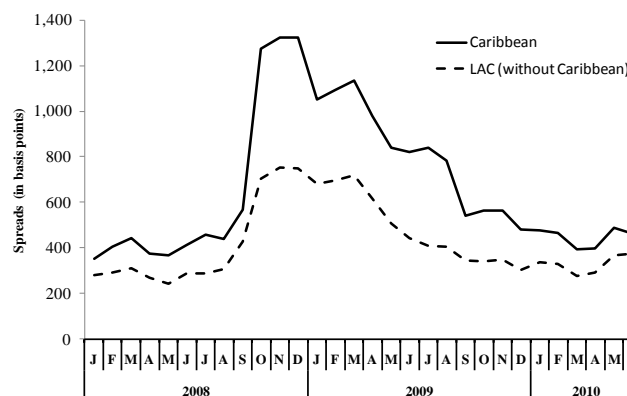
** The latest poverty estimates (in share of the population) have been assumed for the most recent population data available as of 2008.

Source: Based on data from World Development Indicators and World Bank PovCalNet databases. Poverty simulations rely on poverty elasticities estimated by Azevedo et al (2009) for Latin America and have been used as the best approach given the lack of data for a proper poverty-growth elasticity measurement in the Caribbean.

II.B Impact in Investment Profile and Flows

With the collapse of financial markets in September 2008 the sovereign lending of Latin America & the Caribbean experienced a considerable increase in spreads²¹. While the Latin America²² region saw the spreads of its sovereign debt, measured by the EMBI index, rise by almost 300 basis points between September and October of 2008 the Caribbean countries experienced a much stronger impact. Indeed, the average spread of the Caribbean rose by more than 700 basis points during the same period. This striking performance was led by the Dominican Republic which saw its spread increase by over a 1,000 basis points. The remaining three Caribbean countries holding an EMBI index experienced an increase of around 200 basis points in the month of October 2008. The main increases for these countries were not experienced immediately after, but by the end of 2008: Belize saw its highest spread by December 2008 (over 1,000 basis points compared to September of the same year), Jamaica's spread increased by almost 700 basis points from September to December 2008 and Trinidad and Tobago still kept showing increases in its spread at the beginning of 2009 (more than 600 basis points by February).

**Graph 20: EMBI Spreads Caribbean versus Rest of LAC
November 2007 – June 2010**



Note: The Caribbean average includes Belize, Dominican Republic, Jamaica and Trinidad & Tobago, except for the period March 2009-June 2010 where data for Trinidad & Tobago is not available. The average for Latin America includes: Argentina, Brazil, Chile, Colombia, Ecuador, El Salvador, Mexico, Panama, Peru, Uruguay and Venezuela. Averages are GNI PPP weighted.
 Source: Based on data from LCSPE database.

Since the beginning of 2010 the Caribbean region spreads seem to be returning to pre-crisis levels and are closing the gap with the rest of LAC. With a significant reduction in the spread of the Dominican Republic, Jamaica and Belize, the average spread of the region is very close to its pre-crisis level of around 392 basis points during the first half of 2008. However, Belize and Jamaica still exhibit a spread higher than the pre-crisis period. The Caribbean spread during the first half of 2010 stands at an average of 448 basis points, only 100 basis points above the rest of LAC. This seems to be a significant improvement for a region where sovereign rate spreads was 571 basis points higher than the rest of LAC during the peak of the crisis. In spite of this, the fact that the Caribbean investment risk increases so strongly during a time of crisis is of great concern for the countries' capability of financing during shocks.

In parallel with the increase in EMBI spreads, the Caribbean countries experienced downgrades in their credit risk classification during the crisis but, unlike most countries of the rest of LAC, very few Caribbean countries have regained their previous rating. Table 1 presents the downgrades in Latin America & the Caribbean since August 2008. There are currently eight Caribbean countries with access

²¹ The spreads refer to the gap between the interest debt on sovereign debt of a country and that of the US Treasury Bonds.

²² Latin America excluding the Caribbean countries.

to international capital markets: Barbados, Belize, Dominican Republic, Grenada, Jamaica, St. Vincent, Suriname and Trinidad & Tobago. Among these countries only Barbados and Trinidad & Tobago are classified as investment grade even though they have seen a decrease in their credit rating since the collapse of financial markets in September 2008 and have not regained their former classification. The remaining six Caribbean countries issuing sovereign debt are classified as non-investment grade. St. Vincent & the Grenadines and Suriname are four ratings below investment grade, but have not experienced any major downgrade during the crisis. Belize and Dominican Republic are five ratings below investment grade. Dominican Republic, Jamaica and Belize were downgraded. As of mid-July of 2010 only the Dominican Republic and Jamaica's rating had been upgraded. The Dominican Republic was upgraded only by Moody's and Jamaica's upgrades have remained below its pre-crisis classification.

Table 1: Latin America & the Caribbean, Sovereign Rating Scale as of July 14th, 2010
(In parentheses increase(+)/decrease(-) of rating since July 2008)*

	S&P Rating	Moodys Rating	Fitch Rating	Foreign Currency Rating for Latin American Countries, as of July 14 th , 2010*		
				S&P	Moodys	Fitch
Investment Grade	AA-	Aa3	AA-		Chile (+2)	
	A+	A1	A+	Chile		
	A	A2	A	Trinidad & Tobago (-1)		Chile
	A-	A3	A-			
	BBB+	Baa1	BBB+		Mexico, Trinidad & Tobago	
	BBB	Baa2	BBB	Barbados (-1), Mexico (-1)		Mexico (-1)
Non-Investment Grade	BBB-	Baa3	BBB-	Brazil, Peru	Brazil (-1), Barbados (-1), Panama (+1), Peru	Brazil, Peru, Panama (+1)
	BB+	Ba1	BB+	Colombia, Panama	Colombia, Costa Rica, El Salvador (-1), Guatemala (+1)	Colombia, Guatemala
	BB	Ba2	BB	Costa Rica, El Salvador (-1), Guatemala		Costa Rica, El Salvador (-1)
	BB-	Ba3	BB-	Venezuela, Uruguay	Uruguay (-1)	Uruguay
	B+	B1	B+	Suriname	St. Vincent, Suriname, Dominican Republic (+1)	Venezuela (+1)
	B	B2	B	Belize, Bolivia (+1), Dominican Republic (-1), Honduras (-1), Paraguay	Bolivia (+1), Honduras, Venezuela	Argentina (+7), Bolivia (+1), Dominican Republic, Suriname
	B-	B3	B-	Argentina (-2), Grenada, Jamaica (-1)	Argentina, Belize (-1), Jamaica (-1), Nicaragua(+1), Paraguay	Jamaica
	CCC+	Caa1	CCC+	Ecuador (-1)		
	CCC	Caa2	CCC			Ecuador
	CCC-	Caa3	CCC-		Ecuador (-2)	

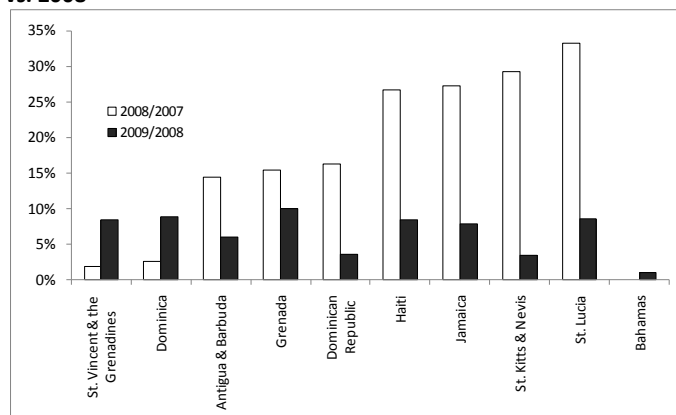
*Refers to the net (total of upgrades minus total of downgrades) number of times the country was downgraded since July 2008.

Source: Based on information from LCSPE database.

FDI and portfolio flows of the Caribbean, an important source of income for the region, experienced a strong deceleration in most countries. Several Caribbean economies exhibited a decrease in FDI flows during 2009 and in some cases also in 2008, as in the case of Antigua & Barbuda, Barbados, Grenada and St. Lucia. As expected due to their characteristic volatility, portfolio flows were reduced considerably and turned negative in some countries (Table A.5).

An interesting indicator of domestic investment is the performance of credit to the private sector, which significantly slowed down during the crisis. In 2009, all economies in the Caribbean for which data is available, saw a deceleration of credit to the private sector (Graph 21). The slowdown in credit was very strong, with credit growth decelerating from above 15 percent in 2008 to less than 5 percent for the most recent period (Graph 21). This signals that the private sector lost dynamicity in 2009, which could be associated to the slow recovery in that year and the current.

Graph 21. Caribbean: Growth of Credit to the Private Sector, 2009 vs. 2008*



*Refers to latest frequency available: For Bahamas data corresponds to November of each year, for Haiti June of each year, for Jamaica it corresponds to September, for Dominican Republic to September, for the Eastern Caribbean Economies to March.

Source: Based on data from Central Bank of Barbados, Central Bank of the Dominican Republic, Banque de la Republique d’Haiti, Bank of Jamaica and Eastern Caribbean Central Bank.

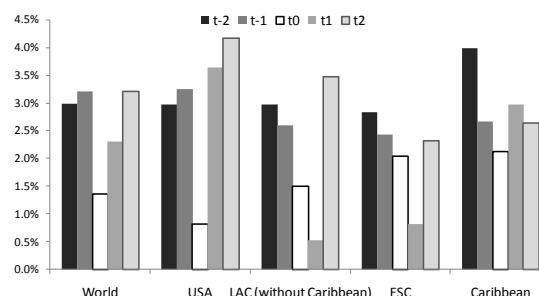
III. Contrasting Recent Crisis with Past Episodes and with the Response of the rest of LAC

The recent global crisis has deteriorated the Caribbean growth to levels only comparable to the 1980s recession, which has been the worst crisis for the region in the last 30 years.²³ For the first time since 1983 the Caribbean region shows a contraction after a global downturn signaling that it is no longer a relatively resilient region to global shocks. As previously discussed, among the Caribbean, the English Speaking countries are the more vulnerable economies. The ESC contracted by 3.6 percent in the peak of the crisis during 2009, a level just comparable to the 3.5 percent contraction of 1983.

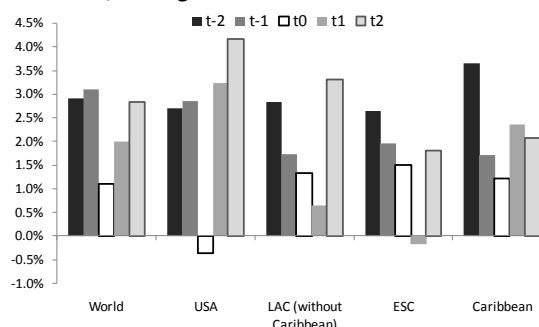
During previous crises the Caribbean as a whole and the English Speaking Caribbean countries have tended towards a V-Shape recovery²⁴. This V-shape path has been similar to that of the rest of LAC, the USA and the world, but with two particular differences: (i) the Caribbean has tended to be more resilient during a crisis; (ii) it has exhibited a less dynamic recovery after a crisis than the rest of LAC (Graph 22). In addition, the ESC countries have tended to show contagion effects of global crisis with a lagged of one period, a pattern that is quite different in the current crisis when the largest impacts occurred in 2009 (Graphs 22 & 24).

When observing only crises where the USA has been affected, it is clear that the Caribbean has been particularly shocked. The recessions of the early 1980s, the early 1990s and the early 2000s considerably affected the growth of the USA, while it was not the case during 1997-98. During these crises the Caribbean slowed down significantly and the ESC contracted considerably (Graph 23).

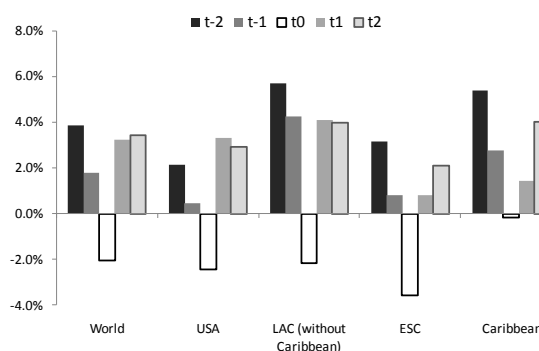
Graph 22: GDP Growth before and after the Peak of a crisis, Avg of the Four Global Crises of 1980-2001



Graph 23: GDP Growth before and after the Peak of a crisis, Average of the USA Crises of 1980-2001



Graph 24: GDP Growth before and Projections after the Peak of the Current Global Crisis



Note: The Growth Projections for 2010-11 are from the WEO database as of April 2010.

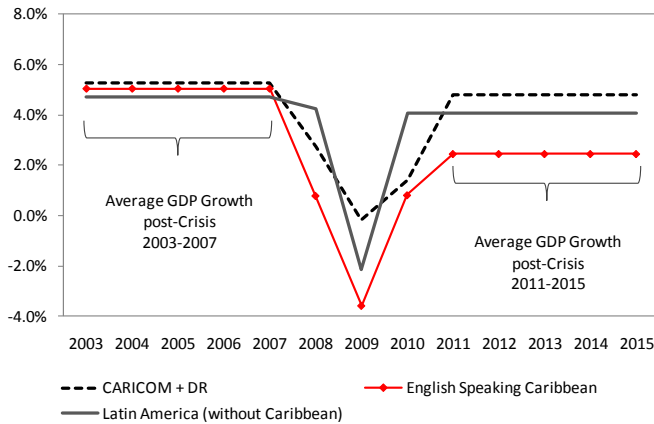
Source: Based on data from WDI and IMF.

²³ Since the 1980s the world has seen four major recessions: (i) the early 1980s recession, characterized by severe stagflation and high unemployment, which followed after the oil and energy crisis of the 1970s; (ii) the early 1990s recession in response to a severe fall in stock markets and characterized by a savings and loans shortage; (iii) the 1997-98 financial crisis; and (iv) the early 2000s economic activity downturn.

²⁴ A V-shape recovery refers to a slowdown in which only one point in time is affected.

The contraction that the ESC countries have experienced during this crisis has been the highest within the LAC region. The ESC countries not only contracted more than South & Central American countries, the USA and the world, but their recovery in 2010 is estimated to be very modest (0.8 percent), contrasting with a dynamic recovery in the rest of these areas (Graph 24). The contraction for the whole Caribbean region in 2009 is very slight as the economies of Haiti and the Dominican Republic experienced a relatively strong growth, 2.9 and 3.5 percent respectively, during this year. The year 2010 is characterized by a deep fall in the growth of Haiti due to the January 2010 earthquake, a strong growth for the Dominican Republic and a moderate to sluggish recovery in the remaining countries.

Graph 25: 5 year average growth before and after 2009 for LAC
(Actual Growth for 2003-2008 & Growth Estimations for 2009-15)



Source: Based on data from IMF WEO database of April 2010 and WDI.

Unlike for the rest of LAC, average growth after the crisis will likely be lower for the ESC countries during the next 5 years than it was just before the crisis. While the rest of the Caribbean, South America and Central America will likely recover during the medium-term to a similar growth path as that experienced on average before the crisis, the English Speaking Caribbean countries will remain lagging significantly behind its dynamic growth of approximately 5 percent per year during 2003-07, with an estimated annual growth rate of 2.5 percent per year

during 2011-15. With this, the crisis seems to have halved the medium-term growth prospects of the English Speaking Caribbean countries.

IV. Understanding the Recovery Cycle in the Caribbean: Data, Model & Methodology

Two issues concerning the region's response after the Global Financial Crisis are of particular importance. The first is the fact that the English Speaking Caribbean countries were more affected than other countries in LAC and other nations of the Caribbean. The second issue concerns the reasons behind the slow recovery in the English Speaking Caribbean countries. One possible explanation for these two behaviors is that the strong linkages the English Speaking Caribbean countries maintain with the US, and the lack of integration with other regions of the world which are exhibiting a strong and dynamic growth, like India and China, might be affecting the recovery in the ESC. We test this hypothesis evaluating the elasticity of the cycle of selected macroeconomic indicators, with respect to the economic cycles of the United States, China, Brazil, India and the United Kingdom. A comparison is made for three country groups in the region: the English Speaking Caribbean countries, the Non-English Speaking Caribbean (NESC) countries and the entire Caribbean region. We find that, unlike the Non-English Speaking Caribbean, the cycle of most macroeconomic variables in the ESC region appears closely aligned to that of the USA and independent from that of China, Brazil and India. On the contrary, the NESC countries seem less aligned to the US cycle and sometimes aligned to the cycle of India and China.

IV.A. The Model

The model suggested in this analysis presents the relation between the economic cycle of five selected macroeconomic aggregates (Gross domestic product, remittances, foreign direct investment, exports of services and exports of goods) and the cycle of the Gross Domestic Product of five selected economic groups (the US, China, India, UK and Brazil). The choice of countries lies in the fact that we would like to test the hypothesis of: (i) if the US, as one of the most important partners for the Caribbean, has a significant influence in the economic cycle of the region; (ii) if China and India as two economies leading the world recovery have any influence in Caribbean's growth; (iii) if the growth of the United Kingdom, as a country representing the growth in Europe, impacts Caribbean growth; and, (iv) if there are any important economic linkages with Brazil, a Latin American country that has recovered significantly faster and which is the largest economy in LAC. The model can be represented as follows:

$$\text{Ln}Y_t^{\text{Cycle}} = \alpha + \beta * \text{LnForeignGDP}_t^{\text{Cycle}} + v_t \quad (1)$$

Where $\text{Ln}Y_t^{\text{Cycle}}$ is the cycle of the natural logarithm of the variable Y in time t, where Y refers to Gross domestic product, remittances, foreign direct investment, exports of services or exports of goods, depending on the model we are evaluating;

$\text{LnForeignGDP}_t^{\text{Cycle}}$ is the cycle of the natural logarithm of the real GDP in the selected foreign economy (US, China, India, UK or Brazil);

$$v_t \sim N(0, \sigma_v^2)$$

β measures the elasticity of the cycle of variable Y with respect to changes in the cycle of foreign GDP. In other words how sensitive the cycle of the variable under analysis is to the economic cycle of the foreign economy.

An alternative model, conducted to correct for the presence of a unit root in some of the variables, is as follows:

$$D\ln Y_t^{\text{Cycle}} = \emptyset + \gamma * D\ln \text{ForeignGDP}_t^{\text{Cycle}} + e_t \quad (2)$$

Where $D\ln Y_t^{\text{Cycle}}$ is the first difference for the cycle of the natural logarithm of the variable Y in time t (i.e. the growth rate of variable Y);

$D\ln \text{ForeignGDP}_t^{\text{Cycle}}$ is the first difference of the cycle of the natural logarithm of the real GDP of the selected foreign economy (i.e. the growth rate of the foreign economy);

$$e_t \sim N(0, \sigma_e^2)$$

γ measures the elasticity of the cycle of domestic economic growth with respect to changes in the cycle of foreign GDP. In other words how sensitive the cycle of the variable under analysis is to the economic cycle of the foreign economy.

The cycles were derived using the Hodrick-Prescott filter and unit root tests were conducted using the Augmented Dickey Fuller test (see annex). The period under analysis corresponds to 1989-2008. Ideally, the analysis would have had benefited from an estimation of a more recent period, but the lack of information in lower frequency (quarterly or monthly) prevented from this. The results of the estimations are presented in Tables 2-6.

The most important result of the analysis is that the economic cycle of the English Speaking Caribbean region is particularly vulnerable to the cycle of the USA, while this is not the case in the Non-English Speaking Caribbean countries. In Table 2 it can be seen that the estimated elasticity of the ESC economic cycle with respect to the cycle of the USA is approximately 1.2, while is not significant for the NESC countries. In addition, the economic cycle of the ESC seems vulnerable to the cycle of the United Kingdom, although with an elasticity below 1 indicating that changes in the cycle of the UK are translated into less than proportional effects to the ESC. The NESC seem to be sensitive only to the cycle of India and the UK, but in a countercyclical pattern. In the case of India an explanation could be the competition in the manufacturing and services sectors, possibly indicating that when India is in a peak its Caribbean competitors are not as well inserted in the global markets for manufacturing and services. In the case of the UK, this negative relation could be explained by a limited relation with this country as an investment and trade partner.

The empirical results also show that the cycle of Caribbean remittances is sensitive to the US economic cycle, but also to that of China and of Brazil and that the cycle of FDI is not affected by the US cycle. In particular, the cycle of remittances in the ESC is elastic with respect to the economic cycle of China and India, showing that there might be a triangular effect of economic expansions in areas of

the world that depend on the demand from these two countries and that are positively affecting the employment conditions of migrant workers from the Caribbean. Therefore, this could be the result of higher wages for Caribbean migrants in the USA or other countries related to trade relations with Chinese and Indian enterprises (Table 3). The fact that remittances are related to the cycle of other economies and not only to the USA might also be an explanation of why these flows are expected to recover relatively fast, as not only the host country (in this case the USA) matters but also other economies that do business with the USA or countries where Caribbean migrants reside. **Surprisingly, foreign direct investment in Caribbean economies does not seem to be sensitive to the cycle of the US.** But, in the case of the ESC, there is a clear positive and high elasticity of foreign direct investment with respect to the economic cycle of the UK (Table 4).

The cycle of exports of services and exports of goods show how the entire Caribbean is related to the cycle of the US, but only the NESC are affected²⁵ by the cycles of China, India and Brazil (Table 5). This result is interesting as it is indicating that economic expansions in China, India and Brazil affect positively the export industry in the Non-English Speaking Caribbean countries, in spite of being competitors in certain areas. This motivates an interesting question regarding how is it that NESC are aligned to new economic growth poles, when they still export mostly to the US. It could signal that these countries have managed to position their exports of goods and services in sectors that are influenced by or linked to China, India and Brazil. If this is the case, then it should be analyzed which sectors have been capable of being exploited in a more profitable manner in the NESC so that the ESC could also be inserted in similar markets.

²⁵ Taking into account the 5% level of significance.

Table 2: Results of Log-Log model to measure the elasticity of the GDP cycle with respect to the Economic Cycle of Selected Foreign Economies

Models: (i) Levels, $LnY_t^{Cycle} = \alpha + \beta * LnForeignGDP_t^{Cycle} + v_t$ and (ii) In first Differences, $DLnY_t^{Cycle} = \phi + \gamma * DLnForeignGDP_t^{Cycle} + e_t$, where $LnForeignGDP_t^{Cycle}$ refers to the log of the Cycle in the selected foreign economies (USA, China, Brazil, India and the UK), Period: 1986-2008

Country Groups	Models	Model 1: Elasticity with respect to the Cycle of USA		Model 2: Elasticity with respect to the Cycle of China		Model 3: Elasticity with respect to the Cycle of Brazil		Model 4: Elasticity with respect to the Cycle of India		Model 5: Elasticity with respect to the Cycle of the UK	
		In Levels	In Difference	In Levels	In Difference	In Levels	In Difference	In Levels	In Difference	In Levels	In Difference
English Speaking Caribbean	Constant	-2.86x10 ^(^-14) (-4.66x10 ^(^-12))	-0.004 (-0.48)	-2.57x10 ^(^-13) (-3.63x10 ^(^-11))	-0.005 (-0.56)	-2.51x10 ⁻¹³ (-3.56x10 ⁻¹¹⁾)	-0.005 (-0.56)	-2.12x10 ^(^-13) (-3.09x10 ^(^-11))	-0.006 (-0.62)	-1.19x10 ⁻¹³ (-1.83x10 ⁻¹¹⁾)	-0.005 (-0.61)
	Slope	1.18** (2.61)	1.61** (2.29)	-0.003 (-0.014)	0.19 (0.44)	0.03 (0.08)	0.14 (0.31)	0.37 (1.08)	0.58 (1.12)	0.73* (1.88)	1.13 (1.70)
	R-squared	0.25	0.21	0.0000	0.010	0.000	0.005	0.05	0.06	0.15	0.13
Non-English Speaking Caribbean	Constant	-4.73x10 ^(^-13) (-5.32x10 ^(^-11))	9.53x10 ⁻⁰⁵ (0.009)	-3.48x10 ^(^-13) (-3.97x10 ^(^-11))	0.0008 (0.07)	-3.43x10 ⁻¹³ (-3.80x10 ⁻¹¹⁾)	0.003 (0.03)	-4.07x10 ^(^-13) (-4.56x10 ^(^-11))	0.002 (0.21)	-5.78x10 ⁻¹³ (-7.18x10 ⁻¹¹⁾)	0.001 (0.12)
	Slope	-0.54 (-0.82)	-1.43 (0.17)	0.35 (1.17)	0.43 (0.84)	0.12 (0.31)	0.58 (1.08)	-0.33 (-0.72)	-1.25** (-2.12)	-1.12** (-2.34)	-1.52* (-1.91)
	R-squared	0.03	0.09	0.06	0.03	0.004	0.05	0.02	0.18	0.21	0.15
Caribbean (ESC + NESG)	Constant	-1.24x10 ^(^-13) (-2.47x10 ^(^-11))	-0.002 (-0.24)	-1.87x10 ^(^-13) (-3.72x10 ^(^-11))	-0.002 (-0.28)	-1.74x10 ⁻¹³ (-3.41x10 ⁻¹¹⁾)	-0.002 (-0.32)	-1.84x10 ^(^-13) (-3.60x10 ^(^-11))	-0.002 (-0.23)	-2.19E-13 (-4.28E-11)	-0.002 (-0.26)
	Slope	0.38 (1.03)	0.22 (0.39)	0.16 (0.94)	0.25 (0.83)	0.11 (0.48)	0.32 (0.98)	0.11 (0.41)	-0.22 (-0.58)	-0.12 (-0.40)	-0.13 (-0.26)
	R-squared	0.05	0.01	0.04	0.03	0.01	0.05	0.008	0.02	0.007	0.003

*n.a.=not applicable, used in the case of models that cannot be regressed in levels due to the existence of a unit root in the series or because the regressor is the same as the regressant.

Note: Unit root tests have been conducted for all the series and are presented in the annex.

Note: *** Means significant at the 1 percent level, ** at the 5 percent, * at the 10 percent. T-statistics are shown in parentheses.

Table 3: Results of Log-Log model to measure the elasticity of the Remittances cycle with respect to the Economic Cycle of Selected Foreign Economies

Models: (i) Levels= $LnRemittances_t^{Cycle} = \alpha + \beta * LnForeignGDP_t^{Cycle} + v_t$ and (ii) In first Differences, $DLnRemittances_t^{Cycle} = \phi + \gamma * DLnForeignGDP_t^{Cycle} + e_t$, where $LnForeignGDP_t^{Cycle}$ refers to the log of the Cycle in the selected foreign economies (USA, China, Brazil, India and the UK), Period: 1986-2008

Country Groups	Models	Model 1: Elasticity with respect to the Cycle of USA		Model 2: Elasticity with respect to the Cycle of China		Model 3: Elasticity with respect to the Cycle Brazil		Model 4: Elasticity with respect to the Cycle of India		Model 5: Elasticity with respect to the Cycle of the UK	
		In Levels	In Difference	In Levels	In Difference	In Levels	In Difference	In Levels	In Difference	In Levels	In Difference
English Speaking Caribbean	Constant	-0.005 (-0.12)	-0.0005 (-0.013)	4.63x10 ⁻¹⁵ (1.40x10 ⁻¹³⁾)	-0.006 (-0.19)	9.37E-13 (3.28E-11)	-0.009 (-0.28)	2.67x10 ⁻¹³ (7.53x10 ⁻¹²⁾)	-0.01 (-0.30)	7.16E-13 (2.05E-11)	-0.007 (-0.25)
	Slope	3.85 (1.28)	5.76* (1.90)	3.26*** (2.88)	1.95 (1.22)	5.46*** (4.29)	3.03* (1.86)	3.87** (2.15)	4.10** (2.21)	4.83** (2.32)	7.41*** (3.39)
	R-squared	0.08	0.17	0.28	0.07	0.47	0.15	0.18	0.20	0.20	0.36
Non-English Speaking Caribbean	Constant	1.04x10 ⁻¹² (3.29x10 ⁻¹¹⁾)	-0.007 (-0.19)	1.15x10 ⁻¹³ (3.78x10 ⁻¹²⁾)	-0.01 (-0.31)	5.86E-13 (1.81E-11)	-0.01 (-0.36)	-9.02x10 ⁻¹⁴ (-2.51x10 ⁻¹²⁾)	-0.008 (-0.23)	5.44E-13 (1.61E-11)	-0.009 (-0.26)
	Slope	5.70** 2.45	2.54 (0.84)	2.98*** (2.89)	3.51** (2.39)	3.13** (2.17)	3.10* (1.91)	-0.26 (-0.14)	-0.52 (-0.25)	3.23 (1.60)	2.67 (2.68)
	R-squared	0.22	0.03	0.28	0.22	0.18	0.15	0.0009	0.003	0.10	0.05
Caribbean (ESC + NESG)	Constant	8.08x10 ⁻¹³ (3.01x10 ⁻¹¹⁾)	-0.006 (-0.23)	5.84x10 ⁻¹⁴ (2.58x10 ⁻¹²⁾)	-0.009 (-0.41)	7.11E-13 (3.09E-11)	-0.01 (-0.51)	2.22x10 ⁻¹⁴ (7.39x10 ⁻¹³⁾)	-0.009 (-0.35)	5.58E-13 (2.04E-11)	-0.009 (-0.37)
	Slope	4.84** (2.45)	3.44 (1.66)	3.19*** (4.14)	2.96*** (2.95)	4.08*** (3.98)	3.05** (2.83)	1.28 (0.84)	1.26 (0.86)	3.67** (2.25)	4.30** (2.48)
	R-squared	0.23	0.12	0.45	0.30	0.43	0.29	0.03	0.04	0.20	0.23

*n.a.=not applicable, used in the case of models that cannot be regressed in levels due to the existence of a unit root in the series.

Note: Unit root tests have been conducted for all the series and are presented in the annex.

Note: *** Means significant at the 1 percent level, ** at the 5 percent, * at the 10 percent. T-statistics are shown in parentheses.

Table 4: Results of Log-Log model to measure the elasticity of the FDI cycle with respect to the Economic Cycle of Selected Foreign Economies
Models: (i) Levels= $LnFDI_t^{Cycle} = \alpha + \beta * LnForeignGDP_t^{Cycle} + v_t$ and (ii) In first Differences $D LnFDI_t^{Cycle} = \phi + \gamma * D LnForeignGDP_t^{Cycle} + e_t$, where $LnForeignGDP_t^{Cycle}$ refers to the log of the Cycle in the selected foreign economies (USA, China, Brazil, India and the UK), Period: 1986-2008

Country Groups	Models	Model 1: Elasticity with respect to the Cycle of USA		Model 2: Elasticity with respect to the Cycle of China		Model 3: Elasticity with respect to the Cycle of Brazil		Model 4: Elasticity with respect to the Cycle of India		Model 5: Elasticity with respect to the Cycle of the UK	
		In Levels	In Difference	In Levels	In Difference	In Levels	In Difference	In Levels	In Difference	In Levels	In Difference
English Speaking Caribbean	Constant	9.15X10-13 (1.49X10-11)	0.05 (0.60)	-2.63X10-13 (-4.13X10-12)	0.04 (0.51)	-1.22x10-13 (-1.92x10-12)	0.04 (0.46)	9.42X10-14 (1.50X10-12)	0.05 (0.56)	1.05E-12 (1.79E-11)	0.04 (0.53)
	Slope	5.88 (1.31)	8.34 (1.25)	-0.70 (-0.32)	2.09 (0.56)	0.49 (0.17)	4.83 (1.24)	2.70 (0.85)	-3.40 (-0.73)	6.82* (1.95)	10.3* (1.76)
	R-squared	0.08	0.07	0.005	0.02	0.001	0.07	0.03	0.03	0.15	0.13
Caribbean (ESC + NES)	Constant	3.31X10-13 (5.23X10-12)	0.05 (0.55)	-3.18X10-13 (-5.10X10-12)	0.05 (0.53)	-5.83E-13 (-9.24E-12)	0.05 (0.52)	-5.17X10-14 (-8.14X10-13)	0.05 (0.60)	2.93E-13 (4.65E-12)	0.05 (0.53)
	Slope	2.73 (0.59)	2.62 (0.37)	-2.08 (-0.97)	-1.15 (-0.29)	-1.87 (-0.66)	0.80 (0.19)	1.24 (0.38)	-4.97 (-1.05)	2.63 (0.70)	5.15 (0.81)
	R-squared	0.02	0.007	0.04	0.004	0.02	0.002	0.007	0.05	0.02	0.03

*n.a.=not applicable, used in the case of models that cannot be regressed in levels due to the existence of a unit root in the series.

Note: Unit root tests have been conducted for all the series and are presented in the annex.

Note: *** Means significant at the 1 percent level, ** at the 5 percent, * at the 10 percent. T-statistics are shown in parentheses.

Table 5: Results of Log-Log model to measure the elasticity of the Exports of Services cycle with respect to the Economic Cycle of Selected Foreign Economies
Models: (i) Levels, $LnXServices_t^{Cycle} = \alpha + \beta * LnForeignGDP_t^{Cycle} + v_t$ and (ii) In first Differences, $D LnXServices_t^{Cycle} = \phi + \gamma * D LnForeignGDP_t^{Cycle} + e_t$, where LnX_t^{Cycle} refers to the log of the Cycle in the selected foreign economies (USA, China, Hong-Kong, India, Euro Area and rest of LAC), 1986-2008

Country Groups	Models	Model 1: Elasticity with respect to the Cycle of USA		Model 2: Elasticity with respect to the Cycle of China		Model 3: Elasticity with respect to the Cycle of Brazil		Model 4: Elasticity with respect to the Cycle of India		Model 5: Elasticity with respect to the Cycle of the United Kingdom	
		In Levels	In Difference	In Levels	In Difference	In Levels	In Difference	In Levels	In Difference	In Levels	In Difference
English Speaking Caribbean	Constant	1.46X10-13 (1.23X10-11)	-0.006 (-0.44)	-2.24X10-13 (-1.70X10-11)	-0.009 (-0.51)	-2.64E-13 (-2.02E-11)	-0.009 (-0.49)	-1.15X10-13 (-9.19X10-12)	-0.01 (-0.64)	-7.36E-14 (-5.76E-12)	-0.009 (-0.56)
	Slope	1.93** (2.23)	4.22*** (4.09)	0.06 (0.13)	0.41 (0.54)	-0.18 (-0.31)	-0.15 (-0.18)	0.97 (1.52)	1.66* (1.90)	0.82 (1.08)	2.16* (1.86)
	R-squared	0.19	0.46	0.0009	0.01	0.004	0.001	0.10	0.15	0.05	0.15
Non-English Speaking Caribbean	Constant	6.22X10-14 (4.85X10-12)	0.005 (0.31)	-2.55X10-13 (-2.45X10-11)	0.003 (0.22)	4.90E-14 (4.56E-12)	0.002 (0.15)	-1.68X10-13 (-1.32X10-11)	0.003 (0.21)	-1.42E-13 (-1.03E-11)	0.003 (0.22)
	Slope	2.10** (2.23)	1.55 (1.31)	1.52*** (4.29)	1.37** (2.29)	1.91*** (3.98)	1.21* (1.84)	1.50** (2.33)	0.26 (0.31)	1.08 (1.32)	1.65 (1.57)
	R-squared	0.19	0.08	0.47	0.21	0.43	0.14	0.21	0.005	0.08	0.11
Caribbean (ESC + NES)	Constant	2.11X10-13 (2.58X10-11)	-0.002 (-0.24)	-1.28X10-13 (-1.35X10-11)	-0.005 (-0.38)	-6.42E-14 (-6.65E-12)	-0.005 (-0.37)	-1.78X10-14 (-2.09X10-12)	-0.005 (-0.49)	6.72E-18 (7.13E-16)	-0.005 (-0.42)
	Slope	1.88*** (3.15)	3.28*** (4.76)	0.44 (1.36)	0.56 (1.04)	0.43 (1.01)	0.23 (0.40)	1.16** (2.67)	1.23* (1.97)	0.82 (1.47)	1.84** (2.29)
	R-squared	0.32	0.53	0.08	0.05	0.05	0.008	0.25	0.16	0.09	0.21

*n.a.=not applicable, used in the case of models that cannot be regressed in levels due to the existence of a unit root in the series.

Note: Unit root tests have been conducted for all the series and are presented in the annex.

Note: *** Means significant at the 1 percent level, ** at the 5 percent, * at the 10 percent. T-statistics are shown in parentheses.

Table 6: Results of Log-Log model to measure the elasticity of the Exports of Goods cycle with respect to the Economic Cycle of Selected Foreign Economies

Models: (i) Levels, $\ln X_{Goods_t}^{Cycle} = \alpha + \beta * \ln ForeignGDP_t^{Cycle} + v_t$ and (ii) In first Differences, $DLnX_{Goods_t}^{Cycle} = \phi + \gamma * DLnForeignGDP_t^{Cycle} + e_t$,

where $\ln Y_t^{Cycle}$ refers to the log of the Cycle in the selected foreign economies (USA, China, Hong-Kong, India, Euro Area and rest of LAC), 1986-2008

Country Groups	Models	Model 1: Elasticity with respect to the Cycle of USA		Model 2: Elasticity with respect to the Cycle of China		Model 3: Elasticity with respect to the Cycle of Brazil		Model 4: Elasticity with respect to the Cycle of India		Model 5: Elasticity with respect to the Cycle of the United Kingdom	
		In Levels	In Difference	In Levels	In Difference	In Levels	In Difference	In Levels	In Difference	In Levels	In Difference
English Speaking Caribbean	Constant	1.04E-12 (2.04E-11)	-0.03 (-0.52)	-3.54E-14 (-6.62E-13)	-0.04 (-0.59)	-2.48E-13 (-4.66E-12)	-0.04 (-0.55)	3.26E-13 (6.27E-12)	-0.05 (-0.73)	5.88E-13 (1.13E-11)	-0.04 (-0.65)
	Slope	5.51 (1.47)	12.03** (2.52)	-0.11 (-0.06)	1.30 (0.44)	-1.06 (-0.45)	-1.72 (-0.55)	3.02 (1.15)	6.28* (1.82)	3.30 (1.07)	8.13* (1.77)
	R-squared	0.09	0.24	0.0002	0.01	0.009	0.01	0.06	0.14	0.05	0.13
Non-English Speaking Caribbean	Constant	7.31E-13 (1.77E-11)	-0.004 (-0.07)	1.30E-13 (3.91E-12)	-0.007 (-0.15)	1.08E-12 (3.32E-11)	-0.01 (-0.24)	2.44E-13 (5.94E-12)	-0.008 (-0.16)	3.69E-13 (8.76E-12)	-0.007 (-0.14)
	Slope	4.42 (1.46)	3.83 (0.93)	4.34*** (3.85)	2.90 (1.32)	5.83*** (4.04)	4.67** (2.12)	3.15 (1.50)	1.96 (0.69)	2.64 (1.05)	4.61 (1.26)
	R-squared	0.09	0.04	0.41	0.08	0.44	0.18	0.10	0.02	0.05	0.07
Caribbean (ESC + NESC)	Constant	8.24E-13 (2.71E-13)	-0.02 (-0.50)	3.82E-14 (1.20E-12)	-0.02 (-0.59)	2.70E-13 (8.34E-12)	-0.02 (-0.58)	3.00E-13 (9.79E-12)	-0.03 (-0.73)	4.14E-13 (1.29E-11)	-0.02 (-0.65)
	Slope	4.53* (2.02)	7.94*** (2.85)	1.56 (1.44)	1.72 (0.98)	1.57 (1.09)	0.67 (0.34)	3.02* (1.93)	4.23* (2.07)	2.51 (1.31)	5.89** (2.20)
	R-squared	0.16	0.29	0.09	0.05	0.05	0.01	0.15	0.18	0.08	0.20

*n.a.=not applicable, used in the case of models that cannot be regressed in levels due to the existence of a unit root in the series.

Note: Unit root tests have been conducted for all the series and are presented in the annex.

Note: *** Means significant at the 1 percent level, ** at the 5 percent, * at the 10 percent. T-statistics are shown in parentheses.

V. Conclusions and Recommendations

A first message from this analysis is that the Caribbean region strengths, given by their export driven growth and linkages to developed nations, can also become a weakness in the outset of global shocks. Our analysis indicates that a potential explanation of why the Caribbean countries were so hardly hit by the recent global crisis was that the majority of countries in this region are very sensitive to the economic cycle of nations that were severely affected by the crisis, like the US. In addition, during the recovery phase, the weak linkages of some Caribbean countries with nations that are driving global recovery (like India and China) have prevented them to benefit from a “push upward” effect. **Consequently, the first recommendation is to channel Caribbean exports of goods and services towards markets that are more aligned to other dynamic world regions and not limit them to the US and few European markets.**

A second message is that the Caribbean is still constrained by a limited fiscal space and high levels of debt, which hinder their capacity to react during economic downturns. Their limited fiscal space and lack of allocation of funds to emergency accounts do not allow Caribbean countries to react as rapidly with mechanisms that help them smooth external shocks. In addition, as a result of high levels of debt in many countries of the region the access to additional financing is considerably costly, which prevents them from accessing additional financing in times of crisis. **The second recommendation is therefore to correct fiscal imbalances, construct emergency funds and reduce the levels of debt.**

As complements of a strategy that promotes diversification towards new dynamic markets and a reduction of fiscal imbalances and debt, our recommendation goes towards emergency programs that help cope with crisis. With access to new trade markets it is likely that Caribbean countries could reduce the effects that global imbalances cause in the demand for their exports of goods and services. In addition, a correction of fiscal imbalances and a restructuring of their expenditures could permit that the countries have more space to reallocate funds to emergency plans. **We recommend more targeted programs that facilitate the identification of population at higher risk during a crisis, more emergency employment projects and the creation of emergency funds for the tourism and export sectors.**

Smoothing the effects of crisis on the more vulnerable population can be better achieved with the implementation of targeted programs or self selection emergency programs. During the recent global crisis those economies that had targeted poverty programs in place were able to rapidly allocate more funds to them; this is an ideal strategy to prevent severe increases in poverty levels. Other nations, like the Philippines, implemented emergency employment programs that offered minimum salary positions up to the opportunity to temporarily occupy government vacancies (Manila Bulletin, 2010). Another measure that can be used is to introduce a stimulus to the economy through the issuance of unilateral small monetary transfers. These transfers will ideally be provided to vulnerable population (senior citizens, single mothers, among others), but they can also be provided through self-selection, such that only those in need request them. The main goal is to provide a rapid and effective stimulus to the population in need when a crisis strikes.

Creating emergency funds can allow countries to face crisis rapidly. An ideal example is that of the Copper fund in Chile, constructed through fiscal revenue from copper when the international price of this mineral exceeds a certain threshold, and which was actively used as a countercyclical mechanism during the crisis. Currently most countries in the Caribbean do not have available fiscal space to react in crisis, and only two Caribbean economies, Trinidad & Tobago and Suriname, have mining richness that could allow them to create a similar fund as in Chile. However, we would like to recommend other type of emergency funds that suit better the Caribbean context. **The first suggested project is an emergency fund based on remittances.** The idea is that the government implements a program of individual saving accounts for recipients of remittances. The saving accounts could be composed of a minimum amount of the remittances receipts per each holder up to a determined ceiling. The fund should be carefully constructed, so that it does no incentive illegal sending of remittances as recipients might feel taxed. Each holder should be able to access this fund whenever in a risk situation, loss of employment, sickness, or similar. As a result, this fund will perform as a personal social security device. **The second suggestion concerns a tourism emergency fund created to help the tourism sector receive a boost in downturn periods.** The fund could be constructed from minimum fees charged to the total net revenue of the tourism industry. Likewise, **a fund for commodity exports** constructed from small contributions derived from the revenue from exports of commodities could be used as a source of income for the export industry during crisis.

These core recommendations could help the countries of the Caribbean be more successful in the implementation of emergency programs and in channeling their development strategies within a vision of contingency planning. We expect that this paper becomes a tool for dialogue with Caribbean economies and can help with the understanding of the particularities of the nations of this region, of their economic richness and of the limitations they face to better implement policies that help them react better to shocks. The Caribbean is after all a region of the world prone to natural disasters and sensitive to global economic downturns, so the growth and development agenda should be envisioned into taking into account measures that help the country preserve their achievements when shocks arrive.

However, these recommendations are only first steps into a strategy that is constructed within the countries and its institutions. The Caribbean nations are very rich and diverse so more in depth analysis should be conducted to better address the particular conditions and needs of each of its countries. Moreover, development strategies that incorporate contingency planning and a diversification of the trade sector would likely have different constructions in each of the Caribbean countries. The ideal strategy to follow will take into consideration the advantages and constraints of each Caribbean nation and therefore become the best fit for this economy.

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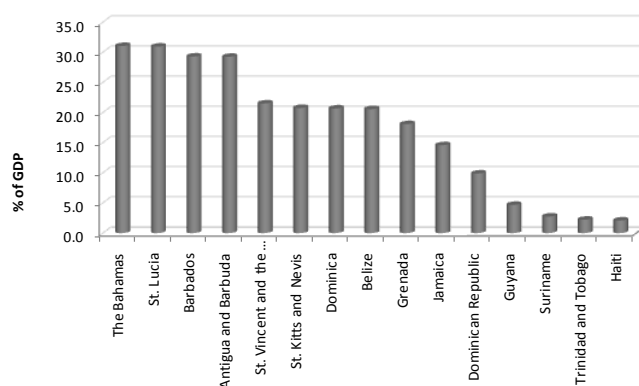
Annex

Table A.1: GDP Growth in the Caribbean 1981-2008

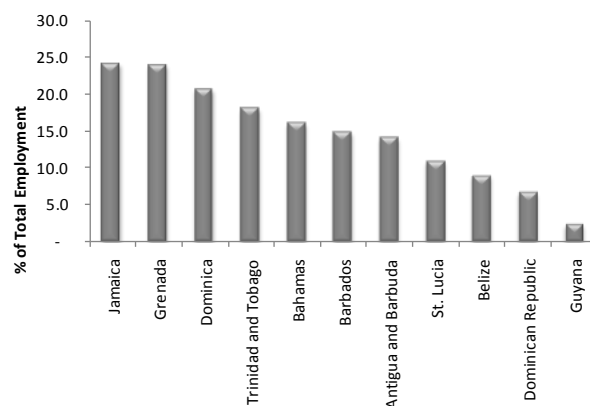
Countries	1981-85	1986-90	1991-95	1996-2000	2001-05	2006-08	1996-08
Antigua and Barbuda	7.0%	6.5%	2.0%	5.0%	3.7%	7.0%	4.9%
Bahamas, The	3.3%	1.9%	-0.5%	5.1%	1.3%	1.1%	2.7%
Barbados	-0.3%	2.3%	-0.9%	3.0%	1.7%	2.3%	2.3%
Belize	0.2%	9.9%	6.1%	6.1%	5.4%	3.2%	5.2%
Dominica	5.3%	5.9%	2.1%	2.2%	-0.6%	3.5%	1.4%
Dominican Republic	1.9%	3.0%	5.3%	6.9%	3.6%	8.1%	5.9%
Grenada	5.3%	5.8%	2.0%	7.1%	2.2%	1.6%	4.0%
Guyana	-3.2%	-1.6%	7.1%	2.8%	0.5%	4.7%	2.4%
Haiti	-1.0%	-0.1%	-1.5%	2.5%	-0.5%	2.1%	1.3%
Jamaica	2.3%	4.1%	1.3%	-0.3%	1.7%	1.1%	0.8%
St. Kitts and Nevis	5.0%	6.6%	3.8%	4.5%	3.4%	4.1%	4.0%
St. Lucia	5.4%	9.4%	2.5%	1.9%	1.6%	2.3%	1.9%
St. Vincent and the Grenadines	5.9%	7.1%	3.1%	3.1%	3.1%	5.0%	3.5%
Suriname	-2.0%	0.4%	-0.1%	1.5%	5.3%	5.0%	3.8%
Trinidad and Tobago	-3.5%	-2.2%	1.4%	7.7%	8.1%	6.8%	7.6%
Weighted Average	0.1%	1.7%	2.6%	4.9%	3.6%	5.5%	4.8%

Source: Based on data from IMF WEO database as of April 2010 and previous WEO databases.

Graph A.1 Travel services in the Caribbean as % of GDP, 2008*



Graph A.2: Share of Tourism Employment in Total Employment in Selected Caribbean countries+



* Or latest year available.

+ Data for Jamaica refers to 2006, for Grenada to 1998, for Dominica to 2001, for Trinidad and Tobago for 2005, for Bahamas to 2007, for Barbados to 2004, for Antigua & Barbuda to 2001, for St. Lucia to 2004, for Belize to 2005, for Guyana to 2002 and for Dominican Republic to 2009. Tourism Employment for Bahamas, Barbados, Antigua and Barbuda, St Lucia, Belize, Guyana and the Dominican Republic refers to Employment in Hotels and Restaurants (ISIC-Rev.3); for the rest of countries it refers to employment in Wholesale and Retail Trade and Restaurants and Hotels (ISIC-Rev 2).

Source: Based on data from World Development Indicators, ILO Laborsta Database and Central Bank of the Dominican Republic.

Table A.2: Estimation of the Share of Remittances Receipts by Region of Origin in Available Caribbean Countries

	Antigua and Barbuda	Barbados	Belize	Dominica	Dominican Republic	Grenada	Guyana	Haiti	Jamaica	Suriname	Trinidad and Tobago
Europe	10.4	21.6	2.6	24.0	12.9	15.6	6.2	3.1	16.1	75.8	7.1
France	0.1	0.0	0.0	1.8	0.0	0.1	0.0	2.7	0.0	0.1	0.1
Germany	0.1	0.2	0.1	0.5	0.7	0.1	0.0	0.1	0.2	0.0	0.2
Greece	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Italy	0.0	0.0	0.0	0.7	1.9	0.0	0.0	0.1	0.0	0.0	0.0
Netherlands	0.1	0.1	0.0	0.2	0.6	0.0	0.6	0.1	0.1	75.4	0.1
Spain	0.0	0.1	0.1	2.3	9.1	0.0	0.0	0.1	0.0	0.1	0.1
Switzerland	0.1	0.0	0.0	0.2	0.5	0.1	0.0	0.1	0.0	0.0	0.1
UK	10.0	21.1	2.3	17.5	0.1	15.2	5.6	0.0	15.7	0.1	6.5
North America	54.7	66.6	83.6	49.4	73.2	60.0	78.5	63.6	73.2	2.9	81.5
US	48.9	52.4	78.5	42.0	72.6	46.3	56.9	56.6	60.6	2.6	62.2
Canada	5.8	14.2	2.7	7.1	0.5	13.5	21.6	6.9	12.6	0.4	19.3
Mexico	0.0	0.0	2.4	0.4	0.1	0.2	0.0	0.1	0.0	0.0	0.0
Caribbean	10.2	2.3	0.4	16.5	2.7	15.2	4.5	24.3	1.2	12.3	1.3
Martinique & Guadeloupe	0.0	0.0	0.0	0.1	0.6	0.0	0.1	5.4	0.0	0.1	0.0
DR	0.3	0.0	0.1	0.0	0.0	0.0	0.0	12.1	0.0	0.0	0.0
Bahamas	0.0	0.1	0.0	0.1	0.0	0.0	0.1	2.2	0.3	0.0	0.1
French Guyana	0.0	0.0	0.0	0.0	0.1	0.0	0.9	2.7	0.0	11.2	0.0
Cuba	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.3	0.0	0.0
Trinidad & Tobago	0.0	1.2	0.0	0.0	0.0	14.0	1.1	0.0	0.0	0.0	0.0
Antigua & Barbuda	0.0	0.2	0.0	7.2	0.1	0.2	1.0	0.0	0.2	0.0	0.1
Barbados	0.0	0.0	0.0	1.3	0.0	1.0	0.7	0.0	0.1	0.0	0.6
Jamaica	0.0	0.3	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
US Virgin islands	7.3	0.0	0.0	7.5	0.2	0.0	0.0	0.0	0.0	0.0	0.4
Haiti	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0
Netherlands Antilles	2.6	0.4	0.0	0.3	0.9	0.0	0.3	0.4	0.2	1.0	0.0
Other:	24.7	9.5	13.4	10.1	11.1	9.2	10.8	8.9	9.5	9.0	10.1
<i>Of which</i>											
Colombia	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Panama	0.0	0.1	0.2	0.0	0.7	0.0	0.0	0.0	0.1	0.0	0.0
Philippines	15.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Based on estimations from Ratha and Shaw (2007).

Table A.3: Growth in the Caribbean during 2006-09 and Projections for 2010-15

	Actual				Projections					
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
GDP Growth										
Antigua and Barbuda	12.9%	6.5%	1.8%	-8.9%	-4.1%	3.1%	2.5%	3.8%	4.2%	4.4%
Bahamas, The	3.5%	1.9%	-1.7%	-4.3%	0.5%	1.5%	2.5%	2.5%	2.5%	2.5%
Barbados	3.6%	3.8%	-0.2%	-5.5%	-0.5%	3.0%	2.5%	2.5%	2.5%	2.5%
Belize	4.7%	1.2%	3.8%	0.0%	2.0%	2.3%	2.5%	2.5%	2.5%	2.5%
Dominica	4.8%	2.5%	3.2%	-0.3%	1.4%	2.5%	3.0%	3.0%	3.0%	3.0%
Dominican Republic	10.7%	8.5%	5.3%	3.5%	5.5%	5.5%	6.0%	6.0%	6.0%	6.0%
Grenada	-2.3%	4.9%	2.2%	-7.7%	0.8%	2.0%	3.0%	3.5%	4.0%	4.0%
Guyana	5.1%	7.0%	2.0%	3.0%	2.9%	3.1%	3.2%	3.1%	3.1%	3.0%
Haiti	2.2%	3.3%	0.8%	2.9%	-8.5%	9.8%	8.4%	6.9%	6.2%	6.0%
Jamaica	3.0%	1.4%	-0.9%	-3.0%	-0.1%	1.8%	2.0%	2.0%	2.1%	2.1%
St. Kitts and Nevis	2.6%	4.2%	4.6%	-5.5%	-1.5%	0.5%	1.5%	2.0%	2.0%	2.0%
St. Lucia	4.8%	1.5%	0.7%	-5.2%	1.1%	2.3%	3.5%	3.8%	3.8%	3.8%
St. Vincent and the Grenadines	7.6%	8.0%	-0.6%	-1.0%	0.5%	2.0%	2.5%	3.0%	3.5%	3.5%
Suriname	3.8%	5.2%	6.0%	2.5%	4.0%	4.8%	5.5%	7.5%	6.0%	6.0%
Trinidad and Tobago	13.2%	4.8%	2.4%	-3.5%	1.2%	2.5%	2.5%	2.6%	2.6%	2.6%
Caribbean	8.4%	5.5%	2.8%	-0.2%	2.1%	4.0%	4.3%	4.3%	4.2%	4.2%
English Speaking Caribbean	7.5%	3.4%	0.8%	-3.6%	0.6%	2.2%	2.4%	2.5%	2.5%	2.6%

Source: WEO database as of October 2010.

Table A.4: Estimating Household Consumption

Dependent Variable: Change in Real Household Consumption, $\Delta(CHouse_t)$								
Models	1		2		3		4	
	Random Effects	Fixed Effects	Random Effects	Fixed Effects	Random Effects	Fixed Effects	Random Effects	Fixed Effects
Constant	-1.34e+07 (-0.22)	-2799015 (-0.04)	-1.20e+07 (-0.21)	-6906049 (-0.10)	9456927 (0.34)	5.47e+07 (0.97)	-2.52e+07 (-1.37)	-3.77e+07 (-1.78)
Change in Real GDP, $\Delta(GDP_t)$	.8846257*** (11.52)	.6786737*** (2.84)	.892194*** (12.87)	.6775109*** (3.08)	.8782145*** (12.86)	.7164534*** (3.87)	.9401704*** (19.83)	1.004855*** (14.10)
Change in FDI, $\Delta(FDI_t)$	-8.59e+07 (-0.33)	-7.68e+07 (-0.24)						
Change in Remittances, $\Delta(Remit_{t-1})$	.0769208* (1.97)	.158188 (1.66)	.074762* (2.06)	.1588787 (1.80)	.0782337* (2.13)	.1421673 (1.86)		
Change in Debt Stocks, $\Delta(Debt_t)$	.033878*** (2.97)	.0280249 (1.87)	.0333392*** (3.11)	.0275836* (1.98)	.0344338*** (3.18)	.0310691* (2.38)		
Change in US GDP, $\Delta USGDP_{t-1}$	.0001198 (0.50)	.0003084 (0.85)	.0000857 (0.41)	.0002911 (0.92)				
Dummy Natural Disaster $Disaster_{t-1}$	-1.95e+07 (-0.15)	-3575023 (-0.02)						
N	53	53	57	57	58	58	234	234
Number of Groups	6	6	6	6	6	6	9	9
R-squared within	0.89	0.86	0.89	0.86	0.88	0.86	0.69	0.69
R-squared between	0.97	0.98	0.99	0.99	0.99	0.99	0.99	0.99
R-squared overall	0.92	0.88	0.92	0.88	0.91	0.89	0.75	0.75
Wald Chi-square	300.92	240.53	339.7	267.14	322.77	263.45	393.28	293.38
Prob>Chi-square	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Z-values in parentheses

* Indicates significance at the 0.05 significance level, **indicates significance at the 0.01 significance level and ***indicates significance at the 0.001 significance level.

Note: Instrumental Variables have been used to correct for the endogeneity of the model. The instrument is the lagged of the change in GDP.

Table A.5: Foreign Direct Investment and Portfolio Investment Flows to the Caribbean in US\$ Millions, 2007-2009+

Countries	Investment Flows	Period	2007	2008	2009	% Change	
						2008/2007	2009/2008
Antigua & Barbuda*	FDI	January-December	340.5	175.4	141.3	-48.48%	-19.5%
	Portfolio Investment		33.5	45.1	16.0	34.69%	-64.5%
Bahamas	FDI	January-June	387.3	498.7	408.0	28.76%	-18.2%
Barbados	Long-Term private flows (net)	January-December	1,531.6	319.7	67.8	-79.1%	-78.8%
Belize	FDI	January-March	21.3	46.5	24.6	118.82%	-47.2%
	Portfolio Investment (net)		82.3	-1.2	-1.3	-101.46%	8.3%
Dominica*	FDI	January-December	147.8	153.4	126.1	3.78%	-17.8%
	Portfolio Investment		19.4	16.5	25.2	-14.61%	52.6%
Dominican Republic	FDI	January-September	1,010.3	2,810.3	1,758.0	178.16%	-37.4%
	FDI	January-June	916.6	1,601.0	1,158.7	74.67%	-27.6%
	Portfolio Investment		854.8	-172.7	-310.0	-120.20%	79.5%
Grenada*	FDI	January-December	167.4	150.0	84.8	-10.42%	-43.5%
	Portfolio Investment		5.0	7.6	5.3	53.46%	-30.8%
Guyana	FDI	January-September	125.5	154.4	166.4	23.03%	7.8%
	Portfolio Investment		-62.6	9.6	34.1	-115.34%	255.2%
Haiti	FDI	January-Mars	4.5	6.8	4.8	51.11%	-29.4%
Jamaica	Other private investment (net)	January-May	229.0	1,515.0	250.0	561.57%	-83.5%
St. Kitts & Nevis*	FDI	January-December	140.8	183.9	140.1	30.62%	-23.8%
	Portfolio Investment		4.8	22.4	0.0	371.26%	-100.0%
Saint Lucia*	FDI	January-December	277.5	177.4	171.7	-36.05%	-3.2%
	Portfolio Investment		20.5	19.2	16.1	-6.53%	-15.8%
St. Vincent & the Grenadines*	FDI	January-December	132.1	159.3	125.9	20.58%	-21.0%
	Portfolio Investment		7.1	15.6	27.6	118.84%	76.5%

+ Periods depend on data availability. *2009 data refers to annual projections by the Eastern Caribbean Central Bank as presented in the publication Balance of Payments Statistics 2009. ** The US\$46.5 million in 2008 includes US\$22.5 million due to the buy-out of Universal Health Services.

Source: Eastern Caribbean Central Bank, The Central Bank of the Bahamas, Central Bank of Barbados, Central Bank of Belize, Banco Central de la Republica, Banque de la Republique d'Haiti and Bank of Jamaica.

Table A.6: Caribbean* Countries Members of CARICOM

1. Antigua and Barbuda
2. The Bahamas
3. Barbados
4. Belize
5. Dominican
6. Grenada
7. Guyana
8. Haiti
9. Jamaica
10. Saint Lucia
11. Saint Kitts & Nevis
12. St. Vincent & the Grenadines
13. Suriname
14. Trinidad & Tobago

*According to the definition of Caribbean used in this paper.

Table A.7: Verifying the level of integration
ADF Test Statistic for the Cycle series of the log of GDP
Ho: The series has unit root
Period: 1986-2008

Country Groups	Cycle series for the log of Real GDP	
	In Levels	In first difference
English Speaking Caribbean	-4.88*** (0.0009)	-4.53*** (0.003)
Non-English Speaking Caribbean	-3.51** (0.02)	-4.25*** (0.004)
Caribbean (ESC + NESC)	-3.82*** (0.008)	-4.74*** (0.002)
Brazil	-3.68** (0.01)	-4.93*** (0.0008)
USA	-2.71* (0.08)	-3.20** (0.03)
China	-4.66*** (0.0015)	-4.57*** (0.0019)
Hong-Kong	-3.01** (0.049)	-4.63*** (0.0016)
India	-4.07*** (0.006)	-4.07*** (0.005)
Euro Area	-3.77** (0.01)	-3.11 (0.04)

No evidence of unit root at 10% significance = *, at 5%= **, at 1% ***.
 Schwarz automatic criterion for the selection of lags.
 Note: Probability of unit root is shown in parentheses.

Table A.8: Verifying the level of integration
ADF Test Statistic for the Cycle series of the log of Remittances
Ho: The series has unit root
Period: 1986-2008

Country Groups	Cycle series for the log of Remittances	
	In Levels	In first difference
English Speaking Caribbean	-3.81*** (0.009)	-4.31*** (0.004)
Non-English Speaking Caribbean	-2.62 (0.103)	-4.23*** (0.004)
Caribbean (ESC + NESC)	-3.45** (0.02)	-3.88*** (0.009)

Note: Probability of unit root is shown in parentheses.

Table A.9: Verifying the level of integration
ADF Test Statistic for the Cycle series of the log of FDI*
Ho: The series has unit root
Period: 1986-2008

Country Groups	Cycle series for the log of FDI	
	In Levels	In first difference
English Speaking Caribbean	-8.82*** (0.000)	-11.89*** (0.000)
Caribbean (ESC + NESC)	-7.49*** (0.000)	-10.57*** (0.000)

*The log is taken on net FDI, therefore only the series with positive net flows have been used.
 Note: Probability of unit root is shown in parentheses.

Table A.10: Verifying the level of integration

ADF Test Statistic for the Cycle series of the log of Exports of Services
Ho: The series has unit root
Period: 1986-2008

Country Groups	Cycle series for the log of	
	In Levels	In first difference
English Speaking Caribbean	-4.52*** (0.002)	-2.80* (0.08)
Non-English Speaking Caribbean	-2.81* (0.07)	-5.49*** (0.0002)
Caribbean (ESC + NESC)	-3.62** (0.014)	-2.87* (0.06)

Note: Probability of unit root is shown in parentheses.

Table A.11: Verifying the level of integration of the series
ADF Test Statistic for the Cycle series of the log of exports of travel services
Ho: The series has unit root
Period: 1986-2008

Country Groups	Cycle series for the log of exports of travel services	
	In Levels	In first difference
English Speaking Caribbean	-4.13*** (0.005)	-4.23*** (0.005)
Non-English Speaking Caribbean	-2.37 (0.16)	-4.35*** (0.003)
Caribbean (ESC + NESC)	-3.38** (0.023)	-3.38** (0.024)

Note: Probability of unit root is shown in parentheses.

Table A.12: Verifying the level of integration of the series
ADF Test Statistic for the Cycle series of the log of exports of goods and services
Ho: The series has unit root
Period: 1986-2008

Country Groups	Cycle series for the log of exports of goods and services	
	In Levels	In first difference
English Speaking Caribbean	-5.97*** (0.0001)	-4.27*** (0.0047)
Non-English Speaking Caribbean	-2.78* (0.077)	-4.72*** (0.001)
Caribbean (ESC + NESG)	-4.95*** (0.0008)	-3.59** (0.018)

Note: Probability of unit root is shown in parentheses.

Table A.13 Correlations:
Are the Cycles of LAC correlated with other regions of the world?
Correlation of GDP Cycle Series, 1986-2008

	Andean Countries	Brazil	Central America	Caribbean	Colombia & Mexico	English Speaking Caribbean	Non-English Speaking Caribbean	Southern Cone Countries	USA	China	Hong-Kong	India	Euro Area
Andean Countries	1.00	0.51	0.66	0.42	0.18	-0.02	0.53	0.85	-0.12	0.60	0.59	0.40	-0.25
Brazil		1.00	0.38	0.10	-0.33	0.02	0.07	0.47	0.18	0.76	0.42	0.48	-0.41
Central America			1.00	0.44	0.29	-0.05	0.56	0.82	-0.02	0.58	0.11	0.18	-0.40
Caribbean				1.00	0.34	0.61	0.76	0.38	0.22	0.20	0.13	0.09	0.16
Colombia & Mexico					1.00	0.09	0.35	0.25	0.22	-0.31	0.00	-0.07	0.41
English Speaking Caribbean						1.00	-0.03	-0.10	0.50	0.00	0.04	0.23	0.25
Non-English Speaking Caribbean							1.00	0.54	-0.18	0.25	0.14	-0.16	-0.03
Southern Cone Countries								1.00	-0.05	0.70	0.43	0.33	-0.48
USA									1.00	0.02	-0.18	0.40	0.34
China										1.00	0.46	0.33	-0.70
Hong-Kong											1.00	0.42	-0.14
India												1.00	0.11
Euro Area													1.00

Table A.14 Granger Causality

Is There Statistical Evidence in Support of the Economic Cycles of these countries explaining the Economic Cycle of these sub-regions of LAC?

Ho: Cycle of Foreign Economy does not cause the cycle, 1986-2008

	US Cycle affecting LAC	Cycle of China affecting LAC	Cycle of Hong-Kong affecting LAC	Cycle of India affecting LAC	Cycle of the Euro Area affecting LAC
ESC	2.62* (0.10)	1.27 (0.31)	0.48 (0.63)	0.45 (0.64)	1.26 (0.30)
NOESC	0.05 (0.94)	0.37 (0.69)	0.25 (0.77)	0.80 (0.47)	0.28 (0.75)
Caribbean	0.47 (0.63)	0.03 (0.97)	0.09 (0.91)	0.73 (0.49)	0.45 (0.64)

The table reports F-statistics. Probability of Ho is in parentheses.