

FISCAL FIRST AID

Fiscal First Aid: Returning to a Sustainable Debt Trajectory in The Bahamas

Submission for The T. Baswell Donaldson Research Competition 2022

Abstract

A debt to GDP ratio can be considered high when it rises above 77 percent according to a study done by The World Bank, because after that point any increase would negatively impact real growth.¹ A high debt to GDP ratio indicates that a country may not be producing and selling enough goods or services to pay back its existing debt without requiring even more debt. This research paper will explore how The Bahamas can lower its debt to GDP ratio through the use of fiscal policy, specifically through altering government spending. Throughout 2020, The Bahamas' debt to GDP ratio has had a significant increase of 35 percent because the tourism industry had shut down due to the global pandemic along with the other industries.² With the economy's most profitable industry not operating, GDP has shrunk thus increasing the debt to GDP ratio. This does not bode well for any economy, as it can negatively impact economic growth. The Bahamas' debt to GDP ratio has reached an unsustainable level in the past year and requires remedy to ensure a future of positive progression. This paper will explore a more controversial method of lowering the debt to GDP ratio through fiscal policy, specifically through increasing government spending. The paper will examine studies discussing this method and its potential to change the fate of countries struggling with the same issue. The research done will then be applied to The Bahamas specifically and determine whether or not this is a feasible path for the country to explore.

Keywords: fiscal policy, sustainable debt trajectory, debt to GDP ratio, The Bahamas, government spending, CARICOM, economic growth

¹ The study is titled "Finding the Tipping Point--When Sovereign Debt Turns Bad" by Mehmet Caner, Thomas Grennes, and Fritz Koehler-Geib.

² Retrieved from Central Bank of The Bahamas' Quarterly Statistical Digest May 2021.

Table of Contents

I. ABSTRACT..... 2

II. INTRODUCTION 4

III. LITERATURE REVIEW 7

IV. METHODOLOGY..... 9

V. RESULTS..... 16

VI. DISCUSSION 19

VII. CONCLUSION AND RECOMMENDATION 22

VIII. REFERENCES 24

Introduction

When a country has a high debt to GDP ratio it is put into a more vulnerable position. This can impact economic growth negatively and increase the worries that a country will default on its loans. Due to the global pandemic that began in 2020, the Bahamas' debt to GDP ratio has risen steeply from 64.2 percent in 2019 to 99.5 percent in the following year³. With tourism coming to a complete halt and not picking back up until March 2021, The Bahamas' GDP has suffered according to the Bahamas' Department of Statistics as they reported that GDP contracted by 14.5% in real terms in 2020. The majority of the economy also grinded to a halt, with a number of other industries such as restaurants and retailers being greatly impacted by the pandemic. With the economy slowly coming back to life as vaccinations roll out both nationwide and globally, there is the expectation that GDP will rise again with the increase in economic activity for residents and tourists. This does not mean that the high debt to GDP ratio issue will be forgotten, as all it takes is one more devastating hurricane or financial crisis to put the Bahamas in a state of peril. This problem should be addressed now, as the debt to GDP ratio will continue to impact the world's perception of the Bahamian economy and its sustainability.

There is a conventional approach to reducing a country's debt to GDP ratio called fiscal consolidation. The ratio is comprised of debt as the numerator and GDP as the denominator and fiscal consolidation focuses on reducing the numerator to decrease the ratio as a whole. The aim of this method is to create primary budget surpluses since they allow for a country to increase savings or pay off existing national debt (Greiner, et al., 2011). Countries can achieve a primary

³ Retrieved from Central Bank of The Bahamas' Quarterly Statistical Digest February 2022.

FISCAL FIRST AID

surplus through a decrease in public spending or an increase in tax revenue, and real-world economies tend to decrease public spending as it is easier to control directly (Greiner, et al., 2011). This method works well enough in the short run but can have negative long run impacts. Since economies tend to go with decreasing public investment, a long-lasting high debt to GDP ratio can negatively impact economies' growth rates. A high debt to GDP ratio is a problem for many countries that they just cannot seem to shake, so economists have been looking into more radical solutions. The more controversial method focuses on increasing GDP, the denominator, in order to decrease the debt to GDP ratio. The idea is to increase government investment in an effort to increase GDP at a faster rate than debt is increasing. This increase in government spending is meant to stimulate economic growth rather than stagnate it, as the previous method is likely to do. This option is ideal for slack economies, which are economies with high unemployment, that are struggling with unemployment because the effects of public spending more impactful (Nakamura & Steinsson, 2011). This concept centres on the longevity of economy rather than immediate solutions, so it does make it the chancier option but could be the best opportunity for the economy.

The paper will discuss the practicality of implementing the latter strategy of increasing public investment to increase the growth rate at a faster rate than the national debt is increasing in order to achieve a more sustainable economy in The Bahamas. This will be determined by analysing the criteria that must be met for the implementation of this idea to be achievable and fruitful and whether the Bahamas currently meets those requirements. The most efficient allocation of government spending that allows for maximum growth will also be examined, as well as a past example of a smaller scale public investment and its impact on the country's

FISCAL FIRST AID

economy. Finally, the paper will theorize the ways in which this method could go wrong and the consequences that could occur if this proposal is not carried out effectively.

Literature Review

Investing your way out of debt sounds counterintuitive but could be a viable solution for several countries' high debt to GDP ratio. The focus resides on a long-term solution rather than an instantaneous result. Cashin (1995) found that increased government spending on items that are productive public inputs, public investment is one example presented, does enhance economic growth. These investments generate positive externalities that raise private investment and by extension spurs economic growth. The premise of growing yourself out of debt begins with debt to GDP ratio itself. There are two ways to lessen the ratio: decrease the numerator, or to increase the denominator. The traditional method relies on the former and keeps a tight leash on expenses to increase primary surpluses and allow for enough funds to cover the interest payments on debt. The alternative focuses on the latter, increasing GDP at a faster rate than the rate at which debt is increasing. Leão (2013) wrote a paper to argue that raising government spending can paradoxically lower the debt to GDP ratio for economies that are below full employment. He states that this is possible because if government spending increases, the Keynesian multiplier will raise GDP, as well as tax revenues, but it will lower government transfers such as food stamps or unemployment benefits. In the end, both the numerator and denominator will rise and have an uncertain effect on the debt to GDP ratio but after some calculations, he found that it decreased the ratio for countries below full employment. Leão argues that since a government is eternal it is not obligated to pay its debt in full but that what really matters is not growing the debt to GDP ratio. So, the value of debt is irrelevant, and the matter of importance is the relationship between interest payments generated by debt and the tax flows generated by GDP. With this mindset, he argues that further borrowing pays for itself

FISCAL FIRST AID

through debt that needs not be paid back because of its higher output and a much larger overall output that's makes interest payments on larger debt more affordable. Globan and Matošec's (2016) paper analyses whether fiscal consolidation or economic growth have a greater impact on the debt to GDP ratio. They found that while a budget balance improvement does decrease the growth rate of public debt, it is by a rather small amount and that the estimates for GDP growth were much larger. They end the paper on the note that the key to success is a combination of both strategies, a highly efficient budget paired with stimulating economic growth where there is potential. Furthermore, Nakamura and Steinsson (2011) estimate the impact of government spending in a monetary union and develop multipliers to aid with their estimations. They utilized their open economy relative multiplier to estimate a regression, found that in a country with higher unemployment, the effects of government spending are larger. The traditional route of fiscal consolidation is beginning to not be seen as a viable solution anymore by some economists as Cafiso and Cellini (2012) argue that it often leads to adverse consequences in the medium-run and is not a recommended method of managing the debt-to-GDP ratio.

Methodology

Not every economy is suited for growing oneself out of debt, so there are a few requirements that make this solution possible. The first requirement is that the economy in question must be below full employment for two reasons. Full employment occurs when everyone who wants work and is willing to work at the market wage is employed (*Economic A-Z terms beginning with F*, 2021). Economists also associate full employment with NAIRU, the non-accelerating inflation rate of unemployment, and below this rate the economy is at full employment, businesses struggle to find workers, and inflation and wages usually rise (Zagorsky, 2018). Nakamura and Steinsson (2011) found that increasing government spending has a larger impact on economies with higher unemployment likely because expansionary government spending won't crowd out private consumption or investment in a slack economy and central banks are less likely to enact tighter monetary policy to counteract increased government spending if unemployment is high. Leão (2013) found that below full employment an increase in government expenditure will have an uncertain effect on the debt to GDP ratio. He used the Keynesian closed economy model to derive a condition that determines whether the ratio decreases with an increase in government spending, and that condition is that if the initial debt to GDP ratio is greater than the incremental debt to GDP ratio associated with an increase in spending, then the overall ratio will decrease. Once these two ideas are combined it is clear that an economy that is below full unemployment allows for a much larger rise in GDP when government spending is increased, therefore lowering the debt to GDP ratio. If an economy at full employment tried to employ this strategy it would only result in negligible increases in the

FISCAL FIRST AID

denominator whilst rising the country's debt to new heights, making it essential that the economy be below full employment for this tactic to work (Nakamura & Steinsson, 2011).

The second criterion is that the increased investment must be accompanied by a government budget that is as efficiently allocated as possible. The state budget is seen as the most important law of economic activity and is necessary to meet its monetary needs whilst fulfilling economic, social, and political functions (Badwan et al., 2017). Whilst increasing government spending to decrease the debt to GDP ratio might have been introduced as an alternative to fiscal consolidation, that does not mean that optimizing the budget to reduce unnecessary expenses should be put on the backburner as Globan and Matošec (2016) concluded that a combination of the two ideas will likely provide the best results for countries both in the short and long run. According to the International Monetary Fund, an effective budget controls the aggregate expenditure to ensure affordability, allocates resources in way the reflects expenditure policy priorities, and efficiently delivers public services. These priorities must still be maintained in conjunction with an emphasis on economic growth.

To determine theoretically if the Bahamas would be able to effectively increase government spending as a tactic to decrease the debt to GDP ratio, the paper will be utilizing the framework used by Leão to discover the possibility for success with this method. Leão (2013), in addition to deriving a condition that determines whether the ratio decreases with an increase in government spending, also presented an expression that yields the minimum value of the Keynesian multiplier that makes an increase in government expenditure reduce the debt to GDP ratio. The expression is:

FISCAL FIRST AID

$$m > 1/(Y/B + \tau)$$

m is the Keynesian multiplier ($\partial Y / \partial G$), Y/B is the initial debt to GDP ratio, and τ is the effect an increase in output on tax revenues net of government transfers ($\partial (T - Tr) / \partial Y$). He based the expression off of the Keynesian closed economy model where output for an economy below full employment and interest rates are fixed by the Central Bank is:

$$Y = C(Ydisp, i) + I + G$$

C represents consumption, $Ydisp$ is disposable income, i is interest rates, I is investment, and G represents government expenditure. Disposable income is output minus taxes, T , plus government transfers, Tr . His proof begins with an expression that shows that if debt rises by relatively less than GDP, an increase in government spending will reduce the debt-to GDP ratio:

$$\Delta B/B < \Delta Y/Y$$

Then the increase in income due to additional stimulus, $\Delta Y = m\Delta G$, and the change in debt due to that additional stimulus, $\Delta B = \Delta G - \tau\Delta Y$, plugged into the previous expression:

$$(\Delta G - \tau\Delta Y)/B < (m\Delta G)/Y$$

That is equivalent to both of these expressions:

$$B/Y > (\Delta G - \tau\Delta Y) / (m\Delta G) (= \Delta B / \Delta Y)$$

$$B/Y > 1/m - \tau$$

This expression can be used to estimate the minimum value of the multiplier that allows for an increase in government stimulus to decrease the debt to GDP ratio. The current initial debt to

FISCAL FIRST AID

GDP ratio of a specific country can be used in the calculation and can be supplemented as Leão did by also using debt to GDP ratios of 60 and 90 percent. Leão estimated the response of tax revenues and government transfers to an increase in output, by using GDP percent growth, GDP growth against the trend of growth, changes in governments social expenditure, as well as the change in total tax revenues over the change in GDP, and is denoted as $\tau = \partial (T - Tr) / \partial Y$. The intuition behind the expression is that an increase in government spending will reduce the debt to GDP ratio, if debt rises by relatively less than GDP rises. The paper will utilize Leão's expression to determine what is the minimum value of the multiplier for the Bahamian economy to implement an increase in government spending that reduces the debt to GDP.

Table 1

Responses of government transfers and tax revenues to increases in GDP in The Bahamas

	2018	2019	2020	2021
1. GDP Growth (%) ⁴	3.03	1.22	-16.28	1.998
2. GDP Growth Rate vs. trend ⁵	2.11	0.3	-17.2	1.08
3. Change in government social expenditure ⁶	0.06	-0.095	1.28	-0.54

⁴ GDP growth is retrieved from the series 'Gross Domestic Product, constant prices, Percent change' of the IMF World Economic Outlook Database, April 2021. <https://www.imf.org/en/Publications/WEO/weo-database/2021/April>

⁵ Trend is measured as the average growth rate in 1990–2020: The Bahamas' is 0.92.

⁶ In percentage points of the previous year GDP. Social expenditure data retrieved from budget reports published by the Bahamian Ministry of Finance for years 2018 to 2021. GDP data was retrieved from the 'National Accounts Report 2020' and 'Advance Estimates for Gross Domestic Product 2021' published by the Bahamian Department of Statistics.

FISCAL FIRST AID

4. $-\partial Tr / \partial Y = - [(3)/(2)]$	-0.03	0.32	0.07	0.05
5. Estimate of $\partial T / \partial Y$ based on the 2018-2020 average of Δ total tax revenues/ Δ GDP ⁷	0.452			
6. Estimate of $-\partial Tr / \partial Y$ based on its 2018-2020 average	0.10			

Table 2

Initial debt ratios equal to debt ratio at the end of 2018, 2019, and 2020

	Debt ratio ⁸	$\partial T / \partial Y - \partial Tr / \partial Y$	Minimum value of the multiplier that makes an increase in government spending reduce the debt ratio
2018	64.3%	0.55	0.84
2019	64.2%	0.55	0.84
2020	99.5%	0.55	0.65
2021	100.3%	0.55	0.64

⁷ Tax revenue data retrieved from the ‘Nine Month Fiscal Snapshot’ reports published by the Bahamian Ministry of Finance for years 2018 to 2020.

⁸ Retrieved from Central Bank of The Bahamas’ Quarterly Statistical Digest February 2022.

FISCAL FIRST AID

The third and final condition is that the Bahamas' government spending multiplier must be above the minimum value that results in an increase in government spending reducing the debt to GDP ratio that was previously calculated. The multiplier is derived using the Aggregate Expenditures model where the equilibrium condition is:

$$AD = AS$$

$$Y = \text{Income} = \text{RGDP}$$

$$Y = C + I + G + NX$$

Consumption is dependent on disposable income, resulting in:

$$C = C_0 + MPC*(Y-T)$$

C_0 is autonomous consumption, MPC is the marginal propensity to consume, or the percentage of personal income that is spent on consumption, and T is tax on personal income. When the consumption equation is plugged into the GDP equation it becomes:

$$Y = C_0 + MPC*(Y-T) + I + G + NX$$

It is assumed that Y , T , I , G and NX are autonomous of income level and combined with C_0 under the same fixed term A :

$$Y = C_0 + (MPC*Y - MPC*T) + I + G + NX$$

$$Y = MPC*Y + A$$

$$Y - MPC*Y = A$$

$$(1 - MPC) * Y = A$$

FISCAL FIRST AID

Dividing both sides by $1 - MPC$, the equation becomes $Y = (1/(1-MPC)) * A$ and the multiplier is:

$$\text{Change in RGDP} = (1 \div (1 - MPC)) * (\Delta G)$$

Marginal propensity to consume represents the proportion of an additional dollar income that is spent on consumption rather than saving it (Ross, 2019). Since lower income households tend to have a higher marginal propensity to consume, a country's marginal propensity to consume is largely impacted by the distribution of wealth (*Wealth inequality and the marginal propensity to consume*, 2014). The average government spending multiplier in the Caribbean is 0.13 in the short run, 0.6 in the medium run, and 0.53 in the long run (Narita, 2014). Narita attributes the lower multiplier to the fact that fiscal policy would be less effective if it led to an increase in imports rather than stimulating domestic consumption and investment. Furthermore, the author highlights that high public debt is another crucial factor that lowers the multiplier, with the cumulative multiplier for high-debt countries becoming essentially zero after two years whilst the multiplier for low-debt countries converges to 0.77 and is statistically significant.

Results

The ability to successfully relies on three criteria that are at the core of the tactic of reducing the debt to GDP ratio by increasing government spending. The first requirement is an economy that is below full employment as some economists have found that it allows for government spending to have a much larger on impact on GDP. This prerequisite is what makes this strategy possible. The Bahamas' unemployment rate rose from 9.9% in 2019 to 25.6% in 2020 (*Labour Force Survey Report*, 2020). The Bahamas' unemployment rate has been rising in the past ten years but was beginning to fall back down in the latter half of the past decade. To determine whether The Bahamas is below full employment it is helpful to see that the United States places their NAIRU at 4.45% (*Natural Rate of Unemployment (Short-Term) [NROUST]*, 2021). With an unemployment rate exceeding twenty-five percent, it is very likely that the Bahamian economy is below full employment.

Public expenditure has increased by 7% over the past 20 years in the Caribbean and Latin America but has failed to increase the quality of physical or human capital or have a lasting positive social impact (Izquierdo & Pessino, 2018). The authors highlight that the prevalent issue facing governments has been wasteful and inefficient expenditure in weak budgets. The Bahamas' GDP has grown over the past ten years, excluding 2020, but not in leaps and bounds. National budgets throughout the past years have done well at keeping the country afloat and handling the major problems facing the country at the time but could be improved by focusing more on investing in endeavours that prioritise medium and long-term growth such as public spending, sustainable tourism, and hurricane-proof infrastructure (*The Bahamas 2020 Article IV Consultation—Press Release; Staff Report; and Statement by the Executive Director for The*

FISCAL FIRST AID

Bahamas, 2021). Whilst the Bahamas' budgeting has sufficed in the past to maintain the stability of the economy, but in order to make this strategy actionable there would have to be major adjustments to minimize inefficient expenditures and maximize meaningful investments into the Bahamian economy.

Table 1 gathers the data necessary for the minimum value of the multiplier that makes an increase in government spending reduce the debt to GDP ratio. The first value is GDP growth as a percentage which begins with 3.03% in 2018 as the economy was growing. It fell to 1.22% in 2019, most likely due to the Hurricane Dorian that devastated the northern islands Abaco and Grand Bahama. GDP growth plummeted in 2020 to -16.28%, due to the global pandemic that stunted economies worldwide but recovered in 2021 with a growth rate of 1.998% due to the introduction of the vaccine. The second value is GDP growth against trend, which is the average GDP growth rate from 1990 to 2020 and calculating the difference between the two values. Trend was calculated to be 0.92%, and resulted in 2.11% in 2018, 0.3% in 2019, 17.2% in 2020, and 1.08% in 2021. The third value is the change in social expenditure, using the values labelled Social Assistance Benefits in the budget reports issued by the Ministry of Finance, and was found to be 0.06% in 2018, -0.095% in 2019, 1.28% in 2020, and -0.54% in 2021. The difference between GDP growth against trend and change in social expenditure results in $-\partial Tr/\partial Y$, one component of the response of tax revenues and government transfers to an increase in output. The four values -0.03%, 0.32%, 0.07%, and 0.05% averaged to 0.10%. The estimate of $\partial T/\partial Y$, the other half of the response of tax revenues and government transfers to an increase in output, was based on the average of changes in total tax revenues over changes in GDP from 2018 to 2020. Table 2 presents the data needed to compute the minimum multiplier value. The response

FISCAL FIRST AID

of tax revenues net government transfers to an increase in output ($\partial T/\partial Y - \partial Tr/\partial Y$) was calculated to 0.57. The minimum value of the multiplier that makes an increase in government spending reduce the debt to GDP ratio was calculated using debt ratios from 2018, 2019, 2020, and 2021 and were 0.84, 0.84, 0.65, and 0.64 respectively.

In terms of the Bahamas' multiplier, the Caribbean's regional government spending multiplier was estimated to be around 0.5. The multiplier is most impacted by trade openness and the amount of public debt. Currently, the Bahamas is suffering from a debt to GDP ratio that is above ninety percent and trade accounts for seventy-six percent of GDP.⁹ The high debt to GDP ratio is a deviation from the normal levels of the ratio, which typically fell around 60% in the past decade, but the Bahamas does rely on trade in almost every industry.¹⁰ With the current amount of public debt and high degree of trade openness, The Bahamas' government spending multiplier is likely to fall just below the 0.5 Caribbean average.

⁹ Trade as a percentage of GDP retrieved from the series 'Trade (% of GDP) – Bahamas, The' of The World Bank DataBank. https://data.worldbank.org/indicator/NE.TRD.GNFS.ZS?locations=BS&name_desc=false

¹⁰ Debt to GDP ratios retrieved from Central Bank of The Bahamas' Quarterly Statistical Digests 2010 to 2021.

Discussion

Once a country has decided to increase their government spending, the million-dollar question is where to allocate that spending. The general aim is to stimulate economic growth, so the spending must go towards programs and projects that allow for potential growth. An obvious investment would be an education reform because an improvement in students' academic performance results in increased skills and productivity as well as labour force participation (Fournier & Johansson, 2016). If the reform targeted secondary school completion it would have the added benefit of reducing education inequality and possibly income equality (Fournier & Johansson, 2016). Another avenue is public investment, specifically in the health sector and research and development, as a one percent increase would increase the long-term GDP level by five percent (Fournier, 2016). This is because public investment can boost productivity in an economy. A similar thought is to increase capital expenditures, as every 1% of GDP spent on it has a significant positive impact on annual real growth by slightly more than 0.1% for developing nations with ineffective governments (Butkiewicz & Yanikkaya, 2011). Butkiewicz and Yanikkaya specify that an ineffective government is weak, corrupt, and may have large expenditures that are unproductive for the economy. A capital expenditure, such as road construction, can have very different impacts depending on the effectiveness of a government.

The Bahamas is no stranger to large capital investments, namely the highway that connects all parts of the island of New Providence. The Bahamas' public foreign debt increased by 110 million dollars in December of 2008 in the height of a global recession to fund various

FISCAL FIRST AID

capital investments including the New Providence Roads Project.¹¹ This project was meant to improve the infrastructure of the country to instigate more economic growth.¹² GDP growth fell by over 2 percent in 2008 and continued to fall by 4 percent in 2009 as the global recession worsened but finally strengthened in 2010 and 2012 with a growth rate of 1.5 and 3.1 percent respectively.¹³ The fall is likely to attributed to the United States 2008 recession that reverberated worldwide. Since the construction of the roadways GDP has continued to grow, but not in a positive slope so the likelihood that there is a direct correlation between these two variables is low. Another possible reason as to why this project did not have a significant impact upon GDP growth is because the company contracted for the construction of the highway was an Argentinian company, despite the fact that there was a Bahamian company capable of completing the task (Public Accounts Committee, 2012). By not hiring local workers, the money invested in the project left the country rather than enriching the domestic economy. In the end, it has had a positive impact on Bahamians' daily lives and can be considered progress for infrastructural development in the country, but not enough to significantly increase the growth rate.

There is a plethora of ways the implementation of this strategy can go wrong. A major threat to the success is the political landscape, as elections occurs every five years in the Bahamas meaning that parties spend either five or ten years in office if re-elected. With that in

¹¹ Figure retrieved from The Central Bank of The Bahamas' 'Monthly Economic and Financial Developments' December 2008 issue.

¹² Mentioned in the 'Budget Communication 2009/10' by the Bahamian government.

¹³ GDP Growth retrieved from the series 'GDP growth (annual %) – Bahamas, The' of The World Bank DataBank. <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=BS>

FISCAL FIRST AID

mind, if one party decided to implement this strategy and power switches to the other party, there is a possibility of the new power disregarding the previous party's work. If the project is stopped before it can really get started, it would just be a splurge of government expenditure with little potential for long-term growth. Another complication would be another devastating natural disaster, akin to Hurricane Dorian in 2019, to completely devastate the country. If a detrimental storm occurs, then the government will be focused on disaster relief above all else and any other project would have to be postponed at the very least. Capital investments focused on infrastructure could be rendered completely unusable by a storm. There is also potential to not allocate efficiently, thus increasing debt with little to no potential for economic growth and putting the country in an even worse economic position. To conclude, there are many risks, both natural and economic, associated with undertaking this project in the Bahamas due to its physical and political landscape.

Conclusion and Recommendation

The Bahamas is currently at a turning point in its progression as a country. With a high debt to GDP ratio induced by a global pandemic, debt sustainability has become an increasing concern for local economists. The paper sought to determine whether the non-traditional method of reducing the debt to GDP ratio by raising government spending would be viable for the Bahamas. It was found that the minimum government spending multiplier necessary for an increase in government expenditure to reduce the debt to GDP ratio, using the 2021 debt to GDP ratio, is 0.64 and that the Caribbean's regional multiplier falls at around 0.5. Since The Bahamas currently has a high public debt and is very open to trade, its government spending multiplier is likely to be below the regional average. In the current economic landscape, it is unlikely that an increase in government spending will lower the debt to GDP ratio. The optimal time to implement an increase in government spending would be prior to the economy's full recovery. Real GDP is not expected to return to pre-pandemic levels until 2024, reducing the debt to GDP ratio as it rises.¹⁴ The government spending multiplier would be stronger in this time, with public debt decreasing but not so much so that the minimum multiplier value would increase by over ten percent. Furthermore, the higher level of unemployment will strengthen the multiplier, as government spending has a much larger impact in slack economies. This idea could also be implemented during an economic downturn as the conditions, higher unemployment and a lower minimum multiplier required, would be ideal. The paper's recommendation for the time prior to implementation is to reallocate public spending more efficiently, specifically towards education

¹⁴ Prediction for recovery was retrieved from the IMF's Country Report titled 'The Bahamas: 2020 Article IV Consultation'.

FISCAL FIRST AID

and infrastructure, in order to stimulate GDP growth without worsening the current economic conditions. If the strategy is given the go ahead, then any increase in government spending should continue to be allocated towards education, infrastructure, and research to further the Bahamian economy's development. In conclusion, whilst the Bahamas is a candidate for the more unconventional method of reducing the debt to GDP, it is not currently an actionable suggestion because of the fragility of the economy at the moment. Despite this, this concept of reducing the debt to GDP ratio by raising public spending that accelerate growth and development should be kept in consideration in the future for the Bahamas.

References

- Badwan, N. L., Blazhenkova, N. M., Klicheva, E. V., Karaev, A. K., & Yarullin, R. R. (2017). Increasing the efficiency of the state fiscal and budgetary policy in modern conditions. *International Journal of Applied Business and Economic Research*, 15(23), 125-138.
- Bahamas Government Debt to GDP. *Trading Economics*.
<https://tradingeconomics.com/bahamas/government-debt-to-gdp>
- Bangwayo-Skeete, P. F. (2011). Is Discretionary Fiscal Policy Effective? The Caribbean Experience. *Conference on Economic Growth, Development and Macroeconomic Policy*.
- Blanchard, O. (2021). *Macroeconomics* (8th ed.). 221 River Street, Hoboken, New Jersey: Pearson.
- Butkiewicz, J. L., & Yanikkaya, H. (2011). Institutions and the impact of government spending on growth. *Journal of Applied Economics*, 14(2), 319-341.
- Cafiso, G., & Cellini, R. (2012). Fiscal consolidations for debt-to-GDP ratio containment? Maybe... but with much care. *VoxEU.org*, 20. https://voxeu.org/article/fiscal-consolidations-debt-gdp-containment?quicktabs_tabbed_recent_articles_block=0
- Caner, M., Grennes, T., & Koehler-Geib, F. (2010). Finding the tipping point--when sovereign debt turns bad. *The World Bank Policy Research Working Paper* No. 5391
- Cashin, P. (1995). Government Spending, Taxes, and Economic Growth, *IMF Staff Papers*, 1995(002), A001. <https://doi.org/10.5089/9781451947205.024>

FISCAL FIRST AID

Central Bank of The Bahamas (2022, February). Quarterly Statistical Digest.

Dinerstein, M., He, Z., Sun, X., & Berkovich, E. (2021, February). Background: Marginal Propensities to Consume in the 2021 Economy. *Penn Wharton, University of Pennsylvania Budget Model*.

<https://budgetmodel.wharton.upenn.edu/issues/2021/2/3/background-mpc-in-2021-economy>

Fournier, J. M. (2016). The positive effect of public investment on potential growth. *OECD Economics Department Working Paper No. 1347*

Fournier, J. M., & Johansson, Å. (2016). The effect of the size and the mix of public spending on growth and inequality. *OECD Economics Department Working Paper No. 1344*

Globan, T., & Matošec, M. (2016). Public Debt-to-GDP Ratio in New EU Member States: Cut the Numerator or Increase the Denominator?. *ESPERA, 19(3)*.

Greiner, A., Koeller, U., & Semmler, W. (2007). Debt sustainability in the European Monetary Union: Theory and empirical evidence for selected countries. *Oxford Economic Papers, 59(2)*, 194-218.

Hartnell, N. (2021, May 25). From ‘Burners To Earners’ As Debt At 100% Of Gdp. *The Tribune*.
<http://www.tribune242.com/news/2021/may/25/burners-earners-debt-100-gdp/>

Hennerich, H. (2020). Debt-to-GDP Ratio: How High Is Too High? It Depends. *Federal Reserve Bank of St. Louis*. <https://www.stlouisfed.org/open-vault/2020/october/debt-gdp-ratio-how-high-too-high-it-depends>

FISCAL FIRST AID

International Monetary Fund (2021, January). The Bahamas 2020 Article IV Consultation—
Press Release; Staff Report; and Statement by the Executive Director for The Bahamas.
IMF Country Report No. 21/24

International Monetary Fund. Budget Preparation.

<https://www.imf.org/external/pubs/ft/extend/guide3.htm>

Izquierdo, A., & Pessino, C. (2018). Chapter 3. The (In)Efficiency of Public Spending. *In Better Spending for Better Lives. Inter-American Development Bank.*

<https://flagships.iadb.org/en/DIA2018/chapter-3-inefficiency-public-spending>

Leão, P. (2013). Effect of Government Spending on the Debt-to-GDP Ratio. *Metroeconomica*, 64: 448-465. <https://doi.org/10.1111/meca.12013>

Nakamura, E., Steinsson, J. (2011). ‘Fiscal Stimulus in a Monetary Union: Evidence from U.S. Regions’, *NBER Working Paper* No. 17391.

Narita, M. (2014). Chapter 8. Fiscal Multipliers in the Caribbean. *In Caribbean Renewal. USA: International Monetary Fund.* <https://www.elibrary.imf.org/view/books/071/20625-9781484369142-en/ch08.xml>

Public Accounts Committee (2012, March). Review of the Nassau Road Improvement Project and Related Government Spending.

https://www.bahamaslocal.com/files/PAC%20Interim%20Report%20Road%20Project%203_BJN%5b1%5d.pdf

FISCAL FIRST AID

Ross, S. (2019, June). How Do You Calculate Marginal Propensity to Consume?. *Investopedia*

<https://www.investopedia.com/ask/answers/050115/how-do-you-calculate-marginal-propensity-consume.asp>

Subhashree, P. (2020, October 25). Rise in Public Debt-to-GDP Ratio: How Does It Impact an

Economy?. *Transfin*. <https://transfin.in/rise-in-public-debt-to-gdp-ratio:-how-does-it-impact-an-economy>

The Department of Statistics in The Bahamas (2022, April). Advance Estimates for Gross Domestic Product 2021.

The Department of Statistics in The Bahamas (2020, September). Labour Force Survey Report May 2019.

The Department of Statistics in The Bahamas (2021, June). National Accounts Report 2020.

The Economist (2021). Economic A-Z terms beginning with F.

<https://www.economist.com/economics-a-to-z/f#node-21529900>

The Government of The Bahamas (2009, May). 2009/10 Budget Communication.

The Ministry of Finance, The Bahamas (2019, April). Nine-Months Consolidated Fiscal Snapshot and Report on Budgetary Performance.

The Ministry of Finance, The Bahamas (2020, April). Combined Nine Month Fiscal Snapshot & Report.

The Ministry of Finance, The Bahamas (2021, April). Combined Nine Month Fiscal Snapshot & Report on Budgetary Performance.

FISCAL FIRST AID

The Ministry of Finance, The Bahamas (2022, January). Mid-Year Budget Performance.

U.S. Congressional Budget Office (2021, June). Natural Rate of Unemployment (Short-Term) [NROUST]. *FRED, Federal Reserve Bank of St. Louis.*

<https://fred.stlouisfed.org/series/NROUST>

Washington Center for Equitable Growth (2014, December). Wealth inequality and the marginal propensity to consume. <https://equitablegrowth.org/wealth-inequality-marginal-propensity-consume/>

Zagorsky, J. L. (2018, May 4). What is full employment? An economist explains the latest jobs data. *The Conversation*. <https://theconversation.com/what-is-full-employment-an-economist-explains-the-latest-jobs-data-95908>