Project Document

The relationship between fiscal and current account balances in the Caribbean

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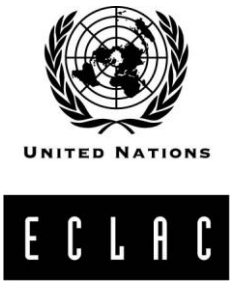

Economic Commission for Latin America and the Caribbean (ECLAC)
Subregional headquarters for the Caribbean

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Abstract

The global economic recession which affected most of the Caribbean would have been less severe if policymakers were in a position to sustain fiscal stimulus packages for a longer duration. This paper argues that while the crisis aggravated the debt and fiscal situation, the negative fiscal and current account balances reflected long standing issues related to declining competitiveness. To address the challenging fiscal situation, a number of countries are pursuing fiscal consolidation programmes, many of which imply expenditure cuts and revenue increases. Implicit in such programmes is that the current account deficits are due to fiscal deficits and, consequently, in some countries fiscal responsibility laws are being enacted.

To address the question as to whether the current account balances cause the fiscal balance or vice versa, Granger causality tests were employed. In addition, the proportion of the variance due to the shock from one variable to another is examined using a vector autoregressive moving average (VARMA) framework. The analysis was carried out for Antigua and Barbuda, Barbados, Belize, Grenada, Guyana, Jamaiaca, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines and Trinidad and Tobago for the period 1980-2010.

The findings of the study support the hypothesis that causation runs from the current account to the fiscal balance in which case the solution to the fiscal problem is only partially addressed by expenditure adjustment. The paper then goes on to examine more closely issues surrounding investment, the public debt, the trade and service balance and capital and financial account balance. The paper finds that domestic investment has been in relative decline even though foreign direct investment (FDI) has been rising, this together with a deteriorating trade and service balance was a major cause of the negative current account balance.

The paper also showed that the Caribbean was losing market share in services at a time when other developing countries were rapidly gaining market share. Thus, the loss of competitiveness has occurred with respect to goods and service production. In proposing a strategy for growth it is argued that economic restructuring is necessary to return countries to positive growth. To this end, the paper suggests that the process of fiscal consolidation must be carefully pursued to maintain the welfare of the most vulnerable.

Secondly, it proposes that a regional system of innovation is needed to raise the productive capacity of firms and to encourage new activities. The paper also suggests that regional policymakers must encourage both market and product diversification which is important for reducing negative external shocks.

I. Introduction

The recent global economic recession affected most Caribbean countries severely, partly because they were not in a position to deploy significant fiscal stimulus packages due to negative fiscal balance and high debt burdens. The service based economies, namely the Bahamas, Jamaica and countries in the Eastern Caribbean Currency Union (ECCU) posted negative growth in 2009 due to the decline in tourist arrivals, offshore banking and other related services such as construction. At the same time, even though lesser effects on growth were felt by those countries which benefited from robust commodity prices, the sustainability of their performance is in doubt since commodity prices tend to be volatile. The crisis made clear the fragility of Caribbean economies and demonstrated their limited capacity to withstand external shocks.

In the face of these difficulties, two areas of particular concern have been the growing negative current account and fiscal balance and high public debt. This paper examines the relationship between the fiscal and current account balances and their implications for growth over the medium term. The line of causation is hypothesized to occur through the declining import productivity[1], which reflects reduced competitiveness and this leads to current account deficits. The fiscal results from a corresponding upward adjustment in government expenditure in order to maintain employment and incomes in the face of declining output and lower foreign exchange earnings. Granger causality test were carried out to determine whether causation runs from the current account balance to the fiscal balance or vice versa. In addition, vector autoregressive moving average (VARMA) model was developed to determine the percentage of the variation attributable to both the fiscal and current account deficits resulting from shock arising from either of the two variables. The paper finds that for several countries, the current account deficit causes the fiscal deficit and in others the relationship was bidirectional in which case the variables affected each other jointly. The implication is that cutting the negative fiscal balance to reasonable levels though necessary will not solve the problem of a growing current account deficit. The solution lies in solving the problems on the external sector through investment in domestic capital to raise the level of innovation and to create new products and services in dynamically growing markets.

This means refocusing efforts on diversifying export and product markets while raising the competitiveness of such exports. The next section examines the relationship between the fiscal and current account balance.

[1] Import productivity is the ratio of output to intermediate inputs and reflects the efficiency with which imported inputs are used in production. Improving productivity reflects the efficiency of foreign exchange use in an open economy. Annex 1 sets out the effect of import productivity on the simple Keynesian multiplier.

II. Conceptual issues with respect to the fiscal and current account balance

A variety of approaches have been employed to explain the relationship or lack of it between the current account and the fiscal balance. This is an important issue for Caribbean economies given their small domestic market and the importance of trade in their development. To fix ideas it is useful to begin with an examination of the identity in which gross domestic product, (Y) is composed of private consumption expenditure (C), gross private domestic investment (I) , government spending (G) , plus net exports (exports less imports), X-M.

(1) $Y=C+I+G+X-M$

Equation (1) can be rewritten as (2) where S is savings and T is taxes.

(2) $Y=C+S+T$

On substituting equation (1) into (2), the results in equation (3) in which net exports equal total savings which is made up of private and public savings.

(3) $(X - M) = (S - I)+(T - G)$

If balanced trade and a balanced budget are assumed then private savings equals private investment. However, this would be the case for a closed economy where domestic investment is constrained by domestic savings, but in an open economy this relationship would be considerably modified. The reason is that both governments and the private sector would have access to international capital markets. Equation (3) can be rewritten in such a way that the current account is composed of national savings (S_N) and investment (I_N). National savings is private savings plus the government budget balance which is the primary budget deficit plus net interest.

(4) $CA = S_N - I_N$ + statistical discrepancy (SD)

= (Private Savings - Government Primary Budget deficit

+ Government Net Interest Receipts) – I_N + Statistical discrepancy

Two perspectives have been employed in interpreting the relationship between the two deficits often referred to as the "twin deficit hypothesis". The first of these, which has roots in the Mundell–Fleming model (Fleming, 1962; Mundell, 1963) suggest that the budget deficit causes the current account deficit. The transmission mechanism is such that the budget deficit increases consumer spending through increases in wealth which leads to increasing imports.

The alternative perspective is that the relationship between the budget deficit and the current account deficit is very weak and at best spurious since there are a variety of intervening factors. This is the Ricardian Equivalence Hypothesis which is attributable to Barrow (1989) and suggests that shifts between taxes and budget deficits do not matter for the real interest rate, investment or the current account balance. It is based on the idea that fiscal deficits that results from a tax cut have no impact on national savings. On the other hand, decreasing public savings due to large fiscal deficits will be matched by an increase in savings. The theorem assumes that because consumers believe that a tax cut today will result in future taxes tomorrow they save more today to pay for future tax increases.

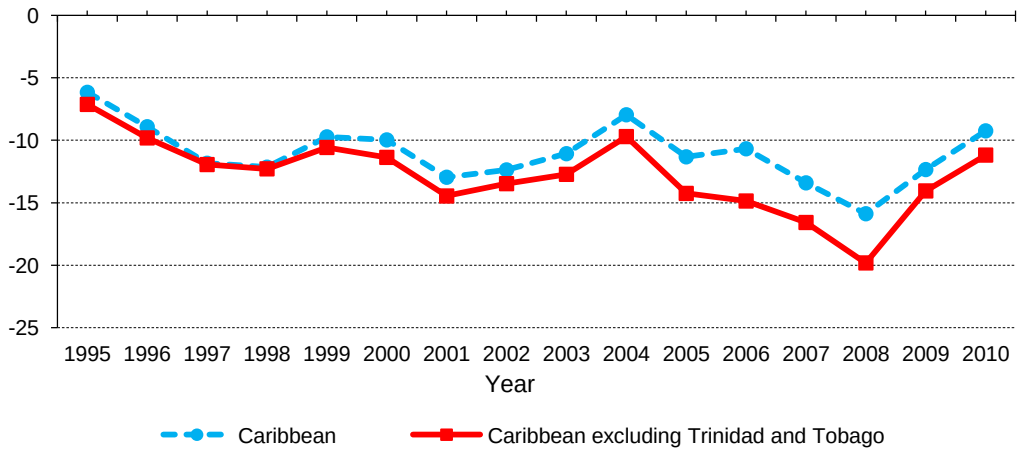
It is hypothesized in this paper that the causation runs from the current account balance to the fiscal balance. The rationale is that the decline in import productivity impacts on the level of output, which is essentially a decline in the capacity to generate foreign exchange. This in turn shows up in lower savings which affects investment. The government deficit expands as government expenditure rises to maintain employment and aggregate demand (see equation 5 in annex 1). Thus we argue that the causation runs from the current account balance to the fiscal balance; however, there could also be bidirectional causality in which the variables affect each other jointly. The causation running from the current account to the fiscal balance has been referred to by Summers (1988) as "current account targeting". This assumes that adjustments to the external accounts may be sought via fiscal policy.

III. Evolution of the current account and fiscal balance

1. Current account balance

The current account balance is examined to properly understand the extent of the problem identified above. Figure 1 shows the current account balance as a share of GDP for the Caribbean with and without Trinidad and Tobago. Trinidad and Tobago has been isolated in the graph because of the considerable surplus accumulated due to oil revenues.

FIGURE 1
CURRENT ACCOUNT BALANCE, 1995-2010
(Percentages of GDP)



Source: Economic Commission of Latin America and the Caribbean (ECLAC), based on official data.

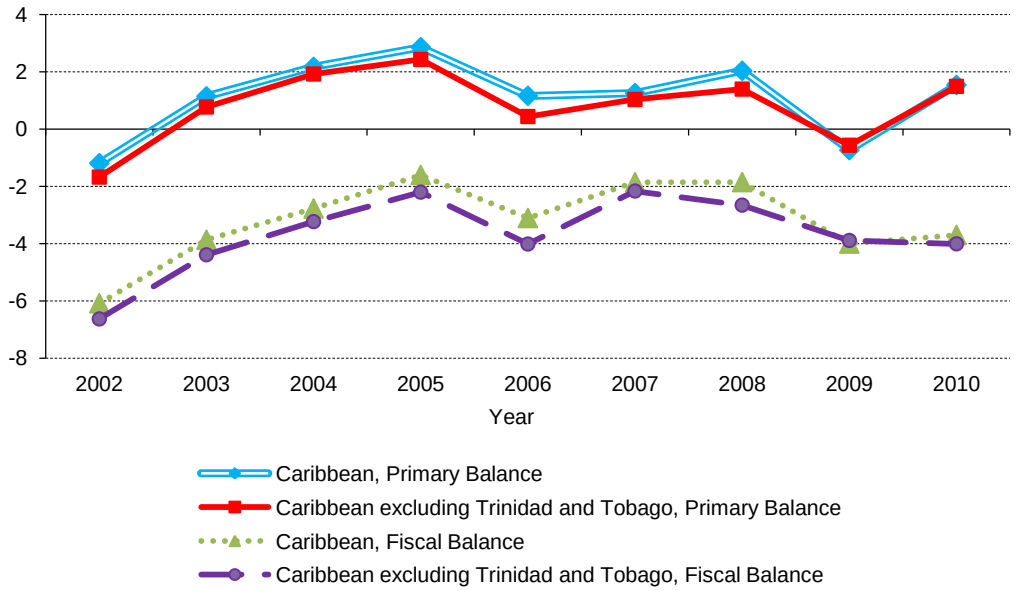
The overall picture is one of deterioration in the current account balance between 1995 and 2008, with a slight reversal in the late 1990s and in 2004. Since 2008 there has been a significant adjustment which lowered the deficit, however, this has occurred in the context of lower imports. When the data for the Caribbean was disaggregated to include Belize, Guyana, Suriname and Trinidad and Tobago, it was observed that the current account of these countries showed a much smaller deficit than those of the others that were service oriented.

The increasing deficit was partly due to the lack of private sector investment in response to the new regime of trade liberalization and competition. In trying to address this problem governments have tended to increase expenditure to compensate for this decline in private sector investment outlays. In some countries, the tendency has been to raise recurrent expenditure and squeeze the capital side of the budget, but by and large government expenditure has tended to increase. In many instances debt financing through internal and external borrowing has been used to expand such expenditure. From the data it can be concluded that real government expenditure since 2002 has been either constant or rising in the Caribbean.

2. Primary and fiscal balance

Turning to the public finances, figure 2 reported the primary balance[2] and the fiscal balance[3] for the Caribbean with and without Trinidad and Tobago. The figure shows that both the primary balance and the fiscal balance tended to improve for the Caribbean including Trinidad and Tobago from 2002 to 2005, after which there was a decline in fiscal surpluses.

FIGURE 2
PRIMARY AND FISCAL BALANCE FOR THE CARIBBEAN, 2002-2010
(Percentages of GDP)



Source: Economic Commission of Latin America and the Caribbean (ECLAC), based on official data

[2] Primary balance is defined as: total revenue minus total expenditure plus interest payments. It is calculated as a percentage of GDP, where nominal GDP at market prices is used.

[3] The fiscal balance is total revenue (Current and Capital Revenue) including grants minus total expenditure. It is calculated as a percentage of GDP, where Nominal GDP at market prices is used.

It should be noted that while there was an increase in the fiscal and current account deficits especially after 2005, such correlations do not imply causation. As a result, a formal Granger causality test was carried out to determine if there was a relationship between the fiscal and current account balances for a number of countries for which time series data were available from 1980-2010. These were Antigua and Barbuda, Barbados, Belize, Grenada, Guyana, Jamaiaca, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines and Trinidad and Tobago. The next section reports the results.

IV. Test results for causation between the fiscal and current account balances

In testing to determine whether the current account balance causes the fiscal balance or vice versa, there are three possibilties. The first is that, there may be no evidence of causality or between the variables, secondly, there may be causality in one direction or unidirectional causality, and thirdly, bidirectional causality in which causation runs from both variables. The test determines in a statistical sense whether lags of the current account balance are important in predicting the fiscal balance and vice versa. The results obtained from testing for causality will be biased if there are no intervening variables. As a result, in addition to the fiscal balance and the current account balance, the productivuty of imports[4], real GDP and real interest rates were considered as intervening variables. To determine how important the relationship is between the two variables the variance decomposition was also computed within the VARMA framework by examining the percentage composition of the variance as a result of the impact of a shock from the fiscal balance on the current account balance and vice versa. This is referred to as the variance decomposition.

In this analysis the line of causation is expected to flow from a decline in competitiveness (falling import productivity) and output which in turn affects the current account balance and subsequently the fiscal balance (annex 2).

Three sets of results emerged from the test and these were as follows: For some countries there was bi-directional causality which means that the variables jointly cause each other. Secondly for some countries there was no statistical relationshp between the two variables. Thirdly, some countries exhibited unidirectional causation that is the causation went in only one direction. To illustrate, in the countries Grenada, Guyana and Jamaica causation was bi-directional which means that the two variables influence each other simultaneously through feedback effects. In the case of Antigua and Barbuda, Saint Lucia and Trinidad and Tobago, no statistical significance was found for causation between the two variables. In Barbados and Belize, the current account balance caused the fiscal balance but not vice versa while for Saint Vincent and the Grenadines, causation ran from the fiscal balance to the current account balance.

An analysis of the variance decomposition confirms the results of the causation tests for the countries of interest. To clarify, the overall effect of a 1% shock in one of the variables on the others is

[4] Import productivity should be measured as the ratio of GDP to intermediate inputs, however, due to data limitations; this measure was computed as the ratio of GDP to total imports.

computed as 100% and by summing the percentage response in the variance of the current account and fiscal balance, we can determine the size of their overall effect at various time horizons. Since the variables are annual time series, the results were computed for one to five years. In the cases for which there was bi-directional causality, there were varying responses. In Grenada the contribution of both the current account and fiscal balance to the overall variation was large regardless of which of the two variables caused the shock. For Guyana the fiscal balance was not responsive to a current account shock while the current account balance was responsive to a fiscal shock. In the case of Jamaica, the fiscal balance was more responsive to a current account shock than the current account balance to fiscal shock.

For Barbados and Belize where there was one way causality running from the current account balance to the fiscal balance, the variances of both variables were significant over the five year horizon on account of a current account shock.

While the hypothesis for causation strictly from the curent account balance to the fiscal balance did not hold in every case,the results were generally in line with out hypothesis that the current account balance caused the fiscal balance. In addition, the variance in productivity tended to have a high share of the variation in the overall variance which suggests that productivity effects were significant.

V. Factors affecting the deterioration of current account and the fiscal balance

In order to arrest the growing negative current account balance and to formulate a strategy to address the fiscal deterioration a number of factors which contribute to the deficit problem can be examined. Among those considered are the level of domestic and foreign direct investment (FDI), the rising public debt and such components of the external sector as the merchandise trade balance, services exports and the composition of the financial balance as part of the balance of payments.

1. Investment

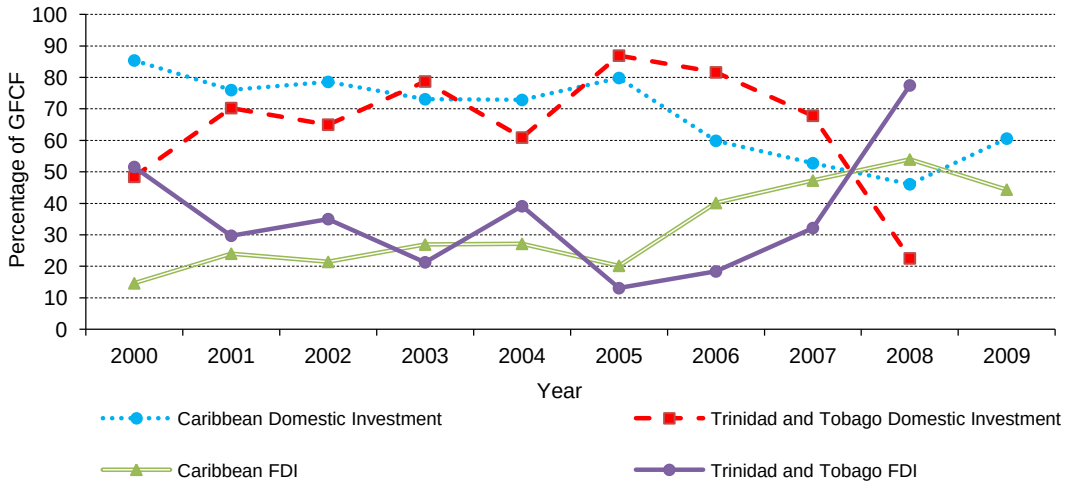
Useful insights into the causes of the consistently negative current account balance can be gleaned from examining the evolution of investment over the period 2000-2008.

It was observed that since 2005 the share of domestic investment to gross fixed capital formation (GFCF) has been in decline while at the same time the FDI share also tended to increase relatively. 2005 was a watershed year, as the rate of decline of domestic investment thereafter was much faster. Roache (2006) had also reported a decline in the level of private domestic investment between 1988 and 2004 for the Caribbean. In the case of Trinidad and Tobago, the domestic investment share was variable but tended to increase at least up to 2005 after which it declined. It is argued that government expenditure in this period was increased to arrest the softening of private investment. An examination of the real level of public expenditure in the Caribbean suggested that expenditure was constant in some countries or trended upwards especially in Guyana and Trinidad and Tobago. Expenditure expansion was also aggravated by the increase in interest payments[5]. This expansionary fiscal stance has been consistently in excess of the export performance ratio and has been observed elsewhere (ECLAC, 2005)[6]. The overall impact has been an increase in the public debt which is extremely large for a number of Caribbean countries.

[5] In the case of Jamaica, for example, interest and amortization have often been in excess of 50% of public expenditure.

[6] The fiscal stance is defined as FS=G/(T/GDP) (Godley and Cripps 1983). The export performance ratio is defined as (Exports/(imports)/GDP)).

FIGURE 3
DOMESTIC INVESTMENT AND FOREIGN DIRECT INVESTMENT FOR THE CARIBBEAN AND TRINIDAD AND TOBAGO, 2000-2009
(Percentage share of Gross Fixed Capital Formation)

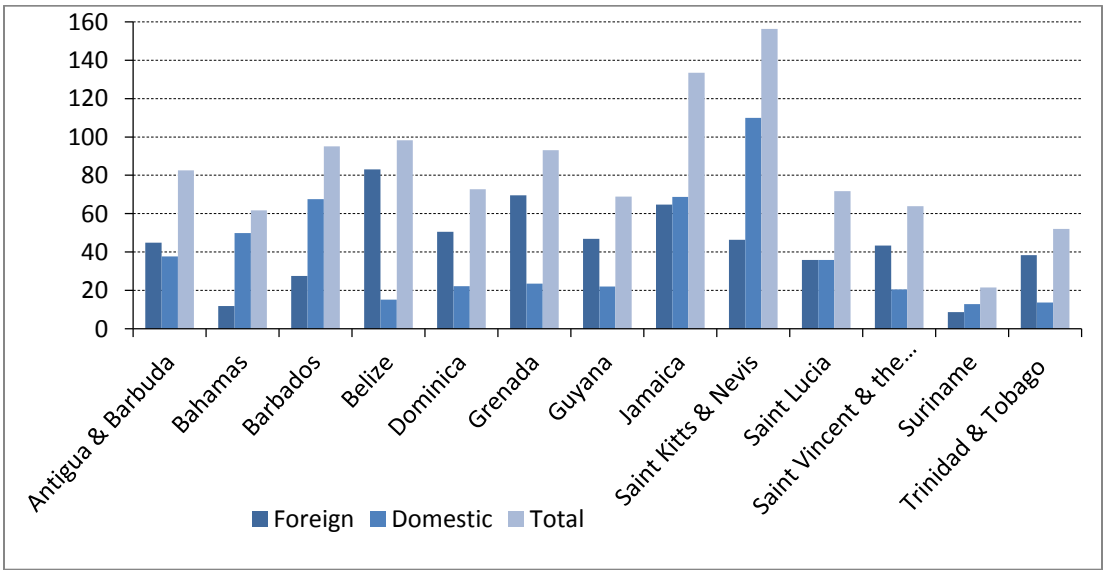


Source: Economic Commission of Latin America and the Caribbean (ECLAC), based on official data.
Note: GFCF refers to Gross Fixed Capital Formation.

2. Public Debt

One of the areas of considerable concern has been the large debt accumulation among Caribbean countries and its possible impact on crowding out the private sector. Figure 4 below examined the total public debt to GDP ratio and the composition of debt in 2010.

FIGURE 4
PUBLIC DEBT, 2010
(Percentages of GDP)



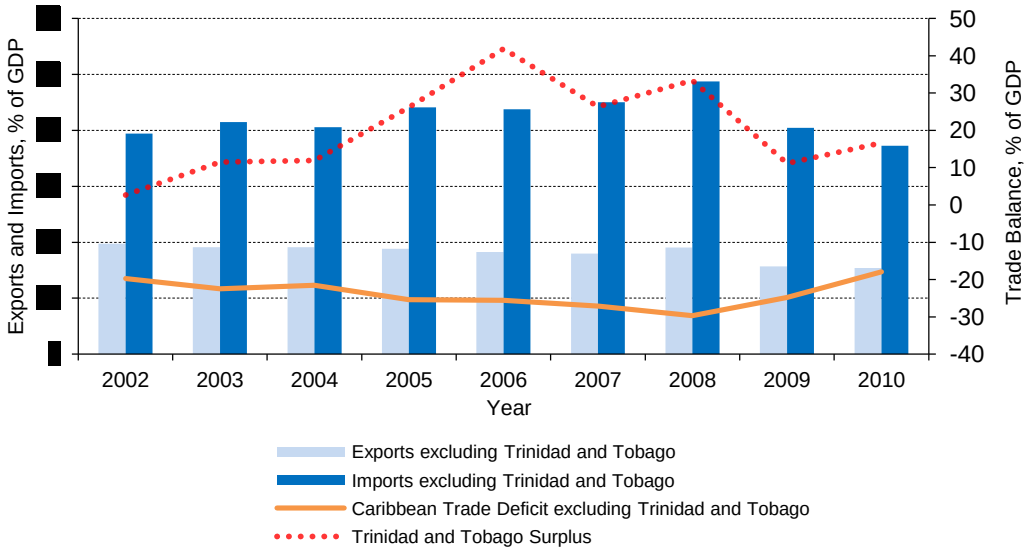
Source: Economic Commission of Latin America and the Caribbean (ECLAC), based on official data

The data suggested a very serious situation in which some countries reported debt to GDP ratios in ranges that were extremely high. While it was true that a number of developed countries were also carrying high debt burdens, Caribbean economies were far less diversfied and more vulnerable to external shocks.The debt will force up domestic interest rates, and at the same time limit the capacity of governments to provide resources for the industrial restructuring necessary for economic transformation. For several countries large debt burdens have created increased sovereign default risk.

3. Merchandise trade and services balance

Besides the decline in domestic investment, there has also been the deterioration of the merchandise trade balance. The most dramatic consequence of trade liberalization for the Caribbean has been the weak response of the merchandise trade sector over time.

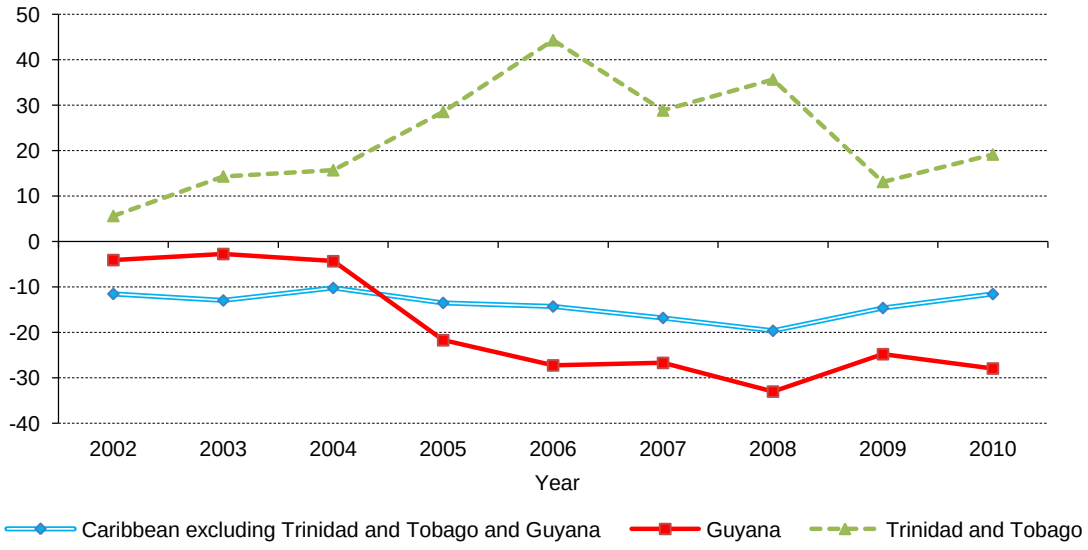
FIGURE 5
MERCHANDISE TRADE AND BALANCES FOR THE CARIBBEAN (EXCLUDING TRINIDAD & TOBAGO) AND TRINIDAD & TOBAGO, 2002-2010



Source: Economic Commission of Latin America and the Caribbean (ECLAC), based on official data.

The trade deficit, excluding Trinidad and Tobago, grew from US$4,851 million in 2002 to US$10,650 million in 2008. This was partly due to stagnation in exports and the rapid increase in imports. While the decline in external demand has been the immediate source of the problem in the last two years, the merchandise trade deficit has been growing due to declining competitiveness. Over the past two decades, Caribbean Community's (CARICOM) share of world exports of goods has been stable which reflected the dynamism of a few countries (ECLAC, 2010a) and stagnation among the rest. Of these, Belize, Guyana, Suriname and Trinidad and Tobago, have been dynamic, while for the rest, the erosion of preferences, energy costs, trade liberalization and the rise of Chinese manufacturing have been some of the limiting factors. These countries, however, rely heavily on a limited range of primary commodities which are extremely vulnerable to price variation.

FIGURE 6
MERCHANDISE GOODS AND SERVICE BALANCE FOR THE CARIBBEAN (EXCLUDING TRINIDAD AND TOBAGO AND GUYANA), GUYANA AND TRINIDAD AND TOBAGO 2002-2010
(Percentages of GDP)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), based on official data.

When the goods and service balance was examined a growing deficit was also observed and in the case of Guyana the deterioration has been due to rising imports on account of the economy growing from a low economic base. The pattern and destination of exports has also remained relatively stable with the United States remaining the main export destination representing over 40% of the regional exports. The exports share from the Caribbean to the European Union has also been stable and the only change was the small increase in interregional exports. Of importance was the fact that CARICOM has become an important market for the Organisation of Eastern Caribbean States (OECS) exports since that market absorbs 50% of its exports.

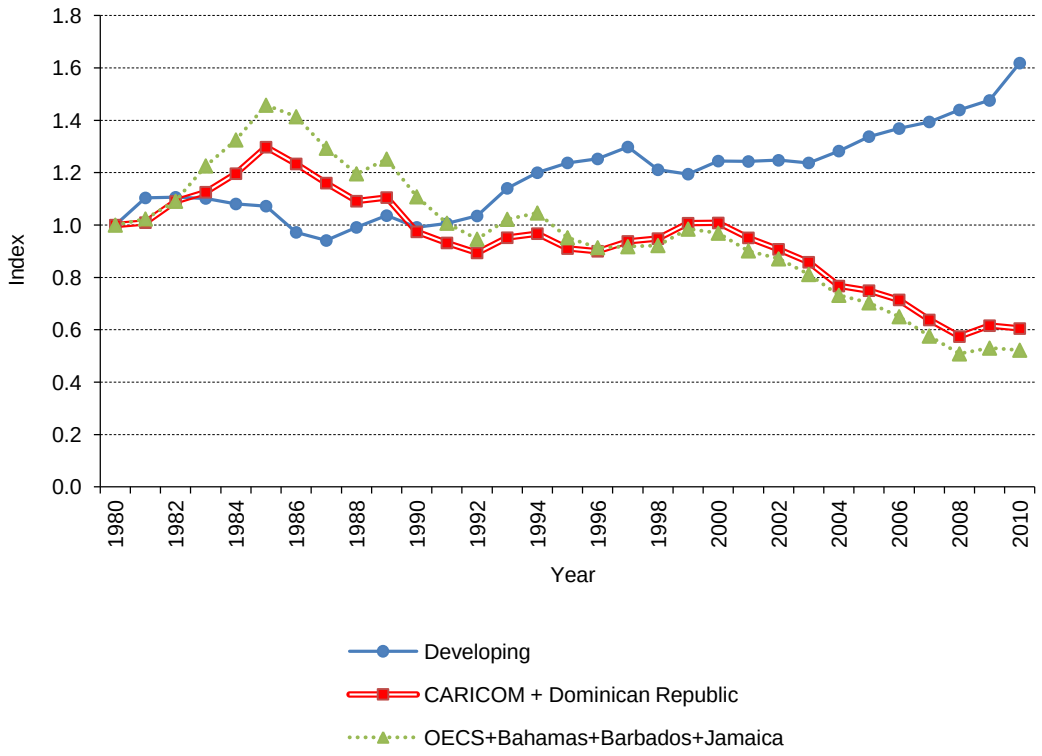
Regional GDP and goods exports have become increasingly dominated by Trinidad and Tobago as its share of regional GDP grew from 21.7% in 1990 to 38.2% in 2008, while exports rose from 37.4% in 1990 to 70.5% in 2008. In the meantime the OECS have lost GDP share in the region and their export share of goods and services have decline over this period.

The heavy concentration of exports on a few goods and tourism services which partially compensates for the decline in the goods sector has made the Caribbean extremely vulnerable to external shocks. For example, over the period 2002-2006 the top 20 goods exported consisted of four agricultural and food products, six minerals and ores, four manufactured goods and six fuel related products. The concentration of goods has also increased with the top 20 goods exported accounting for 70% of total exports of goods in 2006 compared to 51% in 1997 (ECLAC, 2010a).

The structural composition of the economies have become more distinct over time and, except for Belize, Guyana, Suriname and Trinidad and Tobago, all other Caribbean countries are largely service oriented with services constituting at least 70% of exports and providing a significant share of foreign exchange. In the case of Jamaica, despite a significant goods sector, services are the main source of foreign exchange.

The shift from goods production to services has helped to boost the growth rates of a number of Caribbean economies many of which are categorized as middle income countries. While the gains are not trivial, the diversification of the sector has not been widespread[7] and in many cases the sector was an inefficient user of foreign exchange. The service sector has begun to lose global market share as the tourism product and offshore banking have matured and no significantly new services have been added to exports. In the figure below, an index with 1980 base shows the ratio of tourism services to global services for 1) developing countries, 2) CARICOM and the Dominican Republic and 3) the OECS plus the Bahamas, Barbados and Jamaica as a group.

FIGURE 7
INDEX OF SERVICE EXPORTS, 1980-2010



Source: Economic Commission of Latin America and the Caribbean (ECLAC), based on official data

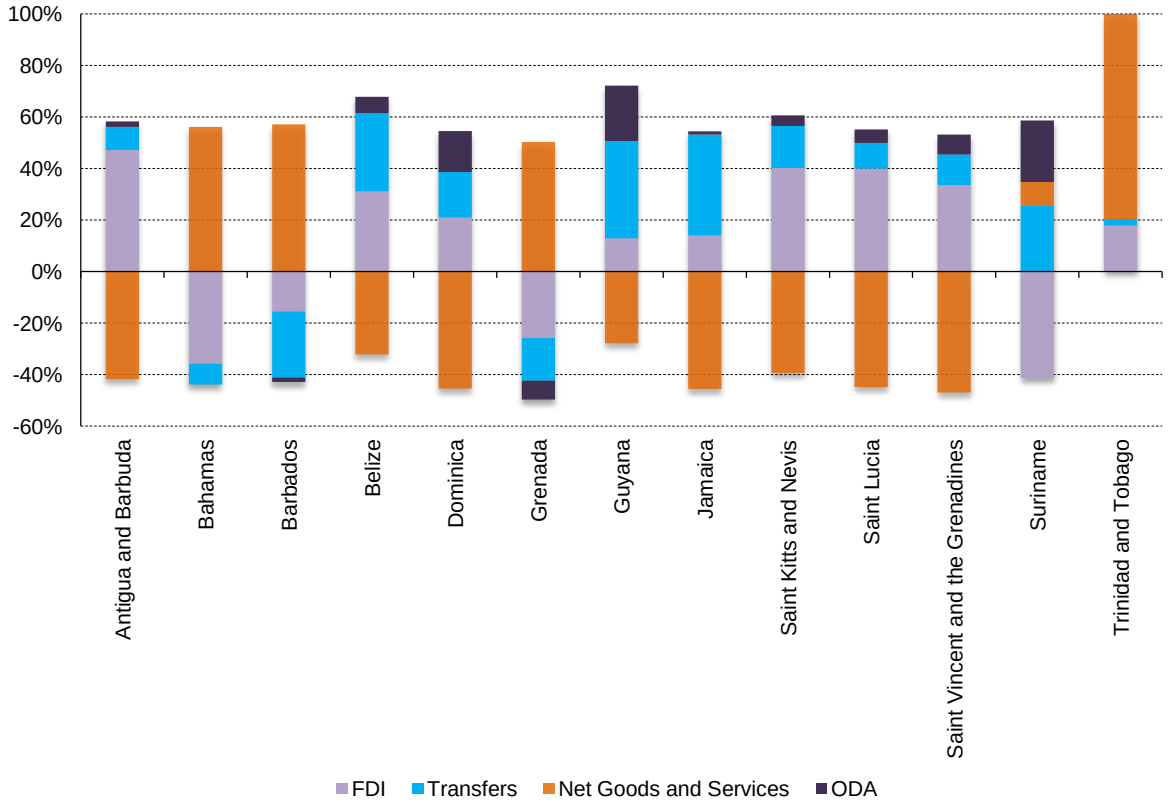
The graph shows an increase in the service index from 1980 to 1985, after which there was a decline in the global contribution of services from CARICOM and the Dominican Republic, through to 2010. The data were also disaggregated to isolate the main service providers in the Caribbean which included the OECS, the Bahamas, Barbados and Jamaica. The results showed that although the decline for this group was less steep, the trend was still downwards. Meanwhile, the index of services as a percentage of global services, for developing countries, tended to increase over time. This result demonstrates the challenges which the Caribbean must now confront. In addition, to a declining goods sector, services have also begun to deteriorate. The search for new growth engines and the rejuvenation of a maturing service sector is an important part of the restructuring necessary for medium term growth.

[7] The major developments have been offshore banking, ecotourism, hatching and a few other activities.

4. Major sources of foreign exchange together with the capital and financial account balance

The financing of the current account is crucial to the performance of Caribbean economies and the lack of foreign exchange often emerges as a binding constraint. In this section the major components of foreign exchange inflow which are made up of FDI, transfers, and earnings from exports of goods and services and overseas development assistance are examined.

FIGURE 8
MAJOR SOURCES OF FOREIGN EXCHANGE, 2002-2009



Source: Economic Commission for Latin America and the Caribbean (ECLAC), based on official data.

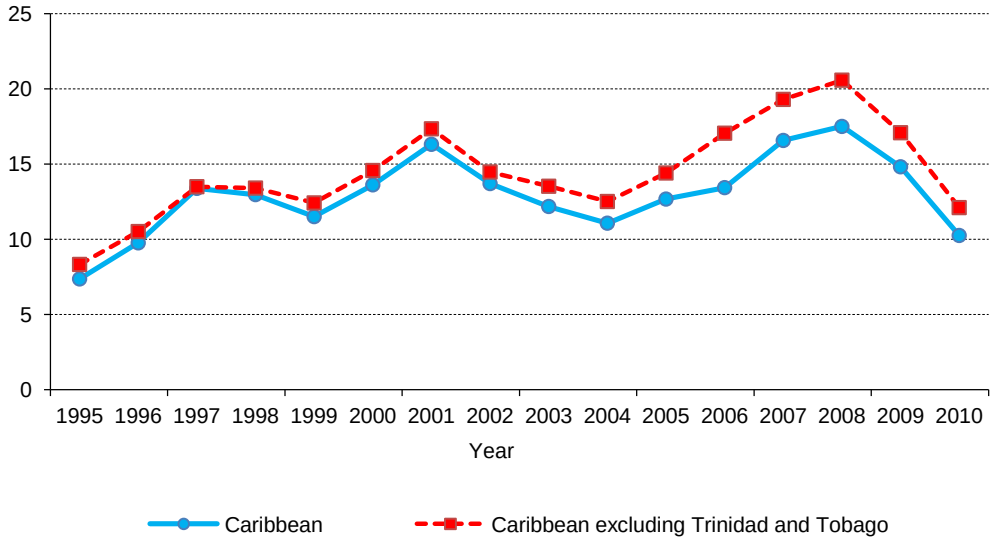
The results suggest that, except for a few countries, Caribbean economies rely heavily on FDI as a source of foreign exchange. Thus, the volatility of FDI can have an impact on the overall foreign exchange inflows and on expectations. FDI, however, has over time been attracted to the Caribbean through generous fiscal incentives without a clear accounting for the benefits of such inflows relative to the loss of fiscal capacity. In many countries tax expenditures are very excessive and represent a significant revenue loss at a time of fiscal stress. Another important source of foreign exchange inflow was net transfers which was very important for countries including Grenada, Guyana and Jamaica[8], In light of the volatility of FDI, and the importance of FDI to the foreign exchange earnings, it appears that the Caribbean economies are likely to experience considerable variation in their foreign exchange flows.

The final area of interest in terms of the external sector was the capital and financial account balance which was composed of net FDI and the financial capital balance. Table in annex 3, reports

[8] Jamaica net transfers, which was largely made up of remittances, was larger than tourism receipts.

the capital and financial account balance as a share of GDP for the period 2009 and 2010. It suggested that the capital and financial account balances were in deficit as a result of the crisis except for Suriname and Trinidad and Tobago.

FIGURE 9
CAPITAL AND FINANCIAL BALANCE, 1995-2010
(Percentages of GDP)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), based on official data.

Figure 9 reported the capital and financial account balance between 1995 and 2009. During this period the capital and financial balance exhibited considerable variation. Inflows peaked in 1997, 2001 and 2008 while the longest period of decline was observed from 2001-2004.

The regional pattern in this period was similar for all the countries, however, after 2002, there was a divergence between inflows to Trinidad and Tobago and the rest of the Caribbean. After 2001 for the regional flow tended to decline and except for a respite in 2006-2007, the trend downwards has continued. The capital and financial balance data for Trinidad and Tobago tended upward until 2008 after which there was a decline. The evidence is clear that all Caribbean economies including Trinidad and Tobago have been severely affected by the crisis.

The important point to be gleaned from this analysis is that fiscal retrenchment designed to reduce public expenditure and adjust the fiscal balance to reasonable levels will not solve the problems identifies with respect to the external balance. Thus, merely focusing on short term adjustments underestimates the medium structural problems which confront the economies of the region. These changes which have been observed reflect a declining capacity to export except for a few economies and an over concentration of production of a few products and markets for countries that have had better fiscal outcomes. In light of this both sets of economies are vulnerable to external shocks.

VI. Proposals for renewed growth in the Caribbean

The medium-term prospects for the Caribbean depend on the speed of the recovery abroad and the extent to which pressures for fiscal consolidation at home might dampen further injections in the economy.

A programme of economic restructuring will be necessary to return many countries to a path of positive growth and a variety of programmes and strategies will have to be pursued. Three of these are outlined as follows:

Firstly, in light of the persistent fiscal and current account deficit and a mounting public debt, a carefully crafted programme of fiscal consolidation is necessary, but this must be done while at the same time maintaining the welfare of the most vulnerable.

Secondly, renewed efforts must be made to build a regional system of innovations in order to raise the technical capacity of labour and to improve the technological sophistication of exports. However, as James (2010) has pointed out, investment in domestic capability is not sufficient, but this must be guided by a careful policy designed to encourage new activities.

Strategies based on pure export promotion will be unsuccessful given the new norm of lower global growth and a possible return to protectionism, at least in the medium term. Boosting internal and regional demand through the encouragement of sustainable projects must be pursued through private and public sector partnerships.

Thirdly, a programme of export diversification must be pursued in addition to market diversification to reflect the emergence of new players in international trade. Fundamental issues however, must be raised here since what is exported and the composition of exports are both important for growth.

These recommendations do not constitute the sum total of issues to consider since matters such as financial regulation, a regional competition policy and a system of risk management to allocate credit to emerging sectors are also important. However, the recommendations are at the core of a system of revitalization of Caribbean economies over the medium term.

VII. Conclusion

This paper addresses an important issue related to fiscal management and macroeconomic stability in the Caribbean. That is, how to address the mounting fiscal and current account deficits which have emerged in the last decade. The prevailing wisdom is that fiscal consolidation programmes are necessary to address expenditure growth in the face of stagnant revenue performance. The paper demonstrated that while fiscal consolidation is necessary it is not sufficient to address the medium- and long-term structural challenges which result from declining competitiveness in the external sector. This conclusion was arrived at by examining the lines of causation between the fiscal and current account balances within a time series framework. The results suggest that the fiscal balance is driven by the current account balance along lines suggested by Summers (1988) who argues that the adjustment to the current account deficit was sought through fiscal policy.

The implication is that a concerted effort must be made to improve export competitiveness in both the services and goods producing sectors of Caribbean economies. This will require raising the technical capacity of the labour force and of economic sectors over time. Faster investment in domestic capital within a regional framework is important to reap the benefits of scale, given the small size of Caribbean economies.

The diversification of markets and economic activities must also accompany the process of raising technical capacity since the emerging world economy has thrown up new markets of dynamic growth.

This paper demonstrates that while government expenditure has been expansive and has led to increasing indebtedness of several Caribbean countries, much of this has been in response to declining export performance.

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Annexes

Annex 1
Deriving the Simple Keynesian Multiplier

In this annex the basic assumptions underlying the relationship between importance of import productivity growth and the deterioration of the current account balance which leads logically to the deterioration of the fiscal deficit is set out with some care. The simple national income aggregates is as follows:

(1) $$Y + C + I + G + X - M$$

Where Y=the usual measure of GDP

$$C = \alpha + \beta Y$$

$$I = \bar{I} - \delta i$$

$$G = \overline{G}$$

$$M = M_0 + mY$$

$$X = total \text{ exp } orts$$

Where Y is the GDP, C is consumption, I is investment, G is government spending, M is the usual import function and X refers to exports.

A reformulation of the export and import expression to account for the terms of trade yields equation (2) and (3) as follows:

(2) $$Y = C + I + G + X - \sum P_m M / P$$

(3) $$Y = C + I + G + \sum P_x X / P - \sum P_m M / P$$

Reorganizing the information, the result is as follows:

$$\mathrm{Y} = \mathrm{C} + \mathrm{I} + \mathrm{G} + \frac{\sum \mathrm{M}\,\mathrm{P_x}}{\mathrm{P}} \frac{\mathrm{P_x X}}{\mathrm{P_m M}} - \sum \mathrm{P_m M / P}$$

$$\mathrm{Y} = \mathrm{C} + \mathrm{I} + \mathrm{G} + \frac{\sum \mathrm{M}\,\mathrm{P_x}}{\mathrm{P}} \left[\frac{\mathrm{P_x X}}{\mathrm{P_m M}} - 1 \right]$$

$$\mathrm{Y} = \mathrm{C} + \mathrm{I} + \mathrm{G} + \frac{\sum \mathrm{M}\,\mathrm{P_x}}{\mathrm{P}} \left[\frac{\mathrm{P_x}}{\mathrm{P_m}} \frac{\mathrm{X}}{\mathrm{Y}} \frac{\mathrm{Y}}{\mathrm{M}} - 1 \right]$$

$$\mathrm{Y} = \mathrm{C} + \mathrm{I} + \mathrm{G} + \frac{\sum \mathrm{M}\,\mathrm{P_x}}{\mathrm{P}} \left[\frac{\mathrm{P_x}}{\mathrm{P_m}} \alpha\Theta - 1 \right]$$

Where $\alpha = \mathrm{X / Y}$ and $\Theta = \mathrm{Y / M}$ with the second expression, appropriately defined, representing the productivity of imports. $\mathrm{P_x / P_m}$ is the term of trade. Substituting for M, yields equation (4).

(4) $$Y = \alpha + \beta Y + \bar{I} - \delta i + \overline{G} + (\sum P_m / P) M_0 \left[\frac{P_x}{P_m} \alpha\Theta - 1 \right] + \left(\sum P_m / P \right) mY \left[\frac{P_x}{P_m} / P \alpha\Theta - 1 \right]$$

Collecting terms give rise to: $\alpha + \bar{I} + \overline{G} + \left(\sum P_m / P\right) M_0 \left[\frac{P_x}{P_m}\alpha\Theta - 1\right] = A$

And thus $Y - \beta Y - \left(\sum P_m / P\right) mY \left[\frac{P_x}{P_m}\alpha\Theta - 1\right] = A - \delta i$

At this point the simple multiplier can be derived. But notice that the two policy variables α and Θ plus the terms of trade affect and m the marginal propensity to consume, modify the standard multiplier and this impact comes through the foreign exchange or BOP constraint.

The final expression can thus be set out as follows;

(5) $$Y = \frac{A - \delta i}{(1-\beta) - \sum \frac{P_m}{P} m \left[\frac{P_x}{P_m}\alpha\Theta - 1\right]}$$

This is an important result which suggests that even within a very simple framework, the balance of payments constraint modifies the standard multiplier through the marginal propensity to import, the terms of trade effects and the import productivity effects. Import productivity is defined here as the ratio of GDP to intermediate imports. Equation (5) also implies that under conditions in which the expression in bracket comes close to 1, the additional effects are zero. There is no reason to expect this, however, since the expression is as follows:

(6) $$\frac{P_x}{P_m} * \alpha\Theta - 1$$

While the value of exports can be equal to the value of imports, the expanding current account deficit suggests that this is not a realistic interpretation, thus, the result is important to understanding how import productivity impacts on output expansion.

Annex 2
The Vector Auto Regression (VAR) framework

A. Estimation and Testing

The variables for each of the countries were placed in a time series framework over the peirod 1980 to 2010. Test for stationarity determined whether the variables can be treated within an error correction mechanism or whether a short run vector autoregressive framework is required. If the panel unit root tests suggested that both the current account balance and the overall balance together with the other variables are I(1) or nonstationary the following strategy is employed.

$$\text{(1)} \qquad \Delta CA_t = a_0 + \lambda_1 e_{t-1} + \sum_{k=1}^{p} \alpha_k \Delta CA_{it-k} + \sum_{j=1}^{q} \beta_j \Delta OB_{t-j} + \sum_{m=1}^{n} \delta_m \Delta Y_{t-1} + u_t$$

where

$$\text{(2)} \qquad \Delta OB_t = a_{01} + \lambda_2 e_{t-1} + \sum_{k1=1}^{p} \alpha_{k1} OB_{t-k1} + \sum_{j1=1}^{q} \beta_{j1} \Delta CA_{it-j1} + \sum_{m1=1}^{n} \delta_{m1} \Delta Y_{t-m1} + v_t$$

The variable Y_t refers to the presence of other variables in addition to the current account and fiscal deficits. These are the interest rates, the import productivity, and real GDP. In the face of co-integration equations 1 and 2 are the vector error correction models. Note that λ_1 and λ_2 are coefficients for the error correction terms in the two equations. This approach also allows us to test for Granger causality within the system. Thus, to determine if the budget deficit does not Granger cause the trade deficit then we restrict the coefficients in (1) such that $\beta_j = 0$ and λ_1=0 and in (2) if we assume that the current account deficit does not Granger cause the fiscal deficit we restrict β_{j1} and $\lambda_2 = 0.$

Assuming no cointegration among the variables then a short run VAR is in order. The variables are arranged as a recursive VAR $[IMPROD, RGDP, INT, FB, CA]$=Z. The variance decomposition was also generated to determine the impact of the current account deficit.

The key issue in this analysis is to determine how to identify the system to isolate the effects of the current account and the fiscal deficit. Following Bjørland and Leitemo (2005), we identify the recursive nature of the impact of the current account shock on the rest of the variables by restricting the S matrix after writing the orthogonal structural disturbances ε_t as a linear combination of v_t that is

$$v_t = S\varepsilon_t \text{ (3).}$$

The system can be expanded as follows:

$$(3)\qquad \begin{bmatrix} \Delta IMP \\ \Delta RGDP \\ \Delta INT \\ \Delta FB \\ \Delta CA \end{bmatrix} = B(L) \begin{bmatrix} S_{11} & 0 & 0 & 0 & 0 \\ S_{21} & S_{22} & 0 & 0 & 0 \\ S_{31} & S_{32} & S_{33} & 0 & 0 \\ S_{41} & S_{42} & S_{43} & S_{44} & S_{45} \\ S_{51} & S_{52} & S_{53} & S_{54} & S_{55} \end{bmatrix} \begin{bmatrix} \varepsilon_{imp} \\ \varepsilon_{rgdp} \\ \varepsilon_{\text{int}} \\ \varepsilon_{fb} \\ \varepsilon_{ca} \end{bmatrix}$$

Where $B(L) = \sum_{j=0}^{\infty} B_j L^J$ is a vector of lag operators coming from the relationship and $Z_t = B(L)v_t$. Given that the system requires (N(N-1))/2 restrictions to be identified in a (5*5) system, an additional restriction is needed. One approach is to assume that $S_{45} = 0$ which essentially implies the Cholesky decomposition. This would also imply that the neither the macroeconomic variables nor the fiscal balance can respond to the current account balance but the current account can react to the other variables. Instead we impose the restriction that the fiscal balance cannot have a long run impact on the current account balance which can be written as follows:

$$(4)\qquad B_{51}(1)S_{14} + B_{52}(1)S_{24} + B_{53}(1)S_{34} + B_{54}(1)S_{44} + B_{55}(1)S_{54} = 0$$

Annex 3
The Capital and Financial account

TABLE
COMPOSITION OF CAPITAL AND FINANCIAL ACCOUNT, 2009-2010
(Percentage of GDP at Current Prices)

	FDI		Financial Capital		Capital and Financial Account Balance	
	2009	2010	2009	2010	2009	2010
Antigua and Barbuda	9.4	4.7	9.4	5.1	18.9	9.9
Bahamas, The	8.5	11.3	6.2	0.8	14.7	12.1
Barbados	2.0	3.7	4.6	3.2	6.6	6.9
Belize	8.0	6.9	0.6	-4.9	9.6	3.2
Dominica	8.9	6.6	13.6	16.0	22.4	22.6
Grenada	13.5	8.2	14.8	16.0	28.2	2.4
Guyana	8.1	12.1	11.1	2.4	22.4	15.2
Jamaica	6.6	3.6	0.8	3.7	7.5	7.2
Saint Kitts and Nevis	19.4	19.6	9.5	2.2	28.9	21.9
Saint Lucia	13.2	10.1	3.2	3.6	16.4	13.7
Saint Vincent and the Grenadines	15.2	14.2	13.7	16.3	28.8	30.5
Suriname	2.9	-8.5	-2.4	8.1	0.5	-0.3
Trinidad and Tobago	3.6	2.7	-16.0	-14.7	-12.4	-12.0

Source: Economic Commission for Latin America and the Caribbean (ECLAC), based on official data
Note: Negative sign indicates a surplus.