INTERNATIONAL MONETARY FUND

GRENADA

Debt Sustainability Analysis

Prepared by the Staff of the International Monetary Fund

In consultation with the World Bank Staff

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Grenada's outlook has deteriorated somewhat relative to the previous debt sustainability analysis (DSA), driven by the current economic downturn and higher debt financing.[1]. *Grenada will not achieve the regional benchmark of reducing the debt-to-GDP ratio to 60 percent until 2024, which is four years after the ECCB's target date of 2020 and a deterioration of six years relative to the previous DSA. A possible large loan from the Export-Import Bank of China to build a luxury hotel could undermine efforts to secure debt sustainability. Grenada exceeds thresholds for the ratios of the present value (PV) of external debt to GDP and to exports, and the ratio of the PV of external debt to GDP will fall below the 40 percent indicative threshold only in 2024. Thus, Grenada remains at* ***high risk*** *of debt distress.*[2]

I. CONTEXT

1. **The global economic slowdown and financial turmoil have weakened Grenada's outlook significantly through their impact on tourism receipts, FDI, and remittances.** Growth slowed from 4.5 percent in 2007 to 0.3 percent in 2008, and real GDP is projected to decline by 0.7 percent in 2009. Inflation, which stood at 2.8 percent as of March 2009, is expected to decline to 2.1 percent by the end of 2009, as lower world food and fuel prices are passed through.

2. **Grenada obtained substantial debt relief through a commercial debt exchange in November 2005 and under a Paris Club agreement reached in May 2006.**[3] Nevertheless,

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[1] See IMF Country Report No. 08/357.

[2] Standard & Poor's notes that Grenada's ratings are constrained by its high general government debt burden, debt management problems, and vulnerabilities inherent in the country's small size. It has not rated the sovereign in 2009.

[3] Bilateral agreements have been reached with all creditors except the Russian Federation.

the debt service burden is now increasing reflecting the end of the grace period on restructured debt to domestic commercial banks, and the step up in the interest rate on exchanged debt from 1 percent during 2006–08 to 2.5 percent in 2009.

3. **The government established a Debt Management Unit in the Ministry of Finance in January 2009 to improve the effectiveness of and to develop a strategy for debt management.** The Unit is already making progress with plans to improve debt monitoring and the capacity to assess debt sustainability. It is also working to improve procedures to ensure timely debt service payments.[4]

II. Underlying DSA Assumptions

4. **The baseline scenario is based upon the government's current fiscal policies, as set forth in their May 2009 Supplementary Memorandum of Economic Policies**.[5] The main assumptions under this scenario are described in the following table and in Box 1.

Grenada: Key Assumptions and Indicators in the DSA, 2008–29

(In percent of GDP, unless otherwise indicated)

	Prelim.	Projections					
	2008	2009	2010	2011	2019	2025	2029
Total revenue and grants 1/	44.3	39.7	41.4	41.7	40.2	39.7	39.5
Primary (noninterest) expenditure 1/	46.5	41.3	41.1	39.2	38.0	37.3	36.8
Primary balance (including grants) 1/	-2.3	-1.6	0.3	2.5	2.2	2.5	2.7
Overall balance 1/	-5.7	-4.9	-2.7	-0.7	-1.6	-0.6	0.3
Public debt	108.6	109.4	108.9	104.6	72.0	55.3	43.0
External current account	-42.3	-32.0	-30.3	-29.9	-27.6	-24.2	-21.9
Exports of goods and services	27.7	24.0	25.0	26.1	30.2	31.0	31.4
Real GDP growth (in percent)	0.3	-0.7	1.0	2.9	4.0	4.0	4.0
Inflation rate (average; in percent)	8.0	2.3	2.9	2.6	2.0	2.0	2.0

Sources: Ministry of Finance of Grenada; and Fund staff estimates and projections.
1/ Public sector.

[4] The authorities made several small external debt service payments in 2008 with a delay. There have also been several cases in which there were delays in rolling over treasury bills. In addition, the government incurred EC$20.3 million arrears in June 2007 on unrestructured debt to the nonbank public; all but EC$1 million has been cleared.

[5] The baseline program scenario assesses the implications of the authorities' program under the PRGF arrangement, which focuses on securing debt sustainability through fiscal consolidation and on implementing structural reforms. The accompanying staff report includes an extensive description of the authorities' program.

Box 1. Baseline Macroeconomic Assumptions (2009–29)

- Real **GDP** is projected to decline by 0.7 percent in 2009 due to the global economic slowdown and financial turmoil and to recover slightly to 1 percent in 2010. Growth is projected to average 3.5 percent during 2011–14, and return to its potential of 4 percent subsequently. The growth projection for 2009 reflects a 37 percent decline in FDI, a 14 percent drop in travel receipts, and a 10 percent drop in net remittances for 2009, all of which start to recover in 2010. In the longer run, the projection assumes that the authorities undertake the structural reforms needed to sustain growth.

- After rising to 8.0 percent in 2008 due to increases in food and fuel prices, annual average **inflation** is projected to fall gradually to 2 percent by 2014, and remain at this level thereafter.

- The **primary balance** (including grants) of the public sector improves from an average deficit of 2.1 percent of GDP during 1999–2008 to a surplus of 2.7 percent by 2014. This primary surplus reflects wage restraint in the medium term and annual central government capital expenditure of 8.2 percent of GDP.

- **Grants** gradually decline from high post-hurricane levels to 1 percent of GDP by 2029, and the interest rate on new borrowing increases from 2.6 percent in 2010 to 5 percent for 2011–2029. As concessional financing tapers off, and with a commercial borrowing rate above the discount rate of 5 percent, the grant element of new borrowing turns negative in later years.

- The projection assumes that Grenada receives **concessional financing** under the PetroCaribe initiative during 2009–12 (paragraph 6 below), and that the grant element is used to finance programs already in the budget, replacing more expensive forms of financing.

- The **external current account** deficit is assumed to decline gradually from 42.3 percent of GDP in 2008 to about 27.4 percent of GDP by 2014. Ongoing adjustment of the economy (reflected in a growing share of tourism receipts beginning in 2010) would allow the current account deficit to average around 23 percent of GDP in the outer years.[1] **Exports** of goods and services are assumed to average 27.2 percent of GDP in 2009-14and are projected to average 30.6 percent for the rest of the period. Most of the financing would be provided by **FDI** inflows, averaging 17.9 percent of GDP in 2009–14 and 15.1 percent of GDP in the outer years, as well as by official transfers and portfolio investment inflows, averaging close to 3.5 percent of GDP over the projection period.

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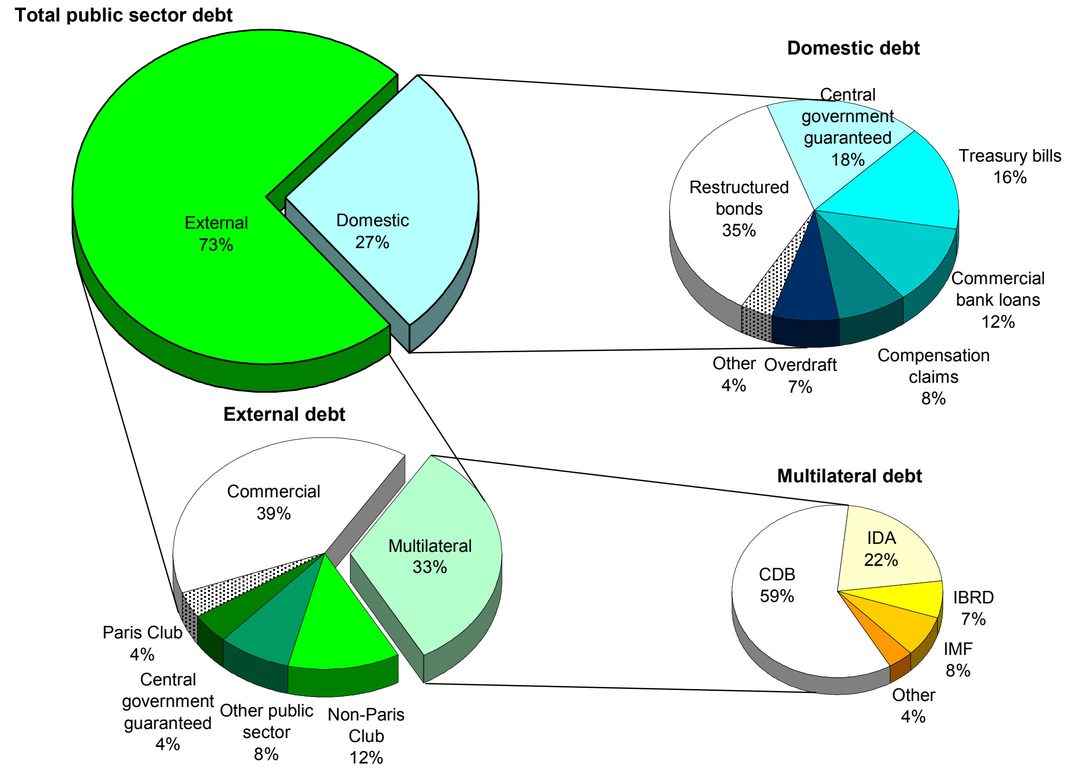
[1] This current account deficit is consistent with estimates of current account norms for ECCU countries (see Emilio Pineda, Paul Cashin, and Yan Sun, *Assessing Exchange Rate Competitiveness in the Eastern Caribbean Currency Union*, WP/09/78).

III. Evaluation of Public Sector Debt Sustainability

Grenada's public debt as of end-2008

5. **Public sector debt fell to 108.6 percent of GDP during 2008** (Tables 1 and A1a). The debt-to-GDP ratio declined by 3 percentage points of GDP, reflecting nominal GDP growth of 5 percent and the use of divestment proceeds to finance most of the overall deficit. Nevertheless, the end-2008 ratio was higher than the previous DSA's projection of 106.5 percent of GDP, as a result of the higher than expected overall deficit. External debt was 73.0 percent of total debt at end 2008. The central government accounted for almost all of external debt (88.1 percent). Public sector debt in PV terms at 103.9 percent of GDP was only slightly lower than in nominal terms, notwithstanding the concessional element of multilateral and restructured official debt, reflecting the stepping up of the interest rate on restructured debt to 9 percent by 2019.

Grenada: Public Sector Debt, end-2008
(In percent)

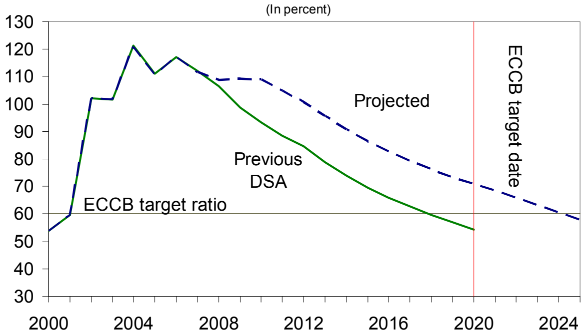


Source: Grenada authorities.

The baseline (program) scenario

6. **Grenada's debt sustainability outlook has deteriorated somewhat relative to the previous DSA, notwithstanding expectations of greater concessional borrowing in the near term.**[6] The deterioration reflects the higher-than-expected debt at the end of 2008, the downward revision in the growth trajectory in the adverse external environment, and a higher overall deficit in 2009–10. Another important factor is that divestment proceeds from a luxury hotel project—the expected main financing source for the 2009 budget—will not materialize this year. Nevertheless, some of this deterioration is countered by lower PetroCaribe borrowing, due to a lower expected path for oil prices in the medium term and higher primary surpluses in the long run (2015–29).[7] The baseline does not include a proposed loan from the Export-Import Bank of China which is discussed below.[8]

Grenada: Evolution of Debt-to-GDP Ratio
(In percent)



Sources: Ministry of Finance; and Fund staff estimates and projections.

7. **On the worsened debt trajectory, the authorities will not achieve the ECCU's nominal debt target of 60 percent of GDP by 2020 until 2024, six years later than in the previous DSA.** The PV of debt falls to 42.4 percent of GDP by 2029, compared with 43.0 percent of GDP in nominal terms, reflecting new borrowing at a rate close to the discount rate of 5 percent (Figure 1). The PV of public sector debt-to-revenue ratio falls from 234.7 percent in 2008 to 107.4 percent in 2029.[9] The debt service-to-revenue ratio would increase from 12.5 percent in 2008 to 19.6 percent in 2029, with the ratio rising to 27-28percent during 2021–25 as restructured debt amortizes.

[6] The projections assume an augmentation of the PRGF program (37.5 percent of quota or US$6.5 million), and budgetary support from the Caribbean Development Bank (US$12 million) and the World Bank (US$8 million). In the long term, most of Grenada's new borrowing is assumed to be on commercial terms with an interest rate above the discount rate.

[7] The financing terms for PetroCaribe are highly concessional, with an interest rate of 1 percent and a maturity of 25 years (including a two-year grace period), implying a grant element of 46 percent. The agreement extends for a 14-year period, but is assumed to operate during 2008–12 reflecting the possibility that committed concessional financing might not be delivered.

[8] The program ceiling on bilateral concessional debt does not accommodate this loan.

[9] These ratios are stated with revenue inclusive of grants, consistent with Table A1a.

Alternative scenarios and stress tests

Policy scenarios

8. **The debt trajectory is highly sensitive to shocks and policy slippages.** The following scenarios explore the potential impact of a delayed economic recovery, a lack of fiscal adjustment, or proposed borrowing from the Export-Import Bank of China.

9. **A scenario in which economic recovery is delayed due to a deeper and more prolonged global recession would be a setback to debt sustainability.** This scenario assumes a more protracted global economic downturn, with an 0.7 percent decline in real GDP in 2010-11 due to weak tourism sector performance. It also assumes a delayed recovery in FDI flows as a share of GDP as a result of continued difficulties in financing (Table A1b, Alternative Scenario A4).[10] The PV of debt to GDP would fall to 45.6 percent by 2029 (46.2 percent in nominal terms), rather than 42.4 percent in the baseline scenario (Figure 1a). The 60 percent of GDP target for nominal debt is reached only in 2025 rather than 2024 in the baseline. The PV of debt to revenue would fall to 114.7 percent in 2029, rather than 107.4 percent in the baseline scenario.

10. **Fiscal adjustment is essential to reducing the level of debt.** Under a scenario in which the primary fiscal balance remains unchanged at the 2009 level throughout the projection period, the nominal debt to GDP remains nearly constant (Table A1b, Alternative Scenario A2). With an unchanged primary balance, the PV of debt-to-GDP ratio reaches 103.6 percent by 2029 (109.3 percent in nominal terms).

11. **The authorities are considering a large proposed loan from the Export-Import Bank of China in 2009–11 to finance a luxury hotel.** Such a large loan could undermine the objective of reducing debt. Although the size and terms of the loan have yet to be fully finalized, this scenario assumes a loan amount of US$80 million disbursed over 2009–11 with a 39 percent grant element, no private co-financing, and no impact on growth.[11] With these assumptions, the average PV of debt-to-GDP ratio in 2009-14 is 104.6 percent (as opposed to 98.1 percent in the baseline scenario). In 2029, the PV of debt-to-GDP ratio is

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[10] This is a similar scenario to the one with a natural disaster in the previous DSA which assumed that real GDP growth was zero for three years (2009-11) and then rose above the baseline during the recovery (2012–13), while the primary deficit was 3 percentage points of GDP higher during 2009–11. In that scenario, the PV of debt was 14 percentage points of GDP higher than in the baseline in 2028. A recent study has shown that Grenada's high vulnerability to natural disasters could potentially reverse the direction of a declining debt trajectory and has estimated that the projected baseline central government debt ratio without hurricanes could be between 29 to 129 percent of GDP by 2020 while with the impact of hurricanes this range would widen to 32–145 percent of GDP. See "Chapter VI. Insurance Against Natural Disasters in the Caribbean" in *ECCU—Selected Issues* (IMF Country Report No. 09/176).

[11] This reflects the most recent information available to staff.

46.0 percent (47.8 percent in nominal terms; Table A1b, Alternative Scenario A5). The 60 percent of GDP target for nominal debt is reached only in 2026 rather than 2024 in the baseline. If the project raises GDP growth by 0.5 percentage points per year during 2009–13, the PV of debt-to-GDP ratio in 2029 is 44.5 percent (46.1 percent in nominal terms), and the 60 percent of GDP target is reached in 2025.

Other scenarios

12. **It would be essential to contain expenditure if the downturn is prolonged**. In Bound Test B1, real GDP contracts by 2.7 percent in 2010 and 2011, the fiscal revenue-to-GDP ratio and nominal expenditure follow the same trajectories as in the baseline. In this scenario, the PV of debt rises sharply to 103.1 percent of GDP (108.4 percent in nominal terms) in 2029. In Bound Test B4, a 30 percent real depreciation in 2010 implies that the PV of debt falls only to 73.4 percent of GDP by 2029. In neither case would the 60 percent of GDP target for nominal debt be achieved in the projection period

IV. Evaluation of External Debt Sustainability

13. **Grenada continues to exceed thresholds for the ratio of the PV of external debt to GDP and to exports of goods and services**.[12] Based on Grenada's 2005–07 average CPIA rating of "medium," the thresholds are 40 percent and 150 percent for the ratios to GDP and exports, respectively, while for 2008, Grenada's ratios were 74.5 percent and 269.2 percent, respectively.[13]

14. **However, Grenada is expected to remain above the threshold for the ratio for the PV of external debt to GDP for an extended period** (Table A2a). The ratio of the PV of external public debt to GDP would not fall below the 40 percent threshold until 2023, while the PV of debt to exports would not fall below the 150 percent threshold until 2021 (Figure 2). The debt-service-to-exports ratio during 2009–14 remains well below the threshold for all but one year (2012), but breaches the 20 percent threshold in 2016 and remains above it for the remainder of the projection period.[14]

15. **A large possible loan from the Export-Import Bank of China would worsen the debt outlook**. The PV of external public debt to GDP would not fall below the 40 percent

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[12] Goods exports for Grenada are relatively small, reflecting hurricane damage during 2004–05 to the nutmeg industry.

[13] See Staff Guidance Note on the Application of the Joint Fund-Bank Debt Sustainability Framework for Low-Income Countries (Public Information Notice (PIN) No. 05/59 (May 4, 2005)).

[14] The analysis excludes flows of private sector external debt, which are believed to be small, due to lack of data. Given this exclusion, the size of the residuals in the baseline scenario is determined by developments in Grenada's BOP, e.g., the financing gap, the change in imputed reserves, and other investments (net).

threshold until 2025, while the PV of debt to exports would fall below the 150 percent threshold in 2023, two years later than under the baseline.

16. **Sensitivity analysis shows greater variation relative to the baseline in the short and medium term, but less variation in outer years** (Table A2b). Under an alternative scenario with key variables (GDP growth, the current account deficit, and FDI) at historical averages, the PV of external public debt-to-GDP ratio would fall to 22.6 percent by 2029 (Scenario A1), slightly lower than in the baseline scenario (see Figure 2).[15] However if new public sector loans are made on less favorable terms during 2009–2029 (Scenario A2, assuming 2 percentage points higher interest rate than in the baseline), the PV of external debt to GDP would not fall below the 40 percent threshold until 2028, and both the PV of debt-to-exports ratio, and debt-service-to-exports ratio will remain above the thresholds during most of this period.

V. Conclusions

17. **Grenada's debt sustainability has deteriorated owing to lower economic growth, worsened primary deficits, and lower FDI flows due to the global economic slowdown.** The authorities have responded prudently by prioritizing spending plans and enhancing efforts to protect vulnerable groups. The debt outlook is most sensitive to a protracted delay in fiscal adjustment, which would prevent the authorities from reaching the 60 percent of GDP debt target during the projection period. The outlook would also be adversely affected by the possible large loan from the Export-Import Bank of China and to any delays in economic recovery due to a deeper and more prolonged global downturn. Either of these shocks would significantly set back the goal of putting debt on a sustainable trajectory.

18. **Grenada's risk of external debt distress remains high**. External debt, although on a sustainable path, remains above the indicative thresholds for most of the period of the DSA analysis. In addition, the external debt outlook could deteriorate substantially if public sector loans were to be contracted on less favorable terms, thus calling for the authorities' careful consideration of the terms of debt contracted in the future.

[15] The historical average real GDP growth rate, which includes post-hurricane recovery years, is higher than average growth rate projected for the medium term in the baseline, which is driven by the effect of the global economic slowdown.

Table 1. Grenada: Public Sector Debt, 2008

(Year end, in millions of U.S. dollars)

	Stock	Percent of Total Debt	Percent of GDP
Public sector debt 1/	693.3	100.0	108.6
Central government debt	600.3	86.6	94.0
Central-government guaranteed debt	54.8	7.9	8.6
Other public sector debt	38.2	5.5	6.0
External debt	506.0	73.0	79.2
A. Central government	445.8	64.3	69.8
1. Multilateral	167.1	24.1	26.2
CDB	100.2	14.4	15.7
IDA	36.0	5.2	5.6
IBRD	11.5	1.7	1.8
IMF	13.0	1.9	2.0
Other multilateral	6.5	0.9	1.0
2. Official bilateral	79.3	11.4	12.4
Paris Club	17.9	2.6	2.8
Belgium	7.3	1.0	1.1
France	4.3	0.6	0.7
Russian Federation	0.2	0.0	0.0
United Kingdom	3.3	0.5	0.5
United States	2.9	0.4	0.5
Non-Paris Club	61.4	8.9	9.6
Kuwait	18.5	2.7	2.9
Taiwan Province of China	20.3	2.9	3.2
Trinidad and Tobago	17.1	2.5	2.7
Other bilateral	5.6	0.8	0.9
3. Commercial, total	199.4	28.8	31.2
Restructured bonds	193.5	27.9	30.3
Unrestructured bonds	5.8	0.8	0.9
B. Central government guaranteed	22.0	3.2	3.4
Of which:			
Paris Club	6.0	0.9	0.9
C. Other public sector 2/	38.2	5.5	6.0
Domestic debt	187.3	27.0	29.3
A. Central government	154.5	22.3	24.2
Restructured Bonds	68.1	9.8	10.7
Unrestructured bonds	2.8	0.4	0.4
Treasury bills	29.1	4.2	4.6
Commercial bank loans	21.8	3.1	3.4
Overdraft	13.7	2.0	2.1
Domestic arrears	3.6	0.5	0.6
Compensation claims	14.8	2.1	2.3
Other	0.6	0.1	0.1
B. Central-government guaranteed	32.8	4.7	5.1
Memorandum item:			
Nominal GDP	638.5		

Sources: Grenada authorities; and IMF staff estimates.

1/ Includes central government liabilities to the National Insurance Scheme.
2/ Includes PetroCaribe-related borrowing.

Table A1a. Grenada: Public Sector Debt Sustainability Framework, Baseline Scenario, 2006–29 1/
(In percent of GDP, unless otherwise indicated)

	Actual			1999-08 Average 2/	Standard Deviation 2/	Projections										
	2006	2007	2008			2009	2010	2011	2012	2013	2014	2009–14 Average	2019	2025	2029	2015–29 Average
Public sector debt 1/	117.3	111.5	108.6			109.4	108.9	104.6	100.5	95.1	90.2		72.0	55.3	43.0	
o/w foreign-currency denominated	81.6	78.7	79.2			79.9	80.2	77.4	74.3	69.9	65.8		50.6	36.0	24.9	
Change in public sector debt	6.6	-5.8	-2.9			0.8	-0.5	-4.3	-4.1	-5.4	-4.9		-2.9	-2.9	-3.1	
Identified debt-creating flows	3.7	-2.4	-2.5			-0.2	-1.6	-5.5	-5.2	-5.3	-4.8		-2.9	-2.9	-3.1	
Primary deficit	**3.6**	**5.1**	**2.3**	**2.1**	**4.7**	**1.6**	**-0.3**	**-2.5**	**-2.5**	**-2.8**	**-2.7**	**-1.5**	**-2.2**	**-2.5**	**-2.7**	**-2.4**
Revenue and grants	44.6	39.2	44.3			39.7	41.4	41.7	41.5	41.3	41.2		40.2	39.7	39.5	
of which: grants	8.7	1.1	4.3			2.5	2.9	2.8	2.6	2.5	2.3		1.7	1.2	1.0	
Primary (noninterest) expenditure	48.1	44.3	46.5			41.3	41.1	39.2	39.0	38.6	38.5		38.0	37.3	36.8	
Automatic debt dynamics	**0.7**	**-5.4**	**-1.9**			**-1.6**	**-1.0**	**-2.8**	**-2.5**	**-2.4**	**-1.9**		**-0.5**	**-0.3**	**-0.2**	
Contribution from interest rate/growth differential	1.6	-5.1	0.0			1.4	0.0	-2.0	-2.0	-2.1	-1.8		-0.5	-0.3	-0.2	
of which: contribution from average real interest rate	-1.0	-0.1	0.3			0.6	1.1	1.0	1.4	1.4	1.7		2.4	2.0	1.6	
of which: contribution from real GDP growth	2.7	-5.0	-0.3			0.8	-1.1	-3.1	-3.4	-3.5	-3.6		-2.9	-2.2	-1.8	
Contribution from real exchange rate depreciation	-0.9	-0.3	-1.9			-3.0	-1.0	-0.7	-0.4	-0.3	-0.1		...	...	...	
Other identified debt-creating flows	**-0.6**	**-2.2**	**-2.9**			**-0.1**	**-0.3**	**-0.3**	**-0.2**	**-0.2**	**-0.2**		**-0.2**	**-0.1**	**-0.1**	
Privatization receipts (negative)	-0.6	-2.2	-2.9			-0.1	-0.3	-0.3	-0.2	-0.2	-0.2		-0.2	-0.1	-0.1	
Recognition of implicit or contingent liabilities	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Debt relief (HIPC and other)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Other (specify, e.g. bank recapitalization)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Residual, including asset changes	2.9	-3.4	-0.4			1.0	1.1	1.2	1.1	-0.1	-0.1		-0.1	-0.1	0.0	
Other Sustainability Indicators																
PV of public sector debt	…	…	103.9			105.1	105.0	101.0	97.2	92.4	87.9		70.1	54.1	42.4	
o/w foreign-currency denominated	…	…	74.5			75.6	76.3	73.8	70.9	67.1	63.5		48.7	34.8	24.3	
o/w external	...	...	74.5			75.6	76.3	73.8	70.9	67.1	63.5		48.7	34.8	24.3	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	...	
Gross financing need 3/	7.8	10.8	7.8			6.4	4.2	2.7	4.4	3.3	3.8		5.3	8.1	5.0	
PV of public sector debt-to-revenue and grants ratio (in percent	**…**	**…**	**234.7**			**264.7**	**253.3**	**242.5**	**234.1**	**223.4**	**213.3**		**174.2**	**136.1**	**107.4**	
PV of public sector debt-to-revenue ratio (in percent)	**…**	**…**	**260.0**			**282.6**	**272.6**	**259.8**	**249.9**	**237.6**	**226.1**		**182.1**	**140.3**	**110.1**	
Of which: external 4/	…	…	186.6			203.3	198.0	189.9	182.5	172.7	163.4		126.5	90.3	63.1	
Debt service-to-revenue and grants ratio (in percent) 5/	**9.5**	**14.3**	**12.5**			**12.1**	**10.8**	**12.5**	**16.7**	**14.8**	**15.8**		**18.8**	**26.7**	**19.6**	
Debt service-to-revenue ratio (in percent) 5/	11.8	14.7	13.8			12.9	11.6	13.4	17.8	15.7	16.7		19.6	27.5	20.1	
Primary deficit that stabilizes the debt-to-GDP ratio	-3.0	10.9	5.2			0.8	0.2	1.8	1.6	2.6	2.2		0.7	0.4	0.4	
Key macroeconomic and fiscal assumptions																
Real GDP growth (in percent)	-2.3	4.5	0.3	2.8	5.5	-0.7	1.0	2.9	3.4	3.6	3.9	2.3	4.0	4.0	4.0	4.0
Average nominal interest rate on forex debt (in percent)	2.8	2.9	3.3	5.3	2.9	3.0	2.9	3.3	3.5	3.5	3.9	3.3	5.4	5.7	5.7	5.4
Average real interest rate on domestic debt (in percent)	-2.1	-0.7	-1.5	1.3	2.8	-1.7	-0.1	-0.1	0.9	1.2	2.0	0.4	3.3	3.3	3.3	3.2
Real exchange rate depreciation (in percent, + indicates depreciatior	-1.1	-0.4	-2.4	-0.9	1.3	...	...	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	4.4	3.1	4.8	2.9	1.9	5.5	2.8	2.8	2.5	2.3	2.1	3.0	2.0	2.0	2.0	2.0
Growth of real primary spending (deflated by GDP deflator, in percer	0.1	0.0	0.1	0.1	0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grant element of new external borrowing (in percent)	...	...	...	…	…	20.8	25.9	28.2	19.1	19.0	11.2	20.7	-0.7	-6.3	-9.4	...

Sources: Grenada authorities; and IMF staff estimates and projections.

1/ The coverage of the public sector is public and publicly guaranteed debt, including debt of public enterprises and the debt of the central government to the public sector.
2/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.
3/ Gross financing need is defined as the primary deficit plus debt service plus the stock of short-term debt at the end of the last period.
4/ Revenues excluding grants.
5/ Debt service is defined as the sum of interest and amortization of medium and long-term debt.

Table A1b. Grenada: Sensitivity Analysis for Key Indicators of Public Debt 2009–29

	Projections								
	2009	2010	2011	2012	2013	2014	**2019**	2025	2029
PV of Debt-to-GDP Ratio									
Baseline	105.1	105.0	101.0	97.2	92.4	87.9	**70.1**	54.1	42.4
A. Alternative scenarios									
A1. Real GDP growth and primary balance are at historical averages	105.1	105.2	105.4	106.1	106.3	107.0	**113.1**	123.4	129.2
A2. Primary balance is unchanged from 2009	105.1	106.7	106.3	106.1	105.1	104.2	**102.7**	103.8	103.6
A3. Permanently lower GDP growth 1/	105.1	106.7	104.7	103.2	101.0	99.5	**102.0**	123.1	143.6
A4. Delayed recovery	109.7	114.1	115.5	111.1	105.7	100.4	**78.5**	59.0	45.6
A5. With China loan	111.1	110.8	108.1	104.1	99.2	94.6	75.7	58.4	46.0
A6. With China loan with growth impact	110.6	109.7	106.5	102.1	96.8	92.2	73.7	56.7	44.5
B. Bound tests									
B1. Real GDP growth is at historical average minus one standard deviations in 2010–11	105.1	110.3	115.6	114.7	112.7	111.0	**106.8**	105.9	103.1
B2. Primary balance is at historical average minus one standard deviations in 2010–11	105.1	111.3	115.5	111.4	106.4	101.7	**83.0**	65.5	52.9
B3. Combination of B1-B2 using one half standard deviation shocks	105.1	110.2	115.3	112.5	108.7	105.1	**92.0**	80.9	72.1
B4. One-time 30 percent real depreciation in 2010	105.1	137.8	133.0	128.3	122.9	118.0	**98.8**	83.4	73.4
B5. 10 percent of GDP increase in other debt-creating flows in 2010	105.1	113.9	109.9	105.9	101.0	96.3	**78.0**	61.1	48.8
PV of Debt-to-Revenue Ratio 2/									
Baseline	264.7	253.3	242.5	234.1	223.4	213.3	**174.2**	136.1	107.4
A. Alternative scenarios									
A1. Real GDP growth and primary balance are at historical averages	264.7	254.2	253.2	256.0	257.2	259.6	**280.2**	309.2	325.5
A2. Primary balance is unchanged from 2009	264.7	257.4	255.2	255.7	254.2	253.1	**255.1**	261.1	262.3
A3. Permanently lower GDP growth 1/	264.7	257.2	250.9	248.1	243.7	240.7	**252.0**	307.7	361.3
A4. Delayed recovery	276.2	273.7	275.0	265.5	253.7	241.8	**193.6**	147.5	114.7
A5. With China loan	279.7	267.4	259.4	250.8	239.9	229.6	188.0	146.9	116.4
A6. With China loan with growth impact	278.4	264.9	255.8	246.2	234.4	224.2	183.2	142.7	112.8
B. Bound tests									
B1. Real GDP growth is at historical average minus one standard deviations in 2010–11	264.7	265.3	275.7	274.7	271.1	268.0	**264.2**	265.6	260.3
B2. Primary balance is at historical average minus one standard deviations in 2010–11	264.7	268.5	277.2	268.5	257.5	247.0	**206.2**	164.8	134.0
B3. Combination of B1-B2 using one half standard deviation shocks	264.7	265.6	276.1	270.4	262.3	254.7	**228.2**	203.4	182.4
B4. One-time 30 percent real depreciation in 2010	264.7	332.6	319.3	309.2	297.4	286.4	**245.6**	209.8	185.8
B5. 10 percent of GDP increase in other debt-creating flows in 2010	264.7	274.9	263.7	255.2	244.3	233.9	**193.8**	153.6	123.6
Debt Service-to-Revenue Ratio 2/									
Baseline	12.1	10.8	12.5	16.7	14.8	15.8	**18.8**	26.7	19.6
A. Alternative scenarios									
A1. Real GDP growth and primary balance are at historical averages	12.1	10.6	12.5	17.2	15.8	17.4	**23.7**	39.4	36.8
A2. Primary balance is unchanged from 2009	12.1	10.8	12.7	17.3	15.8	17.2	**21.9**	34.0	30.1
A3. Permanently lower GDP growth 1/	12.1	10.9	12.8	17.4	15.7	17.1	**23.1**	38.5	36.5
A4. Delayed recovery	12.4	11.3	13.6	18.1	16.0	17.7	**20.9**	28.6	21.0
A5. With China loan	12.1	11.0	12.9	17.1	15.1	16.1	19.9	27.6	20.5
A6. With China loan with growth impact	12.1	10.9	12.8	16.8	14.8	15.8	19.5	27.1	20.1
B. Bound tests									
B1. Real GDP growth is at historical average minus one standard deviations in 2010–11	12.1	11.2	13.8	18.7	17.0	18.5	**23.4**	35.9	31.1
B2. Primary balance is at historical average minus one standard deviations in 2010–11	12.1	10.8	13.1	18.3	16.4	17.2	**20.1**	29.9	22.6
B3. Combination of B1-B2 using one half standard deviation shocks	12.1	10.9	13.4	18.4	16.6	17.7	**21.4**	32.2	25.8
B4. One-time 30 percent real depreciation in 2010	12.1	12.7	17.2	23.2	20.7	22.3	**27.5**	42.0	34.3
B5. 10 percent of GDP increase in other debt-creating flows in 2010	12.1	10.8	13.4	17.8	15.6	16.7	**19.6**	28.6	21.4

Sources: Grenada authorities; and IMF staff estimates and projections.

1/ Assumes that real GDP growth is at baseline minus one standard deviation divided by the square root of the length of the projection period.

2/ Revenues are defined inclusive of grants.

Table A2a. Grenada: External Debt Sustainability Framework, Baseline Scenario, 2006–29 1/
(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average 2/	Standard Deviation 2/	Projections										
	2006	2007	2008			2009	2010	2011	2012	2013	2014	2009–14 Average	2019	2025	2029	2015–29 Average
External debt (nominal) 1/	**81.6**	**78.7**	**79.2**			**79.9**	**80.2**	**77.4**	**74.3**	**69.9**	**65.8**		**50.6**	**36.0**	**24.9**	
o/w public and publicly guaranteed (PPG)	81.6	78.7	79.2			79.9	80.2	77.4	74.3	69.9	65.8		50.6	36.0	24.9	
Change in external debt	2.3	-2.9	0.5			0.6	0.3	-2.8	-3.1	-4.4	-4.1		-2.5	-2.6	-2.8	
Identified net debt-creating flows	16.0	7.4	13.2			17.3	12.9	9.1	7.8	6.3	5.8		10.6	7.7	5.9	
Non-interest current account deficit	**31.2**	**39.7**	**39.8**	**24.5**	**11.8**	**29.8**	**28.1**	**27.5**	**26.8**	**25.4**	**24.8**		**24.9**	**22.1**	**20.4**	23.1
Deficit in balance of goods and services	41.7	41.2	43.2			31.4	30.1	29.3	28.3	26.9	26.1		23.9	20.3	17.9	
Exports	28.8	31.0	27.7			24.0	25.0	26.1	27.4	29.2	31.3		30.2	31.0	31.4	
Imports	70.4	72.2	70.9			55.4	55.1	55.4	55.7	56.0	57.4		54.1	51.3	49.3	
Net current transfers (negative = inflow)	-13.9	-5.0	-6.8	-11.8	7.0	-4.6	-4.9	-4.6	-4.4	-4.2	-4.0		-1.5	-1.3	-1.2	-2.0
o/w official	-9.4	-1.8	-3.8			-2.0	-2.4	-2.3	-2.1	-2.0	-1.8		0.5	0.4	0.4	
Other current account flows (negative = net inflow)	3.4	3.5	3.4			3.0	2.9	2.8	2.9	2.7	2.7		2.6	3.2	3.8	
Net FDI (negative = inflow)	**-15.9**	**-28.7**	**-25.2**	**-16.1**	**6.4**	**-15.3**	**-16.7**	**-18.7**	**-19.1**	**-19.0**	**-19.0**		**-15.0**	**-15.0**	**-15.0**	-15.1
Endogenous debt dynamics 3/	**0.7**	**-3.6**	**-1.3**			**2.8**	**1.5**	**0.3**	**0.1**	**-0.1**	**0.0**		**0.7**	**0.6**	**0.5**	
Contribution from nominal interest rate	2.2	2.2	2.5			2.2	2.3	2.5	2.6	2.5	2.6		2.7	2.1	1.5	
Contribution from real GDP growth	1.8	-3.4	-0.2			0.5	-0.8	-2.2	-2.5	-2.5	-2.6		-2.0	-1.5	-1.0	
Contribution from price and exchange rate changes	-3.3	-2.5	-3.6			…	…	…	…	…	…		…	…	…	
Residual 4/	**-13.7**	**-10.3**	**-12.8**			**-16.6**	**-12.6**	**-11.8**	**-10.9**	**-10.7**	**-9.8**		**-13.1**	**-10.4**	**-8.7**	
o/w exceptional financing	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
PV of external debt 5/	...	...	74.5			75.6	76.3	73.8	70.9	67.1	63.5		48.7	34.8	24.3	
In percent of exports	...	...	269.2			315.7	304.7	283.1	259.2	230.0	203.0		161.2	112.2	77.4	
PV of PPG external debt	**...**	**...**	**74.5**			**75.6**	**76.3**	**73.8**	**70.9**	**67.1**	**63.5**		**48.7**	**34.8**	**24.3**	
In percent of exports	**...**	**...**	**269.2**			**315.7**	**304.7**	**283.1**	**259.2**	**230.0**	**203.0**		**161.2**	**112.2**	**77.4**	
In percent of government revenues	**...**	**...**	**186.6**			**203.3**	**198.0**	**189.9**	**182.5**	**172.7**	**163.4**		**126.5**	**90.3**	**63.1**	
Debt service-to-exports ratio (in percent)	**12.4**	**15.6**	**16.4**			**15.7**	**14.8**	**17.1**	**22.0**	**17.9**	**17.6**		**21.3**	**31.0**	**21.7**	
PPG debt service-to-exports ratio (in percent)	**12.4**	**15.6**	**16.4**			**15.7**	**14.8**	**17.1**	**22.0**	**17.9**	**17.6**		**21.3**	**31.0**	**21.7**	
PPG debt service-to-revenue ratio (in percent)	**9.9**	**12.7**	**11.3**			**10.1**	**9.6**	**11.5**	**15.5**	**13.4**	**14.2**		**16.7**	**24.9**	**17.7**	
Total gross financing need (Millions of U.S. dollars)	106.5	96.2	121.9			121.9	104.9	97.4	107.0	95.4	98.8		192.6	280.5	259.9	
Non-interest current account deficit that stabilizes debt ratio	28.9	42.5	39.3			29.2	27.8	30.2	29.9	29.8	28.9		27.4	24.8	23.2	
Key macroeconomic assumptions																
Real GDP growth (in percent)	-2.3	4.5	0.3	2.8	5.5	-0.7	1.0	2.9	3.4	3.6	3.9	2.3	4.0	4.0	4.0	4.0
GDP deflator in U.S. dollar terms (change in percent)	4.4	3.1	4.8	2.9	1.9	5.5	2.8	2.8	2.5	2.3	2.1	3.0	2.0	2.0	2.0	2.0
Effective interest rate (percent) 6/	2.8	2.9	3.3	5.3	2.9	3.0	2.9	3.3	3.5	3.5	3.9	3.3	5.4	5.7	5.7	5.4
Growth of exports of G&S (U.S. dollar terms, in percent)	9.0	15.9	-6.0	2.1	17.1	-9.4	8.5	10.2	11.2	13.0	13.7	7.9	6.8	6.4	6.4	6.1
Growth of imports of G&S (U.S. dollar terms, in percent)	0.6	10.4	3.2	6.4	9.9	-18.2	3.3	6.4	6.5	6.7	8.7	2.2	5.2	5.1	4.9	5.0
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	20.8	25.9	28.2	19.1	19.0	11.2	20.7	-0.7	-6.3	-9.4	-3.3
Government revenues (excluding grants, in percent of GDP)	35.9	38.1	39.9			37.2	38.5	38.9	38.9	38.9	38.9		38.5	38.5	38.5	38.5
Aid flows (in Millions of U.S. dollars) 7/	49.0	6.4	27.5			16.9	20.4	20.4	20.4	20.4	20.4		20.4	20.4	20.4	
o/w Grants	49.0	6.4	27.5			16.9	20.4	20.4	20.4	20.4	20.4		20.4	20.4	20.4	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			3.7	4.2	3.8	3.5	2.9	2.7		1.7	0.8	0.6	1.3
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			45.0	54.4	59.3	48.0	59.0	50.7		28.2	9.2	11.2	20.4
Memorandum items:																
Nominal GDP (Millions of U.S. dollars)	564.4	607.9	638.5			668.8	694.4	734.6	778.6	825.1	875.3		1175.8	1675.4	2121.6	
Nominal dollar GDP growth	1.9	7.7	5.0			4.8	3.8	5.8	6.0	6.0	6.1	5.4	6.1	6.1	6.1	6.1
PV of PPG external debt (in Millions of U.S. dollars)	...	...	475.8			505.8	529.6	542.4	552.3	553.7	555.7		572.7	582.9	515.8	
(PVt-PVt-1)/GDPt-1 (in percent)	...	...	...			4.7	3.6	1.8	1.3	0.2	0.2	2.0	0.3	-0.3	-1.1	-0.1

Sources: Grenada authorities; and IMF staff estimates and projections.

1/ The coverage of the public sector is public and publicly guaranteed debt, including debt of public enterprises and the debt of the central government to the public sector.
2/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.
3/ Derived as [i - g - r(1+g)]/(1+g+r+gr) times previous period debt ratio, with i = nominal interest rate; g = real GDP growth rate, and r = growth rate of GDP deflator in U.S. dollar terms.
4/ Includes exceptional financing (i.e., changes in arrears and debt relief); changes in gross foreign assets; and valuation adjustments. For projections also includes contribution from price and exchange rate changes.
5/ Assumes that PV of private sector debt is equivalent to its face value.
6/ Current-year interest payments divided by previous period debt stock.
7/ Defined as grants, concessional loans, and debt relief.
8/ Grant-equivalent financing includes grants provided directly to the government and through new borrowing (difference between the face value and the PV of new debt).

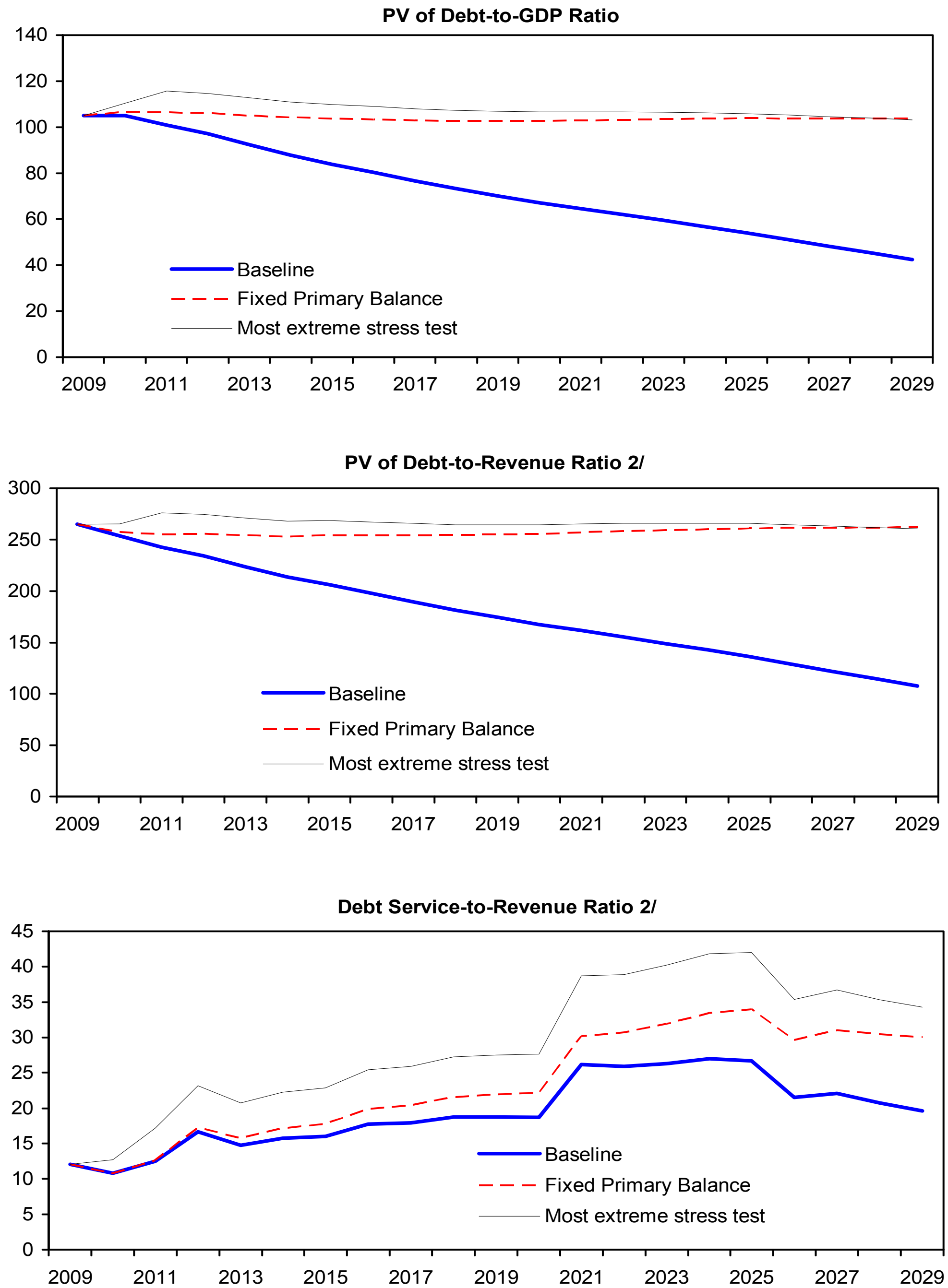
Table A2b. Grenada: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2009–29
(In percent)

	Projections								
	2009	2010	2011	2012	2013	2014	**2019**	2025	2029
PV of debt-to GDP ratio									
Baseline	75.6	76.3	73.8	70.9	67.1	63.5	**48.7**	34.8	24.3
A. Alternative Scenarios									
A1. Key variables at their historical averages in 2009-2029 1/	75.6	70.1	65.7	62.2	59.1	57.4	**35.2**	22.4	22.6
A2. New public sector loans on less favorable terms in 2009–29 2/	75.6	77.3	75.8	73.6	70.3	67.1	**54.7**	45.2	37.8
B. Bound Tests									
B1. Real GDP growth at historical average minus one standard deviation in 2010–11	75.6	79.1	81.0	77.8	73.6	69.7	**53.4**	38.2	26.7
B2. Export value growth at historical average minus one standard deviation in 2010–11 3/	75.6	82.0	90.3	87.3	83.4	79.0	**55.0**	36.1	24.8
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010–11	75.6	77.6	76.5	73.5	69.5	65.8	**50.4**	36.0	25.2
B4. Net non-debt creating flows at historical average minus one standard deviation in 2010–11 4/	75.6	83.7	90.4	87.4	83.5	78.9	**54.8**	36.1	24.8
B5. Combination of B1–B4 using one-half standard deviation shocks	75.6	82.0	93.7	90.6	86.4	82.0	**57.5**	38.0	26.1
B6. One-time 30 percent nominal depreciation relative to the baseline in 2010 5/	75.6	107.7	104.3	100.2	94.8	89.7	**68.8**	49.1	34.3
PV of Debt-to-Exports ratio									
Baseline	315.7	304.7	283.1	259.2	230.0	203.0	**161.2**	112.2	77.4
A. Alternative Scenarios									
A1. Key variables at their historical averages in 2009-2029 1/	315.7	280.1	252.1	227.2	202.6	183.6	**116.3**	72.3	72.0
A2. New public sector loans on less favorable terms in 2009–29 2/	315.7	309.0	290.6	268.8	241.0	214.7	**180.9**	145.7	120.3
B. Bound Tests									
B1. Real GDP growth at historical average minus one standard deviation in 2010–11	315.7	304.7	283.1	259.2	230.0	203.0	**161.2**	112.2	77.4
B2. Export value growth at historical average minus one standard deviation in 2010–11 3/	315.7	417.8	572.9	527.8	472.7	418.1	**300.8**	192.7	130.6
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010–11	315.7	304.7	283.1	259.2	230.0	203.0	**161.2**	112.2	77.4
B4. Net non-debt creating flows at historical average minus one standard deviation in 2010–11 4/	315.7	334.2	346.7	319.4	286.1	252.5	**181.4**	116.4	78.9
B5. Combination of B1–B4 using one-half standard deviation shocks	315.7	373.6	465.7	428.8	383.8	339.8	**246.4**	158.7	107.7
B6. One-time 30 percent nominal depreciation relative to the baseline in 2010 5/	315.7	304.7	283.1	259.2	230.0	203.0	**161.2**	112.2	77.4
Debt service-to-exports ratio									
Baseline	15.7	14.8	17.1	22.0	17.9	17.6	**21.3**	31.0	21.7
A. Alternative Scenarios									
A1. Key variables at their historical averages in 2009–29 1/	15.7	14.5	15.8	20.3	16.2	14.5	**16.3**	22.6	16.5
A2. New public sector loans on less favorable terms in 2009–29 2/	15.7	14.8	16.5	21.2	16.8	17.0	**19.4**	44.1	36.1
B. Bound Tests									
B1. Real GDP growth at historical average minus one standard deviation in 2010–11	15.7	14.8	17.1	22.0	17.9	17.6	**21.3**	31.0	21.7
B2. Export value growth at historical average minus one standard deviation in 2010–11 3/	15.7	18.9	30.2	41.7	34.6	37.0	**47.3**	53.5	36.8
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010–11	15.7	14.8	17.1	22.0	17.9	17.6	**21.3**	31.0	21.7
B4. Net non-debt creating flows at historical average minus one standard deviation in 2010–11 4/	15.7	14.8	18.6	25.2	20.9	23.0	**28.6**	32.4	22.2
B5. Combination of B1–B4 using one-half standard deviation shocks	15.7	17.2	24.6	34.1	28.2	29.6	**38.2**	44.1	30.3
B6. One-time 30 percent nominal depreciation relative to the baseline in 2010 5/	15.7	14.8	17.1	22.0	17.9	17.6	**21.3**	31.0	21.7
Memorandum item:									
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	**-5.1**	-5.1	-5.1

Source: Grenada authorities; and IMF staff projections and simulations.

1/ Variables include real GDP growth, growth of GDP deflator (in U.S. dollar terms), non-interest current account in percent of GDP, and non-debt creating flows.
2/ Assumes that the interest rate on new borrowing is by 2 percentage points higher than in the baseline, while grace and maturity periods are the same as in the baseline.
3/ Exports values are assumed to remain permanently at the lower level, but the current account as a share of GDP is assumed to return to its baseline level after the shock (implicitly assuming an offsetting adjustment in import levels).
4/ Includes official and private transfers and FDI.
5/ Depreciation is defined as percentage decline in dollar/local currency rate, such that it never exceeds 100 percent.
6/ Applies to all stress scenarios except for A2 (less favorable financing) in which the terms on all new financing are as specified in footnote 2.

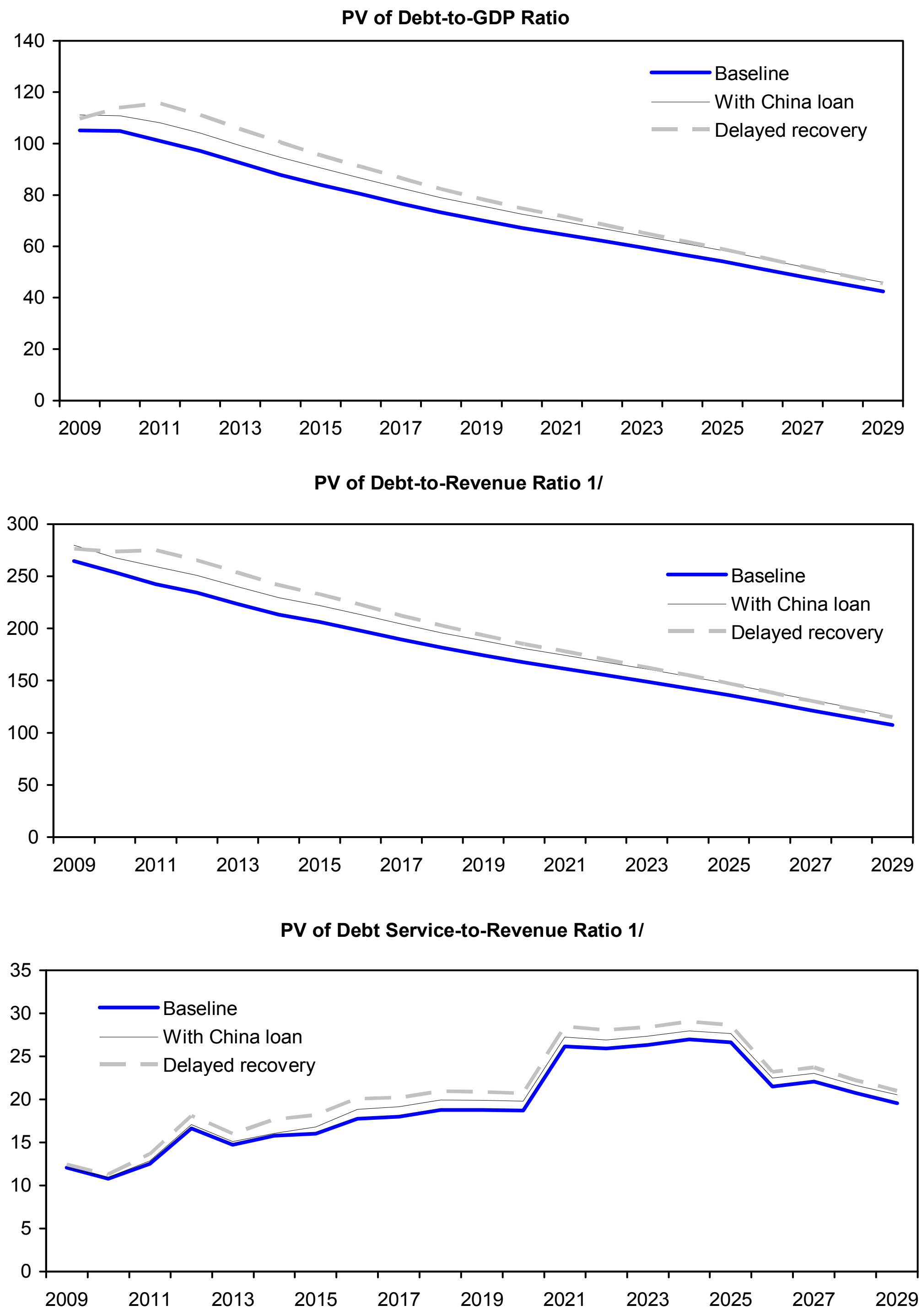
Figure 1. Grenada: Indicators of Public Debt Under Alternative Scenarios, 2009–29 1/



Sources: Grenada authorities; and IMF staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2019. It corresponds to real GDP growth at historical average minus one standard deviations in 2010–11 in panels one and two and to a one-time real depreciation of 30 percent in 2010 in panel three.
2/ Revenues are defined inclusive of grants.

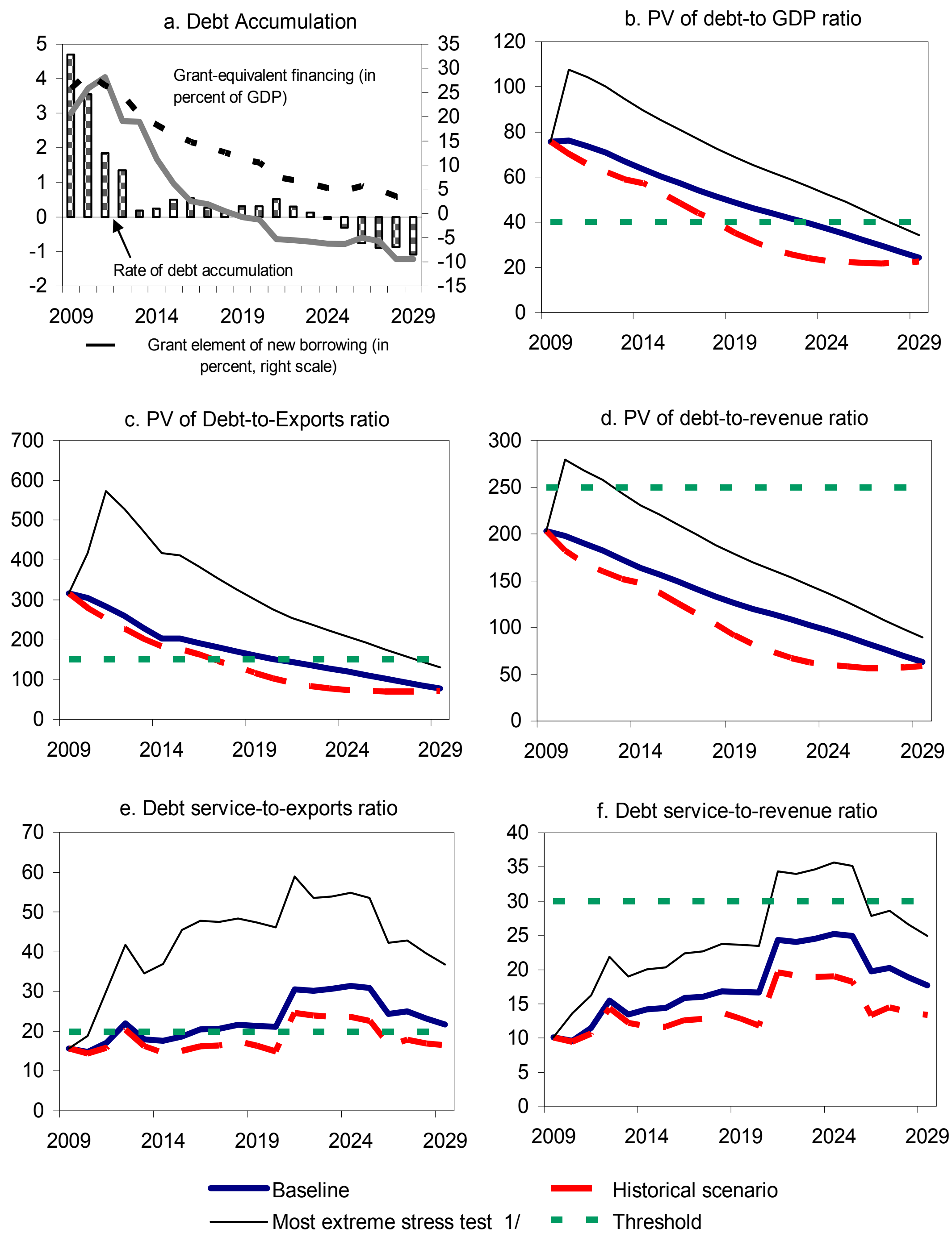
Figure 1a. Grenada: Indicators of Public Debt Under Alternative Scenarios, 2009–29 1/



Sources: Grenada authorities; and IMF staff estimates and projections.

1/ Revenues are defined inclusive of grants.

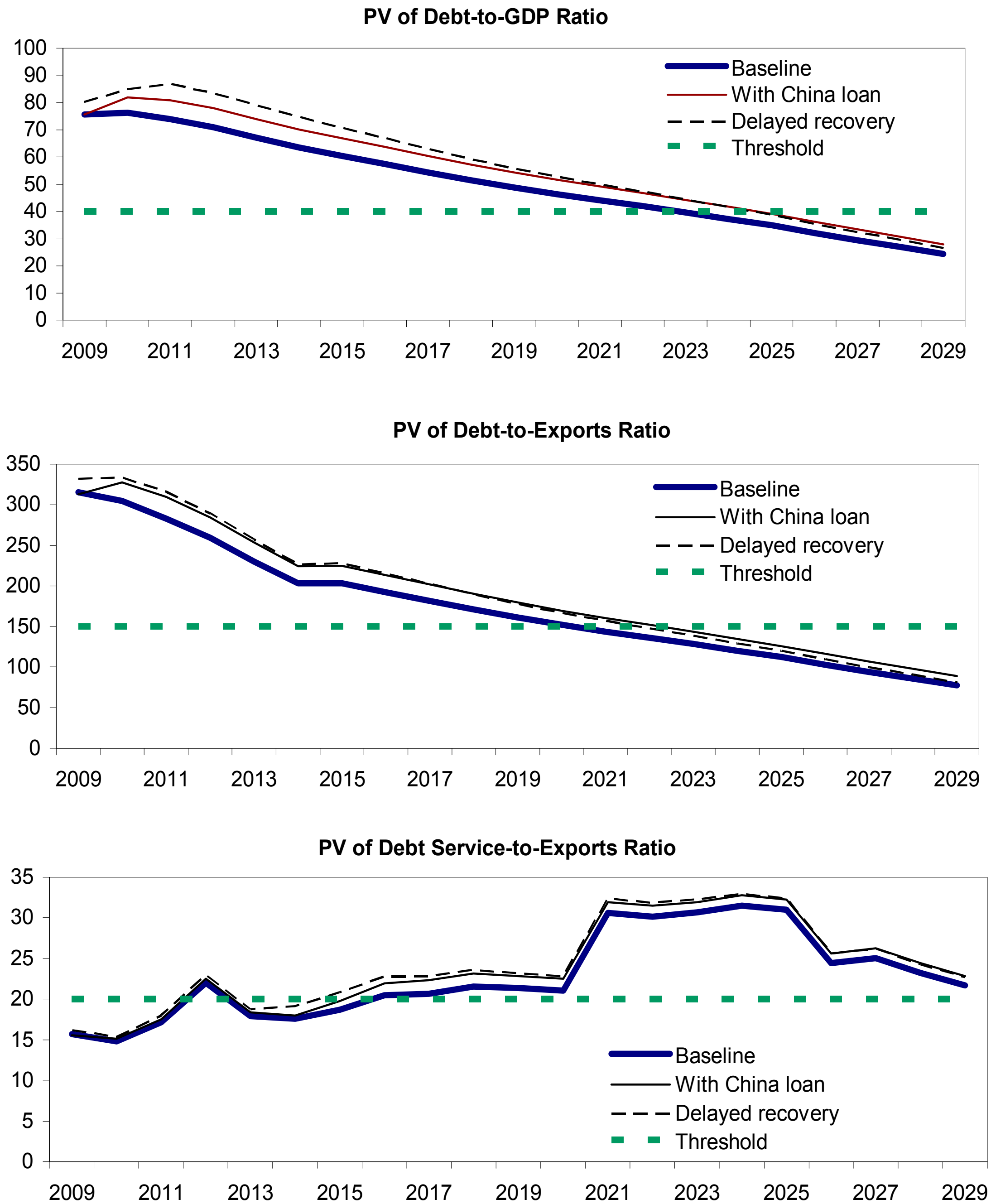
Figure 2. Grenada: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2009–29 1/



Source: IMF staff projections, and simulations.

1/ The most extreme stress test is the test that yields the highest ratio in 2019. In figure b. it corresponds to a one-time depreciation shock; in c. to an exports shock; in d. to a one-time depreciation shock; in e. to an exports shock and in picture f. to a one-time depreciation shock.

Figure 2a. Grenada: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2009–29 1/



Source: IMF staff projections, and simulations.