INTERNATIONAL MONETARY FUND

GUYANA

Joint IMF/World Bank Debt Sustainability Analysis

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

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The debt sustainability analysis (DSA) indicates that Guyana's risk of debt distress remains moderate. In addition, the recent rebasing of GDP statistics has improved Guyana's debt-to-GDP ratios significantly. The risk of debt distress hinges from an eventual departure from the agreed fiscal consolidation path—particularly if foreign external financing were to be higher or at less concessional terms than currently envisaged. In addition, further delays in completing the modernization of the public sugar company—which remains important to the baseline growth projection—, a weaker or slower global recovery, and higher-than-projected world oil prices could also add to sustainability concerns. The authorities' continued commitment to fiscal consolidation and structural reforms to entrench long-term growth would help reduce these risks over time.

I. Background

1. **Debt relief from the international community helped reduce Guyana's external debt burden significantly in recent years**. 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.[1] In July 2007, China granted a write-off of US$15 million of outstanding debt. In 2008, Venezuela cancelled a US$12.5 million debt stock, while Russia cancelled about US$0.25 million of outstanding debt. Ongoing negotiations with Kuwait and Libya on debt relief worth US$61.9 and US$38.8 million, respectively, have not yet been concluded.

[1] HIPC debt relief 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 HIPC debt relief.

2. **Total gross public debt has increased slightly since 2007, driven by foreign borrowing.** Total gross public debt stood at 60 percent of GDP in 2007—rising to around 61½ percent of GDP in 2008–09. This was driven largely by an increase in gross external debt (from official and bilateral sources), which, after having declined from 71¾ percent of GDP at end-2006 to 41½ percent of GDP at end-2007 on account of HIPC debt relief, rose to about 46 percent of GDP by 2009. The central government's short-term domestic debt, defined on a gross basis, has fallen sharply, from 21¼ percent of GDP in 2006 to 15¼ percent in 2009, helping contain total public debt.

Guyana: External Stock of Debt as of end-2009
(by creditor)

	US$ million	Share of total
Total Public External Debt	**933.0**	**100**
Non-Financial Public Sector	**827.6**	**88.7**
Multilateral	447.8	48.0
Bilateral	375.2	40.2
of which Paris Club	54.8	5.9
Commercial Bank	3.8	0.4
Other	0.8	0.1
Central Bank	**105.4**	**11.3**
Multilateral	89.2	9.6
Bilateral	0.0	0.0
Suppliers' Credit	12.7	1.4
Other	3.5	0.4

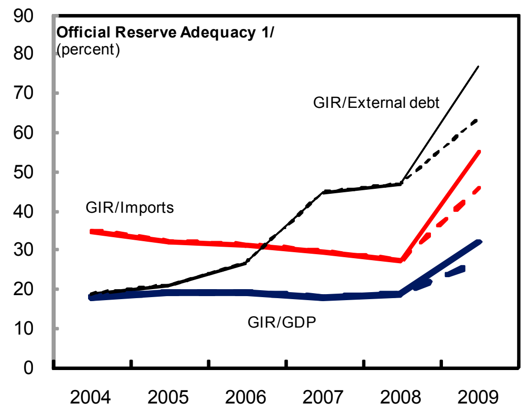
Source: Ministry of Finance of Guyana

II. Macroeconomic and Financing Framework

A. Background

3. **Guyana has sustained a solid macroeconomic performance in recent years, supported by prudent policies**. Newly released GDP series (based on 2006 prices) suggest that Guyana's economic growth exceeded 4 percent a year on average during 2007–09—compared with 3½ percent in the previous GDP series (based on 1988 prices), while nominal GDP at market value is some 65 percent higher than before. This reflects improved pricing estimates, as well as the incorporation of new sectors of economic activity, and of the previously large informal activity that moved into the formal sector since Guyana changed course in the late 1980s (Box 1). Inflation has declined steadily since the imported price shock of 2008, to around 3½ percent at end-2009, supported by a cautious monetary policy stance and the softening in world commodity prices. In addition, the non-financial public sector (NFPS) deficit declined steadily from 8.6 percent of GDP in 2005 to 3.3 percent of GDP in 2009. This benefited from a strong fiscal consolidation effort in the last year, when the deficit was ¾ percent narrower than the budget target, largely on account of stronger-than envisaged tax revenues.

4. **External sustainability indicators have strengthened, including through reserve accumulation**. In 2009, the current account narrowed significantly—by some 5 percent of GDP—to 8½ percent of GDP, largely on account of a reduction of imports, particularly of fuel. At the same time, capital and financial inflows remained strong, supported by official financing (including the Fund's SDR allocation, along with concessional loan and grant disbursements).[2] Domestic commercial banks also reduced their net foreign assets to benefit from the relatively higher domestic interest rate, adding to the external inflows. This increased gross reserves to US$623 million by end-year (exceeding 5 months of imports). In addition, the authorities have also accumulated some 4¼ percent of GDP in an escrow account, where disbursements under Venezuela's PetroCaribe Initiative are saved.[3]



1/ Dotted lines denote value before SDR allocation (US$108.6 million) in 2009.

B. Baseline Scenario: Projections and Assumptions

5. **The baseline macroeconomic framework underpinning the DSA projects that the economy will continue to perform well (Table 1).** In particular, it reflects the recent information on macroeconomic performance observed as of end-2009, as well as the changes implied by the GDP rebasing exercise, and the updated assumptions on the prospects for the global economy.

- ***Real GDP growth is projected to remain strong:***
  - Following output growth of 3¼ percent in 2009, real GDP is expected to rise over the medium term at an annual average rate of 4¼ percent through 2014, which is broadly equal to the average rate observed in 2006–09. Drivers of growth would include key public infrastructure investment projects (including in energy and roads), the yields from the implementation of the sugar modernization plan (expected to deliver an annual average growth of nearly 11 percent in raw sugar production in 2010–14), and growth in other commodity export sectors, including gold and bauxite. Real GDP growth would stabilize at its potential level of around 3¼ percent over the long term.
  - The growth path is somewhat conservative, projecting a slightly lower real GDP growth in 2010–14 than at the time of the 2008 Article IV Consultation

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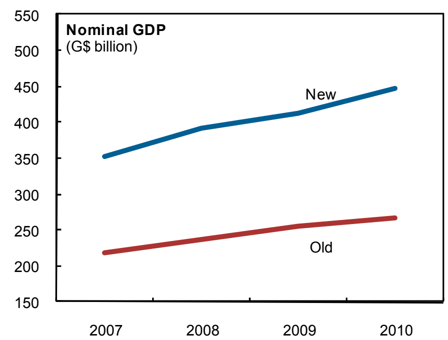
[2] The SDR allocation is assumed to bolster up reserve accumulation, as indicated by the authorities.

[3] The authorities have saved, on average, nearly 70 percent of PetroCaribe disbursements in 2007–09, and plan to save almost 94 percent in 2010. They are committed to use savings prudently, as an insurance against shocks and to support key investment projects if funding were not available. The stock has risen steadily, in the presence of sufficient financing for the public sector investment program, and despite the global shock of 2009.

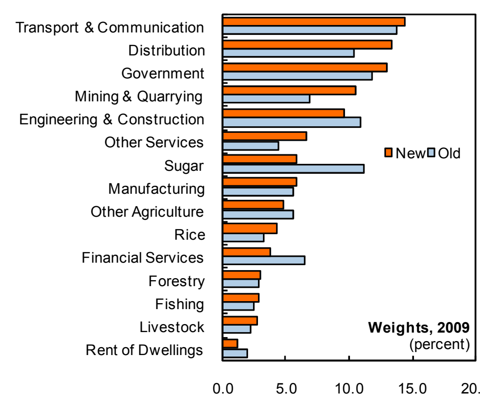
(which envisaged real growth at 4.6 percent on average in the same period). The revised projection takes into account the weaker-than-envisaged performance of the sugar sector in 2009, and the still muted prospects for global recovery. At the same time, key investments completed over the medium term would support long-term growth of over 3¼ percent in 2010–30 in the revised baseline framework, which is slightly higher than the potential growth of 3 percent assumed in the 2008 DSA.

Box 1. The Rebased GDP Figures

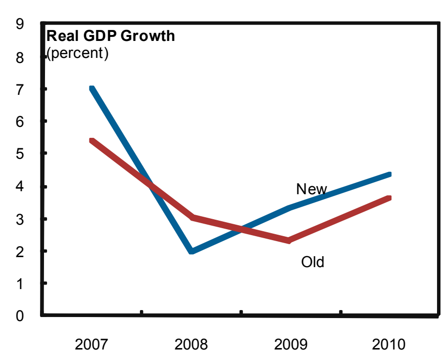
GDP data have been rebased from 1988 to 2006. As a result of these changes, 2009 GDP at market prices is higher than previously estimated by 64 percent. Preliminary estimates suggest that the new GDP per capita reached US$2,630 as of end-2008, up from US$1,504 in the old series. The rebasing project benefited from technical assistance from the U.S. Census Bureau (under an IDB project) and CARTAC. The establishment of the new base year aimed at capturing changes in relative industrial costs and price structures, the large informal sector that has gradually formalized itself since the late 1980s, and the emergence of new economic activities. The project has improved the national accounts compilation system.



The change in sectoral composition reflects better accounting of activity in key sectors. For example, the government services sector now captures statutory bodies. Health and education services (formerly classified under the government sector) are now separated and expanded to include private sector activities. The distribution sector has an expanded coverage of commodity flows and an improved estimation of trade margins. The mining and quarrying sector now reflects a larger share of gold and diamond production, and a lower share of bauxite. The new benchmark for manufacturing reflects the use of an expanded index of 47 products; and the "other services" sector captures new categories, including hotels and restaurants, and professional services. The transportation and communications sector saw important coverage enhancements—for instance, to include cell phone activities internet and TV broadcasting. There were no major changes in the coverage of financial services.

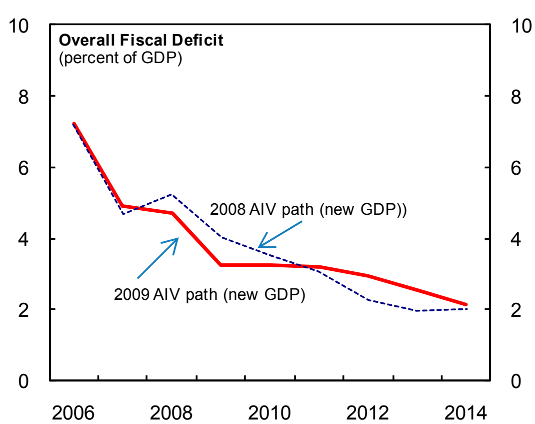


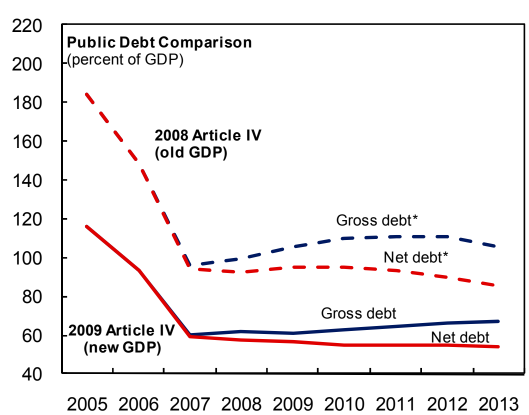
The importance of the sugar sector in total output declined. As an industry, sugar's calculations are robust. However, the old series used an arbitrary split in the value added between agriculture and manufacturing, while the new series draw on actual employment costs, and sugar manufacturing was reclassified into manufacturing.



- ***The external current account would widen slightly as the economy recovers in 2010, narrowing gradually over the medium term.*** The current account deficit is projected to increase to 10 percent of GDP in 2010 and to subsequently decline gradually to 6½ percent of GDP by 2014, and further to about 3½ percent by 2030. This adjustment would be supported by higher commodity exports, and a moderate recovery in imports. This is explained by the modest upturn in FDI (which would limit private capital import growth), and relatively stable oil imports.[4] The envisaged fiscal consolidation plan should also help contain the growth in imports, including as nearly all of the bilateral disbursements by PetroCaribe are projected to be saved, in line with the authorities' commitment to use these resources very sparsely and the availability of alternative funding for the public investment program under the baseline scenario.

- ***Prudent fiscal policies would underpin debt sustainability during the projection period.*** The fiscal consolidation effort in 2009 resulted in a stronger fiscal balance than agreed at the time of the 2008 Article IV Consultation. Moreover, the rebased GDP figures revealed a significantly smaller fiscal deficit than previously considered.[5] In this light, the revised fiscal path would maintain the NFPS deficit at around 3¼ percent of GDP in 2010–11, and gradually converge to a deficit of 2¼ percent of GDP by 2014.[6] This strategy would support growth, while allowing for a reduction in the net public debt-to-GDP ratio (excluding savings of disbursements by PetroCaribe). Gross public debt, while increasing somewhat over the medium term before converging to over 45 percent of GDP by 2030, would be rising more moderately than projected at the time of the 2008 Article IV Consultation, mainly on account of the smaller NFPS deficits (as a share of GDP) in the 2009 baseline.





[4] WEO projections assume an increase in oil prices in 2010 that moderates somewhat over the medium term.

[5] The NFPS deficit of 3.3 percent of (new) GDP in 2009 is equivalent to a deficit of 5.3 percent of (old) GDP.

[6] The consolidation effort would rely on the gradual moderation of the public investment program as well on structural reform, including the modernization of the public sugar company, measures to further enhance the revenue administration and reforms to ensure the long-term viability of the National Insurance System.

- ***High and stable inflows of foreign capital are projected over the medium term.*** So far Guyana has weathered the global crisis well by regional and global standards, notwithstanding a modest decline in its external financing resources (including remittances and FDI). The moderate decline in capital inflows observed in 2009 is projected to be followed by a gradual and sustained recovery over the medium term. This would be further supported by higher external disbursements available for the Public Sector Investment Program (PSIP), including from PetroCaribe. The current account deficit is therefore expected to remain fully financed.[7] In 2010–14, FDI is projected to reach some 7 percent of GDP per year on average, while concessional loans and grant gross disbursements together would average some 10 percent of GDP annually. In the long run, FDI would decline to about 4½ percent of GDP. Concessional loans and grants would also fall gradually to some 3½ percent of GDP,[8] particularly as concessional financing from Venezuela under the PetroCaribe initiative—projected to hover at 2–4 percent of GDP—is assumed to be discontinued by end-2014.[9] [10]

6. **Risks to the outlook are balanced over the medium and long term:**

- ***Downside risks*** include those related to a protracted global recovery, which could impinge on FDI, remittances and exports and, eventually, on growth. Higher-than-envisaged oil prices could also cause a further widening of the current account given Guyana's significant exposure to fuel imports—including for electricity generation. Further delays in completing the modernization of the public sugar company would add to these concerns, particularly given the recent elimination of the preferential sugar prices by the EU, which will increasingly expose Guyana to the volatility of world sugar prices. Buffers to these risks include the increasingly comfortable reserve levels, and the funds saved in the escrow account for PetroCaribe.

- ***Upside potential*** includes the successful completion of the potential key infrastructure projects still not included in the baseline scenario, but which are envisaged for execution sometime in 2010–14—including the hydropower plant at Amalia Falls, which could drastically reduce Guyana's exposure to oil prices.[11] Likewise, the

[7] The current account deficit would remain fully financed even if the share of PetroCaribe loans that are expected to be saved abroad is excluded.

[8] This assumption is broadly consistent with that used in the DSAs completed during the 2007 and 2008 Article IV Consultations.

[9] Projections for PetroCaribe disbursements provided by the authorities are based on the end-2009 WEO oil price baseline.

[10] Given the relatively high grant element of PetroCaribe disbursements, the assumption that these will be discontinued in 2014 reduces the average grant element for all lending in that same year. This assumption is consistent with that applied in the DSAs completed as part of the Article IV Consultations in 2007 and 2008.

[11] The hydropower plant and other large infrastructure projects are still being assessed for financial and economic viability, with IDB. They are expected to be completed as public-private partnerships, and only the firm and contingent liabilities arising from them will eventually be reflected in the public debt statistics.

positive prospects for eventual oil extraction and export (currently expected for 2014) could further support a boost to growth. Finally, Guyana could also benefit significantly from the further development of the global carbon credit markets, on account of the country's rainforest, in the context of the Low Carbon Development Strategy (LCDS).

III. Assessment of the Baseline Scenario: Gross Debt[12]

A. Results of the External Debt Sustainability Analysis

7. **The analysis of Guyana's gross external debt sustainability suggests that the country faces a moderate risk of debt distress.** This assessment, which is unchanged from the 2008 Article IV Consultation, is supported by a gradual decline in gross external borrowing that is projected over the long-term, in line with the envisaged path for fiscal tightening. Debt sustainability concerns could emerge if there were a significant deviation from the fiscal adjustment path outlined in the baseline macroeconomic policy framework, or in the presence of strong exogenous shocks.

8. **The assessment of the baseline scenario suggest sustainability for all indicators, with one minor exception.** Under the baseline scenario, all sustainability indicators remain well below their respective thresholds, with the exception of a temporary and minor breach by the PV of the gross external debt-to-GDP ratio (Figure 1). This breach is driven by the relatively high upfront gross borrowing projected in the PSIP (including from PetroCaribe). Nonetheless, this indicator is also affected by the reduction in the discount rate used in the DSA exercise, which is one percentage point lower than last year.[13] External debt burden indicators are projected to improve significantly over the long term. For instance, the PV of external debt-to-revenue ratio and external debt-to-exports ratios remain well below the debt burden thresholds (Table 2, Figure 1).[14] Moreover, debt-service ratios are projected to remain low (at about 4 percent of exports and 10 percent of revenue in the long term), indicating that the government would have the ability to meet its debt service payments comfortably.

9. **The inclusion of remittances into the analysis support the aforementioned assessment of a moderate risk of debt distress.** In particular, the inclusion of remittances still implies that the trajectories for all sustainability indicators in the baseline scenario remain well within their respective thresholds, with, again, the very minor exception of the PV of debt to GDP-and-remittances ratio (Figure 2). As before, the debt-service ratios (to

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[12] 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. Debt net of such savings is significantly lower, and nuances further most of this assessment of risks, as presented in the alternative scenarios in this document.

[13] Using the same discount rate as in the 2008 Article IV Consultation in the 2009 DSA, the breach disappears completely—with the PV of the debt-to-GDP ratio peaking at 37½ percent of GDP in 2014.

[14] Based on the World Bank classification, the external debt burden thresholds relevant 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.

exports and revenues) also continue to indicate a comfortable capacity to repay the debt incurred.

10. **The sensitivity analysis shows that Guyana's resilience to shocks is broadly unchanged relative to the 2008 DSA, also confirming the assessment of a moderate risk of debt distress** (Table 3, Figure 1):

- ***PV of the external debt-to-GDP ratio.*** The use of the rebased GDP series does not prevent the PV in all stress tests for the debt-to-GDP indicator from breaching the threshold of 40 percent—with the highest long-term risks associated to a shock on a combined shock of real GDP, export value growth, US dollar GDP deflator and net non-debt generating flows at a standard deviation of their historical average (B4), and to a 30 percent nominal depreciation of the currency (B6).

- ***PV of the external debt-to-revenue.*** This indicator breaches its threshold only under two of eight tests (as in the 2008 DSA).[15] First, under the A1 scenario, which uses key variables (real GDP growth, non-interest current account, growth of GDP deflator, non-debt creating flows) at their historical averages in 2010–30, the PV of external debt-to-revenue ratio breaches the threshold in 2023 and remains above it until the end of the projection period. Second, under the B5 test, which assumes that net non-debt creating flows, real GDP, exports and the GDP deflator in US dollars grow at their respective historical averages minus one standard deviation in 2009/10. In this extreme case, the PV of the external debt-to-revenue ratio would increase to 284 percent in 2012 and decline below the threshold starting in 2022.[16]

- ***PV of external debt-to exports.*** A minor temporary breach of the threshold takes place under the extreme combination of shocks (B5) in 2012, when the PV of external debt peaks at 153 percent of exports, above the threshold of 150 percent of exports.

B. Results of the Public Debt Sustainability Analysis

11. **Driven largely the external debt dynamics, the sustainability assessment of Guyana's total gross public debt also confirms the presence of a moderate risk of debt distress.** Most critically, Guyana's public debt is considered manageable as long as the authorities adhere to their fiscal consolidation strategy and continue to ensure that financing is at sufficiently high concessional terms. In light of the sufficient availability of external financing, the macroeconomic scenario assumes no recourse to domestic financing of the fiscal deficit in the medium term and allows for a gradual redemption of domestic securities.

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[15] Importantly, the breach to these stress tests would be reduced significantly if the (higher) discount rates relevant at the time of the 2008 Article IV had been used instead. In particular, only the B5 test for the external-debt-revenue ratio would have been exceeded marginally, and for a short period of four years, while there would have been no breach by the external-debt to export ration under the B5 test, nor any breach under the A1 Test for any indicator.

[16] If net non-debt creating flows were to grow at the historical average minus one standard deviation in 2009-10 (B4), the PV of external debt-to-revenue ratio would reach exactly the threshold in 2016 but not exceed it.

As external financing falls beyond 2012, domestic financing needs would remain broadly constant until 2020, and decline beyond that point. Thus, the PV of total public debt-to-revenue ratio would rise over the medium term from 168 percent in 2010 to about 184 percent in 2014, reflecting large external disbursements, and gradually decline thereafter to 157 percent by 2030. Given the authorities' assurances of their commitment to implement the agreed fiscal framework, the projected primary fiscal balances are consistent with debt sustainability (Table 4, Figure 4).[17]

12. **Under alternative scenarios and stress tests, total public debt vulnerabilities highlight the importance of adhering to sound policies** (Table 5):[18] [19]

- ***PV of public debt-to-GDP ratio***. 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 (B1) almost reaches 100 percent by 2030.

- ***PV of public debt-to-revenue.*** If GDP growth were at its historical average minus one standard deviation in 2011–12, adversely affecting the revenue collection, the PV of public debt would reach 390 percent of revenue by 2030 (B1). Likewise, if real GDP growth and primary balances were at historical averages (A1), if there were permanently lower GDP growth (A3), or if GDP and the primary balance were both at their historical average using one half standard deviation shocks in 2011–12 (B3), the PV of public debt to revenue would also exceed the threshold of 300 percent.

- The results of the ***sensitivity analysis*** underscore the importance of pursuing sound macroeconomic policies to achieve high GDP growth and maintain low fiscal deficits. In particular, severe shocks to these variables would push public debt—and the debt service obligations—up relative to fiscal revenue, potentially posing debt repayment risks.

IV. Alternative Scenarios

A. External Debt Net of PetroCaribe Savings

13. **External debt sustainability risks are further nuanced by the projected saving of a large share of the disbursements under the PetroCaribe initiative.** As in recent years, the upfront borrowing from PetroCaribe is projected to be saved in an escrow account, in line with the authorities' commitment to use these resources sparsely. With the public investment program well financed over the medium-term, PetroCaribe savings are expected to continue

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[17] The real domestic interest rate is expected to be positive throughout the projection period, supported by prudent monetary policies and low inflation.

[18] The assumptions for marginal lending in the case of shocks under the public DSA is unchanged with respect to the 2008 DSA, with 70 percent external and 30 percent domestic borrowing and concessionality slightly below the baseline.

[19] While the magnitude of the breach of these tests would be somewhat more muted if the discount rate of the 2008 DSA had been used instead, the same concerns outlined here would remain.

accumulating until 2014, after which they would be gradually unwound, helping maintain net debt indicators on a downward path (Figures 1 and 3, Table 6).[20]

14. **While debt indicators improve substantially when only the spent part of PetroCaribe financing is considered, the baseline scenario conclusions remain valid.** Given the magnitude of the estimated savings accumulated from PetroCaribe financing through 2014, the net debt indicators are significantly lower than in the gross-basis baseline scenario (Table 6 and Figure 3). The PV of the external debt-to-revenue ratio would reach 126 percent in 2014 (some 34 percentage points lower than in the baseline scenario), and would converge to values similar to those obtained in the baseline scenario in the long-term, as the savings are used up. Under the baseline scenario, the PV of debt-to-GDP would rise by about three percentage points in both 2010 and 2011 in the gross DSA (Table 2), compared to an increase of 0.5 percent and 1.3 percent, respectively, in the net-debt DSA (Table 6).

B. A "High Investment, Low Growth" Scenario

15. **The emergence of a "high investment, low growth" scenario in Guyana does not appear to be a high probability event when contrasted with the baseline scenario underlying this DSA.** Guyana's economic structure and sources of growth have strengthened significantly in the last decade, particularly because of the gradual decline in importance of traditional commodity export sectors (which tend to be more vulnerable to external shocks) than the non-tradable and service sectors that have picked up over time. In particular, the early part of the last decade witnessed a weak economic growth, which averaged only 0.6 percent in 2000–04. In contrast, average growth in 2005–09 rose to 3.1 percent, even when accounting for the devastating flood of 2005 (which generated a contraction of 2 percent). Indeed, the average growth rate is much higher for 2006–09 (at 4.4 percent). This suggests that the average projection of 3.5 percent in 2010–30 is not overly-optimistic, and could be reasonably supported by the planned public investment program and projected global conditions.

16. **Stress tests suggest, however, that there would be risks attached to unproductive public investment, underscoring the need to implement high-quality projects.** This is illustrated by the test A1 for gross external debt, which assumes that key macroeconomic variables (including growth) remain at their 10-year historical averages in 2010–30, despite the continued presence of disbursements underlying the authorities' public investment program. In this case, gross external debt would rise rapidly over the medium term, with the PV of debt-to-GDP ratio exceeding the 40 percent of GDP threshold as soon as in 2012, reaching nearly 70 percent of GDP by 2030. While the PV of the debt-to exports ratio would remain within the sustainable range, the PV of debt-to revenue ratio would also exceed its threshold of 250 percent by the end of the projection period. All debt service ratios, however, would be well within their thresholds, helping nuance any potential concerns on the country's ability to repay.

[20] The expected increase to the discount rate over the medium term should also provide a more nuanced view.

C. The Impact of Reduced Concessional Financing for Guyana

17. **The importance of continued access to concessional resources is illustrated through a scenario that assumes a temporary greater reliance on commercial financing.** In particular, the exercise assumes that an average of about 32 percent of total disbursements (currently concessional, at terms comparable to those offered by the IDB) would gradually be converted into commercial terms in the period 2010–14.[21] The assumptions on the degree of concessionality for the remaining period (2014–30) remain as in the baseline scenario.

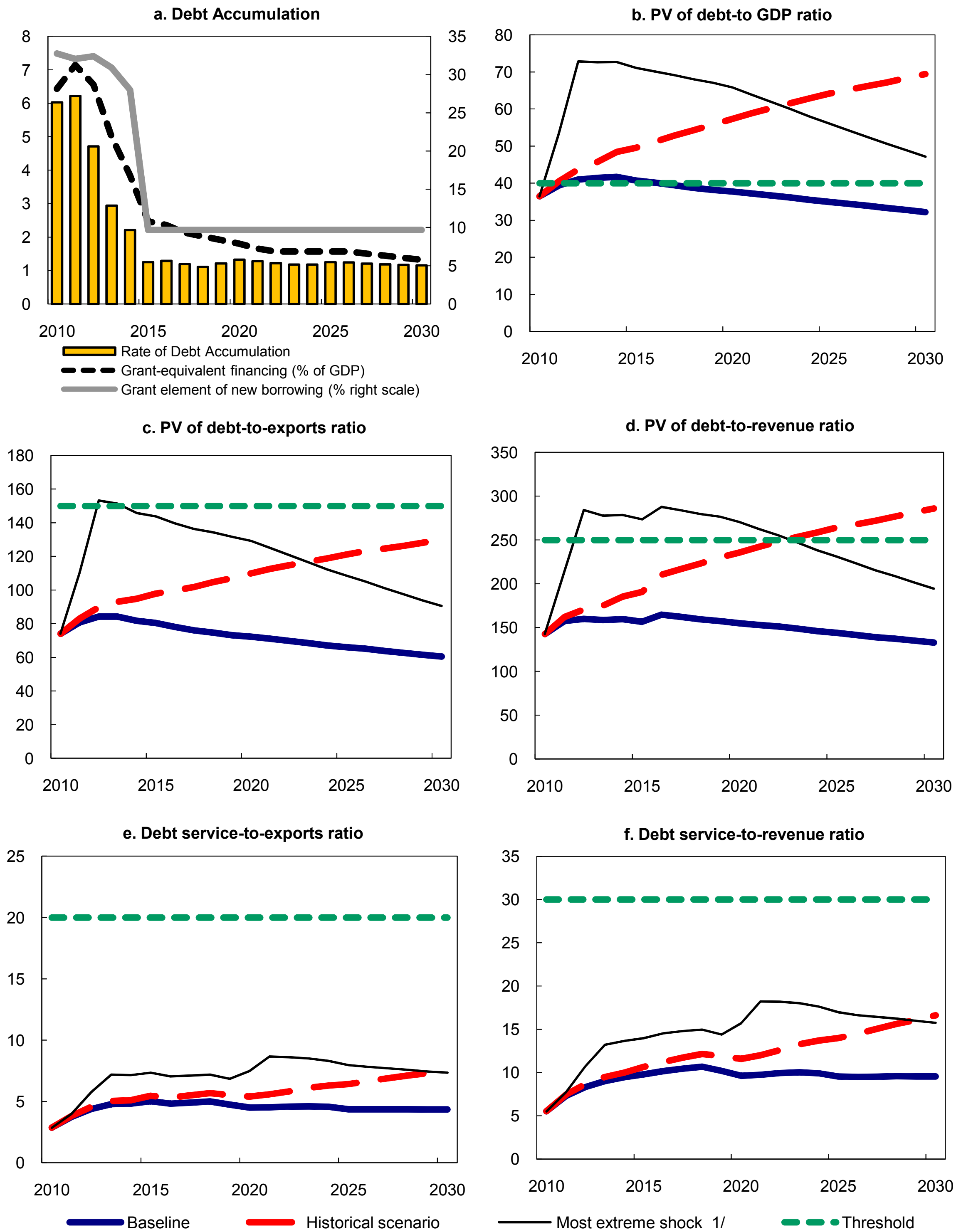
18. **External debt indicators would significantly worsen if future disbursements for Guyana were in less concessional terms (Figure 5).** The relevant tests suggest that the breach of the threshold of the PV of debt-to-GDP ratio would be longer and more pronounced that under the concessional terms currently granted to Guyana (Figure 1). In addition, the path of debt would be significantly more vulnerable to external shocks, with the PV of external debt to exports exceeding the threshold under the most extreme shock (when it did not in the scenario with full concessionality), and a more pronounced and prolonged breach of the threshold for the PV of external debt to revenue.

V. Conclusion

19. **Guyana remains at a moderate risk of debt distress**. Most of the relevant external debt indicators are well below their thresholds in the baseline scenario, with the PV of debt-to-GDP ratio showing only a minor and temporary breach which does not alter the assessment of moderate risk. Sustainability indicators for public sector debt show broadly the same level of vulnerability than those for external debt, given its large share on the total—including that related to currency risk. The presence of some risk of debt distress underscores the importance of further entrenching fiscal consolidation, and maintaining a prudent macroeconomic framework that is supportive to growth and external stability. Going forward, broadening the sources of growth, and maintaining prudent fiscal and debt strategies—including through focusing on concessional lending—would be critical to preserve and further strengthen the gains to sustainability achieved to date.

[21] The package of loans shocked in this exercise represents nearly 40 percent of total annual disbursements in 2010-12, 30 percent of total disbursements in 2013, and 13¼ percent of total disbursements in 2014. For instance, 100 percent of the package of loans subject to the stress test would be disbursed under concessional terms in 2010. The share of concessional lending would reduce to 75 percent in 2011, to 50 percent in 2012, and to 25 in 2013, becoming fully commercial in 2014. For the period 2014 onwards, the previous assumptions on the concessionality terms have not been affected relative to the baseline.

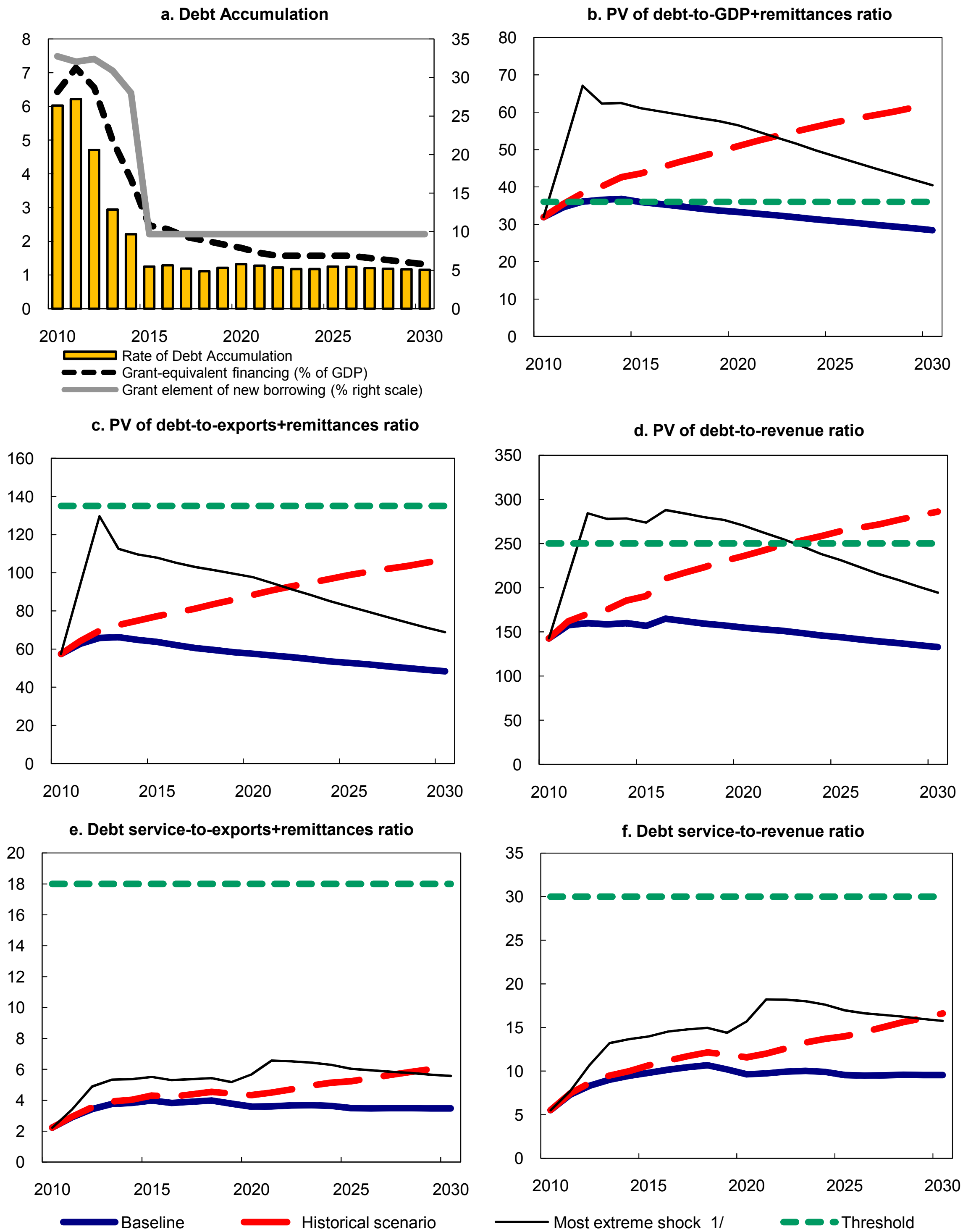
Figure 1. Guyana: Indicators of Public and Publicly Guaranteed External Debt, 2010-30, Baseline Scenario 1/



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 and Publicly Guaranteed External Debt Under Alternative Scenarios, 2010-30 1/



Sources: Country authorities; and staff estimates and projections.

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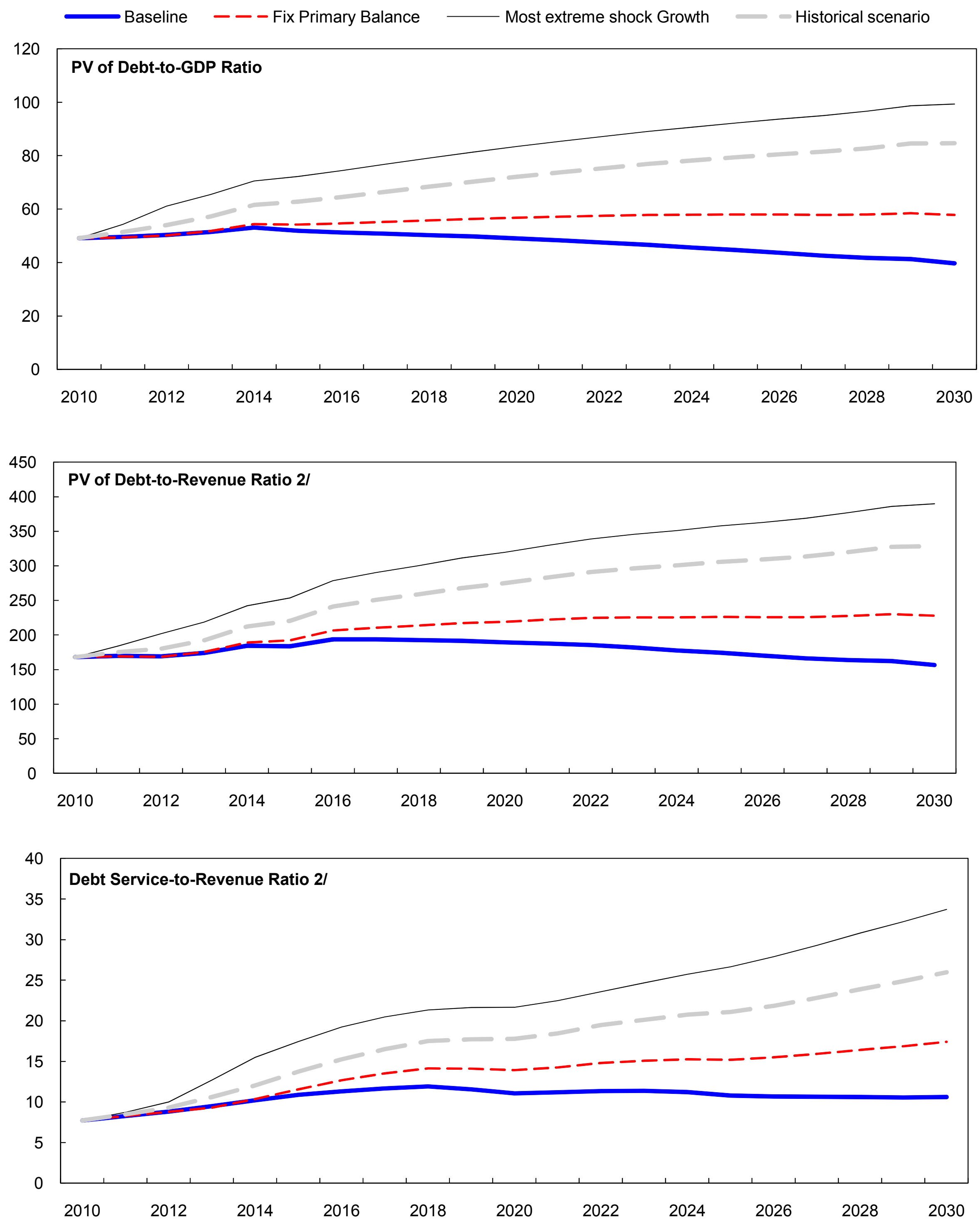
Figure 3. Guyana: Indicators of Public Debt Under Alternative Scenarios, 2010-30 1/

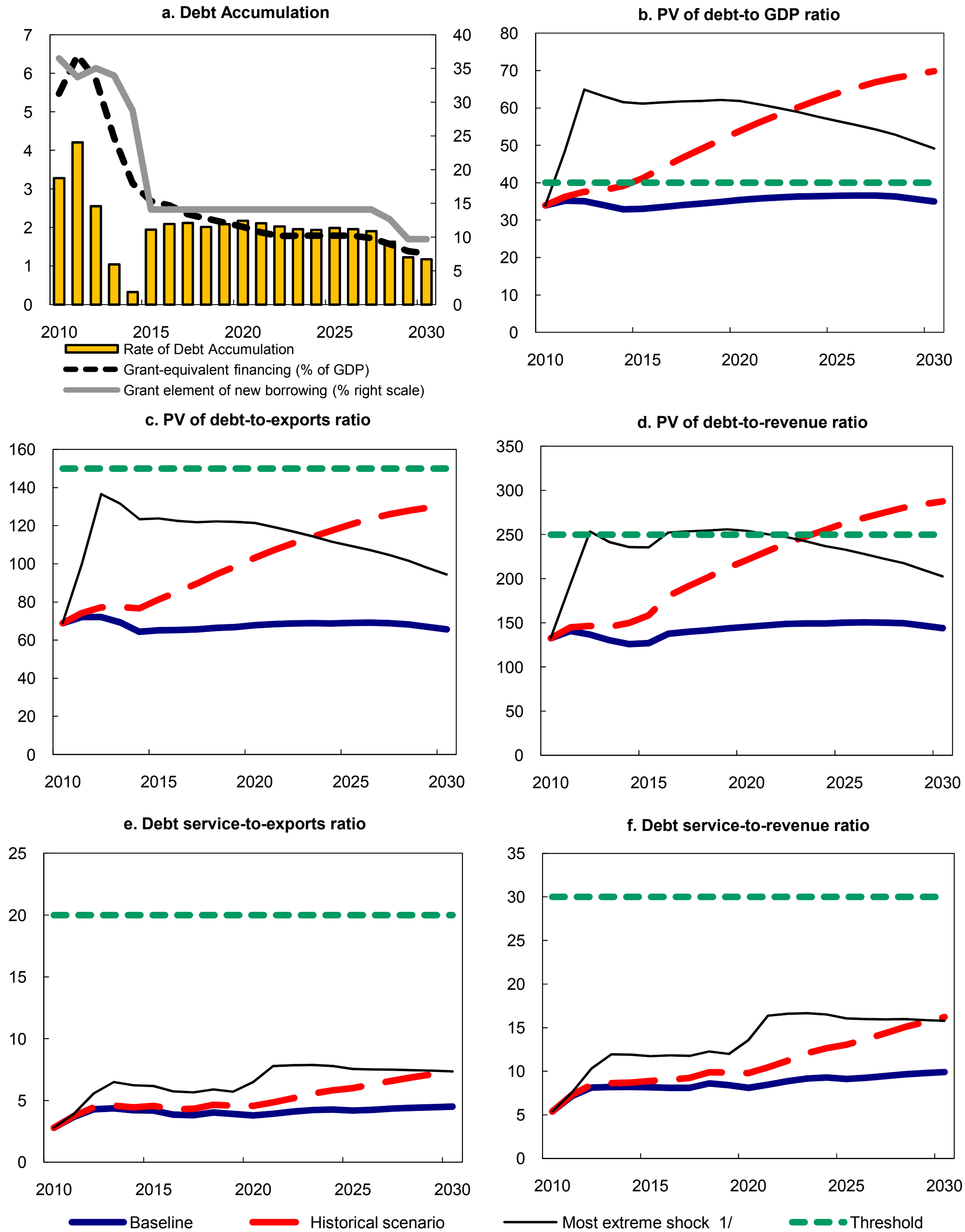


Sources: Country authorities; and staff estimates and projections.

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

2/ Revenues are defined inclusive of grants.

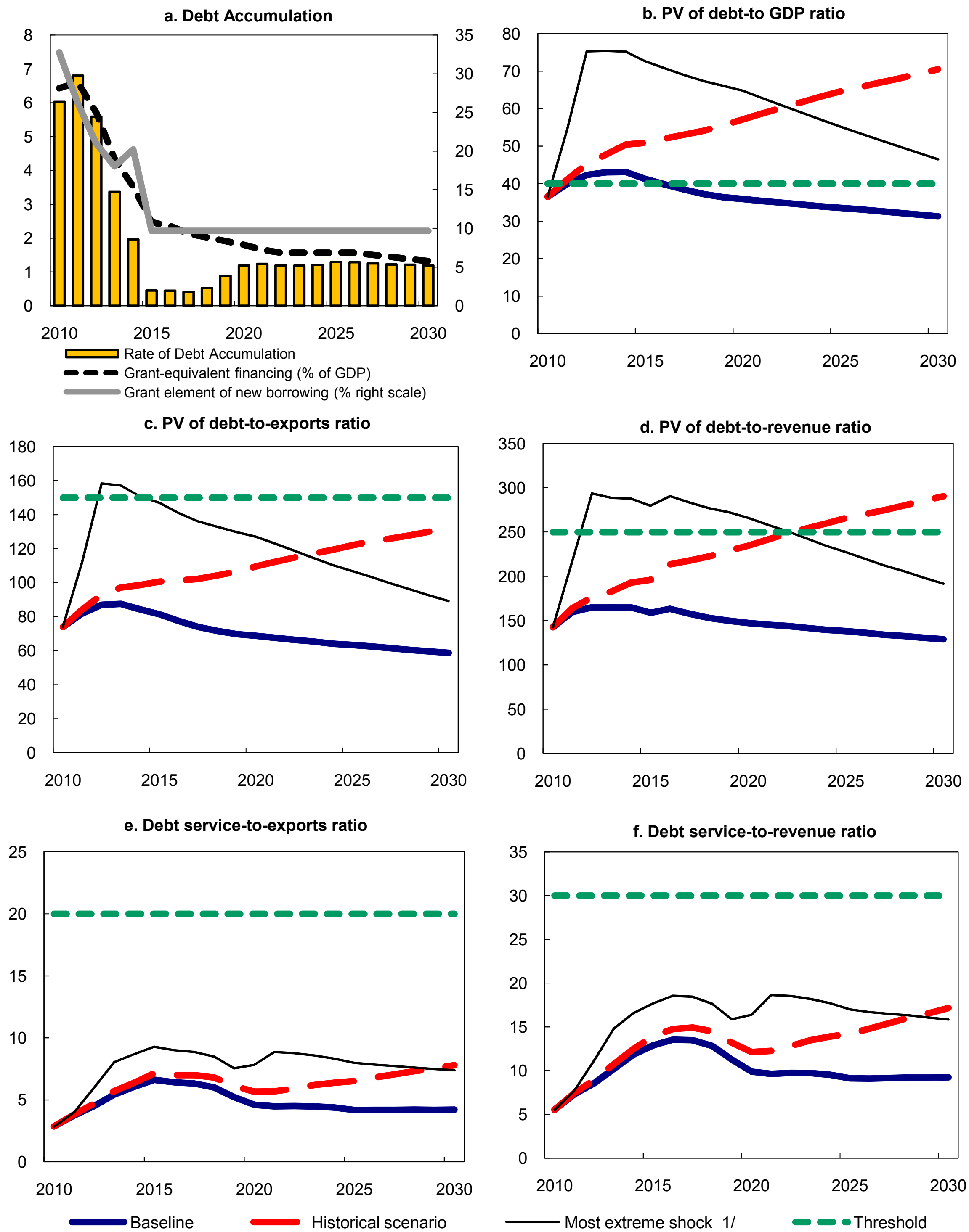
Figure 4. Guyana: Indicators of Public and Publicly Guaranteed External Debt, 2010-30, Petrocaribe on a Net Basis 1/



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 5. Guyana: Indicators of Public and Publicly Guaranteed External Debt Under A Case of Lower Concessionality, 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.

Table 1. Guyana: Main Elements of the Macroeconomic Framework

(In percent of GDP, unless otherwise indicated)

	Medium Term						Long Term			Averages		
	2009	2010	2011	2012	2013	2014	2020	2025	2030	2010-14	2015-30	2010-30
Economic growth and inflation												
Real GDP (percentage change)	3.3	4.4	4.9	4.2	3.9	3.6	3.3	3.2	3.1	4.2	3.2	3.5
GDP (in billions of G$)	413.1	448.1	490.4	535.7	579.9	624.4	933.9	1310.6	1867.0	535.7	1166.1	1016.0
End-of-period inflation (in percent)	3.6	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
National Income (percent of GDP)												
Investment	16.5	18.2	19.0	19.3	18.2	17.4	15.7	16.2	17.2	18.4	16.4	16.8
Private	4.0	5.1	5.5	5.4	5.1	5.4	6.0	6.1	6.6	5.3	6.3	6.0
Public	12.6	13.1	13.5	13.9	13.0	12.0	9.6	10.1	10.6	13.1	10.1	10.8
National savings	8.0	8.2	9.6	10.6	10.1	10.9	10.0	11.7	13.6	9.9	11.3	11.0
Fiscal sector												
Central government operations												
Revenue and grants	28.8	29.2	29.2	29.8	29.5	28.8	25.9	25.6	25.4	29.3	25.9	26.7
Of which: tax revenue	21.6	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Expenditure	32.0	32.5	32.4	32.7	32.1	30.9	27.9	27.6	27.4	32.1	27.9	28.9
Current expenditure	19.5	19.4	19.0	18.8	19.0	19.0	18.3	17.5	16.7	19.0	17.9	18.1
Capital expenditure	12.6	13.1	13.5	13.9	13.0	12.0	9.6	10.1	10.6	13.1	10.1	10.8
Public enterprises overall balance	1.6	2.2	1.8	2.2	2.4	2.4	2.4	2.4	2.4	2.2	2.4	2.4
PetroCaribe savings	-0.9	-3.5	-2.5	-2.6	-2.4	-2.5	0.8	0.8	0.0	-2.7	0.7	-0.1
Primary balance (excluding Skeldon)	-1.0	-0.6	-1.8	-1.5	-1.1	-0.7	-0.5	-0.6	-0.7	-1.1	-0.6	-0.7
Overall balance after grants	-3.3	-3.2	-3.2	-2.9	-2.5	-2.2	-2.0	-2.0	-2.0	-2.8	-2.0	-2.2
Balance of payments												
Current account bal. (incl. official transfers)	-8.5	-10.0	-9.4	-8.7	-8.0	-6.5	-5.6	-4.6	-3.6	-8.5	-5.1	-5.9
Exports of goods and services	48.0	49.3	48.8	48.7	49.2	51.1	52.2	52.9	53.3	49.4	52.5	51.7
Imports of goods and services	72.6	74.2	72.5	71.2	70.5	70.7	70.7	70.2	69.7	71.8	70.3	70.7
Current transfers, net	16.8	15.9	15.4	15.3	14.9	14.8	14.7	14.6	14.6	15.3	14.7	14.8
Official transfers (current)	2.0	1.7	1.4	1.7	1.5	1.5	1.4	1.3	1.3	1.6	1.4	1.4
Foreign direct investment	8.1	7.0	7.0	7.0	7.0	7.0	6.0	5.1	4.6	7.0	5.6	5.9
Gross official reserves (in months of imports)	5.1	4.9	5.2	5.4	5.4	5.4	5.6	5.8	6.0	5.2	5.7	5.6
Terms of trade (percent change)	21.5	-5.3	-4.0	0.7	0.3	-0.3	-0.6	-0.3	0.0	-1.7	-0.3	-0.6
Financing												
External financing (in millions of U.S. dollar)	173.1	251.3	303.9	283.3	220.7	183.6	142.4	175.1	225.9	248.5	164.4	184.4
External financing	8.6	11.5	12.8	11.1	8.2	6.5	3.8	3.7	3.7	10.0	3.8	5.3
Loans	4.9	8.4	9.2	7.5	5.2	4.2	2.4	2.4	2.4	6.9	2.4	3.4
Of which: PetroCaribe financing	1.6	3.7	2.6	2.6	2.4	2.5	0.0	0.0	0.0	2.8	0.0	0.7
Grants	3.6	3.1	3.7	3.6	3.0	2.3	1.4	1.3	1.3	3.1	1.4	1.9

Source: Staff estimates and projections.

Table 2. Guyana: External Debt Sustainability Framework, Baseline Scenario, 2010–30

(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**	**46.1**			**50.4**	**54.5**	**56.7**	**57.1**	**57.2**	**54.9**		**47.2**	**36.7**	
o/w public and publicly guaranteed (PPG)	41.6	43.7	46.1			50.4	54.5	56.7	57.1	57.2	54.9		47.2	36.7	
Change in external debt	-30.2	2.0	2.5			4.2	4.1	2.3	0.4	0.1	-2.3		-1.2	-0.9	
Identified net debt-creating flows	-9.5	0.1	-1.9			1.1	0.0	-0.5	-1.1	-2.6	-1.7		-1.9	-2.1	
Non-interest current account deficit	**10.5**	**12.7**	**8.0**	**8.0**	**3.1**	**9.4**	**8.7**	**7.9**	**7.2**	**5.6**	**6.2**		**4.7**	**2.7**	4.0
Deficit in balance of goods and services	27.6	32.3	24.5			25.0	23.6	22.5	21.3	19.6	19.9		18.5	16.3	
Exports	48.6	50.6	48.0			49.3	48.8	48.7	49.2	51.1	50.6		52.2	53.3	
Imports	76.3	83.0	72.6			74.2	72.5	71.2	70.5	70.7	70.6		70.7	69.7	
Net current transfers (negative = inflow)	-17.2	-19.8	-16.8	-11.8	6.1	-15.9	-15.4	-15.3	-14.9	-14.8	-14.7		-14.7	-14.6	-14.6
o/w official	-0.7	-2.7	-2.0			-1.7	-1.4	-1.7	-1.5	-1.5	-1.5		-1.4	-1.3	
Other current account flows (negative = net inflow)	0.1	0.2	0.3			0.3	0.5	0.7	0.7	0.8	1.0		1.0	0.9	
Net FDI (negative = inflow)	**-8.8**	**-9.3**	**-8.1**	**-5.8**	**2.5**	**-7.0**	**-7.0**	**-7.0**	**-7.0**	**-7.0**	**-6.9**		**-6.0**	**-4.6**	-5.5
Endogenous debt dynamics 2/	**-11.1**	**-3.3**	**-1.8**			**-1.2**	**-1.6**	**-1.3**	**-1.3**	**-1.1**	**-0.9**		**-0.6**	**-0.2**	
Contribution from nominal interest rate	0.6	0.6	0.5			0.6	0.7	0.8	0.8	0.8	0.9		0.9	1.0	
Contribution from real GDP growth	-4.2	-0.7	-1.4			-1.9	-2.3	-2.1	-2.1	-2.0	-1.8		-1.5	-1.1	
Contribution from price and exchange rate changes	-7.5	-3.1	-1.0			…	…	…	…	…	…		…	…	
Residual (3-4) 3/	**-20.7**	**1.9**	**4.4**			**3.1**	**4.1**	**2.7**	**1.5**	**2.6**	**-0.6**		**0.6**	**1.3**	
o/w exceptional financing	-19.5	3.0	0.9			3.5	2.5	2.6	2.4	2.5	0.0		0.0	0.0	
PV of external debt 4/	...	...	33.4			36.5	39.4	41.0	41.4	41.7	40.7		37.7	32.2	
In percent of exports	...	...	69.5			74.0	80.7	84.2	84.2	81.7	80.4		72.3	60.4	
PV of PPG external debt	**...**	**...**	**33.4**			**36.5**	**39.4**	**41.0**	**41.4**	**41.7**	**40.7**		**37.7**	**32.2**	
In percent of exports	**...**	**...**	**69.5**			**74.0**	**80.7**	**84.2**	**84.2**	**81.7**	**80.4**		**72.3**	**60.4**	
In percent of government revenues	**...**	**...**	**135.8**			**142.7**	**157.6**	**160.0**	**158.5**	**159.8**	**156.8**		**155.0**	**132.8**	
Debt service-to-exports ratio (in percent)	**2.3**	**2.1**	**1.8**			**2.9**	**3.7**	**4.4**	**4.8**	**4.8**	**5.0**		**4.5**	**4.3**	
PPG debt service-to-exports ratio (in percent)	**2.3**	**2.1**	**1.8**			**2.9**	**3.7**	**4.4**	**4.8**	**4.8**	**5.0**		**4.5**	**4.3**	
PPG debt service-to-revenue ratio (in percent)	**4.5**	**4.9**	**3.5**			**5.5**	**7.3**	**8.3**	**9.0**	**9.5**	**9.8**		**9.6**	**9.5**	
Total gross financing need (Billions of U.S. dollars)	0.0	0.1	0.0			0.1	0.1	0.1	0.1	0.0	0.1		0.0	0.0	
Non-interest current account deficit that stabilizes debt ratio	40.7	10.6	5.6			5.1	4.6	5.7	6.8	5.5	8.4		6.0	3.5	
Key macroeconomic assumptions															
Real GDP growth (in percent)	7.0	2.0	3.3	1.9	3.1	4.4	4.9	4.2	3.9	3.6	3.3	4.1	3.3	3.1	3.2
GDP deflator in US dollar terms (change in percent)	11.7	8.1	2.2	4.1	4.1	3.5	3.3	3.3	2.1	0.8	2.1	2.5	1.4	2.2	1.7
Effective interest rate (percent) 5/	1.0	1.5	1.2	1.4	0.7	1.5	1.4	1.5	1.6	1.6	1.6	1.5	1.9	2.7	2.2
Growth of exports of G&S (US dollar terms, in percent)	15.4	14.8	0.2	3.9	6.8	10.8	7.4	7.3	7.1	8.6	4.6	7.6	4.7	5.3	5.3
Growth of imports of G&S (US dollar terms, in percent)	17.3	19.9	-7.6	7.7	10.0	10.5	5.8	5.7	5.1	4.8	5.4	6.2	4.6	5.4	4.9
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	32.8	32.0	32.4	30.9	28.0	9.7	27.6	9.7	9.7	9.7
Government revenues (excluding grants, in percent of GDP)	24.4	21.7	24.6			25.6	25.0	25.6	26.1	26.1	26.0		24.3	24.3	24.3
Aid flows (in Billions of US dollars) 7/	0.2	0.2	0.2			0.3	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	0.1		0.1	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/	...	...	...			6.4	7.1	6.6	5.0	3.8	2.5		1.8	1.3	1.7
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			53.2	53.4	56.5	58.3	56.2	53.4		45.5	37.9	43.7
Memorandum items:															
Nominal GDP (Billions of US dollars)	1.7	1.9	2.0			2.2	2.4	2.5	2.7	2.8	3.0		3.8	6.2	
Nominal dollar GDP growth	19.5	10.2	5.6			8.0	8.4	7.6	6.1	4.5	5.5	6.7	4.7	5.3	5.0
PV of PPG external debt (in Billions of US dollars)			0.7			0.8	0.9	1.0	1.1	1.2	1.2		1.4	2.0	
(PVt-PVt-1)/GDPt-1 (in percent)						6.0	6.2	4.7	2.9	2.2	1.2	3.9	1.3	1.2	1.2
Gross remittances (Billions of US dollars)	0.3	0.3	0.3			0.3	0.3	0.3	0.4	0.4	0.4		0.5	0.8	
PV of PPG external debt (in percent of GDP + remittances)	...	...	29.1			32.0	34.6	36.1	36.5	36.8	36.0		33.3	28.4	
PV of PPG external debt (in percent of exports + remittances)	...	...	53.1			57.5	62.7	65.8	66.3	64.8	63.7		57.6	48.4	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	1.4			2.2	2.9	3.4	3.8	3.8	4.0		3.6	3.5	

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 PetroCaribe savings, 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 Analyses for Key Indicators of Public and Publicly Guaranteed External Debt, 2010-30

(In percent)

		Projections							
	2009	2010	2011	2012	2013	2014	2015	**2020**	2030
PV of debt-to GDP ratio									
Baseline	33	36	39	41	41	42	41	**38**	32
A. Alternative Scenarios									
A1. Key variables at their historical averages in 2010-2030 1/	33	36	41	44	46	48	50	**57**	69
A2. New public sector loans on less favorable terms in 2010-2030 2	33	36	41	45	46	47	46	**46**	47
B. Bound Tests									
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	33	36	42	46	46	47	46	**42**	36
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	33	36	43	52	52	53	51	**48**	37
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	33	36	41	44	44	44	43	**40**	34
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	33	36	51	63	63	63	62	**57**	41
B5. Combination of B1-B4 using one-half standard deviation shocks	33	36	53	73	73	73	71	**66**	47
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	33	36	55	58	58	59	57	**53**	45
PV of debt-to-exports ratio									
Baseline	70	74	81	84	84	82	80	**72**	60
A. Alternative Scenarios									
A1. Key variables at their historical averages in 2010-2030 1/	70	74	83	90	93	95	98	**110**	130
A2. New public sector loans on less favorable terms in 2010-2030 2	70	74	85	92	94	93	92	**89**	88
B. Bound Tests									
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	70	74	81	84	84	82	80	**72**	60
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	70	74	98	131	130	125	124	**111**	84
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	70	74	81	84	84	82	80	**72**	60
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	70	74	104	130	128	124	122	**110**	78
B5. Combination of B1-B4 using one-half standard deviation shocks	70	74	110	153	151	146	144	**129**	91
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	70	74	81	84	84	82	80	**72**	60
PV of debt-to-revenue ratio									
Baseline	136	143	158	160	158	160	157	**155**	133
A. Alternative Scenarios									
A1. Key variables at their historical averages in 2010-2030 1/	136	143	162	171	175	186	191	**236**	286
A2. New public sector loans on less favorable terms in 2010-2030 2	136	143	166	175	177	182	179	**191**	192
B. Bound Tests									
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	136	143	167	179	178	179	176	**174**	149
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	136	143	173	204	200	201	198	**195**	152
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	136	143	163	171	169	170	167	**165**	141
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	136	143	203	247	242	242	238	**235**	171
B5. Combination of B1-B4 using one-half standard deviation shocks	136	143	213	284	278	278	274	**270**	194
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	136	143	222	225	223	225	221	**218**	187

Table 3. Guyana: Sensitivity Analyses for Key Indicators of Public and Publicly Guaranteed External Debt, 2010-30 (Continued)

(In percent)

		Projections							
	2009	2010	2011	2012	2013	2014	2015	**2020**	2030
					Debt service-to-exports ratio				
Baseline	2	3	4	4	5	5	5	**4**	4
A. Alternative Scenarios									
A1. Key variables at their historical averages in 2010-2030 1/	2	3	4	5	5	5	5	**5**	8
A2. New public sector loans on less favorable terms in 2010-2030 2	2	3	4	5	5	5	5	**6**	6
B. Bound Tests									
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	2	3	4	4	5	5	5	**4**	4
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	2	3	4	6	7	7	7	**7**	6
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	2	3	4	4	5	5	5	**4**	4
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	2	3	4	5	6	6	6	**6**	6
B5. Combination of B1-B4 using one-half standard deviation shocks	2	3	4	6	7	7	7	**7**	7
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	2	3	4	4	5	5	5	**4**	4
					Debt service-to-revenue ratio				
Baseline	4	6	7	8	9	9	10	**10**	10
A. Alternative Scenarios									
A1. Key variables at their historical averages in 2010-2030 1/	4	6	7	9	9	10	11	**12**	17
A2. New public sector loans on less favorable terms in 2010-2030 2	4	6	7	9	9	10	10	**12**	13
B. Bound Tests									
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	4	6	8	9	10	11	11	**11**	11
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	4	6	7	9	10	11	11	**11**	12
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	4	6	8	9	10	10	10	**10**	10
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	4	6	7	10	12	12	12	**14**	14
B5. Combination of B1-B4 using one-half standard deviation shocks	4	6	8	11	13	14	14	**16**	16
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	4	6	10	12	13	13	14	**14**	13
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, 2010-30
(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	61.4			63.0	64.6	66.0	67.1	68.5	66.0		58.5	44.2	
o/w foreign-currency denominated	41.6	43.7	46.1			50.4	54.5	56.7	57.1	57.2	54.9		47.2	36.7	
Change in public sector debt	-33.1	1.6	-0.2			1.6	1.7	1.4	1.1	1.4	-2.5		-1.5	-1.9	
Identified debt-creating flows	-30.7	-1.1	-0.1			-1.4	-1.8	-1.8	-1.4	-1.0	-1.7		-0.9	-0.5	
Primary deficit	3.4	3.4	2.0	2.4	2.6	1.8	2.0	1.7	1.3	0.8	0.7	1.4	0.6	0.7	0.6
Revenue and grants	27.5	25.9	28.8			29.2	29.2	29.8	29.5	28.8	28.2		25.9	25.4	
of which: grants	3.2	4.2	4.2			3.7	4.2	4.1	3.4	2.7	2.2		1.6	1.1	
Primary (noninterest) expenditure	30.9	29.3	30.7			31.0	31.2	31.4	30.8	29.6	28.9		26.5	26.0	
Automatic debt dynamics	-13.5	-4.5	-2.1			-3.1	-3.7	-3.5	-2.7	-1.9	-2.4		-1.5	-1.2	
Contribution from interest rate/growth differential	-11.7	-5.6	-0.5			-3.2	-4.5	-4.1	-3.7	-3.6	-3.4		-2.6	-1.9	
of which: contribution from average real interest rate	-5.6	-4.4	1.5			-0.7	-1.5	-1.5	-1.2	-1.2	-1.2		-0.7	-0.5	
of which: contribution from real GDP growth	-6.1	-1.2	-2.0			-2.6	-3.0	-2.6	-2.5	-2.4	-2.2		-1.9	-1.4	
Contribution from real exchange rate depreciation	-1.8	1.1	-1.6			0.1	0.8	0.6	1.0	1.7	1.0		...	...	
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			3.0	3.4	3.1	2.5	2.4	-0.8		-0.5	-1.4	
Other Sustainability Indicators															
PV of public sector debt	…	…	48.6			49.1	49.6	50.3	51.4	53.1	51.9		49.0	39.7	
o/w foreign-currency denominated	…	…	33.4			36.5	39.4	41.0	41.4	41.7	40.7		37.7	32.2	
o/w external	...	...	33.4			36.5	39.4	41.0	41.4	41.7	40.7		37.7	32.2	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	23.0	21.7	20.6			18.1	15.9	13.6	12.6	13.1	14.3		14.3	11.3	
PV of public sector debt-to-revenue and grants ratio (in percent)	…	…	169.0			167.9	169.7	169.0	174.1	184.4	183.9		189.3	156.7	
PV of public sector debt-to-revenue ratio (in percent)	…	…	197.7			192.1	198.2	196.3	196.7	203.3	199.7		201.5	163.7	
o/w external 3/	…	…	135.8			142.7	157.6	160.0	158.5	159.8	156.8		155.0	132.8	
Debt service-to-revenue and grants ratio (in percent) 4/	7.2	7.1	5.8			7.7	8.3	8.8	9.5	10.2	10.9		11.1	10.6	
Debt service-to-revenue ratio (in percent) 4/	8.1	8.4	6.8			8.9	9.7	10.2	10.7	11.3	11.8		11.8	11.1	
Primary deficit that stabilizes the debt-to-GDP ratio	…	1.8	2.2			0.1	0.3	0.3	0.2	-0.6	3.2		2.1	2.6	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	7.0	2.0	3.3	1.9	3.1	4.4	4.9	4.2	3.9	3.6	3.3	4.1	3.3	3.1	3.2
Average nominal interest rate on forex debt (in percent)	1.0	1.5	1.2	1.4	0.7	1.5	1.4	1.5	1.6	1.6	1.6	1.5	1.9	2.7	2.2
Average real interest rate on domestic debt (in percent)	-6.8	-4.1	2.5	4.4	9.5	2.0	0.8	0.4	1.0	1.2	0.8	1.1	1.4	0.5	1.1
Real exchange rate depreciation (in percent, + indicates depreciation)	-2.9	2.9	-3.6	0.9	2.6	...	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	12.7	9.0	2.1	5.6	3.8	3.9	4.3	4.8	4.2	3.9	4.1	4.2	3.4	4.2	3.7
Growth of real primary spending (deflated by GDP deflator, in percent)	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grant element of new external borrowing (in percent)	...	...	...	…	…	32.8	32.0	32.4	30.9	28.0	9.7	27.6	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 2010-30

		Projections							
	2009	2010	2011	2012	2013	2014	2015	2020	2030
PV of Debt-to-GDP Ratio									
Baseline	49	49	50	50	51	53	52	49	40
A. Alternative scenarios									
A1. Real GDP growth and primary balance are at historical averages	49	49	51	54	57	62	63	72	85
A2. Primary balance is unchanged from 2010	49	49	49	50	52	54	54	57	58
A3. Permanently lower GDP growth 1/	49	49	50	51	53	56	56	62	80
A4. Alternative Scenario :[Costumize, enter title]	49	49	51	53	54	56	55	48	30
B. Bound tests									
B1. Real GDP growth is at historical average minus one standard deviations in 2011-2012	49	49	54	61	65	70	72	83	99
B2. Primary balance is at historical average minus one standard deviations in 2011-2012	49	49	53	57	58	59	58	55	45
B3. Combination of B1-B2 using one half standard deviation shocks	49	49	54	58	62	66	67	74	83
B4. One-time 30 percent real depreciation in 2011	49	49	64	63	64	65	64	64	59
B5. 10 percent of GDP increase in other debt-creating flows in 2011	49	49	60	60	61	63	61	58	48
PV of Debt-to-Revenue Ratio 2/									
Baseline	169	168	170	169	174	184	184	189	157
A. Alternative scenarios									
A1. Real GDP growth and primary balance are at historical averages	169	168	175	180	192	212	220	275	329
A2. Primary balance is unchanged from 2010	169	168	169	169	175	189	192	219	228
A3. Permanently lower GDP growth 1/	169	168	171	173	181	195	199	237	316
B. Bound tests									
B1. Real GDP growth is at historical average minus one standard deviations in 2011-2012	169	168	184	202	219	242	254	320	390
B2. Primary balance is at historical average minus one standard deviations in 2011-2012	169	168	180	190	195	206	206	212	179
B3. Combination of B1-B2 using one half standard deviation shocks	169	168	182	193	207	226	234	283	324
B4. One-time 30 percent real depreciation in 2011	169	168	218	212	215	227	228	245	232
B5. 10 percent of GDP increase in other debt-creating flows in 2011	169	168	204	202	207	218	218	225	190
Debt Service-to-Revenue Ratio 2/									
Baseline	6	8	8	9	9	10	11	11	11
A. Alternative scenarios									
A1. Real GDP growth and primary balance are at historical averages	6	8	8	9	11	12	14	18	26
A2. Primary balance is unchanged from 2010	6	8	8	9	9	10	12	14	17
A3. Permanently lower GDP growth 1/	6	8	8	9	10	11	12	15	25
B. Bound tests									
B1. Real GDP growth is at historical average minus one standard deviations in 2011-2012	6	8	9	10	13	16	17	22	34
B2. Primary balance is at historical average minus one standard deviations in 2011-2012	6	8	8	9	13	14	13	12	14
B3. Combination of B1-B2 using one half standard deviation shocks	6	8	9	10	12	14	16	19	27
B4. One-time 30 percent real depreciation in 2011	6	8	10	12	13	15	16	18	22
B5. 10 percent of GDP increase in other debt-creating flows in 2011	6	8	8	11	20	12	15	13	15

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.

Table 6. Guyana: External Debt Sustainability Framework, Petrocaribe on a Net Basis, 2010-30

(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/	**40.6**	**39.7**	**41.6**			**42.6**	**44.8**	**45.1**	**43.9**	**42.2**	**41.8**		**42.2**	**38.9**	
o/w public and publicly guaranteed (PPG)	40.6	39.7	41.6			42.6	44.8	45.1	43.9	42.2	41.8		42.2	38.9	
Change in external debt	-31.3	-0.8	1.8			1.0	2.2	0.3	-1.3	-1.7	-0.4		0.2	-1.0	
Identified net debt-creating flows	-9.5	0.2	-1.7			1.3	0.4	-0.1	-0.7	-2.1	-1.2		-1.7	-2.2	
Non-interest current account deficit	**10.5**	**12.7**	**8.0**	**8.0**	**3.1**	**9.4**	**8.7**	**8.0**	**7.3**	**5.7**	**6.3**		**4.8**	**2.6**	4.0
Deficit in balance of goods and services	27.6	32.3	24.5			25.0	23.6	22.5	21.3	19.6	19.9		18.5	16.3	
Exports	48.6	50.6	48.0			49.3	48.8	48.7	49.2	51.1	50.6		52.2	53.3	
Imports	76.3	83.0	72.6			74.2	72.5	71.2	70.5	70.7	70.6		70.7	69.7	
Net current transfers (negative = inflow)	-17.2	-19.8	-16.8	-11.8	6.1	-15.9	-15.4	-15.3	-14.9	-14.8	-14.7		-14.7	-14.6	-14.6
o/w official	-0.7	-2.7	-2.0			-1.7	-1.4	-1.7	-1.5	-1.5	-1.5		-1.4	-1.3	
Other current account flows (negative = net inflow)	0.1	0.2	0.3			0.3	0.6	0.8	0.8	0.9	1.1		1.0	0.9	
Net FDI (negative = inflow)	**-8.8**	**-9.3**	**-8.1**	**-5.8**	**2.5**	**-7.0**	**-7.0**	**-7.0**	**-7.0**	**-7.0**	**-6.9**		**-6.0**	**-4.6**	-5.5
Endogenous debt dynamics 2/	**-11.1**	**-3.2**	**-1.6**			**-1.1**	**-1.3**	**-1.0**	**-0.9**	**-0.8**	**-0.6**		**-0.5**	**-0.2**	
Contribution from nominal interest rate	0.6	0.6	0.5			0.6	0.6	0.7	0.8	0.8	0.8		0.9	1.0	
Contribution from real GDP growth	-4.2	-0.7	-1.2			-1.7	-1.9	-1.7	-1.7	-1.5	-1.3		-1.3	-1.2	
Contribution from price and exchange rate changes	-7.5	-3.0	-0.9			…	…	…	…	…	…		…	…	
Residual (3-4) 3/	**-21.8**	**-1.0**	**3.5**			**-0.2**	**1.8**	**0.4**	**-0.6**	**0.4**	**0.8**		**1.8**	**1.2**	
o/w exceptional financing	-20.5	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/	...	...	33.4			33.9	35.2	35.1	34.0	32.9	33.0		35.4	35.0	
In percent of exports	...	...	69.5			68.9	72.1	72.1	69.3	64.4	65.2		67.8	65.6	
PV of PPG external debt	**...**	**...**	**33.4**			**33.9**	**35.2**	**35.1**	**34.0**	**32.9**	**33.0**		**35.4**	**35.0**	
In percent of exports	**...**	**...**	**69.5**			**68.9**	**72.1**	**72.1**	**69.3**	**64.4**	**65.2**		**67.8**	**65.6**	
In percent of government revenues	**...**	**...**	**135.8**			**132.8**	**140.8**	**136.9**	**130.3**	**125.9**	**127.0**		**145.4**	**144.2**	
Debt service-to-exports ratio (in percent)	**2.3**	**2.1**	**1.8**			**2.8**	**3.7**	**4.3**	**4.4**	**4.2**	**4.2**		**3.8**	**4.5**	
PPG debt service-to-exports ratio (in percent)	**2.3**	**2.1**	**1.8**			**2.8**	**3.7**	**4.3**	**4.4**	**4.2**	**4.2**		**3.8**	**4.5**	
PPG debt service-to-revenue ratio (in percent)	**4.5**	**4.9**	**3.5**			**5.4**	**7.2**	**8.1**	**8.2**	**8.2**	**8.1**		**8.1**	**9.9**	
Total gross financing need (Billions of U.S. dollars)	0.0	0.1	0.0			0.1	0.1	0.1	0.1	0.0	0.0		0.0	0.0	
Non-interest current account deficit that stabilizes debt ratio	41.8	13.5	6.2			8.3	6.5	7.7	8.6	7.4	6.7		4.6	3.7	
Key macroeconomic assumptions															
Real GDP growth (in percent)	7.0	2.0	3.3	1.9	3.1	4.4	4.9	4.2	3.9	3.6	3.3	4.1	3.3	3.1	3.2
GDP deflator in US dollar terms (change in percent)	11.7	8.1	2.2	4.1	4.1	3.5	3.3	3.3	2.1	0.8	2.1	2.5	1.4	2.2	1.7
Effective interest rate (percent) 5/	1.0	1.5	1.3	1.4	0.7	1.6	1.6	1.7	1.8	1.8	1.9	1.7	2.1	2.6	2.3
Growth of exports of G&S (US dollar terms, in percent)	15.4	14.8	0.2	3.9	6.8	10.8	7.4	7.3	7.1	8.6	4.6	7.6	4.7	5.3	5.3
Growth of imports of G&S (US dollar terms, in percent)	17.3	19.9	-7.6	7.7	10.0	10.5	5.8	5.7	5.1	4.8	5.4	6.2	4.6	5.4	4.9
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	36.5	33.7	35.0	33.9	28.7	14.1	30.3	14.1	9.7	13.4
Government revenues (excluding grants, in percent of GDP)	24.4	21.7	24.6			25.6	25.0	25.6	26.1	26.1	26.0		24.3	24.3	24.3
Aid flows (in Billions of US dollars) 7/	0.2	0.2	0.2			0.3	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	0.1		0.1	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/	...	...	...			5.5	6.5	5.8	4.3	3.1	2.7		2.0	1.3	1.9
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			63.7	59.3	65.0	70.6	73.1	49.7		42.6	37.9	41.3
Memorandum items:															
Nominal GDP (Billions of US dollars)	1.7	1.9	2.0			2.2	2.4	2.5	2.7	2.8	3.0		3.8	6.2	
Nominal dollar GDP growth	19.5	10.2	5.6			8.0	8.4	7.6	6.1	4.5	5.5	6.7	4.7	5.3	5.0
PV of PPG external debt (in Billions of US dollars)			0.7			0.7	0.8	0.9	0.9	0.9	1.0		1.3	2.2	
(PVt-PVt-1)/GDPt-1 (in percent)						3.3	4.2	2.5	1.0	0.3	1.9	2.2	2.2	1.2	1.9
Gross remittances (Billions of US dollars)	0.3	0.3	0.3			0.3	0.3	0.3	0.4	0.4	0.4		0.5	0.8	
PV of PPG external debt (in percent of GDP + remittances)	...	...	29.1			29.7	30.9	30.9	30.0	29.0	29.1		31.2	30.9	
PV of PPG external debt (in percent of exports + remittances)	...	...	53.1			53.5	56.0	56.3	54.5	51.1	51.6		54.0	52.5	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	1.4			2.2	2.9	3.3	3.4	3.3	3.3		3.0	3.6	

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).