The Effect of Grenada's Hurricane Clause on Interest Rates and Sustainability

A Comparative Case Study using Grenada and Belize

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INTRODUCTION

Natural disasters have long plagued the Caribbean, often causing major disruption to the local economies. This vulnerability, coupled with the fact that these economies are generally both small and homogenous, puts these island nations at higher risk of economic instability and default. In 2015, Grenada underwent a restructuring in which a hurricane clause was added to the bonds tendered in the exchange. The clause allows for debt relief in the event that Grenada is hit by a hurricane. I look at how this hurricane clause affects the interest rates faced by Grenada, and therefore Grenada's long run sustainability. To do this, I compare Grenada to Belize, another small, homogenous economy which is also affected by hurricanes but does not have a hurricane clause in their restructured debt. I explain how each country went about restructuring their debt, and how it affected interest rates and overall growth and investment after the restructuring.

In section I, I briefly go over the debt restructuring process and how it has evolved in the last half century. In section II, I introduce Grenada and Belize and explain why they can be adequately compared. I also describe each country's debt profile prior to Hurricane Ivan in 2004. In section III, I move on to discuss each country's restructurings and the contents of each plan. I provide a difference-in-difference analysis in section IV that shows the effect of the hurricane clause on interest rates and investment spending as a ratio to GDP. After analyzing the hurricane clause's effects, I discuss why similar clauses should (or should not) be used in the debt restructuring of other vulnerable countries in section V.

SECTION I: RESTRUCTURING

Historically, sovereign defaults have provided a whole host of legal, political and economic issues. How debt payments are to be enforced and what happens when a country can no longer make payments on debt are just two of the issues defaults raise. From 1950 to 2010, there have been over 600

individual cases of countries defaulting.[1] Oftentimes, these defaults come in clusters. Grenada's initial default came in a wave of defaults from 1998 to 2004. In the past, sovereigns have been protected from being sued in foreign courts without consent.[2] However, in 1976, the Foreign Sovereign Immunities Act (FSIA) passed which allowed private parties in the United States to sue foreign governments over commercial activity. Countries can now be held legally accountable in U.S. courts. According to Trebesch, more legislation, and greater attention given to these issues have led to quicker, and generally less painful restructurings since the 1990s. However, the Caribbean has been a constant source of concern due to its susceptibility to natural disasters and its relatively small and non-diverse economies.

SECTION II: BEFORE HURRICANE IVAN (1990-2004)

Grenada

Grenada is a sovereign state located in the West Indies that falls under the control of the Eastern Caribbean Central Bank which includes the countries of Anguilla, Antigua and Barbuda, the Commonwealth of Dominica, Montserrat, Saint Christopher (St. Kitts) and Nevis, Saint Lucia, and Saint Vincent and the Grenadines. From its independence in 1974 to the early 2000's, Grenada's growth was promising. From 1980 to 1999, Grenada had an average growth rate of 4.5 percent.[3] Grenada also received preferential treatment from the EU as a former colony, as they had special access to Europe's agriculture market. They had also tapped into the European and North American tourist industry. However, growth slowed and became more volatile from 1999-2004. The preferential trade agreements with the EU had dissipated, and tourism, although a large driver of growth in the past few decades, was largely dependent on outside forces which made it unreliable. Negative shocks to Europe or the Americas proved fatal to Grenada's economy. By 2002, the country had racked up a large amount of debt in an

[1] Trebesch, Christoph, et al. (2012)
[2] Panizza, Ugo, Federico Sturzenegger, and Jeromin Zettlemeyer (2009)
[3] Asonuma, Tamon, et al. (2017) "Sovereign Debt Restructurings in Grenada: Causes, Processes, Outcomes, and Lessons Learned"

attempt to counteract slow growth through expansionary fiscal policy. The debt to GDP ratio rose from just 35 percent in 1999 to 80 percent in 2002. In June of 2002, the government issued a 100 million dollar international bond as the country faced growing financial needs. The debt was used to finance existing debt and to pursue important investment projects. Grenada also issued domestic 91-day treasury bills in the amount of 91 million Eastern Caribbean dollars, or approximately 33.7 million U.S. dollars. Unfortunately, Hurricane Ivan only exasperated Grenada's public debt problem and led to approximately 900 million U.S. dollars of damage, or 200 percent of GDP. By the end of 2004, the debt to GDP ratio stood at 130 percent.

Belize

Belize, also a Caribbean nation, is found on the northeastern coast of Central America. Belize gained its independence from the United Kingdom in 1981.[4] Due to their former status as a colony, Belize also had preferential access to European agriculture markets. Much like Grenada, Belize grew at a relatively high rate in the 1990's at an average of 5.8 percent but slowed in the 2000s. In response to the slower growth, Belize took on large quantities of debt to support expansionary policies. Deteriorating trade policies with the EU and hurricanes in the 2000s weakened Belize's position.

Comparison

Grenada and Belize have a lot of parallels. They are both small, homogenous economies in the Caribbean that rely heavily on agriculture and tourism. They were both former European colonies that received their independence within ten years of each other. Preferential treatment in the agriculture sector was given to both countries by the EU. Both had periods of high growth from independence to the late 1990s. In the early 2000s, both countries faced slowing growth due to the breakdown of the favorable

[4] Vasilyev, Dmitry (2019)

trade agreements with the EU, damage caused by hurricanes, and the volatility of the tourism industry. In response, Belize and Grenada took on large amounts of debt to implement expansionary policies. They both underwent two separate restructurings, each falling within a few years of one another. These similarities help to isolate the effects of the hurricane clause explored in the next section.

SECTION III: RESTRUCTURING (2004-2015)

Grenada

On October 1, 2004, Grenada formally announced its plan to address debt sustainability concerns and asked for cooperation from its creditors. Grenada would need to undergo a large reconstruction with outside help from the Caribbean Development Bank (CDB), the IMF, and the World Bank. Followed by missed interest payments on the international bond in December 2004, Grenada was downgraded to "selective default" by S&P. In 2005, Grenada enlisted financial and legal advisors to begin the restructuring process. At the time, 71 percent of their debt was held by foreign investors while the other 29 percent was domestic debt (Asonuma 2017). Both external and domestic private debt was targeted which left official creditors and holders of T-bills at a disadvantage. T-bills were not included in the debt restructuring because they were needed to keep government operations afloat during negotiations. Grenada went to its bilateral creditors asking for full debt forgiveness. These bilateral creditors, however, wanted an IMF-supported program. A debt committee that represented approximately 70 percent of Grenada's commercial external debt was formed and negotiations began. The focus was on near-term cash flow relief.

On September 15, 2005, the commercial debt resturing plan, covering approximately 47 percent of the total public debt, was completed. The plan included domestic claims amounting to US$76.8 million and external claims of US$171.6 million. The claims included the capitalization of past-due interest that

had accrued over the ten months prior.[5] The restructuring was executed using two instruments: an Eastern Caribbean dollar-denominated bond for domestic claims, issued under domestic law, and a U.S. dollar-denominated bond, issued under New York law, for external claims. Both bonds received no principal haircut with a final maturity in 2025 with amortization starting in 2020 and a step-up coupon plan that began in 2011. On average, maturity was extended by 11.7 years. The participation rate was 93 percent on the external claims and 86 percent on the domestic claims. Creditors were incentivized to cooperate because of a relatively high return profile, high costs of litigation, and the illiquidity of the original bonds which made outright sales much harder. Grenada also addressed their official bilateral creditors with an IMF supported program at the request of certain Paris Club creditors. A total of US$16 million claims were treated. At the end of the day, losses to Paris Club creditors were much smaller than those to private sector creditors. Although this plan provided significant liquidity relief, Grenada's debt sustainability remained a problem. Following the restructuring, Grenada faced lower-than-expected growth due to negative shocks which led to the government using an expansionary policy. The debt to GDP ratio remained high. The first restructuring was only the beginning of Grenada's fight for sustainable debt.

In 2013, a second debt restructuring plan was initiated. In this plan, the original hurricane Clause was formed. Both Grenada and creditors alike recognized the vulnerability of the Caribbean to adverse weather shocks, and as a result, introduced the first hurricane Clause. It stated that in the case of a hurricane, both principal and interest payments could be postponed. This would give immediate relief to Grenada and give them time to get back on their feet. Grenada's hurricane Clause was translated into three different versions, targeting different creditors. For private bond holders, the hurricane Clause is triggered in the case of a hurricane that results in over US$15 million of damage. The clause allows for delayed payments on interest and principal with a 6 month moratorium if damages are within the range of

[5] Asonuma, Tamon, et al. (2017) "Sovereign Debt Restructurings in Grenada: Causes, Processes, Outcomes, and Lessons Learned"

US$15-30 million and a 12 month moratorium if damages are above US$30 million as assessed by the Caribbean Catastrophe Risk Insurance Facility Segregated Portfolio Company (CCRIF SPC).[6] The use of the CCRIF SPC was critical for fairness and objectivity. For Taiwan, the clause is triggered in the case of any natural disaster, including earthquakes or excess rainfall, that the CCRIF SPC deems as having over US$15 million of damage. The payment moratorium on interest and principal is 12 months with two payment dates. The third clause for the Paris Club creditors is analyzed on a case to case basis in the event of a hurricane. There is no minimum damage that needs to occur for the clause to be triggered, and specific moratorium timeframes are not specified. The addition of the hurricane clause to new bond agreements was an attempt to recognize, and in some way rectify, the challenges that natural disasters can impose on a small economy such as Grenada.

Belize

Facing similar challenges, Belize underwent its first restructuring in 2006. The deal was concluded in a collaborative manner with high creditor participation and introduced a single external bond with longer maturity than those of the original instruments, thus providing liquidity relief.[7] Expansionary fiscal policy that was used to counter the slow growth and damage of hurricanes of the early 2000s resulted in imbalances in the fiscal account. In an attempt to stimulate the economy further, Belize also increased capital spending and lowered taxes. The overall deficit rose by an average of 6 percentage points from 1996-98 to 2000-04. By 2003, Belize had a debt to GDP ratio of 100 percent, totaling over US$ 990 million with 95 percent of the total public debt being held by external creditors. In 2005, the amount of external debt had risen to US$1.1 billion. By the end of the year, Belize's international reserves fell below one month of important coverage, leaving them extremely vulnerable to adverse shocks. In

[6] Robinson, Michele (2016)
[7] Asonuma, Tamon, et al. (2017) "Sovereign Debt Restructurings in Belize: Debt Sustainability and Financial Stability Aspects."

August of 2006, Belize announced its intention to restructure with the help of a formal creditor committee that represented approximately 51 percent of the affected debt. After the announcement, bond prices continued to fall. Only external commercial debt was targeted, as eliminating external vulnerabilities remained the main target (Erce 2010). T-bills and domestic debt would also be difficult to restructure because the banks would need to be recapitalized. On December 18, 2006 Belize announced its formal debt offer. It included US$348 million of global bonds, US$53 million of bank notes, and two insured loans consisting of US$115 million. The restructuring was enacted through a single instrument called the "super-bond." There was no principal haircut with a final maturity in 2029, amortization starting in 2019, and a step-up coupon structure. Maturity was extended by 16 years on average. There was a 98 percent participation rate. Although there was significant liquidity relief, solvency remained a concern (Asonuma 2017).

In 2012, Belize underwent its second restructuring. From 2007- 11, adverse weather shocks and structural issues led to lower than expected growth of only 1.9 percent on average compared to 5.4 percent from 2002-06. In October 2012, negotiations between Belize and the creditor committee began. After Belize's first proposal, the creditor committee offered an alternate plan. After the proposal went back and forth a few times, they officially reached an agreed upon plan in February 2013 with full creditor participation. New 2038 bonds were issued, totalling US$530 million. The original "super-bond" faced a 10 percent face value haircut, but it included overdue interest. The final maturity date was pushed back until February 2038 instead of 2029 under the first restructuring terms. This plan provided some cash-flow relief and debt service relief, but needed to be complimented with changes in macroeconomic policy to be fully effective.

SECTION IV: ANALYSIS

Using data from the Eastern Caribbean Central Bank, the Central Bank of Belize and the IMF World Economic Outlook, Table 1 and Table 2 show the weighted average of interest rates on government securities, GDP growth in percent, government revenue as a percent of GDP, government expenditure as a percent of GDP, and government gross debt as a percent of GDP from 2003 to 2018. The bold line through each table indicates when the second restructuring was finished. In order to analyze the effects of the hurricane clause, there will be a difference-in-difference analysis comparing Grenada's interest rates on government securities before and after the second restructuring to Belize's interest rates on government securities before and after the second restructuring. To do this, the following equation is used:

$$(\bar{i}^{G}_{A} - \bar{i}^{G}_{B}) - (\bar{i}^{B}_{A} - \bar{i}^{B}_{B})$$

Grenada's average interest rates on government securities, from 2003 to 2015, were 5.91 percent. From 2016 to 2018, Grenada's average interest rates were 4.31 percent. Belize had an average interest rate of 2.83 percent from 2003 to 2013 and 0.53 percent from 2014 to 2018. Adding this to our equation, we get:

$$(4.31 - 5.91) - (0.53 - 2.83)$$
$$= -1.60 - -2.30$$
$$= 0.70$$

Grenada saw an average decrease in interest rates after the restructuring of 1.60 percentage points while Belize saw an average decrease of 2.30 percentage points. The difference between the two differences can be attributed to the hurricane clause. The hurricane clause appears to have added an additional 0.70 percentage points to Grenada's average interest rates on government securities. To check for significance the following regression is used with results shown in Table 3:

$$\bar{i} = \beta 0 + \beta 1*[\text{After}] + \beta 2*[\text{Grenada}] + \beta 3*[\text{After*Grenada}] + \varepsilon$$

The time period following the restructurings is associated with a 2.304 percentage point decrease in interest rates with a p-value of 0.000 indicating that it is statistically significant. A 2.304 percentage point difference is also practically significant. Grenada is associated with interest rates that are 3.08 percentage points higher than Belize with a p-value of 0.000, also indicating that it is both statistically and practically significant. The interaction term, providing the difference-in-difference coefficient, is associated with a 0.699 percentage point increase in interest rates, matching our previous estimation. However, it is not significant at the 10 percent significant level with a p-value of 0.158. Using this significance level, the hurricane clause did not cause a significant difference in average interest rates of government securities. It is challenging to select a significance level, as it is not fully understood how the hurricane clause impacts the insured country. The hurricane clause has yet to be triggered in Grenada, leaving a lot of questions unanswered. Due to this, it is hard to weigh the costs of making a type 1 versus type 2 error. If the hurricane clause provides relatively low relief, perhaps the significance level should be increased to be more sensitive to the potential costs in the form of increased interest rates.

One explanation for these results could be that countries already internalize and understand the risk of taking on debt from a country that is vulnerable to hurricanes. Perhaps interest rates are not significantly affected by the hurricane clause because there has been no actual change in the expected debt payment timeline. Creditors that buy debt from Grenada are aware of the risks and understand that payments may be delayed in the case of a hurricane. The hurricane clause just explicitly lays this out and provides a plan for when an adverse weather shock occurs. In this way, the hurricane clause might actually provide some comfort to creditors, as they will have a better idea of what is to happen following a hurricane.

The simplicity of this difference-in-difference model leaves plenty of room to add levels of complexity for a richer analysis in the future. For example, we could add controls to better isolate the hurricane clause's effects. Although this model did not find significant results at the 10 percent

significance level, the hurricane clause is still relatively new and needs to be watched and analyzed carefully. In the next section, I explain how we can move forward given these results.

SECTION V: MOVING FORWARD

The introduction of hurricane clauses into debt contracts is still a relatively new step that needs to be further analyzed and tested. We are still unsure how much debt relief the clauses will provide, as one has yet to go into effect. However, having a mechanism in place to protect a small country like Grenada from adverse weather shocks is a step in the right direction. Instead of waiting until a disaster hits to decide how to proceed, Grenada now knows exactly how much time they will have to get back on their feet and what is expected of them. Creditors, although possibly facing the burden of delayed payments on debt, also know what to expect after a hurricane. The appeal of such a clause has also reached other countries. In October of 2019, Barbados added a natural disaster clause in most of their new debt instruments.[8] Countries that have a record of devastating natural disasters and that have a compatible debt portfolio would be a good candidate for implementing such a clause. Each country, and their creditors, would have to discuss what debt instruments would be covered, the appropriate trigger and the moratorium timeline. Overall, a natural disaster clause has the potential to add structure and clarity to where there was once chaos and confusion.

CONCLUSION:

Similarities in Grenada and Belize's backgrounds, economies and vulnerabilities to natural disasters make them excellent candidates for a comparative case study. They both restructured their debt twice, one in the mid-2000s and one following in the mid 2010s. One large difference was Grenada's implementation of a hurricane clause in their restructured debt. A difference-in-difference analysis was

[8] Anthony, Myrvin, et al. (2019)

applied in order to isolate the effect of the clause on interest rates. Although no statistically significant results were found, there is still plenty of room to expand our analysis. Countries that wish to add a similar clause need to be aware of the potential costs as well as how much debt relief will be provided.

APPENDIX:

Table 1: Grenada (2003-2018)

Year	Weighted Average of Interest Rates on Government Securities	GDP growth (%)	Gov. revenue (% of GDP)	Gov. expenditure (% of GDP)	Gov. gross debt (% of GDP)
2003	6.0	9.464	25.893	29.502	79.562
2004	5.0	-0.647	24.15	25.17	94.694
2005	6.0	13.273	27.466	26.95	87.312
2006	6.5	-3.993	27.14	32.78	92.923
2007	6.5	6.124	21.76	28.11	89.056
2008	6.5	0.948	24.18	28.33	83.913
2009	5.5	-6.613	22.76	27.98	91.094
2010	6.0	-0.511	24.63	28.25	96.937
2011	5.75	0.765	23.61	28.79	100.689
2012	6.0	-1.155	20.80	26.69	103.338
2013	6.0	2.351	20.87	28.12	108.059
2014	6.0	7.342	24.49	29.16	101.764
2015	5.1	6.445	24.46	25.66	90.100
2016	5.0	3.74	26.22	23.92	81.568
2017	4.75	4.439	25.60	22.59	70.109
2018	3.17	4.248	26.54	22.03	63.487

*Data from IMF: World Economic Outlook (WEO)

Table 2: Belize (2013-2018)

Year	Weighted Average of Interest Rates on Government Securities	GDP growth (%)	Gov. Revenue (% of GDP)	Gov. Expenditure (% of GDP)	Gov. gross debt (% of GDP)
2003	3.2	9.33	21.33	32.62	109.34
2004	3.2	4.645	22.74	30.03	103.37
2005	3.2	2.583	23.42	28.0	102.44
2006	3.2	4.578	24.69	26.41	95.65
2007	3.2	1.104	28.91	31.51	93.40
2008	3.2	3.228	29.25	28.28	85.82
2009	3.23	0.671	26.19	29.62	93.70
2010	2.8	3.383	26.80	29.23	89.46
2011	2.4	2.163	27.62	28.98	83.62
2012	2.0	2.938	26.77	28.15	79.62
2013	1.5	0.852	28.60	29.32	78.16
2014	0.70	3.692	29.17	31.32	76.82
2015	0.09	3.432	28.38	34.66	79.33
2016	0.04	-0.588	28.75	34.66	93.18
2017	0.60	1.437	29.30	34.89	94.51
2018	1.2	3.035	30.34	31.32	95.22

*Data from IMF: World Economic Outlook (WEO)

Table 3: Difference-in-difference Estimator Results

$\bar{i}$	Coefficient	t	P>|t|
After	-2.304 (.3105313)	-7.42	0.000
Grenada	3.081538 (.2358654)	13.06	0.000
DID	.6991282 (.4820998)	1.45	0.158

Note: Values in parentheses show standard errors

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