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Sistema Econômico
Latino-Americano e do Caribe

Système Economique
Latinoaméricain et Caribéen



Debt Burden and Fiscal Sustainability in the Caribbean Region

Intra-Regional Relations

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F O R E W O R D

This study has been elaborated in order to fulfill the activity I.1.5 of the Work Program of SELA Permanent Secretariat for 2013 “Analysis and Elaboration of Policy Proposals for the Consolidation of a Regional Financial Architecture”.

The paper is organized in the following way. The introduction (Section I) briefly discusses the role of debt as a fiscal policy tool, and some of the reasons that explain episodes of excessive debt accumulation. After the introduction, section II presents and analyzes the debt indicators more frequently used in the empirical literature on debt and fiscal sustainability for a sample of Caribbean countries. Section III examines the impact of debt on some relevant fiscal variables. Section IV deals with the relationship between debt and growth. Section V discusses some conceptual aspects of fiscal sustainability, presents the results of a conventional sustainability analysis for the Caribbean countries, and applies the econometric fiscal sustainability test proposed by Bohn (2005) to the Caribbean data. Section VI develops a country by country analysis of the debt situation that combines the debt indicators and the sustainability analysis. Finally, section VII contains the main conclusions of the study and some policy recommendations.

The Permanent Secretariat expresses its gratitude to Doctor Víctor Olivo for his dedication in the elaboration of this study.

EXECUTIVE SUMMARY

This paper main objective is to examine the issue of debt burden and fiscal sustainability in the Caribbean region. For this purpose, it applies a battery of indicators, and statistical and econometric tools to a data set of relevant debt and fiscal variables of the Caribbean region.

The emphasis of the paper on the situation of the Caribbean region is due to the fact that both, average and country by country data for Latin America, does not show signs of an imminent debt problem. For the period under analysis, public debt and external debt burden indicators for Latin America have tended to improve and are considerably lower than those of the Caribbean.

Together with government expenditures and taxes, public debt is an important fiscal policy tool. The idea of tax smoothing, which is essential to provide a steady flow of public goods and services and run a countercyclical fiscal policy, depends on the capacity of government to borrow during recessions and repaying debt during booms. In addition, "some economists have advocated borrowing to finance public investment, in which has been referred to as the "golden rule" (Tanzi, 2011). This argument is based on the idea that, "because public investment creates assets that favor future generations, the latter should pay for it. This argument assumes that public investment is always productive" (Tanzi, 2011).

Although debt can be used as a tool to improve macroeconomic performance and promote welfare, excessive debt accumulation can lead to a fiscally unsustainable situation, with severe negative effects on macroeconomic stability and economic growth.

The analyses conducted in this paper with aggregate data for the Caribbean region show clear signals of a situation of excessive debt burden and potential fiscal insolvency.

The simple mean of the public debt to GDP ratio in the Caribbean (fourteen countries in the IMF-WEO database) for the period 1999-2011 was 72.32 percent, and in 2011 this indicator reached 74.35 percent. These figures are above the 50-60 percent threshold suggested in the paper by Mendoza and Ostry (2007). In this study, the emerging economies group (34 countries) registered a mean debt to GDP ratio of 64.5 percent. The Caribbean simple average (1999-2011) debt-GDP level is also consistently larger than the value for Latin America and the Caribbean as a whole (51.77 percent).

Applying simple statistics and more elaborated econometric methods, we present evidence that the public debt burden of the Caribbean countries has a significant negative impact on economic growth.

Implementation of the Bohn's fiscal sustainability test (Mendoza and Ostry, 2007) using public debt and fiscal data of nine countries in the Caribbean indicates that the region follows an unsustainable fiscal policy. For the period 1999-2011, the primary balances of the Caribbean countries analyzed do not respond significantly to changes in the debt to GDP ratios. This result is consistent with Mendoza and Ostry (2007) finding that highly indebted emerging economies do not appear to follow sustainable fiscal policies.

Aggregate external debt of the Caribbean region is also high. The simple average of the external debt to GDP ratio (eight countries included in the WB-IDS database) for the period 1999-2011 is 61.07 percent. In 2011 the ratio registered a value of 59.40 percent. The simple mean is above the threshold identified by Reinhart and Rogoff (2011) for

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emerging markets (60 percent), beyond which the external debt level begins to have a substantial negative effect on economic growth. The average external debt-GDP ratio for the Caribbean is substantially larger than the one observed for Latin America and the Caribbean (30.62 percent simple average 1999-2011).

Despite the relatively high external debt level in the Caribbean, we could not detect a significant negative relationship between the external debt to GDP ratio and economic growth as reported by Reinhart and Rogoff (2011). However, this result may be due to the limited sample that we have available to test this relationship. Additionally, that an elevated level of indebtedness does not contribute to higher economic growth, should be by itself an issue of concern.

The high external leverage of the Caribbean region is also reflected in the values of the ratio of total external debt to export of goods and services and primary income. The 1999-2011 simple average of this indicator is 165.24 percent versus 136.85 percent for Latin America and the Caribbean. However, a low ratio of external short-term debt to total debt (12.65 percent average), and a high ratio of concessional external debt to total debt (45.09 percent mean), moderate substantially total debt service as a percentage of exports of goods and services and primary income (13.63 percent average).

The elevated weight of concessional debt on total external debt also contributes to attenuate the impact of debt interest payments on the fiscal variables (global fiscal balance, government revenues, and government expenditures). However, countries with public debt to GDP ratios in the 90 percent plus interval show a substantial rise in the interest payments burden.

The previous results obtained from the aggregate data reflect the fact that most countries in the Caribbean region exhibit excessive debt levels. Of the fourteen countries for which we have gross public debt data available (IMF-WEO), ten countries had in 2011 debt-GDP ratios above the 60 percent threshold that we define in this study. Four countries showed in 2011 debt-GDP ratios above 90 percent (the Reinhart and Rogoff 2011 threshold). For the eight countries for which we collected data of external debt (WB-IDS), in 2011 four had debt to GDP ratios above the Reinhart and Rogoff (2011) 60 percent threshold, and seven countries presented external debt levels larger than 30 percent.

Countries in the high public debt level interval (60-90 percent) include: Barbados, Belize, Dominica, Guyana, St. Lucia and St. Vincent and the Grenadines. Countries in the very high debt level range (90 percent plus) include: Antigua and Barbuda, Grenada, Jamaica, and St. Kitts and Nevis.

Our main conclusion from the analysis of the data at an aggregate level and on a country by country basis is that, an adequate combination of fiscal consolidation and debt restructuring/relief is crucial to achieve a debt level compatible with fiscal sustainability in the Caribbean region. The Caribbean countries should attempt to negotiate and obtain the maximum debt restructuring/relief possible. Nevertheless, the excessive debt burden of most of the countries in the Caribbean makes impossible to attain the debt reduction required without fiscal adjustment.

“As documented in Reinhart, Rogoff, and Savastano (2003) for emerging-market countries, large public debt overhangs do not unwind quickly and seldom painlessly. In particular, debt-to-GDP ratios are seldom reduced entirely through consistent robust economic growth. More commonly, reducing debt levels significantly has relied on fiscal austerity, debt restructuring (sometimes outright default), or a combination of these” (Reinhart and Rogoff, 2011).

The considerable magnitude of the fiscal effort necessary to attain debt levels consistent with solvency implies that, fiscal consolidation programs in the Caribbean region have to be carefully designed and implemented for several years. Policy makers should be convinced that the current excessive debt level of the region is severely limiting the use of fiscal policy, and affecting negatively economic growth. Moreover, achieving and maintaining fiscal sustainability is especially important for the Caribbean countries, given their vulnerability to natural disasters and scarcely diversified economic base.

I. INTRODUCTION

This paper main objective is to examine the issue of debt burden and fiscal sustainability in the Caribbean region. For this purpose, it applies a battery of indicators, and statistical and econometric tools to a data set of relevant debt and fiscal variables of the Caribbean region.

The emphasis of the paper on the situation of the Caribbean region is due to the fact that both, average and country by country data for Latin America, does not show signs of an imminent debt problem. For the period under analysis, public debt and external debt burden indicators for Latin America have tended to improve and are considerably lower than those of the Caribbean.

Together with government expenditures and taxes, public debt is an important fiscal policy tool. The idea of tax smoothing, which is essential to provide a steady flow of public goods and services and run a countercyclical fiscal policy, depends on the capacity of government to borrow during recessions and repaying debt during booms. In addition, "some economists have advocated borrowing to finance public investment, in which has been referred to as the "golden rule" (Tanzi, 2011). This argument is based on the idea that, "because public investment creates assets that favor future generations, the latter should pay for it. This argument assumes that public investment is always productive" (Tanzi, 2011).

Although debt can be used as a tool to improve macroeconomic performance and promote welfare, excessive debt accumulation can lead to a fiscally unsustainable situation, with severe negative effects on macroeconomic stability and economic growth. Reinhart and Rogoff (RR 2009, 2011) thoroughly document historical episodes of excessive debt accumulation for a large sample of countries. Many of these episodes are characterized by Reinhart and Rogoff (2011) as "surges in public debt". "Throughout the ages and across continents, war has been a recurrent causal force behind rapid deteriorations in government finances and surges in public indebtedness" (Reinhart and Rogoff, 2011). "During peacetime, a leading factor behind rapid surges in public debt has been severe or systemic financial crisis" (Reinhart and Rogoff, 2011). However, "more general and chronic fiscal problems (because governments systematically overspend, do not have the political will or ability to tax effectively, or a combination of the two) tend to produce more gradual debt buildups" (Reinhart and Rogoff, 2011).

With respect to the gradual accumulations of public debt, public choice theorists have emphasized "the problems arising because the asymmetry of expenditures and taxes and because of fiscal illusions that may be pondered from the use of debt finance" (Aronson and Ott, 1996). "Financing government programs with debt may create a fiscal illusion. A substitution of debt finance for tax finance may cause people to underestimate the price of public goods and thereby increase their demand for more spending" (Aronson and Ott, 1996).

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The paper is organized in the following way. After this introduction, section II presents and analyzes the debt indicators more frequently used in the empirical literature on debt and fiscal sustainability for a sample of Caribbean countries. Section III examines the impact of debt on some relevant fiscal variables. Section IV deals with the relationship between debt and growth. Section V discusses some conceptual aspects of fiscal sustainability, presents the results of a conventional sustainability analysis for the Caribbean countries, and applies the econometric fiscal sustainability test proposed by Bohn (2005) to the Caribbean data. Section VI develops a country by country analysis of the debt situation that combines the debt indicators and the sustainability analysis. Finally, section VII contains the main conclusions of the study and some policy recommendations.

II. DEBT BURDEN INDICATORS

In this section we examine for the Caribbean region, the debt burden indicators most commonly used in the literature (see Agénor 2000 and Chuhan 2005). The basic idea behind these indicators is to capture the ability to pay.

From the International Monetary Fund World Economic Outlook database (IMF-WEO), we compiled the gross public debt to GDP ratio for fourteen Caribbean countries for the 1999-2011 period.

External debt indicators were obtained from the World Bank International Debt Statistics (WB-IDS). This database contains information for eight Caribbean countries. For the period 1999-2011, we analyze the following ratios: total external debt to GDP ratio; total external debt to exports of goods, services and primary income; short-term debt to total debt; concessional debt to total debt; and debt service to exports of goods, services and primary income.

Table 1 shows the Caribbean countries included in the analysis with their classification according to income per capita (World Bank), and their main economic activity (Amo-Yartey et al, 2012).

TABLE 1
Caribbean Countries. Classification According to Per capita Income (World Bank) and Main Economic Activity

Country	Income Classification (WB)	Main Economic Activity
Antigua and Barbuda	Upper-middle (\$4,036-\$12,475)	Tourism
The Bahamas	High (< \$12,476)	Tourism
Barbados	High (< \$12,476)	Tourism
Belize	Lower-middle (\$1,026-\$4,035)	Tourism
Dominica	Upper-middle (\$4,036-\$12,475)	Tourism
Grenada	Upper-middle (\$4,036-\$12,475)	Tourism
Guyana	Lower-middle (\$1,026-\$4,035)	Commodity exporting
Haiti	Low (> \$1,025)	
Jamaica	Upper-middle (\$4,036-\$12,475)	Tourism
St. Kitts and Nevis	Upper-middle (\$4,036-\$12,475)	Tourism
St. Lucia	Upper-middle (\$4,036-\$12,475)	Tourism
St. Vincent and the Grenadines	Upper-middle (\$4,036-\$12,475)	Tourism
Suriname	Upper-middle (\$4,036-\$12,475)	Commodity exporting
Trinidad and Tobago	High (< \$12,476)	Commodity exporting

Source: World Bank; IMF

Although these indicators can provide useful information about ability to pay, critical debt levels or thresholds are likely to vary from country to country, as well as over time (Chuhan 2005). In principle this suggests, that a thorough analysis of the debt burden issue must combine these indicators with an economic evaluation of each country. There is, however, an alternative approach that allows us to evaluate the problem without entering into a country by country detailed economic analysis. Reinhart and Rogoff (RR, 2009 and 2011) hold that mapping a vague concept such as “high debt” to a workable definition for interpreting the existing facts requires making arbitrary judgments about where to draw lines. In the case of debt, they propose to divide the data for the debt to GDP ratio in four buckets or intervals: 0 to 30 percent, 30 to 60 percent, 60 to 90 percent, and over 90 percent. When RR (2011) relate their debt intervals with per capita GDP growth for 44 countries spanning 200 years, they find that above the threshold of 90 percent, median and average growth falls considerably. For public debt this threshold is similar in advanced and emerging-market economies. However, emerging-market economies face lower thresholds for total external debt. The decline in per capita GDP growth is detected when total external debt reaches 60 percent of GDP.

Mendoza and Ostry (2007) find that, emerging market countries with high debt levels (above the 64.5 percent mean of the full group) do not satisfy the fiscal sustainability criterion developed by Bohn (2005). A crucial conclusion from their study is that countries should avoid public debt ratios to rise above the 50-60 percent range, as the ability of policy makers to maintain fiscal solvency through primary balances in countries with public debt ratios above this range appears to wane.

Combining the Reinhart-Rogoff (2009, 2011) approach and empirical evidence with the results from Mendoza and Ostry (2007), we consider that debt to GDP ratios in the 60 to 90 percent range should be considered as a signal of concern (high debt), and ratios over 90 percent should be taken as situations of high risk in terms of debt burden and fiscal sustainability (very high debt).

In addition to the Reinhart-Rogoff and Mendoza-Ostry thresholds, we compare the various debt indicators for the Caribbean countries to those for Latin America and the Caribbean (LAC) region as a whole.

1. Public Debt to GDP

Table 2 shows the evolution of the gross public debt as percentage of GDP in the Caribbean countries included in the IMF-WEO data base for the period 1999-2011.

TABLE 2
**Gross Debt/
GDP (%)**

Country													Country	
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average
Antigua and Barbuda	96.99	108.04	112.80	127.50	126.12	122.05	94.57	90.36	78.79	76.87	102.02	90.62	93.41	101.55
The Bahamas	24.46	23.86	23.85	24.43	26.90	28.43	28.12	29.01	30.18	32.75	39.45	45.30	49.45	31.25
Barbados	34.74	40.15	46.69	48.56	48.48	49.26	47.13	46.73	52.75	56.30	63.38	72.92	76.90	52.62
Belize	NA	NA	85.26	90.35	104.05	103.69	103.63	93.86	89.04	79.24	83.32	85.22	83.60	91.02
Dominica	64.24	71.46	100.34	101.25	98.91	85.87	85.55	80.99	75.33	66.42	62.80	69.08	71.17	79.49
Grenada	37.61	41.33	44.37	78.50	78.88	94.22	88.05	92.59	88.90	83.76	97.13	102.41	103.71	79.34
Guyana	121.07	120.19	129.66	131.32	119.46	118.17	115.68	93.10	59.88	61.65	64.89	65.33	65.22	97.35
Haiti	39.92	55.48	49.60	54.41	60.88	49.95	47.19	39.05	34.78	37.80	27.67	17.33	11.73	40.44
Jamaica	85.62	93.69	110.65	122.24	128.65	123.23	122.22	121.10	118.29	128.32	144.41	145.25	142.92	122.05
St. Kitts and Nevis	89.91	97.60	105.77	120.39	143.21	156.07	159.94	145.24	133.94	130.98	148.52	163.81	154.30	134.59
St. Lucia	35.56	39.58	47.96	60.71	57.58	61.59	64.82	60.57	55.79	56.18	60.82	65.50	70.12	56.68
St. Vincent and the Grenadines	57.70	58.53	56.19	57.17	58.91	64.00	66.49	63.76	55.60	56.99	64.79	66.85	68.14	61.16
Suriname	38.67	51.85	39.85	40.06	33.71	31.44	28.89	23.97	17.45	15.64	15.49	18.49	19.09	28.82
Trinidad and Tobago	54.55	52.59	55.59	58.74	50.43	43.49	35.28	31.50	24.58	20.35	33.15	34.54	31.14	40.46
Simple Average	60.08	65.72	72.04	79.69	81.16	80.82	77.68	72.27	65.38	64.52	71.99	74.48	74.35	72.32

Source: International Monetary Fund, author's own calculations

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The table reveals important differences in the behavior of the ratio for the fourteen individual countries included. In 2011, only four countries of the fourteen considered, had ratios under 60 percent; six countries showed ratios in the 60-90 percent interval, and four countries were in the 90 percent plus range. In 2011, Grenada, Jamaica, and St. Kitts and Nevis had debt to GDP ratios above 100 percent.

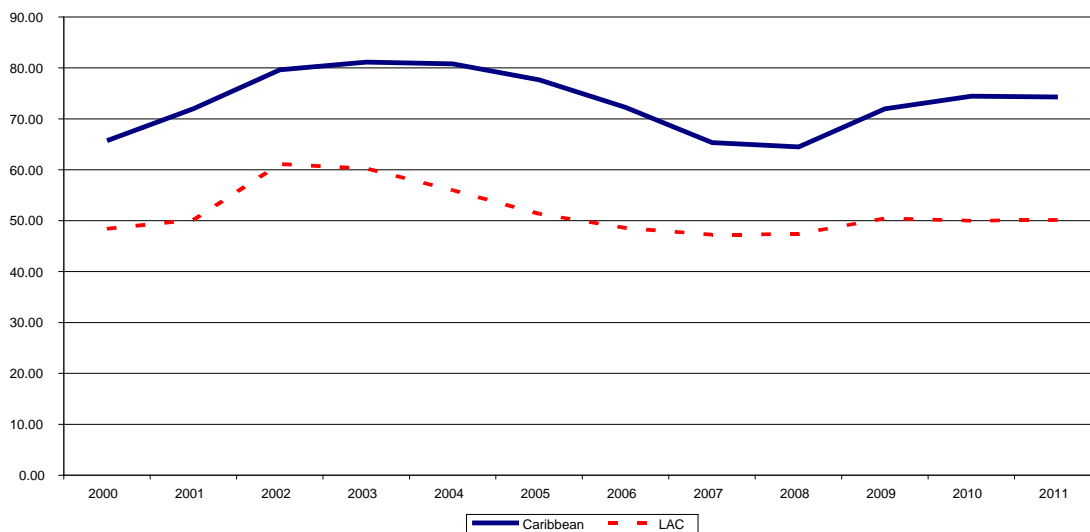
The table also reveals that few countries exhibit a downward trend in the debt to GDP indicator during the 1999-2011 period. Only in Belize, Guyana, Haiti, Suriname, and Trinidad and Tobago the ratio shows signals of a downward trend.

Following the Reinhart-Rogoff (2011) threshold debt to GDP ratio for the Caribbean (90 percent), four countries in the region present an excessive debt accumulation that suggests a fiscal vulnerability that can lead to a debt crisis. The Mendoza-Ostry (2007) threshold debt to GDP ratio for the Caribbean (60 percent) indicates that ten countries in the region exhibit an excessive debt accumulation.

Graph 1 compares the simple average Gross Debt to GDP ratio of the Caribbean countries to that of Latin America and the Caribbean region as a whole (LAC), for the period 1999-2011.

The simple mean ratio for the Caribbean countries is consistently larger than the value for LAC. For the period 1999-2011, the simple average of this ratio for the Caribbean countries is 72.32 percent compared to 51.77 percent for LAC. The simple average debt to GDP ratio of the Caribbean region for the 1999-2011 period, does not show a tendency to decrease.

GRAPH 1
Gross Debt/GDP Caribbean Vs LAC (%)



Source: International Monetary Fund, author's own calculations

2. Total External Debt to GDP

Table 3 presents figures of external debt stock to GDP ratios for the eight Caribbean countries included in the International Debt Statistics of the World Bank (WB-IDS). The external debt definition includes public and private debt owed to nonresidents.

TABLE 3
External debt stocks
% of GDP

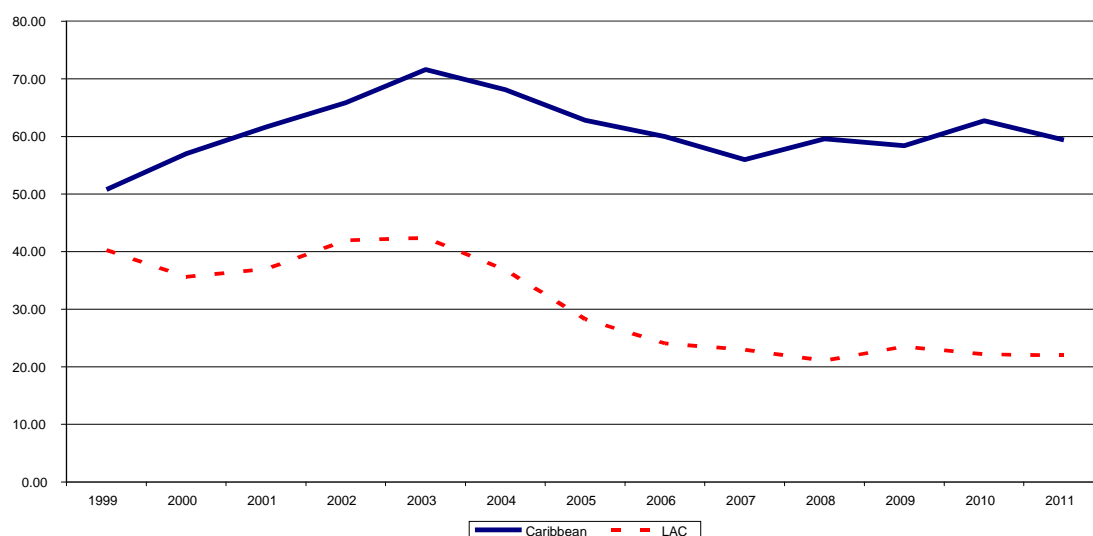
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Country Average
Belize	56.91	75.71	82.80	91.05	107.46	91.35	91.65	86.82	83.81	93.46	96.01	93.33	88.40	87.60
Dominica	41.93	56.58	70.36	76.11	90.14	83.95	76.61	65.95	69.65	66.20	55.65	58.64	58.79	66.97
Grenada	28.49	38.90	46.19	67.67	63.39	71.99	58.10	70.99	70.37	66.32	73.64	73.74	69.22	61.46
Guyana	129.49	123.25	117.89	119.95	121.47	110.65	94.26	79.77	43.62	44.22	57.90	65.75	71.62	90.76
Haiti	29.41	30.43	35.75	36.89	46.08	37.62	31.25	32.06	27.21	30.11	22.11	15.04	10.60	29.58
Jamaica	45.12	53.05	59.35	57.57	60.64	64.13	58.88	68.23	81.81	76.30	92.03	106.92	99.03	71.00
St Lucia	24.77	29.09	35.67	39.67	42.49	41.45	45.73	36.25	41.95	70.87	36.89	47.96	36.43	40.71
St Vincent and the Grenadines	50.08	49.14	45.25	37.93	41.34	43.72	45.85	39.85	29.48	29.27	33.03	40.50	41.10	40.50
Simple Average	50.77	57.02	61.66	65.85	71.63	68.11	62.79	59.99	55.99	59.60	58.41	62.73	59.40	61.07

Source: World Bank, author's own calculations

In 2011, only one country (Haiti), had a external debt to GDP ratio under 30 percent; three countries presented ratios between 30 and 60 percent; four countries showed ratios above 60 percent (the RR 2011 threshold value for the external debt to GDP ratio). Only Jamaica had an external debt to GDP ratio above 90 percent (99.03%). Also note, that only in the case of Haiti this indicator exhibits a clear downward trend.

For the period 1999-2011, the simple mean external debt to GDP coefficient of the Caribbean region is 61.07 percent, and does not show any tendency to decrease (Graph 2). In contrast, the external debt to GDP ratio for LAC as a whole average 30.62 percent, and decreases markedly from 1999 to 2005 and then on stabilizes until 2011 around 23 percent. Thus the gap for this ratio between the Caribbean region and the LAC has widened in the period of analysis.

GRAPH 2
External Debt Stocks % of GDP Caribbean Vs LAC



Source: World Bank, author's own calculations

3. Total External Debt to Export of Goods and Services and Primary Income

Table 4 contains the values of the ratio of external debt to exports of goods and services, and primary income for the Caribbean region obtained from the WB-IDS.

The table shows that seven of the eight countries present average ratios above 100%, and two countries have values that exceed 200%. Interpretation of this indicator, however, is not easy, as it tends to fluctuate widely around the mean as a result of the volatility of the denominator (exports). For countries like Belize, Dominica, St. Lucia, and St. Vincent and the Grenadines, the ratio does not show a clear tendency. For Guyana and Haiti, the coefficient shows a tendency to decrease, while for Grenada and Jamaica the ratio tends to increase.

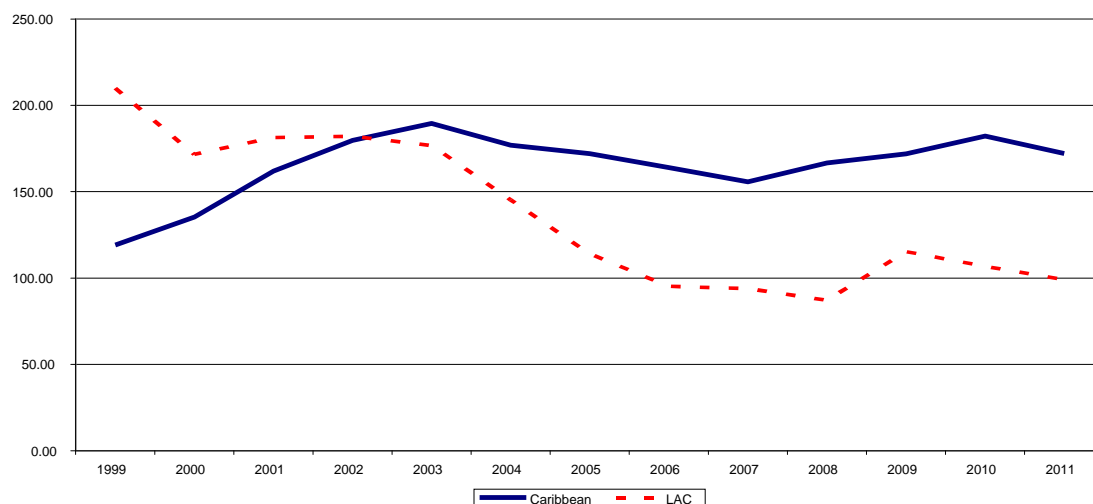
TABLE 4
External Debt Stocks
(% of Exports Goods, Services, Primary Income)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Country Avg.
Belize	100.35	142.71	162.61	173.44	199.15	176.01	164.35	133.97	130.50	146.11	176.76	156.74	134.30	153.62
Dominica	83.11	122.88	186.58	197.68	254.81	229.44	205.00	169.92	186.62	177.98	166.81	160.72	164.35	177.38
Grenada	62.01	84.49	120.27	208.31	206.15	213.03	254.05	285.08	265.37	278.86	313.28	330.53	296.39	224.45
Guyana	210.64	202.39	199.04	207.61	217.18	184.98	177.49	159.31	85.29	82.14	122.91	128.51		164.79
Haiti	229.97	238.91	289.39	304.13	290.51	259.69	224.26	216.57	199.81	229.91	151.24	118.39	72.92	217.36
Jamaica	109.65	126.63	152.52	161.76	151.99	156.51	152.75	157.70	188.09	173.03	260.27	334.15	317.98	187.93
St Lucia	49.81	58.40	76.44	88.85	84.02	75.60	77.98	81.68	101.13	153.00	77.28	89.66	77.57	83.96
St Vincent and the Grenadines	107.46	106.86	109.38	96.66	112.83	120.68	120.91	107.93	89.51	92.87	107.75	139.31	141.91	111.85
Simple Average	119.13	135.41	162.03	179.81	189.58	176.99	172.10	164.02	155.79	166.74	172.04	182.25	172.20	165.24

Source: World Bank, author's own calculations

Graph 3 illustrates the behavior of the simple average of the external debt to exports ratio of the Caribbean region, in comparison with the ratio for LAC. At the beginning of the sample period, from 1999 to 2002, this ratio was lower for the Caribbean region than for LAC. But since 2003, the simple average external debt to export ratio of the Caribbean countries has been consistently above of LAC. The LAC ratio fell considerably between 1999 and 2005, and then stabilizes around 100 percent until 2011. In contrast, the ratio for the Caribbean does not show a tendency to decline. For the period 1999-2011, the average of the coefficient for the Caribbean region is 165.24 percent versus 136.85 percent for LAC.

GRAPH 3
External Debt Stocks
% of Exports of Goods, Services and Primary Income Caribbean
Vs LAC



Source: World Bank, author's own calculations

4. External Debt Short-Term to Total Debt

Table 5 collects the values of the ratio of short term external debt to total debt reported in the WB-IDS. For the eight Caribbean countries included in the sample, three have values of this ratio under 10 percent, and seven under 20 percent, during the period 1999-2011.

St. Lucia is the country with the highest average short term external debt to total debt ratio, 34.35 percent for the 1999-2011 period. In 2011 its ratio was below the mean (21.64 percent), but this indicator exhibits strong volatility and does not present a clear tendency to decrease.

Guyana's short-term external debt to total average 13.46 percent during the 1999-2011 period, but it has steadily increased since 2008 and it reached the highest value in the sample, 33 percent in 2011.

TABLE 5
External Debt Short-Term/
Total Debt %

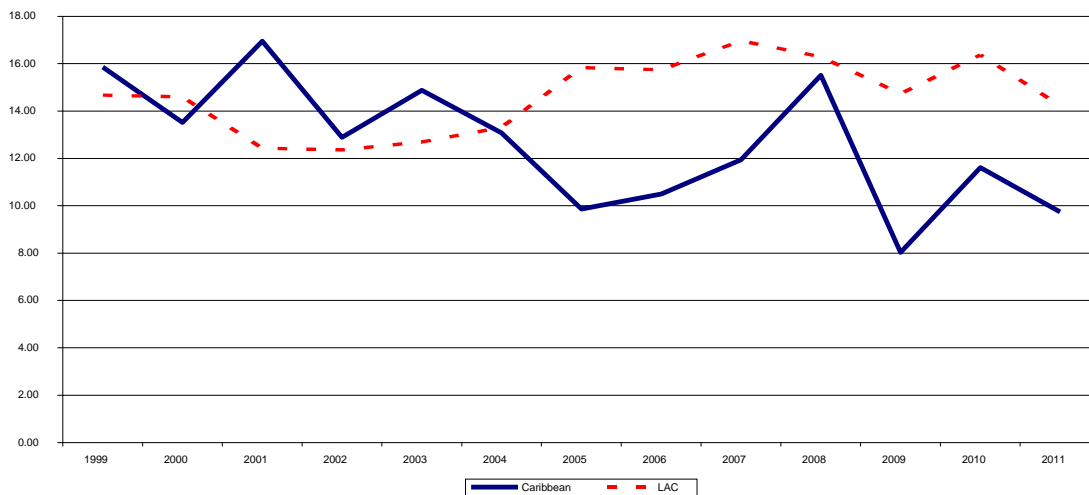
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Country
Belize	12.24	7.94	7.04	5.40	7.63	0.14	0.67	0.74	0.68	0.59	0.73	0.53	0.61	Avg.
Dominica	14.04	10.37	9.45	10.58	24.01	22.77	14.63	8.60	21.60	27.33	13.94	11.49	9.68	15.27
Grenada	17.16	10.61	23.04	19.54	19.11	17.60	1.55	6.96	9.11	10.91	6.35	6.67	5.97	11.89
Guyana	9.64	8.61	8.54	9.16	8.10	9.47	6.63	13.94	12.27	11.26	16.73	27.63	33.00	13.46
Haiti	7.86	7.50	14.40	12.03	8.59	5.63	2.05	8.27	0.00	0.00	0.00	0.01	0.00	5.10
Jamaica	19.63	16.55	17.10	14.05	17.39	16.83	9.34	13.55	14.63	12.11	6.78	7.71	7.02	13.29
St Lucia	29.84	30.50	39.47	31.03	32.57	30.68	42.34	31.70	36.50	61.83	19.53	38.86	21.64	34.35
St Vincent and the Grenadines	16.45	16.08	16.53	1.35	1.62	1.56	1.69	0.20	0.78	0.08	0.23	0.00	0.01	4.35
Simple Average	15.86	13.52	16.95	12.89	14.88	13.08	9.86	10.50	11.95	15.51	8.04	11.61	9.74	12.65

Source: World Bank, author's own calculations

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Graph 4 compares the participation of short-term debt on total debt for the Caribbean Region with that of LAC. This ratio is more volatile for the Caribbean countries than for LAC, but it has tended to decrease in the Caribbean, while it trends upward in LAC. Since 2004, the ratio of short-term external debt to total debt of the Caribbean region has a lower value than the corresponding to LAC. The simple average short-term external debt to total debt ratio of the Caribbean region, 12.65% for the period 1999-2011, is slightly smaller than the LAC (14.63%)

GRAPH 4
External Debt Short-Term to Total Debt (%) Caribbean Vs LAC



Source: World Bank, author's own calculations

The data suggests that, with the exception of St. Lucia and Guyana, excessive accumulation of short-term debt does not seem to be a serious problem in the Caribbean countries included in the WB-IDS sample.

5. Concessional Debt to Total Debt

Table 6 presents the ratio of concessional debt to total debt for the eight countries included in the WB-IDS data set. The World Bank defines concessional debt as loans with an original grant element of 25 percent or more. For the 1999-2011 period, six countries possessed a ratio of concessional debt to total debt above 30 percent on average; four of the eight countries in the sample had a ratio superior to 40 percent; and three countries surpassed 50 percent. The countries with the lowest concessional debt participation in total debt are Belize (15.78 percent) and Jamaica (14.54 percent).

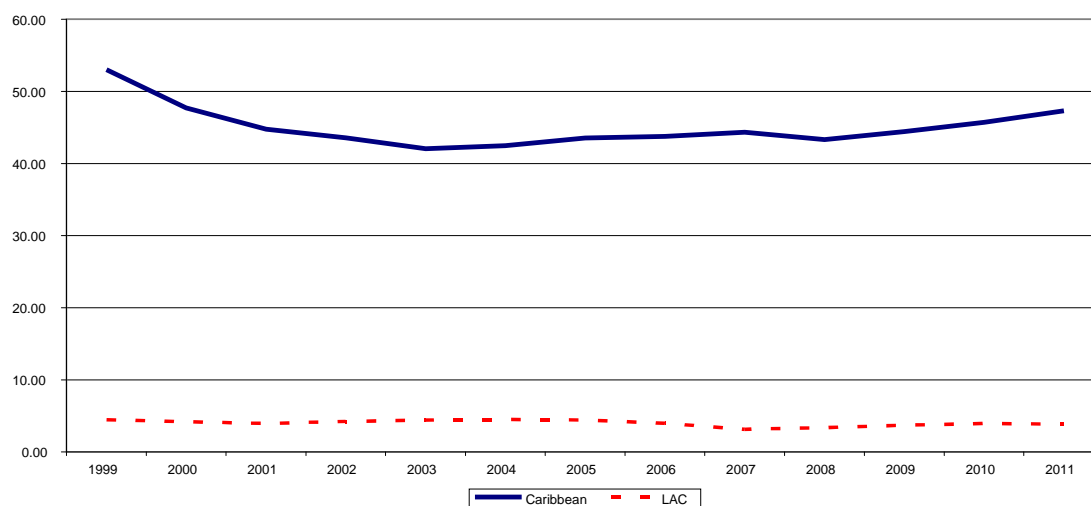
TABLE 6
Concessional Debt/
Total Debt %

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Country Avg.
Belize	24.41	16.73	13.84	11.99	9.08	12.59	14.51	15.83	17.26	15.78	17.15	17.55	18.43	15.78
Dominica	65.58	55.10	55.54	49.87	43.79	47.36	50.67	54.12	47.36	43.94	48.78	54.64	58.44	51.94
Grenada	62.72	46.36	41.75	29.17	28.39	26.33	35.45	35.97	37.85	41.75	43.45	42.93	43.30	39.65
Guyana	68.38	71.76	72.81	73.01	74.97	77.07	79.96	75.25	70.92	72.61	61.37	54.68	52.51	69.64
Haiti	86.57	87.68	81.12	84.12	85.89	89.25	92.01	85.61	92.98	91.90	79.93	86.30	81.07	86.49
Jamaica	26.78	22.46	17.54	17.21	17.62	14.85	13.12	11.87	10.82	10.83	10.16	8.56	7.24	14.54
St Lucia	43.00	34.84	28.64	29.78	28.77	28.91	24.99	32.75	29.10	23.22	46.78	38.44	51.11	33.87
St Vincent and the Grenadines	46.71	46.95	46.92	53.51	48.14	43.40	37.73	38.73	48.52	46.60	47.88	62.81	66.41	48.79
Simple Average	53.02	47.73	44.77	43.58	42.08	42.47	43.56	43.77	44.35	43.33	44.44	45.74	47.31	45.09

Source: World Bank, author's own calculations

Graph 5 compares the ratio of concessional debt to total external debt for the Caribbean region to LAC. This ratio for the period 1999-2011 is on average 45.09% for the Caribbean region versus just 4.03% for LAC.

GRAPH 5
External Debt Concessional to Total Debt (%) Caribbean Vs LAC



Source: World Bank, author's own calculations

The strong participation of concessional debt on total external debt is a crucial element to understand how the economies of the Caribbean region have been able to manage a relatively high debt to GDP ratio for a prolonged time.

6. Total Debt Service to Export of Goods and Services and Primary Income

Table 7 compiles information of total external debt service as a percentage of exports of goods, services, and primary income for the Caribbean countries as reported in the WB-IDS. The simple average of this indicator for the region in the 1999-2011 period is 13.63 percent. Three countries out eight presented a ratio under 10 percent; three countries had ratios between 10 and 20 percent; and two countries possessed ratios above 20percent.

Of the countries under analysis, only the debt service to exports ratio of Guyana exhibits a clear decreasing tendency. In the case of Haiti, although there is not a clear trend in the ratio between 1999-2010, the value for 2011 was very low (0.49 percent).

TABLE 7
Total Debt Service
(% of Exports Goods, Services, Primary Income)

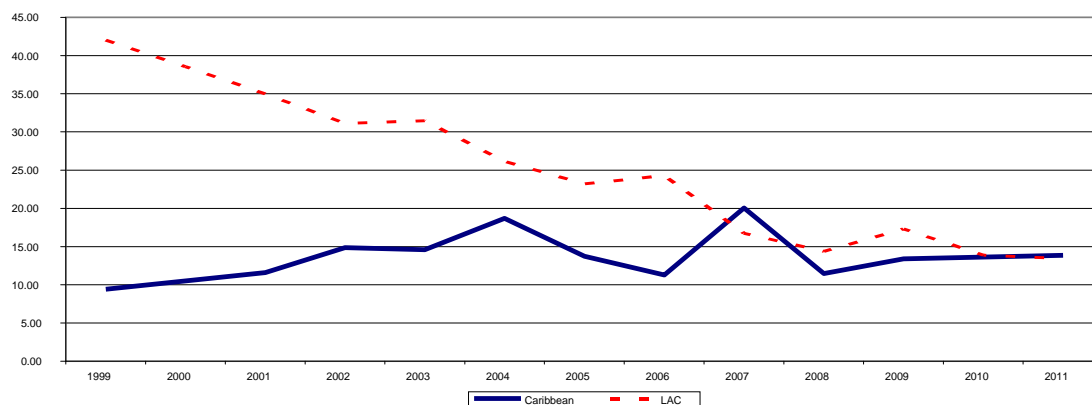
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Country Avg.
Belize	11.31	17.49	21.84	38.52	28.73	60.08	36.84	17.58	78.94	16.88	17.18	15.28	13.87	28.81
Dominica	6.89	7.38	14.21	10.25	13.19	13.47	12.09	12.68	12.57	11.21	12.74	8.89	9.79	11.18
Grenada	5.33	6.02	8.58	16.08	16.95	14.47	6.59	8.80	9.74	10.86	12.81	15.29	13.33	11.14
Guyana	12.46	10.23	6.85	9.65	8.67	6.44	5.01	4.41	3.17	2.59	2.13	2.74		6.20
Haiti	9.88	9.21	6.27	7.00	11.51	19.53	9.62	8.57	10.37	6.76	4.70	15.78	0.49	9.21
Jamaica	16.60	18.71	20.85	24.72	22.41	20.42	22.50	16.10	23.50	19.41	34.80	27.99	36.53	23.43
St Lucia	4.91	7.91	7.62	6.30	7.62	5.04	5.96	7.48	9.96	10.64	7.74	7.14	7.79	7.39
St Vincent and the Grenadines	7.98	7.18	6.72	6.51	7.80	10.20	11.32	14.78	12.32	13.35	15.13	16.04	15.22	11.12
Simple Average	9.42	10.52	11.62	14.88	14.61	18.70	13.74	11.30	20.07	11.46	13.40	13.64	13.86	13.63

Source: World Bank, author's own calculations

Graph 6 compares the simple average debt service to exports ratio of the eight Caribbean countries with that of LAC during the period 1999-2011.

The average ratio in the 1999-2011 period for the Caribbean (13.63 percent) is substantially lower than the LAC value (25.20%). The LAC ratio, however, shows a clear downward trend between 1999-2007 and then stabilizes around 15 percent until 2011. In contrast, reflecting the individual countries data, the debt service to exports ratio for the Caribbean does not exhibit a trend, and since 2007 presents values very close to those in LAC. Thus despite the important weight of concessional debt on total external debt in the Caribbean countries, the relatively high debt to GDP ratio of the region generates a debt service burden similar to the one observed for LAC since 2007.

GRAPH 6
Total External Debt Service to Exports of Goods, Services and Primary Income (%)
Caribbean Vs LAC



Source: World Bank, author's own calculations

III. IMPACT OF PUBLIC DEBT ON FISCAL VARIABLES

To complement the debt indicators examined in the previous section, we assess the impact of total public debt on some relevant fiscal variables of the Caribbean region.

1. Global Fiscal Balance

Table 8 illustrates how a higher public debt to GDP ratio is related to the global fiscal result (as a percentage of GDP) of the Caribbean countries. The table classifies the fourteen countries included in the IMF-WEO data set according to their debt to GDP ratios in four ranges: 0– 30 percent; 30-60 percent; 60–90 percent; 90 percent plus.

TABLE 8
Debt and Global Fiscal Balance

Debt/GDP ratio average (%)	Average Global Fiscal Balance 1999-2011 (%)
0-30	-1.57
30-60	-2.39
60-90	-3.29
90 Plus	-6.31

Source: International Monetary Fund; author's own calculations

For those countries with average (1999-2011) debt/GDP ratios below 30 percent (only Suriname), the average global fiscal result is -1.57 percent (deficit). Average global deficit increases to -2.39 percent for countries with average debt/GDP ratios between 30-60 percent. For countries with debt/GDP ratios between 60 and 90 percent, there is a further rise in the global deficit, to -3.29 percent. There is substantial jump in the average global fiscal deficit for those countries with debt/GDP ratios larger than 90 percent. Countries in the 90 percent plus range, exhibit average global fiscal deficits almost two times larger than countries in the 60-90 percent range, and four times larger than countries below 30 percent.

2. Interest Payments Burden on Government Revenues and Expenditures

Table 9 reports the results of an experiment similar to the one conducted in the previous section with the global fiscal result, but with the average (1999-2011) interest payments as percentage of government revenues and expenditures, respectively. In this case, however, is important to note that we have a reduced sample, as the IMF-WEO database only has available information on interest payments for eight Caribbean countries.

We observe an important jump in the average interest payments burden when the debt to GDP ratio locates in the 30-60 percent interval, compared to the bellow 30 percent range. The interest payments burden almost double in the 30-60 percent range with respect to the 0-30 percent interval. There is, however, a somewhat puzzling reduction in the average interest payments burden when the debt to GDP ratio moves to the 60-90 percent interval, compared to the 30-60 percent range. Similar to the case with the average global fiscal balance, there is a substantial jump in the interest payments burden when the debt to GDP ratio goes beyond 90 percent. The average interest/revenues and interest/expenditures ratios triple, when the debt/GDP ratio is in the 90 percent plus interval with respect to the 60-90 percent interval.

TABLE 9
Debt and Interest Payments

Debt/GDP Ratio average (%)	Average Interest/Revenues (%)	Average Interest/Expenditures (%)
0 – 30	5.30	5.08
30 -60	10.30	9.43
60 – 90	7.45	6.60
90 Plus	24.49	19.49

Source: International Monetary Fund; author's own calculations

Although these results are not entirely consistent with those obtained from the relationship between the debt/GDP ratio and the global fiscal balances, the message points in the same direction: at some point, the increase in the debt to GDP ratio translates into a substantial rise in the interest payments burden.

Because we do not have information to estimate the interest payments burden on government revenues/expenditure for LAC, we do not possess a benchmark to say whether this burden is relatively high, moderate or low. Agénor (2000), suggests that a ratio of interest payments to revenues less than 20% is often considered low; between 20% and 50% moderate; and above 50% high. Following this simple rule not even the most indebted countries in the Caribbean region fall in the high interest payments burden

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range. This result may be related to the relatively important participation of concessional debt in total debt in the Caribbean.

IV. THE RELATIONSHIP BETWEEN DEBT AND GROWTH

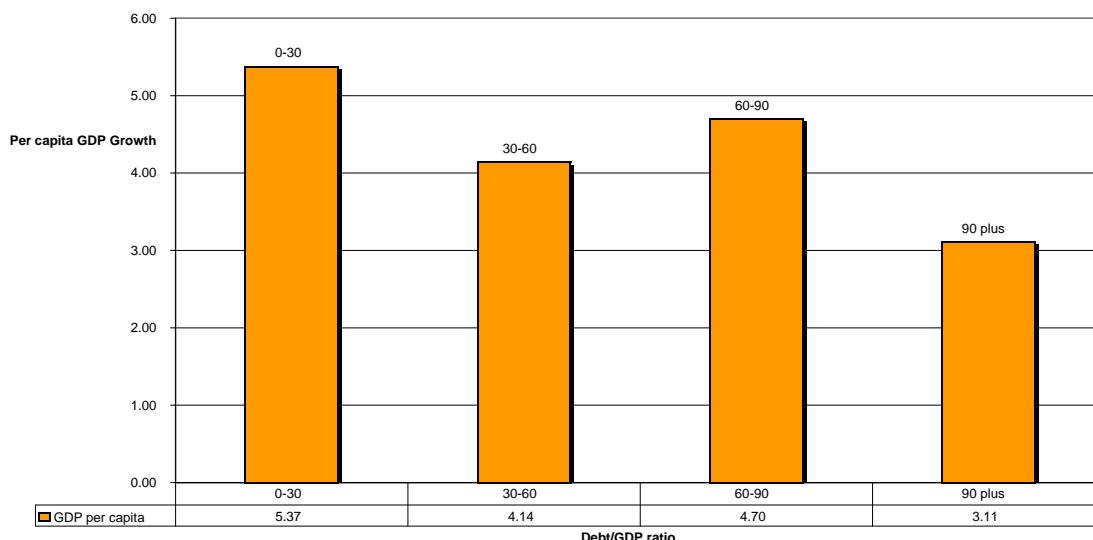
Most of the literature that studies the impact of debt on economic performance, focus its attention on the relationship between debt indicators and economic growth. The empirical results from this literature points to a non-linear relationship between debt and growth: "...the relationship between government debt and real GDP growth is weak for debt/GDP ratios below a threshold of 90 percent of GDP. Above 90 percent, median growth rates fall by one percent, and average growth falls considerably more." (Reinhart and Rogoff, 2011).

Another important issue in the debt and growth relationship, refers to the direction of causality. RR (2011) hold that the empirical evidence points to bi-directional causality. As stressed in the sustainability analysis, slow economic growth leads to higher debt/GDP levels. But a unilateral causal pattern from growth to debt does not fit the data according to RR (2011). If economic agents expect that the government will repay its debts, a high public debt burden implies higher taxes and/or lower government spending, and this in turn, will slowdown growth.

1. Total Public Debt and Growth

We follow RR (2011) approach, and group the average public debt to GDP ratios of thirteen Caribbean countries (we exclude Haiti) for the 1999-2011 period, in the four intervals defined in the analysis of the debt burden indicators. Graph 7 shows that when the debt/GDP ratio is between 30 and 60 percent, the average growth rate declines 1.24 percentage points compare to the 0-30 percent interval. However, when the debt/GDP ratio is between 60 and 90 percent, average growth accelerates slightly, 0.56 percentage points with respect to the 30-60 percent interval. In the 90 percent plus range, average growth falls again to 3.11 percent, 1.59 percentage points less relative to the 60-90 percent interval.

GRAPH 7
Caribbean Countries Public Debt to GDP Ratio and per capita GDP Growth



Source: International Monetary Fund; author's own calculations

From this data we identify a negative relationship between debt and growth, but we do not perceive abrupt changes that indicate nonlinearity.

To explore the topic further, we proceed to estimate a simple econometric linear panel data model that relates the growth rate of GDP per capita as the dependent variable, with the public debt/GDP ratio and a time trend variable. The estimation includes thirteen cross-sections (thirteen countries excluding Haiti) and eleven time observations (1999-2011). Table 10 summarizes the results of the estimation using fixed-effects and robust standard deviations. The coefficient of the debt to GDP ratio variable (b) is negative and statistically significant at a 10% level of confidence (p-value 0.05970). An increase of one percentage point in the debt to GDP ratio, reduces economic growth in 0.032 percentage points. Hence, we have a more formal evidence of a negative relationship between debt and growth. However, this evidence should be considered with caution given the simplicity of the model estimated. The model does not include key variables that usually appear in growth models, like levels of education, investment, measures of macroeconomic stability and openness.¹

TABLE 10
Public Debt and Growth

Dependent variable: growth rate GDP per capita

	Coef.	Sta. Dev.	t-Statistic	p-Value	
const	8,00143	1,22369	6,5388	<0,00001	***
Public Debt/GDP (b)	-0,031708	0,0167113	-1,8974	0,05970	*
time	-0,246551	0,0950937	-2,5927	0,01046	**

Number of obs. 165

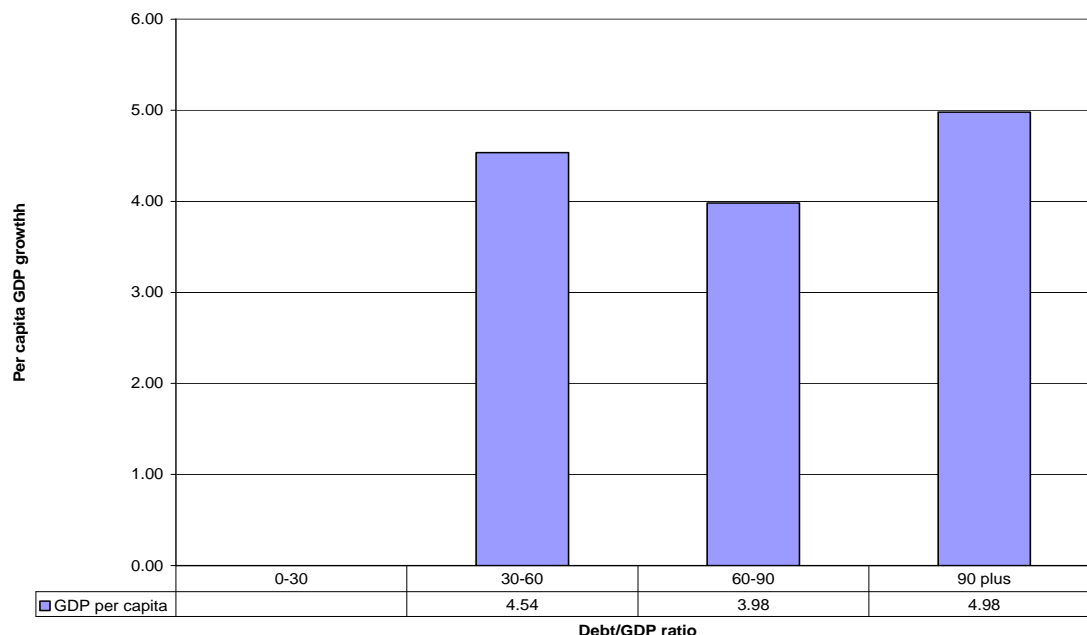
2. Total External Debt and Growth

When evaluating the relationship between the external debt to GDP ratio and GDP per capita growth, our sample data reduces substantially to seven Caribbean countries with time data for the 1999-2011 period. The relationship between the external debt to GDP and average growth of GDP per capita is shown in Graph 8. The information set has no countries in the 0-30 percent interval. Average growth of per capita GDP diminishes 0.56 percentage points in the 60-90 percent range with respect to the 30 to 60 percent. However, in the 90 percent plus interval, average growth of per capita GDP rises one percentage point compare to the 60-90 percent range, and 0.45 points with respect to the 30-60 percent interval. These results indicate a weak relationship between external debt and growth.

To explore further the relationship between external debt and growth, we estimate a simple linear panel data model that relates the growth rate of GDP per capita as the dependent variable, with the external debt/GDP ratio and a time trend variable. Table 11 shows the results of the estimation using fixed-effects and robust standard deviations. The coefficient of the external debt/GDP variable (be) has a negative sign, but it is not statistically significant at conventional levels of confidence (p-value 0.23574).

¹ Reinhart and Rogoff (2011) hold that there is scant evidence to suggest that high debt has little impact on growth. They cite a cross-country study by Kumar and Woo (2010) that finds that debt levels have negative consequences for growth, even after controlling for other standard determinants in growth equations.

GRAPH 8
Caribbean Countries External Debt to GDP ratio and per capita GDP Growth (%)



Source: World Bank; author’s own calculations

TABLE 11
External Debt and Growth
Dependent variable: growth rate GDP per capita

	Coef.	Sta. Dev	t-Statistic	p-Value	
const	7,85954	2,1079	3,7286	0,00035	***
External debt/GDP (be)	-0,0310926	0,0260305	-1,1945	0,23574	
time	-0,219831	0,119	-1,8473	0,06831	*

Number of obs. 91

Thus the data available for the Caribbean countries do not reveal a connection between external debt and growth. However, this result should be taken with caution given the simplicity of the econometric model, in addition to the reduced size of the sample used in the estimation.

V. FISCAL SUSTAINABILITY

In this section, we examine fiscal sustainability in the Caribbean region applying two approaches commonly used in the literature.

1. Conventional Sustainability Analysis

Conventional sustainability analysis is based on the government intertemporal budget constraint. This constraint can be derived from the government flow budget constraint that can be written as:

$$b_t = (1 + \rho)b_{t-1} - pb_t \quad (1)$$

Where:

b = debt to GDP ratio

$\rho = r - g$

r = real interest rate

g = growth rate of real output

pb = primary balance

It can be proved that if we rearrange this equation and solve it by the method of forward iteration, we can obtain the following expression (Olivo, 2011):

$$b_{t-1} = \left(\frac{1}{1 + \rho} \right) \sum_{j=0}^{\infty} \left(\frac{1}{1 + \rho} \right)^j pb_{t+j} \quad (2)$$

If $r - g > 0$, then $\lim_{j \rightarrow \infty} \left(\frac{1}{1 + \rho} \right)^{j+1} b_{t+j} \rightarrow 0$; the no Ponzi scheme condition.

The intertemporal budget constraint (2) indicates that government solvency requires that its initial stock of debt (as a percentage of GDP) should be financed through a primary surplus in present value terms²

The most basic tool for fiscal sustainability analysis uses a steady-state version of the intertemporal budget constraint (Burnside, 2005). The idea is to obtain, the constant primary surplus that should be maintained on an infinite horizon to stabilize the debt to GDP ratio at b_{t-1} . Assuming steady-state values for r and g , the primary surplus that satisfies this condition can be expressed as:

$$pb^* = \left(\frac{\rho}{1 + g} \right) b_{t-1} \quad (3)$$

Another way of testing debt sustainability, consists in using equation (1) to determine the primary result required to achieve a target debt level (b^*) in a specified period of time (Burnside 2005).

The results of conducting the debt sustainability exercises previously described are shown in Table 12 columns v and vi.³ For both exercises we have assumed that long-run or steady-state output growth is equal to the 1999-2011 average growth rate of real GDP. Estimating the steady-state real interest rate is a more contentious issue. Here we use as a proxy for this variable, the average growth rate of real GDP of emerging market and developing economies for the period 1999-2011 reported in the IMF-WEO data base.⁴

² For external debt, there is an additional sustainability requirement. The present value of future surpluses in the current account, net of interest payments, has to be at least equal to the initial external debt to GDP ratio.

³ For this analysis we have excluded Haiti. As of 2011 Haiti had already received substantial debt relief and reduced its debt burden to a sustainable level. In 2011 the public debt to GDP ratio was 11.73 percent, and the external debt to GDP ratio 10.60 percent.

⁴ Implicit estimations of the interest rate on debt based on the interest payments reported in the fiscal accounts and debt statistics were very variable, and available for only a reduced number of countries.

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TABLE 12
Fiscal Sustainability in the Caribbean

	r Long-run (i) (%)	g Long-run Avg.1999- 2011 (ii) (%)	pb 2011 (iii) (%)	b 2011 (iv) (%)	pb* Infinite Horizon (v) (%)	pb* b=60%; J=10 years (vi) (%)
Country						
Antigua and Barbuda	6.03	1.51	-1.0	93.41	4.15	6.9
The Bahamas	6.03	1.40	-2.3	49.45	2.26	
Barbados	6.03	0.97	0.08	76.90	3.86	5.2
Belize	6.03	4.85	2.33	83.60	0.94	3.2
Dominica	6.03	2.39	-2.30	71.17	2.53	3.5
Grenada	6.03	2.73	-2.30	103.71	3.34	7.1
Guyana	6.03	2.41	-1.49	65.22	2.31	2.75
Jamaica	6.03	0.72	3.15	142.92	7.53	14.05
St. Kitts and Nevis	6.03	2.22	10.40	154.30	5.74	13.7
St. Lucia	6.03	2.23	-4.40	70.12	2.61	3.5
St. Vincent and the Grenadines	6.03	2.50	-1.88	68.14	2.35	3.0
Suriname	6.03	4.03	1.79	19.09	0.37	
Trinidad and Tobago	6.03	5.55	2.20	31.14	0.14	

Source: International Monetary Fund; author's own calculations

Column v shows the constant primary surplus that has to be achieved on an infinite horizon to maintain the debt to GDP ratio observed in 2011 (Column iv), calculated using equation 3. Column v can be compared to Column iii that contains the observed primary surplus for 2011. For the thirteen Caribbean countries considered, only Belize, St. Kitts and Nevis, Suriname, and Trinidad and Tobago exhibit primary surpluses larger to what is required to stabilize its debt to GDP ratio at the 2011 level. All countries, with the exception of Belize, Suriname, and Trinidad and Tobago need to generate primary surpluses above two percent to maintain their 2011 debt levels.

Column vi contains the constant primary surplus that would have to be generated on a ten-year horizon to achieve a debt target level of 60 percent. The sixty percent target is based on Mendoza and Ostry (2007) suggested threshold. As expected, countries that start with levels of debt close or beyond the 90 percent RR (2011) threshold, need to generate large primary surpluses to reduce their debt burden. Countries like Antigua and Barbuda and Grenada, with debt levels near to 90 percent, would have to generate primary surpluses of approximately 7% to achieve the indicative debt target. Jamaica and St. Kitts and Nevis with debt levels well above 100 percent, would have to produce primary surpluses around 14 percent to achieve the benchmark debt target.

It is important to note that in these conventional debt sustainability exercises, in addition to the starting level of the debt to GDP ratio, the long-run output growth rate is another crucial factor. If as discussed previously, there exists a negative relationship between debt and growth, a highly indebted country with slow growth, has to generate a substantially large primary surplus to move its debt level towards a sustainable range.

2. Bohn's Fiscal Sustainability Test

When the government intertemporal budget constraint is derived in the context of a dynamic general equilibrium model, it contains terms that capture the covariance between future government primary surpluses and future marginal utilities of

consumption. Bohn (Mendoza and Ostry, 2007) holds that in this case the interest rates on public debt cannot be used to discount primary balances to establish fiscal solvency. Bohn (Mendoza and Ostry, 2007) proposes a test of fiscal sustainability that does not require to specify interest rates for government debt: if the primary balance-GDP ratio (pb) is an increasing linear function of the initial debt-GDP ratio (b), after controlling for other determinants of the primary balance-output ratio, and if these other determinants measured as GDP ratios are bounded and the present value of output is finite, then the intertemporal budget constraint holds. The Bohn's test is based on the estimation of the following relationship:

$$pb_t = \rho b_{t-1} + \mu_t + \varepsilon_t \quad (4)$$

$$\mu_t = \beta_0 + \beta_1 \tilde{g}_t + \beta_2 \tilde{y}_t \quad (5)$$

where ε is a zero mean error. A sufficient condition for the intertemporal budget constraint to hold, is that the value of ρ is positive and statistically significant. μ_t captures the other determinants of the primary balance, where \tilde{g}_t and \tilde{y}_t are measures of temporary fluctuations in government expenditures and GDP, respectively.

Mendoza and Ostry (2007) applies Bohn's fiscal sustainability test to a sample of 22 industrial countries for the period 1970-2005, and 34 developing countries for the period 1990-2005. They find that for both groups of countries, the data is consistent with Bohn's test of fiscal sustainability: the conditional response of primary balances to changes in government debt is positive and statistically significant at conventional levels. A very relevant finding of Mendoza and Ostry (2007) is that, when they split each country group into subgroups of high-debt and low-debt countries, the solvency criterion is satisfied for countries with moderate levels of debt, but not for countries with debt levels that surpass the sample mean and median of each group.

We apply Bohn's fiscal sustainability test to a sample of nine Caribbean countries for which we have data on primary balances: Antigua and Barbuda, The Bahamas, Barbados, Belize, Guyana, Jamaica, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago. The time series cover the period 1999-2011.

Table 13 contains the results of Bohn's test with three different specifications. These different specifications of equation four were estimated using panel data with fixed-effects and robust standard errors.

TABLE 13

Bohn's Fiscal Sustainability Test

Dependent Variable: primary balance as share of GDP (pb)

	i	ii	iii
Debt-GDP ratio (b)	-0.0618***	-0.0331	-0.0317
yvar		10.7965 **	5.607
egvar			2.696

Number of observations: 105

In column i, equation 4 was estimated excluding the control variables that capture temporary fluctuations in output and government outlays. In this case, the estimated

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coefficient of the debt/GDP ratio (ρ) is negative and statistically significant at the one percent level (p-value 0.0062).

Column ii shows the estimation including the control variable *yvar*, which is defined as an output gap around a linear trend. This variable has a positive sign as expected, and is statistically significant at a 5 percent confidence level. The coefficient of the debt to GDP ratio (ρ) in this case has a negative sign, but it is not statistically significant at standard levels of confidence (p-value 0.1931).

The last column (iii) presents the estimation of the test including the control variables *yvar* and *egvar*. The variable *egvar* is defined as the government expenditure gap around a linear trend. The estimated coefficient for *egvar* is positive, contrary to what is expected, but not statistically significant. The estimated coefficient of the debt/GDP ratio is again negative, but not statistically significant at conventional levels of confidence (p-value 0.2105).

The estimated model in the second column is the most satisfactory from an econometric point of view, but the negative sign of the estimated coefficient of the debt-GDP ratio (ρ) in the three versions of the Bohn's test points in the same direction: the Caribbean countries included in the sample do not appear to follow sustainable fiscal policies. Their primary balances do not respond significantly to changes in the debt to GDP ratio.

The results of the Bohn's fiscal sustainability test for the Caribbean countries are consistent with those reported by Mendoza and Ostry (2007). The mean of the debt to GDP ratio of the nine Caribbean countries in our sample 69.21 percent, is larger than the mean of the 34 countries in the emerging market group (64.5 percent) studied by Mendoza and Ostry (2007). Hence, the Caribbean countries in our sample would be classified in the high debt subgroup of Mendoza and Ostry (2007). As mentioned before, the high debt subgroup in the emerging market group in the Mendoza and Ostry (2007) paper, also shows an estimate of ρ that is not statistically significant.

VI. DEBT BURDEN AND FISCAL SUSTAINABILITY IN THE CARIBBEAN: ZOOMING IN

Until now most of our analysis of the debt burden and fiscal sustainability in the Caribbean region has focused on aggregate level data. This approach has allowed us to manage a relatively large data set to implement the Reinhart-Rogoff (2011) and Mendoza-Ostry (2007) critical values for the debt to GDP ratio, compare the region-specific debt indicators to the values for Latin America and the Caribbean, and run a robust test of fiscal sustainability (Bohn's test). This analysis gives clear signals that the Caribbean region as a whole exhibits an excessive debt burden, and does not follow a sustainable fiscal policy. Although very useful, this approach overlooks important differences among the countries in the region in terms of their debt situation. Therefore, it is necessary to put a zoom on the data presented in the previous sections to offer an assessment of the debt burden on a country by country basis. This is also crucial to produce specific policy recommendations.

To organize the discussion, we use Table 14. This table classifies the thirteen countries for which we have total public debt to GDP data in the four intervals suggested by Reinhart and Rogoff (2011), and combines this information with some of the indicators that we have calculated in the previous sections. Column i shows the income classification of the countries used by the World Bank; column ii presents the main economic activity of the Caribbean countries based on an IMF Working Paper (Amo-Yartey et al, 2012); column iii contains the public debt to GDP ratios for 2011 (IMF-WEO); column iv shows the average

growth rate of real GDP for the 1999-2011 period; column v shows the mean (1999-2011) ratio of external concessional debt to total external debt; column vi contains our estimation of the constant primary surplus that should be generated to reduce the debt-GDP ratio to a 60 percent target in ten years; column vii presents the fiscal effort required to achieve the 60 percent debt target in ten years, measured as the difference between the constant primary surplus needed to achieve the target and the observed primary balance (2011).

TABLE 14
Debt Burden, Fiscal Sustainability and Fiscal Effort in the Caribbean Countries

RR Intervals	WB Income Classification (i)	Main Economic Activity (ii)	Public Debt/GDP Ratio 2011 (iii) (%)	Avg. GDP Growth 1999-2011 (iv) (%)	Concessional Debt/Total External Avg. 1999-2011 (v) (%)	pb*;b=60% J=10 years (vi) (%)	Fiscal Effort; sp*-sp Avg. (vii) (%)
0-30% Low Debt							
Suriname	Upper-middle	Commodity exporting	19.09	4.03		-	
30-60% Moderate Debt							
The Bahamas	High	Tourism	49.45	1.40		-	
Trinidad/Tobago	High	Commodity exporting	31.14	5.55		-	
60-90% High Debt							
Barbados	High	Tourism	76.90	0.97		5.20	5.12
Belize	Lower-middle	Tourism	83.60	4.85	15.78	3.20	0.87
Dominica	Upper-middle	Tourism	71.17	2.39	51.94	3.50	5.80
Guyana	Lower-middle	Commodity exporting	65.22	2.41	69.64	2.75	4.24
St. Lucia	Upper-middle	Tourism	70.12	2.23	33.87	3.50	7.9
St. Vincent/Grenadines	Upper-middle	Tourism	68.14	2.50	48.79	3.0	4.88
90% Plus Very High Debt							
Antigua/Barbuda	Upper-middle	Tourism	93.41	1.51		6.90	7.90
Grenada	Upper-middle	Tourism	103.71	2.73	39.65	7.10	9.40
Jamaica	Upper-middle	Tourism	142.92	0.72	14.54	14.05	10.90
St. Kitts/Nevis	Upper-middle	Tourism	154.30	2.22		13.70	3.30

1. Low Debt Countries

Suriname

Suriname is the only Caribbean country in our sample that is classified in the low-debt range. Its low debt to GDP ratio (19.09 percent in 2011) and relatively high average GDP growth (4.03 percent), suggest a sustainable fiscal position. However, as pointed out by Barnett and Ossowski (2003), commodity exporting countries should achieve in the long-run a positive net assets position to face the potential obsolescence of the resource or its exhaustion, and its impact on fiscal revenues.

2. Moderate Debt Countries

The Bahamas

The debt-GDP ratio of The Bahamas in 2011 (49.45 percent) is in the moderate debt interval, but is very close to the 50-60 percent range that Mendoza and Ostry (2007) consider dangerous for fiscal solvency. In addition, The Bahamas exhibits a low average GDP growth rate (1.40 percent). These factors imply that, although the country may not face an immediate problem of fiscal sustainability, its policy makers should keep a close watch on the fiscal accounts. A fiscal consolidation plan combined with other macro and micro policies, may help to boost growth in The Bahamas.

Trinidad and Tobago

Trinidad and Tobago debt level (31.14 percent) is located in the moderate range. This in addition to a relatively high average GDP growth (5.55 percent versus 2.45 percent average for the Caribbean) indicates a sustainable fiscal situation. However, as pointed out by Barnett and Ossowski (2003), commodity exporting countries should accumulate substantial financial assets over the period of oil production. Trinidad and Tobago should consider the possibility of taking advantage of the currently high oil prices to reduce its debt-GDP ratio to a level below that observed before the global financial crisis.

3. High Debt Countries

Barbados

Barbados high debt-GDP ratio (76.90 percent) and low average output growth (0.97 percent) are signals of a fiscal sustainability problem. The fiscal sustainability analysis suggests that the country would have to generate a constant surplus of 5.20 percent of GDP to achieve a target level of 60 percent in ten years. Given a small observed primary surplus during 2011, the fiscal effort to achieve the 60 percent target level is equivalent to 5.12 percent of GDP. We consider this a relatively high fiscal effort (5-8 percent of GDP). We do not have data available on concessional external debt to total debt, but if possible, Barbados should attempt to combine fiscal consolidation with negotiations with creditors to achieve debt restructuring/relief.

Belize

Belize has a high debt to GDP ratio (83.60 percent), but it registers an average GDP growth rate well above the region's mean (4.85 percent versus 2.45 percent average for the Caribbean). With this figures, our calculations suggest that Belize would have to generate a constant primary surplus equivalent to 3.20 percent of GDP to reach a debt level of 60 percent of GDP in ten years. Because Belize registered a primary surplus in 2011, it would have to increase its primary balance by 0.87 percent of GDP to achieve the 60 percent debt target. This may be considered as a moderate-low fiscal effort (0-3 percent of GDP) that can be achieved with a well defined fiscal consolidation plan. In addition, given the small share of concessional debt in total external debt, Belize could try to combine fiscal consolidation with debt restructuring/relief.

Dominica

Dominica registers a debt-GDP ratio of 71.17 percent in 2011 and a moderate average rate of growth of GDP (2.39 percent). Our analysis of fiscal sustainability indicates that the country would have to attain a constant primary surplus of 3.50 percent of GDP during ten years to achieve the 60 percent target debt level. Given its actual primary balance, Dominica needs a high fiscal effort of 5.80 percent of GDP (5-8 percent of GDP) to accomplish this target. Because Dominica shows a relatively large participation of concessional external debt on total external debt, which could limit its

capacity to negotiate debt restructuring/relief, the country would have to rely mainly on fiscal adjustment to achieve sustainability.

Guyana

Guyana's debt to GDP ratio in 2011 (65.22 percent) is close to the 60 percent threshold, but still high, and its average (1999-2011) GDP growth rate 2.41 percent is just below the region's mean. Our calculations suggest that Guyana should generate a constant primary surplus of 2.75 percent of GDP to achieve the 60 percent debt target in ten years. With the primary deficit that Guyana had in 2011, its fiscal effort of 4.24 percent of GDP is moderate-high (3-5 percent of GDP). This is not a trivial fiscal effort, but it can be attained with a well-designed and sustained fiscal consolidation plan. Guyana is one of the few countries in the Caribbean that has reduced substantially its debt level in the period under analysis. It is crucial for Guyana to continue its effort to reduce its debt level well under the 60 percent threshold. Given that 52.21 percent of Guyana's external debt is concessional, there may be little scope for debt restructuring/relief. Efforts to reduce the debt-GDP ratio have to rely mainly on fiscal consolidation and other measures to impulse growth. Because Guyana is a commodity exporter, it is important that its fiscal policy considers the need to ensure sustainability on the long-run by accumulating a substantial amount of financial assets (Barnett and Ossowski, 2003).

St. Lucia

St. Lucia's debt to GDP ratio of 70.12 percent in 2011 couple with a GDP growth rate below regional average (2.23 percent) implies that the country needs to generate a constant primary surplus of 3.50 percent of GDP to accomplish the 60 percent debt target in ten years. St. Lucia relatively high observed primary deficit translates into an elevated fiscal effort equivalent to 7.90 percent of GDP (5-8 percent) to achieve the 60 percent target level. The share of concessional external debt to total debt for St. Lucia averages 33.87 percent (1999-2011), and has been increasing substantially since 2008 reaching a value of 51.11 percent in 2011. Therefore, strong and sustain fiscal consolidation is vital to effectively reduce the debt burden and attain fiscal sustainability in St. Lucia.

St. Vincent and the Grenadines

The debt to GDP ratio of St. Vincent and the Grenadines (68.14 percent in 2011) together with an average GDP growth rate just above the region's mean (2.50 percent), indicates that the country requires a constant primary surplus of 3 percent of GDP to achieve the debt level target of 60 percent in ten years. With the primary deficit registered by St. Vincent and the Grenadines in 2011, the fiscal effort to attain the target debt level is 4.88 percent of GDP, which is moderate-high (3-5 percent of GDP). The share of concessional external debt on total debt averaged 48.79 percent (1999-2011) and reached a value of 66.41 percent in 2011. This suggests that to achieve fiscal sustainability the country may have to rely mainly on fiscal consolidation.

4. Very High Debt Countries

Antigua and Barbuda

With a debt to GDP ratio of 93.41 percent in 2011 and a low growth rate of GDP (1.51 percent), Antigua and Barbuda needs to generate a constant primary surplus of 6.90 percent of GDP to accomplish the 60 percent reference debt target in ten years. Given that the country has registered an average primary deficit of 6.90 percent of GDP in the 1999-2011 period, the fiscal effort required to achieve the target debt level reaches the extremely high value of 13.80 percent of GDP (above 8 percent of GDP). However, the country primary deficit in 2011 was 1 percent of GDP, and this reduces the fiscal effort to a high 7.90 percent of GDP (5-8 percent of GDP). These figures suggest that it could be difficult for Antigua and Barbuda to achieve fiscal sustainability through fiscal adjustment

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alone. The possibility of negotiating debt restructuring/relief will depend on the current share of concessional external debt to total debt, for which we do not possess data.

Grenada

Grenada's debt to GDP ratio of 103.71 percent in 2011 with a moderate average GDP growth rate (2.75 percent) requires a constant primary surplus of 7.10 percent of GDP to accomplish the debt level target of 60 percent in ten years. With a primary deficit of 2.3 percent of GDP in 2011, Grenada's estimated fiscal effort to achieve the reference debt target is a very high 9.40 percent of GDP (above 8 percent of GDP). Grenada's elevated share of concessional external debt to total debt (39.65 percent on average and 43.30 percent in 2011) may limit the possibility of debt restructuring/relief.

Jamaica

Jamaica shows in 2011 a substantially high public debt to GDP ratio of 142.92 percent (the second largest in the Caribbean) and a very low average growth rate of GDP (the lowest in the Caribbean). Our calculations suggest that Jamaica needs to generate a constant primary surplus of 14.05 percent to achieve the 60 percent debt level target in ten years. Jamaica has registered an average primary surplus of 7.35 percent of GDP (1999-2011), which translates into a high fiscal effort figure of 6.70 percent of GDP (5-8 percent of GDP) to attain the reference debt level target. In 2011, however, Jamaica's primary surplus reduced to 3.15 percent of GDP, and this implies a very high fiscal effort of 10.90 percent of GDP (above 8 percent of GDP). With a relatively low share of concessional external debt to total debt (14.54 percent average 1999-2011), Jamaica has space to negotiate debt restructuring/relief, but still requires a strong fiscal adjustment to attain fiscal sustainability.

St. Kitts and Nevis

In 2011 St. Kitts and Nevis presented the highest debt-GDP ratio in the Caribbean (154.30 percent) and an average growth rate of GDP below the region's mean (2.22 percent). With these figures, our sustainability analysis indicates that St. Kitts and Nevis has to generate a constant primary surplus of 13.70 percent of GDP to accomplish the debt level target of 60 percent in ten years. With an already high primary surplus of 10.40 percent of GDP in 2011, the fiscal effort required to achieve the 60 percent debt level target is a moderate-high 3.30 percent of GDP (3-5 percent of GDP). The possibility of negotiating debt restructuring/relief will depend on the current share of concessional external debt to total debt, for which we do not possess data. Amo-Yartey et al (2012) point out that St. Kitts and Nevis has recently negotiated a comprehensive and substantive public debt restructuring. However, given the extremely high debt level of the country, strong and sustain fiscal consolidation continues to be crucial to attain fiscal sustainability.

VII. CONCLUDING REMARKS AND POLICY RECOMMENDATIONS

The analyses conducted in this paper with aggregate data for the Caribbean region show clear signals of a situation of excessive debt burden and potential fiscal insolvency.

The simple mean of the public debt to GDP ratio in the Caribbean (fourteen countries in the IMF-WEO database) for the period 1999-2011 was 72.32 percent, and in 2011 this indicator reached 74.35 percent. These figures are above the 50-60 percent threshold suggested in the paper by Mendoza and Ostry (2007). In this study, the emerging economies group (34 countries) registered a mean debt to GDP ratio of 64.5 percent. The Caribbean simple average (1999-2011) debt-GDP level is also consistently larger than the value for Latin America and the Caribbean as a whole (51.77 percent).

Applying simple statistics and more elaborated econometric methods, we have presented evidence that the public debt burden of the Caribbean countries has a significant negative impact on economic growth. Estimation of a panel data model for thirteen Caribbean countries for the 1999-2011 period shows that, a one percentage point increase in the debt-GDP ratio diminishes economic growth in 0.032 percentage points.

Implementation of the Bohn's fiscal sustainability test (Mendoza and Ostry, 2007) using public debt and fiscal data of nine countries in the Caribbean indicates that the region follows an unsustainable fiscal policy. For the period 1999-2011, the primary balances of the Caribbean countries analyzed do not respond significantly to changes in the debt to GDP ratios. This result is consistent with Mendoza and Ostry (2007) finding that highly indebted emerging economies do not appear to follow sustainable fiscal policies.

Aggregate external debt of the Caribbean region is also high. The simple average of the external debt to GDP ratio (eight countries included in the WB-IDS database) for the period 1999-2011 is 61.07 percent. In 2011 the ratio registered a value of 59.40 percent. The simple mean is above the threshold identified by Reinhart and Rogoff (2011) for emerging markets (60 percent), beyond which the external debt level begins to have a substantial negative effect on economic growth. The average external debt-GDP ratio for the Caribbean is substantially larger than the one observed for Latin America and the Caribbean (30.62 percent simple average 1999-2011).

Despite the relatively high external debt level in the Caribbean, we could not detect a significant negative relationship between the external debt to GDP ratio and economic growth as reported by Reinhart and Rogoff (2011). However, this result may be due to the limited sample that we have available to test this relationship. Additionally, that an elevated level of indebtedness does not contribute to higher economic growth, should be by itself an issue of concern.

The high external leverage of the Caribbean region is also reflected in the values of the ratio of total external debt to export of goods and services and primary income. The 1999-2011 simple average of this indicator is 165.24 percent versus 136.85 percent for Latin America and the Caribbean. However, a low ratio of external short-term debt to total debt (12.65 percent average), and a high ratio of concessional external debt to total debt (45.09 percent mean), moderate substantially total debt service as a percentage of exports of goods and services and primary income (13.63 percent average).

The elevated weight of concessional debt on total external debt also contributes to attenuate the impact of debt interest payments on the fiscal variables (global fiscal balance, government revenues, and government expenditures). However, countries with public debt to GDP ratios in the 90 percent plus interval show a substantial rise in the interest payments burden.

The previous results obtained from the aggregate data reflect the fact that most countries in the Caribbean region exhibit excessive debt levels. Of the fourteen countries for which we have gross public debt data available (IMF-WEO), ten countries had in 2011 debt-GDP ratios above the 60 percent threshold that we define in this study. Four countries showed in 2011 debt-GDP ratios above 90 percent (the Reinhart and Rogoff 2011 threshold). For the eight countries for which we collected data of external debt (WB-IDS), in 2011 four had debt to GDP ratios above the Reinhart and Rogoff (2011) 60 percent threshold, and seven countries presented external debt levels larger than 30 percent.

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Countries in the high public debt level interval (60-90 percent) include: Barbados, Belize, Dominica, Guyana, St. Lucia and St. Vincent and the Grenadines. Our analysis of fiscal sustainability suggests that of these six countries, Belize requires a low-moderate fiscal effort (0-3 percent of GDP) to achieve the 60 percent debt target level in a ten-year horizon. Guyana and St. Vincent and the Grenadines need a moderate to high level of fiscal effort (3-5 percent of GDP) to reach the debt level target in ten years. Meanwhile, Barbados, Dominica, and St. Lucia require high levels of fiscal effort (5-8 percent of GDP) to attain the 60 percent debt target in ten years. Because most of these countries, except Belize, exhibited in 2011a ratio of concessional debt to total external debt above 30 percent, their scope for further debt restructuring/relief may be considerably limited. This implies that the deleveraging process to attain fiscal sustainability should be mainly based on fiscal adjustment.

Countries in the very high debt level range (90 percent plus) include: Antigua and Barbuda, Grenada, Jamaica, and St. Kitts and Nevis. Our analysis of fiscal sustainability to attain a debt level target of 60 percent in ten years indicates that, St. Kitts and Nevis requires a moderate-high fiscal effort (3-4 percent of GDP); Antigua and Barbuda needs a high fiscal effort (3-8 percent of GDP); and Jamaica and Grenada require a very high fiscal effort (above 8 percent of GDP). Given the very high debt burden of these countries, independently of the level of concessional debt or debt restructuring/relief achieved, the deleveraging process to accomplish fiscal sustainability has to rely heavily on fiscal consolidation.

Our main conclusion from the analysis of the data at an aggregate level and on a country by country basis is that, an adequate combination of fiscal consolidation and debt restructuring/relief is crucial to achieve a debt level compatible with fiscal sustainability in the Caribbean region. The Caribbean countries should attempt to negotiate and obtain the maximum debt restructuring/relief possible. Nevertheless, the excessive debt burden of most of the countries in the Caribbean makes impossible to attain the debt reduction required without fiscal adjustment.

"As documented in Reinhart, Rogoff, and Savastano (2003) for emerging-market countries, large public debt overhangs do not unwind quickly and seldom painlessly. In particular, debt-to-GDP ratios are seldom reduced entirely through consistent robust economic growth. More commonly, reducing debt levels significantly has relied on fiscal austerity, debt restructuring (sometimes outright default), or a combination of these" (Reinhart and Rogoff, 2011).

The considerable magnitude of the fiscal effort necessary to attain debt levels consistent with solvency implies that, fiscal consolidation programs in the Caribbean region have to be carefully designed and implemented for several years. Policy makers should be convinced that the current excessive debt level of the region is severely limiting the use of fiscal policy, and affecting negatively economic growth. Moreover, achieving and maintaining fiscal sustainability is especially important for the Caribbean countries, given their vulnerability to natural disasters and scarcely diversified economic base.

The following considerations from Amo-Yartey et al (2012) to improve the chances of success of the fiscal consolidation efforts are valuable:

- Fiscal consolidations plans should contemplate measures to cut expenditures and improve tax revenues. However, empirical evidence suggests that fiscal consolidation based on expenditures reductions have tended to be more effective.

- The ratio of government expenditures to GDP in the Caribbean was around 31 percent in 2011 versus 33 percent for Latin America and the Caribbean as a whole. Reducing government expenditures is a difficult task and there are not fast rules that can be applied. Experience shows, however, that across-the-board cuts should be avoided (IMF, 2000). A careful revision of expenditure programs to identify an appropriate amount of adjustment produces a more sustainable reduction of expenditures. Structural public expenditure reform based on examining the long-term role of government in the economy is also vital to achieve a durable reduction in government expenditures.
- Tax revenues in the Caribbean region represented around 28 percent of GDP in 2011, compare to 30 percent in Latin America and the Caribbean as a whole. This suggests that there is some space to boost fiscal revenues. Revenue increasing measures should focus in broadening the tax base and improving the efficiency of the tax collection system.
- Given that the fiscal consolidation program should be sustained for several years, a gradual approach may be desirable. However, the empirical literature finds that a large initial adjustment increases the likelihood of success as it strengthens credibility.
- Experience also suggests that the adoption of fiscal rules for government expenditures and primary fiscal balance, together with a medium-term fiscal framework, contributes to the success of the fiscal adjustment effort.
- Reduction of general subsidies and improvement in well-targeted social programs to protect the poor are important to make the consolidation effort sustainable.
- Broad political consensus and public support are necessary to maintain the viability of the fiscal adjustment program over time.
- Measures that stimulate growth by promoting greater regional cooperation and creating a more stable environment for private sector development are also important to support fiscal consolidation.

It is also important that the fiscal consolidation program considers the correction of other imbalances affecting the economy. Appendix A contains graphs with several macroeconomic indicators for the Caribbean region and Latin America and the Caribbean as whole. In particular, we notice the substantial and sustained current account deficit as a percentage of GDP that the Caribbean region exhibits: an average of 10.45 percent of GDP in the 1999-2011 period, compare to 0.59 percent of GDP for Latin America and the Caribbean. This indicator, together with the high external debt to GDP ratio of the region, points to a problem of external sector sustainability that requires attention. Fiscal consolidation should play a crucial role in restoring sustainability in the current account, by contributing to reduce the significant gap between saving and investment.

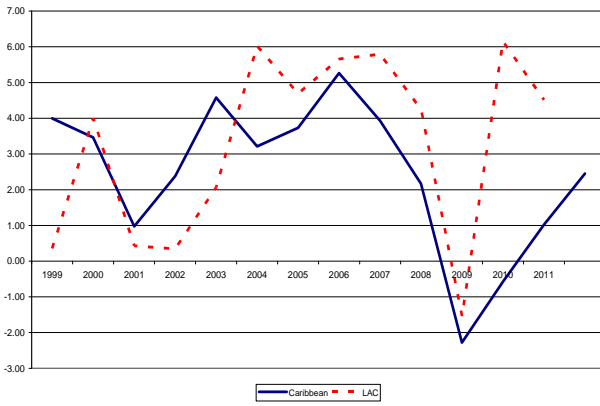
REFERENCES

- Agénor Pierre-Richard. 2000. *Development Macroeconomics*. Academic Press.
- Amo-Yartey, Charles, Machiko Narita, Garth Peron Nicholls, Joel Chiedu Okwuokei, Alexandra Peter, and Therese Turner Jones. 2012. *The Challenges of Fiscal Consolidation and Debt Reduction in the Caribbean*. IMF Working Paper WP/12/276.
- Aronson, Richard J., and Ott Attiat F. 1996. The Growth of the Public Sector. In *A Guide to Modern Economics*. Edited by David Greenway and Ian Stewart. Routledge.
- Barnett, Steven and Rolando Ossowski. 2003. Operational Aspects of Fiscal Policy in Oil-Producing Countries. In *Fiscal Policy Formulation and Implementation in Oil-Producing Countries*. Edited by J.M. Davis, R. Ossowski, and A. Fedelino. International Monetary Fund.
- Burnside, Craig. 2005. Some Tools for Fiscal Sustainability Analysis. In *Fiscal Sustainability in Theory and Practice*. Edited by Craig Burnside. The World Bank
- Chuhan, Punam. 2005. Debt and Debt Indicators in the Measurement of Vulnerability. In *Fiscal Sustainability in Theory and Practice*. Edited by Craig Burnside. The World Bank
- Fiscal Affairs Department. 2000. *Guidelines for Fiscal Adjustment*. International Monetary Fund.
- Mendoza, Enrique G., and Jonathan D. Ostry, 2007, *International Evidence on Fiscal Solvency: Is Fiscal Policy "Responsible"?*, NBER Working Paper Series 12947
- Olivo, Victor T. 2011. *Tópicos Avanzados de Teoría y Política Monetaria*. Editorial Arte Profesional/ Amazon-Kindle Electronic Books.
- Reinhart, Carmen M., Kenneth S. Rogoff. 2009. *This Time is Different. Eight Centuries of Financial Folly*. Princeton University Press
- _____ 2011. A Decade of Debt. Peterson Institute for International Economics. *Policy Analyses in International Economics* 95, September.
- Tanzi, Vito. 2011. *Government versus Markets. The Changing Economic Role of the State*. Cambridge University Press

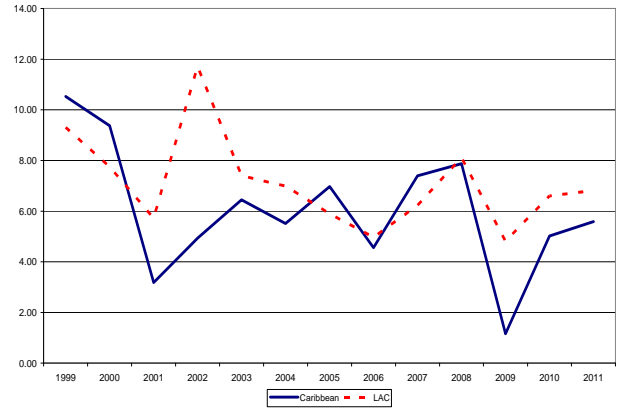
APPENDIX A

Some Macroeconomic Indicators for the Caribbean Region

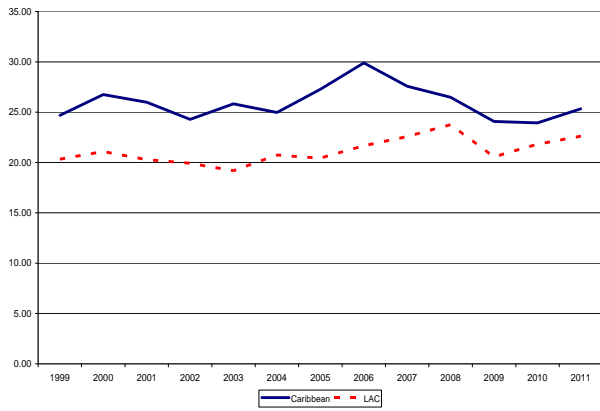
Real GDP Growth Rate (%) Caribbean Vs LAC



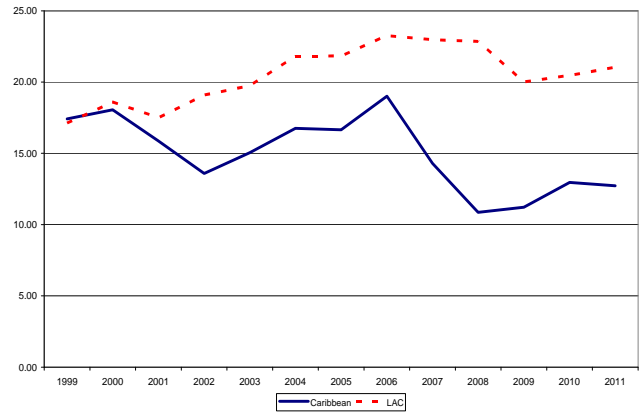
Inflation (%) Caribbean Vs LAC



Investment (% of GDP) Caribbean Vs LAC



Gross National Saving (% of GDP) Caribbean Vs LAC



Current Account (% of GDP) Caribbean Vs LAC

