INTERNATIONAL DEVELOPMENT ASSOCIATION AND
INTERNATIONAL MONETARY FUND

REPUBLIC OF CONGO

Joint IMF/World Bank Debt Sustainability Analysis

Prepared by the Staffs of the International Monetary Fund
and the International Development Association[1]

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Based on the Debt Sustainability Framework (DSF) for Low Income Countries (LIC), the rating for the Republic of Congo shifts to low from moderate risk of debt distress. Under the baseline, none of the indicative thresholds are breached. There is one brief and small breach of the PV of debt-to-GDP threshold when stress tested, which could however be financed from accumulated deposits rather than external debt. Considering accumulated liquid assets, external debt is resilient to shocks, but public finances remain vulnerable to oil price volatility and the maturing of wells over the longer run. Consequently, consolidation is still required to ensure fiscal sustainability and strengthen external stability—fiscal discipline, pro-growth structural reforms and efficient public investment are key to keeping the overall balance in surplus while raising growth. Continued improvements in debt management and development of an oil wealth management strategy would further reduce risks.

I. Background

1. **Congo's net external debt is low.** Congo reached the HIPC Completion Point in January 2010, and in March 2010 the Paris club granted 100 percent relief. At end-2010, Congo's net external debt is estimated at 3½ percent of GDP, with gross official foreign assets and gross official debt amounting to 44 and 47½ percent of GDP, respectively. Public and publicly guaranteed debt (PPG) comprises roughly half of external debt, with the remainder owed mostly by the national oil company.[2] In 2010, domestic government debt

[1] In collaboration with the Congolese country authorities.

[2] Given data limitations, PPG covers only debt of the central government. However, wage and pension arrears of restructured state owned enterprises have been assumed by government and are included in domestic debt.

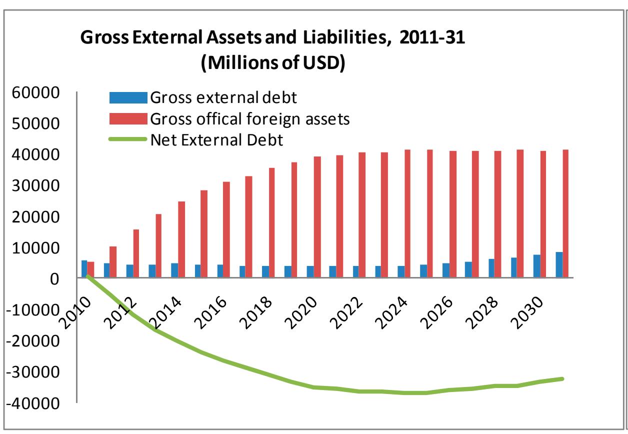
amounted to 2.6 percent of GDP and constituted wage and pension arrears of restructured state owned enterprises which have been assumed by government and are subject to a repayment plan.

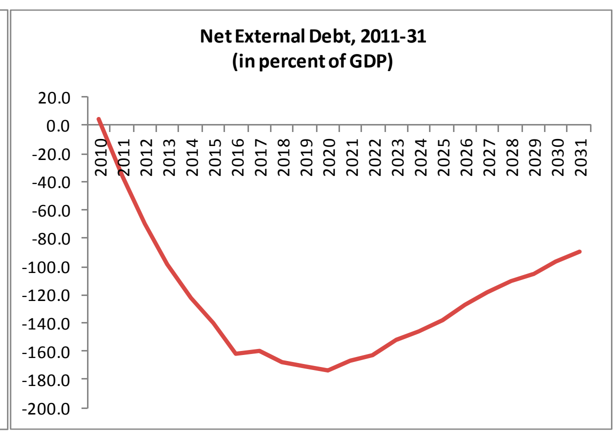
II. Macroeconomic assumptions

2. **The baseline macroeconomic framework for the debt sustainability analysis reflects current policies and macroeconomic prospects.** The key macroeconomic assumptions are summarized in Box 1. The outlook is favorable, with the increasing stock of basic infrastructure supporting an acceleration of non-oil growth. Growth in 2011–13 averages 7.5 percent as a result of robust activity in the oil, telecom, construction, timber and transport sectors. Over the medium term, non-oil growth gains further momentum as completion of public investment projects eases transport and supply bottlenecks, while structural reforms to enhance the business climate begin to take hold. The successful completion of structural reforms and broader private sector participation in economic activity sustain growth in the long run. The external position continues to strengthen as Congo's sizable oil wealth and high petroleum prices limit the need for external borrowing and allow for a buildup of government assets. As Congo begins to approach emerging market status (expected in 2025), total external debt is projected to start to tick up as the private sector begins to borrow from international markets.

III. External Debt Sustainability Analysis

3. **Under the baseline scenario, gross external debt averages 20 percent of GDP and net external debt is negative over the entire projection period.** The present value of gross PPG external debt remains well below all indicative thresholds (Figure 1), and the large buildup of government deposits (i.e., asset accumulation) resulting from sustained fiscal surpluses implies falling external vulnerability.[3]





[3] The 3-year moving average of the CPIA indicates that the country is a weak performer.

Box 1. Republic of Congo: Baseline Macroeconomic Assumptions

Real GDP growth: Over 2011–31 oil production declines and growth is increasingly led by non-oil activity. Over the medium term, public investment begins to narrow infrastructure gaps and non-oil growth is assumed to rise significantly (average 8.6 percent) driven by robust activity in the telecoms, construction, timber and transportation sectors. Over the longer term, assumed structural changes and reforms support growth through an enhanced business climate, and increasing infrastructure (rail, roads and ports) supports new industries such as mining and light manufacturing, including agroindustry.

Oil production and prices: Oil production is expected to peak in 2011 at about 126 million barrels per year and decline thereafter to 21 million barrels per year in 2031. Current WEO oil prices average about $100 per barrel over the medium term, and are assumed to remain constant in real dollar terms thereafter.

Inflation: Inflation would subside over the medium term (4 percent average) as infrastructure bottlenecks ease, stabilizing at around 3 percent, in line with the Central African Economic and Monetary Community (CEMAC) convergence criterion (3 percent).

Balance of payments: The current account would remain in surplus over 2011–19 (8½ percent average) before swinging into deficit starting in 2020 (-8¾ percent average) as oil production dwindles. In later years, the trade deficit would be partially offset by interest on foreign assets and lower profit remittances by oil companies. FDI in the non-oil sector is projected to grow by around 12 percent per year as the investment environment improves and new sectors such as mining are opened to foreign investors; the share of the non-oil sector in FDI is projected to increase to around 90 percent (13 percent in 2010). Gross official foreign assets would stabilize at around $40 billion and decline over time as a percent of GDP.

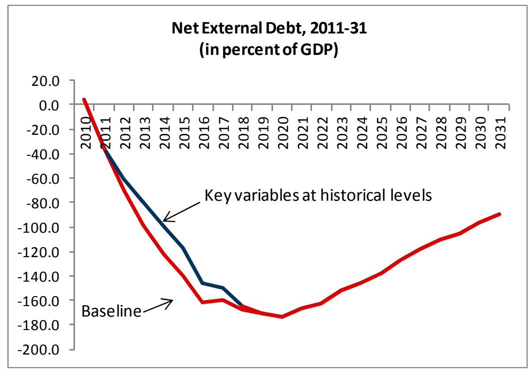
Government balance: The government is expected to continue consolidation efforts aimed at long-term fiscal sustainability while at the same time investing to meet country's significant development needs. The overall fiscal balance is projected to decline with oil production but remain in surplus over the longer term. As a result, government deposits would gradually decline to around 100 percent of GDP in 2031. Under such a scenario, there is no borrowing need. However, the authorities are assumed to fully draw the estimated $1.6 billion Chinese line of credit associated with nine infrastructure projects, as well as lending in the pipeline from international financial institutions.

External assistance: As the country progresses toward an emerging economy, grants (mainly technical assistance) and loan concessionality are assumed to diminish. From 2019, Congo is expected to obtain limited amounts of non-concessional loans from the IBRD.

Domestic borrowing: Domestic arrears are fully repaid by 2014, and no new domestic borrowing is assumed over the projection period given Congo's abundant oil wealth.

4. **Given the public sector asset accumulation under the baseline, results for the alternative scenarios and bound tests must be interpreted with caution.**[4] First, the alternative scenarios assume that any gap is filled by external borrowing rather than a smaller accumulation of assets. Second, 10-year historical averages are likely poor proxies of future outcomes for countries experiencing an oil boom and significant growth-enhancing structural change.

5. **Despite these caveats, debt dynamics for PPG external debt remain robust under both the alternative scenarios and bound tests.** While holding key variables at their historical level (Table 2, scenario A.1) leads to a slight breach of the indicative threshold of the present value of debt-to-GDP ratio in 2014–15, the gross debt stock would rise by only 15 percentage points (average) over 2011–15, and leave negative net debt in excess of 100 percent of GDP. The most extreme scenario is represented by the shock to exports. Under such circumstances, the threshold is breached for 6 years, peaking at 38 percent. The PV of debt-to-exports and debt-to-revenue ratios, as well as the liquidity indicators remain well below relevant thresholds under both the alternative scenarios and standard bound tests (Figure 1).

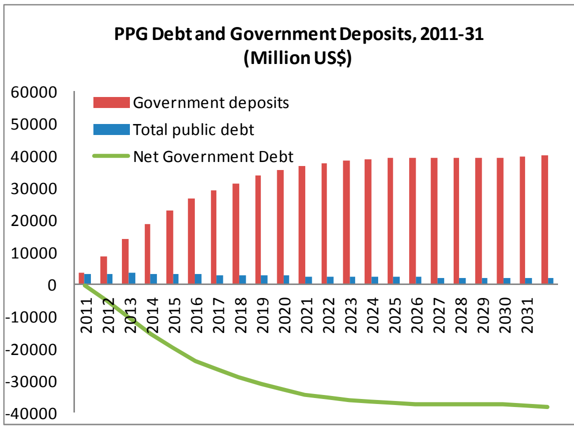


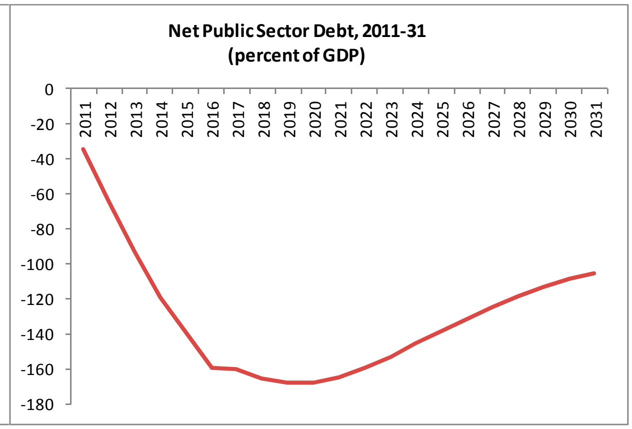
6. **While the DSA points to low risk of external debt distress, the prolonged fiscal consolidation assumed under the baseline is required for fiscal sustainability and external stability.** Declining oil production and uncertainty regarding oil prices call for further strengthening of policy buffers. Over the medium term, the public sector should continue to borrow only on concessional terms, preferably for high return projects containing a large technical assistance component. As market access increases the authorities should maintain a cautious borrowing policy.

IV. Public Sector Debt Sustainability

7. **Under the baseline scenario public and publicly guaranteed debt remains low and net public external debt is negative.** Public sector debt mirrors the external debt path, reflecting the low level of domestic debt and the lack of market access of the private sector.

[4] The LIC DSA template is ill equipped to analyze oil-rich countries with negative debt which experience asset accumulation over the projection period. Alternatively, the template could be run using net debt.





8. **Debt dynamics are most sensitive to a lower primary surplus resulting from lower oil revenues or the overspending of oil wealth.** Under the baseline, the primary balance registers a surplus of more than 28 percent of GDP (average) over the medium term, declining rapidly thereafter as oil production wanes, but remaining large at over 4 percent of GDP at the end of the projection period. Under the alternative scenario, with real GDP growth and the primary balance at historical averages (Table 4a, scenario A.1), debt dynamics worsen, with the largest impact coming from the lower (but still positive) primary balance while liquid government deposits keep accumulating. Thus, this shock appears irrelevant given the authorities' policy of financing development expenditure mostly with own resources—in the event of lower oil revenues the authorities would most likely accumulate fewer government deposits and/or adjust investment spending to available resource wealth. The most extreme shock is represented by the combination shock, which is a variation of the historical alternative scenario, only this time it is temporary rather than permanent. The same aforementioned analytical caveats also apply in this case.

9. **The vulnerability of Congo's public finances to oil price volatility puts a premium on maintaining fiscal discipline.** In addition to prudent spending, good debt management and cautious borrowing, efforts should focus on increasing non-oil revenue—including through structural reforms to foster non-oil activity and tax policy—to safeguard long-term debt sustainability.

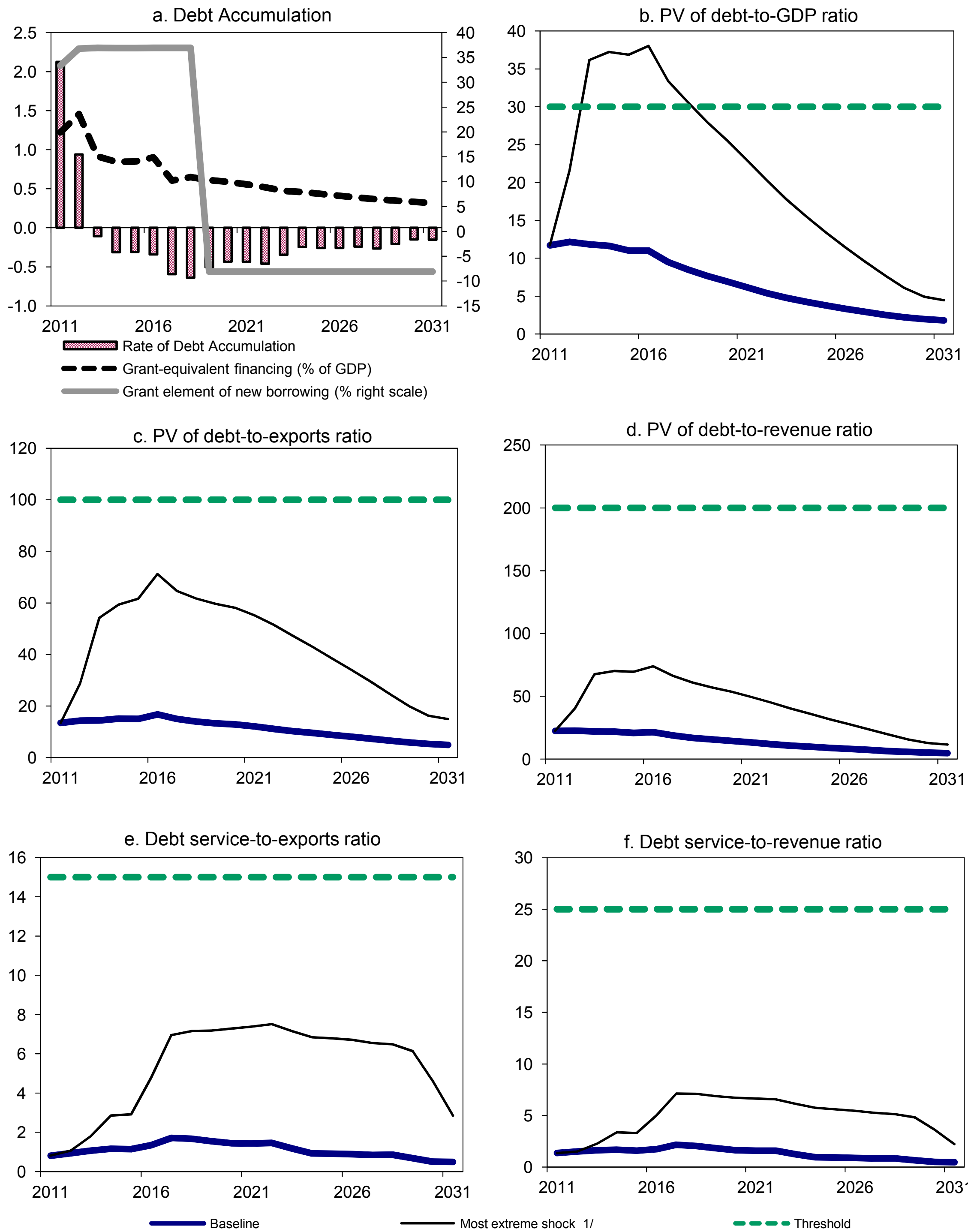
10. **The authorities agreed with the assessment.** The external position has improved significantly as a result of rising oil production, favorable oil prices and debt relief under the HIPC initiative. Looking ahead, the strong external environment together with their commitment to maintaining prudent debt policies—including financing public investment mostly through own resources—will allow them to accumulate net assets, thereby further reducing vulnerability. They recognize the vulnerability of the fiscal and external accounts to volatile oil prices, and are (a) taking steps to increase economic diversification through implementing an action plan to improve the business climate and (b) undertaking a tax reform to strengthen non-oil revenue collection.

V. Conclusion

11. **Congo's external and public debt burden was significantly reduced after reaching the HIPC completion point in January 2010 and the country is at a low risk of debt distress.** At current oil price and public expenditure forecasts, Congo will not have a borrowing requirement over the medium to longer term. External debt is resilient to most shocks, but public finances remain vulnerable to oil price volatility. However, in the event of sharply lower oil prices, the government is unlikely to resort to extensive external borrowing, opting to accumulate fewer government deposits or adjust development expenditure to available oil resources.

12. **Despite the relatively positive external debt outlook, policy challenges remain.** Historically, oil revenues have come in lower than staff estimates, and the renegotiation of oil contracts could lower the government's take of oil profits. Consolidation is still required to ensure fiscal sustainability and strengthen external stability—fiscal discipline, pro-growth structural reforms and efficient public investment are key to keeping the overall balance in surplus while raising growth. Continued improvements in debt management and development of an oil wealth management strategy would further reduce risks of debt distress. If an external financing need arises, the authorities should maintain a prudent external debt policy, borrowing only for high return projects and on concessional terms whenever possible.

Figure 1. Republic of Congo: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2011–31 1/ 2/

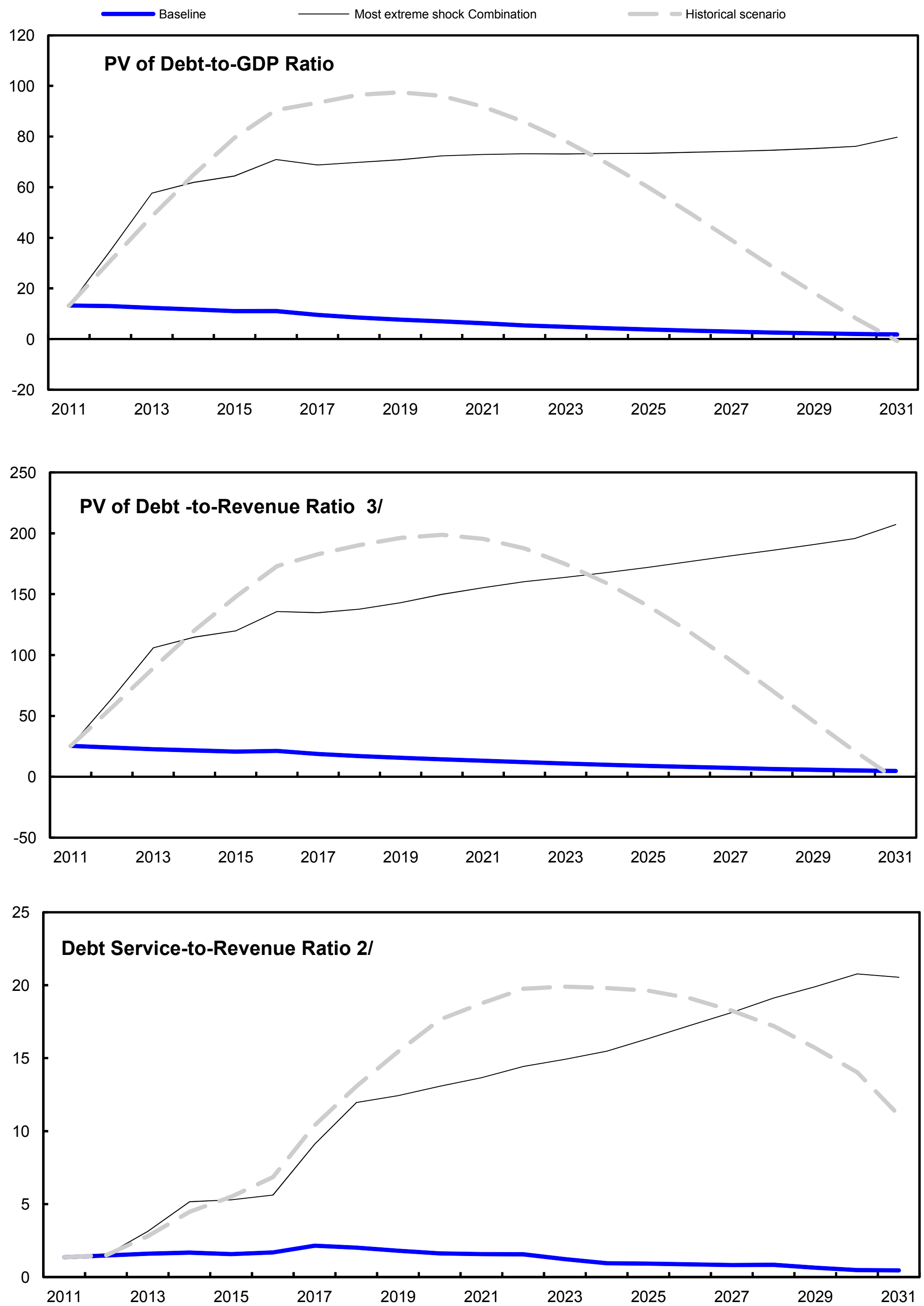


Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2021. In all cases the most extreme shock is the export shock.

2/ The fixed primary balance scenario is deleted as it shows a negative net debt.

Figure 2. Republic of Congo: Indicators of Public Debt Under Alternative Scenarios, 2011–31 1/ 2/



Sources: Country authorities; and staff estimates and projections.
1/ The most extreme stress test is the test that yields the highest ratio in 2021.
2/The historical scenario has been suppressed, as it yields negative values.
3/ Revenues are defined inclusive of grants.

Table 1. External Debt Sustainability Framework, Baseline Scenario, 2008–31 1/
(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average 6/	Standard Deviation 6/	Projections									
	2008	2009	2010			2011	2012	2013	2014	2015	2016	2011–16 Average	2021	2031	2017–31 Average
External debt (nominal) 1/	**89.2**	**84.5**	**47.7**			**30.3**	**25.2**	**25.6**	**27.7**	**26.6**	**26.4**		**17.8**	**22.0**	
o/w public and publicly guaranteed (PPG)	59.7	50.2	22.7			19.6	20.2	19.5	19.2	18.2	18.2		9.9	2.3	
Change in external debt	-43.8	-4.7	-36.8			-17.4	-5.1	0.4	2.1	-1.1	-0.3		-0.5	2.0	
Identified net debt-creating flows	-61.5	9.6	-38.3			-28.0	-30.6	-31.8	-27.3	-24.9	-17.1		-7.7	-1.4	
Non-interest current account deficit	**-3.7**	**7.8**	**-6.1**	**-4.6**	**5.4**	**-10.6**	**-14.7**	**-16.5**	**-13.1**	**-10.7**	**-5.0**		**1.8**	**6.4**	3.6
Deficit in balance of goods and services	-27.0	-19.7	-33.8			-36.2	-37.0	-36.0	-28.5	-23.3	-12.4		0.6	8.4	
Exports	73.9	70.7	84.5			87.0	85.3	82.2	77.1	73.7	65.7		51.2	36.8	
Imports	47.0	51.0	50.7			50.8	48.3	46.2	48.6	50.5	53.3		51.8	45.1	
Net current transfers (negative = inflow)	-0.1	0.4	0.6	0.5	0.2	0.3	-0.2	-0.1	-0.1	0.0	0.0		0.4	0.7	0.5
o/w official	-0.6	-0.2	0.0			-0.2	-0.7	-0.7	-0.7	-0.7	-0.8		-0.5	-0.3	
Other current account flows (negative = net inflow)	23.3	27.1	27.2			25.3	22.5	19.6	15.5	12.6	7.4		0.7	-2.7	
Net FDI (negative = inflow)	**-21.1**	**-20.1**	**-16.2**	**-14.1**	**8.4**	**-15.3**	**-14.6**	**-14.2**	**-13.3**	**-12.7**	**-11.5**		**-8.8**	**-7.5**	-8.5
Endogenous debt dynamics 2/	**-36.7**	**21.9**	**-16.0**			**-2.1**	**-1.2**	**-1.1**	**-1.0**	**-1.4**	**-0.6**		**-0.7**	**-0.3**	
Contribution from nominal interest rate	2.5	1.1	0.4			0.2	0.3	0.5	0.4	0.4	0.4		0.3	0.3	
Contribution from real GDP growth	-5.2	-8.2	-6.0			-2.3	-1.5	-1.6	-1.4	-1.9	-1.0		-1.0	-0.6	
Contribution from price and exchange rate changes	-33.9	29.0	-10.4			…	…	…	…	…	…		…	…	
Residual (3-4) 3/	**17.7**	**-14.3**	**1.6**			**10.6**	**25.4**	**32.2**	**29.4**	**23.8**	**16.8**		**7.2**	**3.4**	
o/w exceptional financing	-10.1	-1.7	-24.3			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
PV of external debt 4/	29.5	34.2	38.3			22.5	17.2	17.9	20.2	19.5	19.2		14.1	21.5	
In percent of exports	39.9	48.4	45.3			25.8	20.2	21.7	26.1	26.4	29.2		27.5	58.4	
PV of PPG external debt	29.5	34.2	**13.3**			**11.7**	**12.2**	**11.8**	**11.6**	**11.0**	**11.0**		**6.2**	**1.8**	
In percent of exports	39.9	48.4	**15.7**			**13.5**	**14.3**	**14.4**	**15.1**	**15.0**	**16.8**		**12.1**	**4.9**	
In percent of government revenues	63.8	99.0	**35.1**			**22.5**	**22.7**	**22.1**	**21.9**	**20.8**	**21.5**		**13.3**	**4.7**	
Debt service-to-exports ratio (in percent)	**10.0**	**5.2**	**2.0**			**2.1**	**1.8**	**2.5**	**3.5**	**3.7**	**4.2**		**4.2**	**5.0**	
PPG debt service-to-exports ratio (in percent)	**5.2**	**3.7**	**1.3**			**0.8**	**0.9**	**1.1**	**1.2**	**1.1**	**1.3**		**1.4**	**0.5**	
PPG debt service-to-revenue ratio (in percent)	**8.3**	**9.0**	**2.9**			**1.4**	**1.5**	**1.6**	**1.7**	**1.6**	**1.7**		**1.6**	**0.5**	
Total gross financing need (Billions of U.S. dollars)	-2.1	-0.8	-2.5			-3.8	-4.5	-4.8	-3.9	-3.5	-2.3		-1.0	0.2	
Non-interest current account deficit that stabilizes debt ratio	40.0	12.5	30.7			6.8	-9.6	-16.9	-15.2	-9.6	-4.8		2.3	4.4	
Key macroeconomic assumptions															
Real GDP growth (in percent)	5.6	7.5	8.8	4.7	3.2	6.3	5.3	6.4	5.4	6.9	3.7	5.7	5.9	2.8	5.0
GDP deflator in US dollar terms (change in percent)	34.2	-24.5	14.1	10.5	18.6	23.3	-0.8	-4.2	-6.2	-3.9	-6.6	0.3	-0.7	-1.7	0.2
Effective interest rate (percent) 5/	2.6	1.0	0.6	2.5	1.1	0.6	1.1	1.9	1.7	1.6	1.5	1.4	1.9	1.4	1.7
Growth of exports of G&S (US dollar terms, in percent)	31.7	-22.4	48.3	16.2	25.8	35.0	2.3	-1.8	-7.2	-1.8	-13.6	2.2	-0.5	-0.8	1.2
Growth of imports of G&S (US dollar terms, in percent)	45.5	-11.9	23.4	18.6	16.3	31.4	-0.8	-2.5	4.2	6.7	2.3	6.9	5.6	-1.4	4.1
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	33.4	36.8	36.9	36.9	36.9	36.9	36.3	-8.1	-8.1	-2.1
Government revenues (excluding grants, in percent of GDP)	46.6	29.2	37.8			52.1	53.6	53.6	53.1	53.0	51.4		46.3	38.1	43.7
Aid flows (in Billions of US dollars) 7/	0.2	0.0	0.3			0.5	0.4	0.2	0.2	0.2	0.2		0.1	0.1	
o/w Grants	0.1	0.0	0.0			0.0	0.1	0.1	0.1	0.1	0.1		0.1	0.1	
o/w Concessional loans	0.1	0.0	0.3			0.4	0.3	0.1	0.0	0.0	0.0		0.0	0.0	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			1.2	1.5	0.9	0.8	0.8	0.9		0.6	0.3	0.5
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			39.1	53.7	75.6	88.4	89.8	91.1		79.0	68.2	76.7
Memorandum items:															
Nominal GDP (Billions of US dollars)	11.8	9.6	11.9			15.6	16.3	16.6	16.4	16.9	16.4		21.4	35.0	
Nominal dollar GDP growth	41.7	-18.9	24.1			31.0	4.4	1.9	-1.1	2.8	-3.1	6.0	5.2	1.0	5.2
PV of PPG external debt (in Billions of US dollars)			1.6			1.8	2.0	2.0	1.9	1.9	1.8		1.3	0.6	
(PVt-PVt-1)/GDPt-1 (in percent)						2.1	0.9	-0.1	-0.3	-0.3	-0.3	0.3	-0.4	-0.2	-0.3
Gross workers' remittances (Billions of US dollars)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
PV of PPG external debt (in percent of GDP + remittances)	29.5	34.2	13.3			11.7	12.2	11.8	11.6	11.0	11.0		6.2	1.8	
PV of PPG external debt (in percent of exports + remittances)	39.9	48.4	15.7			13.5	14.3	14.4	15.1	14.9	16.8		12.0	4.9	
Debt service of PPG external debt (in percent of exports + remittances)	29.5	34.2	1.3			0.8	0.9	1.1	1.2	1.1	1.3		1.4	0.5	

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 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. Republic of Congo: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2011–31

(In percent)

	Projections							
	2011	2012	2013	2014	2015	2016	**2021**	2031
PV of debt-to-GDP ratio								
Baseline	12	12	12	12	11	11	**6**	2
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011–31 1/	12	21	30	34	34	27	**-20**	-96
A2. New public sector loans on less favorable terms in 2011–31 2/	12	13	12	12	12	12	**7**	2
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012–13	12	13	13	13	12	12	**7**	2
B2. Export value growth at historical average minus one standard deviation in 2012–13 3/	12	22	36	37	37	38	23	4
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012–13	12	13	13	13	12	12	**7**	2
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012–13 4/	12	22	30	31	30	31	**19**	4
B5. Combination of B1-B4 using one-half standard deviation shocks	12	17	16	16	15	15	**9**	2
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	12	17	17	17	16	16	**9**	3
PV of debt-to-exports ratio								
Baseline	13	14	14	15	15	17	**12**	5
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011–31 1/	13	24	36	44	46	41	**-40**	-262
A2. New public sector loans on less favorable terms in 2011–31 2/	13	15	15	16	16	18	**13**	6
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012–13	13	14	14	15	15	17	**12**	5
B2. Export value growth at historical average minus one standard deviation in 2012–13 3/	13	29	54	59	61	71	**55**	15
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012–13	13	14	14	15	15	17	**12**	5
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012–13 4/	13	25	37	40	41	47	**36**	10
B5. Combination of B1-B4 using one-half standard deviation shocks	13	19	19	20	20	22	**16**	6
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	13	14	14	15	15	17	**12**	5
PV of debt-to-revenue ratio								
Baseline	23	23	22	22	21	21	**13**	5
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011–31 1/	23	39	55	64	64	53	**-44**	-253
A2. New public sector loans on less favorable terms in 2011–31 2/	23	24	23	23	22	23	**15**	6
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012–13	23	23	24	24	23	23	**14**	5
B2. Export value growth at historical average minus one standard deviation in 2012–13 3/	23	40	67	70	70	74	**49**	12
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012–13	23	24	25	25	23	24	**15**	5
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012–13 4/	23	40	56	58	58	61	**40**	10
B5. Combination of B1-B4 using one-half standard deviation shocks	23	31	29	30	29	30	**19**	6
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	23	32	32	31	30	31	**19**	7
Debt service-to-exports ratio								
Baseline	1	1	1	1	1	1	**1**	0
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011–31 1/	1	1	1	2	2	3	**1**	-17
A2. New public sector loans on less favorable terms in 2011–31 2/	1	1	1	1	1	1	**1**	0
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012–13	1	1	1	1	1	1	**2**	1
B2. Export value growth at historical average minus one standard deviation in 2012–13 3/	1	1	2	3	3	5	**7**	3
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012–13	1	1	1	1	1	1	**2**	1
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012–13 4/	1	1	1	2	2	4	**5**	2
B5. Combination of B1-B4 using one-half standard deviation shocks	1	1	1	1	1	2	**2**	1
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	1	1	1	1	1	1	**2**	1
Debt service-to-revenue ratio								
Baseline	1	2	2	2	2	2	**2**	0
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011–31 1/	1	1	2	2	2	3	**1**	-17
A2. New public sector loans on less favorable terms in 2011–31 2/	1	2	2	2	2	2	**2**	0
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012–13	1	2	2	2	2	2	**2**	1
B2. Export value growth at historical average minus one standard deviation in 2012–13 3/	1	2	2	3	3	5	**7**	2
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012–13	1	2	2	2	2	2	**2**	1
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012–13 4/	1	2	2	3	3	5	**5**	2
B5. Combination of B1-B4 using one-half standard deviation shocks	1	2	2	2	2	3	**3**	1
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	1	2	2	2	2	2	**3**	1
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	5	5	5	5	5	5	**5**	5

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. Republic of Congo: Public Sector Debt Sustainability Framework, Baseline Scenario, 2008–31
(In percent of GDP, unless otherwise indicated)

	Actual			Average	Standard Deviation	Estimate	Projections								
	2008	2009	2010			2011	2012	2013	2014	2015	2016	2011-16 Average	2021	2031	2017-31 Average
Public sector debt 1/	68.5	57.3	25.3			21.1	21.1	20.0	19.3	18.2	18.2		9.9	2.4	
o/w foreign-currency denominated	59.7	50.2	22.7			19.6	20.2	19.5	19.2	18.2	18.2		9.9	2.3	
Change in public sector debt	-30.1	-11.1	-32.0			-4.2	0.0	-1.0	-0.8	-1.1	0.0		-1.3	-0.3	
Identified debt-creating flows	-52.9	0.2	-48.7			-37.1	-33.0	-31.7	-28.2	-27.0	-19.4		-9.8	-4.3	
Primary deficit	-25.1	-5.7	-15.4	-13.8	7.1	-31.2	-32.3	-31.5	-28.6	-26.6	-20.1	-28.4	-9.3	-4.3	-7.8
Revenue and grants	47.3	29.5	37.9			52.3	54.3	54.4	53.9	53.8	52.2		46.9	38.4	
of which: grants	0.7	0.3	0.1			0.3	0.7	0.7	0.8	0.8	0.9		0.6	0.3	
Primary (noninterest) expenditure	22.2	23.8	22.4			21.1	22.0	22.9	25.3	27.2	32.1		37.6	34.1	
Automatic debt dynamics	-17.7	7.7	-9.0			-5.9	-0.7	-0.2	0.4	-0.4	0.7		-0.4	0.0	
Contribution from interest rate/growth differential	-7.8	-2.4	-5.8			-2.0	-1.2	-1.3	-1.2	-1.4	-0.8		-0.7	-0.1	
of which: contribution from average real interest rate	-2.6	2.4	-1.2			-0.5	-0.1	-0.1	-0.1	-0.2	-0.2		-0.1	0.0	
of which: contribution from real GDP growth	-5.2	-4.8	-4.6			-1.5	-1.1	-1.3	-1.0	-1.2	-0.7		-0.6	-0.1	
Contribution from real exchange rate depreciation	-9.9	10.1	-3.2			-3.9	0.5	1.1	1.5	1.0	1.6		...	...	
Other identified debt-creating flows	-10.1	-1.7	-24.3			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)	-10.1	-1.7	-24.3			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	22.9	-11.4	16.7			32.9	32.9	30.7	27.4	25.9	19.4		8.4	4.0	
Other Sustainability Indicators															
PV of public sector debt	...	...	15.9			13.3	13.1	12.3	11.7	11.1	11.1		6.2	1.8	
o/w foreign-currency denominated	...	...	13.3			11.7	12.2	11.8	11.6	11.0	11.0		6.2	1.8	
o/w external	...	...	13.3			11.7	12.2	11.8	11.6	11.0	11.0		6.2	1.8	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	-21.1	-2.9	-14.3			-30.5	-31.5	-30.6	-27.7	-25.8	-19.2		-8.6	-4.1	
PV of public sector debt-to-revenue and grants ratio (in percent)	…	…	42.1			25.3	24.1	22.6	21.7	20.6	21.2		13.2	4.7	
PV of public sector debt-to-revenue ratio (in percent)	…	…	42.1			25.4	24.4	22.9	22.0	20.9	21.6		13.4	4.8	
o/w external 3/	…	…	35.1			22.5	22.7	22.1	21.9	20.8	21.5		13.3	4.7	
Debt service-to-revenue and grants ratio (in percent) 4/	8.6	9.6	2.9			1.4	1.5	1.6	1.7	1.6	1.7		1.6	0.5	
Debt service-to-revenue ratio (in percent) 4/	8.7	9.7	3.0			1.4	1.5	1.6	1.7	1.6	1.7		1.6	0.5	
Primary deficit that stabilizes the debt-to-GDP ratio	4.9	5.4	16.5			-27.0	-32.2	-30.5	-27.8	-25.6	-20.1		-8.0	-4.0	
Key macroeconomic and fiscal assumptions 5/															
Real GDP growth (in percent)	5.6	7.5	8.8	4.7	3.2	6.3	5.3	6.4	5.4	6.9	3.7	5.7	5.9	2.8	5.0
Average nominal interest rate on forex debt (in percent)	2.3	1.1	0.7	3.1	2.4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.0	0.5	0.9
Average real interest rate on domestic debt (in percent)	-18.7	28.0	-16.2	-1.3	21.5	-16.3	...	...	...	...	...	...	...	...	...
Real exchange rate depreciation (in percent, + indicates depreciation)	-12.5	18.1	-6.9	-5.0	15.3	-18.2	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	25.0	-20.3	19.8	6.2	16.1	19.5	-0.3	-3.5	-5.4	-3.1	-5.9	0.2	-0.7	1.9	0.4
Growth of real primary spending (deflated by GDP deflator, in percent)	-0.1	0.2	0.0	0.1	0.2	0.0	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.0	0.1
Grant element of new external borrowing (in percent)	...	...	...	…	…	33.4	36.8	36.9	36.9	36.9	36.9	36.3	-8.1	-8.1	...

Sources: Country authorities; and staff estimates and projections.

1/ Includes debt of the central government.

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. Republic of Congo: Sensitivity Analysis for Key Indicators of Public Debt 2011–31

	Projections							
	2011	2012	2013	2014	2015	2016	2021	2031
PV of Debt-to-GDP Ratio								
Baseline	13	13	12	12	11	11	6	2
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	13	31	48	65	80	90	92	-1
A2. Primary balance is unchanged from 2011	13	14	14	10	5	-6	-92	-327
A3. Permanently lower GDP growth 1/	13	13	13	14	15	17	24	61
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	13	15	20	24	28	33	46	70
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	13	37	61	63	62	66	56	45
B3. Combination of B1-B2 using one half standard deviation shocks	13	35	58	62	64	71	73	80
B4. One-time 30 percent real depreciation in 2012	13	18	17	17	16	17	12	7
B5. 10 percent of GDP increase in other debt-creating flows in 2012	13	23	22	22	21	22	16	10
PV of Debt-to-Revenue Ratio 2/								
Baseline	25	24	23	22	21	21	13	5
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	25	57	89	120	148	173	195	-2
A2. Primary balance is unchanged from 2011	25	26	25	19	10	-11	-195	-851
A3. Permanently lower GDP growth 1/	25	25	25	26	28	32	52	159
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	25	28	37	45	52	64	99	181
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	25	69	112	116	116	126	120	116
B3. Combination of B1-B2 using one half standard deviation shocks	25	64	106	115	120	136	155	207
B4. One-time 30 percent real depreciation in 2012	25	33	31	31	30	32	25	19
B5. 10 percent of GDP increase in other debt-creating flows in 2012	25	42	40	41	40	42	35	27
Debt Service-to-Revenue Ratio 2/								
Baseline	1	1	2	2	2	2	2	0
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	1	1	3	4	6	7	19	11
A2. Primary balance is unchanged from 2011	1	1	2	2	1	1	-6	-62
A3. Permanently lower GDP growth 1/	1	1	2	2	2	2	4	12
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	1	2	2	2	3	3	7	16
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	1	1	3	5	5	5	12	13
B3. Combination of B1-B2 using one half standard deviation shocks	1	2	3	5	5	6	14	21
B4. One-time 30 percent real depreciation in 2012	1	2	2	2	2	3	3	2
B5. 10 percent of GDP increase in other debt-creating flows in 2012	1	1	2	2	2	2	4	3

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.