INTERNATIONAL MONETARY FUND

GUYANA

Joint IMF/World Bank Debt Sustainability Analysis

Prepared by the Staffs of the World Bank and the International Monetary Fund

Approved by Gilbert Terrier and Dhaneshwar Ghura (IMF)
and Carlos Braga and Marcelo Giugale (World Bank)

January 5, 2011

An updated debt sustainability analysis (DSA) yields results in line with those reported in the 2009 Article IV.[1] *Guyana's risk of debt distress remains moderate. Risks of debt distress could arise from both shocks to the growth rate and departure from the agreed fiscal consolidation path. The authorities' continued commitment to fiscal consolidation and structural reforms–including the modernization of the sugar sector- to entrench long-term growth would help reduce these risks over time. Compared to last year's assessment, projected debt ratios are somewhat lower as a stronger growth path is envisioned over the medium term.*

I. Background

1. **Debt relief and fiscal consolidation efforts have helped reduce Guyana's external debt burden significantly in recent years.** Public sector debt declined from 93.1 percent of GDP in 2006 to 60½ percent in 2009. In 2006–07, the Fund, the World Bank, and the IDB provided debt relief amounting to US$611 million under the Multilateral Debt Relief Initiative (MDRI). In November 2006, Japan finalized its bilateral debt cancellation agreement and wrote off its claims as part of the 2004 Paris Club agreement.[2] Further, the non-financial public sector (NFPS) deficit declined steadily from 8.6 percent of GDP in 2005 to 3.4 percent of GDP in 2009.

2. **Since 2007, total gross public debt has remained broadly stable.** Total gross public debt stood at 60 percent of GDP in 2007—rising to 61.2 percent of GDP in 2010.

---

[1] See Guyana—Staff Report for the 2009 Article IV Consultation—Debt Sustainability Analysis (IMF Country Report No. 10/292).

[2] Debt relief under the Heavily Indebted Poor Country (HIPC) Initiative was granted by all multilaterals but one, Paris Club bilateral creditors, and four non-Paris Club creditors (China, India, Venezuela, and Cuba). Debt owed to Brazil and North Korea was paid off without relief. The other creditors have yet to provide their share of debt relief.

External debt has increased by new net disbursements from bilateral and multilateral sources, while domestic debt has significantly decreased from 18.3 percent of GDP in 2007, to 13.9 percent in 2010.

3. **Guyana's external debt burden thresholds correspond to the ones associated with a medium policy performance.** The CPIA (Country Policy and Institutional Assessment) of Guyana has remained stable at 3.4 during the last three years. A rating between 3.25 and 3.75 corresponds to medium performance. Thus, the relevant thresholds for Guyana are: (i) PV of debt-to-exports ratio of 150 percent; (ii) PV of debt-to-revenue of 250 percent; (iii) PV of debt-to-GDP of 40 percent; and (iv) debt service-to-exports and revenue ratios of 20 and 30 percent, respectively.

II. Macroeconomic Framework

A. Background

4. **Despite external and domestic shocks in 2010, the Guyanese economy demonstrated resilience and registered a fifth consecutive year of growth.** Real GDP is projected to grow by 3.4 percent this year compared with 3.3 percent in 2009, as output of gold and services expanded. End-year inflation is projected to pick up to 4.4 percent, from 3.7 percent in 2009, reflecting higher food prices. The external current account deficit would widen to 11.3 percent of GDP from 8.7 percent last year, as the value of sugar exports declined while fuel costs were higher. At the same time, official inflows have allowed for a modest increase in gross reserves, to around 5 months of imports.

5. **The fiscal outturn for 2010 represents a temporary deviation from the authorities' fiscal consolidation path.** The NFPS deficit (after grants) is expected to rise from 3.4 percent of GDP in 2009 to 4.3 percent of GDP in 2010 (higher than the 3.2 percent of GDP agreed on the 2009 Article IV consultation), as buoyant central government revenues only partly offset the underperformance of public enterprises. Public debt would remain broadly stable at 61 percent of GDP.

B. Baseline Scenario: Projections and Assumptions

6. **The medium-term outlook remains positive (Table 1).** The implementation of the Low Carbon Development Strategy (LCDS), and the Amaila Falls Hydropower Plant (AFHP) in particular, would underpin annual growth rates of about 5 percent over the medium term (2011–2015). This path represents a 1 percentage point upward revision from the 2009 Article IV Consultation. The construction of the AFHP would add cumulatively 6 percentage points to growth during 2012–2014, while the public investment projects to be financed with the LCDS inflows (US$250 million during 2011–2015), will add approximately 0.4 percentage points per year over the medium term. Over the long-term (2016–2030), growth rates will converge to some 3 percent per year.

7. **Although fully financed, the external current account will temporarily widen over the medium term.** Capital goods imports associated with the AFHP will cause the current account to widen to some 14½ percent of GDP over the medium term. FDI and official inflows will protect the reserve position at about 5 months of imports. As imports stabilize—partially driven by the fuel import savings associated with the AFHP—and exports recover somewhat in line with improved diversification and private sector investments in gold, oil, and gas sectors, the external current account deficit will slowly improve, reaching 6½ percent of GDP by 2030.

8. **Continued fiscal efforts would underpin a steady reduction in debt ratios.** Supported by a stable inflow of grants and improvements in the performance of public enterprises, the proposed fiscal path includes a gradual narrowing of the overall fiscal deficit**.** In 2011, the baseline scenario envisions a deficit of 3.5 percent of GDP, and a long-term deficit of 2.5 percent of GDP. Gross public debt ratios will decrease moderately to 60.8 percent of GDP over the medium term and will converge to 53 percent in the long term. Domestic debt, while decreasing somewhat over the medium term, would stabilize at some 12 percent of GDP afterwards.

9. **Resilient foreign capital inflows are projected to fully finance the current account deficit.** FDI inflows will peak at some 15 percent of GDP in 2012 and gradually decline to an average of 7 percent of GDP in the long term. Net official borrowing will hover around 5 percent of GDP over the medium term, partly driven by the upfront borrowing projected in the PSIP; however, as the PetroCaribe financing is assumed to be discontinued by 2014, it will converge to some 2.5 percent of GDP in the long term. Similarly, net official transfers (including budget support grants) are assumed to decrease from its medium-term average of 2.2 percent of GDP to some 1 percent of GDP after 2015.[3]

III. Assessment of the Baseline Scenario: Gross External Debt[4]

10. **The analysis of Guyana's gross external debt sustainability suggests that the country faces a moderate risk of debt distress.** All indicators are *well below* their threshold values with the exception of PV of gross external debt-to-GDP ratio, which reaches 38.8 percent in 2013, just 1.2 percentage points below the threshold value. The aforementioned upfront borrowing envisioned within the PSIP drives this result. The moderate rating is also supported by a gradual decline in gross external borrowing over the long-term, in line with the envisaged path for fiscal tightening (Table 2, Figure 1).

---

[3] Given the relatively high grant element of PetroCaribe disbursements, as they are discontinued in 2014, the grant element of following years' financing decreases somewhat (assumption consistent with the DSA completed in the 2009 Article IV Consultation).

[4] Gross debt includes the total value of disbursements by Venezuela's PetroCaribe as debt, although the authorities have saved most of these disbursements in an escrow account.

11. **The sensitivity analysis shows that Guyana's sustainability indicators are highly vulnerable to some of the standard shocks (Table 3, Figure 1).** The PV for the external debt-to-GDP indicator breaches the threshold in all standard tests, and it is particularly vulnerable to a combined shock of real GDP, export value growth, inflation (U.S. dollar GDP deflator), and net non-debt generating flows at one half standard deviation of their historical average (B5). It reaches almost 84 percent in 2012 (i.e., equivalent to 200 percent of the threshold). The PV of external debt-to-revenue breaches its threshold under two of eight tests; while the PV of debt-to-exports breaches its 150 percent limit under one test. For the last two indicators, the most severe shock remains the same combined shock whose results are mostly driven by lower-than-expected FDI flows. In respect of liquidity indicators, debt-service-to-exports and revenue remain well below their corresponding thresholds under all standard tests.

12. **Albeit a low probability event, a "high investment, low growth" scenario highlights the risks from lower than anticipated returns from the AFHP and other investment projects.** A scenario in which the growth benefits of both the AFHP and the LCDS-related investments are absent (2011–2015 growth rate average of 3.4 instead of the baseline 5 percent) includes a minor and temporary breach of the PV of debt-to-GDP ratio threshold (Figure 1). This indicator will reach 40.9 percent by 2014 and return to levels below the 40 percent threshold by 2019. All the other indicators, however, would remain under their respective thresholds.

IV. Assessment of the Baseline Scenario: Gross Public Debt

13. **The analysis of the dynamics of Guyana's total gross public debt does not alter the overall debt sustainability assessment (Table 4).** The projected fiscal consolidation path is consistent with debt sustainability. The PV of public-debt-to-GDP ratio stabilizes at around its 2010 level (i.e., 48 percent) over the projection period. Debt service will hover around 8–13 percent of revenue over the projection period, indicating that the government would have the ability to meet its debt service payments comfortably.

14. **Total public debt vulnerabilities to standard shocks highlight the importance of adhering to sound policies (Table 5, Figure 2).** The PV of public debt-to-GDP ratio in the test with GDP growth at its historical average minus one standard deviation in 2011–12—resulting in growth rates of -1.3—(B1) will steadily increase and would reach 110 percent by 2030. Further, under the same shock, debt service would reach 35 percent of revenue by 2030, potentially posing debt repayment risks. The high sensitivity to deviations in the growth path is further illustrated by the scenario A3 where growth is assumed to be permanently lower by some 0.7 percentage points over the projection period (averaging 4.2 and 2.5 over the 2011–2015 and 2016–2030 respectively). Under this scenario, the PV of public debt-to-GDP ratio will also steadily increase reaching 87 percent by 2030 while debt service would reach 26 percent of revenue. In addition, if contingent liabilities or other debt-creating flows were to increase by 10 percentage points of GDP in 2011, the PV of the public

debt-to-GDP ratio will expand to 57 percent over the medium term and moderately decline thereafter (B5).

V. Conclusion

15. **Guyana remains at a moderate risk of debt distress, albeit with somewhat lower debt ratios than last year's assessment.** This assessment is unchanged from the 2009 Article IV Consultation. Debt indicators are below their respective thresholds over the projection period in the baseline scenario. The PV of external debt-to-GDP remains however close to its threshold, which requires close attention to its evolution. The sensitivity analysis of both the external and public-sector debt illustrates the great vulnerability of Guyana's debt dynamics to shocks, in particular to FDI flows and GDP growth. Going forward, Guyana is on the cusp of a structural transformation, led by the government's Low Carbon Development Strategy (LCDS) -which includes enhancing human capital, improving business environment and developing high potential low-carbon sector-; private sector investments in gold, oil, and gas sectors as well as the large PPP associated with the construction of hydroelectric plant.

16. **The authorities view the envisioned fiscal consolidation for 2011 and over the medium term as a priority to protect debt sustainability.** Further, they considered that their current strategy of using medium term debt sustainability as a fiscal anchor continues to be appropriate.

Table 1. Guyana: Main Elements of the Macroeconomic Framework

	Medium Term						Long Term			Averages		
	2010	2011	2012	2013	2014	2015	2020	2025	2030	2011-2015	2016-2030	2011-2030
	(Annual percent change)											
Production and prices												
Real GDP	3.4	4.8	6.0	6.1	5.0	2.7	3.1	3.1	3.1	4.9	3.1	3.6
Consumer prices (end of period)	4.4	4.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.2	5.4	5.3
Terms of trade	1.3	-0.1	0.4	0.4	1.1	1.8	-0.4	-0.1	0.0	0.7	-0.2	0.0
	(In percent of GDP, unless otherwise indicated)											
National accounts												
Investment	17.5	20.7	30.2	30.4	26.5	21.8	17.2	16.5	16.9	25.9	17.1	19.3
Private sector	5.8	6.1	17.5	17.7	13.6	8.8	6.7	6.6	7.3	12.8	6.9	8.3
Public sector	11.7	14.5	12.6	12.7	12.9	12.9	10.5	10.0	9.6	13.1	10.2	10.9
National saving	6.1	11.9	11.5	11.9	10.0	12.5	9.8	9.3	10.5	11.6	9.6	10.1
Private sector	0.0	1.9	4.1	4.2	2.1	4.2	2.8	2.7	4.4	3.3	3.0	3.1
Public sector	6.1	10.0	7.4	7.7	7.9	8.3	7.0	6.6	6.1	8.3	6.7	7.1
External savings	11.4	8.8	18.6	18.5	16.5	9.2	7.4	7.3	6.4	14.3	7.4	9.2
Nonfinancial public sector												
Central government revenue and grants	26.7	30.5	29.1	27.9	27.4	27.5	25.9	25.3	24.8	28.5	25.4	26.2
of which: Tax revenue	22.4	21.3	21.4	21.8	21.8	21.8	21.8	21.8	21.8	21.6	21.8	21.7
of which: Public enterprises operational balance	0.6	1.9	1.2	0.9	1.2	1.7	2.0	1.5	1.0	1.4	1.6	1.5
Expenditure	31.0	34.1	32.3	31.0	30.4	30.5	28.3	27.6	27.3	31.7	27.9	28.8
Current 2/	19.4	19.5	19.7	19.2	18.9	18.9	18.9	18.7	18.7	19.2	18.8	18.9
Capital	11.7	14.5	12.6	11.9	11.5	11.6	9.4	8.9	8.6	12.4	9.1	9.9
Overall balance (after grants)	-4.3	-3.5	-3.2	-3.1	-3.0	-3.0	-2.4	-2.3	-2.5	-3.2	-2.5	-2.6
Financing	4.3	3.5	3.2	3.1	3.0	3.0	2.4	2.3	2.5	3.2	2.5	2.6
Net external financing 2/	5.9	7.0	6.4	5.9	2.9	1.0	0.8	0.9	1.1	4.6	0.9	1.8
Net domestic financing	0.3	-0.9	-1.3	-0.5	2.0	1.3	0.9	0.7	1.4	0.1	1.0	0.8
PetroCaribe savings	-1.9	-2.6	-1.9	-2.3	-2.0	0.8	0.8	0.8	0.0	-1.6	0.6	0.0
External sector												
Current account balance (incl. official transfers)	-11.4	-8.8	-18.6	-18.5	-16.5	-9.2	-7.4	-7.3	-6.4	-14.3	-7.4	-9.2
Terms of trade (percent change)	1.3	-0.1	0.4	0.4	1.1	1.8	-0.4	-0.1	0.0	0.7	-0.2	0.0
Foreign direct investment (net)	6.9	6.9	14.8	14.1	13.6	8.7	8.0	7.0	6.7	11.6	7.5	8.5
Gross official reserves (in months of imports)	4.8	5.1	4.9	4.8	4.4	4.9	5.4	5.6	5.3	4.8	5.4	5.2
Memorandum items:												
Nominal GDP (G$ billion)	453	490	544	605	667	722	1,043	1,509	2,099	605.4	1363.1	1173.7
Per capita GDP, US$	2,875	3,095	3,394	3,691	3,956	4,125	4,944	5,936	7,048	3652.3	5586.8	5103.1

Sources: Guyanese authorities; and Fund staff estimates and projections.

1/ Includes debt service savings under HIPC and MDRI.
2/ Reflects interest and amortizations after debt stock operations.
3/ After delivery of HIPC and MDRI and excluding the unspent portion of PetroCaribe loans in 2007-14.

Table 2. Guyana: External Debt Sustainability Framework, Baseline Scenario, 2007-2030 1/
(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average	Standard Deviation	Projections									
	2007	2008	2009			2010	2011	2012	2013	2014	2015	2010-2015 Average	2020	2030	2016-2030 Average
External debt (nominal) 1/	**41.6**	**43.7**	**45.4**			**47.3**	**50.2**	**51.9**	**53.4**	**52.3**	**50.9**		**46.1**	**39.8**	
o/w public and publicly guaranteed (PPG)	41.6	43.7	45.4			47.3	50.2	51.9	53.4	52.3	50.9		46.1	39.8	
Change in external debt	-30.2	2.0	1.7			1.9	2.9	1.8	1.4	-1.1	-1.4		-0.8	-0.1	
Identified net debt-creating flows	-9.5	0.1	-2.3			3.0	-0.3	1.1	1.4	0.5	-0.8		-2.0	-1.4	
Non-interest current account deficit	**10.5**	**12.7**	**8.2**	**8.0**	**3.1**	**10.8**	**8.1**	**17.9**	**17.7**	**15.8**	**8.4**		**6.5**	**5.4**	6.5
Deficit in balance of goods and services	27.6	32.3	24.4			26.8	24.2	32.8	31.8	28.9	21.6		19.6	18.4	
Exports	48.6	50.6	47.6			47.4	51.4	47.7	46.2	46.1	47.3		49.9	54.9	
Imports	76.3	83.0	72.0			74.2	75.7	80.5	78.0	75.0	68.9		69.5	73.3	
Net current transfers (negative = inflow)	-17.2	-19.8	-16.6	-11.7	6.1	-16.3	-16.7	-15.6	-14.8	-13.9	-14.1		-14.1	-14.0	-14.1
o/w official	-0.7	-2.7	-2.0			-1.0	-2.0	-1.8	-1.6	-1.1	-1.1		-1.1	-1.0	
Other current account flows (negative = net inflow)	0.1	0.2	0.3			0.3	0.6	0.8	0.8	0.8	0.9		0.9	1.0	
Net FDI (negative = inflow)	**-8.8**	**-9.3**	**-8.0**	**-5.8**	**2.5**	**-6.9**	**-6.9**	**-14.8**	**-14.1**	**-13.6**	**-8.7**		**-8.0**	**-6.7**	-7.5
Endogenous debt dynamics 2/	**-11.1**	**-3.3**	**-2.5**			**-0.8**	**-1.5**	**-2.0**	**-2.2**	**-1.7**	**-0.6**		**-0.5**	**-0.2**	
Contribution from nominal interest rate	0.6	0.6	0.5			0.6	0.6	0.7	0.7	0.8	0.8		0.9	1.0	
Contribution from real GDP growth	-4.2	-0.7	-1.4			-1.4	-2.1	-2.7	-2.9	-2.5	-1.4		-1.4	-1.2	
Contribution from price and exchange rate changes	-7.5	-3.1	-1.6			…	…	…	…	…	…		…	…	
Residual (3-4) 3/	**-20.7**	**1.9**	**4.0**			**-1.1**	**3.1**	**0.6**	**0.0**	**-1.5**	**-0.6**		**1.2**	**1.4**	
o/w exceptional financing	-19.5	3.0	0.8			1.9	2.6	1.9	2.3	2.0	0.0		0.0	0.0	
PV of external debt 4/	...	...	32.9			34.3	36.3	37.5	38.8	38.3	37.9		37.0	35.0	
In percent of exports	...	...	69.1			72.4	70.6	78.6	84.0	82.9	80.1		74.1	63.8	
PV of PPG external debt	**...**	**...**	**32.9**			**34.3**	**36.3**	**37.5**	**38.8**	**38.3**	**37.9**		**37.0**	**35.0**	
In percent of exports	**...**	**...**	**69.1**			**72.4**	**70.6**	**78.6**	**84.0**	**82.9**	**80.1**		**74.1**	**63.8**	
In percent of government revenues	**...**	**...**	**136.8**			**142.5**	**133.0**	**149.0**	**154.4**	**149.4**	**144.9**		**148.9**	**147.1**	
Debt service-to-exports ratio (in percent)	**2.3**	**2.1**	**1.8**			**2.9**	**3.5**	**4.2**	**4.6**	**4.8**	**4.9**		**4.6**	**4.6**	
PPG debt service-to-exports ratio (in percent)	**2.3**	**2.1**	**1.8**			**2.9**	**3.5**	**4.2**	**4.6**	**4.8**	**4.9**		**4.6**	**4.6**	
PPG debt service-to-revenue ratio (in percent)	**4.5**	**4.9**	**3.5**			**5.7**	**6.5**	**8.0**	**8.4**	**8.7**	**8.8**		**9.3**	**10.7**	
Total gross financing need (Billions of U.S. dollars)	0.0	0.1	0.0			0.1	0.1	0.1	0.2	0.1	0.1		0.0	0.1	
Non-interest current account deficit that stabilizes debt ratio	40.7	10.6	6.5			8.9	5.3	16.2	16.3	16.8	9.8		7.2	5.4	
Key macroeconomic assumptions															
Real GDP growth (in percent)	7.0	2.0	3.3	1.9	3.1	3.4	4.8	6.0	6.1	5.0	2.7	4.7	3.1	3.1	3.1
GDP deflator in US dollar terms (change in percent)	11.7	8.1	3.8	4.3	4.1	4.4	3.0	3.8	2.8	2.4	1.8	3.0	0.8	-0.5	0.8
Effective interest rate (percent) 5/	1.0	1.5	1.2	1.4	0.7	1.4	1.4	1.5	1.6	1.6	1.6	1.5	2.0	2.7	2.2
Growth of exports of G&S (US dollar terms, in percent)	15.4	14.8	0.8	4.0	6.7	7.6	17.2	2.1	5.5	7.4	7.2	7.8	5.5	3.5	5.0
Growth of imports of G&S (US dollar terms, in percent)	17.3	19.9	-6.9	7.8	9.8	11.3	10.1	17.1	5.6	3.5	-3.9	7.3	4.2	3.1	4.4
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	34.1	32.6	32.3	27.5	27.9	9.7	27.3	9.7	9.7	9.7
Government revenues (excluding grants, in percent of GDP)	24.4	21.7	24.0			24.1	27.3	25.2	25.1	25.6	26.1		24.9	23.8	24.4
Aid flows (in Billions of US dollars) 7/	0.2	0.2	0.2			0.2	0.3	0.3	0.2	0.2	0.1		0.1	0.2	
o/w Grants	0.1	0.1	0.1			0.1	0.1	0.1	0.1	0.1	0.0		0.0	0.1	
o/w Concessional loans	0.1	0.1	0.1			0.2	0.2	0.2	0.1	0.1	0.1		0.1	0.1	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			4.7	5.6	6.4	4.7	2.9	1.6		1.3	1.2	1.3
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			54.1	52.7	55.2	47.9	49.9	42.4		37.9	35.5	36.6
Memorandum items:															
Nominal GDP (Billions of US dollars)	1.7	1.9	2.1			2.2	2.4	2.6	2.9	3.1	3.2		3.9	5.8	
Nominal dollar GDP growth	19.5	10.2	7.3			8.0	8.0	10.0	9.1	7.5	4.6	7.9	3.9	2.6	3.9
PV of PPG external debt (in Billions of US dollars)			0.7			0.8	0.9	1.0	1.1	1.2	1.2		1.5	2.0	
(PVt-PVt-1)/GDPt-1 (in percent)						4.2	4.9	4.9	4.8	2.3	1.3	3.8	1.3	1.0	1.2

Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt.

2/ Derived as [r - g - ρ(1+g)]/(1+g+ρ+gρ) times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, and ρ = growth rate of GDP deflator in U.S. dollar terms.

3/ 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.

4/ Assumes that PV of private sector debt is equivalent to its face value.

5/ Current-year interest payments divided by previous period debt stock.

6/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.

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 3.Guyana: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2010-2030
(In percent)

	Projections							
	2010	2011	2012	2013	2014	2015	**2020**	2030
				PV of debt-to GDP ratio				
Baseline	34	36	38	39	38	38	**37**	35
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-2030 1/	34	38	39	40	40	41	**49**	60
A2. New public sector loans on less favorable terms in 2010-2030 2	34	38	41	44	44	43	**46**	51
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	34	39	43	44	44	43	**42**	40
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	34	44	53	53	52	52	**50**	42
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	34	37	40	41	41	40	**39**	37
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	34	49	67	67	66	65	**63**	49
B5. Combination of B1-B4 using one-half standard deviation shocks	34	55	84	83	81	80	**78**	59
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	34	51	53	55	54	53	**52**	49
				PV of debt-to-exports ratio				
Baseline	72	71	79	84	83	80	**74**	64
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-2030 1/	72	73	82	87	87	87	**99**	109
A2. New public sector loans on less favorable terms in 2010-2030 2	72	74	86	94	95	92	**92**	93
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	72	71	79	84	83	80	**74**	64
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	72	102	140	146	143	139	**128**	97
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	72	71	79	84	83	80	**74**	64
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	72	95	141	145	142	137	**126**	89
B5. Combination of B1-B4 using one-half standard deviation shocks	72	117	183	188	184	177	**163**	112
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	72	71	79	84	83	80	**74**	64
				PV of debt-to-revenue ratio				
Baseline	143	133	149	154	149	145	**149**	147
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-2030 1/	143	138	156	160	156	157	**198**	251
A2. New public sector loans on less favorable terms in 2010-2030 2	143	139	163	173	171	166	**184**	215
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	143	141	170	176	170	165	**170**	167
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	143	160	210	213	204	198	**203**	177
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	143	137	159	164	159	154	**159**	157
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	143	178	268	267	256	248	**253**	205
B5. Combination of B1-B4 using one-half standard deviation shocks	143	200	332	330	316	307	**312**	246
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	143	188	210	218	211	205	**210**	208

Table 3.Guyana: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2010-2030 (continued)
(In percent)

Debt service-to-exports ratio

Baseline	3	3	4	5	5	5	**5**	5
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-2030 1/	3	4	5	5	5	5	**5**	6
A2. New public sector loans on less favorable terms in 2010-2030 2	3	3	4	5	5	5	**6**	6
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	3	3	4	5	5	5	**5**	5
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	3	4	6	7	7	7	**8**	8
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	3	3	4	5	5	5	**5**	5
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	3	3	5	7	7	7	**7**	7
B5. Combination of B1-B4 using one-half standard deviation shocks	3	4	6	8	8	8	**9**	9
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	3	3	4	5	5	5	**5**	5

Debt service-to-revenue ratio

Baseline	6	7	8	8	9	9	**9**	11
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-2030 1/	6	7	9	9	9	9	**10**	15
A2. New public sector loans on less favorable terms in 2010-2030 2	6	7	8	9	9	9	**12**	15
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	6	7	9	10	10	10	**11**	12
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	6	7	9	10	10	10	**12**	14
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	6	7	9	9	9	9	**10**	11
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	6	7	9	12	12	12	**14**	17
B5. Combination of B1-B4 using one-half standard deviation shocks	6	7	11	14	14	14	**18**	21
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	6	9	11	12	12	12	**13**	15
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	15	15	15	15	15	15	**15**	15

Sources: Country authorities; and staff estimates and projections.

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.

Table 4. Guyana: Public Sector Debt Sustainability Framework, Baseline Scenario, 2007-2030
(In percent of GDP, unless otherwise indicated)

	Actual					Estimate	Projections								
	2007	2008	2009	Average	Standard Deviation	2010	2011	2012	2013	2014	2015	2010-15 Average	2020	2030	2016-30 Average
Public sector debt 1/	60.0	61.6	60.5			61.2	62.1	61.4	61.4	61.6	60.8		57.8	53.4	
o/w foreign-currency denominated	41.6	43.7	45.4			47.3	50.2	51.9	53.4	52.3	50.9		46.1	39.8	
Change in public sector debt	-33.1	1.6	-1.1			0.7	0.9	-0.7	0.0	0.2	-0.9		-0.7	0.8	
Identified debt-creating flows	-30.7	-1.1	-0.9			-0.2	-1.0	-2.5	-2.2	-1.5	0.0		-0.2	1.0	
Primary deficit	3.4	3.4	2.1	2.4	2.6	2.8	2.1	1.8	1.8	1.7	1.6	2.0	0.8	0.8	0.9
Revenue and grants	27.5	25.9	28.1			26.7	30.5	29.1	27.9	27.4	27.5		25.9	24.8	
of which: grants	3.2	4.2	4.1			2.6	3.2	3.9	2.8	1.8	1.3		1.1	1.0	
Primary (noninterest) expenditure	30.9	29.3	30.2			29.6	32.7	30.9	29.7	29.1	29.1		26.8	25.5	
Automatic debt dynamics	-13.5	-4.5	-3.0			-3.0	-3.1	-4.3	-4.0	-3.2	-1.6		-1.1	0.2	
Contribution from interest rate/growth differential	-8.7	-2.2	-1.7			-1.5	-2.3	-3.2	-3.4	-2.8	-1.7		-1.5	-0.8	
of which: contribution from average real interest rate	-2.6	-1.0	0.3			0.5	0.5	0.3	0.2	0.1	0.0		0.2	0.8	
of which: contribution from real GDP growth	-6.1	-1.2	-2.0			-2.0	-2.8	-3.5	-3.6	-2.9	-1.6		-1.8	-1.6	
Contribution from real exchange rate depreciation	-4.8	-2.4	-1.3			-1.6	-0.8	-1.1	-0.6	-0.4	0.0		...	...	
Other identified debt-creating flows	-20.5	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Privatization receipts (negative)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
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	
Debt relief (HIPC and other)	-20.5	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	
Residual, including asset changes	-2.5	2.7	-0.1			0.8	1.9	1.8	2.2	1.7	-0.9		-0.5	-0.2	
Other Sustainability Indicators															
PV of public sector debt	…	…	48.0			48.2	48.3	47.0	46.8	47.6	47.7		48.7	48.6	
o/w foreign-currency denominated	…	…	32.9			34.3	36.3	37.5	38.8	38.3	37.9		37.0	35.0	
o/w external	...	...	32.9			34.3	36.3	37.5	38.8	38.3	37.9		37.0	35.0	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	23.0	21.7	20.4			19.1	17.5	15.3	13.0	11.7	13.1		14.6	16.2	
PV of public sector debt-to-revenue and grants ratio (in percent)	…	…	170.4			180.3	158.2	161.5	167.8	173.6	173.8		187.6	196.2	
PV of public sector debt-to-revenue ratio (in percent)	…	…	199.6			200.2	176.7	186.7	186.3	185.8	182.7		195.8	204.2	
o/w external 3/	…	…	136.8			142.5	133.0	149.0	154.4	149.4	144.9		148.9	147.1	
Debt service-to-revenue and grants ratio (in percent) 4/	7.2	7.1	5.8			8.4	8.4	9.4	9.6	9.9	10.4		11.4	13.1	
Debt service-to-revenue ratio (in percent) 4/	8.1	8.4	6.8			9.3	9.4	10.8	10.7	10.6	10.9		11.9	13.6	
Primary deficit that stabilizes the debt-to-GDP ratio	…	1.8	3.1			2.2	1.2	2.5	1.8	1.5	2.5		1.6	0.0	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	7.0	2.0	3.3	1.9	3.1	3.4	4.8	6.0	6.1	5.0	2.7	4.7	3.1	3.1	3.1
Average nominal interest rate on forex debt (in percent)	1.0	1.5	1.2	1.4	0.7	1.4	1.4	1.5	1.6	1.6	1.6	1.5	2.0	2.7	2.2
Average real interest rate on domestic debt (in percent)	-6.8	-4.1	0.9	4.3	9.6	1.9	2.7	1.6	1.8	1.7	1.1	1.8	1.6	4.2	1.8
Real exchange rate depreciation (in percent, + indicates depreciation)	-7.3	-5.8	-3.1	-1.9	3.6	-3.5	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	12.7	9.0	3.7	5.7	3.7	4.3	3.2	4.8	4.8	5.0	5.4	4.6	4.4	1.5	4.2
Growth of real primary spending (deflated by GDP deflator, in percent)	0.0	0.0	0.1	0.1	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grant element of new external borrowing (in percent)	...	...	...	…	…	34.1	32.6	32.3	27.5	27.9	9.7	27.3	9.7	9.7	...

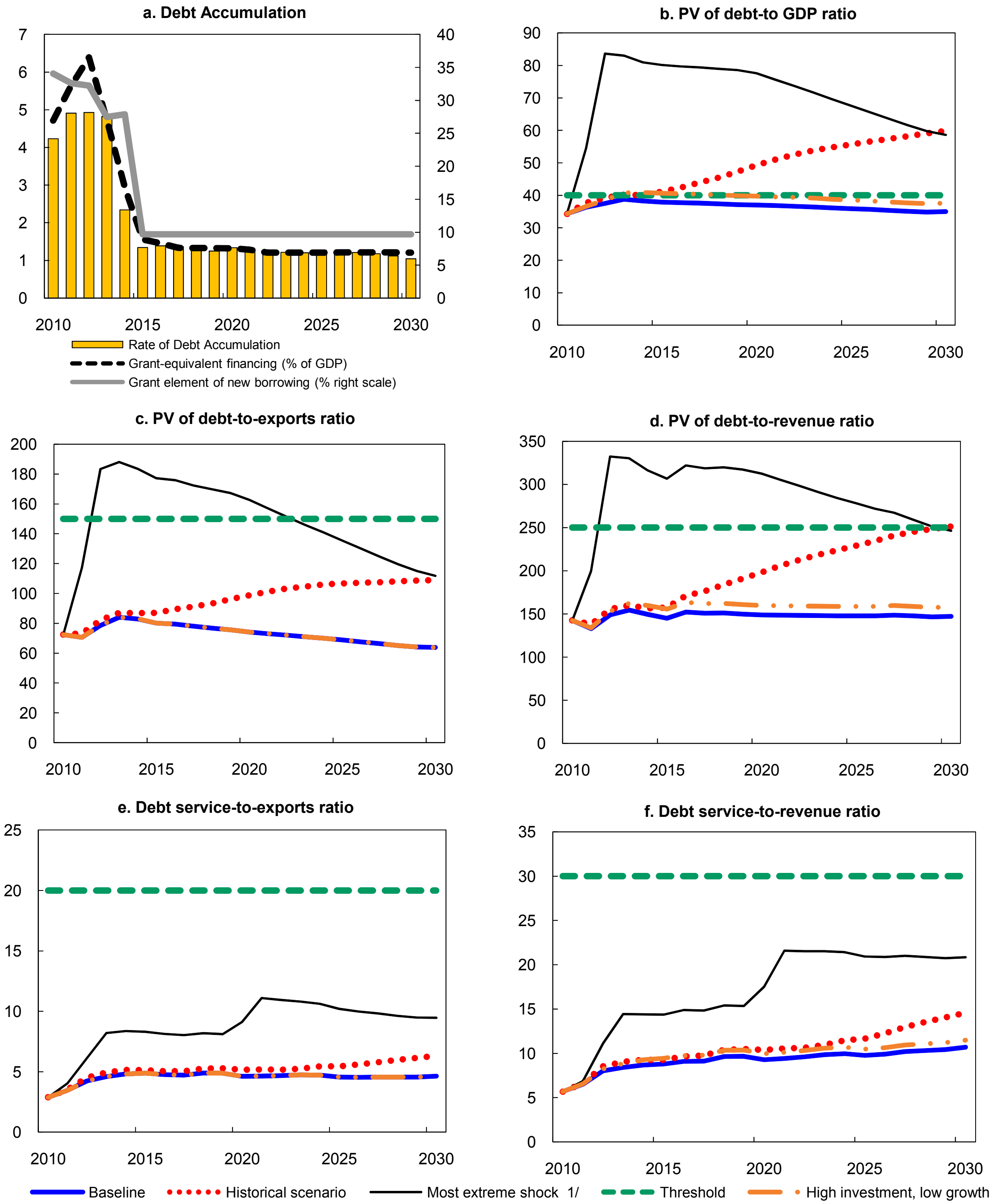
Sources: Country authorities; and staff estimates and projections.
1/ Includes total gross debt for the consolidated public sector.
2/ Gross financing need is defined as the primary deficit plus debt service plus the stock of short-term debt at the end of the last period.
3/ Revenues excluding grants.
4/ Debt service is defined as the sum of interest and amortization of medium and long-term debt.
5/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.

Table 5.Guyana: Sensitivity Analysis for Key Indicators of Public Debt 2010-2030

	Projections							
	2010	2011	2012	2013	2014	2015	2020	2030
PV of Debt-to-GDP Ratio								
Baseline	48	48	47	47	48	48	49	49
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	48	50	51	53	56	57	66	87
A2. Primary balance is unchanged from 2010	48	49	48	49	51	52	60	78
A3. Permanently lower GDP growth 1/	48	49	48	49	50	52	60	87
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2011-2012	48	53	58	61	65	68	83	111
B2. Primary balance is at historical average minus one standard deviations in 2011-2012	48	51	52	52	52	52	53	53
B3. Combination of B1-B2 using one half standard deviation shocks	48	52	55	57	60	62	74	94
B4. One-time 30 percent real depreciation in 2011	48	62	59	57	57	58	61	66
B5. 10 percent of GDP increase in other debt-creating flows in 2011	48	57	56	55	55	55	56	55
PV of Debt-to-Revenue Ratio 2/								
Baseline	180	158	161	168	174	174	188	196
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	180	163	173	188	202	206	253	347
A2. Primary balance is unchanged from 2010	180	160	167	176	186	190	233	313
A3. Permanently lower GDP growth 1/	180	160	165	174	183	187	231	348
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2011-2012	180	172	196	215	233	245	320	444
B2. Primary balance is at historical average minus one standard deviations in 2011-2012	180	167	180	186	191	191	205	213
B3. Combination of B1-B2 using one half standard deviation shocks	180	169	185	201	216	225	284	380
B4. One-time 30 percent real depreciation in 2011	180	202	201	205	210	211	236	266
B5. 10 percent of GDP increase in other debt-creating flows in 2011	180	187	191	196	202	201	216	223
Debt Service-to-Revenue Ratio 2/								
Baseline	8	8	9	10	10	10	11	13
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	8	9	10	11	12	13	16	25
A2. Primary balance is unchanged from 2010	8	8	9	11	11	12	15	24
A3. Permanently lower GDP growth 1/	8	8	9	10	11	12	15	26
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2011-2012	8	9	11	13	16	17	22	35
B2. Primary balance is at historical average minus one standard deviations in 2011-2012	8	8	10	13	14	12	12	15
B3. Combination of B1-B2 using one half standard deviation shocks	8	9	10	12	13	16	19	29
B4. One-time 30 percent real depreciation in 2011	8	10	12	13	14	15	18	23
B5. 10 percent of GDP increase in other debt-creating flows in 2011	8	8	11	20	11	14	13	16

Sources: Country authorities; and 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.

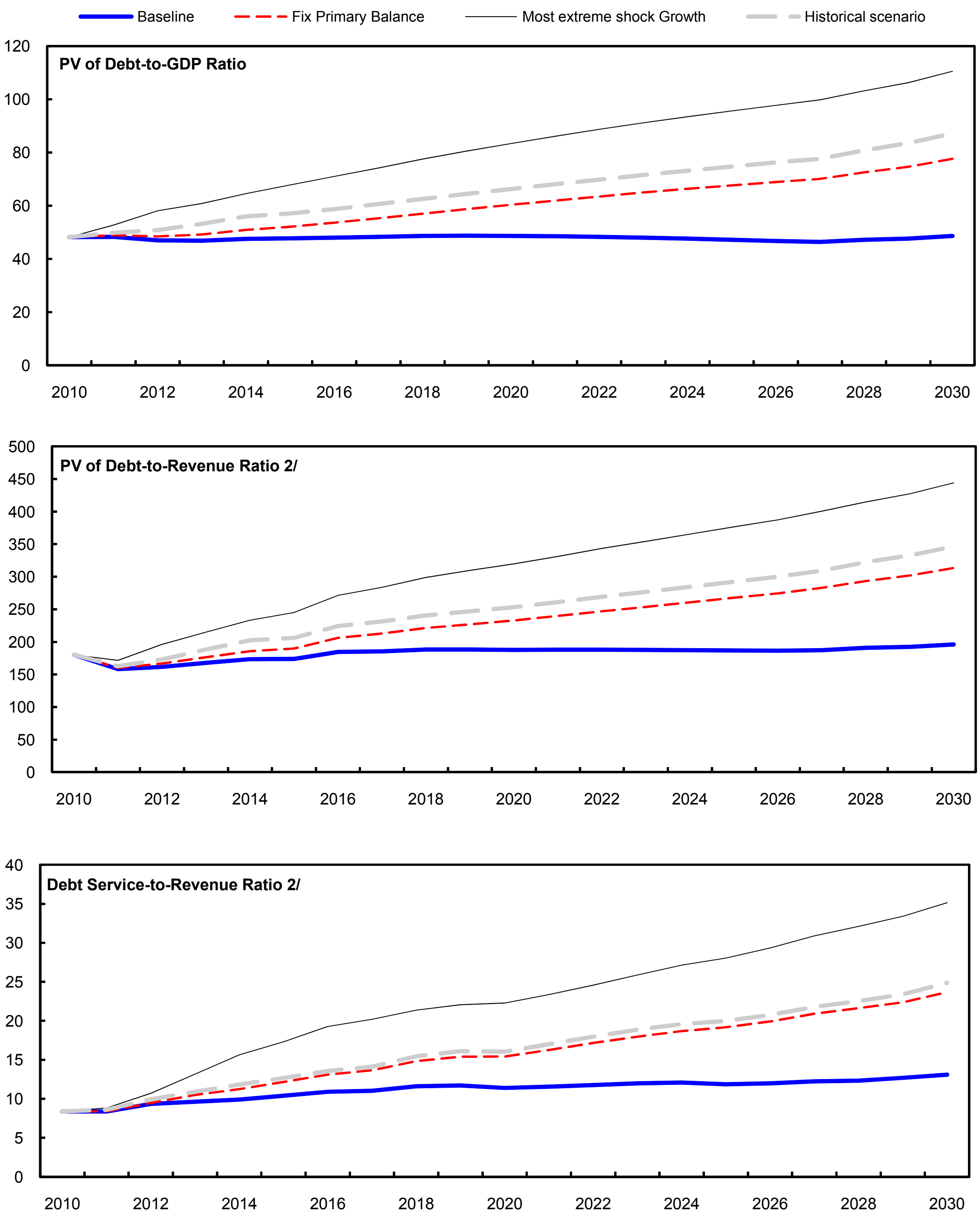
Figure 1. Guyana: Indicators of Public and Publicly Guaranteed External Debt Under Alternative Scenarios, 2010-30 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2020. In figure b. it corresponds to a Combination shock; in c. to a Combination shock; in d. to a Combination shock; in e. to a Combination shock and in figure f. to a Combination shock.

Figure 2. Guyana: Indicators of Public Debt Under Alternative Scenarios, 2010-30 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2020.

2/ Revenues are defined inclusive of grants.