



GUYANA

STAFF REPORT FOR THE 2018 ARTICLE IV CONSULTATION— DEBT SUSTAINABILITY ANALYSIS

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Guyana's risk of external debt distress remains moderate, but debt dynamics will improve markedly with the start of oil production in 2020. The debt sustainability analysis (DSA) update shows that indicators of the risk of external debt distress remain under the relevant thresholds in the baseline. The PV of external debt-to-GDP is projected to decline to 8 percent over the medium-term while debt service will decrease to 2 percent of revenue.

Stress tests indicate the susceptibility of public debt to adverse shocks before oil revenues place the debt on a downward trajectory. Guyana's external public debt ratio is sensitive to extreme shocks to exports and to the exchange rate. These shocks cause temporary but significant breaches in the external debt thresholds, prompting a moderate risk rating.

Nevertheless, Guyana's medium- and long-term outlook is very favorable given the projected oil revenues, which will eventually underpin fiscal surpluses and a reduction in external indebtedness.

BACKGROUND

1. **Total gross public debt has declined significantly over the past decade.** Debt relief and PetroCaribe repayments through in-kind rice exports have helped reduce Guyana's debt burden, prompting a decline in total public-sector debt from 61.2 percent of GDP in 2007 to 50.7 percent of GDP in 2017. The IMF, World Bank (IDA), and IADB provided debt relief amounting to US\$640 million in 2006–07, under the Multilateral Debt Relief Initiative (MDRI). Paris Club bilateral creditors and some non-Paris Club creditors also granted debt relief as part of the 2004 Paris Club agreement.¹ Negotiations with other non-Paris Club creditors are protracted, with debt amounting to around 12 percent of total external debt or 4 percent of GDP.² Most of the external debt is owed to multilateral institutions (58.5 percent). The IADB is the largest creditor, accounting for 40.8 percent of total external debt at end-2017. China's state-owned Export-Import Bank is now the largest bilateral creditor, accounting for 14.6 percent of total external debt at end-2017. Part of the debt owed to Venezuela under the PetroCaribe agreement was repaid through Guyana's rice exports to that country. The pace of external debt accumulation has slowed after the PetroCaribe agreement was suspended in 2015 following the revival of a border dispute, and no further borrowing was made since then.

2. **Exxon Mobil made a significant offshore oil discovery in 2015,** conservatively estimated to hold between 800 and 1,400 million barrels. Additional major oil discoveries in 2017, in the Stabroek block (Liza, Liza Deep, Payara, Snoek and Turbot), are estimated to bring the total gross recoverable resources to 3.2 billion oil-equivalent barrels. Two other discoveries have been made recently, in Ranger and Pacora, underscoring considerable upside potential. In addition to oil, there is associated gas production planned for the domestic market which could replace diesel or fuel oil for power generation.

3. **Commercial production is planned to commence in mid-2020,** with a conservatively estimated output of 100,000 barrels/day (bpd) from Liza Phase I.³ Liza Phase II is expected to commence production in 2022, with a capacity of 220,000 barrels per day.⁴ In combination, Liza Phase I and Phase II comprise close to 45 percent of total oil reserves in the country (14.1 percent and 30.7 percent respectively). The two phases are estimated to produce around 300,000 bpd by 2025. The main direct effect of oil on the economy will be through fiscal revenues. Under the revenue-sharing agreement, 75 percent of oil production is initially

¹ Debt relief under the Heavily Indebted Poor Country (HIPC) Initiative and Multilateral Debt Relief Initiative (MDRI) was granted by all multilateral creditors, by Paris Club bilateral creditors, and five non-Paris Club creditors (China, India, Venezuela, Bulgaria, and Cuba). Debt owed to Brazil and North Korea was paid off without relief.

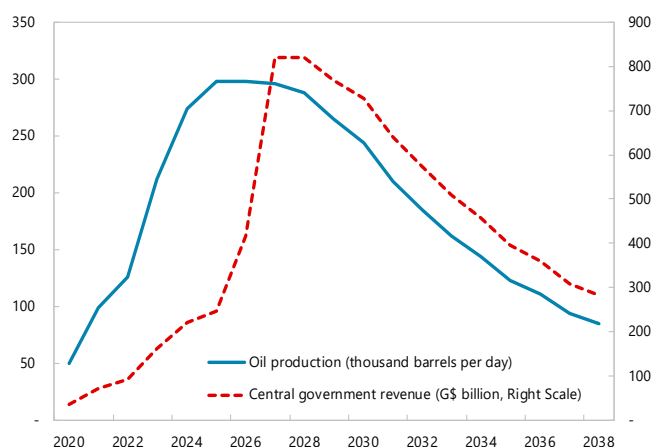
² These creditors include Argentina, Kuwait, Libya, United Arab Emirates, and Serbia.

³ The Liza Phase 1 development plan includes a floating production, storage and offloading (FPSO) vessel designed to produce up to 120,000 barrels per day. The production estimate of 100,000 barrels per day is premised on a ramp up period from the planned starting point in March 2020.

⁴ Some recent estimates have production as high as 120,000 bpd in 2020 (Liza I) and 340,000 bpd in 2025 (Liza I and Liza II combined).

allocated to “cost recovery” to ExxonMobil and its partners. The remaining 25 percent is considered “profit oil” and is shared 50-50 with the government. The agreement sets a royalty of 2 percent on gross earnings, which brings the initial government share to 14.5 percent of total oil revenues.⁵ As a result, changes to oil prices have a one-for-one impact on fiscal revenue in the first years of production (but lower oil prices would prolong the “cost recovery” period). The breakeven price for Liza Phase 2 is relatively low at around \$35 per barrel, so it would take a major adverse price shock to delay its development plans. It is worth noting the considerable upside potential as there are other offshore blocks besides Stabroek, and many companies have expressed interest for the ultra-deep offshore block.⁶

Guyana Oil Production and Government Oil Revenue



4. **Guyana’s external debt thresholds correspond to the ones associated with a medium policy performance rating.** The three-year average of the Country Policy and Institutional Assessment (CPIA) of Guyana has remained stable at 3.3, corresponding to a medium policy performance rating. This implies the following thresholds: (i) a PV of debt-to-GDP ratio of 40 percent; (ii) a PV of debt-to-exports ratio of 150 percent; (iii) a PV of debt-to-revenue ratio of 250 percent; and (iv) debt service-to-exports and revenue ratios of 20 percent, respectively.

BASELINE SCENARIO ASSUMPTIONS

5. **The baseline assumes that oil production in Liza Phase I and Phase II will commence in 2020 and 2022, respectively.** The estimates are conservatively derived by considering only oil revenues from Liza Phase I and Phase II where a production license has either been issued (Phase I) or there is a very high probability of being issued (Phase II).⁷ Oil production is projected to increase from 100,000 barrels per day in mid-2020 to 300,000 barrels per day in 2025-2026, and to average around 111,000 barrels per day in 2034-38. To account for the risk of delays in Liza Phase II, its production ramp-up period is extended over three years,

⁵ The government share will increase substantially once cost recovery on the initial investment is met, and most of production consists of “profit oil.”

⁶ They include 4 exploration wells in 2018 and 20 additional prospects in the Stabroek block, as indicated by Exxon Mobil. In addition, there are 7 other offshore blocks awarded besides Stabroek which have not been drilled.

⁷ ExxonMobil has submitted an application to Guyana’s Environmental Protection Agency (EPA) for environmental authorization for Liza Phase II.

(continued)

from 2022 to 2025. Given the additional major oil discoveries in 2017, prospects of associated gas, and Exxon Mobil's indication of committing additional resources for the project, there is substantial potential upside to oil revenues than is presently assumed in the baseline scenario. The value-added of the oil sector to gross production is assumed to be 50 percent of total output. Staff estimates GDP to grow at 29.1 percent (Y/Y) in 2020.⁸ Oil production will have a much larger impact on GDP than on GNP, and the main impact of the oil sector on Guyana will take place through fiscal revenues. The trajectory of oil prices is based on the April 2018 WEO projection, rising from US\$52 dollars per barrel in 2017 to around US\$54 dollars by 2023, and converging to a long-run value of US\$55 dollars per barrel thereafter.

6. The medium- and long-term debt dynamics will be shaped by developments in the oil sector. The Government's oil revenue is forecasted based on the Fiscal Analysis of Resource Industries (FARI) Model. The government's share is initially 14.5 percent of gross revenues, but increases after the oil companies recover their initial investment, peaking at 70 percent of gross revenues, before tapering off. The authorities are working closely with the IMF and other TA providers to develop a transparent rules-based fiscal framework for managing the oil wealth. In the DSA, we assume a fiscal regime that incorporates a permanent-income type approach to use oil revenues to finance infrastructure investment and save for stabilization and inter-generational purposes. The latter involves a substantial accumulation of foreign assets in a Sovereign Wealth Fund (with fiscal surpluses in excess of 20 percent of GDP per year in the late 2020s given the time profile of production).⁹ In our assumptions, external debt is gradually paid off as it matures (given its concessional nature, there are no incentives for early repayment). Oil revenues are assumed to lead to exchange rate appreciation and accumulation of reserves by the central bank.

7. Guyana's medium term economic growth outlook is projected to improve significantly with oil production (Table 1). Revenues from oil production and rising public investment are expected to increase growth to 13.3 percent, on average, during 2018–23, while non-oil growth will remain at around 4.5 percent.^{10,11} The oil sector's contribution to GDP is projected to peak at around 42 percent in 2025. Oil will contribute 3.5 and 6 percent of GDP to revenue in 2020 and 2021, respectively. That share will increase substantially after cost recovery is met. This will lead to a narrowing of the central government overall deficit from 5.4 percent of GDP in 2018 to a projected 0.2 percent of GDP by 2023, before turning to an overall surplus,

⁸ The offshore investment by foreign companies is not captured in the national accounts (although some investment in supportive infrastructure is). If it was, the level of GDP would be much higher, and there would not be such a sharp increase once production starts.

⁹ Plans for establishing a natural resource fund are well-advanced, and legislation is expected to be presented to the Cabinet and to the Parliament later this year.

¹⁰ The authorities' data and projections on the national accounts and balance of payments currently do not reflect the foreign companies' investments in developing Guyana's offshore oil resources during the preparatory phase. This causes GDP, imports and FDI to be underestimated. For consistency, this investment is not covered in staff's projections.

¹¹ After the ramping up of oil production, growth is projected to converge to the steady state value.

underpinning a sharp downward trajectory in debt levels. Inflation is projected to increase slightly, averaging 3.1 percent in the medium term. The current account will move to large surpluses after 2020, which will be partially offset by deficits in the financial account as repatriation of revenues from “cost recovery” by Exxon Mobil and its partners is recorded as a divestment of FDI (their repatriation of “profit oil” is recorded in the current account). Gross international reserves will increase, with reserve cover rising to 8 months of imports by 2023.

	Medium term						Averages		
	2016	2017	2018	2019	2020	2021	2018-23	2024-38	2018-38
Real GDP growth (%)									
Previous DSA	3.3	3.5	3.6	3.7	38.5	28.5	13.3	1.3	4.9
Current DSA	3.4	2.1	3.4	4.8	29.8	22.1	16.6	2.2	5.1
Consumer prices (eop)									
Previous DSA	1.5	2.6	2.7	3.0	3.1	3.1	2.9	2.4	2.6
Current DSA	1.5	1.5	2.2	3.0	3.2	3.5	3.1	2.5	2.7
Overall balance 1/									
Previous DSA	-2.9	-7.2	-6.3	-6.0	-4.8	-4.5	-4.8	-0.4	-1.7
Current DSA	-2.8	-5.2	-6.1	-5.0	-4.6	-3.8	-4.7	13.2	8.1
Current account balance									
Previous DSA	0.4	-2.0	-4.1	-4.7	-2.7	1.4	-1.2	1.4	0.6
Current DSA	0.4	-6.7	-6.1	-4.3	10.7	21.9	6.9	27.7	21.8
Foreign direct investment									
Previous DSA	0.9	3.9	3.8	3.7	0.9	-1.4	0.6	-2.5	-1.6
Current DSA 2/	1.7	6.0	6.0	5.9	-7.5	-17.0	-4.6	-11.1	-9.2

Sources: Guyanese authorities; and Fund staff estimates and projections.
1/ After grants, includes public enterprises.
2/ FDI declines because a significant share of the repatriation of profits takes place through the financial account.

8. **Debt levels are projected to rise in 2018-19 due to the expansionary fiscal policy, before declining with the materialization of oil revenues.** The fiscal deficit is projected at around 4.7 percent of GDP, on average, over the medium term, driven largely by capital spending on infrastructure projects. The government’s oil revenue averages 5.5 percent of GDP in 2020-22 and 21 percent of GDP in the long run, underpinning the initial reduction in the overall deficit as oil production starts, and subsequent fiscal surpluses which will be accumulated in a sovereign wealth fund. Under these assumptions, while total public and publicly-guaranteed debt increases to 61 percent of GDP by end-2018, it will stabilize at 56.3 percent of GDP at the start of oil production in 2020. The debt ratio gradually tapers to 21.9 percent of GDP by 2038, based on increasing oil revenue and an assumption that outstanding domestic government debt securities will be maintained at 20 percent of GDP for the sake of developing and maintaining a liquid domestic bond market.

9. **The analysis of Guyana’s debt sustainability takes into consideration a publicly-guaranteed debt to finance the restructuring of the state-owned sugar enterprise.** Following continued losses in the state-owned Guyana Sugar Corporation (GuySuCo) which resulted in heavy subsidies amounting to 1-2 percent of GDP per year over the last three years, the government had undertaken a restructuring which includes a reduction in its workforce and the establishment of a Special Purposes Unit, at the National Industrial and Commercial Investments Limited (NICIL), to divest its assets. NICIL is raising G\$30 billion (3.7 percent of GDP) through a five-year syndicated external

bond, secured by its assets and guaranteed by the government. That bond carries an interest rate of 4.75 percent, making Guyana one of the lowest credit risks in the Caribbean.¹² That borrowing will cover part of the workers' severance payments and the revitalization of three out of six of GuySuCo's sugar estates prior to their privatization. NICIL was incorporated as a Private Limited Company under the Companies Act of 1991 and is 100 percent owned by the Government of Guyana.¹³ Revenue from GuySuCo and associated businesses, and proceeds from the privatization of GuySuCo's estates will be used to repay this bond. The principal repayment is spread evenly over five years. To be conservative and to ensure that the public guarantee is fully reflected in the debt statistics, this analysis takes into account the G\$30 billion borrowing by NICIL, although it is secured by the company's assets.

ASSESSMENT OF BASELINE SCENARIO: GROSS EXTERNAL DEBT

10. **The analysis of Guyana's external debt shows that it will remain sustainable under the baseline** (Table 1, Figure 1). In the baseline, all debt burden indicators remain below their thresholds as the advent of oil means that the need for new external borrowing is significantly reduced and surpluses could be used to service existing debts. The PV of the external debt-to-GDP ratio peaks at 27 percent of GDP in 2018 due to the public guarantee on NICIL's G\$30 billion bond, but gradually declines to 2 percent in the long term (compared to 20 percent in the previous DSA).¹⁴ While the ratio of external debt-to-revenue is close to its threshold, the ratios of external debt-to-exports and external debt service-to-exports are well below their respective thresholds. These ratios increase over the short term due to slight increase in principal payments but will gradually decline from 2020 onwards with support from oil revenues.

11. **Standardized stress tests show that Guyana's external public debt ratio is vulnerable to very extreme shocks to exports and the exchange rate before the start of oil production** (Table 2, Figure 1). Breaches to the sustainability thresholds that are significant¹⁵ but temporary in the stress test scenarios are as follows:

- (i) The PV of the ratios of external debt-to-GDP and external debt-to-exports breach their sustainability thresholds in 2020-22 and 2020-21 respectively, both in a scenario that assumes export value growth at historical average minus one standard deviation.

¹² Guyana's spread seems broadly in line with investment-grade countries in the region. For example, Trinidad and Tobago's US\$ sovereign bond maturing January 16, 2024 (rated BBB+ by S&P) traded at a yield-to-maturity of 4.36 percent as of May 10, 2018.

¹³ While GuySuCo made losses, the value of its assets before the revaluation of land is larger than its current debt liability of G\$26 billion.

¹⁴ External debt projections reflect the authorities' actual debt stock, amortization, and disbursement. Given that Guyana's current account is projected to swing from deficit to surplus in 2020 with oil production, we are not projecting additional new external debt based on macroeconomic analysis.

¹⁵ Significant breaches are breaches above the ± 5 percent band around the sustainability threshold.

- (ii) The PV of external debt service-to-revenue ratio breaches the sustainability threshold in 2019, in a scenario that assumes a one-time 30 percent nominal exchange rate depreciation relative to the baseline during that year.

12. **The results suggest that the risk of debt distress is moderate.** Under the baseline, all sustainability indicators remain below their thresholds. While breaches are noted in the stress tests, they are caused by shock assumptions for exports and the exchange rate, which under current and anticipated developments in Guyana, may be less relevant (and probable) than in earlier DSA exercises.

- The breaches in the ratios of external public debt-to-GDP and external debt-to-exports—in scenarios that assume real GDP growth and nominal export growth, respectively, at 10-year historical averages minus one standard deviation—are distorted by the high standard deviation of export growth in the historical data. The large variability of exports in the historical data is attributed to the high share of commodity exports (at 85 percent of total exports), high volatility of commodity prices, and a few idiosyncratic shocks (e.g. the suspension of rice exports to Venezuela, and the collapse of the sugar sector). Nonetheless, the temporary breaches in these two ratios in 2020-22 before sustained oil revenues place debt on a sustained downward trajectory, underscore the importance of prudence before the start of oil production to prevent debt levels from rising to unsustainable levels in the event of unanticipated shocks.
- The assumption of a one-time 30 percent nominal exchange rate devaluation in 2019 which leads to a breach in the external debt service-to-revenue ratio in that year is not reflective of Guyana's current economic cycle and past exchange rate path (the steepest exchange rate depreciation since 1990 was 11 percent, in 1998). Moreover, the start of oil production in 2020 will substantially increase international reserves, and may create significant appreciation pressures on the Guyanese dollar.

ASSESSMENT OF BASELINE SCENARIO: GROSS PUBLIC DEBT

13. **The analysis of total gross public-sector debt shows that the risk of debt distress starts to decrease from 2020 with oil revenues** (Table 4). The debt-to-GDP ratio rises to 61 percent in 2018 due to the government guarantee on NICIL's bond (3.7 percent of GDP), but then gradually declines to 56.3 percent in 2020 and 21.9 percent of GDP by 2038, on the back of rising fiscal surpluses from oil revenues. The PV of the public-sector debt-to-GDP ratio is projected to increase to 48 percent in 2018-19 and gradually decline thereafter, stabilizing at around 20 percent of GDP in the long term. That long-term level is driven by our assumption of the maintenance of domestic debt at 20 percent of GDP for capital market development and liquidity purposes.

14. **Stress tests indicate that total public debt is also susceptible to standard shocks** (Table 4, Figure 2). In an extreme scenario which assumes real GDP growth at 10-year historical average minus one standard deviation, the PV of debt-to-GDP ratio would breach the threshold from 2020 onwards, rising to 212 percent by 2038. One reason for this threshold breach is that the scenario eliminates the

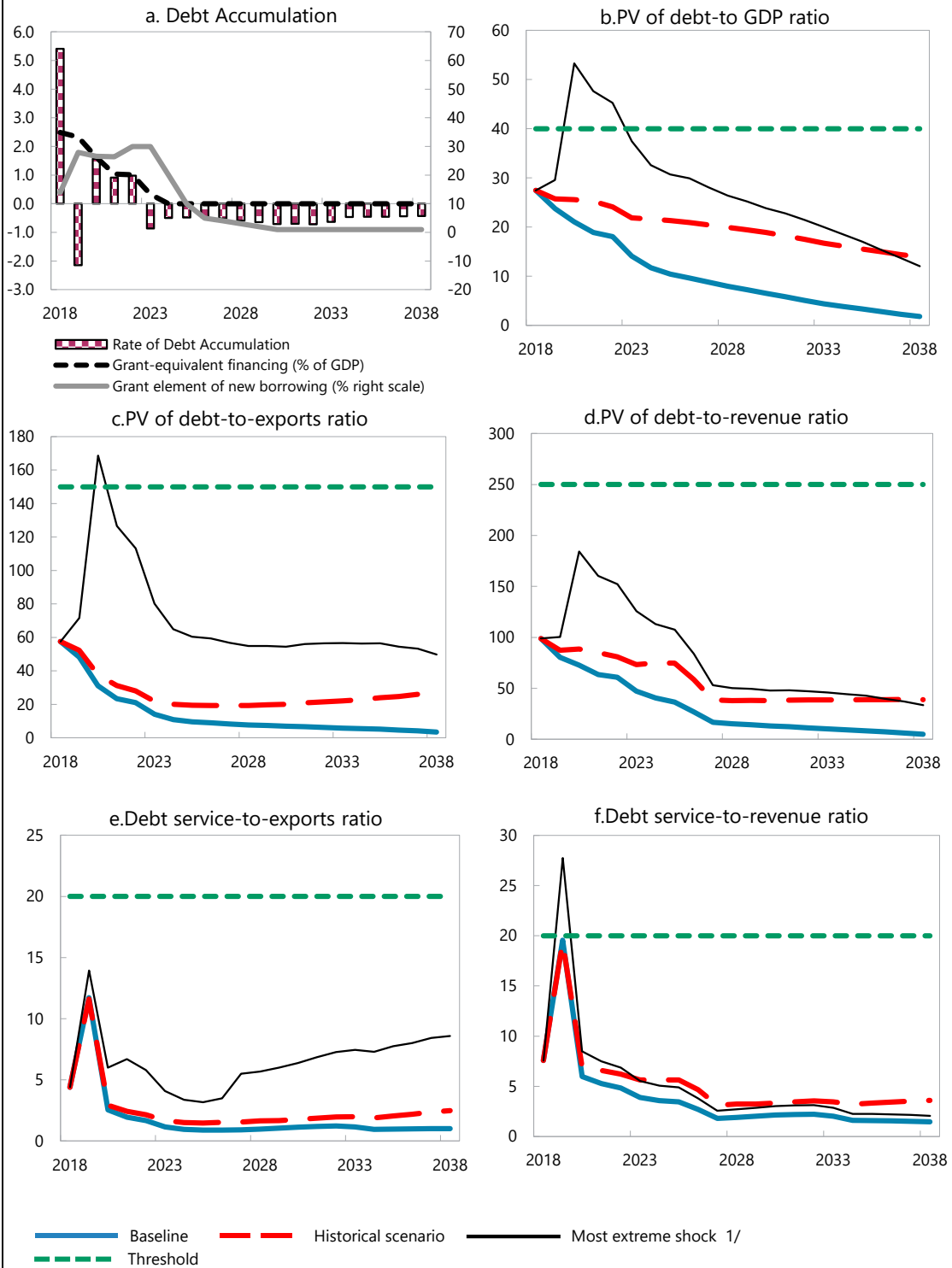
high real GDP growth in 2020 (so in the scenario it is as if oil production in Liza Phase I did not start). It is also worth noting that the historical standard deviation may be distorted by the underestimation of GDP, imports, and FDI in years prior to the start of oil production as the authorities' current data on the national accounts and balance of payments do not reflect foreign companies' investments in developing Guyana's offshore oil resources during the preparatory phase. Thus, while this scenario is meant to capture large but plausible adverse shocks, in this case it is mainly removing the level effect on GDP of going from no oil production to becoming an oil producer. For these reasons, we consider this scenario to be less informative as its probability is extremely low. Another breach occurs in 2028 under a shock that assumes a fixed primary balance. Again, this shock is highly unlikely to materialize as it would involve running a 4 percent primary deficit at the peak of oil revenues, which are projected to swing the fiscal balance to an overall surplus by 2024.

CONCLUSION

15. **Guyana's debt dynamics improve considerably under the baseline, but are vulnerable to stress tests, and the risk of debt distress remains moderate.** In the baseline scenario, debt indicators remain below their respective thresholds over the projection period. The PV of external debt-to-GDP ratio declines to around 2 percent in the long run as the need for external borrowing is eliminated by the accumulation of external assets. However, stress tests indicate that Guyana's external public debt ratio is vulnerable to an extreme shock to exports and the exchange rate before the start of oil production. The PV of total debt-to-GDP ratio also remains below the debt sustainability threshold in the baseline scenario and is on a downward trajectory, but is susceptible to (large) shocks to real GDP growth. Financing the large deficits projected in the short-term may require an increasing reliance on non-concessional debt, including domestic borrowing. These financing risks are not fully captured in this LIC DSA, and warrant close monitoring. It is also important to strengthen fiscal policy institutions prior to the start of oil production, for prudent and effective management of the anticipated large inflows.¹⁶

¹⁶ Box 1 in the Staff Report provides details on fiscal structural reforms.

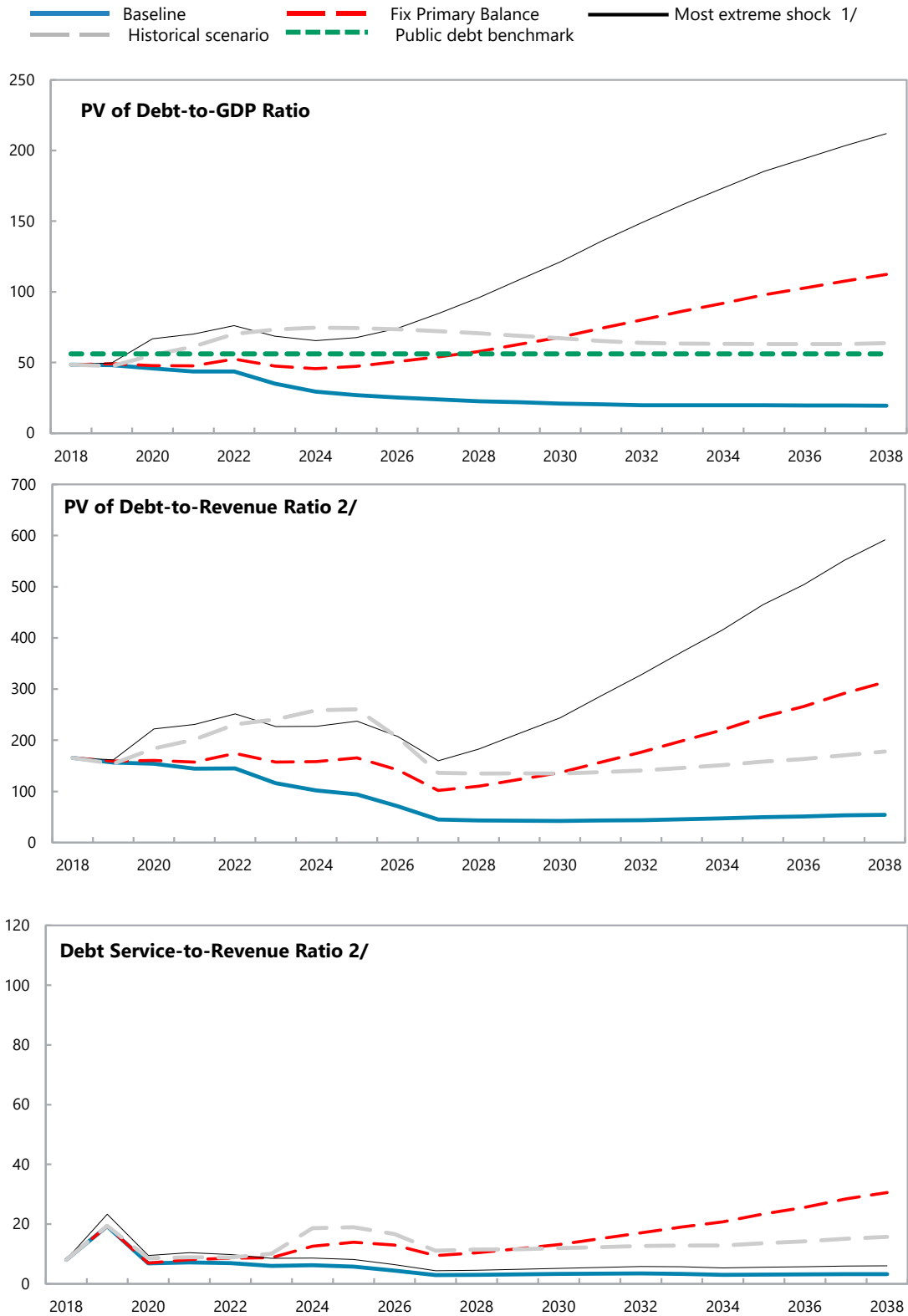
Figure 1. Guyana: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2018-2038 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio on or before 2028. In figure b. it corresponds to a Exports shock; in c. to a Exports shock; in d. to a Exports shock; in e. to a Exports shock and in figure f. to a One-time depreciation shock

Figure 2. Guyana: Indicators of Public Debt Under Alternative Scenarios, 2018-2038 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio on or before 2028.

2/ Revenues are defined inclusive of grants.

Table 1. Guyana: External Debt Sustainability Framework, Baseline Scenario, 2015–2038 1/
(In percent of GDP, unless otherwise indicated)

	Actual			Historical ^{6/} Standard ^{6/}		Projections							2018-2038		
	2015	2016	2017	Average	Deviation	2018	2019	2020	2021	2022	2023	Average	2028	2038	Average
External debt (nominal) 1/	35.7	33.2	35.5			40.0	35.8	31.5	28.0	26.5	20.6		11.7	4.2	
<i>of which: public and publicly guaranteed (PPG)</i>	35.7	33.2	35.5			40.0	35.8	31.5	28.0	26.5	20.6		11.7	4.2	
Change in external debt	-3.8	-2.6	2.3			4.5	-4.1	-4.3	-3.5	-1.5	-5.9		-1.1	-0.6	
Identified net debt-creating flows	-0.2	-5.2	0.2			-1.2	-3.4	-12.1	-10.8	-8.1	-14.7		-25.7	-5.4	
Non-interest current account deficit	4.6	-0.9	6.0	8.0	4.1	5.4	3.7	-11.3	-22.4	-26.6	-41.1		-30.1	-6.0	-25.6
Deficit in balance of goods and services	19.5	9.4	15.7			14.9	13.2	-6.4	-20.3	-25.9	-43.7		-59.2	-11.1	
Exports	40.5	45.7	45.2			47.7	49.2	68.0	80.9	86.0	100.6		103.6	52.0	
Imports	60.0	55.0	60.8			62.6	62.3	61.6	60.5	60.0	56.9		44.4	40.9	
Net current transfers (negative = inflow)	-9.8	-8.3	-9.2	-14.1	4.2	-9.3	-9.6	-8.0	-7.2	-6.7	-5.7		-3.7	-3.1	-3.6
<i>of which: official</i>	-0.6	-0.7	-1.4			-1.1	-1.5	-1.0	-1.0	-0.8	-0.7		0.0	0.0	
Other current account flows (negative = net inflow)	-5.2	-2.0	-0.4			-0.2	0.2	3.1	5.1	6.0	8.3		32.7	8.2	
Net FDI (negative = inflow)	-3.8	-1.7	-6.0	-7.3	2.7	-6.0	-5.9	7.5	17.0	21.0	32.1		4.1	0.6	9.0
Endogenous debt dynamics 2/	-0.9	-2.6	0.1			-0.6	-1.2	-8.3	-5.4	-2.4	-5.6		0.3	0.1	
Contribution from nominal interest rate	0.5	0.5	0.6			0.6	0.6	0.6	0.6	0.5	0.5		0.3	0.1	
Contribution from real GDP growth	-1.2	-1.1	-0.7			-1.2	-1.8	-8.9	-6.0	-3.0	-6.1		0.0	0.0	
Contribution from price and exchange rate changes	-0.3	-2.0	0.2			...	...	...	...	...	...		...	...
Residual (3-4) 3/	-3.6	2.6	2.1			5.7	-0.7	7.8	7.4	6.6	8.7		24.6	4.8	
<i>of which: exceptional financing</i>	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 4/	...	...	23.0			27.5	23.7	21.1	18.9	18.1	14.1		8.0	1.8	
In percent of exports	...	...	50.8			57.5	48.3	31.0	23.4	21.0	14.0		7.7	3.5	
PV of PPG external debt	...	...	23.0			27.5	23.7	21.1	18.9	18.1	14.1		8.0	1.8	
In percent of exports	...	...	50.8			57.5	48.3	31.0	23.4	21.0	14.0		7.7	3.5	
In percent of government revenues	...	...	87.3			98.9	80.6	72.9	63.6	60.8	47.3		15.2	5.0	
Debt service-to-exports ratio (in percent)	7.6	3.8	3.6			4.4	11.7	2.5	1.9	1.7	1.2		1.0	1.0	
PPG debt service-to-exports ratio (in percent)	7.6	3.8	3.6			4.4	11.7	2.5	1.9	1.7	1.2		1.0	1.0	
PPG debt service-to-revenue ratio (in percent)	11.5	6.6	6.1			7.6	19.5	6.0	5.3	4.8	3.9		1.9	1.5	
Total gross financing need (Billions of U.S. dollars)	0.1	0.0	0.1			0.1	0.1	-0.1	-0.2	-0.3	-0.6		-2.5	-0.6	
Non-interest current account deficit that stabilizes debt ratio	8.3	1.7	3.7			0.9	7.8	-7.0	-18.9	-25.2	-35.2		-29.0	-5.4	
Key macroeconomic assumptions															
Real GDP growth (in percent)	3.1	3.4	2.1	3.8	1.2	3.4	4.8	29.8	22.1	11.8	27.9	16.6	0.0	0.5	0.3
GDP deflator in US dollar terms (change in percent)	0.8	6.0	-0.5	3.6	3.8	-1.3	1.7	-7.2	-4.5	-1.5	-5.0	-3.0	2.8	3.4	3.1
Effective interest rate (percent) 5/	1.4	1.5	1.9	1.3	0.3	1.8	1.7	2.0	2.1	2.1	2.1	2.0	2.1	1.8	2.0
Growth of exports of G&S (US dollar terms, in percent)	-4.0	23.6	0.5	7.3	15.1	7.9	9.8	66.6	38.8	17.0	42.2	30.4	0.0	-2.6	-0.9
Growth of imports of G&S (US dollar terms, in percent)	-11.4	0.6	12.3	5.9	15.0	5.1	6.0	19.0	14.7	9.2	15.1	11.5	13.4	3.0	1.2
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	13.9	27.9	26.5	26.4	30.0	30.0	25.8	3.0	1.0	3.5
Government revenues (excluding grants, in percent of GDP)	26.8	26.4	26.3			27.8	29.5	28.9	29.7	29.7	29.8		52.5	35.8	41.9
Aid flows (in Billions of US dollars) 7/	0.1	0.1	0.1			0.1	0.1	0.0	0.0	0.0	0.0		0.0	0.0	
<i>of which: Grants</i>	0.0	0.0	0.1			0.1	0.1	0.0	0.0	0.0	0.0		0.0	0.0	
<i>of which: Concessional loans</i>	0.1	0.1	0.1			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			2.5	2.3	1.6	1.0	1.0	0.3		0.0	0.0	0.0
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			28.9	47.5	44.2	41.5	42.1	100.0		3.0	1.0	3.5
Memorandum items:															
Nominal GDP (Billions of US dollars)	3.2	3.5	3.6			3.6	3.9	4.7	5.4	6.0	7.3		10.0	11.8	
Nominal dollar GDP growth	3.8	9.6	1.6			2.1	6.6	20.4	16.6	10.1	21.5	12.9	2.8	3.9	3.4
PV of PPG external debt (in Billions of US dollars)	...	...	0.8			1.0	0.9	1.0	1.0	1.1	1.0		0.8	0.2	
(PVT-PVt-1)/GDPt-1 (in percent)	...	...	...			5.4	-2.1	1.6	0.9	1.0	-0.9	1.0	-0.6	-0.4	-0.5
Gross workers' remittances (Billions of US dollars)	0.3	0.3	0.3			0.3	0.3	0.3	0.3	0.4	0.4		0.4	0.4	
PV of PPG external debt (in percent of GDP + remittances)	...	...	21.3			25.4	22.0	19.7	17.8	17.1	13.4		7.7	1.8	
PV of PPG external debt (in percent of exports + remittances)	...	...	43.3			49.1	41.5	28.1	21.7	19.7	13.4		7.4	3.3	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	3.0			3.8	10.1	2.3	1.8	1.6	1.1		0.9	0.9	

Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt.

2/ Derived as $[r - g - \rho(1+g)] / (1+g+\rho+gp)$ 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 2. Guyana: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2018–2038
(In percent)

	Projections							2038
	2018	2019	2020	2021	2022	2023	2028	
PV of debt-to GDP ratio								
Baseline	27	24	21	19	18	14	8	2
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2018-2038 1/	27	26	26	25	24	22	20	14
A2. New public sector loans on less favorable terms in 2018-2038 2/	27	25	22	20	20	16	10	4
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2019-2020	27	24	27	24	23	18	10	2
B2. Export value growth at historical average minus one standard deviation in 2019-2020 3/	27	30	53	48	45	37	26	12
B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020	27	24	20	18	17	13	8	2
B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/	27	24	11	10	10	7	2	-1
B5. Combination of B1-B4 using one-half standard deviation shocks	27	26	40	36	34	28	18	7
B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/	27	34	30	27	25	20	11	3
PV of debt-to-exports ratio								
Baseline	58	48	31	23	21	14	8	3
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2018-2038 1/	58	52	38	31	28	22	19	27
A2. New public sector loans on less favorable terms in 2018-2038 2/	58	50	33	25	23	16	10	8
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2019-2020	58	48	31	23	21	14	8	3
B2. Export value growth at historical average minus one standard deviation in 2019-2020 3/	58	72	169	127	113	80	55	50
B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020	58	48	31	23	21	14	8	3
B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/	58	50	16	12	11	7	2	-3
B5. Combination of B1-B4 using one-half standard deviation shocks	58	57	93	70	63	44	28	22
B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/	58	48	31	23	21	14	8	3
PV of debt-to-revenue ratio								
Baseline	99	81	73	64	61	47	15	5
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2018-2038 1/	99	87	88	85	81	73	38	39
A2. New public sector loans on less favorable terms in 2018-2038 2/	99	83	77	69	67	54	19	12
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2019-2020	99	82	94	82	78	61	20	6
B2. Export value growth at historical average minus one standard deviation in 2019-2020 3/	99	100	184	160	152	126	50	34
B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020	99	82	69	60	57	45	14	5
B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/	99	83	39	34	33	23	4	-4
B5. Combination of B1-B4 using one-half standard deviation shocks	99	88	139	121	115	93	35	20
B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/	99	114	103	90	86	67	22	7

Table 2. Guyana: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2018–2038 (Concluded)
(In percent)

Debt service-to-exports ratio								
Baseline	4	12	3	2	2	1	1	1
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2018-2038 1/	4	12	3	2	2	2	2	2
A2. New public sector loans on less favorable terms in 2018-2038 2/	4	12	2	2	2	1	1	1
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2019-2020	4	12	3	2	2	1	1	1
B2. Export value growth at historical average minus one standard deviation in 2019-2020 3/	4	14	6	7	6	4	6	9
B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020	4	12	3	2	2	1	1	1
B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/	4	12	3	2	1	1	0	0
B5. Combination of B1-B4 using one-half standard deviation shocks	4	13	5	4	4	3	3	4
B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/	4	12	3	2	2	1	1	1
Debt service-to-revenue ratio								
Baseline	8	20	6	5	5	4	2	1
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2018-2038 1/	8	19	7	7	6	6	3	4
A2. New public sector loans on less favorable terms in 2018-2038 2/	8	20	6	5	5	4	2	2
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2019-2020	8	20	8	7	6	5	2	2
B2. Export value growth at historical average minus one standard deviation in 2019-2020 3/	8	20	7	8	8	6	5	6
B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020	8	20	6	5	5	4	2	1
B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/	8	20	6	4	4	3	1	0
B5. Combination of B1-B4 using one-half standard deviation shocks	8	20	7	8	7	6	4	4
B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/	8	28	8	7	7	6	3	2
<i>Memorandum item:</i>								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	25	25	25	25	25	25	25	25

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 3. Guyana: Public Sector Debt Sustainability Framework, Baseline Scenario, 2015–2038
(In percent of GDP, unless otherwise indicated)

	Actual			Average ^{5/}	Standard Deviation ^{5/}	Estimate										Projections			
	2015	2016	2017			2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2018-23 Average	2028	2038	2024-38 Average
Public sector debt 1/	50.1	50.7	52.2			61.0	60.3	56.3	52.8	52.1	41.4	34.8	31.6	29.7	27.9		26.4	21.9	
<i>of which: foreign-currency denominated</i>	35.7	33.2	35.5			40.0	35.8	31.5	28.0	26.5	20.6	17.1	15.2	14.0	12.8		11.7	4.2	
Change in public sector debt	-1.8	0.6	1.5			8.8	-0.7	-4.0	-3.5	-0.7	-10.7	-6.6	-3.2	-1.9	-1.8		-1.5	-0.3	
Identified debt-creating flows	-1.8	-1.6	4.6			4.2	1.1	-5.6	-4.5	-5.1	-9.5	-6.0	-2.6	-1.2	-1.1		-0.8	-0.8	
Primary deficit	-0.6	2.1	4.3			5.3	4.2	3.7	2.6	-1.2	-1.1	-1.1	-1.0	-0.9	-0.9	2.2	-0.8	-0.7	
Revenue and grants	27.8	27.5	27.9			29.3	30.8	29.8	30.2	30.1	30.2	28.9	28.5	35.7	53.0		52.5	35.8	
<i>of which: grants</i>	1.0	1.1	1.6			1.5	1.3	0.9	0.5	0.4	0.3	0.0	0.0	0.0	0.0		0.0	0.0	
Primary (noninterest) expenditure	27.2	29.5	32.2			34.5	35.0	33.5	32.8	28.9	29.1	27.7	27.6	34.7	52.1		51.6	35.1	
Automatic debt dynamics	-1.2	-3.6	0.4			-1.1	-3.0	-9.4	-7.1	-3.9	-8.4	-4.8	-1.6	-0.3	-0.2		0.1	-0.1	
Contribution from interest rate/growth differential	-1.2	-2.2	-1.0			-1.6	-3.1	-12.2	-8.9	-4.8	-9.9	-5.4	-1.8	-0.3	-0.2		0.2	-0.1	
<i>of which: contribution from average real interest rate</i>	0.3	-0.5	0.0			0.1	-0.3	1.7	1.3	0.7	1.5	0.9	0.4	0.3	0.2		0.2	0.0	
<i>of which: contribution from real GDP growth</i>	-1.5	-1.6	-1.1			-1.7	-2.8	-13.9	-10.2	-5.6	-11.4	-6.3	-2.2	-0.6	-0.4		0.0	-0.1	
Contribution from real exchange rate depreciation	0.1	-1.5	1.4			0.6	0.1	2.8	1.8	0.9	1.5	0.6	0.2	0.1	-0.1		...	...
Other identified debt-creating flows	0.0	0.0	0.0			0.0	0.0	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	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	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	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	0.0		0.0	0.0	
Residual, including asset changes	0.0	2.2	-3.2			4.6	-1.8	1.7	1.0	4.5	-1.2	-0.7	-0.7	-0.7	-0.7		-0.7	0.6	
Other Sustainability Indicators																			
PV of public sector debt	...	...	39.7			48.5	48.2	45.9	43.6	43.6	34.9	29.5	26.8	25.3	23.8		22.6	19.4
<i>of which: foreign-currency denominated</i>	...	...	23.0			27.5	23.7	21.1	18.9	18.1	14.1	11.7	10.4	9.6	8.8		8.0	1.8
<i>of which: external</i>	...	...	23.0			27.5	23.7	21.1	18.9	18.1	14.1	11.7	10.4	9.6	8.8		8.0	1.8
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...	...	...	...	...		...	...
Gross financing need 2/	14.6	17.2	23.1			23.7	29.7	25.9	25.8	23.1	21.5	18.4	17.0	16.3	15.7		15.4	17.1	
PV of public sector debt-to-revenue and grants ratio (in percent)	...	...	142.2			165.6	156.5	153.9	144.4	144.8	115.9	102.1	93.9	70.9	45.0		43.1	54.2
PV of public sector debt-to-revenue ratio (in percent)	...	...	151.0			174.6	163.5	158.6	146.9	146.8	117.2	102.1	93.9	70.9	45.0		43.1	54.2
<i>of which: external 3/</i>	...	...	87.3			98.9	80.6	72.9	63.6	60.8	47.3	40.6	36.6	27.0	16.6		15.2	5.0
Debt service-to-revenue and grants ratio (in percent) 4/	12.0	7.3	6.7			8.0	19.3	6.9	7.2	6.9	6.0	6.2	5.8	4.4	3.0		3.0	3.2	
Debt service-to-revenue ratio (in percent) 4/	12.4	7.6	7.1			8.5	20.1	7.1	7.3	7.0	6.0	6.2	5.8	4.4	3.0		3.0	3.2	
Primary deficit that stabilizes the debt-to-GDP ratio	1.2	1.4	2.8			-3.5	4.9	7.7	6.1	-0.5	9.6	5.5	2.2	0.9	0.9		0.7	-0.4	
Key macroeconomic and fiscal assumptions																			
Real GDP growth (in percent)	3.1	3.4	2.1	3.8	1.2	3.4	4.8	29.8	22.1	11.8	27.9	18.0	6.8	1.9	1.3	16.6	0.0	0.5	0.3
Average nominal interest rate on forex debt (in percent)	1.4	1.5	1.9	1.3	0.3	1.8	1.7	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	1.8	2.0
Average real interest rate on domestic debt (in percent)	1.3	-3.8	0.2	-1.0	2.8	0.8	-1.2	8.8	6.4	3.1	7.3	4.8	2.3	1.4	1.4	4.2	1.1	0.1	0.7
Real exchange rate depreciation (in percent, + indicates depreciation)	0.2	-4.2	4.3	-1.8	3.7	1.7
Inflation rate (GDP deflator, in percent)	0.8	6.0	1.3	4.0	3.6	0.7	2.1	-6.6	-3.4	-0.2	-4.0	-0.5	1.6	2.5	2.6	-1.9	2.8	3.7	3.2
Growth of real primary spending (deflated by GDP deflator, in percent)	-2.5	12.3	11.4	2.1	5.2	10.8	6.1	24.4	19.7	-1.5	28.5	12.6	6.1	28.5	52.0	14.7	-0.9	-2.4	2.6
Grant element of new external borrowing (in percent)	13.9	27.9	26.5	26.4	30.0	30.0	20.0	10.0	5.0	4.0	25.8	3.0	1.0	...

Sources: Country authorities; and staff estimates and projections.

1/ Gross debt of the nonfinancial 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 4. Guyana: Sensitivity Analysis for Key Indicators of Public Debt 2018–2038

	Projections							
	2018	2019	2020	2021	2022	2023	2028	2038
PV of Debt-to-GDP Ratio								
Baseline	48	48	46	44	44	35	23	19
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	48	48	55	61	70	73	71	64
A2. Primary balance is unchanged from 2018	48	49	48	48	53	47	58	112
A3. Permanently lower GDP growth 1/	48	48	46	44	45	36	27	39
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2019-2020	48	50	67	70	76	69	96	212
B2. Primary balance is at historical average minus one standard deviations in 2019-2020	48	48	47	44	44	35	23	20
B3. Combination of B1-B2 using one half standard deviation shocks	48	48	57	61	68	61	87	196
B4. One-time 30 percent real depreciation in 2019	48	59	55	52	51	41	28	26
B5. 10 percent of GDP increase in other debt-creating flows in 2019	48	56	53	49	49	39	27	24
PV of Debt-to-Revenue Ratio 2/								
Baseline	166	156	154	144	145	116	43	54
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	166	154	184	201	231	241	135	178
A2. Primary balance is unchanged from 2018	166	159	161	157	174	158	110	313
A3. Permanently lower GDP growth 1/	166	157	155	146	148	119	51	109
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2019-2020	166	161	222	231	252	227	183	592
B2. Primary balance is at historical average minus one standard deviations in 2019-2020	166	157	156	146	147	117	44	55
B3. Combination of B1-B2 using one half standard deviation shocks	166	157	190	202	224	202	166	548
B4. One-time 30 percent real depreciation in 2019	166	193	185	171	169	137	54	73
B5. 10 percent of GDP increase in other debt-creating flows in 2019	166	183	177	163	163	131	51	67
Debt Service-to-Revenue Ratio 2/								
Baseline	8	19	7	7	7	6	3	3
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	8	19	9	9	9	10	11	16
A2. Primary balance is unchanged from 2018	8	19	7	8	9	9	10	31
A3. Permanently lower GDP growth 1/	8	19	7	7	7	6	4	9
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2019-2020	8	20	9	10	17	16	16	58
B2. Primary balance is at historical average minus one standard deviations in 2019-2020	8	19	7	7	8	6	3	3
B3. Combination of B1-B2 using one half standard deviation shocks	8	20	9	8	9	14	15	53
B4. One-time 30 percent real depreciation in 2019	8	23	9	10	10	9	5	6
B5. 10 percent of GDP increase in other debt-creating flows in 2019	8	19	7	15	8	8	4	5

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.