# SUDAN

## STAFF REPORT FOR THE 2013 ARTICLE IV CONSULTATION—DEBT SUSTAINABILITYANALYSIS

September 5, 2013

Approved By
**Adnan Mazarei and Ranil Salgado (IMF) and Jeffrey D. Lewis and Marcelo Giugale (IDA)**

Prepared by the Staffs of the International Monetary Fund (IMF) and the International Development Association (IDA)

*As in the last debt sustainability analysis (DSA) in 2012 (IMF Country Report No. 12/298), Sudan continues to be assessed in debt distress.[1] Given the current size and evolution of the debt stock (that is mostly in arrears), both baselines external and public DSA suggest that Sudan's public sector debt remains unsustainable. All debt ratios exceed their indicative policy-dependent thresholds at end-2012. This continues even through the long term, except for the debt service-to-revenue ratio. Compared to the 2012 DSA, some external and domestic debt ratios improve modestly, because of an assumed slowdown of new external borrowing in the face of growing challenges to the economy from a continued deterioration of macroeconomic fundamentals after the secession of South Sudan in July 2011 and incessant accumulation of external arrears. Against this background, it remains critical for Sudan to follow sound policies consistent with a prudent borrowing strategy, also with a view to garner support for debt relief.*

[1] As Sudan is an IDA-only country, this DSA update was prepared jointly by IMF and World Bank staff under the joint Fund-Bank Low-Income Country (LIC) Debt Sustainability Framework (DSF). It was also discussed with the authorities. Sudan's fiscal year runs from January 1 to December 31.

# BACKGROUND AND RECENT DEVELOPMENTS

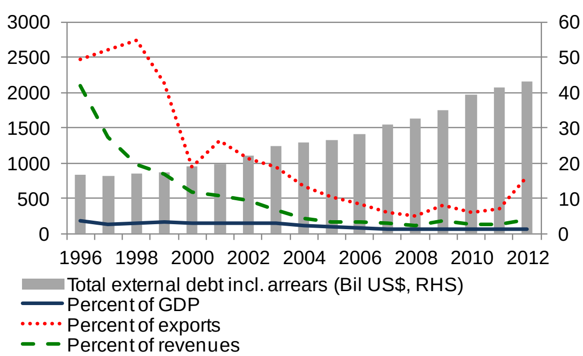
1. **Sudan continues to struggle with the enormous macroeconomic challenges arising from the secession of South Sudan in mid-2011.** The secession of South Sudan has inflicted a large permanent fiscal and external shock on Sudan, involving the loss of some ¾ of its oil output, 60 percent of fiscal revenues, and about two thirds of the country's current account payment capacity. This has not only presented the authorities with the exacerbation of an already difficult economic situation, but also weighs on the longer macroeconomic outlook and debt servicing capacity. Against the backdrop of a sizable external debt overhang and continued uncertainties as to the implementation of an oil wealth sharing agreement between Sudan and South Sudan, the authorities have yet to implement a comprehensive package of ambitious policy responses that succeeds in tackling the sizable imbalances.

# STRUCTURE OF DEBT

## A. External Debt

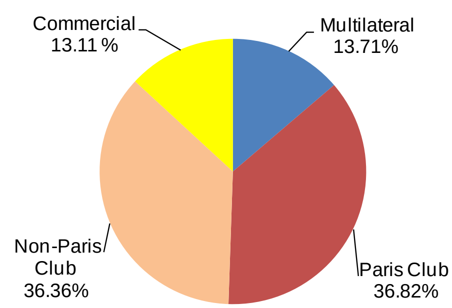
2. **At end-2012, Sudan's stock of external debt remained very high.** In nominal terms, it amounted to about US$43.2 billion (72 percent of GDP), of which 85 percent was in arrears (Figure 1 and Table 4). The structure of external debt has not changed over the last decade. Only a small fraction is private, owed to suppliers (US$1.6 billion). The bulk is public and publicly guaranteed (PPG) debt (US$41.6 billion, of which 88 percent in arrears), mainly owed to bilateral creditors (Figure 2). In present value (PV) terms, the latter corresponds to almost US$95 billion, or 158 percent of GDP, 1790 percent of exports and 1633 percent of revenues (Table 4).[2]

### Figure 1. Stock of External Debt, 1996–12




Sources: Sudanese authorities, World Bank, and IMF staff estimates.

### Figure 2. Structure of 2012 PPG external debt




Sources: Sudanese authorities, World Bank, and IMF staff estimates.

[2] This mainly reflects an increase in the stock external debt and a denominator effect, mainly on account of a sharp currency devaluation (66 percent in June 2012 alone) and secession-induced drop in GDP, exports and government revenues.

3. **The external debt stock and arrears have continued to grow, albeit at a slower pace.** This is the result of a debt strategy that focuses on: (i) adhering to the ceiling on new non-concessional external public borrowing established in previous SMPs (US$700 million) and (ii) continuing to partially repay outstanding public debt. In fact, in recent years, Sudan has limited new external public borrowing, especially on non-concessional terms (Table 1). Mainly provided by either multilateral or non-Paris Club bilateral creditors, newly contracted debt was mainly directed to projects in the agriculture, services and energy sector. Meanwhile, debt disbursements and actual debt service continued at lower levels (Table 2). The latter remained partial, even to creditors providing new financing. The private sector has neither tapped, nor repaid, any international debt in decades.

**Table 1. New Contracted Debt (2009–12)**

| | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|
| | (in million US$) | | | |
| **Total new debt** | **1,655** | **419** | **857** | **431** |
| Concessional | 204 | 150 | 193 | 134 |
| Non-Concesisonal | 1,451 | 269 | 664 | 296 |
| | (in percent) | | | |
| **Creditors** | **100** | **100** | **100** | **100** |
| Multilateral | 3 | - | 82 | 79 |
| Non-Paris Club bilateral | 97 | 100 | 18 | 21 |
| Other | - | - | - | - |

Source: Sudanese authorities and IMF staff calculations.

**Table 2. Debt Flows (in million US$, 2010–12)**

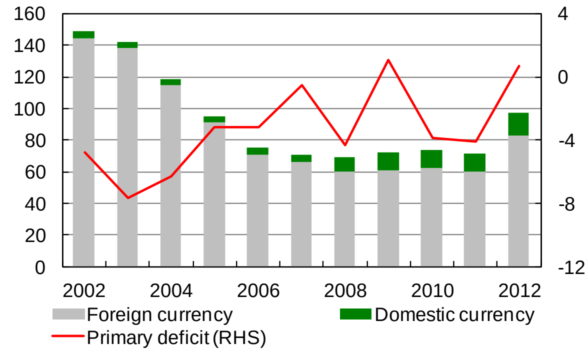
| | 2010 | 2011 | 2012 |
|---|---|---|---|
| **Debt disbursements** | **569** | **606** | **376** |
| Multilateral | 161 | 222 | 185 |
| Non-Paris Club bilateral | 408 | 383 | 192 |
| Other | - | - | - |
| **Total actual debt service** | **395** | **288** | **268** |
| Multilateral | 115 | 114 | 153 |
| Non-Paris Club bilateral | 279 | 174 | 115 |
| Other | - | - | - |
| **Scheduled debt service on disbursed outstanding debt** | **637** | **436** | **389** |
| Multilateral | 167 | 18 | 21 |
| Non-Paris Club bilateral | 450 | 400 | 350 |
| Other | 19 | 19 | 18 |
| **Penalties and late interest on arrears** | **1,564** | **1,564** | **1,546** |
| Multilateral | 28 | 28 | 29 |
| Non-Paris Club bilateral | 478 | 478 | 473 |
| Other | 1,057 | 1,057 | 1,044 |

Sources: Sudanese authorities and IMF staff calculations.

## B. Total Public Debt and Its Domestic Component

4. **In recent years, total public debt continued to be on the rise (Figure 3), reaching a stock of SDG215 billion at end-2012.** This corresponds to 97 and 170 percent of GDP in nominal and PV terms, respectively (Table 6). The main driver was the rise in foreign currency denominated debt. Yet, on account of primary deficits continuously financed by domestic resources, the domestic component has also recently been on the rise, albeit to a still relatively small level (14.2 percent of GDP).

**Figure 3. Stock of Public Debt, 2002–12 (in percent of GDP)**




Source: Sudanese authorities, World Bank, and IMF staff estimates.

# DEBT SUSTAINABILITY ANALYSIS

## C. Underlying Assumptions

**5. This DSA update generally builds on the same assumptions as the 2012 DSA (Box 1).**[3] Changes arise from newly available information emanating from the actual 2012 outcome (especially the stronger persistence of the deterioration of post-secession fundamentals and difficulties tapping external financing) and other developments relevant for the medium-term outlook. The most notable change is the implementation of a 3½-year oil-revenue sharing agreement between Sudan and South Sudan. This is expected to lead to the resumption of oil exports through Sudan and associated payments, beginning in mid-2013. As in the 2012 DSA, this DSA update also refrains from presenting alternative scenarios based on speculations about the timing and magnitude of arrears clearance, possible external debt relief or debt apportionment between Sudan and South Sudan.[4,5]

[3] Debt data have provided by the Sudanese authorities, complemented by information obtained during the 2011 external debt reconciliation exercise as well as Fund and World Bank staffs' estimates.

[4] Sudan is potentially eligible for debt relief under different initiatives including the Heavily Indebted Poor Countries Initiative (HIPC) Initiative, since it is included in the list of ring-fenced countries. Sudan has made good progress toward finalizing the technical work required to advance towards the decision point of the HIPC Initiative. The government has taken three important steps: (i) it has reconciled over 90 percent of the end-2010 external debt stock in collaboration with creditors; (ii) Parliament approved an ambitious interim-PRSP in June 2012; and (iii) Sudan has implemented 13 Staff-Monitored Programs (SMPs) with the Fund since 1997, establishing a sound track record of cooperation on economic policies and payments. Besides, Sudan has continuously indicated its desire to continue demonstrate a strong commitment to cooperation with the Fund on policies and the payment of arrears, preferably also formally in the framework of a new SMP.

[5] Prior to the secession, Sudan and South Sudan agreed on the so-called zero option plan, under which Sudan would retain the entire external debt, provided that (i) South Sudan joined Sudan in outreach efforts for debt relief for Sudan, and (ii) the international community gave firm commitments to the delivery of debt relief within two years. Absent such a commitment, Sudan's external debt would be apportioned based on a formula to be determined. As part of the discussions that led to the resumption of oil shipments and associated oil-related-payments, the beginning of the two-year period was reset, implying a deadline in the

(continued)

## D. Results

**6. This DSA Update broadly confirms the 2012 DSA outcome.**[6] Also, alternative scenario and standard bound tests again fully back up the robustness of the external and public debt baseline scenarios.[7] Some ratios experience some level shift effects, mainly due to an interaction between updated paths of the denominators and an assumed slowdown of new external borrowing in the face of growing challenges to the economy from continued adverse macroeconomic developments and further accumulation of external arrears. In addition, especially PV terms reflect the larger-than-expected currency depreciation in 2012.

*i)* *External sector DSA baseline scenario.* Most debt ratios continue to breach their indicative thresholds for poor performers through the long term, Tables 3 and 4).[8] Most debt ratios show a declining trend, but persist at very high levels (rather because of the growing stock of unaddressed arrears than because of the accumulation of new debt). Debt-to-export ratios show little tendency toward improvement, because of a dwindling export base built on natural resources (especially oil and gold), underlining the need for economic diversification.

### Table 3. Summary of Debt Burden Thresholds for External Public Debt 1/

| | *Indicative threshold* | 2013 | 2023 | 2033 |
|---|---|---|---|---|
| PV of debt-to GDP | *30* | 166 | 125 | 86 |
| PV of debt-to-exports | *100* | 1500 | 1364 | 1572 |
| PV of debt-to-revenues | *200* | 1649 | 1152 | 880 |
| Debt service-to-exports | *15* | 36 | 28 | 34 |
| Debt service-to-revenues | *18* | 39 | 24 | 19 |

Source: IMF staff calculations and estimates.
1/ Threshold over which countries considered as weak policy performers (i.e. countries with a CPIA of less than 3.25) would have at least a 25 percent chance of having a prolonged debt distress episode in the coming year.

*ii)* *External sector DSA robustness checks.* The *alternative scenario* is a financing scenario involving a 2 percentage point higher interest rate (Table 5, Scenario A1). The outcome does not deviate much from the baseline, suggesting that Sudan's external

second half of 2014 or early 2015. However, agreement on any debt apportionment may prove to be very difficult since it would likely require extensive negotiations to reach a consensus view from Sudan's entire pool of creditors.

[6] This worsening of the debt ratios relative to those in pre-2012 DSAs mainly owes to the secession-induced deterioration in fundamentals and to the more complete external debt portfolio compiled at the 2011 reconciliation exercise.

[7] With secession-induced structural breaks in the time series undermining the validity of the historical scenario, this DSA update follows the 2012 DSA in omitting the historical scenario (in which the main variables that determine debt dynamics are assumed to remain at their 10-year historical averages).

[8] According to the World Bank Country Policy and Institutions Assessment (CPIA), Sudan is a weak performer, i.e. a country with poor quality of policies and institutions. Its average CPIA rating for 2010–12 is 2.37 on a scale from 1 to 6 and below the operational cutoff of 3.25 for medium performers.

debt is relatively resilient to new public loan terms. This is not surprising since Sudan's debt dynamics are driven less by new debt accumulation than by the stock of outstanding debt and arrears. The *bound tests* (Table 5, Scenarios B1 to B6) assess Sudan's vulnerability to a range of unexpected external shocks. They show that the PV of debt-to-GDP, debt-to-revenue and debt service-to-revenue ratios are most vulnerable to a one-time depreciation shock, whereas the PV of debt-to-exports and debt service-to-exports ratio are most vulnerable to an exports shock.

iii) *Public sector DSA baseline scenario.* Public debt stock and service indicators mirror their external counterparts (Figure 5 and Table 6). They depict a declining trend, but converge to relatively high levels in the long term.

iv) *Public sector DSA robustness checks.* The *alternative scenarios* are a no-reform scenario (involving a primary balanced persisting at the 2013 level) and a permanent growth shock (Table 7, Scenarios A1–A2). Both scenarios underline how crucially public debt sustainability depends on improving fiscal soundness and above all growth, particularly in the non-oil economy. The *bound tests* (Table 7, Scenarios B1–B5) show the vulnerability of public debt ratios to especially a one-time 30 percent real depreciation in the coming year (B4).

# CONCLUSIONS

**7. As in the previous 2012 DSA, Sudan continues to be assessed in debt distress.** Overall public sector debt dynamics remain unsustainable. Throughout the long term, all external debt burden ratios remain well above their respective indicative thresholds (except for the debt service-to-revenue ratio in the middle of the projection horizon, and the present value of the debt-GDP ratio which dips slightly below at the extreme end of the period).

**8. To reduce external debt to a sustainable level and regain access to external financing, Sudan needs to:**

i) *re-engage with key creditors and donors.* This is a necessary step towards a comprehensive arrears clearance and debt relief strategy, especially since even after traditional debt relief according to Paris Club Naples Terms[9] and HIPC Initiative assistance, Sudan will likely be left with a sizeable stock of external debt. This will either need to be serviced or addressed through further assistance (such as Paris Club beyond-HIPC bilateral,[10] Multilateral Debt Relief Initiative (MDRI) on remaining eligible debt of IDA and the African Development

[9] Paris Club members provide a reduction of pre-cutoff date bilateral non-official development assistance and commercial debt up to 67 percent in present value terms. Other non-multilateral creditors generally join with comparable actions.

[10] Paris Club members can provide debt relief on a voluntary basis.

Fund (AfDF)[11] or MDRI-like[12] debt relief). The qualification for debt relief will be announced at the appropriate time.

ii) *continue to cooperate with the IMF on economic policies and payments.* A track record of sound macro policies, especially under a new SMP, and regular payments in line with Sudan's repayment capacity is critical to secure access to possible debt relief under the Enhanced HIPC Initiative and MDRI.

iii) *pursue prudent public debt management.* The debt management strategy should continue to limit borrowing on non-concessional terms as much as possible (since it further increases the future debt burden, undermining debt sustainability even after possible debt relief) and secure foreign support on highly concessional terms to finance necessary development and infrastructure expenditures.

iv) *effectively address debt and macroeconomic vulnerabilities*. To this aim, Sudan needs to focus on strengthening its external and fiscal stance and on providing a more stable political and business environment.

[11] MDRI is provided by the IDA, AfDF, and IMF at the HIPC Initiative's completion point. Eligible for MDRI assistance are debt obligations contracted before end-December 2003 for IDA and end-December 2004 for the IMF and AfDB that are still outstanding at the HIPC Initiative's completion point date. All of Sudan's current debt to IDA and the AFDF qualifies for MDRI since it has been contracted prior to the cut-off date.

[12] None of Sudan's debt to the Fund would be eligible for MDRI debt relief. However, following the approach developed for Liberia's debt relief, "MDRI-like" debt relief could be provided if the necessary financing is secured at the appropriate time."

## Box 1. Macroeconomic Assumptions 2013–33

**Natural resources.** After the secession-induced loss of ¾ of oil production oil now accounts for only 4 to 7 percent of GDP, 25 to 35 percent of government revenue, and 35 to 40 percent of exports. At the same time, there has been an increase in gold production, with gold exports having tripled since 2009. The price outlook for major commodity exports is guided by the IMF's latest World Economic Outlook (WEO) figures for the medium term and the World Bank's Commodity Market Review for the longer term. Overall, prices are expected to remain stable and average around US$83 per barrel for Sudanese crude over the medium term before settling to around US$79 per barrel in the longer term.

**Oil deal.** In recent months, Sudan and South Sudan have implemented an oil-revenue-sharing agreement, which is expected to lead to the resumption of oil exports and associated payments from South Sudan to Sudan around mid-2013. The agreement includes a 3½-year Transitional Financial Arrangement (TSA), involving payments of $15/bl by South Sudan, until a ceiling of approximately $3 billion is reached. It also involves a payment of about $10/bl for the use of Sudanese pipelines and related infrastructure. This transit fee is assumed to continue indefinitely.

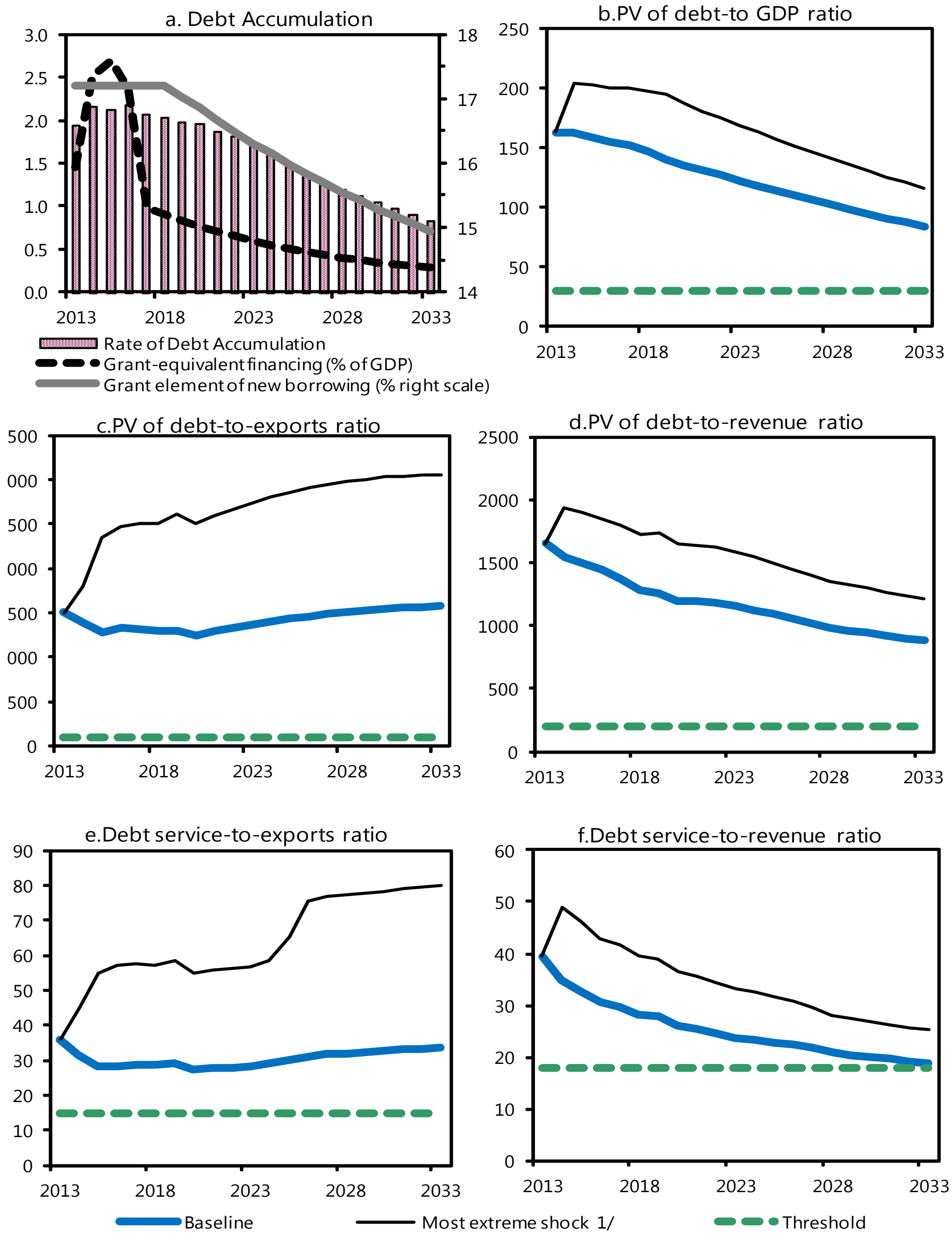
**Real sector.** The real GDP growth rate is expected to gradually increase to 4.4 percent until 2017 and then to average 4.8 percent over 2018–32. Given the smaller post-secession oil sector, real GDP growth will mainly reflect non-oil GDP growth in the presence of renewed macroeconomic stabilization, new attempts at structural reform and finance-constrained low infrastructure investments. Inflation, as measured by the GDP deflator, is a projected to grow in line with CPI inflation over the long term, implying stable terms of trade. After averaging 20.3 percent over the medium term, inflation will gradually come down to 6 percent by 2033.

**Fiscal sector and domestic debt.** The projected fiscal deficit averages 1.3 percent of GDP during the period 2013–18, reflecting a combination of factors, including: (i) some improvements in tax revenue collection; (ii) a progressive increase in oil revenues; (iii) the continuation of current public wage and employment policies; (ii) a gradual phasing out of fuel subsidies; (iv) slight decrease of current spending shares on transfers to states; and (v) rising capital expenditure outlays. During 2018–32, the fiscal deficit is expected to average some 2.6 percent of GDP, reflecting (i) a gradual increase in tax revenues, against the backdrop of decreasing oil revenues, (ii) the continuation of current expenditure policies, and (iii) increasing interest payments. Owing to continued limited access to international financing, the projected budget deficit wills will be financed mostly domestically, assuming no further accumulation of arrears.

**External sector and financing.** The balance of payments is expected to benefit from export growth until 2020 and then to gradually contract, mainly due to waning production of traditional natural resource exports (notably petroleum and gold) limited development of other exports, and continued limitations on foreign direct investment, aid inflows and access to international financing. Stronger export growth in the medium term contributes to a decline in the current account deficit (incl. official transfers), and a contraction in imports.

**External debt.** Reflecting continued limited access to international finance and a deteriorating debt service capacity, disbursements of new loans are projected at about 0.5 percent of GDP during 2013–33. In line with the recent portfolio of new contracted debt, the share of new concessional loans is kept at around one third. Starting in 2012, Sudan is assumed to remain current on debt service falling due on disbursed outstanding debt (including new borrowing), but continue to fail to service obligations arising from the stock of arrears (i.e., late interest and penalties as well as arrears themselves).

**Figure 4. Sudan: Indicators of Public and Publicly Guaranteed External Debt Under Alternative Scenarios, 2013–33 1/, 2/**




Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2023. In figure b. it corresponds to a One-time depreciation shock; in c. to a Exports shock; in d. to a One-time depreciation shock; in e. to a Exports shock and in figure f. to a One-time depreciation shock

2/ The secession-induced structural breaks in the time series undermine the historical scenario, which is therefore omitted from the figures.

## Table 4. Sudan: External Debt Sustainability Framework, Baseline Scenario, 2010–33 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/** | **64.6** | **62.2** | **84.9** | | | **90.7** | **92.2** | **92.1** | **91.7** | **92.0** | **90.8** | | **82.7** | **65.8** | |
| *of which: public and publicly guaranteed (PPG)* | 62.2 | 59.8 | 82.2 | | | 87.6 | 89.3 | 89.2 | 88.8 | 89.1 | 87.9 | | 80.1 | 63.6 | |
| Change in external debt | 1.0 | -2.4 | 22.7 | | | 5.8 | 1.5 | -0.1 | -0.4 | 0.3 | -1.2 | | -1.4 | -1.8 | |
| Identified net debt-creating flows | -14.3 | -4.6 | 13.3 | | | 3.0 | 0.4 | -0.4 | 0.9 | 1.7 | 1.4 | | 1.4 | -1.2 | |
| **Non-interest current account deficit** | **-0.6** | **-2.1** | **8.0** | **2.0** | **3.8** | **8.7** | **4.0** | **3.2** | **3.7** | **5.0** | **5.4** | | **5.1** | **1.5** | 3.9 |
| Deficit in balance of goods and services | -2.5 | -2.0 | 8.2 | | | 9.4 | 5.7 | 5.0 | 5.4 | 5.5 | 6.1 | | 6.1 | 2.5 | |
| Exports | 19.7 | 17.7 | 9.2 | | | 10.9 | 11.8 | 12.5 | 11.7 | 11.6 | 11.4 | | 9.0 | 5.3 | |
| Imports | 17.2 | 15.6 | 17.5 | | | 20.3 | 17.5 | 17.5 | 17.1 | 17.1 | 17.5 | | 15.1 | 7.8 | |
| Net current transfers (negative = inflow) | -3.2 | -1.7 | -1.4 | -3.3 | 2.0 | -2.3 | -3.4 | -3.7 | -3.5 | -2.2 | -2.3 | | -2.5 | -2.0 | -2.4 |
| *of which: official* | -1.8 | -1.0 | -0.7 | | | -1.3 | -2.4 | -2.6 | -2.3 | -0.9 | -0.9 | | -1.2 | -0.8 | |
| Other current account flows (negative = net inflow) | 5.2 | 1.6 | 1.2 | | | 1.5 | 1.7 | 1.9 | 1.8 | 1.8 | 1.7 | | 1.5 | 1.0 | |
| **Net FDI (negative = inflow)** | **-4.4** | **-4.0** | **-4.1** | **-6.1** | **2.0** | **-5.5** | **-4.2** | **-3.6** | **-3.3** | **-3.4** | **-3.7** | | **-3.2** | **-1.6** | -2.7 |
| **Endogenous debt dynamics 2/** | **-9.3** | **1.6** | **9.4** | | | **-0.2** | **0.6** | **0.1** | **0.5** | **0.1** | **-0.4** | | **-0.6** | **-1.0** | |
| Contribution from nominal interest rate | 2.6 | 2.8 | 2.8 | | | 3.8 | 3.2 | 3.3 | 3.2 | 3.1 | 2.9 | | 2.3 | 1.5 | |
| Contribution from real GDP growth | -1.8 | 0.6 | 1.8 | | | -4.0 | -2.6 | -3.2 | -2.6 | -3.0 | -3.3 | | -2.9 | -2.5 | |
| Contribution from price and exchange rate changes | -10.1 | -1.9 | 4.8 | | | ... | ... | ... | ... | ... | ... | | ... | ... | |
| **Residual (3-4) 3/** | **15.2** | **2.2** | **9.4** | | | **2.8** | **1.1** | **0.3** | **-1.3** | **-1.4** | **-2.6** | | **-2.8** | **-0.5** | |
| *of which: exceptional financing* | -7.3 | -2.7 | -2.9 | | | -3.0 | -2.8 | -2.7 | -2.7 | -2.7 | -2.6 | | -2.1 | -1.3 | |
| PV of external debt 4/ | ... | ... | 159.6 | | | 166.3 | 165.6 | 161.9 | 157.7 | 155.0 | 150.1 | | 125.0 | 86.3 | |
| In percent of exports | ... | ... | 1726.1 | | | 1528.4 | 1407.6 | 1296.7 | 1350.2 | 1336.5 | 1319.4 | | 1393.2 | 1612.8 | |
| **PV of PPG external debt** | **...** | **...** | **156.9** | | | **163.2** | **162.6** | **159.0** | **154.8** | **152.1** | **147.2** | | **122.4** | **84.1** | |
| **In percent of exports** | **...** | **...** | **1697.4** | | | **1499.9** | **1382.6** | **1273.2** | **1325.3** | **1311.1** | **1293.8** | | **1364.0** | **1571.8** | |
| **In percent of government revenues** | **...** | **...** | **1646.4** | | | **1649.4** | **1541.3** | **1491.2** | **1436.8** | **1366.2** | **1286.5** | | **1151.6** | **879.8** | |
| **Debt service-to-exports ratio (in percent)** | **17.1** | **18.3** | **37.6** | | | **36.3** | **31.7** | **28.4** | **28.7** | **29.1** | **29.0** | | **28.8** | **35.2** | |
| **PPG debt service-to-exports ratio (in percent)** | **17.0** | **18.1** | **37.2** | | | **35.8** | **31.3** | **28.0** | **28.3** | **28.6** | **28.5** | | **28.1** | **33.7** | |
| **PPG debt service-to-revenue ratio (in percent)** | **18.0** | **18.0** | **36.0** | | | **39.4** | **34.8** | **32.8** | **30.7** | **29.8** | **28.3** | | **23.7** | **18.9** | |
| Total gross financing need (Billions of U.S. dollars) | -1.1 | -1.9 | 4.5 | | | 3.8 | 2.0 | 1.8 | 2.2 | 3.0 | 3.1 | | 3.5 | 2.1 | |
| Non-interest current account deficit that stabilizes debt ratio | -1.6 | 0.2 | -14.7 | | | 2.9 | 2.5 | 3.2 | 4.1 | 4.8 | 6.6 | | 6.5 | 3.2 | |
| **Key macroeconomic assumptions** | | | | | | | | | | | | | | | |
| Real GDP growth (in percent) | 3.4 | -1.0 | -2.6 | 3.9 | 3.6 | 4.1 | 3.0 | 3.6 | 2.9 | 3.3 | 3.8 | 3.4 | 3.6 | 3.9 | 3.8 |
| GDP deflator in US dollar terms (change in percent) | 18.8 | 3.0 | -7.1 | 11.4 | 11.3 | -16.6 | 4.0 | -1.6 | -0.2 | -2.4 | -0.6 | -2.9 | 1.3 | 1.1 | 1.0 |
| Effective interest rate (percent) 5/ | 5.0 | 4.4 | 4.1 | 5.0 | 0.4 | 3.9 | 3.8 | 3.6 | 3.5 | 3.4 | 3.3 | 3.6 | 2.9 | 2.3 | 2.7 |
| Growth of exports of G&S (US dollar terms, in percent) | 52.7 | -8.7 | -52.7 | 17.4 | 36.7 | 2.2 | 15.8 | 8.2 | -3.9 | 0.0 | 1.2 | 3.9 | -1.3 | 0.5 | -0.3 |
| Growth of imports of G&S (US dollar terms, in percent) | 6.4 | -7.5 | 0.9 | 17.2 | 25.1 | 1.1 | -8.0 | 2.1 | 0.1 | 0.9 | 5.4 | 0.3 | -0.9 | -1.5 | -0.6 |
| Grant element of new public sector borrowing (in percent) | ... | ... | ... | ... | ... | 17.2 | 17.2 | 17.2 | 17.2 | 17.2 | 17.2 | 17.2 | 16.3 | 14.9 | 15.9 |
| Government revenues (excluding grants, in percent of GDP) | 18.7 | 17.8 | 9.5 | | | 9.9 | 10.6 | 10.7 | 10.8 | 11.1 | 11.4 | | 10.6 | 9.6 | 10.4 |
| Aid flows (in Billions of US dollars) 7/ | 0.6 | 0.4 | 0.4 | | | 0.7 | 1.3 | 1.5 | 1.3 | 0.5 | 0.5 | | 0.4 | 0.2 | |
| *of which: Grants* | 0.4 | 0.2 | 0.3 | | | 0.7 | 1.3 | 1.5 | 1.3 | 0.5 | 0.5 | | 0.4 | 0.2 | |
| *of which: Concessional loans* | 0.2 | 0.2 | 0.1 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Grant-equivalent financing (in percent of GDP) 8/ | ... | ... | ... | | | 1.5 | 2.5 | 2.7 | 2.4 | 1.0 | 0.9 | | 0.6 | 0.3 | 0.5 |
| Grant-equivalent financing (in percent of external financing) 8/ | ... | ... | ... | | | 66.0 | 78.3 | 79.5 | 77.3 | 58.3 | 56.5 | | 48.9 | 35.9 | 44.9 |
| *Memorandum items:* | | | | | | | | | | | | | | | |
| Nominal GDP (Billions of US dollars) | 65.6 | 66.9 | 60.5 | | | 52.5 | 56.6 | 58.3 | 60.2 | 61.0 | 63.6 | | 76.5 | 124.7 | |
| Nominal dollar GDP growth | 22.9 | 1.9 | -9.5 | | | -13.1 | 7.1 | 2.0 | 2.7 | 0.8 | 3.2 | 0.4 | 4.9 | 5.1 | 4.9 |
| PV of PPG external debt (in Billions of US dollars) | | | 79.3 | | | 80.5 | 81.6 | 82.8 | 84.1 | 85.3 | 86.5 | | 92.7 | 103.6 | |
| (PVt-PVt-1)/GDPt-1 (in percent) | | | | | | 1.9 | 2.2 | 2.1 | 2.2 | 2.1 | 2.0 | 2.1 | 1.7 | 0.8 | 1.4 |
| Gross workers' remittances (Billions of US dollars) | 2.2 | 1.4 | 1.1 | | | 1.2 | 1.3 | 1.4 | 1.5 | 1.6 | 1.8 | | 2.0 | 2.5 | |
| PV of PPG external debt (in percent of GDP + remittances) | ... | ... | 154.1 | | | 159.6 | 159.0 | 155.2 | 151.0 | 148.0 | 143.1 | | 119.3 | 82.4 | |
| PV of PPG external debt (in percent of exports + remittances) | ... | ... | 1420.9 | | | 1240.2 | 1156.7 | 1065.5 | 1087.2 | 1059.5 | 1034.0 | | 1059.9 | 1144.8 | |
| Debt service of PPG external debt (in percent of exports + remittances) | ... | ... | 31.1 | | | 29.6 | 26.1 | 23.5 | 23.2 | 23.1 | 22.8 | | 21.8 | 24.6 | |

Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt.

2/ Derived as [r - g - ρ(1+g)]/(1+g+ρ+gρ) times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, and ρ = growth rate of GDP deflator in U.S. dollar terms.

3/ Includes exceptional financing (i.e., changes in arrears and debt relief); changes in gross foreign assets; and valuation adjustments. For projections also includes contribution from price and exchange rate changes.

4/ Assumes that PV of private sector debt is equivalent to its face value.

5/ Current-year interest payments divided by previous period debt stock.

6/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.

7/ Defined as grants, concessional loans, and debt relief.

8/ Grant-equivalent financing includes grants provided directly to the government and through new borrowing (difference between the face value and the PV of new debt).

## Table 5. Sudan: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2013–33

| | Projections | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | **2023** | 2033 |
| **PV of debt-to GDP ratio** | | | | | | | | |
| **Baseline** | 163 | 163 | 159 | 155 | 152 | 147 | **122** | 84 |
| **A. Alternative Scenarios** | | | | | | | | |
| A.1 New public sector loans on less favorable terms in 2013-2033 /2 | 163 | 145 | 145 | 143 | 144 | 142 | **123** | 86 |
| **B. Bound Tests** | | | | | | | | |
| B1. Real GDP growth at historical average minus one standard deviation in 2014-2015 | 163 | 149 | 153 | 150 | 151 | 149 | **127** | 88 |
| B2. Export value growth at historical average minus one standard deviation in 2014-2015 3/ | 163 | 148 | 152 | 150 | 151 | 148 | **128** | 85 |
| B3. US dollar GDP deflator at historical average minus one standard deviation in 2014-2015 | 163 | 150 | 147 | 145 | 146 | 143 | **123** | 84 |
| B4. Net non-debt creating flows at historical average minus one standard deviation in 2014-2015 4/ | 163 | 147 | 148 | 146 | 147 | 144 | **124** | 84 |
| B5. Combination of B1-B4 using one-half standard deviation shocks | 163 | 145 | 138 | 136 | 137 | 135 | **116** | 78 |
| B6. One-time 30 percent nominal depreciation relative to the baseline in 2014 5/ | 163 | 204 | 202 | 200 | 201 | 197 | **169** | 116 |
| **PV of debt-to-exports ratio** | | | | | | | | |
| **Baseline** | 1500 | 1383 | 1273 | 1325 | 1311 | 1294 | **1364** | 1572 |
| **A. Alternative Scenarios 1/** | | | | | | | | |
| A.1 New public sector loans on less favorable terms in 2013-2033 /2 | 1500 | 1235 | 1159 | 1227 | 1246 | 1251 | **1374** | 1616 |
| **B. Bound Tests** | | | | | | | | |
| B1. Real GDP growth at historical average minus one standard deviation in 2014-2015 | 1500 | 1232 | 1152 | 1215 | 1230 | 1232 | **1339** | 1544 |
| B2. Export value growth at historical average minus one standard deviation in 2014-2015 3/ | 1500 | 1805 | 2344 | 2473 | 2506 | 2511 | **2740** | 3049 |
| B3. US dollar GDP deflator at historical average minus one standard deviation in 2014-2015 | 1500 | 1232 | 1152 | 1215 | 1230 | 1232 | **1339** | 1544 |
| B4. Net non-debt creating flows at historical average minus one standard deviation in 2014-2015 4/ | 1500 | 1249 | 1183 | 1248 | 1264 | 1266 | **1379** | 1562 |
| B5. Combination of B1-B4 using one-half standard deviation shocks | 1500 | 1457 | 1510 | 1593 | 1614 | 1616 | **1760** | 1996 |
| B6. One-time 30 percent nominal depreciation relative to the baseline in 2014 5/ | 1500 | 1232 | 1152 | 1215 | 1230 | 1232 | **1339** | 1544 |
| **PV of debt-to-revenue ratio** | | | | | | | | |
| **Baseline** | 1649 | 1541 | 1491 | 1437 | 1366 | 1286 | **1152** | 880 |
| **A. Alternative Scenarios 1/** | | | | | | | | |
| A.1 New public sector loans on less favorable terms in 2013-2033 /2 | 1649 | 1376 | 1358 | 1330 | 1298 | 1244 | **1160** | 905 |
| **B. Bound Tests** | | | | | | | | |
| B1. Real GDP growth at historical average minus one standard deviation in 2014-2015 | 1649 | 1410 | 1431 | 1396 | 1359 | 1299 | **1198** | 916 |
| B2. Export value growth at historical average minus one standard deviation in 2014-2015 3/ | 1649 | 1402 | 1426 | 1393 | 1356 | 1297 | **1201** | 886 |
| B3. US dollar GDP deflator at historical average minus one standard deviation in 2014-2015 | 1649 | 1426 | 1378 | 1345 | 1309 | 1251 | **1155** | 883 |
| B4. Net non-debt creating flows at historical average minus one standard deviation in 2014-2015 4/ | 1649 | 1392 | 1386 | 1353 | 1317 | 1259 | **1164** | 874 |
| B5. Combination of B1-B4 using one-half standard deviation shocks | 1649 | 1378 | 1296 | 1265 | 1232 | 1178 | **1089** | 819 |
| B6. One-time 30 percent nominal depreciation relative to the baseline in 2014 5/ | 1649 | 1930 | 1897 | 1852 | 1802 | 1722 | **1589** | 1215 |

## Table 5. Sudan: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2013–33 (continued)

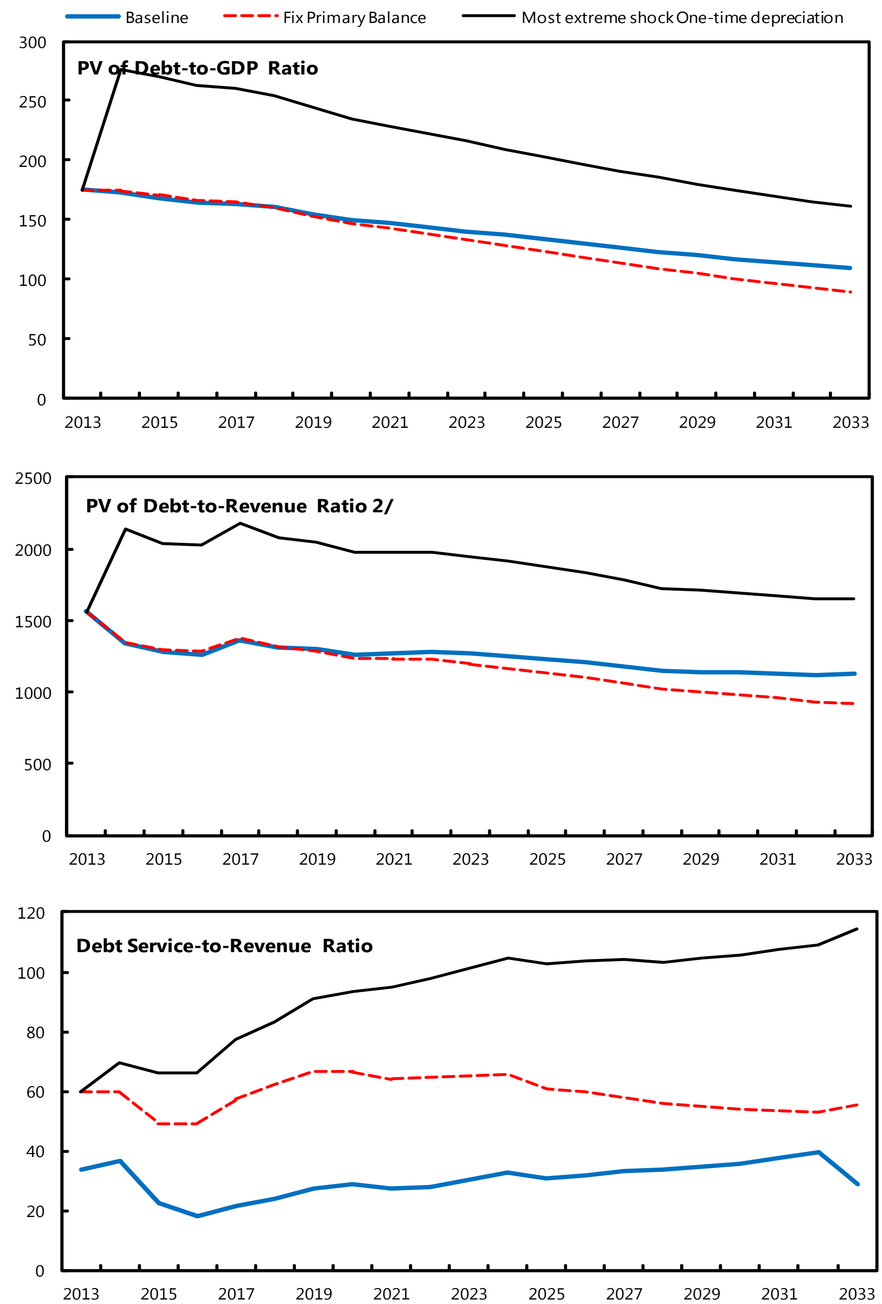
| | Projections | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2023 | 2033 |
| **Debt service-to-exports ratio** | | | | | | | | |
| **Baseline** | 36 | 31 | 28 | 28 | 29 | 28 | **28** | 34 |
| **A. Alternative Scenarios 1/** | | | | | | | | |
| A.1 New public sector loans on less favorable terms in 2013-2033 /2 | 36 | 31 | 28 | 28 | 29 | 29 | **29** | 38 |
| **B. Bound Tests** | | | | | | | | |
| B1. Real GDP growth at historical average minus one standard deviation in 2014-2015 | 36 | 31 | 28 | 28 | 28 | 28 | **28** | 32 |
| B2. Export value growth at historical average minus one standard deviation in 2014-2015 3/ | 36 | 45 | 55 | 57 | 58 | 57 | **57** | 80 |
| B3. US dollar GDP deflator at historical average minus one standard deviation in 2014-2015 | 36 | 31 | 28 | 28 | 28 | 28 | **28** | 32 |
| B4. Net non-debt creating flows at historical average minus one standard deviation in 2014-2015 4/ | 36 | 31 | 28 | 29 | 29 | 29 | **29** | 37 |
| B5. Combination of B1-B4 using one-half standard deviation shocks | 36 | 37 | 36 | 37 | 37 | 37 | **37** | 47 |
| B6. One-time 30 percent nominal depreciation relative to the baseline in 2014 5/ | 36 | 31 | 28 | 28 | 28 | 28 | **28** | 32 |
| **Debt service-to-revenue ratio** | | | | | | | | |
| **Baseline** | 39 | 35 | 33 | 31 | 30 | 28 | **24** | 19 |
| **A. Alternative Scenarios 1/** | | | | | | | | |
| A.1 New public sector loans on less favorable terms in 2013-2033 /2 | 39 | 35 | 33 | 31 | 30 | 29 | **25** | 21 |
| **B. Bound Tests** | | | | | | | | |
| B1. Real GDP growth at historical average minus one standard deviation in 2014-2015 | 39 | 36 | 35 | 32 | 31 | 30 | **25** | 19 |
| B2. Export value growth at historical average minus one standard deviation in 2014-2015 3/ | 39 | 35 | 33 | 32 | 31 | 30 | **25** | 23 |
| B3. US dollar GDP deflator at historical average minus one standard deviation in 2014-2015 | 39 | 36 | 34 | 31 | 30 | 29 | **24** | 18 |
| B4. Net non-debt creating flows at historical average minus one standard deviation in 2014-2015 4/ | 39 | 35 | 33 | 31 | 30 | 29 | **24** | 21 |
| B5. Combination of B1-B4 using one-half standard deviation shocks | 39 | 35 | 31 | 29 | 28 | 27 | **23** | 19 |
| B6. One-time 30 percent nominal depreciation relative to the baseline in 2014 5/ | 39 | 49 | 46 | 43 | 42 | 40 | **33** | 25 |
| *Memorandum item:* | | | | | | | | |
| Grant element assumed on residual financing (i.e., financing required above baseline) 6/ | 15 | 15 | 15 | 15 | 15 | 15 | **15** | 15 |

Sources: Country authorities; and staff estimates and projections.

1/ The secession-induced structural breaks in the time series undermine the historical scenario, which is therefore omitted.

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.

## Figure 5. Sudan: Indicators of Public Debt Under Alternative Scenarios, 2013–33 1/, 2/,




Sources: Country authorities; and staff estimates and projections.

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

2/ Revenues are defined inclusive of grants.

3/ The secession-induced structural breaks in the time series undermine the historical scenario, which is therefore omitted from the figures.

## Table 6. Sudan: Public Sector Debt Sustainability Framework, Baseline Scenario, 2010–33
### (In percent of GDP, unless otherwise indicated)

| | Actual | | | | | Estimate | Projections | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2010 | 2011 | 2012 | Average 5/ | Standard Deviation 5/ | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2013-18 Average | 2023 | 2033 | 2019-33 Average |
| **Public sector debt 1/** | 73.1 | 70.9 | 95.7 | | | 99.5 | 99.7 | 98.9 | 98.4 | 100.4 | 101.2 | | 98.4 | 89.5 | |
| *of which: foreign-currency denominated* | 62.2 | 59.8 | 82.2 | | | 87.6 | 89.3 | 89.2 | 88.8 | 89.1 | 88.0 | | 80.1 | 63.6 | |
| Change in public sector debt | 1.4 | -2.2 | 24.7 | | | 3.8 | 0.2 | -0.8 | -0.5 | 2.0 | 0.8 | | -0.7 | 0.1 | |
| Identified debt-creating flows | -5.9 | -4.9 | 23.4 | | | 3.3 | -0.2 | -1.2 | -1.0 | 1.5 | 0.4 | | 0.4 | 1.3 | |
| Primary deficit | -1.4 | -1.5 | 2.4 | 0.2 | 2.2 | 0.6 | -0.4 | 0.1 | 0.4 | 1.6 | 1.7 | 0.7 | 2.9 | 4.3 | 3.2 |
| Revenue and grants | 19.3 | 18.1 | 10.0 | | | 11.2 | 12.9 | 13.2 | 13.0 | 12.0 | 12.2 | | 11.1 | 9.7 | |
| *of which: grants* | 0.6 | 0.3 | 0.5 | | | 1.3 | 2.4 | 2.6 | 2.2 | 0.8 | 0.8 | | 0.5 | 0.2 | |
| Primary (noninterest) expenditure | 17.9 | 16.7 | 12.3 | | | 11.8 | 12.5 | 13.3 | 13.4 | 13.6 | 13.9 | | 14.0 | 14.0 | |
| Automatic debt dynamics | -4.3 | -3.2 | 21.5 | | | 2.8 | 0.3 | -1.3 | -1.4 | -0.2 | -1.3 | | -2.5 | -2.9 | |
| Contribution from interest rate/growth differential | -0.9 | 1.6 | 2.2 | | | -4.0 | -2.6 | -2.8 | -2.1 | -2.0 | -2.3 | | -3.1 | -3.5 | |
| *of which: contribution from average real interest rate* | 1.5 | 0.8 | 0.3 | | | -0.2 | 0.4 | 0.6 | 0.7 | 1.1 | 1.3 | | 0.3 | -0.1 | |
| *of which: contribution from real GDP growth* | -2.4 | 0.7 | 1.9 | | | -3.8 | -2.9 | -3.4 | -2.8 | -3.1 | -3.6 | | -3.4 | -3.4 | |
| Contribution from real exchange rate depreciation | -3.4 | -4.8 | 19.3 | | | 6.9 | 2.8 | 1.6 | 0.7 | 1.9 | 0.9 | | ... | ... | |
| Other identified debt-creating flows | -0.2 | -0.2 | -0.4 | | | -0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Privatization receipts (negative) | -0.2 | -0.2 | -0.4 | | | -0.2 | 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 | 7.2 | 2.7 | 1.3 | | | 0.6 | 0.4 | 0.3 | 0.6 | 0.5 | 0.4 | | -1.1 | -1.3 | |
| **Other Sustainability Indicators** | | | | | | | | | | | | | | | |
| **PV of public sector debt** | ... | ... | 170.3 | | | 175.1 | 173.1 | 168.6 | 164.4 | 163.4 | 160.4 | | 140.7 | 110.0 | |
| *of which: foreign-currency denominated* | ... | ... | 156.9 | | | 163.2 | 162.6 | 159.0 | 154.8 | 152.1 | 147.3 | | 122.4 | 84.1 | |
| *of which: external* | ... | ... | 156.9 | | | 163.2 | 162.6 | 159.0 | 154.8 | 152.1 | 147.2 | | 122.4 | 84.1 | |
| PV of contingent liabilities (not included in public sector debt) | ... | ... | ... | | | ... | ... | ... | ... | ... | ... | | ... | ... | |
| Gross financing need 2/ | 2.0 | 1.6 | 7.8 | | | 5.3 | 5.2 | 3.9 | 3.5 | 5.0 | 5.6 | | 7.8 | 9.2 | |
| PV of public sector debt-to-revenue and grants ratio (in percent) | ... | ... | 1706.5 | | | 1564.7 | 1339.7 | 1276.2 | 1264.7 | 1366.2 | 1314.8 | | 1267.4 | 1128.5 | |
| PV of public sector debt-to-revenue ratio (in percent) | ... | ... | 1787.2 | | | 1769.5 | 1640.1 | 1581.8 | 1526.0 | 1468.2 | 1402.4 | | 1323.9 | 1151.4 | |
| *of which: external 3/* | ... | ... | 1646.4 | | | 1649.4 | 1541.3 | 1491.2 | 1436.8 | 1366.2 | 1286.5 | | 1151.6 | 879.8 | |
| Debt service-to-revenue and grants ratio (in percent) 4/ | 12.9 | 11.9 | 45.2 | | | 33.6 | 36.7 | 22.5 | 17.9 | 21.5 | 24.0 | | 30.2 | 28.8 | |
| Debt service-to-revenue ratio (in percent) 4/ | 13.3 | 12.1 | 47.4 | | | 38.0 | 45.0 | 27.9 | 21.6 | 23.1 | 25.6 | | 31.6 | 29.4 | |
| Primary deficit that stabilizes the debt-to-GDP ratio | -2.7 | 0.7 | -22.4 | | | -3.2 | -0.7 | 1.0 | 0.8 | -0.4 | 0.9 | | 3.6 | 4.2 | |
| **Key macroeconomic and fiscal assumptions** | | | | | | | | | | | | | | | |
| Real GDP growth (in percent) | 3.4 | -1.0 | -2.6 | 3.9 | 3.6 | 4.1 | 3.0 | 3.6 | 2.9 | 3.3 | 3.8 | 3.4 | 3.6 | 3.9 | 3.8 |
| Average nominal interest rate on forex debt (in percent) | 5.1 | 4.5 | 4.2 | 5.1 | 0.4 | 4.0 | 3.9 | 3.7 | 3.6 | 3.5 | 3.3 | 3.7 | 2.9 | 2.3 | 2.7 |
| Average real interest rate on domestic debt (in percent) | -6.6 | -5.7 | -10.1 | 0.6 | 6.7 | -15.9 | -10.4 | -8.2 | -6.2 | 0.0 | 2.9 | -6.3 | -2.1 | -1.2 | -1.8 |
| Real exchange rate depreciation (in percent, + indicates depreciation) | -5.6 | -7.5 | 30.6 | -0.9 | 12.6 | 8.5 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Inflation rate (GDP deflator, in percent) | 19.0 | 19.1 | 28.7 | 14.9 | 7.0 | 34.1 | 26.1 | 22.8 | 20.2 | 12.5 | 10.0 | 20.9 | 9.7 | 9.0 | 9.5 |
| Growth of real primary spending (deflated by GDP deflator, in percent) | 0.0 | -0.1 | -0.3 | 0.1 | 0.2 | 0.0 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| Grant element of new external borrowing (in percent) | ... | ... | ... | ... | ... | 17.2 | 17.2 | 17.2 | 17.2 | 17.2 | 17.2 | 17.2 | 16.3 | 14.9 | ... |

Sources: Country authorities; and staff estimates and projections.

1/ General government gross 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 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. Sudan: Sensitivity Analysis for Key Indicators of Public Debt 2013–33

| | Projections | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2023 | 2033 |
| **PV of Debt-to-GDP Ratio** | | | | | | | | |
| **Baseline** | 175 | 173 | 169 | 164 | 163 | 160 | 141 | 110 |
| **A. Alternative scenarios 3/** | | | | | | | | |
| A1. Primary balance is unchanged from 2013 | 175 | 174 | 171 | 167 | 165 | 160 | 133 | 90 |
| A2. Permanently lower GDP growth 1/ | 175 | 175 | 172 | 170 | 170 | 168 | 155 | 136 |
| **B. Bound tests** | | | | | | | | |
| B1. Real GDP growth is at historical average minus one standard deviations in 2014-2015 | 175 | 178 | 180 | 177 | 176 | 173 | 153 | 121 |
| B2. Primary balance is at historical average minus one standard deviations in 2014-2015 | 175 | 176 | 174 | 170 | 168 | 164 | 142 | 110 |
| B3. Combination of B1-B2 using one half standard deviation shocks | 175 | 177 | 176 | 172 | 171 | 167 | 146 | 114 |
| B4. One-time 30 percent real depreciation in 2014 | 175 | 276 | 270 | 263 | 260 | 254 | 216 | 161 |
| B5. 10 percent of GDP increase in other debt-creating flows in 2014 | 175 | 183 | 178 | 173 | 171 | 167 | 144 | 111 |
| **PV of Debt-to-Revenue Ratio 2/** | | | | | | | | |
| **Baseline** | 1565 | 1340 | 1276 | 1265 | 1366 | 1315 | 1267 | 1128 |
| **A. Alternative scenarios 3/** | | | | | | | | |
| A1. Primary balance is unchanged from 2013 | 1565 | 1350 | 1292 | 1284 | 1376 | 1313 | 1198 | 923 |
| A2. Permanently lower GDP growth 1/ | 1565 | 1351 | 1299 | 1300 | 1420 | 1378 | 1391 | 1394 |
| **B. Bound tests** | | | | | | | | |
| B1. Real GDP growth is at historical average minus one standard deviations in 2014-2015 | 1565 | 1374 | 1350 | 1347 | 1467 | 1415 | 1373 | 1239 |
| B2. Primary balance is at historical average minus one standard deviations in 2014-2015 | 1565 | 1364 | 1318 | 1305 | 1405 | 1347 | 1283 | 1133 |
| B3. Combination of B1-B2 using one half standard deviation shocks | 1565 | 1365 | 1326 | 1318 | 1426 | 1371 | 1317 | 1173 |
| B4. One-time 30 percent real depreciation in 2014 | 1565 | 2139 | 2042 | 2024 | 2176 | 2079 | 1947 | 1651 |
| B5. 10 percent of GDP increase in other debt-creating flows in 2014 | 1565 | 1420 | 1347 | 1332 | 1431 | 1369 | 1297 | 1138 |
| **Debt Service-to-Revenue Ratio 2/** | | | | | | | | |
| **Baseline** | 34 | 37 | 23 | 18 | 22 | 24 | 30 | 29 |
| **A. Alternative scenarios 3/** | | | | | | | | |
| A1. Primary balance is unchanged from 2013 | 60 | 60 | 49 | 49 | 57 | 62 | 65 | 55 |
| A2. Permanently lower GDP growth 1/ | 60 | 60 | 49 | 48 | 57 | 62 | 82 | 113 |
| **B. Bound tests** | | | | | | | | |
| B1. Real GDP growth is at historical average minus one standard deviations in 2014-2015 | 60 | 61 | 51 | 50 | 59 | 65 | 83 | 99 |
| B2. Primary balance is at historical average minus one standard deviations in 2014-2015 | 60 | 60 | 50 | 53 | 63 | 67 | 76 | 87 |
| B3. Combination of B1-B2 using one half standard deviation shocks | 60 | 60 | 50 | 51 | 60 | 65 | 78 | 92 |
| B4. One-time 30 percent real depreciation in 2014 | 60 | 70 | 66 | 66 | 77 | 83 | 101 | 114 |
| B5. 10 percent of GDP increase in other debt-creating flows in 2014 | 60 | 60 | 53 | 64 | 69 | 74 | 79 | 89 |

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.

3/ The secession-induced structural breaks in the time series undermine the historical scenario, which is therefore omitted.