April 2006

Republic of Congo: Joint Bank-Fund Debt Sustainability Analysis

1. This document provides an assessment of Congo's debt dynamics based on the forward-looking approach of the debt sustainability framework for low-income countries (henceforth LIC DSA), using both the external and fiscal (including domestic) public debt templates.[1] The baseline macroeconomic scenario used for the analysis is that described in Section III.B.

2. Although the framework used differs from the HIPC framework, the LIC DSA results confirm the assessment using the enhanced HIPC Initiative DSA template (see Section IV.D). That is, in the absence of debt relief, Congo has debt ratios well above the thresholds indicative of a risk of debt distress: most notably an NPV of debt-to-GDP ratio in 2005 well above the 30 percent indicative threshold and a total debt service-to-revenue ratio above 30 percent (Figures 1-2, Tables 1-4). HIPC Debt relief would significantly improve Congo's debt dynamics.

3. External debt dynamics are portrayed in Figure 1. Under the baseline scenario, debt-to-GDP falls below the indicative threshold of 30 percent once the projected completion point is attained and full HIPC debt relief comes on line in 2008. The two debt-to-exports ratios are both comfortably below the thresholds taking into account HIPC debt relief.

4. Standard stress tests indicate some vulnerability of the debt-to-GDP ratio to exogenous and policy shocks.[2] The greatest vulnerabilities relate to lower export growth, lower GDP growth, and depreciation of the euro (to which the CFA franc is tied) against the US dollar. Under the "historical" scenario, which uses ten-year averages for macroeconomic parameters, debt-to-GDP goes below the indicative threshold only in 2017, after peaking in 2011 as oil production declines. Note, however, that such a historical scenario covers a wartime period in the case of Congo when the economy contracted.

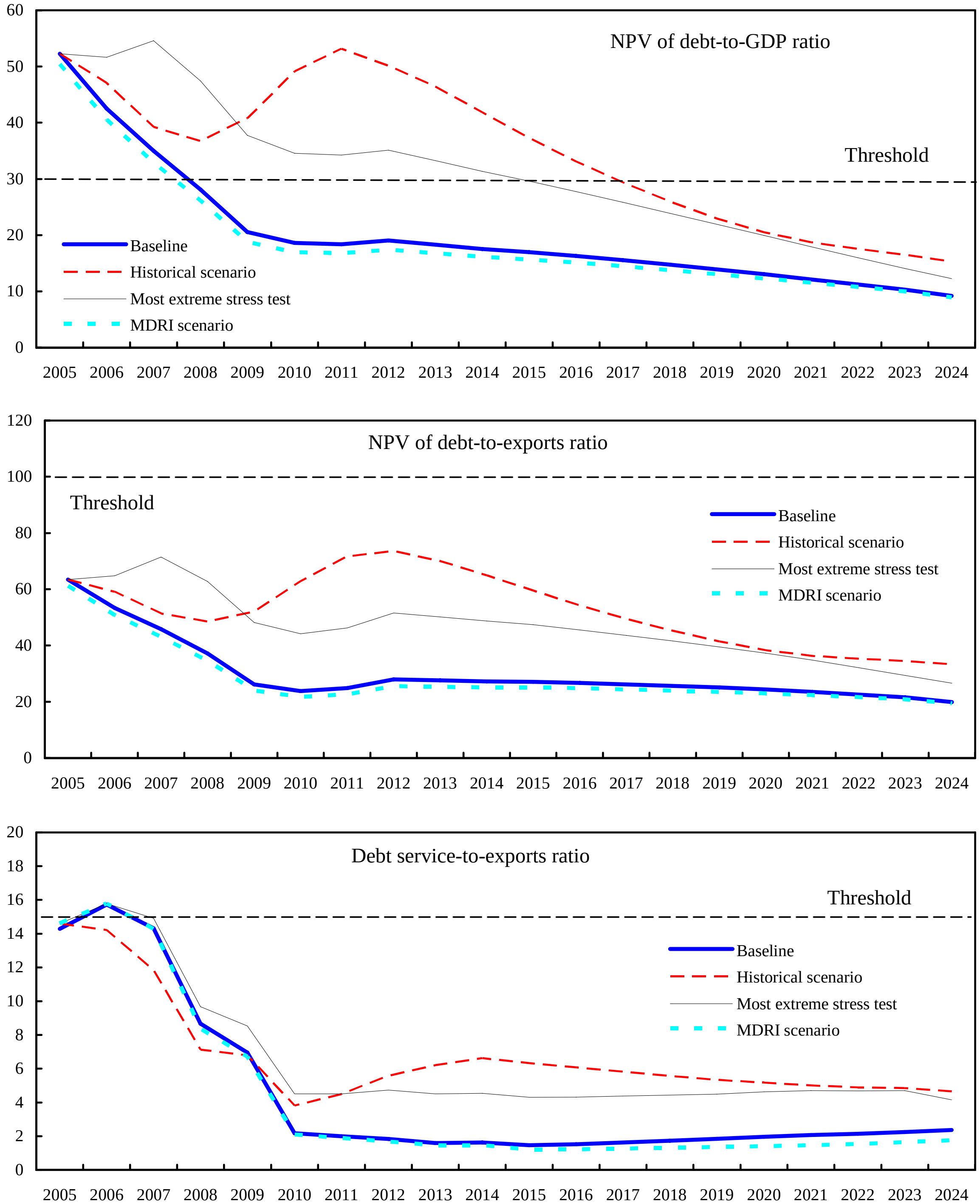
5. Figure 2 portrays debt dynamics including Congolese domestic debt and taking account of projected fiscal deficits. The story is broadly similar. HIPC debt relief brings all three debt ratios (in this case NPV debt to-GDP, NPV debt-to-revenue, debt service-to-revenue) sharply down to sustainable levels. Stress test show that the main sources of vulnerability are fiscal relapse (under a "no reform" historical scenario) and euro depreciation. However, even with these downside risks, the debt service-to-revenue ratio remains at modest levels over the simulation period.

---

[1] See "Interim Guidance on the Preparation of Joint Fund-World Bank Debt Sustainability Assessments for Low-Income Countries," May 17, 2005.

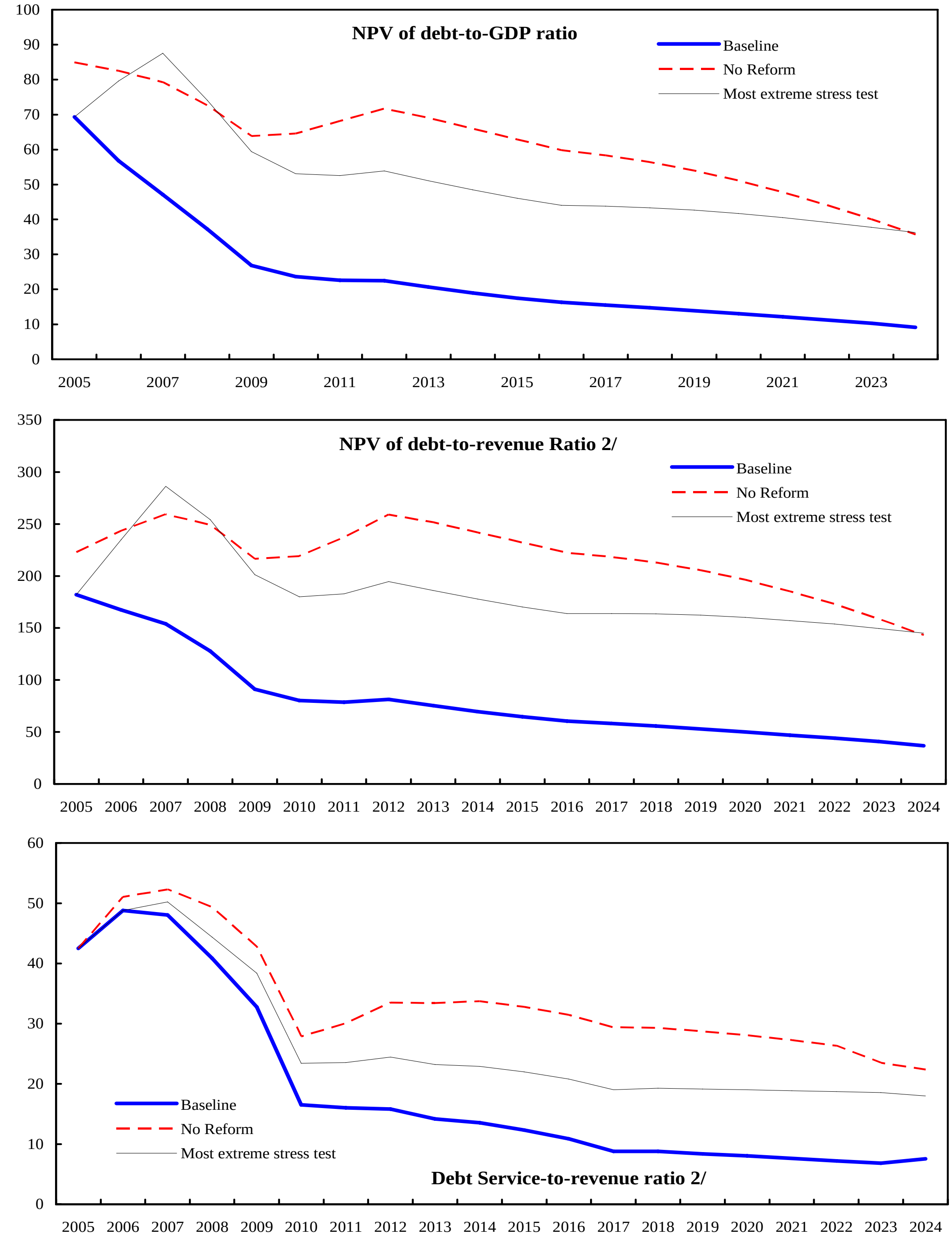
[2] Under the LIC DSA, (i) the "historical scenario" illustrates the dynamics of the Congolese debt under the assumption that key variables (e.g., real GDP growth, current account balance, and foreign direct investment (FDI) inflows) are set at their historical average over the projection period; and (ii) the "most severe" scenario captures the impact on debt of a negative shock to FDI inflows. Under the fiscal DSA, (i) the "most severe" scenario captures the impact of a one time 30 percent currency depreciation, and (ii) the "no reform" scenario illustrates the effects of maintaining the primary fiscal balance at its historical level.

Figure 1. Republic of Congo: Indicators of External Debt
Under Alternative Scenarios, 2005-24
(In percent)



Source: Staff projections and simulations.

Figure 2: Republic of Congo: Indicators of Public Debt Under Alternative Scenarios, 2005-24 1/



Source: Staff projections and simulations.
1/ Most extreme stress test is test that yields highest ratio in 2015
2/ Revenue including grants.

Table 1. Republic of Congo: External Debt Sustainability Framework, Baseline Scenario, 2004-24 1/
(In percent of GDP, unless otherwise indicated)

	Actual 2004	Historical Average 6/	Standard Deviation 6/	Estimate 2005	Projections 2006	2007	2008	2009	2010	2005-10 Average	2015	2020	2024	2011-24 Average
External debt (nominal) 1/	**119.0**			**81.5**	**70.2**	**50.4**	**42.1**	**32.3**	**29.4**		**25.8**	**19.5**	**14.3**	
o/w public and publicly guaranteed (PPG)	119.0			81.5	70.2	50.4	42.1	32.3	29.4		25.8	19.5	14.3	
Change in external debt	-120.2			-37.5	-11.3	-19.8	-8.3	-9.8	-3.0		-1.2	-1.3	-1.5	
Identified net debt-creating flows	-58.1			-25.9	-19.4	-14.6	-13.5	-21.5	-20.0		-7.0	-7.8	-8.5	
Non-interest current account deficit	**-7.0**	**2.5**	**12.9**	**-8.2**	**-5.1**	**-2.4**	**-0.8**	**-7.8**	**-9.2**		**2.3**	**0.3**	**-1.4**	0.3
Deficit in balance of goods and services	-27.2			-27.5	-23.4	-20.4	-18.0	-22.7	-23.0		-7.5	-6.3	-6.0	
Exports	84.5			82.3	79.6	76.4	75.6	78.4	78.2		62.5	53.5	46.0	
Imports	57.3			54.9	56.2	56.0	57.6	55.7	55.1		55.0	47.2	40.0	
Net current transfers (negative = inflow)	-0.2	-0.4	0.7	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1		-0.1	-0.1	-0.2	-0.1
Other current account flows (negative = net inflow)	20.4			19.4	18.5	18.2	17.3	15.0	13.9		9.9	6.7	4.8	
Net FDI (negative = inflow)	**-12.9**	**-8.8**	**6.3**	**-10.8**	**-11.3**	**-11.8**	**-11.3**	**-10.2**	**-9.7**		**-8.8**	**-7.5**	**-6.6**	-8.2
Endogenous debt dynamics 2/	**-38.1**			**-6.9**	**-3.0**	**-0.4**	**-1.3**	**-3.5**	**-1.1**		**-0.6**	**-0.6**	**-0.5**	
Contribution from nominal interest rate	4.7			2.1	1.0	0.7	1.1	0.8	0.6		0.6	0.4	0.3	
Contribution from real GDP growth	-7.2			-9.0	-3.9	-1.1	-2.5	-4.3	-1.8		-1.2	-1.0	-0.8	
Contribution from price and exchange rate changes	-35.6			…	…	…	…	…	…		…	…	…	
Residual (3-4) 3/	**-62.1**			**-11.6**	**8.0**	**-5.2**	**5.2**	**11.7**	**17.1**		**5.8**	**6.5**	**7.1**	
o/w exceptional financing	-86.2			-4.7	-5.7	-45.5	-6.2	-5.2	-1.1		-1.2	-1.1	-0.8	
NPV of external debt 4/	76.5			52.3	42.5	35.0	28.1	20.5	18.6		16.9	13.0	9.2	
In percent of exports	90.6			63.5	53.3	45.8	37.2	26.2	23.8		27.1	24.4	19.9	
NPV of PPG external debt	**76.5**			**52.3**	**42.5**	**35.0**	**28.1**	**20.5**	**18.6**		**16.9**	**13.0**	**9.2**	
In percent of exports	90.6			63.5	53.3	45.8	37.2	26.2	23.8		27.1	24.4	19.9	
Debt service-to-exports ratio (in percent)	14.4			14.3	15.7	14.3	8.7	7.0	2.2		1.5	2.0	2.4	
PPG debt service-to-exports ratio (in percent)	14.4			14.3	15.7	14.3	8.7	7.0	2.2		1.5	2.0	2.4	
Total gross financing need (billions of U.S. dollars)	-0.3			-0.4	-0.2	-0.2	-0.3	-0.8	-1.2		-0.4	-0.6	-0.9	
Non-interest current account deficit that stabilizes debt ratio	113.1			29.3	6.2	17.4	7.5	1.9	-6.3		3.6	1.6	0.1	
Key macroeconomic assumptions														
Real GDP growth (in percent)	3.7	2.9	2.4	9.4	4.8	1.5	5.2	11.6	5.8	6.4	4.6	5.2	5.5	4.2
GDP deflator in US dollar terms (change in percent)	17.5	7.5	16.6	13.1	-4.9	-4.1	1.3	2.6	0.7	1.4	0.5	0.8	1.1	0.4
Effective interest rate (percent) 5/	2.4	4.4	1.1	2.2	1.2	1.0	2.4	2.2	2.1	1.8	2.2	2.2	2.2	2.2
Growth of exports of G&S (US dollar terms, in percent)	29.8	16.8	24.9	20.5	-3.5	-6.7	5.5	18.7	6.2	6.8	2.1	2.3	2.6	0.8
Growth of imports of G&S (US dollar terms, in percent)	30.0	21.8	53.2	18.4	2.2	-3.1	9.7	10.7	5.4	7.2	3.2	2.1	2.7	2.2
Grant element of new public sector borrowing (in percent)	...	...	...	49.3	47.6	46.1	46.8	48.0	48.0	47.6	39.5	46.7	45.3	43.4
Memorandym item:														
Nominal GDP (billions of US dollars)	4.3			5.4	5.4	5.2	5.6	6.4	6.8		7.5	9.9	12.7	

Source: Staff simulations.

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 NPV of private sector debt is equivalent to its face value.
5/ Current-year interest payments devided by previous period debt stock.
6/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.

Table 2. Republic of Congo: Sensitivity Analyses for Key Indicators of Public and Publicly Guaranteed External Debt, 2005-24
(In percent)

	Estimate	**Projections**					
	2005	2006	2007	2010	**2015**	2020	2024
NPV of debt-to-GDP ratio							
Baseline	52	42	35	19	**17**	13	9
A. Alternative Scenarios							
A1. Key variables at their historical averages in 2006-25 1/	52	47	39	49	**37**	20	15
A2. New public sector loans on less favorable terms in 2006-25 2/	52	42	35	19	**17**	14	10
A3. MDRI scenario	50	41	33	17	**16**	12	9
B. Bound Tests							
B1. Real GDP growth at historical average minus one standard deviation in 2006-07	52	44	37	20	**18**	14	10
B2. Export value growth at historical average minus one standard deviation in 2006-07 3/	52	46	44	26	**23**	16	11
B3. US dollar GDP deflator at historical average minus one standard deviation in 2006-07	52	44	39	21	**19**	14	10
B4. Net non-debt creating flows at historical average minus one standard deviation in 2006-07 4/	52	52	55	35	**30**	20	12
B5. Combination of B1-B4 using one-half standard deviation shocks	52	36	12	0	**2**	5	5
B6. One-time 30 percent nominal depreciation relative to the baseline in 2006 5/	52	62	51	27	**25**	19	13
NPV of debt-to-exports ratio							
Baseline	63	53	46	24	**27**	24	20
A. Alternative Scenarios							
A1. Key variables at their historical averages in 2006-25 1/	63	59	51	63	**60**	38	33
A2. New public sector loans on less favorable terms in 2006-25 2/	63	53	46	24	**28**	26	22
A3. MDRI scenario	61	51	43	22	**25**	23	19
B. Bound Tests							
B1. Real GDP growth at historical average minus one standard deviation in 2006-07	63	53	46	24	**27**	24	20
B2. Export value growth at historical average minus one standard deviation in 2006-07 3/	63	61	61	35	**39**	32	25
B3. US dollar GDP deflator at historical average minus one standard deviation in 2006-07	63	53	46	24	**27**	24	20
B4. Net non-debt creating flows at historical average minus one standard deviation in 2006-07 4/	63	65	71	44	**47**	37	27
B5. Combination of B1-B4 using one-half standard deviation shocks	63	42	13	0	**3**	7	10
B6. One-time 30 percent nominal depreciation relative to the baseline in 2006 5/	63	53	46	24	**27**	24	20
Debt service ratio							
Baseline	14	16	14	2	**1**	2	2
A. Alternative Scenarios							
A1. Key variables at their historical averages in 2006-25 1/	15	14	12	4	**6**	5	5
A2. New public sector loans on less favorable terms in 2006-25 2/	15	16	14	2	**1**	2	3
A3. MDRI scenario	15	16	14	2	**1**	1	2
B. Bound Tests							
B1. Real GDP growth at historical average minus one standard deviation in 2006-07	15	16	14	2	**1**	2	2
B2. Export value growth at historical average minus one standard deviation in 2006-07 3/	15	17	16	3	**3**	3	3
B3. US dollar GDP deflator at historical average minus one standard deviation in 2006-07	15	16	14	2	**1**	2	2
B4. Net non-debt creating flows at historical average minus one standard deviation in 2006-07 4/	15	16	15	5	**4**	5	4
B5. Combination of B1-B4 using one-half standard deviation shocks	15	15	11	0	**-2**	-1	0
B6. One-time 30 percent nominal depreciation relative to the baseline in 2006 5/	15	16	14	2	**1**	2	2
Memorandum item:							
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	0	0	0	0	**0**	0	0

Source: Staff projections and simulations.

1/ Variables include real GDP growth, growth of GDP deflator (in U.S. dollar terms), non-interest current account in percent of GDP, and non-debt creating flows.

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

Table 3. Republic of Congo: Public Sector Debt Sustainability Framework, Baseline Scenario, 2004-24.
(In percent of GDP, unless otherwise indicated)

	Actual			Estimate			Projections					
	2004	Historical Average 5/	Standard Deviation 5/	2005	2006	2007	2010	2005-10 Average	2015	2020	2024	2011-24 Average
Public sector debt 1/	144.6			98.5	87.1	39.5	24.5		18.0	11.8	6.9	
o/w foreign-currency denominated	119.0			81.5	72.8	27.4	19.5		17.5	11.8	6.9	
Change in public sector debt	-125.5			-46.1	-11.5	-47.6	0.3		-1.8	-1.1	-1.4	
Identified debt-creating flows	-136.3			-46.1	-15.5	-48.6	-7.3		-1.6	-2.2	-1.0	
Primary deficit	-9.5	-4.2	4.5	-18.8	-12.6	-7.6	-7.7	-10.2	-1.6	-0.7	0.0	-1.5
Revenue and grants	32.5			38.1	33.9	30.6	29.5		27.1	26.0	25.0	
of which : grants	0.3			0.4	0.6	0.6	0.5		0.6	0.6	0.6	
Primary (noninterest) expenditure	23.0			19.3	21.3	23.0	21.8		25.4	25.3	25.0	
Automatic debt dynamics	-40.6			-22.6	2.8	4.5	1.5		1.2	-0.3	-0.2	
Contribution from interest rate/growth differential	-11.5			-12.3	-2.8	-0.1	1.3		1.0	-0.4	-0.3	
of which : contribution from average real interest rate	-2.1			-0.2	1.7	1.2	2.6		1.8	0.2	0.2	
of which : contribution from real GDP growth	-9.4			-12.1	-4.5	-1.3	-1.3		-0.9	-0.6	-0.4	
Contribution from real exchange rate depreciation	-29.2			-10.3	5.6	4.6	0.2		...	...	...	
Other identified debt-creating flows	-86.2			-4.7	-5.7	-45.5	-1.1		-1.2	-1.1	-0.8	
Privatization receipts (negative)	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	
Debt relief (HIPC and other)	-86.2			-4.7	-5.7	-45.5	-1.1		-1.2	-1.1	-0.8	
Other (specify, e.g. bank recapitalization)	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Residual, including asset changes	10.8			0.0	4.1	1.0	7.6		-0.2	1.0	-0.4	
NPV of public sector debt	102.1			69.3	56.8	47.1	23.7		17.5	13.0	9.2	
o/w foreign-currency denominated	76.5			52.3	42.5	35.0	18.6		16.9	13.0	9.2	
o/w external	76.5			52.3	42.5	35.0	18.6		16.9	13.0	9.2	
NPV of contingent liabilities (not included in public sector debt)	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Gross financing need 2/	-1.6			-2.6	4.0	7.1	-2.8		1.7	1.4	1.9	
NPV of public sector debt-to-revenue ratio (in percent) 3/	314.2			181.9	167.5	154.0	80.2		64.6	50.1	36.7	
o/w external	235.5			137.2	125.3	114.4	63.1		62.6	50.1	36.7	
Debt service-to-revenue ratio (in percent) 3/ 4/	24.2			42.5	48.8	48.1	16.5		12.3	8.0	7.5	
Primary deficit that stabilizes the debt-to-GDP ratio	116.0			27.3	-1.1	40.0	-8.0		0.2	0.4	1.5	
Key macroeconomic and fiscal assumptions												
Real GDP growth (in percent)	3.6	2.9	2.9	9.2	4.8	1.5	5.8	6.3	4.5	5.1	5.5	-2.8
Average nominal interest rate on forex debt (in percent)	2.2	4.4	1.4	2.2	1.3	0.9	4.1	2.8	3.3	3.6	4.0	3.5
Average real interest rate on domestic currency debt (in percent)	-3.5	-2.3	17.1	0.6	13.9	14.1	37.3	20.3	118.5	...	...	105.8
Real exchange rate depreciation (in percent, + indicates depreciation)	-12.7	-3.0	16.5	-9.5	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	6.9	7.3	19.7	7.2	-4.8	-4.2	0.7	0.5	0.6	0.9	1.2	0.4
Growth of real primary spending (deflated by GDP deflator, in percent)	1.2	4.7	24.1	-8.5	15.8	9.2	6.1	5.5	4.3	4.8	5.2	4.8
Grant element of new external borrowing (in percent)	0.0	0.0	0.0	52.8	51.7	47.4	45.4	48.8	43.0	41.5	41.4	...

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

1/ Central government net debt.

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 including 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, 2005-24

	Estimate	Projections					
	2005	2006	2007	2010	2015	2020	2024
NPV of debt-to-GDP ratio							
Baseline	69	57	47	24	17	13	9
A. Alternative scenarios							
A1. Real GDP growth and primary balance are at historical averages	69	66	60	51	41	29	13
A2. Primary balance is unchanged from 2004	85	83	79	65	63	51	36
A3. Permanently lower GDP growth 1/	69	57	48	27	29	41	50
B. Bound tests							
B1. Real GDP growth is at historical average minus one standard deviations in 2006-2007	69	61	54	34	37	45	48
B2. Primary balance is at historical average minus one standard deviations in 2006-2007	69	70	69	43	40	39	36
B3. Combination of B1-B2 using one half standard deviation shocks	69	70	66	41	37	37	34
B4. One-time 30 percent real depreciation in 2006	69	80	88	53	46	42	36
B5. 10 percent of GDP increase in other debt-creating flows in 2006	69	67	58	33	29	28	26
NPV of debt-to-revenue ratio 2/							
Baseline	182	167	154	80	65	50	37
A. Alternative scenarios							
A1. Real GDP growth and primary balance are at historical averages	182	196	196	174	151	111	52
A2. Primary balance is unchanged from 2004	223	243	259	219	232	196	143
A3. Permanently lower GDP growth 1/	182	169	158	92	107	156	198
B. Bound tests							
B1. Real GDP growth is at historical average minus one standard deviations in 2006-2007	182	180	176	114	137	172	190
B2. Primary balance is at historical average minus one standard deviations in 2006-2007	182	205	225	146	147	151	144
B3. Combination of B1-B2 using one half standard deviation shocks	182	205	217	139	138	142	136
B4. One-time 30 percent real depreciation in 2006	182	235	286	180	170	160	145
B5. 10 percent of GDP increase in other debt-creating flows in 2006	182	197	189	113	106	109	103
Debt service-to-revenue ratio 2/							
Baseline	42	49	48	17	12	8	8
A. Alternative scenarios							
A1. Real GDP growth and primary balance are at historical averages	42	50	50	24	25	18	13
A2. Primary balance is unchanged from 2004	42	51	52	28	33	28	22
A3. Permanently lower GDP growth 1/	42	49	49	17	16	16	20
B. Bound tests							
B1. Real GDP growth is at historical average minus one standard deviations in 2006-2007	42	51	51	19	19	19	21
B2. Primary balance is at historical average minus one standard deviations in 2006-2007	42	49	50	23	22	19	18
B3. Combination of B1-B2 using one half standard deviation shocks	42	50	51	23	21	18	17
B4. One-time 30 percent real depreciation in 2006	42	49	49	18	14	10	10
B5. 10 percent of GDP increase in other debt-creating flows in 2006	42	49	50	20	17	14	12

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

1/ Assumes that real GDP growth is at baseline minus one standard deviation divided by the square root of 20 (i.e., the length of the projection period).

2/ Revenues are defined inclusive of grants.