Introducing Hurricane Clauses

Lessons from Grenada's recent experience

A countercyclical financial instrument

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Abbreviations and Acronyms

CCRIF SPC	Caribbean Catastrophe Risk Insurance Facility
ECCU	Eastern Caribbean Currency Union
ECF	Extended Credit Facility
EM-DAT	Emergency Events Database
GDP	Gross Domestic Product
IMF	International Monetary Fund
ODA	Official Development Assistance
NODA	Non-Official Development Assistance

Executive Summary

In 2015, eleven years after Hurricane Ivan devastated Grenada and ten years after a comprehensive debt restructuring exercise triggered by Ivan, the island state undertook a second comprehensive restructuring of its public debt.

This restructuring process followed the culmination of a series of events, beginning in the 2000s, that underscored the island state's vulnerability to adverse external events. These included the 9/11 terrorist attacks, which had a searing impact on Grenada's tourism revenues; Hurricane Ivan, which devastated Grenada in 2004; Grenada's first comprehensive debt restructuring process in 2005, which featured stepped-up repayments rates that proved increasingly onerous to satisfy in the face of the global economic downturn; and the 2008 global financial crisis, which adversely impacted Grenada's macroeconomic fundamentals and debt dynamics.

Grenada's second debt restructuring process (initiated in 2013) reflected the sentiment, shared by both Grenada and its key creditors, that the Caribbean region as a whole was becoming more vulnerable to exogenous shocks, and that there was a clear need to make better provisions for such events.

The agreements secured by Grenada were noteworthy, not only for the haircuts that they achieved, but also for their precedent-setting inclusion of 'hurricane clauses'. These legal provisions enabled the deferral of principal and interest debt service payments, or the possibility of fast-tracking debt restructuring operations, in the event of a hurricane (or other insured natural disaster).

Grenada saw the primary benefits as: immediate cash relief and fiscal space in the event of a disaster; avoidance of a payment default; and the prevention of further debt restructuring. Over the period December 2014 to November 2015, debts amounting to US$318 million or one-third of Grenada's total public debt were restructured with three creditors: the Export-Import Bank (the Eximbank) of the Republic of China (Taiwan), holders of Grenada's previously restructured 2025 sovereign bond, and Grenada's Paris Club creditors.

Hurricane clauses were negotiated in all three agreements. Their provisions differed markedly, with the Eximbank's deal most closely aligned to Grenada's request. The 2025 bond holders offered a less flexible version of Eximbank's hurricane clause, while the Paris Club provision differed considerably. This was largely explained by insufficient support by Paris Club creditors for the originally proposed provision due to concerns about precedent-setting, and creditors own parliamentary approval processes limiting their ability to do more.

Drawing on Grenada's experience, countries contemplating including a hurricane or similar disaster linked clauses in their loan agreements should consider the following:

- Having a well-documented history of natural disasters will better engender creditor support for a new approach. This should be combined with a strong and credible case for the inclusion of a hurricane clause.
- Assess whether their debt portfolio compositions are amenable to including hurricane clauses, and whether such clauses would cover a large enough proportion of their country's debt to deliver adequate fiscal space in the event of a natural disaster.
- Determine a trigger and dataset for measuring the type and intensity of a disaster, and the extent of damage caused, that can be independently and reliably verified. The growth of reliable parametric data and the establishment of regional risk-pooling facilities has made this easier.
- Assess the economic or financial trade-offs that may arise in negotiating a hurricane provision. Trade-offs may arise between short-term cash relief and more comprehensive debt relief or between the financial cost of triggering a hurricane provision versus issuing an alternative financing instrument (i.e. fiscal buffers or insurance). The hurricane clauses for the Eximbank and the 2025 bondholders capitalise interest, which leads to an immediate increase in the debt stock.
- Review the possibility of extending the moratorium and repayment period of Grenada's hurricane clauses. Only a one-year moratorium currently exists, which may be considered inadequate to avoid a payment default and debt restructuring. Furthermore, to avoid the bunching of payments especially close to the original maturity of the loan, countries could extend the

Figure 1 Grenada's three hurricane clauses

	Taiwan	Private Bondholders	Paris Club
Type of Debt	Official bilateral	Private	Official bilateral
Type of Event	Insured event - hurricane, earthquake, excess rainfall	Insured event - hurricane	Hurricane
Trigger	Payout by CCRIF SPC for modelled losses exceeding US$15 million	Payout by CCRIF SPC for modelled losses exceeding US$15 million	Hurricane
Independent Body	CCRIF SPC	CCRIF SPC	An independent body
Debts Affected	Principal and accrued interest	Principal and accrued interest	All maturities covered by the rescheduling agreement
Payment Moratorium	12 months (two payment dates)	6 months or one payment date (if CCRIF SPC payout is greater than US$15 million and less than US$30 million) 12 months or two payment dates (if CCRIF SPC payout is greater than US$30 million)	Not stated
RepaymentTerms	Principal deferred and accrued interest deferred and capitalised Both repayable in semi-annual instalments over remaining term of the loan	Principal deferred and accrued interest deferred and capitalised Both repayable in semi-annual instalments over remaining term of the loan	Not stated
Grace Period	6 months	6 months	
Conditions	Policy payout by CCRIF SPC	Policy payout by CCRIF SPC	Imminent default
Number of Triggers	Three	Three	Not stated
Reporting	Progress reports on post-event relief, recovery and reconstruction programmes	Progress reports on post-event relief, recovery and reconstruction programmes	Not stated

Source: 2014 Taiwan debt restructuring agreement; 2015 debt exchange; 2015 Paris Club Agreed Minute.
Notes: CCRIF SPC - Caribbean Catastrophe Risk Insurance Facility

repayment period of the deferred payments or refinance the outstanding loan balance.

- Engage with their creditors quickly once signs of debt distress emerge to ensure a successful outcome and ensuring that financial advisors in debt exchanges or other comprehensive debt restructuring exercises develop and implement effective communication strategies.
- Finally, requesting the inclusion of a hurricane clause in the context of a strong economic policy and debt sustainability framework that can receive the endorsement of the IMF and other multilateral lenders. This will be an important signal for creditors.

These clauses can be applied to other natural disasters or economic shocks. Countries with substantial external debt owed to bilateral and commercial creditors that are at risk of debt distress and are also vulnerable to exogenous shocks, should consider whether their debt strategies ought to include these types of clauses in new financing agreements.

1. Introduction

The objective of this policy brief is to summarise recent experiences and lessons learned from introducing hurricane clauses in Grenada's debt restructuring arrangements. This is in the context of persisting debt problems and climatic vulnerabilities faced by many Commonwealth countries, particularly small states. In 2015, eleven years after Hurricane Ivan devastated Grenada and ten years after a comprehensive debt restructuring exercise triggered by Ivan, the island state undertook a second comprehensive restructuring of its public debt.

The debt restructuring agreement is remarkable not for the haircuts it received from its commercial creditors or for putting an end to a bitter legal dispute between Grenada and Taiwan but for its precedent-setting inclusion of legal provisions that allow for the deferral of payments in the event of a hurricane or other natural disaster. The issue is whether Grenada benefited from a unique set of circumstances or whether such provisions can be replicated by other Commonwealth states when restructuring their debt or negotiating new agreements.

2. Background

Grenada is a small island state located in the Caribbean populated with just over 100,000 persons. It ranks 79th out of 187 in the UN Human Development Index. Its 2014 gross domestic product (GDP) per capita was US$8,578 classifying it as an upper-middle income country. Grenada, along with five other island states, is a member of the Eastern Caribbean Currency Union (ECCU),[1] which shares a common currency, the Eastern Caribbean (EC) dollar, and a single central bank. Grenada faces four significant challenges.

- First, it is a small state. Typical of small states, Grenada has a very open economy and a narrow economic base in which tourism and tourism-related services account for over 60 per cent of economic activity. In addition, the island state is highly exposed to external shocks, both economic and climatic. The combined effect of these characteristics makes Grenada more likely to face repeated external shocks and less likely to be resilient when faced with them.[2]
- Second, it is geographically located in the Caribbean basin, which is widely recognised as the most disaster-prone region in the world. Over the period 1950 to 2015, Caribbean countries have experienced 184 natural disasters, most of which have been hurricanes. Natural disasters have imposed a substantial cost to the region. In the 65-year span, economic losses have been estimated at US$8 billion and the human cost high. Natural disasters have caused over 1,300 deaths and displaced almost five million people. Notably, in recent decades, hurricanes have been increasing in frequency and intensity and losses have been rising. Average annual losses have increased from 0.9 per cent of GDP in the 1980s to 1.3 per cent of GDP per year in the 2000s.
- Third, Grenada is itself classified among the most vulnerable to natural disasters. It is ranked by EM-DAT among the top ten most disaster-prone countries in the world and is classified as one of five Caribbean states that are 'extremely vulnerable' to natural disasters.[3] Not surprisingly, all other members of the ECCU fall in the top 10 list.
- Fourth and finally, coupled with its vulnerability to natural disasters is the severity of Grenada's debt burden. Grenada is the second most highly indebted country in the Caribbean surpassed only by Jamaica. With 2014 debt-to-GDP exceeding 100 per cent it ranks among the top ten most indebted middle-income countries in the world.

1 The other ECCU member states are Antigua and Barbuda, Dominica, St Kitts and Nevis, St Lucia, and St Vincent and the Grenadines. Two British overseas territories, Anguilla and Montserrat, are also ECCU members.

2 See IMF, Caribbean Small States - Challenges of High Debt and Low Growth (Washington, DC, February 2013)

3 See the Emergency Events Database (EM-DAT) – The international disasters database, www.emdat.be

Table 1.1 Caribbean countries – environmental vulnerability

Extremely Vulnerable	Highly Vulnerable	Vulnerable	At Risk	Resilient
Barbados	Dominica	Antigua and Barbuda	The Bahamas	Guyana
Grenada	Saint Kitts and Nevis		Belize	Suriname
Jamaica	Saint Vincent and the Grenadines			
Saint Lucia				
Trinidad and Tobago				

Source: Environmental Vulnerability Index – United Nations Environment Program (UNEP) and South Pacific Applied GeoScience Commission (SOPAC), www.vulnerabilityindex.net

3. The 2015 Debt Restructuring

3.1 Background

Grenada's 2015 recent debt restructuring reflects the culmination of a series of events that began in the 2000s and underscore the island state's vulnerability to external shocks and its lack of resilience in their aftermath. In the five years preceding the start of the 2000s, Grenada experienced robust growth averaging an annual rate of 6 per cent. Debt-to-GDP was moderate at an annual average of 40 per cent between 1995 and 1999 while fiscal deficits were modest at less than an annual average of 3 per cent. However, a series of external shocks beginning in the early 2000s largely explain Grenada's debt difficulties and serial debt restructuring.

- The **9/11 terrorist attacks** in the United States had a searing impact on Grenada's economy. In the face of a dramatic slump in tourism arrivals and remittances from the United States, Grenada's economy convulsed. Economic output fell by 2 per cent in 2001 following growth of 5-6 per cent in the preceding two years. An expansionary fiscal effort combined with falling revenues expanded the overall fiscal deficit to 14.5 per cent of GDP in 2002 from 2.5 per cent two years earlier. Debt-to-GDP jumped from 41.6 per cent at the end of 2000 to 79 per cent at end 2002.[4]
- **Hurricane Ivan**, a deadly tropical cyclone, devastated Grenada in 2004. Damage sustained amounted to over 200 per cent of GDP in its wake. The Grenadian authorities quickly announced a debt moratorium in the face of a 47 per cent drop in revenues and a further widening of the fiscal deficit. By the year's end, the economy had contracted by some 1 per cent compared to growth of 9 per cent a year earlier. Deteriorated finances meant that recovery, rehabilitation and reconstruction efforts were funded largely by debt. The 2004 debt-to-GDP grew to 95 per cent, more than 16 percentage points higher than the ratio in 2003. The authorities sought a comprehensive and collaborative restructuring of its public debt from both its official and private creditors.
- **Grenada's 2005 debt restructuring** provided interim cash relief for what was perceived at the time as a short-term liquidity constraint – a temporary setback in the face of a natural disaster. The terms of the debt exchange secured from Grenada's bondholders reflect this. Grenada's US dollar and EC dollar sovereign bonds were re-profiled with maturities extended from 2012 to 2025 with a one-time 'bullet' principal repayment at maturity. There was no principal haircut of the bond. An added feature of the new bond was stepped-up interest rates or a phased increase in interest rates from 1–9 per cent at intervals over the life of the bond. The terms suggested an underlying optimism by the authorities that Grenada's economy would rebound quickly and robustly to meet the rising interest payments inbuilt into the restructured bond. Grenada similarly did not seek a haircut from its Paris Club creditors. Instead it deferred payments falling due between 2006 and 2009, rescheduling them over 12 years including a five-year grace period. Over time, the stepped-up rates proved increasingly onerous in the face of the global economic downturn and weak domestic economic conditions. Grenada faced a problem of debt sustainability rather than of short-term liquidity.

While external creditor participation in Grenada's debt exchange offer was high, at 93 per cent, Grenada's largest bilateral creditor, the Export-Import Bank of Taiwan, did not participate. In early 2005, Grenada switched its diplomatic ties from Taiwan to the People's Republic of China.

- The **2008 global financial crisis**, immediately preceded by the 2007 food and fuel crisis, abruptly reversed Grenada's fragile economic gains post the 2005 debt restructuring. Anaemic growth of less than 1 per cent gave way to an economic contraction of 6 per cent in 2009 followed by further declines in economic activity in 2010 and 2012. An economic slump, external current account deterioration, an increased fiscal deficit and growing debt arrears underpinned Grenada's growing debt unsustainability. In late 2012, Grenada defaulted on both the external and domestic payments related to its previously restructured bond due 2025. The bond comprised an external tranche amounting

4 See IMF, 2016 World Economic Outlook Databases, http://www.imf.org/external/ns/cs.aspx?id=28

to US$193 million and a domestic tranche denominated in local currency amounting to EC$184 million (US$68 million). The default prompted an immediate downgrade of Grenada's debt to 'SD' (Selective Default) by the international ratings agency, Standard and Poor's. By end-2012, Grenada's debt-to-GDP crossed the 100 per cent threshold. In March 2013, the Grenadian authorities announced its intention to undertake a 'comprehensive and collaborative restructuring of its public debt, including the United States (US) and Eastern Caribbean (EC) Dollar bonds due 2025.' By end-2013, Grenada had accumulated arrears equivalent to 15 per cent of GDP, of which more than two-thirds was owed to external creditors. Debt-to-GDP reached a peak of 107 per cent.

By Grenada's account, four lessons emerged from the external shocks of the 2000s and the 2005 debt restructuring agreement.

- **The Caribbean was becoming more vulnerable to economic shocks**. The events of the 9/11 US terrorist attacks and the food-fuel-financial crisis in 2007–2008 coupled with the spate of natural disasters were significant factors in the low growth rates and rising debt levels that characterised the region, especially tourism-dependent economies. All tourism-dependent economies contracted in the year following the 2008 global financial crisis by an average of 4 per cent[5] while between 2008 and 2010 their debt-to-GDP ratios increased by 15 percentage points in the aftermath of the shock (See IMF, 2013).
- **There was a need to make better provisions for shocks.** The onslaught of frequent and intense hurricanes and tropical storms beginning with Hurricane Ivan underscored the country's high vulnerability to hurricanes and other natural disasters and the resulting damage not only to infrastructure but also to the public finances. A major step in that direction was the 2007 decision to join the Caribbean Catastrophe Risk Insurance Facility (CCRIF SPC) – a regional multi-country insurance pool. At the same time, the idea of a mechanism to prevent payment defaults in the event of a natural disaster took shape.
- **Stepped-up bonds should be avoided in future restructuring agreements**. The inclusion of stepped-up coupons added significantly to Grenada's fiscal burden. Coupon rates of 0.8 per cent at the start of the 2005 agreement doubled to 2 per cent by 2008 and further doubled to 4 per cent in 2011. In an environment of weak growth, rising unemployment and escalating debt, the quadrupling of bond interest payments was unsustainable. While the initial rate provided a significant rate concession and interest relief, Grenada saw the jump in rates as steadily contributing to the fiscal unsustainability of the debt.
- **Debt sustainability analysis needed to be more realistic**. While several debt sustainability analysis (DSA) conducted by the International Monetary Fund (IMF) put Grenada at high risk of debt distress, there is a prevailing view by the Grenadian government ('the authorities') that the DSA assumptions should be more tempered. The primary concern is that for many countries the trajectory to achieving debt sustainability may be overly ambitious and may not adequately take into account the shocks to which small island states such as Grenada are exposed.

3.2 The agreements

Over the period December 2014 to November 2015, Grenada concluded debt restructuring agreements with three creditors – the Export-Import Bank (the Eximbank) of the Republic of China (Taiwan), holders of the previously restructured 2025 sovereign bond, and Paris Club creditors. Debts amounting to US$318 million, or one-third of Grenada's total public debt, were restructured.

3.2.1 The restructuring strategy

Grenada, along with its financial advisors, charted a deliberate debt restructuring strategy that took into account: (i) the profile of the creditor it was approaching, (ii) the anticipated difficulty or complexity in conducting debt negotiations, (iii) the amount of debt to be restructured and (iv) the amount of debt relief or new money that could be anticipated by each of the three creditors. These factors would determine the sequencing of Grenada's negotiations with its creditors as well as the amount and type of relief it would seek.

Grenada opted to pursue the following negotiation sequence. It would negotiate with its most difficult creditor first – the Eximbank. The restructuring imperative was to resolve an ongoing legal battle with Taiwan that threatened to derail concluding

5 Author's own calculations using debt-to-GDP data from the IMF World Economic Outlook database – April 2016

Figure 3.1 Timeline to standstill under hurricane provision

restructuring agreements with other creditors. The negotiations with Taiwan were to be followed by negotiations with holders of the Government of Grenada bond due 2025 after which Grenada would seek to restructure debt owed to its Paris Club creditors. The 2025 bond accounted for 85 per cent of the total debt to be restructured. The imperative therefore was to maximise relief to allow for a significant reduction in Grenada's overall debt-to-GDP and better enable the country to achieve the ECCU stipulated 2020 debt-to-GDP benchmark of 60 per cent. Grenada anticipated that successful negotiations with Taiwan's Eximbank and the 2025 bondholders would strengthen its request to the Paris Club for extensive relief. At the same time, the outcome of the negotiations was not expected to significantly affect Grenada's overall debt profile as the amounts owed to the Paris Club accounted for less than 3 per cent of the total debt to be restructured.

Grenada also determined pre-negotiation that a deferral and re-profiling of its debt service payments should be accompanied by a request for a sizeable principal haircut from each of its creditors. The over-arching priority was to resolve the country's debt sustainability problem rather than merely seek temporary cash-flow relief. The need for debt reduction was explicitly supported by the IMF with whom Grenada had agreed a three-year Extended Credit Facility (ECF) in support of its 'Home Grown Economic Programme.' In its first review under the 2014 ECF arrangement, the IMF stated that it 'continues to support the authorities' intention to seek a substantial nominal reduction in the face value of public debt that, combined with the ongoing fiscal consolidation, would put debt on a sustainable path'.

The final prong of Grenada's negotiating strategy was to present a strong case to all its creditors for the inclusion of a provision in each restructuring agreement that would allow for a pre-determined payment standstill in the event of a natural disaster. Grenada's Timothy Antoine recalls, as the then Finance Secretary, vowing to avoid a repeat of the financial circumstances in which the island state found itself after Hurricane Ivan. Grenada felt that both borrower and creditor would benefit from the inclusion of such a provision. Grenada saw the primary benefits as:

- **Immediate cash relief and fiscal space in the event of a disaster**. A primary benefit of the hurricane clause was the fiscal space that it would provide to Grenada. A standstill would allow the government to finance disaster recovery and rehabilitation efforts with less likelihood of a payment default or of compromising debt sustainability. It was estimated that the average timeline between the disaster occurring and an agreement to a standstill in payments would be no more than 14 weeks depending on the speed of the borrower in submitting the claim and the confirmation by the creditor, as indicated in Figure 3.1.
- **Avoidance of a payment default**. The government would avoid the likely event of a default and an automatic ratings downgrade. A sufficiently long standstill would aid recovery of the public finances without impairing the country's creditworthiness.
- **Avoidance of further debt restructuring**. Another benefit of the provision was that it allowed for a quick and orderly standstill of payments. This gave the authorities the needed fiscal space in the disaster's aftermath to recover and, at the same time, helped both borrower and creditors to avoid lengthy and costly debt restructuring negotiations associated with a payment default. Creditors would benefit from the prompt resumption of payments and the borrower would benefit from an orderly and prompt re-profiling of the debt.

3.2.2 The outcome

Negotiations with the Eximbank were difficult. Debt restructuring was pursued amid rancorous relations between the two countries following Grenada's decision in early 2005 to switch diplomatic ties from Taiwan to the Republic of China. Taiwan retaliated by refusing to be a party to Grenada's 2005 debt restructuring and instead demanded repayment of four concessional loans extended to the island state in the 1990s. Invoking the *pari passu* clause, Taiwan took its case against Grenada to the New York courts, arguing that no payout could be made to Grenada's other external creditors unless a similar payment was made to the Eximbank. Efforts by Taiwan to hold claim to Grenada's assets were initially supported by a lower New York court ruling but reversed on appeal.

Grenada's advisors identify three factors that facilitated the negotiation with Taiwan. First, Grenada was the first test case of the applicability of the Argentine *pari passu* ruling to another sovereign default and, with the intervention of certain US$ bondholders on Grenada's behalf, Taiwan did not achieve a similar outcome. Second, the IMF made a clear and unequivocal statement of the need for debt reduction by Grenada's creditors. Third, Taiwan was a 'sophisticated' creditor who understood and accepted the issues around Grenada's debt sustainability. Grenada also took the unprecedented step in the negotiations to ask for the inclusion of a provision related to natural disasters – a 'hurricane clause' – that would help to avoid any future payments defaults.

Grenada and the Eximbank finally concluded the restructuring of US$36.6 million of outstanding debt in December 2014. The agreement was significant in a number of ways.

- First, it resolved Grenada's 10-year dispute with the Eximbank and put an end to the legal proceedings against it.
- Second, unlike the 2005 debt restructuring, the terms included a 50 per cent principal reduction ('haircut') with the post-haircut balance rescheduled over 15 years including a three-and-a-half-year grace period.
- Third, in contrast to the 2005 exercise was the agreement to a fixed rate of 7 per cent rather than stepped-up interest rates.
- Finally, the Taiwan agreement was precedent-setting with the inclusion of a 'hurricane clause'. The provision written into the Eximbank agreement allows Grenada to halt payments for a pre-determined period in the event of a natural disaster.

On 12 November 2015, Grenada concluded a debt exchange operation with holders of its bond due in 2025. The agreement ended over 2 years of negotiations triggered by the September 2012 default of interest payments on the bond. Bondholders representing over 76 per cent of the total value of the debt formed a creditor committee to conduct negotiations with the Grenadian authorities.

Similar to the Taiwan arrangement, the agreement included a 50 per cent reduction in the outstanding principal, a fixed 7 per cent coupon rate, and a 15-year maturity. In addition, the new bond amortised

Table 3.2 Grenada – Terms of the 2014/15 restructuring arrangements

	Taiwan	2025 Bondholders		Paris Club
Creditor Group	Official bilateral	Private bondholders		Official bilateral
		US dollar	EC dollar	
Date of Agreement	Dec-2014	12-Nov-2015	12-Nov-2015	19 Nov-2015
Restructured Amount	US$36.6 million	US$193.5 million	ECS184.0 million (US$68.1 million)	US$8.0 million
% of Restructured Debt	12.0%	63.2%	22.2%	2.6%
Grace Period	3.5 years	0.5 years	0.5 years	ODA: 7 years NODA: 8 years
Tenor	15 years	15 years	15 years	ODA: 20 years NODA: 15 years
Principal Haircut	Total 50% with 47% upfront; 3% after IMF review	Total 50% with 25% upfront; 25% after IMF review	Total 50% with 25% upfront	None
Other Terms	Hurricane clause	Hurricane clause	Hurricane clause	Hurricane clause

Sources: Grenada – Debt Exchange Offering Circular 2015; Paris Club, www.clubdeparis.org; IMF Grenada Country Report No.15/193
Notes: ODA - Official development assistance

principal repayments over a 15-year period ending 2030 in contrast to the single 'bullet' payment that was a feature of the old bond.

Both the Taiwan agreement and bond exchange provided for a phased haircut of the principal outstanding the remaining amount made contingent on the successful completion of the sixth review of Grenada's existing IMF ECF scheduled for 2017. However, Taiwan agreed to a 47 per cent upfront haircut while the bondholders provided for equal haircuts of 25 per cent – one upfront and the remaining 25 per cent on successful completion of the IMF's sixth review of Grenada's ECF.

Bondholders, at the explicit request of Grenada, also included a hurricane provision in the exchange agreement. However, unlike the Eximbank, the provision only allowed for the deferral of payments in the event of a major hurricane. No other natural disasters were included.

The Paris Club (comprising official bilateral creditors from France, Russia, the United Kingdom and the United States) also reached agreement in November 2015 to restructure Grenada's debt. The agreement rescheduled US$8 million consisting of US$6 million and US$2 million in current maturities. Outstanding arrears were to be repaid in two instalments, one on 30 June 2016 and the other on 30 June 2020. The remaining arrears as well as current maturities were rescheduled over 20 years including seven years of grace for ODA claims and 15 years including eight years of grace for non-ODA[6] claims (See Paris Club, 2015).

In addition to agreeing to reschedule US$8 million in debt owed by Grenada, the Paris Club also added a hurricane provision. The provision provides for the rapid restructuring in the event that 'a hurricane impacts Grenada during the repayment period and the Paris Club determines on the basis of an independent assessment of the damage incurred, that Grenada faces imminent default on its external indebtedness'. However, unlike the provisions in the debt exchange and Taiwan agreements, the extent of relief is not specified nor is there automaticity of relief.

6 Non-ODA claims are those claims that are not classified as official development assistance and include export and suppliers' credits.

4. The Hurricane Provisions

Grenada negotiated landmark agreements with the inclusion of hurricane clauses in all three of its restructuring agreements. In varying degrees, all three clauses sought to mitigate the impact of a natural disaster on Grenada's public finances and on its debt sustainability.

4.1 Hurricane provisions – Taiwan/ private creditors

In the case of Taiwan's Eximbank and the holders of Grenada's bond due 2025, the key considerations in finalising the hurricane provision were:

- **The type of event to be covered.** The main issue was to determine the specific events to be covered under the hurricane provision and under what circumstances. The intent was to ensure that the clause only applied to catastrophic events in which the probabilities of occurrence were very low (1/75 to 1/100) and the possibility of an imminent debt default was most likely due to the severity of the event. A key consideration was whether the provision should be restricted to hurricanes only or expanded to include other natural disasters such as earthquakes, floods and other natural disasters. Taiwan decided to include all events insured by the CCRIF SPC thus providing scope for payment deferral in the event of an earthquake or excess rainfall.
- **The trigger**. The choice of trigger was important to Grenada's creditors. A primary concern was that the trigger was not designed in such a way to place creditors at a financial disadvantage. The negotiations with Taiwan and Grenada's bondholders considered indexed or parametric triggers – both triggers regarded as difficult to manipulate by the borrower as they were amenable to objective, independent and quantifiable measurement. The differences were:
  - Parametric triggers make payments based on the natural hazard rather than on the actual losses determined by an insurer and claimed by the borrower. The parameter may be wind-speed in the case of a hurricane, ground acceleration or intensity in the event of an earthquake or some other objective and appropriate natural disaster benchmark. The clause would be triggered if the actual event parameters exceeded the pre-established threshold parameters.

    Creditors were mainly concerned that this trigger might be used in circumstances where the losses arising from the benchmark might be less than commensurate with the established parameters. For example, based on a parametric trigger, a strong Category 4 storm might be used to trigger a claim even if relatively little damage was incurred.
  - In contrast to parametric triggers, the parametric index triggers make payments based on both the intensity of an event as well as on the losses incurred as determined by catastrophe modelling software. The software calculates losses based on certain parametric data collected from multiple reporting stations.

Both Taiwan and the bondholders decided to rely on the parametric indexed trigger used by CCRIF SPC as the trigger for the hurricane clause in their agreements. Thus a specific precondition to the inclusion of the hurricane clause was that Grenada had a disaster insurance policy with CCRIF SPC. These requirements were completely aligned in Grenada's debt restructuring, since the country has had coverage since the inception of CCRIF SPC in 2007. The hurricane provision in the Taiwan agreement states that Grenada will only be able to defer payment if 'CCRIF SPC has issued an event report confirming that the Event is an insured event under the terms of Grenada's coverage with CCRIF SPC.'

- **The use of CCRIF SPC.** Critical to the inclusion of the hurricane provision in each restructuring agreement was the need to identify an independent organisation that would assess the occurrence of the event and the damage incurred and confirm that it represented a substantial loss or significantly impaired the public finances or debt sustainability of the country. In Grenada's 2005 restructuring agreement, this was a role that creditors envisaged for the IMF. However, there was no evident appetite of the Fund for this role and it already had facilities to assist countries in the event of a natural disaster. CCRIF SPC proved to be a good alternative and provided the following advantages:

- Considerable data on natural disasters in the Caribbean had been compiled and modelled.
- Risk profiles were developed for each participating member state including Grenada. These profiles provided details on the hurricane, earthquake and excess rainfall characteristics and risks for each country.[7]
- Insurance payouts were quick and easy to calculate, which in turn also allowed the hurricane clause to be triggered rapidly. CCRIF SPC payouts typically occur within 14 days of the event (See CCRIF SPC, 2016).

In addition to the terms of the hurricane provision related specifically to the natural disaster and the calculation of losses, the financial terms related to the amount and cost of relief also had to be determined. The key terms negotiated with both Taiwan Eximbank and the bondholders included:

- **The moratorium period**. The moratorium period determined the number of payments that would be subject to a standstill and therefore the amount of cash relief provided under the terms of the hurricane provision.

Both the Taiwan Eximbank and the debt exchange agreement capped the number of deferred payments at two or the equivalent moratorium period of one year. However, while the Eximbank agreement provided for a one-year deferral of principal once the clause was triggered if losses were over $15 million, the debt exchange agreement was more restrictive and linked to the extent of the losses caused by the natural disaster (See Export Import Bank of the Republic of China, 2014). The bondholders' agreement specified the deferral of only one payment if CCRIF SPC's modelled loss was 'greater than US$15 million but less than US$30 million' while a twelve-month moratorium applied only in the event that the losses modelled by CCRIF SPC exceeded US$30 million (See Government of Grenada, 2015).

- **The number of claims.** The amount of cash relief available under the term of the hurricane provision was also determined by number of times that Grenada could invoke the deferral. Relief correspondingly increased with the number of times that Grenada could request a standstill of payments. The Eximbank agreement provided for a maximum of three triggers over the life of the loan provided that a qualifying event occurred and this benchmark was maintained in the bondholders' debt exchange agreement.
- **The repayment period**. While the standstill period determined the amount of interim cash relief that Grenada enjoyed, the repayment terms determined the cost of the relief.

7 Source: Understanding CCRIF – A Collection of Questions and Answers 2015

Box 4.1 Illustration of repayment of deferred amounts

Assume a loan amount of US$100 million repayable over 10 years at an interest rate of 7 per cent per annum.

Assume a claim is made by the borrower in Year 2 of the agreement.

Based on the terms of the provision, the repayment of the deferred amounts begins on the next repayment date immediately following the deferral.

Start of Year 2	End of Year 2	Year 3 – New Profile	Year 3 – Original Profile
Loan balance = US$90.0 million	Loan balance = US$96.3 million	Loan balance = US$84.3 million	Loan balance = US$70.0 million
Principal = $10.0 million	Principal = $0.0 million	Principal = $12.0 million	Principal = $10.0 million
Interest = US$6.3 million	Interest = US$0.0 million	Interest = US$6.7 million	Interest = US$6.3 million
	a) Principal is deferred so there is no debt reduction b) Interest is capitalised adding to the loan balance	a) Deferred principal plus capitalised interest pro-rated across the remaining eight years of the loan b) Interest based on increased loan balance	a) Impact of trigger is to increase debt outstanding and cash-flow payments for the remaining life of the loan

In both agreements interest accrued and deferred was capitalised and added to the outstanding loan balance. The loan interest rate of 7 per cent was applied to the new loan balance. Amortisation was to be increased on a pro-rata basis to ensure the full repayment of the deferred amount over the remaining life of the loan. The maturity of the loan was not extended in either agreement. Both agreements also provided for the re-profiled debt to take effect on the payment date immediately after a deferral date equivalent in effect to a grace period of six months. Box 4.1 illustrates the repayment profile after the clause is triggered.

Private bondholders attribute Grenada's success with the hurricane clause to the following:

- Knowledge of the region and the hazards. The private creditors – from the UK, North America and the Caribbean – were generally knowledgeable about the environment in which they conducted business and thus knew about and understood the Caribbean's vulnerability to natural disasters, particularly hurricanes.
- Sympathy to the Grenada story. Private creditors found Grenada's argument for a hurricane provision credible and compelling. They understood Grenada's need to find a mechanism to address shocks, particularly related to hurricanes. Added reinforcement to Grenada's arguments was that many of the creditors had been a party to Grenada's 2005 debt restructuring agreement which had been triggered by Hurricane Ivan's devastation. Thus they had first-hand experience of a debt crisis triggered by a major catastrophe.
- Desire to avoid future debt restructuring negotiations. There was broad consensus on both sides of the negotiating table that there needed to be some mechanism that could help avert a debt crisis and avoid multiple debt restructurings in the event of a major natural disaster. In the case of Grenada, while the inclusion of the provision of the hurricane clause was not viewed as the best solution, nonetheless it was agreed that it provided a mechanism that would provide the relief that Grenada needed while at the same time would help the country normalise its relations with its creditors quickly.
- Availability of independent quantifiable metrics. The availability of independent bodies such as the US-based National Hurricane Centre and the CCRIF SPC provided the assurance to creditors that they could obtain independent, objective and quantifiable measures on natural disasters and their impact on affected countries. An additional comfort was that significant amounts of data dated back to the early 1900s so that a large pool of data could be modelled and analysed.
- The existence of CCRIF SPC. The CCRIF SPC played a pivotal role in helping Grenada secure the hurricane provision. CCRIF SPC is a regional risk pooling fund that issues parametric insurance.[8] The main advantage of this kind of insurance is that payouts are not dependent on the estimates of loss adjusters, which can take years, but instead on the intensity of an event and the amount of loss calculated in a pre-agreed model. Payout can therefore be made quickly after an event therefore providing rapid short-term support in the event of a major disaster. To private creditors who credibly argue that they were not meteorologists, CCRIF SPC provided the independent mechanism in determining whether an event occurrence qualified for a payment under the terms of the restructuring agreement.
- The involvement of the IMF. Support for Grenada's economic programme by the IMF under an ECF arrangement also provided comfort to Grenada's creditors. While creditors observed that finalising the IMF programme delayed Grenada's negotiations with its bondholders, at the same time they welcomed the need for an independent assessment of the strength of Grenada's effort to restore macroeconomic stability and growth and to achieve overall debt sustainability.

At the same time, bondholders expressed caution about the wider applicability of hurricane provisions noting that:

- A hurricane clause is not economically beneficial to investors. Therefore while such a provision may gain traction in a debt-restructuring agreement where there is strong motivation for a quick resolution of a new agreement, investors may not be so similarly motivated to include it in a new instrument. The primary concern is that including a hurricane provision in a new instrument will make it difficult to price and difficult to trade. The question asked of private creditors is, 'How do you price a bond with

8 The information here is drawn largely from the document, Understanding CCRIF (February 2016).

the possibility of three standstills caused by an uncertain event?' The likely response by investors is to extract a high cost from the debt issuer.

- **Such a provision may not the best use of commercial debt**. Private creditors argue that Grenada is already insured against disaster through the CCRIF SPC, and therefore question the need for hurricane provisions. Furthermore, they argue that this debt is an expensive means to reboot the economy and that Grenada would be served better by appealing for grant funding or more concessional financing from the main multilateral institutions. Nevertheless, as a middle-income country, access to grant and concessional financing is likely to be limited following a crisis and CCRIF SPC's expected payouts are, according to some interviewees, insufficient to cover the anticipated costs of a catastrophe.
- **Other mechanisms are more appropriate**. Private creditors were of the view that governments needed to invest in more appropriate mechanisms such as purchasing disaster risk insurance, maximising their insurance coverage under existing policies, better sizing insurance in tandem with the country's actual financing requirements, and establishing fiscal buffers. The view was that hurricane provisions were likely to be a costly means of mitigating the effects of a disaster.

A wider concern expressed by bondholders was the extended time that it took for Grenada to get to the negotiating table. Bondholders complained specifically about the 'lack of engagement' (See Financial Times, 2014) and pressed for a more proactive approach by the Grenadian authorities in order to both normalise creditor relations and ensure that the request for debt relief was favourably considered. While the bondholders did accept Grenada's request for the inclusion of the hurricane provision in the debt exchange agreement, there is a view that earlier engagement would help avoid prolonged debt distress and an earlier return to fiscal stability.

4.2 The Paris Club

Similar to Grenada's other creditors, the Paris Club accepted, in principle, Grenada's wish to avoid future debt crises triggered by a disaster. However, the Paris Club hurricane provision differed from that of its bondholder and Taiwanese counterparts in a number of material aspects. The differences are largely explained by two factors. First, some Paris Club creditors were constrained by their budget process, which required congressional or parliamentary approval for new debt treatments and could not be obtained in advance of concluding the negotiations. Second, some creditors were not supportive of the provision due to concerns about setting a new precedent but also because of the short time in which they had to familiarise themselves with, and understand, the mechanics of the provision. The hurricane provision in Grenada's Paris Club 2015 Agreed Minute specified the following:

- **The trigger**. Similar to the bondholders' agreement, the Paris Club trigger condition is limited to hurricanes only. However, unlike the bondholders' agreement, the trigger is not determined by the extent of the catastrophe. The Paris Club makes a strong case that this provides more flexibility to the borrower in the event of a disaster caused by a hurricane.
- **Independent assessment**. The Agreed Minute states that Grenada's request for relief is both conditional upon an 'independent assessment of the damage incurred' and that it 'faces an imminent default on its external indebtedness'. The Paris Club argues that this is a less restrictive provision than in other agreements because it does not limit the choice of independent assessors. At the same time it acknowledges that credence would be given to the most recognised institution such as the IMF.
- **The request for relief**. The hurricane provision in the Paris Club Agreed Minute does not provide automatic relief once the clause is triggered. Instead, Grenada may, under the terms of the Agreed Minute, request the granting of additional relief if a hurricane occurs and substantial damage is incurred. While there is no automaticity of relief or certainty of its timing, the Paris Cub indicates that this provision does allow for fast track relief. Under the circumstances of a hurricane event, the Paris Club would consider the request at its monthly meetings – a period considerably shorter than obtains for a typical debt restructuring exercise. Notably, the lack of specificity and automaticity of relief in the Paris Club Agreement can work in Grenada's favour. One advantage is that Grenada has the option of requesting more relief than might be secured under the other agreements which determine, ex ante, the amount of relief that can be obtained.

- **The additional debt relief**. The Paris Club also argues that while its principles remain one of consensus, comparable treatment and equitable burden sharing, the activation of this clause does not require consensus among all creditors. The Paris Club maintains that the hurricane provision is akin to the now standard debt swap provision in agreements and represents an 'additional effort' by official bilateral creditors. As a result, the consensus requirement is therefore loosened under this provision.

Table 4.1 provides a summary of the terms and conditions of the hurricane provision in each of the three debt restructuring agreements.

Table 4.1 Grenada – The Hurricane provisions

	Taiwan	Private Bondholders	Paris Club
Type of Debt	Official bilateral	Private	Official bilateral
Type of Event	Insured event – hurricane, earthquake, excess rainfall	Insured event – hurricane	Hurricane
Trigger	Payout by CCRIF SPC for modelled losses exceeding US$15 million	Payout by CCRIF SPC for modelled losses exceeding US$15 million	Hurricane
Independent Body	CCRIF SPC	CCRIF SPC	An independent body
Debts Affected	Principal and accrued interest	Principal and accrued interest	All maturities covered by the rescheduling agreement
Payment Moratorium	12 months (two payment dates)	6 months or one payment date (if CCRIF SPC payout is greater than US$15 million and less than US$30 million) 12 months or two payment dates (if CCRIF SPC payout is greater than US$30 million)	Not stated
Repayment Terms	Principal deferred and accrued interest deferred and capitalised Both repayable in semi-annual instalments over remaining term of the loan	Principal deferred and accrued interest deferred and capitalised Both repayable in semi-annual instalments over remaining term of the loan	Not stated
Grace Period	6 months	6 months	
Conditions	Policy payout by CCRIF SPC	Policy payout by CCRIF SPC	Imminent default
Number of Triggers	Three	Three	Not stated
Reporting	Progress reports on post-event relief, recovery and reconstruction programmes	Progress reports on post-event relief, recovery and reconstruction programmes	Not stated

Source: 2014 Taiwan debt restructuring agreement; 2015 debt exchange; 2015 Paris Club Agreed Minute

5. Key Lessons Learned

Countries contemplating including hurricane or similar disaster-linked clauses in their loan agreements will need to consider the following:

- **Pattern of natural disasters.** The hurricane provision was a viable option in Grenada's debt restructuring agreement because there was: (i) a well-documented history of natural disasters in the region that evidenced the frequency, intensity and damage impact of the disaster; and ii) the effect of 2004 Hurricane Ivan was still fresh in the memory of many of the creditors. Countries will have to understand and present a good case for a weather-related clause based on a sound understanding of their vulnerability to natural disasters.
- **The country story**. Grenada is credited with presenting a strong and credible case for the inclusion of a hurricane clause. The authorities were able to clearly and forcefully argue the case both on the basis of experience and the knowledge of events.
- **Structure of their debt**. In the case of Grenada, hurricane provisions applied to several categories of restructured debt: official external debt and external and domestic bonds held by private lenders. Multilateral loans remain excluded from restructuring arrangements and therefore the inclusion of a hurricane provision did not apply. Countries will have to carefully assess their portfolio compositions to determine the share of debts that are most amenable to the inclusion of this provision. Heavily externally indebted countries with a large share of multilateral debt will benefit least from hurricane provisions as these debts are amenable to debt restructuring and such provisions have not been included in new lending agreements.
- **Metrics matter**. Determining the trigger for the clause will require available data on the type and intensity of the event and the measurable extent of damage caused. Without the availability of this information, it may be difficult to argue effectively for the inclusion of this clause. In the case of Grenada, for example, the bondholders did not include a trigger for excessive rainfall as they were not satisfied with parametric data for rainfall.
- **Negotiation trade-offs**. Countries will have to carefully consider what economic or financial trade-offs may arise in negotiating a hurricane provision and whether such a trade-off is worth it. In the case of Grenada's debt exchange, it is difficult to determine whether the 7 per cent coupon rate applied to the newly restructured bond may have been lower in the absence of the hurricane provision. Did creditors implicitly build in an additional premium as a trade-off for the hurricane provision? While there is no information that suggests that such a trade-off between the coupon rate and the provision was considered in the debt renegotiation, such a trade-off may arise in other similar negotiations. Countries, therefore, especially when negotiating their hurricane provisions with commercial creditors should carefully consider what possible trade-offs and associated costs may arise.
- **The amount of relief.** The amount of cash-flow relief provided under the hurricane provision is primarily determined by: (i) the amount of debt affected, (ii) the number of times a claim is triggered and (ii) the number of deferred payments. In Grenada's case about one-third of its debt was covered by the inclusion of a hurricane provision. As other debts are to be restructured, Grenada stands to substantially benefit from relief in the event of a major disaster. Grenada's hurricane provisions allowed for a maximum of three claims and up to two deferred payments under each claim. Countries will need to carefully assess and quantify how much debt relief will be obtained if they make a claim and whether this provides significant fiscal space in the event of a hurricane or other eligible disaster.
- **The standstill period.** The hurricane clause provides only a one-year moratorium. Countries will need to consider whether a moratorium period of one year is adequate and whether future hurricane provisions should seek to extend the moratorium period. A longer moratorium period would increase the number of payments eligible to be deferred and therefore would afford countries more cash relief. This could help to avoid a debt restructuring by providing more adequate relief under the provision. However, if there is no extension of the maturity period of the loan the longer moratorium period combined

with the capitalisation of interest and pro-rated principal payments could create a significant liquidity burden.

- **The debt restructuring option.** The trade-off between short-term cash relief and more comprehensive debt relief will need to be carefully weighed during negotiations and in triggering the provision. In effect, circumstances may arise where it may be more appropriate to immediately seek a comprehensive debt restructuring than to invoke the trigger. This is especially so if few loans have a hurricane provision or the amount of relief under the standstill is small and there is a need for substantial relief. Countries will have to carefully decide when it is most financially appropriate to trigger the provision.
- **The cost of the relief.** Countries must carefully consider the financial cost of triggering the hurricane provision. The capitalisation of interest leads to an immediate increase in the stock of debt outstanding. The pro-rating of principal coupled with a very short grace period (six months) also adds to the government's annual debt service payments. The timing of the trigger may also have a significant impact on the government's annual cash flows (See Appendix 1).

  Countries should pursue the possibility of extending the repayment period of the deferred payments to avoid the bunching of payments especially close to the original maturity of the loan. Alternatively, countries may choose to refinance the outstanding loan balance if a claim is triggered close to maturity to avoid the hump in payments and extend the repayment period.
- **Other mechanisms**. Countries should carefully consider alternative mechanisms such as disaster insurance and fiscal buffers before seeking to include a hurricane provision. In addition, countries may need to be more proactive in investing in disaster mitigation infrastructure, such as building sea walls, wind-proofing buildings, making coastal areas flood proof, improving drainage and enforcing building codes. While hurricane provisions provide an additional source of debt relief in the event of a disaster, countries should also determine whether similar but less costly disaster relief mechanisms may be available from other sources. For Caribbean countries, participation in CCRIF SPC provides another avenue for financial support in the event of a disaster. Countries should seek to maximise their coverage and adequately insure themselves against the risk of disaster. A careful quantitative analysis of the comparative cost of including a hurricane provision or increasing insurance coverage should be conducted to determine the best options. A similar analysis should be undertaken for establishing financial buffers.
- **The role of the IMF and other multilateral lenders**. The IMF can play a significant role in the negotiation of a hurricane clause as Grenada's experience illustrates. It can do so by: (i) supporting a country's economic programme; (ii) providing an independent analysis of the country's debt sustainability; (iii) supporting the country's debt restructuring exercise; and (iv) explicitly endorsing the hurricane provision. All these occurred during Grenada's debt restructuring arrangements. The existence of Grenada's ECF arrangement with the Fund in support of Grenada's 'Home-Grown Economic Programme' served to bolster its negotiations with both private and official external creditors. The IMF, in support of Grenada's debt restructuring, stressed the need for debt reduction stating that 'A comprehensive restructuring of public debt with meaningful principal reduction remains essential to return public debt to sustainable levels.' (See IMF, 2014). The Fund's endorsement of the hurricane provision came as early as 2005 when the idea emerged out of discussions between Grenada and the Fund. However, at the time, without the existence of CCRIF SPC and an independent body to measure the impact of a disaster and quantify the losses, there was little appetite by creditors to contemplate a hurricane provision.

  Countries should therefore examine the inclusion of a hurricane provision in the framework of a strong economic policy framework that can receive the endorsement of the Fund and other multilateral lenders, especially regional development banks.

  They should also carefully review their country debt sustainability analyses as these indicate the risk of debt distress and may be an important determinant, especially in the framework of the Paris Club, in negotiating or triggering a hurricane provision. Countries will want to avoid a situation such as occurred in Belize's 2012 debt restructuring negotiations where creditors questioned whether there was a debt sustainability issue based on the IMF's debt sustainability report (*The Belize Times*, 2012).

Beyond helping governments to preserve economic stability and supporting the debt restructuring exercise, multilateral institutions will need to play an increasingly significant role by either helping countries to build resilience and mitigate the effects of natural disasters or by developing innovative instruments to support existing facilities such as the IMF's Rapid Credit Facility or Rapid Financing Instrument.

- **Timely creditor engagement**. Countries should seek to engage their creditors quickly once signs of debt distress emerge. Debt exchanges have generally had more successful outcomes when there is close creditor involvement from the outset. Success is more likely since there is more involvement in the structuring of the agreement and greater opportunity for consensus building. Countries may consider including bondholder engagement provisions in bond documentation to ensure timely engagement with creditors in the event of payment difficulties or an external shock.
- **Financial advisors**. Countries should consider the use of financial advisors in debt exchanges or other comprehensive debt restructuring exercises to develop an implementation and communication strategy. To some extent, Grenada's delay in proceeding with the debt restructuring was due to resource and capacity constraints within the Government. Countries, especially small states, should objectively assess their capacity to develop and implement a debt restructuring strategy and as far as possible seek to appoint sound advisors who can significantly assist in advancing and concluding a restructuring arrangement.
- **New financing agreements**. While a precedent has been set for including hurricane provisions in restructuring agreements, no such precedent has been established for new financing arrangements. Like collective action clauses, these provisions have emerged out of a need to ensure more orderly debt restructuring and were first included in debt restructuring agreements. However, over time, collective action clauses have become a standard feature of new sovereign bond issues. Countries with substantial external debt to bilateral and commercial creditors that are at risk of debt distress and are also vulnerable to natural disasters should consider whether their debt strategies should seek to include the negotiation of hurricane provisions in new financing agreements rather than solely in debt restructuring operations. While the impact of the relief may not be significant over the short-term, against a background of evident climate change, the long-term benefit of having an avenue of temporary cash relief could be substantial.

Appendix 1

Table A1 Debt service impact of timing of trigger

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
DOD	100	90	80	70	60	50	40	30	20	10	0
Principal		10	10	10	10	10	10	10	10	10	10
Interest		7	6.3	5.6	4.9	4.2	3.5	2.8	2.1	1.4	0.7

Trigger in Year 2	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
DOD	100	90	96.3	84.26	72.23	60.19	48.15	36.11	24.08	12.04	0.00
Principal		10	0	12.04	12.04	12.04	12.04	12.04	12.04	12.04	12.04
Interest		7	0	6.74	5.90	5.06	4.21	3.37	2.53	1.69	0.84

Trigger in Year 8	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
DOD	100	90	80	70	60	50	40	30	32.1	16.05	0
Principal		10	10	10	10	10	10	10	0	16.05	16.05
Interest		7	6.3	5.6	4.9	4.2	3.5	2.8	0	2.25	1.12

Governments when undertaking a debt restructuring will primarily be concerned about the overall sustainability of their debt. This is typically measured in present value terms. The timing of the trigger is not likely to adversely impact overall debt sustainability; however, in nominal terms there is notable impact on cash flows as shown in the example below.

Once a claim is triggered, the following occurs:

a. One or two principal repayments falling due over a 12-month period are deferred.

b. The deferred amount is pro-rated over the life of the loan. (For example, if 10 million is deferred and there are four years to maturity, repayments of 2.5 million must be paid each year over the life of the loan in addition to the payments falling due based on the original terms of the loan.

c. Interest is capitalised. This means that it is added to the outstanding balance of the loan.

d. Future interest payments are calculated on the new outstanding balance.

e. The combined effect of (i) the additional pro-rated principal and (ii) the higher interest payments increase the total debt service.

An early trigger, such as in Year 2, leads to higher total debt service costs over the life of the loan. In nominal terms, the increase in annual debt service costs in the year after the trigger is 20 per cent.

A trigger called in Year 8 leads to lower total debt service costs when compared with a trigger in Year 2. However, in nominal terms, the increase in the annual debt service costs in the year after the trigger (Year 9) is 60 per cent.

Countries may face a substantially higher annual liquidity/fiscal burden in nominal terms by triggering the clause in later years as shown by comparing Year 8 with Year 2. For countries that are already fiscally burdened, the annual cash payout may be a strong disincentive to trigger a claim late in the life of the loan.

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