REPUBLIC OF CONGO

STAFF REPORT FOR THE 2015 ARTICLE IV CONSULTATION—DEBT SUSTAINABILITY ANALYSIS

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Approved By
Anne-Marie Gulde-Wolf and Bob Traa (IMF) and John Panzer (IDA)

The Debt Sustainability Analysis (DSA) has been prepared jointly by IMF and World Bank staff, in consultation with the authorities, using the debt sustainability framework for low-income countries approved by the Boards of both institutions.

This debt sustainability analysis (DSA) concludes that the Republic of Congo faces a moderate risk of debt distress. This is a higher risk relative to the analysis prepared in the previous year.[1] It confirms the vulnerability of the Congolese economy to external shocks, in particular to declines in oil prices and external demand, even in a baseline scenario with sustained fiscal adjustment. Under the baseline scenario for the current DSA, the present value of debt-to GDP ratio temporarily breaches the policy-dependent indicative threshold in 2015 and 2016. The other debt burden indicators are projected to remain below the policy-dependent indicative thresholds. Standard stress tests result in multiple breaches of these thresholds. The solitary breach under the baseline, coupled with these stress test breaches would normally give rise to a "high risk of debt distress" classification. However, an analysis based on net debt that takes into account Congo's sizable government deposits at the regional central bank indicates that there are only sustained breaches of the thresholds under the stress tests. On this basis, Congo is classified as at "moderate risk of debt distress". In order to increase the resilience of the Congolese economy, in addition to the fiscal adjustment assumed in the baseline scenario, efforts should continue to focus on diversification of the tradable sectors. Moreover, medium-and long-term fiscal and debt sustainability can be promoted through continued adherence to prudent borrowing policies and building of fiscal buffers.

[1] This DSA is based on end–2014 debt data. The 2014 DSA (see IMF Country Report No. 14/272) was based on end–2013 debt data. The fiscal year for the Republic of Congo is January–December.

BACKGROUND

1. **Congo's stock of external debt has continued its upward trend since the extensive HIPC/MRDI debt relief in 2010.** Congo reached the HIPC Initiative Completion Point in January 2010. This resulted in estimated total debt service savings of US$1.9 billion, and a decline in gross public external debt to just over 20 percent of GDP at end–2010 (from about 55 percent of GDP in 2009) (See Press Release No. 10/20, January 28, 2010). However, the estimated external debt stock at the end of 2014 amounted to around US$4.9 billion, up from US$2.4 billion in 2010.[2] The debt-to-GDP ratio increased steadily over the past 3 years, reflecting new borrowing, notably large disbursements under bilateral loan agreements with China, contracted between 2006 and 2014.[3] Bilateral creditors currently comprise nearly two-thirds of total debt (see Table 1). Domestic public debt is relatively low at around 5.4 percent of GDP at end–2014 and consists mostly of domestic arrears. The bulk of domestic arrears involve pension arrears and unpaid social benefits which started accumulating after the liquidation of public enterprises in the past as employees may not have been rightfully terminated.[4]

Table 1. Republic of Congo: Gross External Debt by Creditor and Total Debt service

	2010		2011		2012		2013		2014	
	CFA billion	USD million	CFA billion	USD million	CFA billion	USD million	CFA billion	USD million	CFA billion	USD million
Debt stock	1,203	2,434	1,568	3,325	1,792	3,511	2,131	4,315	2,435	4,934
Multilateral	227	459	90	191	97	190	95	193	102	207
Bilateral	291	589	957	2,031	1,187	2,325	1,537	3,112	1,740	3,526
of which China	182	369	761	1,615	1,014	1,987	1,401	2,836	1,569	3,180
Private Creditors	685	1,386	520	1,104	508	996	499	1,010	495	1,003
Total debt service	72.6	146.8	65.7	139.3	69.9	137.1	151.9	307.6	176.0	356.7
Interest	15.7	31.8	13.4	28.5	11.9	23.3	18.1	36.7	16.2	32.9
Amortization	56.9	115.0	52.2	110.8	58.1	113.8	133.8	270.9	159.8	323.8
Multilateral	8.2	16.5	7.4	15.6	7.0	13.8	10.4	21.0	6.0	12.1
Bilateral	23.6	47.7	37.5	79.5	47.2	92.5	114.8	232.4	143.2	290.2
Private Creditors	25.1	50.8	7.4	15.6	3.8	7.5	8.7	17.6	10.6	21.5

Sources: Caisse Congolaise d'Amortissement (CCA) and IMF staff calculations.

[2] This figure includes also the external arrears stock of US$683.7 million at end–2014. More than ⅔ are related to commercial creditors, for which legal decisions are pending. No timeline has been provided by the authorities for the resolution of these cases. The rest is owed to bilateral creditors for which the provisions of debt relief under the HIPC Initiative are still under discussion.

[3] The loans from China are denominated in US dollars and obtained on a concessional basis (20 years maturity, 5 years grace period, 0.25 percent interest rate).

[4] The authorities are currently undertaking an audit of domestic arrears. To protect their buffers, the authorities intend to put in place a multi-year repayment plan once the audit is completed. In 2014 and 2015, there may also have been a buildup of domestic arrears because of the tight fiscal situation from the decline in oil prices.

2. The sustainability of Congo's external debt should be assessed in the context of the country's sizeable financial assets (Table 2). The government gross debt to GDP ratio increased in 2014 reflecting continued borrowing on concessional terms, the terms of trade loss from the sharp decline in oil prices in the second half of 2014 which limited nominal GDP growth, as well as debt valuation changes from the depreciation of the CFAF relative to the dollar. While a substantial amount of buffers were used during 2014, gross reserves at about 45 percent of GDP at end-2014 remain sizable. Moreover, the government's total deposits while lower than in 2013 remain fairly sizeable partly owing to the government drawing on statutory advances to the tune of 5.5 percent of GDP. As a result, total government deposits at end–2014 are equivalent to about 89 percent of the net present value of gross external public debt.

Table 2. Republic of Congo: Assets and Liabilities
(Percent of GDP)

	2013	2014
Gross External Debt 1/	32.0	36.4
NPV of Gross External Debt /1	26.6	26.8
Gross Reserves (including deposits abroad)	47.3	44.7
Government Deposits (including deposits abroad)	29.5	19
Memorandum item:		
Advances taken by the government	0	5.4

Sources: Congolese authorities and IMF staff calculations.
1/ Includes external arrears see footnote 2.

3. There is a need to strengthen public debt and asset management.[5] The August 2013 IMF public debt management technical assistance needs assessment mission highlighted the need to : (i) strengthen the legal and institutional framework to cover the entire process of issuing and managing debt; (ii) develop a medium-term debt management strategy and enhance transparency in debt management; (iii) introduce a formal framework for managing the government's cash flows; and (iv) strengthen the staff analytical capabilities with respect to managing the public debt.

UNDERLYING ASSUMPTIONS

4. The medium and long-term macroeconomic framework underlying the DSA is consistent with the baseline scenario presented in the Staff Report for the 2015 Article IV Consultation. The main assumptions and projections for key macroeconomic variables are summarized in Box 1. Economic activity in the near to medium term is expected to reflect developments in oil production and prices. Oil production is expected to reach peak production of

[5] The Congolese authorities are receiving ongoing technical assistance from the IMF's Monetary and Capital Markets Department to strengthen debt management.

about 128 million barrels in 2018 as new oil fields come on streams, and then moderate in the following years. Oil prices dipped in the second half of 2014 and are projected to stay below 80 dollars per barrel in the medium term. The decline in oil prices is associated with a drop in overall nominal GDP in 2015. Non–oil growth is expected to average 3.2 percent over 2015–20, reflecting developments in forestry, agriculture, commerce and transport/communication sectors, and the delay of mining projects. The authorities are expected to tighten fiscal policy in the near and medium term, scaling back capital expenditures and prioritizing projects once the large outlays associated with the fall 2015 All Africa Games are made. The path of public expenditure is projected to permit the public capital stock to reach a level exceeding that typically observed in middle income countries. Private investment is expected to pick up, attracted by an improved infrastructure base and a friendlier business climate.

5. **Assumptions regarding external borrowing have been largely maintained compared to the macroeconomic framework underpinning last year's DSA** (see Table 3). As in last year's DSA, the debt profile reflects not only already committed loans, but also the authorities' medium term borrowing plans taking into account their commitment to fiscal consolidation. New gross external borrowing over the medium term (2015–22) is expected to total around US$3.3 billion. It is assumed that Congo continues to obtain external financing on highly concessional terms, in line with the agreement signed with China in 2012. The degree of concessionality is assumed to lessen after 2025. Compared to previous DSAs, the grant element remains unchanged at about 48 percent reflecting 5 years of grace period, 20 years maturity and low interest rate on loans.

6. **Under the baseline, the current account balance is expected to be negative over 2015–16, but to turn positive in later years.** These developments are mainly driven by the lower international oil price, the investments in the oil sector that result in an initial upward trend in imports of goods and services, and developments in oil production. The *Moho Nord* deep offshore field, developed by Total jointly with Chevron and SNPC, is expected to attract around US$10 billion of foreign direct investments over 2013–16. Also the recent discovery by ENI of the Nené–Banga and Litchendjili offshore fields is expected at its peak to further add over 140,000 barrels per day to oil production. These two fields will reach their full production potential in the period 2017–18, when Congolese oil production is expected to peak. Considering the current highly uncertain conditions in the mining sector, the start of mining production is projected to be delayed until after 2021. The commencement of production on large mining projects is dependent upon the removal of significant sector-specific infrastructure bottlenecks in transportation, the financing of which is being hindered by the uncertain outlook for the global market for iron ore. In the long run, as oil exports decline and non-oil export receipts fail to compensate for this loss, additional financing would be needed. The present DSA assumes that the financing gap after 2025 is filled on concessional terms, although with a lower grant element than that under the current Chinese loans. [6]

[6] The grant element of new borrowing in the long term is assumed to be around 28 percent, mainly reflecting higher interest rates.

Table 3. Congo, Republic of: Comparison of PPG Gross External Debt, Baseline Scenario

(Percent of GDP, unless otherwise indicated)

	2015	2016	2017	2018	2019	2025	2034
PV of Debt to GDP Ratio							
2015DSA	38.6	34.0	28.1	26.4	26.2	26.0	25.6
2014DSA	25.4	24.3	21.2	20.6	20.6	18.3	13.7
PV of Debt to Exports Ratio							
2015DSA	56.7	43.1	35.8	34.1	35.2	42.0	51.7
2014DSA	33.6	33.1	28.6	28.7	30.3	36.6	35.1
PV of Debt to Government Revenue Ratio							
2015DSA	97.5	84.7	73.7	68.4	68.4	75.1	85.0
2014DSA	57.5	55.9	52.7	52.8	54.7	50.8	43.3
Debt Service to Exports Ratio							
2015DSA	4.3	3.5	3.1	3.9	4.8	2.6	3.4
2014DSA	3.9	3.7	3.3	3.4	3.5	2.5	2.7
Memorandum Items							
New Loan Disbursements (billions FCFA)							
2015DSA	374	300	280	150	180	200	250
2014DSA	300	280	260	240	220	108	141
Grant Element of New External Borrowing (in percentage points)							
2015DSA	48.2	48.2	48.2	48.2	48.2	48.2	28.1
2014DSA	48.7	48.7	48.7	48.7	48.7	48.7	28.1
Basic non-oil primary balance (percent of the non-oil GDP)							
2015DSA	-25.8	-26.0	-25.4	-24.5	-22.8	-10.8	2.3
2014DSA	-44.8	-40.0	-35.3	-30.7	-26.5	-7.8	0.1
Real GDP growth (annual percentage change)							
2015DSA	1.0	6.5	7.0	3.4	-1.6	2.4	4.3
2014DSA	7.5	7.3	9.0	3.5	1.9	3.1	4.7
Current Account Balance (percentage of the GDP)							
2015DSA	-10.4	-5.7	3.6	2.9	-2.8	2.8	7.2
2014DSA	-3.5	-1.4	2.3	1.4	-1.6	-2.0	-1.8

Sources: Congolese authorities; IMF and WB staff calculations and projections.

Box 1. Republic of Congo: Main Macroeconomic Assumptions

- **Real GDP growth:** The non-oil sector is projected to grow on average by 3.2 percent per year during 2015–20 driven by agriculture, forestry, commerce and transport/communication sectors; non-oil growth would stabilize at about 5 percent thereafter. The estimated potential of mining in Congo is more than 50 million tons of iron per year. However, given the uncertainties surrounding the mining projects (including sluggish global demand and the associated low prices, and the need for large investment in infrastructure) the baseline projections for mining output are conservative. It is assumed that major mining projects will not commence until 2021, with a small volume of production in that year.

- **Oil production and prices:** Annual oil production is projected at around 92 million barrels in 2015 and expected to peak at 128 million barrels in 2018. Based on official projections, production would steadily decline over 2019–34, to about 13 million barrels in 2034. International oil prices dipped significantly in the latter half of 2014 and are expected to stay depressed throughout 2015, affecting overall nominal GDP in this year. Following projections in the IMF's *World Economic Outlook*, international oil prices are projected to increase from their 2015 low by an average of 5 percent over the period until 2020; thereafter, they are assumed to remain constant in real terms.

- **Inflation:** Annual average inflation decelerated to 0.9 percent in 2014 from 4.6 percent in 2015, largely on the back of lower food prices. In the medium term, inflation is projected to stay below the CEMAC's convergence criteria of 3 percent.

- **Current account balance:** Current account fluctuations are driven by the dynamics of exports and imports in the oil and in the public sectors. The balance is expected to trend positive as oil production increases up to 2018; the upward trend of the current account balance is expected to be reinforced by declining government imports associated with the expected fiscal consolidation. As oil production declines after the peak in 2018, it is expected that the current account will revert to a small deficit in 2020.

- **Fiscal balance:** With the government already holding back capital expenditures for priority projects in 2015, the baseline projections assume that fiscal consolidation continues in 2016 and continues in the medium- and long-terms. The basic non-oil primary deficit on a cash basis would narrow from about 46 percent of non-oil GDP in 2015 to about 18 percent in 2020 and close to zero in the long run. Staff's projected fiscal outturn implies under implementation of the approved 2015 budget. A supplementary 2015 budget has been approved by the cabinet and is awaiting formal ratification by parliament.

- **External financing:** In the medium term, the authorities are assumed to continue to borrow externally at similarly concessional terms as in the recent past. In 2014, an additional CFAF 313 billion (about US$ 630 million) was disbursed under the terms of the bilateral agreements with China, implying that the funds available under these accords have been fully disbursed. This is assumed to be followed by additional borrowing over the period 2015–22 to the tune of another US$ 3.3 billion from various sources. These disbursements would contribute to address Congo's infrastructure gap. In the long run, external borrowing is expected to decline as a percentage of GDP, with primarily domestic sources ensuring the development of the long run capital stock. The concessionality level is expected to lessen after 2025.

DEBT SUSTAINABILITY ANALYSIS

C. External DSA

7. Under the baseline, all Congo's debt indicators, except the PV of debt to GDP ratio, are below the relevant country-specific debt burden thresholds (Figure 1). 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.[7] For 2015–16, the PV of debt to GDP ratio breaches the policy-dependent indicative threshold, mainly reflecting the impact of lower international oil prices on Congo's economy.

8. Three of the stress tests breach significantly the indicative threshold (Figure 1). Standard bound tests that examine the implications of various shocks to the debt and debt-service paths based on the country's historical volatility result in sharp increases in the debt burden indicators. For the PV of debt-to-exports ratio and the debt service-to-exports ratio, the most extreme scenario is associated with a shock to exports. [8]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 present value of debt-to-exports ratio to rise by about 170 percentage points at its peak. Similarly, the present value of the debt service-to-exports ratio would rise by 18 percentage points at its peak, in response to the same shock. For the remaining indicators, the most extreme shock is also the exports shock. In response to a half standard deviation shock to exports, the PV of the debt to GDP ratio would rise by about 40 percentage points at its peak and remain above the critical threshold throughout the forecast horizon. For the remaining indicators, the most extreme scenario either implies a temporary slight breach (the present value of debt-to-revenue ratio) or a persistent breach of (the present value of debt service-to-revenue ratio) the respective threshold.

9. The breach of the policy-dependent PV of the debt to GDP ratio threshold in 2015 and 2016 under the baseline together with multiple breaches of the thresholds under the stress tests would give rise to a downgrade of Congo to a "high risk of debt distress." Under the historical scenario, which derives the debt indicators assuming that key variables are at their 10–year historical averages, the present value of debt to GDP and the present value of debt-to-revenue

[7] The thresholds for weak performers are 100, 30 and 200 percent for the PV of debt to exports, GDP and government revenue, respectively. Debt service thresholds are 15 and 18 percent of exports and revenue, respectively.

[8] The vulnerability stems from the very high share of oil in Congo's exports (about 80 percent) and the significant volatility of oil prices and production. The magnitude of the shock is comparable to that of last year's DSA (-11.5 percent, compared with -10 percent in 2014).

ratios decline very rapidly. However, as pointed out in previous DSAs, this scenario is less relevant for resource-rich countries since past trends are likely to be a poor predictor of future outcomes.

10. A debt sustainability analysis that takes into account Congo's sizable government deposits at the regional central bank would suggest that Congo could be classified as at "moderate risk of debt distress (Figure 3). Here, Congo's significant accumulated deposits at the central bank mitigate the degree of debt distress.[9] They permit the reduction of the present value of Congo's debt obligations, such that the present value of the relevant net debt stock and net debt service ratios remain comfortably below the debt burden thresholds under the baseline. In this analysis, however, there continue to be sustained breaches of the thresholds under the stress tests. A DSA analysis that takes into account Congo's deposits abroad would further support the proposed moderate risk of debt distress rating.

D. Public DSA

11. Adding domestic public debt to external debt does not change the results of the analysis (see Figures 2 and 4). Congo's domestic public and publicly guaranteed (PPG) debt includes domestic arrears.[10] Under the baseline, the total public debt indicators tend to diminish over time. However, the potential evolution of the public debt ratios carries a warning regarding the present expansionary stance of fiscal policy. Under the alternative 'fix primary balance' scenario, under which the primary balance is unchanged from 2015 onwards, all public debt ratios increase significantly going forward. Regarding the stress tests, the most extreme shock (in this case real GDP growth in 2016–17 set at one standard deviation below its historical average) raises the PV of debt to GDP ratio in the outer years (from 2019) of the projection period, and stabilizes at this level. A permanently lower GDP growth would have a similar, albeit somewhat smaller, effect on the present value of the debt-to-revenue ratio. The accumulation of official foreign reserves, which in the case of Congo is significant due to previous years of high primary surpluses, can be regarded as a buffer against these potential shocks.

AUTHORITIES' VIEW

12. The Republic of Congo's authorities broadly concurred with the overall assessment of moderate risk of debt distress. They reiterated their commitment to prudent fiscal policy that should help to alleviate their financing needs as well as to preserve the government deposits at the central bank that would provide a buffer against adverse shocks. The authorities also reaffirmed that they do not want to repeat the experience from the beginning of the 2000s, when debt exceeded by

[9] It is assumed that Congo is able to use its deposits at the central bank (US$2.46 billion at end 2014) to offset future debt service payments on bilateral loans with China.

[10] Although there are indications that domestic arrears may be substantially larger, these do not represent legally verified claims. Therefore, they cannot be included in the DSA. The DSA's standard stress test whereby the debt ratio is raised by 10 percent of GDP can be thought of as illustrating the effect of adding domestic arrears to the stock of domestic debt upon their possible verification.

far the CEMAC convergence criteria. They assured staff of their plans to continue to borrow only on highly concessional terms. Finally, and in light of the ongoing run of lower international oil prices, the authorities' strategy continues to center around economic diversification.

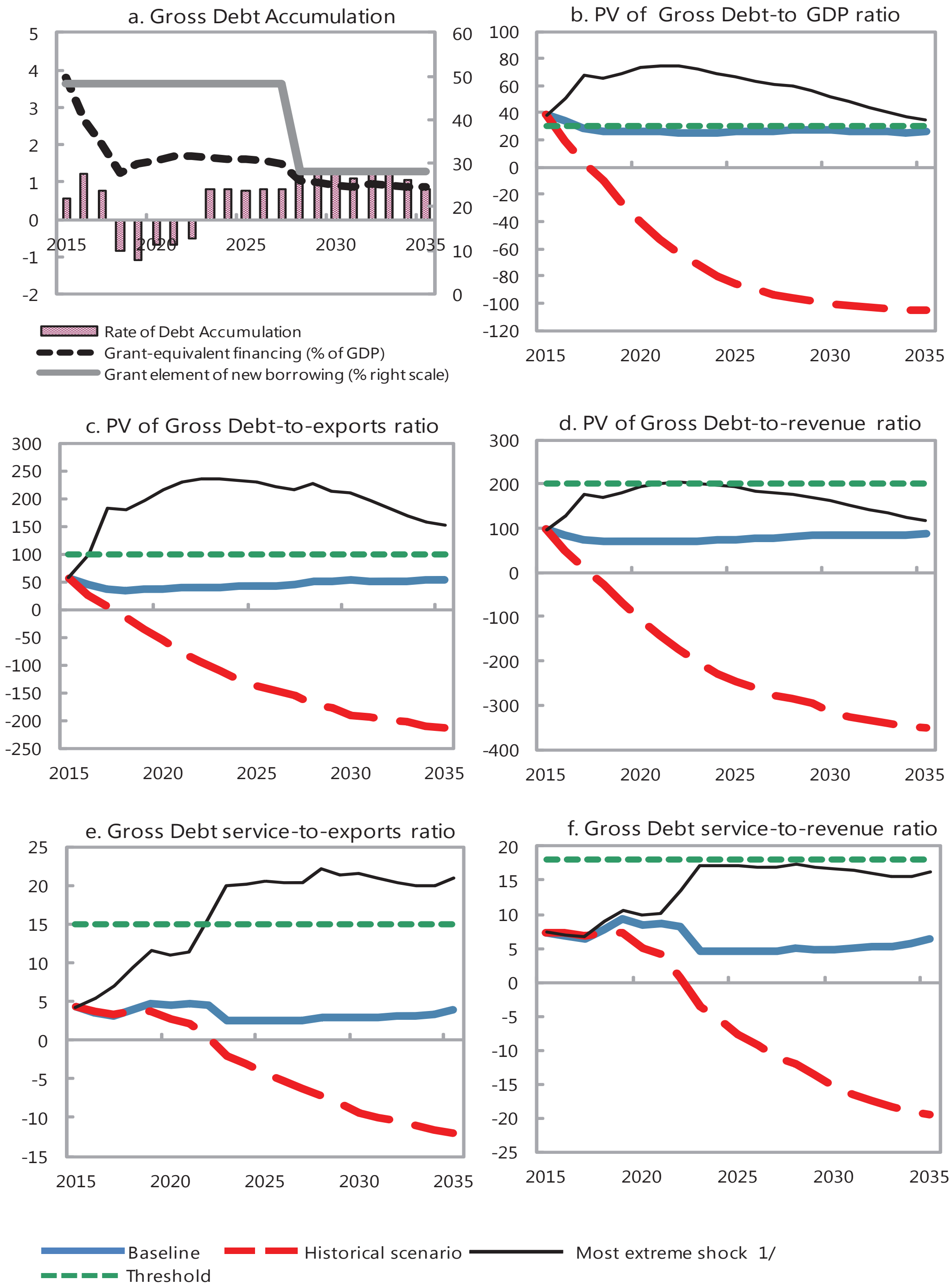
CONCLUSION

13. In the Staff's view, the Republic of Congo faces a medium-term moderate risk of debt distress. An analysis of net debt that takes into consideration the government's large deposits at the regional central bank finds that all external debt indicators are well below the country-specific indicative thresholds under the baseline scenario but three of these thresholds are breached for a sustained period under the various standard stress tests. In view of the persistent low oil prices and decline in fiscal and external buffers, Congo may resort to external borrowing in the near future. It is therefore important for the government to anchor macroeconomic policies by a stability oriented medium-term fiscal framework that targets a reduction of the non-oil primary fiscal deficit and to maintain gross official reserves above five months of prospective imports of goods and services to support the exchange rate peg and to prepare for the post-oil era. The pattern seen in the last 3 years with respect to external borrowing underscores the constrained capacity to finance large infrastructure projects. Since we expect this trend to continue, new borrowing contracts should reflect similar concessional terms as the recent ones in order to maintain debt sustainability.

14. Improving competitiveness and promoting economic diversification are keys 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, efforts toward improving the business climate with assistance from the World Bank should help strengthen competitiveness and boost growth. 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.

15. Focusing on policies to strengthen public debt and asset management and institutions could enhance the Congolese authorities' capacity to manage debt and fiscal policies. In the DSA framework, this would raise the Congolese economies' debt-carrying capacity, by raising the country's CPIA rating. Moreover the development and integration of the regional debt market within the CEMAC area would broaden the menu of options to manage the Republic of Congo's financing needs. The issuance of government securities would also provide an alternative means of financing but would hinge on the strengthening of institutions and analytical capacities.

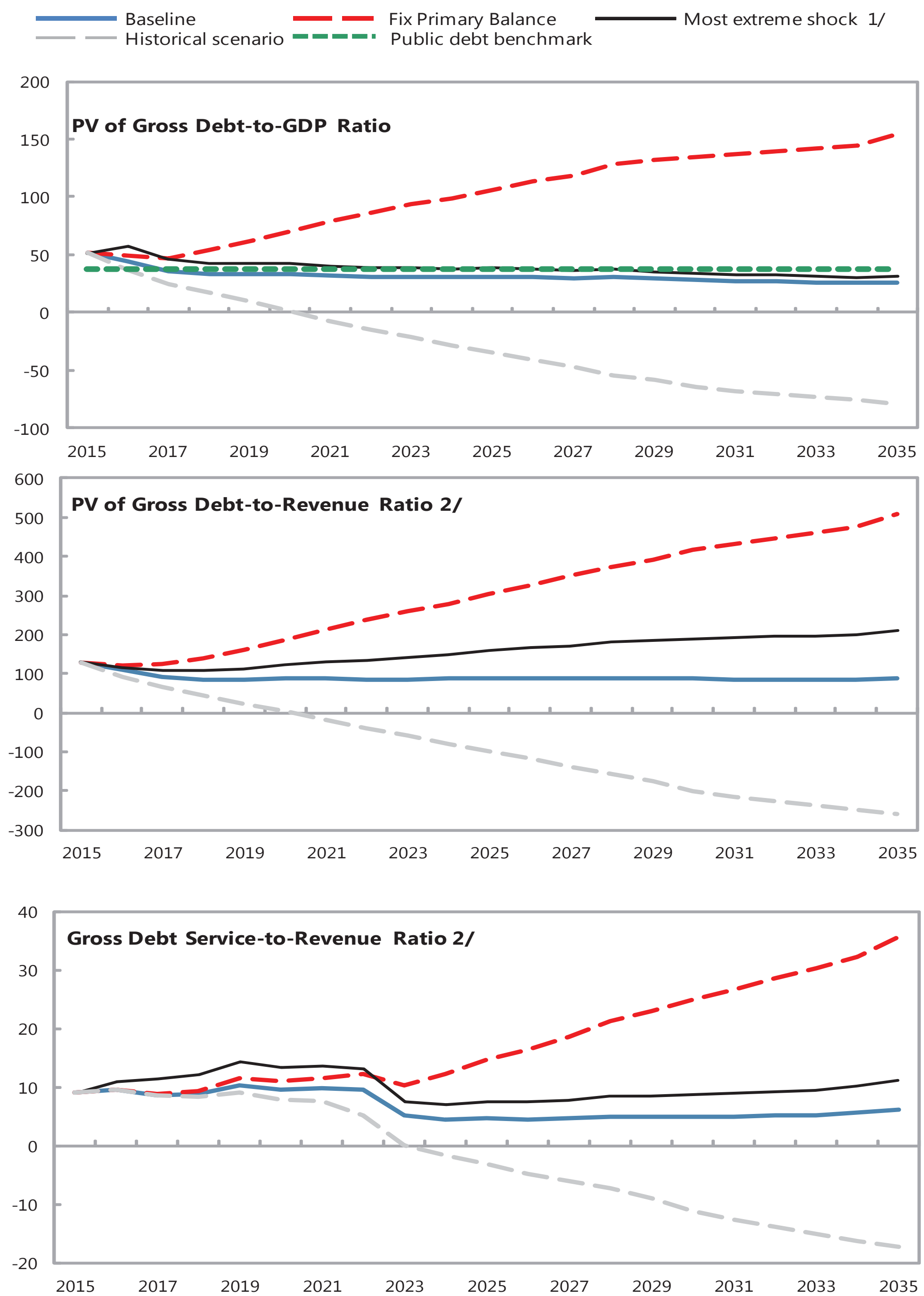
Figure 1. Republic of Congo: Indicators of Public and Publicly Guaranteed External Debt under Alternative Scenarios - Gross Debt, 2015–2035 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio on or before 2025. 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 Exports shock.

Figure 2. Republic of Congo: Indicators of Public Debt Under Alternative Scenarios - Gross Debt, 2015–2035 1/

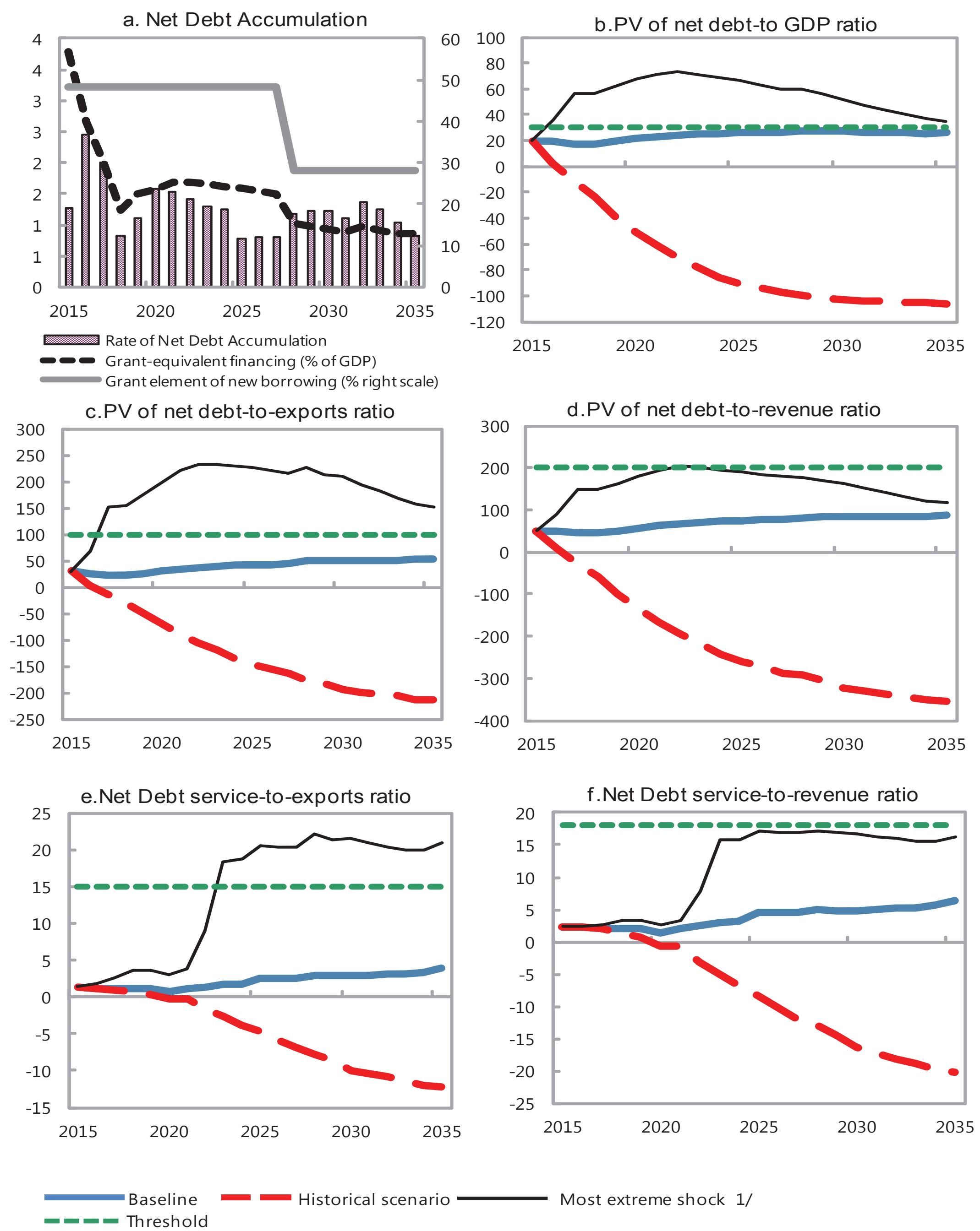


Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio on or before 2025.

2/ Revenues are defined inclusive of grants.

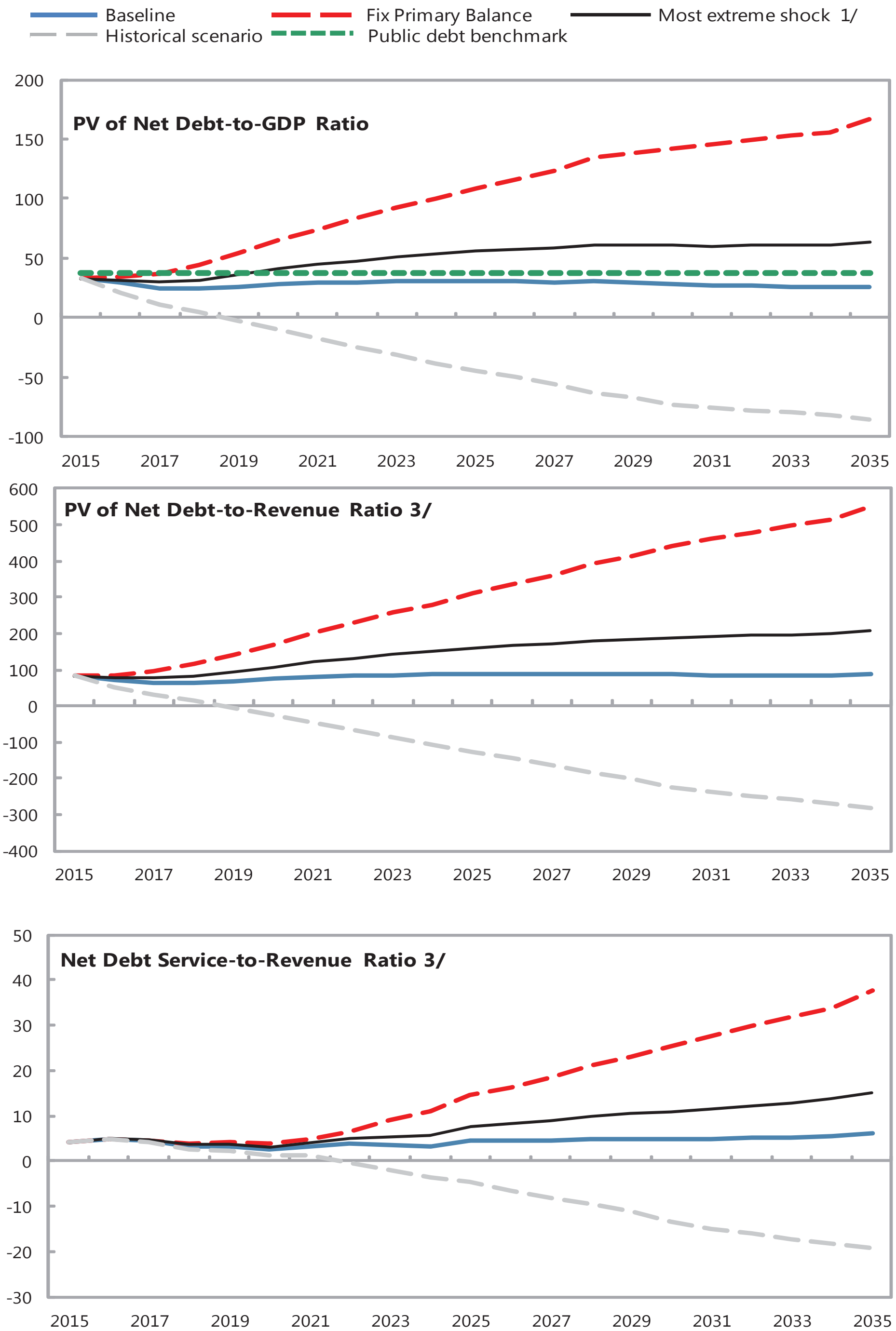
Figure 3. Republic of Congo: Indicators of Public and Publicly Guaranteed External Debt under Alternative Scenarios - Net Debt, 2015–2035 1/ 2/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio on or before 2025. 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 Exports shock.
2/ Net debt is calculated by subtracting USD 2.46 billion of government deposits held at the regional central bank from future debt service payments.

Figure 4. Republic of Congo: Indicators of Public Debt Under Alternative Scenarios - Net Debt, 2015–2035 1/ /2



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio on or before 2025.

2/ Net debt is calculated by subtracting USD 2.46 billion of government deposits held at the regional central bank from future debt service payments.

3/ Revenues are defined inclusive of grants

Table 4. Republic of Congo: External Debt Sustainability Framework, Baseline Scenario – Gross Debt, 2012–35

(Percent of GDP, unless otherwise indicated)

	Actual			Historical 6/	Standard 6/	Projections													
				Average	Deviation							2015-2020							2021-2035
	2012	2013	2014			2015	2016	2017	2018	2019	2020	Average	2021	2022	2023	2024	2025	2035	Average
External debt (nominal) 1/	**25.7**	**32.0**	**36.4**			**51.5**	**46.1**	**38.7**	**36.7**	**37.2**	**38.1**		**38.0**	**37.7**	**38.4**	**38.6**	**39.2**	**34.1**	
of which: public and publicly guaranteed (PPG)	25.7	32.0	36.4			51.5	46.1	38.7	36.7	37.2	38.1		38.0	37.7	38.4	38.6	39.2	34.1	
Change in external debt	2.2	6.3	4.4			15.1	-5.4	-7.4	-2.0	0.4	0.9		-0.1	-0.2	0.7	0.2	0.6	0.6	
Identified net debt-creating flows	-12.7	-13.9	-14.3			9.1	0.3	-3.5	-1.5	6.2	2.9		0.5	0.7	0.6	2.0	-1.4	-0.2	
Non-interest current account deficit	**2.2**	**4.2**	**5.3**	**0.3**	**6.6**	**10.4**	**5.7**	**-3.6**	**-2.9**	**2.8**	**0.9**		**0.4**	**0.7**	**-2.5**	**-2.1**	**-2.8**	**-7.3**	-3.8
Deficit in balance of goods and services	-24.2	-16.2	-12.6			-5.3	-16.3	-26.1	-24.2	-17.0	-17.4		-16.4	-15.0	-17.2	-15.5	-15.0	-11.8	
Exports	78.5	75.8	73.3			68.2	79.0	78.6	77.5	74.5	71.8		68.6	66.9	65.1	63.2	62.0	49.5	
Imports	54.3	59.6	60.7			62.9	62.6	52.5	53.3	57.5	54.5		52.2	51.8	48.0	47.7	47.0	37.8	
Net current transfers (negative = inflow)	2.8	2.9	3.0	2.0	1.1	4.6	4.1	3.5	3.2	3.4	3.7		3.8	3.8	3.9	3.8	3.8	2.9	3.5
of which: official	-0.1	-0.3	-0.4			-0.4	-0.3	-0.2	-0.3	-0.3	-0.3		-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	
Other current account flows (negative = net inflow)	23.6	17.6	14.9			11.0	17.9	19.1	18.1	16.3	14.6		13.0	12.0	10.8	9.5	8.4	1.6	
Net FDI (negative = inflow)	**-16.4**	**-18.7**	**-19.6**	**-21.1**	**3.1**	**-1.1**	**-2.8**	**2.5**	**2.5**	**2.6**	**1.7**		**0.8**	**0.4**	**4.0**	**5.3**	**2.1**	**6.8**	3.7
Endogenous debt dynamics 2/	**1.5**	**0.6**	**0.0**			**-0.2**	**-2.6**	**-2.4**	**-1.0**	**0.9**	**0.2**		**-0.7**	**-0.4**	**-0.8**	**-1.2**	**-0.7**	**0.3**	
Contribution from nominal interest rate	0.2	0.2	0.2			0.3	0.3	0.2	0.3	0.3	0.3		0.3	0.2	0.2	0.2	0.2	0.3	
Contribution from real GDP growth	-0.9	-0.9	-2.2			-0.5	-2.9	-2.6	-1.3	0.6	-0.1		-1.0	-0.7	-1.0	-1.4	-0.9	0.0	
Contribution from price and exchange rate changes	2.2	1.2	2.0			...	...	...	...	...	...		...	...	...	...	...	...	
Residual (3-4) 3/	**14.9**	**20.2**	**18.7**			**6.0**	**-5.6**	**-3.9**	**-0.5**	**-5.8**	**-1.9**		**-0.6**	**-0.9**	**0.0**	**-1.8**	**2.0**	**0.8**	
of which: exceptional financing	0.4	-0.5	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
PV of external debt 4/	...	...	28.3			38.6	34.0	28.1	26.4	26.2	26.5		25.8	25.1	25.5	25.6	26.0	26.4	
In percent of exports	...	...	38.6			56.7	43.1	35.8	34.1	35.2	36.8		37.6	37.6	39.1	40.5	42.0	53.3	
PV of PPG external debt	**...**	**...**	**28.3**			**38.6**	**34.0**	**28.1**	**26.4**	**26.2**	**26.5**		**25.8**	**25.1**	**25.5**	**25.6**	**26.0**	**26.4**	
In percent of exports	**...**	**...**	**38.6**			**56.7**	**43.1**	**35.8**	**34.1**	**35.2**	**36.8**		**37.6**	**37.6**	**39.1**	**40.5**	**42.0**	**53.3**	
In percent of government revenues	**...**	**...**	**66.9**			**97.5**	**84.7**	**73.7**	**68.4**	**68.4**	**70.4**		**70.3**	**69.7**	**71.5**	**72.9**	**75.1**	**87.8**	
Debt service-to-exports ratio (in percent)	**0.2**	**0.3**	**0.3**			**4.3**	**3.5**	**3.1**	**3.9**	**4.8**	**4.4**		**4.6**	**4.4**	**2.4**	**2.5**	**2.6**	**3.8**	
PPG debt service-to-exports ratio (in percent)	**0.2**	**0.3**	**0.3**			**4.3**	**3.5**	**3.1**	**3.9**	**4.8**	**4.4**		**4.6**	**4.4**	**2.4**	**2.5**	**2.6**	**3.8**	
PPG debt service-to-revenue ratio (in percent)	**0.4**	**0.5**	**0.5**			**7.4**	**6.9**	**6.4**	**7.7**	**9.3**	**8.5**		**8.7**	**8.2**	**4.5**	**4.4**	**4.6**	**6.3**	
Total gross financing need (Billions of U.S. dollars)	-1.9	-1.9	-1.9			1.1	0.6	0.2	0.4	1.2	0.8		0.6	0.5	0.4	0.7	0.1	0.3	
Non-interest current account deficit that stabilizes debt ratio	0.0	-2.1	0.9			-4.7	11.1	3.8	-1.0	2.3	0.0		0.5	1.0	-3.2	-2.4	-3.4	-7.8	
Key macroeconomic assumptions																			
Real GDP growth (in percent)	3.8	3.3	6.8	5.2	3.0	1.0	6.5	7.0	3.4	-1.6	0.3	2.8	2.5	1.8	2.8	3.7	2.4	0.0	3.2
GDP deflator in US dollar terms (change in percent)	-8.7	-4.6	-5.9	7.3	17.7	-31.3	9.6	15.6	-0.2	-2.0	-3.6	-2.0	-2.5	-1.1	-1.0	-1.0	-1.0	0.0	-0.2
Effective interest rate (percent) 5/	0.8	0.9	0.7	2.3	1.5	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.5	0.5	0.8	0.5
Growth of exports of G&S (US dollar terms, in percent)	-8.6	-4.8	-2.7	13.9	25.3	-35.5	35.2	23.2	1.8	-7.4	-6.8	1.7	-4.6	-1.9	-0.9	-0.3	-0.6	0.0	0.5
Growth of imports of G&S (US dollar terms, in percent)	-7.4	8.0	2.5	15.7	19.4	-28.1	16.2	3.7	4.9	3.9	-8.4	-1.3	-4.3	-0.1	-5.8	2.1	-0.2	0.0	0.6
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2	28.1	37.5
Government revenues (excluding grants, in percent of GDP)	42.5	46.5	42.3			39.6	40.2	38.1	38.6	38.4	37.6		36.7	36.0	35.6	35.2	34.6	30.1	33.2
Aid flows (in Billions of US dollars) 7/	0.0	0.1	0.1			0.7	0.6	0.5	0.3	0.4	0.4		0.4	0.4	0.4	0.4	0.4	0.0	
of which: Grants	0.0	0.1	0.1			0.1	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
of which: Concessional loans	0.0	0.0	0.0			0.6	0.5	0.5	0.3	0.3	0.3		0.4	0.4	0.4	0.4	0.4	0.0	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			3.8	2.7	2.0	1.2	1.5	1.6		1.7	1.7	1.7	1.6	1.6	0.9	1.2
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			52.0	52.4	52.4	56.2	55.1	55.0		54.3	54.3	54.4	54.4	54.4	35.1	44.5
Memorandum items:																			
Nominal GDP (Billions of US dollars)	13.7	13.5	13.6			9.4	11.0	13.6	14.0	13.5	13.1		13.0	13.1	13.4	13.7	13.9	20.4	
Nominal dollar GDP growth	-5.2	-1.5	0.6			-30.6	16.7	23.7	3.2	-3.6	-3.4	1.0	-0.1	0.7	1.7	2.7	1.4	0.0	3.0
PV of PPG external debt (in Billions of US dollars)			3.6			3.6	3.8	3.8	3.7	3.6	3.5		3.4	3.3	3.4	3.5	3.6	5.4	
(PVt-PVt-1)/GDPt-1 (in percent)						0.6	1.2	0.8	-0.9	-1.1	-0.7	0.0	-0.7	-0.5	0.8	0.8	0.8	0.8	0.8
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	0.0	0.0	0.0	0.0	
PV of PPG external debt (in percent of GDP + remittances)	...	...	28.3			38.6	34.0	28.1	26.4	26.2	26.5		25.8	25.1	25.5	25.6	26.0	26.4	
PV of PPG external debt (in percent of exports + remittances)	...	...	38.6			56.7	43.1	35.8	34.1	35.2	36.8		37.6	37.6	39.1	40.5	42.0	53.3	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	0.3			4.3	3.5	3.1	3.9	4.8	4.4		4.6	4.4	2.4	2.5	2.6	3.8	

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 5. Republic of Congo: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, Baseline Scenario – Gross Debt, 2015–35

(In percent)

	Projections							
	2015	2016	2017	2018	2019	2020	**2025**	2035
PV of debt-to GDP ratio								
Baseline	39	34	28	26	26	26	**26**	26
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2015-2035 1/	39	21	7	-8	-25	-39	**-79**	-93
A2. New public sector loans on less favorable terms in 2015-2035 2/	39	35	30	29	29	30	**33**	38
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2016-2017	39	36	31	29	29	29	**29**	29
B2. Export value growth at historical average minus one standard deviation in 2016-2017 3/	39	51	67	66	69	73	**67**	35
B3. US dollar GDP deflator at historical average minus one standard deviation in 2016-2017	39	42	45	42	42	42	**41**	42
B4. Net non-debt creating flows at historical average minus one standard deviation in 2016-2017 4/	39	24	8	6	4	2	**5**	22
B5. Combination of B1-B4 using one-half standard deviation shocks	39	42	52	50	51	52	**50**	40
B6. One-time 30 percent nominal depreciation relative to the baseline in 2016 5/	39	47	39	37	36	37	**36**	37
PV of debt-to-exports ratio								
Baseline	57	43	36	34	35	37	**42**	53
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2015-2035 1/	57	27	9	-10	-34	-54	**-128**	-188
A2. New public sector loans on less favorable terms in 2015-2035 2/	57	45	38	37	39	42	**53**	76
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2016-2017	57	43	36	34	35	37	**42**	54
B2. Export value growth at historical average minus one standard deviation in 2016-2017 3/	57	98	181	181	197	215	**228**	152
B3. US dollar GDP deflator at historical average minus one standard deviation in 2016-2017	57	43	36	34	35	37	**42**	54
B4. Net non-debt creating flows at historical average minus one standard deviation in 2016-2017 4/	57	31	10	7	5	3	**8**	44
B5. Combination of B1-B4 using one-half standard deviation shocks	57	62	77	75	79	85	**94**	94
B6. One-time 30 percent nominal depreciation relative to the baseline in 2016 5/	57	43	36	34	35	37	**42**	54
PV of debt-to-revenue ratio								
Baseline	98	85	74	68	68	70	**75**	88
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2015-2035 1/	98	52	18	-21	-66	-104	**-229**	-309
A2. New public sector loans on less favorable terms in 2015-2035 2/	98	88	78	74	76	80	**95**	125
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2016-2017	98	89	81	75	75	78	**83**	97
B2. Export value growth at historical average minus one standard deviation in 2016-2017 3/	98	126	176	171	180	194	**192**	117
B3. US dollar GDP deflator at historical average minus one standard deviation in 2016-2017	98	104	117	109	109	112	**120**	140
B4. Net non-debt creating flows at historical average minus one standard deviation in 2016-2017 4/	98	61	20	14	9	5	**14**	73
B5. Combination of B1-B4 using one-half standard deviation shocks	98	104	136	129	132	139	**144**	133
B6. One-time 30 percent nominal depreciation relative to the baseline in 2016 5/	98	117	102	95	95	98	**104**	122

Table 5. Republic of Congo: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, Baseline Scenario – Gross Debt, 2015–35 *(continued)*

(Percent)

Debt service-to-exports ratio								
Baseline	4	4	3	4	5	4	**3**	4
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2015-2035 1/	4	4	3	4	4	3	**-4**	-11
A2. New public sector loans on less favorable terms in 2015-2035 2/	4	4	3	4	5	5	**3**	6
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2016-2017	4	4	3	4	5	4	**3**	4
B2. Export value growth at historical average minus one standard deviation in 2016-2017 3/	4	5	7	9	12	11	**20**	21
B3. US dollar GDP deflator at historical average minus one standard deviation in 2016-2017	4	4	3	4	5	4	**3**	4
B4. Net non-debt creating flows at historical average minus one standard deviation in 2016-2017 4/	4	4	3	4	4	4	**-1**	1
B5. Combination of B1-B4 using one-half standard deviation shocks	4	5	5	7	8	7	**7**	9
B6. One-time 30 percent nominal depreciation relative to the baseline in 2016 5/	4	4	3	4	5	4	**3**	4
Debt service-to-revenue ratio								
Baseline	7	7	6	8	9	8	**5**	6
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2015-2035 1/	7	7	7	7	7	5	**-7**	-18
A2. New public sector loans on less favorable terms in 2015-2035 2/	7	7	7	8	10	9	**6**	9
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2016-2017	7	7	7	8	10	9	**5**	7
B2. Export value growth at historical average minus one standard deviation in 2016-2017 3/	7	7	7	9	11	10	**17**	16
B3. US dollar GDP deflator at historical average minus one standard deviation in 2016-2017	7	8	10	12	15	13	**7**	10
B4. Net non-debt creating flows at historical average minus one standard deviation in 2016-2017 4/	7	7	6	7	9	8	**-2**	1
B5. Combination of B1-B4 using one-half standard deviation shocks	7	8	9	11	13	12	**11**	12
B6. One-time 30 percent nominal depreciation relative to the baseline in 2016 5/	7	10	9	11	13	12	**6**	9
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	40	40	40	40	40	40	**40**	40

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 6. Republic of Congo: Public Sector Debt Sustainability Framework, Baseline Scenario – Gross Debt, 2012–35

(Percent of GDP, unless otherwise indicated)

	Actual					Estimate	Projections								
	2012	2013	2014	Average 5/	Standard Deviation 5/	2015	2016	2017	2018	2019	2020	2015-20 Average	2025	2035	2021-35 Average
Public sector debt 1/	34.1	38.2	47.1			64.5	56.2	46.1	43.6	43.9	44.7		44.3	34.1	
of which: foreign-currency denominated	25.7	32.0	36.4			51.5	46.1	38.7	36.7	37.2	38.1		39.2	34.1	
Change in public sector debt	1.1	4.0	8.9			17.4	-8.2	-10.1	-2.6	0.3	0.8		0.5	0.6	
Identified debt-creating flows	-6.0	4.8	12.1			24.4	-7.4	-13.4	-5.8	0.2	0.9		-1.4	-1.7	
Primary deficit	-6.6	1.5	7.5	-11.6	10.6	9.7	1.7	-3.0	-4.7	-1.7	-1.0	0.2	-1.0	-1.9	-1.6
Revenue and grants	42.6	46.9	42.8			40.2	40.6	38.5	39.0	38.7	37.9		35.0	30.3	
of which: grants	0.1	0.4	0.5			0.5	0.4	0.3	0.3	0.4	0.4		0.3	0.2	
Primary (noninterest) expenditure	36.0	48.4	50.3			49.9	42.3	35.5	34.2	37.0	36.9		34.0	28.4	
Automatic debt dynamics	-0.5	0.8	3.6			14.7	-9.1	-10.4	-1.1	1.9	1.9		-0.4	0.3	
Contribution from interest rate/growth differential	-1.3	-0.5	-2.3			1.8	-5.4	-5.4	-2.0	0.5	-0.2		-1.5	0.3	
of which: contribution from average real interest rate	-0.1	0.6	0.1			2.3	-1.4	-1.8	-0.4	-0.2	-0.1		-0.5	0.3	
of which: contribution from real GDP growth	-1.2	-1.1	-2.4			-0.5	-3.9	-3.7	-1.5	0.7	-0.1		-1.0	0.0	
Contribution from real exchange rate depreciation	0.8	1.3	5.9			12.9	-3.7	-5.0	0.9	1.4	2.1		...	...	
Other identified debt-creating flows	1.1	2.5	1.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Privatization receipts (negative)	1.1	2.5	1.0			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)	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	7.1	-0.8	-3.2			-7.1	-0.8	3.3	3.3	0.1	-0.1		1.9	2.2	
Other Sustainability Indicators															
PV of public sector debt	...	...	39.0			51.7	44.2	35.5	33.3	33.0	33.1		31.1	26.4	
of which: foreign-currency denominated	...	...	28.3			38.6	34.0	28.1	26.4	26.2	26.5		26.0	26.4	
of which: external	...	...	28.3			38.6	34.0	28.1	26.4	26.2	26.5		26.0	26.4	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	-5.5	4.5	8.5			19.7	11.7	5.3	3.6	7.5	8.1		5.7	0.0	
PV of public sector debt-to-revenue and grants ratio (in percent)	...	...	91.2			128.6	108.8	92.4	85.4	85.2	87.1		88.9	87.1	
PV of public sector debt-to-revenue ratio (in percent)	...	...	92.2			130.4	109.9	93.2	86.2	86.0	88.0		89.8	87.8	
of which: external 3/	...	...	66.9			97.5	84.7	73.7	68.4	68.4	70.4		75.1	87.8	
Debt service-to-revenue and grants ratio (in percent) 4/	2.6	6.4	2.2			9.0	9.5	8.6	8.8	10.4	9.6		4.6	6.2	
Debt service-to-revenue ratio (in percent) 4/	2.6	6.4	2.2			9.1	9.6	8.7	8.9	10.5	9.7		4.6	6.3	
Primary deficit that stabilizes the debt-to-GDP ratio	-7.7	-2.5	-1.4			-7.7	9.9	7.1	-2.2	-2.0	-1.8		-1.5	-2.5	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	3.8	3.3	6.8	5.2	3.0	1.0	6.5	7.0	3.4	-1.6	0.3	2.8	2.4	0.0	3.2
Average nominal interest rate on forex debt (in percent)	0.8	0.9	0.7	2.3	1.5	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.5	0.8	0.5
Average real interest rate on domestic debt (in percent)	...	8.8	...	-2.3	11.7	...	...	...	...	...	...	...	...	...	...
Real exchange rate depreciation (in percent, + indicates depreciation)	3.5	5.2	20.0	-1.4	13.3	36.0	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	-1.2	-7.7	-6.0	6.2	15.3	-18.2	9.0	14.2	-1.4	-3.1	-5.1	-0.7	-1.0	0.0	-0.2
Growth of real primary spending (deflated by GDP deflator, in percent)	44.2	39.0	11.0	9.5	17.3	0.2	-9.8	-10.2	-0.2	6.5	0.0	-2.3	-3.8	-0.1	1.4
Grant element of new external borrowing (in percent)	...	...	...	...	...	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2	28.1	...

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 7. Republic of Congo: Sensitivity Analysis for Key Indicators of Public Debt – Gross Debt, Baseline Scenario 2015–35

	Projections							
	2015	2016	2017	2018	2019	2020	2025	2035
PV of Debt-to-GDP Ratio								
Baseline	52	44	36	33	33	33	31	26
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	52	37	25	18	9	1	-35	-79
A2. Primary balance is unchanged from 2015	52	49	47	54	62	71	107	154
A3. Permanently lower GDP growth 1/	52	45	36	35	35	37	42	58
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2016-2017	52	47	42	42	44	47	56	64
B2. Primary balance is at historical average minus one standard deviations in 2016-2017	52	43	35	33	33	33	31	26
B3. Combination of B1-B2 using one half standard deviation shocks	52	41	32	31	31	32	37	43
B4. One-time 30 percent real depreciation in 2016	52	58	46	43	42	42	38	32
B5. 10 percent of GDP increase in other debt-creating flows in 2016	52	50	41	38	38	39	37	31
PV of Debt-to-Revenue Ratio 2/								
Baseline	129	109	92	85	85	87	89	87
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	129	91	64	46	24	2	-100	-261
A2. Primary balance is unchanged from 2015	129	121	123	138	160	186	305	508
A3. Permanently lower GDP growth 1/	129	110	95	89	91	96	120	190
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2016-2017	129	116	109	107	113	123	159	210
B2. Primary balance is at historical average minus one standard deviations in 2016-2017	129	105	92	85	85	86	88	87
B3. Combination of B1-B2 using one half standard deviation shocks	129	100	82	78	81	85	107	143
B4. One-time 30 percent real depreciation in 2016	129	142	119	110	109	111	109	104
B5. 10 percent of GDP increase in other debt-creating flows in 2016	129	124	106	98	99	103	106	102
Debt Service-to-Revenue Ratio 2/								
Baseline	9	9	9	9	10	10	5	6
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	9	10	9	8	9	8	-3	-17
A2. Primary balance is unchanged from 2015	9	9	9	9	11	11	15	36
A3. Permanently lower GDP growth 1/	9	10	9	9	11	10	6	12
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2016-2017	9	10	9	10	12	11	8	15
B2. Primary balance is at historical average minus one standard deviations in 2016-2017	9	9	9	9	10	10	5	6
B3. Combination of B1-B2 using one half standard deviation shocks	9	10	9	9	11	10	4	9
B4. One-time 30 percent real depreciation in 2016	9	11	11	12	14	13	7	11
B5. 10 percent of GDP increase in other debt-creating flows in 2016	9	9	9	9	11	10	6	8

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.