



The Recent Global Financial Instability: Implications for Debt Sustainability in The Bahamas

Authors:

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Abstract

The global financial recession which occurred over the last two years, has led Governments globally to adopt expansionary monetary and fiscal policies to offset the contraction in private activity. These policy measures have resulted in extensive spending which negatively impacted their fiscal deficits and the national debt. The Bahamas, like economies worldwide, has been adversely affected by the financial meltdown and therefore, the Government in an attempt to cushion the effects of the crisis on the domestic economy embarked on countercyclical policies characterised by increased outlays for social assistance programmes and capital works; while simultaneously experiencing a reduction in tax revenue. In this environment, the fiscal deficit expanded and debt indicators worsened. This study therefore, explores the effect of the Government's fiscal stance on the sustainability of The Bahamas' national debt, using the accounting approaches, namely the *primary balance* and the *tax gap* indicators.

¹ The views expressed in this paper are those of the authors and do not necessarily represent The Central Bank of The Bahamas. This paper should be considered a work in progress and as such the authors would welcome any comments on the written text.

Section 1: Introduction

The financial market dilemma, which was induced by the United States (US) subprime mortgage market failure, has had infectious economic implications that have spread from the United States to economies globally. Major developed countries, which prior to this downturn boasted robust economic growth, flourishing retail activity, high employment and healthy liquidity, have been experiencing a deep recession, with high unemployment, fleeting consumer and investor confidence and sharp stock market fluctuations. Resultantly, Governments and monetary authorities globally have had to employ a battery of policies aimed at reviving economic activity, stabilizing financial markets and stimulating investors' and consumer confidence. The Bahamian economy was not sheltered from this economic downturn and the Government engaged in extensive spending with the intent of mitigating the negative effects of the global economic and financial fallout on the domestic economy.

Accordingly, this paper is dedicated to exploring the issue of long run debt sustainability, given the adoption of the Government's countercyclical fiscal measures. Over the years, countries have recognised that a sustainable debt is a precondition for protracted economic development. Levels of debt that are unsustainable may have major negative implications for the ability of Governments to provide basic services to their citizens, in addition to the curtailment of investment and growth. Thus, this study was motivated by the need to investigate whether the Government's elevation in spending will have adverse implications in the long run for the national debt in the Bahamas. Currently, the total debt is 45% of GDP and considered sustainable given that the majority of the debt is internal. However, with GDP contracting, revenue collection declining and expenditure expanding, the fiscal deficit has been widening; thus heightening the necessity for the Government to increase its borrowing in order to finance the deficit. This enlargement in the fiscal deficit has resulted in an expansion in the national debt; thus giving rise to debt sustainability concerns.

In this vein, section two of this study explores the literature surrounding the theories pertaining to debt sustainability; while the subsequent section examines the fiscal impact of the measures that have been taken by selected countries to restore economic stability. This is followed by an analysis of the measures undertaken by the Bahamian Government to encourage GDP growth. Section IV of the paper provides an examination of debt sustainability by computing specific debt ratios and examining their

historical performance; while the primary balance and the tax gap, will be calculated in an attempt to determine the targeted deficit and debt stabilizing ratio. The paper concludes with a summary of the study's findings, and challenges going forward.

Section 2: Literature Review

This literature review surveys selected papers dedicated to the study of debt sustainability, its measurement and maintenance. In the International Monetary Fund (IMF) staff note, "Fiscal Policy for the Crisis", by Splimbergo et.al (2008), the authors examine what measures are necessary to combat a financial crisis and foster economic growth. In their analysis, they indicated that a crisis such as the one recently faced by the United States requires policies that repair the financial market, promote demand and boost consumer confidence. Due to the limitations of monetary policy, fiscal policy must also be employed to reach these objectives. Accordingly, it was asserted that an efficient fiscal package would have to be timely, substantial in size, diverse, strong and sustainable. In articulating the importance of fiscal policy to resolving the crisis, the authors were careful not to neglect the issue of debt sustainability, as an unsustainable plan could result in sharp movements in real interest and consequently lead to destabilization in the financial market. However, the note did not adequately address the issue of sustainability, why it is important, and the ways in which unsustainable debt can impact an economy as time progresses.

The paper, "Debt sustainability in Caribbean Countries: An exploration of Alternative Methodologies" by Ankie Scott-Joseph (2006) addresses such matters and provides an analysis of debt sustainability in Caribbean countries. According to the author, "debt sustainability is the ability of a debtor county to manage its debt continuously so that it does not expand out of control...". The author also posited that, as it relates to public sector debt, sustainability involves solvency; that is, the present values of expenditure and revenue must be equal so that the Government is able to pay its present and future debt. Scott-Joseph (2006) offered a thorough account of the virtues and shortcomings of various approaches to measuring sustainability which included: the Accounting Approach, which assesses the country's ability to meet current and future debt responsibilities; the Econometric Approach, the Sudden Stop Approach, the Probabilistic Approach, and the Human Development approach. However, in assessing the debt sustainability of St. Kitts & Nevis, Dominica, St. Vincent & the Grenadines and Jamaica during the 1970-2005 periods, the author chose to use the econometric approach, along with

the tax gap approach. In the analysis, it was noted that while the econometric method was effective in long term debt sustainability analysis, the tax gap approach was effective for both the long and short terms. Further the tax gap approach provided an indication of the level of adjustment needed to bring debt to a sustainable level, in contrast to the econometric method. This along with the fact that the data availability and quality within the Caribbean maybe inadequate for proper econometric analysis, led the author to conclude that the tax gap approach may be best for Caribbean analysis.

Roubini (2001) also addressed the issue of sustainability, and noted that a country's debt sustainability involves determining whether the country has a solvency or liquidity problem. If the country suffers solvency problems, then a debt reduction may be necessary to achieve a sustainable medium term path for the external liabilities of the country. On the other hand, if the country has a liquidity problem then debt reduction may not be a viable option, instead it might be necessary for the country to reschedule² or restructure³ the debt in order to achieve a sustainable medium-term profile. Further, the author postulated that a practical sufficient condition for determining a country's debt sustainability is a non-increasing foreign debt to GDP ratio. He posits that a country is likely to remain solvent as long as the ratio is not increasing over time. The criterion is related to the "resource balance gap", which represents the amount of trade balance adjustment required to stabilize the debt ratio and ensure solvency. As it relates to public debt, the author indicates that it can be viewed as sustainable once the debt to GDP ratio is non-increasing. In a country where the public debt to GDP ratio is enlarging, then it will be essential to have a higher primary surplus and a larger differential between the real interest rate and the growth rate of the economy. In this case, in order to stabilize the debt to GDP ratio, then a larger fiscal primary gap⁴ will be vital. However, it has been noted that, when pondering the use of the resource gap or fiscal primary gap the medium/long run levels of real interest rates and growth and structural values of trade balances and primary balances should be considered, that will lead to the stabilization of the debt to GDP ratio. Therefore, it appears as though it is more prudent to examine the

² Debt rescheduling is the process whereby the terms of the loan are re-negotiated, reducing payments by extending them over time and or forgiving a portion of the principal. Debt rescheduling has been a primary means of dealing with international debt issues.

³ Under debt restructuring, a country alters the terms of a debt repayment, usually by extending over a longer period of time principal payments, and or reducing interest rates.

⁴ The fiscal primary gap is the difference between the fiscal primary balance and the primary balance required to stabilize the debt to GDP ratio.

permanent⁵ rather than the current primary and resource/trade balance gaps when determining debt sustainability.

In the paper, 'Analysing the Sustainability of Fiscal Deficits in Developing Countries', Cuddington (1997), offers a review of selected literature pertaining to fiscal deficits and current account sustainability, with the goal of ascertaining a suitable means of analysing the sustainability of fiscal debt in less developed countries. In his assessment, he discusses both the Accounting Approach, as well as the Present Value Approach to debt sustainability analysis, and suggests that a combination of the two be employed by developing countries. For the Accounting approach, the presupposition is made that if fiscal deficits or surpluses eventually produce an unchanging debt-to-GDP ratio, then the debt is sustainable. Thus, a long run consistent debt-to-GDP ratio is the goal of this approach. On the other hand, the present value constraint approach focuses on determining the level of the debt that can be financed. This position implies that creditors to the Government, by their behaviour, decide whether fiscal policy is sustainable. Present Value tests attempt to determine whether or not previous fiscal variables and suggested fiscal deficits (or surplus) could proceed with no objection from creditors.

As indicated by other studies, the feature that makes the Accounting approach favourable is that it requires a quantity of data which can be easily acquired. However, critiques of the approach postulate that it does not take into consideration the economy in its entirety. For the present value tests, although it offers an indication of whether or not fiscal policies are sustainable, given the no Ponzi game condition, their tests require the use of extensive time series data on Government spending, revenue, and debt, which may not be available for many less developed countries.

Prior to recent times many Caribbean countries have been struggling with debt sustainability and current conditions have only served to exasperate the issue. Sahay (2005) conducted a study on debt sustainability within 15 Caribbean countries. In his analysis he expressed the view that due to acute increases in government expenditure, accompanied by contracting revenue receipts, the primary balances of many countries within the region have been deteriorating. Accordingly, the author outlined five main options that can be undertaken by Governments to achieve debt sustainability and growth.

⁵ Permanent gap refers to stabilization of the debt to GDP ratio over the medium term.

The steps comprised of: fiscal consolidation, prudent debt management, asset sales/privatization, exogenous shock vulnerability reduction and growth enhancing reforms. However, in cases where the rise in the deficit was due to increased spending rather than reduced revenue, fiscal consolidation was suggested. The findings revealed that fiscal consolidation appeared to be the primary tool used to correct fiscal imbalances, which led to the extremely high deficits in observed countries.

Given the nature of the Bahamian economy, the availability of data and the scope of this analysis, the accounting approach has been chosen to analyse debt sustainability in the Bahamas. In particular, the analysis will focus on calculating the primary balance gap, which is based on the computation of the primary balance required to stabilize the debt-to-GDP ratio and the tax gap, which indicates the increase in the tax ratio needed for public debt sustainability.

Section 3: Fiscal Impact of the Measures Used to Restore Stability

As result of the recent global recession, governments internationally have had to employ a battery of fiscal measures to combat the financial crisis. In particular, countries have expended large levels of fiscal resources to assist in the promotion of market stability and economic growth.

In 2008, the United States Government offered financial assistance through a US\$700 billion bailout package which was made available under the Emergency Economic Stabilization Act. Further, the American Recovery and Reinvestment Act of 2009 was passed allowing for the implementation of another stimulus package; this one valuing US\$787 billion and included provisions for federal tax relief, increased unemployment benefits and other social welfare provisions, in addition to domestic spending in education, health care, infrastructure and the energy sector. Given the rise in disbursements, along with a falloff in revenue intake, the United States' fiscal deficit reached approximately \$1.4 trillion in 2009. Further, with the expansion of the deficit, the country's debt elevated. With heightened debt and economic decline, the U.S. gross federal debt to GDP ratio rose from 69.2% in 2008, to 83.3% in 2009 and is anticipated to reach 94.3% in 2010.

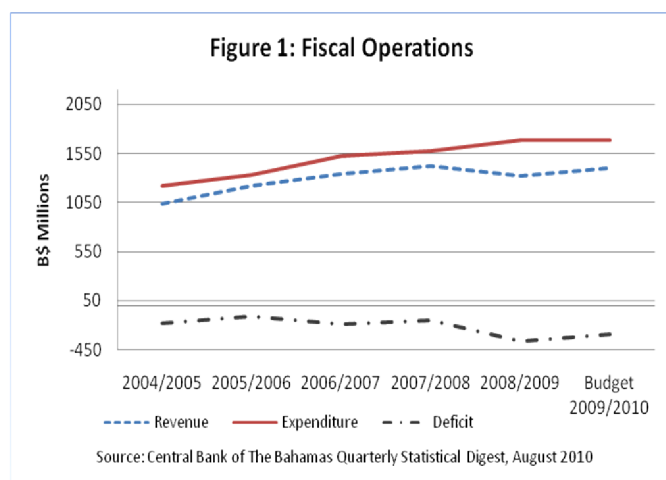
Further, in the Euro Area, the European Government took a number of fiscal measures to assist banks and stimulate the economy. Some of these measures included government guarantees for inter-bank lending, recapitalization or nationalization of financial institutions, along with various asset relief schemes. Given the surge in disbursements, the Government's deficit in the Euro Area ballooned from €181,176 million in 2008 to €565,111.0 million in 2009. Following a similar trend, the gross debt to GDP ratio advanced from 69.5% in 2008 to 79.0% by the end of 2009. In the United Kingdom, the debt to GDP ratio was less daunting at 52.1% in 2008 and 68.5% at the end of 2009, according to the IMF's October 2010 World Outlook.

Likewise, in Asia, governments in China and Japan deployed a variety of fiscal resources with the aim of propelling economic growth. In particular, the Chinese Government formulated a ¥4 trillion (or US\$586 billion) stimulus package to implement over a two year period. With the view of job creation and housing development, a sizable portion of the funds were allotted to housing projects for low income families, in addition to infrastructure projects which included railway, roads, water conservation projects, industrial restructuring and technical innovation. Other projects with social benefits include healthcare, culture and education. Given the elevated spending, China's fiscal deficit was nine times higher in 2009 at CNY950.0 billion, vis-à-vis CNY111.0 billion in 2008. Similarly, the Japanese government constructed a series of stimulus packages and therefore had to deepen its debt accumulation. In general, Japan has historically been the developed country with the highest debt to GDP ratio, and its recent heightened borrowing amidst weak economic growth has solidified this title as their gross debt to GDP ratio grew from 194.7% in 2008 to 217.6% in 2009.

Governments within the Caribbean were not exempted from this dilemma as they experienced deteriorating fiscal positions and expanding debt levels as a result of lower revenue receipts and increased expenditure due to fiscal stimulus programs. For instance, the Central Bank of Jamaica reported an expansion in the deficit from J\$75,321.6 million in FY2008/2009 to J\$121,265.20 in FY2009/2010. Similarly, in Belize, growth in expenditure on both current and capital items is anticipated to exceed gains in total revenue. Resultantly, the overall balance is expected to feature a reversal from a surplus of BZ\$10.4 million in FY2008/2009 to a projected deficit of BZ\$49.1 million in FY2009/2010. Comparable conditions were evident in the Barbadian economy, as weak value added tax (VAT) and import tax receipts coupled with strong government expenditure growth gave way to a fiscal deficit of Bds\$525.3 million during the first nine months of 2009 relative to Bds\$374.2 million in the analogous

period of the previous year. Given the escalation in fiscal deficits, Governments have had to increase their debt holdings, which when combined with reduced economic growth, resulted in further expansion in their debt to GDP ratios. In Jamaica the total debt to GDP ratio which stood at 109.9% in 2008, grew to 123.3% in 2009, with the external debt moving from 50.1% to 54.2% and domestic debt from 59.8% to 69.1%. Similarly, for Belize the ratio advanced to 112.1% in 2009 from 108.4% in 2008, as the external portion rose to 85.4% from 80.4% the previous year, while the internal debt to GDP ratio narrowed to 26.7% from 28.0% in the prior year. In Barbados a ratio of 121.8% was registered in 2009 vis-à-vis a ratio of 111.2% in 2008, with the ratio for external debt reducing to 39.4% from 42.2%, while the internal debt ratio widened to 82.4% from 69.0%. Accordingly it is evident that the expansionary fiscal measures employed throughout the region have had major implications for countries' debt standing (see Table 1). Further, the ability of countries to increase output and expand revenue, while curtailing expenditure to repay such debt will have major bearing on the sustainability of the debt incurred.

The same fiscal sentiments resonated within the Bahamas. For the Bahamian economy tourism is the principal economic activity, contributing approximately 51.0% of GDP, followed by the international financial services, which add some 15.0% to GDP. Therefore, with the advent of the global economic meltdown, the domestic economy suffered a scaling down in economic



prospects, as tourism and foreign direct investment activities abated. Accordingly, in an attempt to stimulate the domestic economy in the face of shrinking economic growth, the Government embarked on expansionary fiscal policy measures. In particular, in November 2008 the Government announced enhanced financial support to families in need, through an increase in the level of social assistance offered under the various programmes of the Department of Social Services. In this vein, social spending advanced by 23.8% to \$97.7 million in FY2007/08 and by 16.6% to \$113.8 million in FY2008/09, as the global economic crisis persisted. During FY2006/07 to FY2007/08, in a bid to spur economic activity, the government increased its recurrent and capital spending by \$58.3 million and \$10.6 million respectively. The upward trend continued for current outlays which for FY2008/09 rose by

\$78.6 million; however, capital spending fell by \$37.0 million. As the crisis persisted, tax revenue weakened; while expenditure continued its upward trajectory. By FY2008/09, the fiscal deficit advanced by \$210.5 million to \$361.3 million in comparison to the preceding year. Given the enlargement of the fiscal deficit, government debt also rose and the overall debt to GDP ratio (excluding government guaranteed loans) grew from 36.6% in 2008 to 45.0% in 2009.

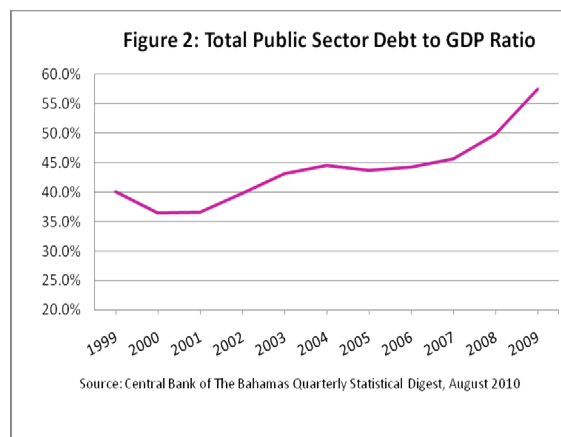
Table 1: CARICOM Countries Debt Indicators

	Internal Debt/GDP				External Debt/GDP				Total Debt/GDP			
	2006	2007	2008	2009	2006	2007	2008	2009	2006	2007	2008	2009
Bahamas	29.9	33.1	34.0	39.0	4.1	3.8	5.5	10.5	34.0	36.9	39.5	49.5
Barbados	44.0	62.1	69.0	82.4	38.8	38.2	42.2	39.4	82.8	100.3	111.2	121.8
Belize	26.5	28.1	28.0	26.7	87.1	84.9	80.4	85.4	113.6	113.0	108.4	112.1
EC Currency Union	43.4	43.6	44.6	47.5	54.0	47.6	43.9	48.4	97.4	91.2	88.4	95.9
Guyana	0.4	0.3	0.3	0.3	1.1	0.7	0.7	0.7	1.6	1.0	1.0	1.1
Haiti	10.5	8.9	7.9	14.1	27.1	23.6	29.5	18.7	37.6	32.5	37.5	32.8
Jamaica	78.7	71.9	59.8	69.1	48.4	48.4	50.1	54.2	135.8	127.5	109.9	123.3
Trinidad & Tobago	10.2	9.7	8.3	14.2	6.7	6.4	5.4	6.6	17.0	16.1	13.7	20.8

Source: Caribbean Center for Money & Finance, Central Bank of Jamaica & Central Bank of The Bahamas

Section 4: Analysis of Public Sector Debt in the Bahamas

Historically, public sector debt in the Bahamas has been at a sustainable level, oscillating in response to various economic and political stimuli. Nonetheless, in assessing the sustainability of debt within the Bahamas, we considered various debt sustainability ratios. Some of these include the debt to GDP ratio, debt service to GDP ratio, the external debt to total exports ratio and the debt service to exports ratio. In addition to discussing these traditional indicators, an analysis of debt sustainability in the Bahamas using the primary balance and the tax gap indicators will be conducted in the subsequent section.



An analysis of recent trends in government debt indicates that the Government's latest pursuit of countercyclical fiscal policy measures has resulted in an expansion in the fiscal deficit and the total public sector debt stock. For instance, over the period 1999 to 2009, the total public sector debt stock as a percentage of GDP averaged an annual 43.7%⁶, firming to 57.5% at end-2009 from 40.0% at the end of 1999 (see

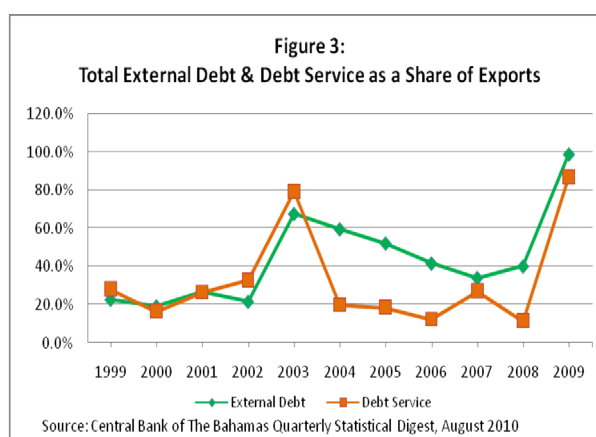


Figure 2). More specific to total direct charges, the debt to GDP ratio in 1999 amounted to 29.3% and at the end of 2009 stood at 45.0%. Notwithstanding, the Government announced in the 2010/2011 budget that this ratio is likely to be higher at the end of the fiscal year due to Government's expansionary fiscal policy. The enlargement of the debt to GDP ratio has implications for debt sustainability in the long run, in the event that the economic growth rate continues to contract, while the real interest rate increases.

⁶ Figure comprised of total direct charges and total public corporation, which includes guarantee and non-guaranteed debt, excluding education guarantee loans.

With regards to debt sustainability determination, in general, focus is placed on a non-increasing foreign debt to GDP ratio and not on the internal debt. The reason emphasis is on the external debt is that the Government can utilize the option of rolling over the internal debt by issuing new bonds—but cannot default on its commitment to service the external debt. For The Bahamas, the stock of external debt, although it has risen over the review period, remained relatively low, with the external debt to GDP ratio averaging 4.0% per annum over the 10 year period. The external debt to GDP ratio moved from 2.0% in 1999 to 9.5% at end-2009. Meanwhile, the Bahamas stock of external debt, which was \$104.7 million in 1999, grew to \$703.1 million at end-2009. Therefore, it is apparent that, by this measure, The Bahamas' debt at its current level is sustainable since this ratio remained within the single digit range; albeit trending upwards over the review period. Moreover, the internal debt to GDP ratio has been expanding over time, rising from 27.3% in 1999 to 35.5% in 2009. In totality, it is evident that the total debt as a share of GDP is more likely to become unsustainable if it keeps growing and economic growth contracting; however the external portion of the debt is likely to remain on the sustainable path since historically it is low and rises at a slow pace.

Another indicator that alludes to the debt in The Bahamas being sustainable at the current level is the debt service to GDP ratio. Data for the past 10 years indicates that the debt service to GDP peaked at 8.4% in 2009 from 2.5% in 1999; however, it achieved a low of 1.2% in 2006. This outcome implies that the country's foreign debt is indeed sustainable since a modest amount of its resources are being utilized to service external debt.

The external debt as a percentage of total exports is another measure of debt sustainability, and for the Bahamas, this ratio has been steadily increasing over the review period. The upward movement in this percentage suggests that on average the accumulation in external debt has surpassed the rise in export receipts. If this trend continues, it is likely to negatively affect international reserves; as the stock of foreign reserves obtained from exports would not be adequate to cover foreign currency debt obligations. Further, debt service as a share of exports has been fluctuating, registering a low of 11.3% in 2008, before widening to 87.0% in 2009 (see Figure 3).

Section 5: Data and Methodologies Analysis

5.1 Data Analysis

In analysing debt sustainability using the primary balance and tax gap accounting methods, the study encompasses trends over the period of 1999 to 2009 and uses a number of explanatory variables in the calibration exercise. Further, the data used was retrieved from various Central Bank of the Bahamas publications, the IMF World Economic Outlook, the Bahamas Department of Statistics and the Bahamas Government Budget Communication. The total Direct Charge (d_t), which excludes government guarantees, was used for the current debt stock, while the primary balance (s_p) was derived by subtracting revenue from total expenditure (excluding interest payments). Meanwhile, the real effective interest rate (r) on the debt was derived by dividing the interest payment by the stock of the direct charge on the debt stock. The ratio of Government non-interest spending to GDP (G_t) was computed by subtracting interest payments from total expenditure, while the ratio of tax to GDP (t_t) was used as a proxy for the current tax gap. In addition, the growth rate (g) in the study refers to growth in real GDP and all variables are calculated as a ratio of real GDP.

5.2 Analysis of Methodologies for Calculation of Primary Balance and Tax Gap

5.2.1 Primary Gap Indicator for The Bahamas

According to the IMF it is desirable for the debt to GDP ratio not to exceed 50% since anything in excess of this could pose debt sustainability issues. Hence, the total debt for The Bahamas at its current level of 45.0%, although high, is deemed sustainable. However, the accounting approach, which focuses on the primary balance and the tax gap, will be used to determine when the country's debt servicing is likely to become increasingly difficult. The primary balance gap indicator concentrates on the primary balance needed to stabilize the debt-to-GDP ratio—the difference between the debt stabilizing primary balance and the actual primary balance. Important to note is that, a positive gap means that the current fiscal policy measure results in debt accumulation and therefore there is need for a change in the policy, so as to avoid the debt becoming unsustainable.

Hence, the relationship between the Government's current debt, the previous period debt, the interest rate and the primary surplus can be expressed by the following budget constraint:

$$D_t = D_{t-1} (1+r_t) - Sp_t \quad (1)$$

Where

D : Nominal stock of debt at the end of period t

Sp : Primary surplus (revenue minus expenditure excluding interest) generated in period t

r : Real interest rate in period t

To derive the sustainability condition, Equation (1) is modified in terms of ratios to GDP.

$$D_t/Y_t = (1+r_t/(1+g_t))(D_{t-1}/Y_{t-1}) - sp_t/Y_t \quad (2)$$

Where

g : denotes real growth rate

Y : denotes GDP at time t

Therefore, the dynamics equation equals:

$$d_t = \beta_t d_{t-1} - sp_t \quad (3)$$

Where

β : Discount factor, defined as $(1+r_t)/(1+g_t)$

d : D/GDP

sp : primary surplus as a percent of GDP

Using equation (3) the change in d_t equals:

$$\Delta d_t = d_t - d_{t-1} = \beta_t d_{t-1} - d_{t-1} - sp_t \quad (4)$$

Therefore, when $r_t > g_t$ there is rising pressure on the debt to GDP ratio and vice versa when $r_t < g_t$.

This means that when the real interest rate is higher than real growth, the debt to GDP ratio will

increase unless compensated for by the primary surplus. Overall, the fiscal stance is considered sustainable once a constant debt to GDP ratio is generated at a level of 50% or lower, implying that the $\Delta d_t = 0$. Thus, derived from equation (5), the primary balance needed to stabilize the public debt is:

$$sp = (r_t - g_t / 1 + g_t) d_{t-1} \quad (5)$$

Hence, the primary gap indicator is:

$$sp^* - sp_t = -sp_t + (r_t - g_t / 1 + g_t) d_{t-1} \quad (6)$$

Equation (6) shows the difference between the required primary surplus (sp^*) and the actual primary surplus (sp_t). A negative gap implies that the required primary surplus is lower than the actual primary surplus, which implies that the Government does not need to increase borrowing, thus placing downward pressure on the debt to GDP ratio. A positive indicator implies that the required primary surplus is higher than the actual primary surplus, signalling that the Government must embark on fiscal adjustment programs to ensure that the debt to GDP ratio does not expand.

If we solve for sp^* the Equation (7) becomes:

$$sp^* = [(r_t - g_t) / (1 + g_t)] d_{t-1} \quad (7)$$

Using the *primary gap indicator* equation (7) and applying 2007 debt/GDP ratio of 35.7%, the primary surplus (sp^*) needed for the national debt in the Bahamas to be held constant at this level over a finite horizon was computed. The results indicate that with 2008's real GDP output of -1.7%⁷ and the effective interest rate of 5.4%, a primary surplus of 2.6% was required for the debt to GDP ratio to be held steady at 35.7%. However, preliminary results for 2008 reveal that the economy realized an actual primary deficit of 0.5%, thus, deriving a positive indicator, since a surplus is required (2.6% - [-0.5%] = 3.1%). The results imply that the Government will find it challenging to manage its deficit in the long run since a primary surplus of 2.6% is required for the debt to remain stable, but in actuality a primary deficit was realized; this would therefore need to be reversed. Hence, the Government would need to adjust its fiscal programs and pursue a more contractionary policy, in order to prevent the debt to GDP ratio from becoming unsustainable over time.

⁷ International Monetary Fund World Economic Outlook, October 2010.

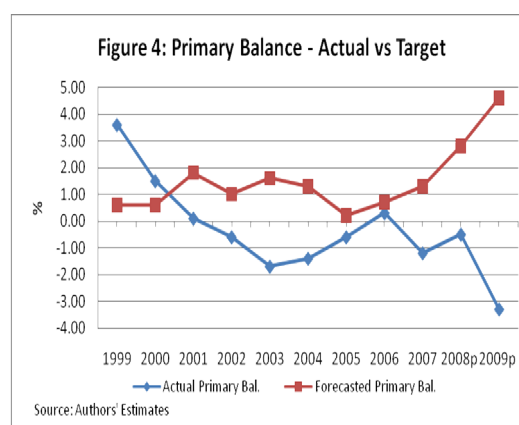
Further, application of the IMF's 2010 projected real GDP growth of 0.5% for the Bahamas and an assumed effective interest rate of 4.9%, a primary surplus of 2.0% would be needed for the debt ratio to be held constant at 45.0%, the 2009 level. Moreover, according to the Government's 2010/2011 Budget the debt to GDP ratio is expected to rise to approximately 47.0% at the end of the FY2009/2010, which means that given the forecasted 1.5% expansion in GDP for 2011 and an interest rate of 4.9%, then a primary surplus of 1.6% is required in order for the debt ratio to stabilize at this forecasted rate at end-2011. However, the Government anticipates that at the end of FY2010/2011, the debt to GDP ratio will reach a high of approximately 49.0%. This implies that to steady the public debt at this level at end of FY2011/2012 a primary surplus of 1.4% is needed, assuming that the economy grows by 2.5% and the interest rate rises to 5.4% in 2012 (see Table 2).

Years	Debt/GDP	Growth Rate*	Interest Rate	Targeted Primary Surplus
2008	35.7	-1.7	5.4	2.6
2009	37.9	-4.3	4.9	3.6
2010	45.0	0.5	4.9	2.0
2011	47.0	1.5	4.9	1.6
2012	49.0	2.5	5.4	1.4
2015	35.0	3.5	5.4	0.6

Source: Authors estimates

*Growth rates are the IMF's (IMF World Economic Outlook, October 2010), Ministry of Finance 2010/2011 Budget Communication & Central Bank of The Bahamas Research Department Forecasts.

With the rise in the current level of debt to record highs, the Government may chose to target the primary surplus that will reduce the stock of debt (d_t) to a certain level. Using equation (3) it can be deduced that, if the Government decides to target a primary surplus of 0.7% in 2015 and GDP growth of 3.5%, with a stable interest rate of 5.4%, then the debt will decline to about 35.0%, which will be deemed sustainable using a 50.0% debt to GDP ratio as the benchmark and a declining debt to GDP



ratio as an indicator (see Table 1). It will also be in keeping with Government's goal of lowering the debt to GDP ratio within the range of 30.0%-35.0% over the medium to long term. Important to note is that over the past decade, the primary balance averaged a deficit of 0.3% per annum, which corresponds to a projected surplus of 1.5% as given by the model. Hence, the Government has to embrace policies that will aid in reversing the primary deficit to a surplus in order to achieve its medium to long term objective of maintaining a GDP ratio below 40%.

Moreover, data for the past decade (1999-2009) revealed that a forecasted primary surplus was required for all the review years in order for the debt/GDP ratio to stabilize at the prior year's level; however, for the majority of the review years, an actual primary deficit was realized (see Figure 4). Therefore, the debt/GDP ratio which peaked at 45.0% in 2009 needed a primary surplus of 4.6%, given a 4.3% contraction in GDP, if the debt was to remain at the 2008 rate of 37.9%.

5.2.2. Tax Gap Indicator for The Bahamas

Conversely, Blanchard (1993) proposed the use of a "*tax gap*" indicator to evaluate the change in policies necessary to hold the debt to GDP ratio constant. According to Blanchard, sustainability refers to the stability in the debt to GDP ratio. The tax gap therefore, indicates the increase in tax ratio needed for public debt sustainability.

Hence, the permanent tax to output ratio necessary to stabilize the debt ratio is given by:

$$t^* = G_t - (g_t - r_t)b_t \quad (8)$$

where,

G_t = the ratio of Government non-interest spending to GDP

t_t = the tax to GDP

r_t = real interest rate

g_t = real growth rate of GDP

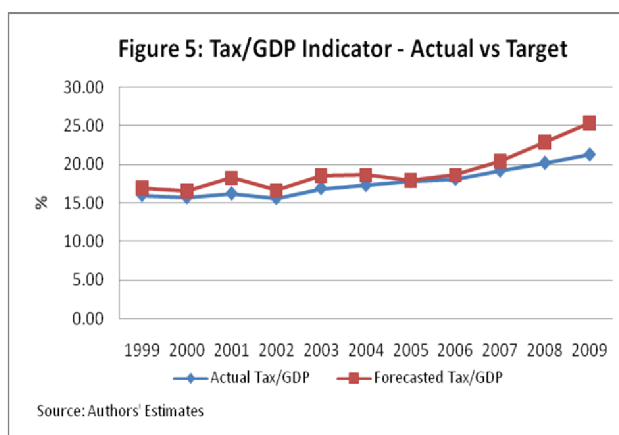
b_t = the current debt stock

Adding t_t to both sides of equation (8) yields the tax gap indicator:

$$t_t - t^* = t_t + (g_t - r_t)b_t - G_t \quad (9)$$

In equation (9) the difference between the permanent tax ratio and the current tax ratio is measured. If the permanent tax ratio is greater than the current tax ratio, it signals that current taxes are inadequate to stabilize the debt ratio given the existing spending policies; current taxes are insufficient to cover Government spending and debt service.

Applying 2008 data for the Bahamas to equation (9), the results revealed that the permanent tax gap is 22.9%, while the current tax gap is 17.5%. Hence, this indicates that the current tax ratio is lower than the permanent tax ratio. A 5.4 percentage point increase in the tax ratio is required for the debt to be sustainable ($17.5\% - 22.9\% = -5.4$). Thus, the results revealed that, current taxes are not



sufficient to stabilize the debt ratio given Government's spending policies. Moreover, with the recorded - 4.3% contraction in GDP and a falloff in tax receipts in 2009, the tax gap widened to 11.0%, with a consequent elevation in the debt ratio to 45.0%. However, if the economy grows by a marginal 0.5% in 2010, as anticipated by the IMF in the October 2010 WEO, then the tax gap would narrow to 9.0%, assuming all other variables are held constant and the debt ratio do not exceed its budgeted 47.0%. The tax gap can be closed by either expanding the tax base or tightening current expenditure. Hence, the Government would need to change its current spending habits, adopting a more conservative stance so as to align the permanent tax ratio with the current tax ratio, in order to stabilize the debt ratio. The same principle will apply for the years following; hence given that the debt level is expected to rise to a high of approximately 49.0% at end of 2011, it signalled an enlargement in the tax gap. If the Government is desirous of reducing the debt to GDP ratio to 35.0% by 2015, then a tax gap of 2.7% will

need to be closed, assuming that the economy expanded at a rate of 3.5%, the interest rate steady at 5.4% and both the tax and expenditure to GDP ratios return to the 2008 level in 2015 (see Table 3).

Years	Debt/GDP	Growth Rate*	Interest Rate	Tax/GDP	Govt Exp/GDP	Tax Gap
2008	37.9	-1.7	5.4	17.5	20.2	5.4
2009	45.0	-4.3	4.9	14.4	21.3	11.0
2010	47.0	0.5	4.9	14.4	21.3	9.0
2011	49.0	1.5	4.9	14.4	21.3	8.6
2012	49.0	2.5	5.4	17.5	19.5	3.4
2015	35.0	3.5	5.4	17.5	19.5	2.7

Source: Authors Estimates

*Growth rates are the IMF's (IMF World Economic Outlook, October 2010) and Central Bank of The Bahamas Research Department forecasts

Historically, the tax gap has never exceeded 5.0% and it tends to widen when the economy contracts or there is a slowdown in economic output. For instance, when the economy attained a growth rate of 5.0% in 2005, the tax gap was 2.8%. Moreover, the more stable non-tax expenditure, the lower the tax gap. Figure 5 shows that for all the reviewed years, the current ratio was lower than the targeted tax ratio, the larger the discrepancy the wider the tax gap. Meanwhile, with the economy anticipated to recovery from 2010, it can be expected that the tax gap will narrow from its 2009 peak of 11.0%, which resulted from Government's countercyclical fiscal policy measures that were embraced to cushion the effects of the global recession.

Overall, the results of both exercises indicate that a change in the Government's fiscal policy stance will be necessary to bring the debt to GDP ratio to a desirable level and avoid it becoming unsustainable. Further, in both scenarios economic growth is vital towards achieving a primary surplus and narrowing the tax gap. Therefore, Governments need to focus on policies that will stimulate economic growth, and stem the accumulation of debt. Measures that will boost revenue collection, for example expanding the tax base, have to be employed in conjunction with a curtailment in current expenditures.

Section 6: Conclusion

Given the results of this analysis, it is evident that the countercyclical fiscal measures employed in the wake of the global recession have had implications on debt accumulation within the Bahamas. In recent years, with increases in the acquisition of debt coupled with contractions in GDP, the debt indicators have been deteriorating. However, given the extent of the increases, and the cautionary 50% benchmark of the IMF, domestic debt is still at a sustainable level.

Conversely, when using the primary gap as a tool for achieving a stable and sustainable debt to GDP ratio, the results indicate that should The Bahamas wish to achieve its medium to long term objective of a debt to GDP ratio of 35%, with a forecasted real GDP growth of 0.5%, a primary surplus of 2.2% would be necessary. Further, looking at the 1999-2009 in totality, primary surpluses were necessary in each year reviewed in order to maintain the previous year's debt to GDP ratio. However, primary deficits were realized in most of the years assessed. The largest disparity between the actual primary balance and the forecasted target occurred during the 2008-2009 period when output had been contracting and countercyclical policies were being pursued.

In the case for the tax gap indicator, the analysis reveals that given the interest rate, GDP and government expenditure, the level of taxes collected is inadequate to close the gap between the permanent tax gap and the actual tax ratio. Thus, an increase in tax revenue or broadening in the tax base would be necessary to narrow the gap and facilitate debt sustainability.

In general, the unorthodox financial crisis has left economists around the world facing quite a conundrum. Governments are now challenged with the twin problem of elevated fiscal deficits and debt ratios. Therefore, it is evident that numerous countries regionally and globally must pay very close attention to their fiscal positions and the sustainability of their debt. Though economic prospects show indications of improvement, further stimulation may be necessary to ensure that it is sustained; meanwhile governments must be sensitive to their debt obligations and ensure that they remain at prudent levels. Therefore the challenge of ascertaining a happy medium arises. Also contributing to this issue is the growth of GDP and the revenue gaining potential of Governments. Given the current

economic environment, and a recovery, that for many economies seems fleeting, the sustainability of debt is heavily reliant on governments' capacity to stimulate GDP growth and boost revenue collection. This issue also, creates a challenge for central bankers to use monetary measures to support fiscal policy and pick-up where fiscal endeavours may have left off.

Also important to note is that, avenues by which deficits are financed play a pivotal role with regards to debt sustainability. From a long-term perspective, debt is only sustainable when it contributes effectively to the development process and should not be disruptive in the process. Excessive internal borrowing can result in Government crowding out the private sector and thus curtailing investment. Meanwhile, incurring external debt increases the exposure of the domestic economy to external influences. Given these scenarios, fiscal prudence is vital to debt sustainability. In this vein a number of countries have taken steps towards fiscal austerity; being sensitive to the reality that the recent surge in their spending and ballooning in their deficits, can seriously affect debt sustainability. The government of the Bahamas is also cognisant of this fact and has therefore outlined numerous measures to reign in the fiscal deficit over time, and ensure that debt levels remain sustainable.

References

- Branch, S. & S. Adderley. (2007). "Fiscal Discipline in The Achievement of Fiscal & Debt Sustainability and Growth in The Bahamas". Paper presented at the Caribbean Centre for Monetary Studies Conference. Belize.
- Cuddington J. (1997). "Analyzing the Sustainability of Fiscal Deficits in Developing Countries". Working Paper Series 1984. The World Bank. Washington.
- Foncerrada, L. (2005). "Public Debt Sustainability. Notes on Debt Sustainability, Development of a Domestic Government Securities Market and Financial Risks", *Análisis Económico*, 44 Volume XX.
- Gunter, B. & Q, Wodon. (2008). "Analyzing Debt Sustainability: Concepts and Tools Applied for Guinea, Rwanda and Senegal". Munich Personal RePEc Archive Paper 10648
- Mishkin, S. F. (1991). "Anatomy of a Financial Crisis", Working Paper Series 3934, National Bureau of Economic Research, Cambridge, Massachusetts.
- Rother, P. (2004). "Fiscal Policy and Inflation Volatility". European Central Bank Working Paper 317, March.
- Roubini, N. (2001). "Debt Sustainability: How to Assess Whether A Country is Insolvent". Stern School of Business, New York University, New York.
- Sahay, R. (2005). "Stabilization, Debt and Fiscal Policy in the Caribbean". IMF Working Paper 05/26, February.
- Samuel, W. (2008). "Cyclicality and Fiscal Policy in the Caribbean: Is There A Case For Fiscal Rules?". Paper presented at the Annual Monetary Studies Conference. Basseterre, St. Kitts.
- Scott-Joseph, A. (2006). "Debt Sustainability in Caribbean Countries: An Exploration of Alternative Methodologies". Paper presented at the Caribbean Centre for Monetary Studies Conference. Bridgetown, Barbados.
- Spilimbergo, A., S. Symansky, O. Blanchard, & C. Cottarelli. (2008). "Fiscal Policy for the Crisis". International Monetary Fund, Washington D.C., IMF.
- Uctum, M. & M. Wickens. (1996). "Debt and Deficit Ceilings, and Sustainability of Fiscal Policies: An Inter-temporal Analysis". Research Paper 9615, Federal Reserve Bank of New York.