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STAFF REPORT FOR THE 2013 ARTICLE IV CONSULTATION—DEBT SUSTAINABILITYANALYSIS

Approved By
Anne-Marie Gulde-Wolf and Masato Miyazaki (IMF) and Marcelo Giugale and Jeffrey Lewis (IDA)

Prepared by the Staff of the International Monetary Fund and the World Bank[37]

Congo's debt outlook has strengthened further since the last debt sustainability analysis (DSA) conducted in 2011 (EBS/11/118, Supplement 1). Under the baseline scenario for the current DSA all debt burden indicators are projected to be significantly below the indicative policy thresholds and the standard stress tests do not result in breaches of these thresholds. As a result, the Republic of Congo remains at a low risk of debt distress. However, the economy continues to be vulnerable to external shocks and, in particular, to adverse changes in oil prices. This calls for continued efforts to promote diversification of the economy away from oil to increase the economy's resilience; and to ensure medium- and long-term fiscal and debt sustainability, including through continued adherence to prudent borrowing policies.

[37] Staff teams included Rossen Rozenov and Ivohasina Razafimahefa from the IMF and Emmanuel Pinto Moreira from the World Bank.

BACKGROUND

4. **Congo's stock of external debt has declined substantially thanks to comprehensive HIPC/MRDI debt relief**. As noted in the previous DSA, Congo reached the HIPC Initiative Completion Point in January 2010 which resulted in estimated total debt service savings of $1.9 billion, and a decline of gross public external debt to just over 20 percent of GDP at end-2010 (from about 55 percent of GDP in 2009).[38] The debt-to-GDP ratio increased to 25 percent of GDP in 2012 reflecting new borrowing, notably large disbursements under a bilateral loan agreement with China, contracted in 2006. Bilateral creditors currently comprise nearly two-thirds of total debt (Text Table 1). Domestic public debt is relatively low at 6 percent of GDP and mainly comprises arrears, including wage arrears to employees in the social sectors. An audit of government domestic arrears is underway; a repayment plan will be developed after the outstanding amounts are confirmed.

Text Table 1. Congo: Gross External Debt by Creditor 1/

	2009	2010	2011	2012
	(in billions of CFAF)			
Multilateral creditors	238.6	226.9	90.0	96.9
Bilateral creditors	1,533.7	291.1	956.3	1,143.1
Commercial debt	699.4	685.2	520.8	517.0
Total	2,471.8	1,203.2	1,567.1	1,757.0
	(in percent)			
Multilateral creditors	9.7	18.9	5.7	5.5
Bilateral creditors	62.0	24.2	61.0	65.1
Commercial debt	28.3	56.9	33.2	29.4
Total	100.0	100.0	100.0	100.0

1/ Excludes arrears.

5. **The sustainability of Congo's debt should be assessed in the context of the country's sizeable assets.** Government deposits at BEAC stood at about 20 percent of GDP at end-2012; and the government is holding deposits abroad and has extended loans to some African countries (for an estimated total of about 29 percent of GDP); thus, Congo's net debt position is negative. The strong external position reflects the impact of continuing high oil prices since the achievement of HIPC/MDRI debt relief in 2010. As the government continues to save part of the oil revenue and to build foreign assets, the net public debt is expected to remain in the negative territory throughout the projections horizon. Relative to GDP, the net debt position is projected to peak at the equivalent of a negative 105 percent of GDP around 2022 and gradually decline thereafter reflecting decreasing oil proceeds.

UNDERLYING ASSUMPTIONS

6. **The medium and long-term macroeconomic framework underlying the DSA is consistent with the baseline scenario presented in the Staff Report for 2013 Article IV Consultation.** The main assumptions and projections for key macroeconomic variables are summarized in Box 1. Economic activity is expected to remain strong, largely driven by the non-oil sector. While oil production is foreseen to fluctuate around current levels until 2018,

[38] Press Release No. 10/20, January 28, 2010.

growth in the non-oil sector is projected to be robust, reflecting developments in construction, agriculture and services. The authorities are assumed to undertake large initial capital outlays to address the country's infrastructure gap. Once a threshold of public capital stock is reached, corresponding to middle-income countries level, public investments would be gradually contained as private investments pick up, attracted by the more enabling infrastructure base. Growth would be supported by this dynamics. Compared to the macroeconomic framework underpinning the 2011 DSA, the main difference relates to the assumed external borrowing conditions, particularly for the loan disbursements under the strategic bilateral partnership with China, which have been revised as per the latest discussions with the authorities. In the mining sector, considering the large uncertainty, a conservative approach is adopted; only one of Congo's iron ore projects under development is assumed to reach the production phase, keeping output and activity relatively low. Removing existing sector-specific infrastructure bottlenecks in transportation would provide a significant boost to longer-term growth at the cost of significant initial investments.

7. Under the baseline, the current account balance is expected to remain positive in the medium term. This implies a further increase in international reserves and no pressing external financing needs for the economy. In line with these projections, new external borrowing in the medium term would largely be limited to a second bilateral loan with China in the amount of $1 billion for which negotiations are underway. Disbursements are assumed to take place in the course of four years starting in 2013, and on concessional terms and conditions identical to those of the existing Chinese loan. In the longer run, as the oil exports decline becomes more pronounced and non-oil export receipts fall short of compensating for the loss, additional financing would be needed. The present DSA assumes financing for the gap to be secured on concessional terms, although with a grant element somewhat lower than that under the current China loan.

Box 1. Republic of Congo: Main Macroeconomic Assumptions

- **Real GDP growth:** The non-oil sector is projected to grow robustly by 7.5 percent during 2013–20 driven by construction, agriculture and services; growth would stabilize at about 5 percent thereafter. Despite a large potential, mining production is assumed to originate from only one project, given the uncertainties surrounding the other projects (including sluggish global demand and the need for large investment in infrastructure). Thus, production would start timidly in 2013 at 120,000 tons, augment to 2 million tons in 2015 and stabilize at a conservative projection of 7 million tons from 2017.

- **Oil production and prices:** Oil production is expected to fluctuate around 100 million barrels per year during 2013–18. Based on existing licenses, production would decline by 15 million barrels per year during 2019–32, leading to a drop of annual production from 100 million barrels in 2012 to about 10 million barrels in 2032. Prices at international markets are projected to decrease by about 3 percent per year during 2013–18; thereafter, this analysis assumes constant prices in real terms.

- **Inflation:** Following the sharp acceleration to 7.5 percent (year-on-year) in 2012, inflation is expected to drop to 4.1 percent by end-2013 as the impact of the shocks related to the ammunitions depot explosion in 2012 dissipates. In the medium term, inflation is projected to decline gradually below the CEMAC's convergence criteria of 3 percent.

- **Current account balance:** The fluctuation of the current account balance is driven by the dynamics of exports and imports in the oil and mining sectors. The balance is expected to be positive until 2018, supported by the oil sector; however, it would turn to a widening deficit thereafter as the currently assumed iron ore production would not suffice to compensate for the decline in oil production.

- **Fiscal balance:** The authorities are expected to continue adhering to the fiscal rule introduced in 2013. Following the brisk increase in expenditures in 2012, fiscal consolidation would resume in 2013 and be continued in the medium- and long-term. The basic non-oil primary deficit would improve from about 63 percent of non-oil GDP in 2012 to 27 percent in 2018 and about 4 percent in the long run.

- **External financing:** A second agreement with China is assumed in the medium-term, with total disbursements of US$ 1 billion during 2013–16. These disbursements would finance reconstruction efforts in the aftermath of the 2012 ammunitions depot explosions and contribute to address Congo's infrastructure and skills gaps. The agreement is assumed to be highly concessional, similar to one entered into in 2006. In the long run, external borrowing would be needed to ensure a minimum public investment of about 6 percent of GDP.

8. The macroeconomic outlook is subject to risks. The baseline scenario is built around relatively favorable assumptions about commodity prices and the continued concessionality in new public sector borrowing. Also, the Congolese economy is highly vulnerable to external shocks, notably to a fall in oil prices or slowdown of trade partners' demand. The government has accumulated sufficient fiscal and external reserves to mitigate the immediate effects of such shocks. A protracted worsening of the terms of trade or foreign demand may nevertheless trigger severe imbalances and require additional borrowing to avoid a sharp contraction in income and could have negative implications for debt sustainability.

EXTERNAL DEBT SUSTAINABILITY ANALYSIS

9. All of Congo's debt indicators are below the relevant country-specific debt burden thresholds. The joint Bank-Fund debt sustainability framework (DSF) for low-income countries classifies Congo as a "weak" performer, based on the quality of the country's policies and institutions as measured by the 3-year average of the ratings under the World Bank's Country Policy and Institutional Assessment (CPIA). This is reflected in lower debt sustainability thresholds compared to countries operating in a strong policy environment (Text Table 2). Nevertheless, given the low level of external debt and strengthening indicators of repayment capacity, the debt stock and debt service ratios remain comfortably within the sustainable debt domain throughout the projections period under the baseline.

10. Stress tests do not result in breach of the indicative thresholds either. Standard bound tests that examine the implications of various shocks for the debt and debt-service paths based on the country's historical volatility result only in moderate increases in the debt burden indicators (Figure 1). For all indicators, except for the debt-service to revenue ratio, the most extreme scenario is associated with a shock to exports. A decline in exports to a level equivalent to one standard deviation below their historical average in the first two years of the projection period would cause the PV of debt to GDP ratio to rise by about 4 percentage points and the PV of debt to export ratio by 10 percentage points at the peak.[39] Under the historical scenario, which derives the debt indicators assuming that key variables are at their 10-year historical averages, all debt ratios decline very rapidly. However, as pointed out in the previous DSA, this scenario is less relevant for resource-rich countries since past trends are likely a poor predictor of future outcomes.[40]

Text table 2. Debt Sustainability Framework: Indicative Policy-Dependant Thresholds

	PV of Debt			Debt Service	
	Exports	GDP	Revenue	Exports	Revenue
Weak Policy (CPIA≤3.25)	100	30	200	15	18
Medium Policy (3.25<CPIA<3.75)	150	40	250	20	20
Strong Policy (3.75≤CPIA)	200	50	300	25	22

[39] The vulnerability stems from very high share of oil in Congo's exports and large volatility of oil prices and production.
[40] Therefore, the historical scenario is not shown in the graph. Moreover, the debt dynamics under this scenario results in negative debt-burden indicators.

PUBLIC DEBT SUSTAINABILITY ANALYSIS

11. Adding domestic public debt to external debt does not change the results of the analysis. Given the low level of Congo's domestic public and publicly guaranteed (PPG) debt and lack of access to private markets, the evolution of the total public debt indicators broadly follows that of external debt under the baseline. The most extreme shock (in this case real GDP growth in 2013–14 set at one standard deviation below its historical average) raises the PV of debt to GDP ratio substantially to over 50 percent in the outer years of the projections period, and stabilizes at this level. A permanently lower GDP growth would have a similar, albeit somewhat smaller, effect on the debt ratios. The results of the bound tests should be interpreted with caution as they do not capture appropriately the accumulation of assets by the government, which in the case of Congo is quite significant, especially in the initial years of high primary surpluses.

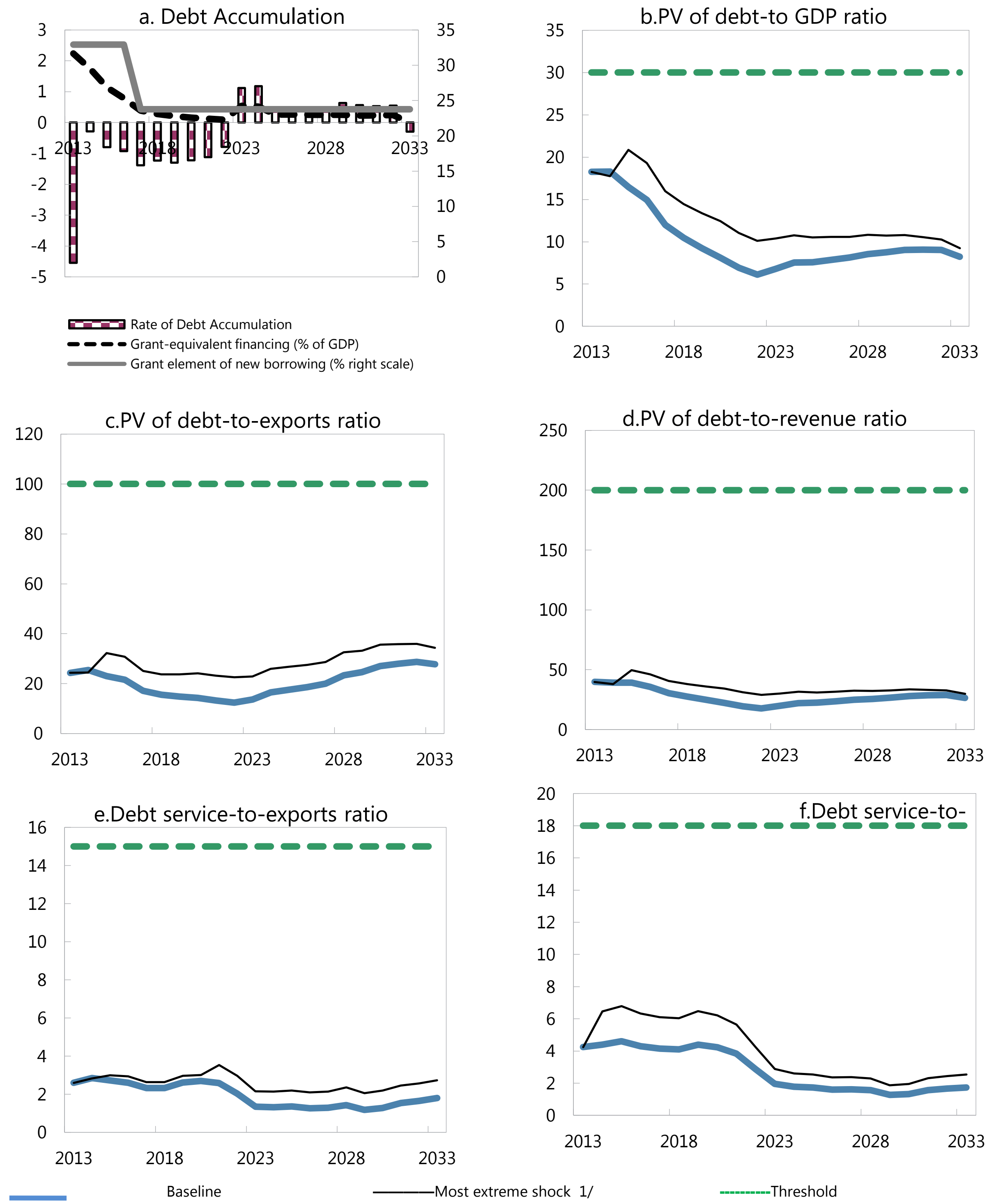
CONCLUSIONS

12. The DSA shows that the Republic of Congo continues to face a low risk of debt distress, unchanged from the 2011 DSA. All external debt indicators are well below the country-specific indicative thresholds under the baseline scenario and none of these thresholds are breached under the various standard stress tests. Congo is unlikely to resort to extensive external borrowing in the near future given the comfortable level of reserves which could be used as a buffer to smooth consumption in difficult economic times. It is therefore important for the government to adhere to its medium-term fiscal framework and to save the excess revenue according to the adopted fiscal rule. Should a need for additional borrowing arise, new loans should be contracted on concessional terms to the extent possible in order to maintain debt sustainability.

13. Improving competitiveness and promoting economic diversification are key to increasing resilience to exogenous shocks. As the DSA indicates, Congo's debt ratios appear to be most sensitive to swings in exports. Given the high concentration and vulnerability of the economy to downward movements in oil prices, broadening of the economic base by enhancing the development of the non-oil sector would reduce the volatility of exports and would strengthen the debt service capacity of the Congolese economy. In this regard, the national program for improvement of the business environment that the authorities recently launched with assistance from the World Bank to strengthen competitiveness and diversify and boost growth, is a welcome step; it ought to be rigorously implemented. In the same vein, in addressing Congo's weak physical and human capital, priority should be given to making electricity supply more reliable and competitive, and to enhancing the quality of transportation services and of the labor force.

14. The authorities broadly concur with the conclusions of the DSA. They expressed commitment to continuing prudent external borrowing policies.

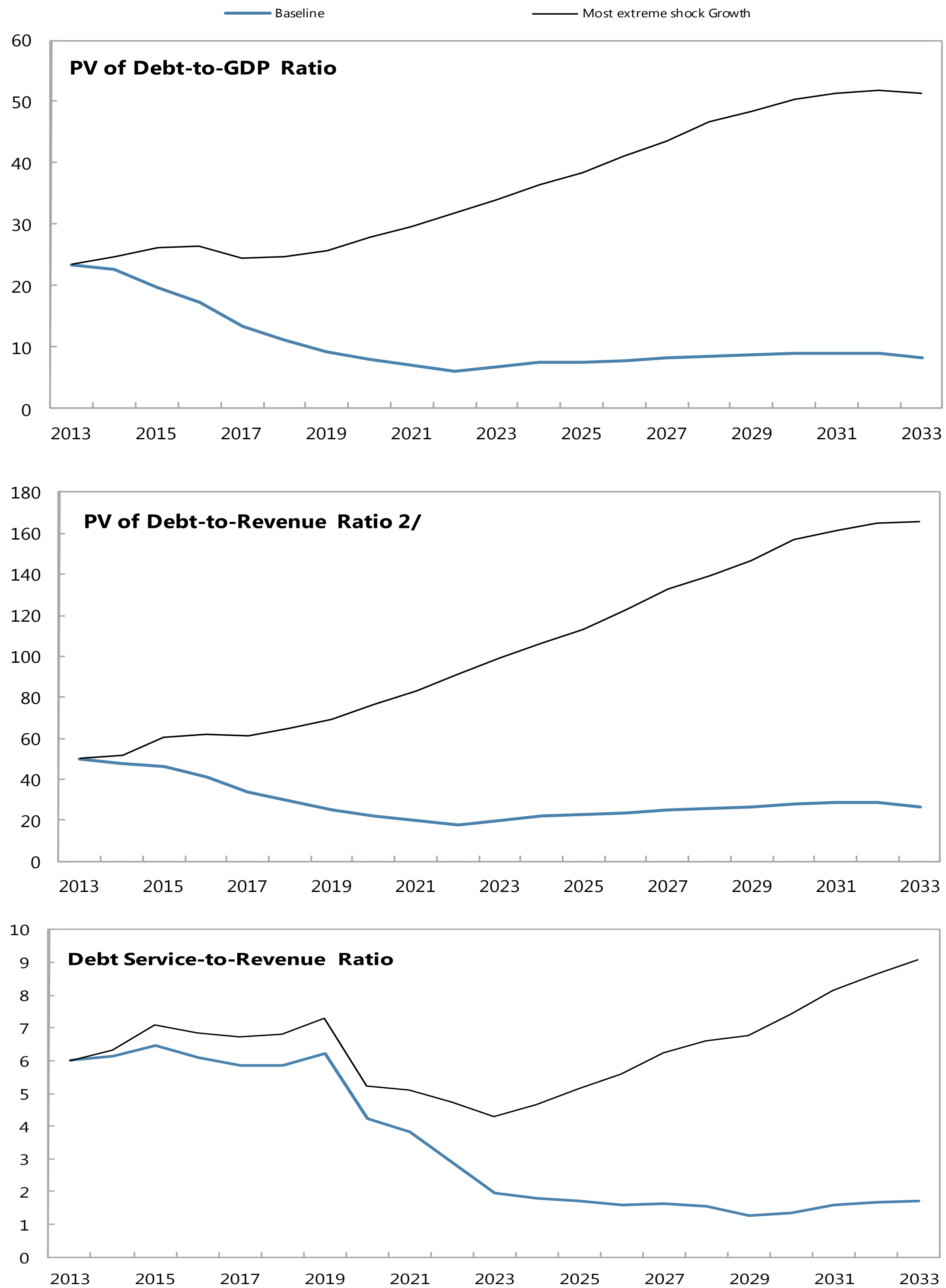
Figure 1. Congo, Republic of: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios. 2013–2033 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2033. In figure b. it corresponds to a Exports shock; in c. to a Exports shock; in d. to a Exports shock; in e. to a Exports shock and in figure f. to a One-time depreciation shock.

Figure 2. Congo, Republic of: Indicators of Public Debt Under Alternative Scenarios, 2013-2033 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2023.

2/ Revenues are defined inclusive of grants.

Table 1. External Debt Sustainability Framework, Baseline Scenario, 2010-2033 1/

(In percent of GDP, unless otherwise indicated)

	Actual			Historical 6/ Average	Standard 6/ Deviation	Projections									
	2010	2011	2012			2013	2014	2015	2016	2017	2018	2013-2018 Average	2023	2033	2019-2033 Average
External debt (nominal) 1/	**20.2**	**23.0**	**25.2**			**21.4**	**21.7**	**19.6**	**17.8**	**14.3**	**12.5**		**8.6**	**10.1**	
of which: public and publicly guaranteed (PPG)	20.2	23.0	25.2			21.4	21.7	19.6	17.8	14.3	12.5		8.6	10.1	
Change in external debt	-34.3	2.8	2.1			-3.8	0.3	-2.1	-1.8	-3.5	-1.8		1.0	-1.1	
Identified net debt-creating flows	-33.0	-12.4	9.0			-9.8	-4.6	1.4	1.3	2.0	5.1		8.4	8.6	
Non-interest current account deficit	**-4.8**	**-6.0**	**1.1**	**-2.6**	**5.2**	**-8.1**	**-5.2**	**-0.9**	**-0.8**	**-2.7**	**-0.2**		**7.3**	**11.2**	9.2
Deficit in balance of goods and services	-25.5	-27.1	-25.3			-24.1	-22.0	-20.6	-19.6	-23.8	-20.8		-5.3	6.6	
Exports	82.9	83.8	80.9			75.1	72.0	71.3	69.1	70.1	67.2		50.0	29.6	
Imports	57.4	56.8	55.6			50.9	50.0	50.7	49.5	46.3	46.4		44.8	36.2	
Net current transfers (negative = inflow)	2.5	2.0	2.8	1.5	1.1	2.0	2.2	2.6	3.1	3.1	3.4		4.6	4.4	4.5
of which: official	0.0	-0.4	-0.1			-1.0	-1.1	-0.7	-0.5	-0.3	-0.2		0.0	0.0	
Other current account flows (negative = net inflow)	18.1	19.0	23.6			14.0	14.5	17.1	15.8	18.0	17.2		8.1	0.2	
Net FDI (negative = inflow)	**-18.2**	**-3.2**	**6.4**	**-13.1**	**11.2**	**-0.5**	**1.5**	**3.7**	**3.3**	**6.2**	**5.8**		**1.5**	**-2.2**	0.2
Endogenous debt dynamics 2/	**-10.0**	**-3.2**	**1.5**			**-1.2**	**-0.9**	**-1.4**	**-1.2**	**-1.4**	**-0.5**		**-0.4**	**-0.4**	
Contribution from nominal interest rate	0.9	0.2	0.2			0.2	0.2	0.2	0.1	0.2	0.1		0.1	0.1	
Contribution from real GDP growth	-3.8	-0.6	-0.9			-1.4	-1.0	-1.6	-1.4	-1.6	-0.7		-0.5	-0.4	
Contribution from price and exchange rate changes	-7.1	-2.8	2.2			...	...	...	...	...	...		...	...	
Residual (3-4) 3/	**-1.3**	**15.2**	**-6.9**			**6.0**	**4.9**	**-3.5**	**-3.1**	**-5.5**	**-6.8**		**-7.4**	**-9.7**	
of which: exceptional financing	0.0	0.0	-2.1			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
PV of external debt 4/	...	...	22.9			18.3	18.3	16.5	14.9	12.0	10.5		6.8	8.2	
In percent of exports	...	...	28.3			24.3	25.4	23.1	21.6	17.1	15.6		13.6	27.7	
PV of PPG external debt	**...**	**...**	**22.9**			**18.3**	**18.3**	**16.5**	**14.9**	**12.0**	**10.5**		**6.8**	**8.2**	
In percent of exports	**...**	**...**	**28.3**			**24.3**	**25.4**	**23.1**	**21.6**	**17.1**	**15.6**		**13.6**	**27.7**	
In percent of government revenues	**...**	**...**	**53.9**			**39.8**	**39.2**	**39.1**	**35.7**	**30.4**	**27.5**		**19.8**	**26.5**	
Debt service-to-exports ratio (in percent)	**1.2**	**0.2**	**0.2**			**2.6**	**2.9**	**2.7**	**2.6**	**2.3**	**2.3**		**1.3**	**1.8**	
PPG debt service-to-exports ratio (in percent)	**1.2**	**0.2**	**0.2**			**2.6**	**2.9**	**2.7**	**2.6**	**2.3**	**2.3**		**1.3**	**1.8**	
PPG debt service-to-revenue ratio (in percent)	**2.6**	**0.4**	**0.4**			**4.2**	**4.4**	**4.6**	**4.3**	**4.1**	**4.1**		**2.0**	**1.7**	
Total gross financing need (Billions of U.S. dollars)	-2.7	-1.3	1.1			-0.9	-0.2	0.7	0.7	0.9	1.3		1.8	2.7	
Non-interest current account deficit that stabilizes debt ratio	29.5	-8.8	-1.0			-4.3	-5.5	1.2	1.0	0.8	1.6		6.3	12.3	
Key macroeconomic assumptions															
Real GDP growth (in percent)	8.8	3.4	3.8	4.6	3.2	5.8	4.8	7.7	7.3	10.1	4.7	6.7	6.6	4.2	3.3
GDP deflator in US dollar terms (change in percent)	15.0	16.1	-8.7	12.7	17.4	-1.5	-6.4	-1.2	-3.1	2.6	-2.0	-2.0	-0.2	2.0	-0.1
Effective interest rate (percent) 5/	2.1	0.9	0.8	2.6	1.2	0.8	0.8	0.8	0.8	1.0	1.0	0.9	1.2	0.8	1.0
Growth of exports of G&S (US dollar terms, in percent)	47.1	21.4	-8.5	18.3	23.4	-3.3	-5.9	5.5	0.7	14.6	-1.8	1.6	7.9	0.0	-2.2
Growth of imports of G&S (US dollar terms, in percent)	26.0	18.6	-7.1	18.5	21.3	-4.7	-3.7	7.9	1.4	5.7	2.8	1.6	6.7	0.0	1.5
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	32.9	32.9	32.9	32.9	23.8	23.8	29.9	23.8	23.8	23.8
Government revenues (excluding grants, in percent of GDP)	37.4	42.0	42.5			45.9	46.7	42.1	41.8	39.4	38.1		34.4	31.0	33.6
Aid flows (in Billions of US dollars) 7/	0.0	0.1	0.0			0.2	0.2	0.1	0.1	0.1	0.1		0.0	0.0	
of which: Grants	0.0	0.1	0.0			0.2	0.2	0.1	0.1	0.1	0.1		0.0	0.0	
of which: Concessional loans	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			2.2	1.7	1.1	0.8	0.4	0.3		0.5	0.0	0.2
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			48.4	59.1	62.7	64.7	97.8	97.1		26.0	47.5	44.9
Memorandum items:															
Nominal GDP (Billions of US dollars)	12.0	14.4	13.7			14.3	14.0	14.9	15.5	17.5	17.9		18.9	28.7	
Nominal dollar GDP growth	25.1	20.0	-5.2			4.2	-1.9	6.4	3.9	13.0	2.6	4.7	6.4	6.3	3.2
PV of PPG external debt (in Billions of US dollars)			3.2			2.6	2.6	2.4	2.3	2.1	1.9		1.3	2.3	
(PVt-PVt-1)/GDPt-1 (in percent)						-4.5	-0.3	-0.8	-0.9	-1.4	-1.2	-1.5	1.1	-0.3	0.1
Gross workers' remittances (Billions of US dollars)	...	...	...			...	...	...	...	...	...		...	...	

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. Congo, Republic of: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2013–2033

(In percent)

	Projections							
	2013	2014	2015	2016	2017	2018	**2023**	2033
PV of debt-to GDP ratio								
Baseline	18	18	16	15	12	10	**7**	8
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2013-2033 1/	18	6	-10	-23	-36	-49	**-98**	-118
A2. New public sector loans on less favorable terms in 2013-2033 2	18	19	17	16	13	11	**8**	12
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2014-2015	18	19	18	16	13	11	**7**	9
B2. Export value growth at historical average minus one standard deviation in 2014-2015 3/	18	18	21	19	16	14	**10**	9
B3. US dollar GDP deflator at historical average minus one standard deviation in 2014-2015	18	18	17	15	12	11	**7**	8
B4. Net non-debt creating flows at historical average minus one standard deviation in 2014-2015 4/	18	16	10	8	6	5	**2**	7
B5. Combination of B1-B4 using one-half standard deviation shocks	18	3	-14	-15	-15	-16	**-16**	1
B6. One-time 30 percent nominal depreciation relative to the baseline in 2014 5/	18	27	24	22	18	15	**10**	12
PV of debt-to-exports ratio								
Baseline	24	25	23	22	17	16	**14**	28
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2013-2033 1/	24	8	-14	-34	-52	-73	**-197**	-399
A2. New public sector loans on less favorable terms in 2013-2033 2	24	26	24	23	18	17	**16**	39
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2014-2015	24	25	23	22	17	16	**14**	28
B2. Export value growth at historical average minus one standard deviation in 2014-2015 3/	24	24	32	31	25	24	**23**	34
B3. US dollar GDP deflator at historical average minus one standard deviation in 2014-2015	24	25	23	22	17	16	**14**	28
B4. Net non-debt creating flows at historical average minus one standard deviation in 2014-2015 4/	24	22	14	12	9	7	**3**	23
B5. Combination of B1-B4 using one-half standard deviation shocks	24	4	-18	-20	-20	-23	**-30**	4
B6. One-time 30 percent nominal depreciation relative to the baseline in 2014 5/	24	25	23	22	17	16	**14**	28
PV of debt-to-revenue ratio								
Baseline	40	39	39	36	30	28	**20**	27
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2013-2033 1/	40	13	-23	-56	-92	-129	**-286**	-382
A2. New public sector loans on less favorable terms in 2013-2033 2	40	40	41	38	32	29	**24**	37
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2014-2015	40	40	43	39	33	30	**22**	29
B2. Export value growth at historical average minus one standard deviation in 2014-2015 3/	40	38	50	46	41	38	**30**	30
B3. US dollar GDP deflator at historical average minus one standard deviation in 2014-2015	40	38	40	36	31	28	**20**	27
B4. Net non-debt creating flows at historical average minus one standard deviation in 2014-2015 4/	40	34	23	20	15	12	**5**	22
B5. Combination of B1-B4 using one-half standard deviation shocks	40	7	-32	-35	-37	-42	**-46**	4
B6. One-time 30 percent nominal depreciation relative to the baseline in 2014 5/	40	57	57	52	45	40	**29**	39

Table 2. Congo, Republic of: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2013–2033 *(concluded)*

(In percent)

Debt service-to-exports ratio								
Baseline	3	3	3	3	2	2	**1**	2
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2013-2033 1/	3	2	2	1	1	1	**-4**	-14
A2. New public sector loans on less favorable terms in 2013-2033 2	3	3	3	3	2	2	**1**	2
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2014-2015	3	3	3	3	2	2	**1**	2
B2. Export value growth at historical average minus one standard deviation in 2014-2015 3/	3	3	3	3	3	3	**2**	3
B3. US dollar GDP deflator at historical average minus one standard deviation in 2014-2015	3	3	3	3	2	2	**1**	2
B4. Net non-debt creating flows at historical average minus one standard deviation in 2014-2015 4/	3	3	3	2	2	2	**0**	1
B5. Combination of B1-B4 using one-half standard deviation shocks	3	3	2	2	2	2	**-2**	-2
B6. One-time 30 percent nominal depreciation relative to the baseline in 2014 5/	3	3	3	3	2	2	**1**	2
Debt service-to-revenue ratio								
Baseline	4	4	5	4	4	4	**2**	2
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2013-2033 1/	4	4	3	2	2	1	**-5**	-13
A2. New public sector loans on less favorable terms in 2013-2033 2	4	4	5	4	4	4	**2**	2
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2014-2015	4	5	5	5	5	5	**2**	2
B2. Export value growth at historical average minus one standard deviation in 2014-2015 3/	4	4	5	4	4	4	**3**	2
B3. US dollar GDP deflator at historical average minus one standard deviation in 2014-2015	4	4	5	4	4	4	**2**	2
B4. Net non-debt creating flows at historical average minus one standard deviation in 2014-2015 4/	4	4	5	4	4	4	**1**	1
B5. Combination of B1-B4 using one-half standard deviation shocks	4	4	4	3	3	3	**-4**	-2
B6. One-time 30 percent nominal depreciation relative to the baseline in 2014 5/	4	6	7	6	6	6	**3**	3
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	24	24	24	24	24	24	**24**	24

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. Congo, Republic of: Public Sector Debt Sustainability Framework, Baseline Scenario, 2010–2033

(In percent of GDP, unless otherwise indicated)

	Actual			Average 5/	Standard Deviation 5/	Estimate	Projections								
	2010	2011	2012			2013	2014	2015	2016	2017	2018	2013-18 Average	2023	2033	2019-33 Average
Public sector debt 1/	20.2	30.2	31.3			26.6	26.1	22.9	20.2	15.7	13.2		8.6	10.1	
of which: foreign-currency denominated	20.2	23.0	25.2			21.4	21.7	19.6	17.8	14.3	12.5		8.6	10.1	
Change in public sector debt	-34.3	10.0	1.1			-4.7	-0.5	-3.2	-2.7	-4.5	-2.5		1.0	-1.1	
Identified debt-creating flows	-24.8	-18.9	-6.1			-14.7	-15.0	-14.0	-13.0	-14.4	-10.5		-2.3	1.4	
Primary deficit	-17.1	-16.6	-6.6	-14.0	7.1	-14.6	-15.6	-12.5	-12.2	-12.2	-10.2	-12.9	-1.9	2.0	-1.8
Revenue and grants	37.5	42.5	42.6			47.0	47.9	42.9	42.4	39.8	38.3		34.5	31.0	
of which: grants	0.1	0.5	0.1			1.1	1.1	0.8	0.6	0.4	0.3		0.1	0.0	
Primary (noninterest) expenditure	20.5	25.9	36.0			32.4	32.2	30.3	30.2	27.5	28.1		32.5	33.0	
Automatic debt dynamics	-7.7	-2.3	-0.6			-0.1	0.6	-1.4	-0.8	-2.2	-0.3		-0.4	-0.6	
Contribution from interest rate/growth differential	-4.9	-1.0	-1.2			-1.7	-1.1	-2.1	-1.7	-2.0	-0.8		-0.5	-0.4	
of which: contribution from average real interest rate	-0.5	-0.3	-0.1			0.0	0.1	-0.2	-0.1	-0.2	-0.1		0.0	0.1	
of which: contribution from real GDP growth	-4.4	-0.7	-1.1			-1.7	-1.2	-1.9	-1.6	-1.8	-0.7		-0.5	-0.5	
Contribution from real exchange rate depreciation	-2.8	-1.4	0.6			1.6	1.8	0.6	0.9	-0.1	0.5		...	...	
Other identified debt-creating flows	0.0	0.0	1.1			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Privatization receipts (negative)	0.0	0.0	1.1			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)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Other (specify, e.g. bank recapitalization)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Residual, including asset changes	-9.6	29.0	7.2			10.0	14.5	10.8	10.3	9.9	8.0		3.3	-2.5	
Other Sustainability Indicators															
PV of public sector debt	...	...	29.1			23.5	22.7	19.7	17.3	13.4	11.2		6.8	8.2	
of which: foreign-currency denominated	...	...	22.9			18.3	18.3	16.5	14.9	12.0	10.5		6.8	8.2	
of which: external	...	...	22.9			18.3	18.3	16.5	14.9	12.0	10.5		6.8	8.2	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	-16.1	-16.4	-5.6			-11.8	-12.7	-9.8	-9.7	-9.9	-8.0		-1.3	2.5	
PV of public sector debt-to-revenue and grants ratio (in percent)	...	...	68.2			50.0	47.5	46.1	40.8	33.6	29.1		19.7	26.5	
PV of public sector debt-to-revenue ratio (in percent)	...	...	68.4			51.2	48.6	46.9	41.3	34.0	29.3		19.8	26.5	
of which: external 3/	...	...	53.9			39.8	39.2	39.1	35.7	30.4	27.5		19.8	26.5	
Debt service-to-revenue and grants ratio (in percent) 4/	2.6	0.4	2.5			6.0	6.1	6.4	6.1	5.9	5.8		2.0	1.7	
Debt service-to-revenue ratio (in percent) 4/	2.6	0.4	2.5			6.1	6.3	6.6	6.2	5.9	5.9		2.0	1.7	
Primary deficit that stabilizes the debt-to-GDP ratio	17.3	-26.6	-7.7			-9.9	-15.1	-9.3	-9.5	-7.8	-7.8		-2.9	3.1	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	8.8	3.4	3.8	4.6	3.2	5.8	4.8	7.7	7.3	10.1	4.7	6.7	6.6	4.2	3.3
Average nominal interest rate on forex debt (in percent)	2.1	0.9	0.8	2.6	1.2	0.8	0.8	0.8	0.8	1.0	1.0	0.9	1.2	0.8	1.0
Average real interest rate on domestic debt (in percent)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Real exchange rate depreciation (in percent, + indicates depreciation	-5.6	-7.1	2.7	-6.6	12.3	6.6	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	20.7	10.7	-1.2	8.8	14.6	-4.7	-5.6	-0.5	-2.4	2.6	-2.0	-2.1	-0.2	2.1	-0.1
Growth of real primary spending (deflated by GDP deflator, in percer	0.0	0.3	0.4	0.1	0.2	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0
Grant element of new external borrowing (in percent)	...	...	...	...	...	32.9	32.9	32.9	32.9	23.8	23.8	29.9	23.8	23.8	...

Sources: Country authorities; and staff estimates and projections.

1/ [Indicate coverage of public sector, e.g., general government or nonfinancial public sector. Also whether net or gross debt is used.]

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. Congo, Republic of: Sensitivity Analysis for Key Indicators of Public Debt 2013–2033

	Projections							
	2013	2014	2015	2016	2017	2018	2023	2033
PV of Debt-to-GDP Ratio								
Baseline	23	23	20	17	13	11	7	8
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	23	24	21	18	14	10	-28	-107
A2. Primary balance is unchanged from 2013	23	23	19	15	9	4	-37	-124
A3. Permanently lower GDP growth 1/	23	23	21	19	16	14	18	44
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2014-20	23	25	26	26	24	25	34	51
B2. Primary balance is at historical average minus one standard deviations in 2014-201	23	29	30	28	23	20	17	15
B3. Combination of B1-B2 using one half standard deviation shocks	23	27	27	27	24	23	28	39
B4. One-time 30 percent real depreciation in 2014	23	31	27	24	20	17	13	12
B5. 10 percent of GDP increase in other debt-creating flows in 2014	23	30	27	24	20	18	13	13
PV of Debt-to-Revenue Ratio 2/								
Baseline	50	47	46	41	34	29	20	27
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	50	50	49	42	36	26	-81	-346
A2. Primary balance is unchanged from 2013	50	49	44	35	23	10	-108	-399
A3. Permanently lower GDP growth 1/	50	48	48	45	39	38	52	141
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2014-20	50	52	61	62	61	65	99	165
B2. Primary balance is at historical average minus one standard deviations in 2014-201	50	61	70	65	57	53	48	49
B3. Combination of B1-B2 using one half standard deviation shocks	50	57	63	63	59	60	81	125
B4. One-time 30 percent real depreciation in 2014	50	64	63	57	49	45	37	40
B5. 10 percent of GDP increase in other debt-creating flows in 2014	50	63	63	57	50	46	39	42
Debt Service-to-Revenue Ratio 2/								
Baseline	6	6	6	6	6	6	2	2
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	6	6	7	6	6	6	1	-12
A2. Primary balance is unchanged from 2013	6	6	6	6	6	6	0	-15
A3. Permanently lower GDP growth 1/	6	6	7	6	6	6	3	6
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2014-20	6	6	7	7	7	7	4	9
B2. Primary balance is at historical average minus one standard deviations in 2014-201	6	6	7	7	6	6	4	4
B3. Combination of B1-B2 using one half standard deviation shocks	6	6	7	7	7	7	4	7
B4. One-time 30 percent real depreciation in 2014	6	7	8	8	8	8	3	4
B5. 10 percent of GDP increase in other debt-creating flows in 2014	6	6	7	6	6	6	3	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.