

**EXECUTIVE
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MEETING**

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To: Members of the Executive Board

From: The Acting Secretary

Subject: **Sudan—Enhanced Heavily-Indebted Poor Countries Initiative—Decision Point Document—Debt Sustainability Analysis**

Board Action: Executive Directors' **consideration** (Formal)

Prepared By: The staffs of the Fund and the International Development Association

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Questions: Ms. Baker, MCD (ext. 34041)
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***The authorities have indicated that they consent to the Fund's publication of this paper.**



SUDAN

June 15, 2021

ENHANCED HEAVILY-INDEBTED POOR COUNTRIES INITIATIVE—DECISION POINT DOCUMENT—DEBT SUSTAINABILITY ANALYSIS

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Risk of external debt distress	<i>In debt distress</i>
Overall risk of debt distress	<i>In debt distress</i>
Granularity in the risk rating	<i>Sustainable</i>
Application of judgment	<i>No</i>

This report incorporates the findings of the Debt Relief Analysis. Sudan's total public external debt at end-2020 was US\$56.6 billion.

Under the baseline scenario, in which traditional debt relief is delivered alone at HIPC Decision Point in 2021, Sudan's debt remains unsustainable. All external and public debt burden indicators remain significantly above the respective thresholds¹ for protracted periods despite traditional debt relief. Sudan continues to be in debt distress as substantial external arrears remain.

Contingent on the full delivery of the HIPC Initiative, MDRI, and beyond-HIPC assistance at the Completion Point, Sudan's debt improves dramatically to manageable levels. All debt burden indicators fall and remain below the threshold during the forecast horizon. As such, in a forward-looking sense, Sudan's debt is judged as sustainable. Sudan is assessed to be at moderate risk of debt distress at post-Completion Point. In addition to full delivery of debt relief, the debt trajectory is also dependent on strong fiscal performance, structural reforms, access to concessional finance and grants.

¹ Sudan is assessed to have a weak debt-carrying capacity. CI rating for Sudan is 1.65, which is based on the April 2021 WEO and the World Bank's 2019 CPIA released in 2020.

COVERAGE AND BACKGROUND ON PUBLIC DEBT

A. Background on Debt and Debt Coverage

1. This DSA is based on the debt reconciliation effort that is underway. A Debt Relief Analysis (DRA) has been prepared jointly by the Sudanese authorities and staffs from the Bank and the Fund. The DRA is based on Sudan's external public and publicly guaranteed (PPG) debt disbursed and outstanding as of end-December 2020,² the bulk of which is in arrears (92 percent of the external debt stock). As of end-May 2021, end-2020 PPG external debt is 80 percent reconciled.³

2. The quality and coverage of debt data has improved but remains limited.

Despite the debt reconciliation exercise, inconsistencies in external debt reports vis-à-vis related fiscal reports and gaps in obtaining detailed debt data remain. Public debt data is limited to the central government, excluding other elements in the general government and SOEs. State and local governments are not allowed to borrow according to the Constitution, while other public entities in the general government are still not captured in the debt coverage. There are reporting issues with regards to the letters of guarantees, which are issued by the central bank on the request of the Ministry of Finance and Economic Development (MOFEP) as a hybrid financing instrument used mainly to fund development projects.⁴

Sudan's external PPG debt is very high and is estimated at around 163 percent of

GDP. Based on the ongoing debt reconciliation exercise total public and publicly guaranteed (PPG) external debt stood at around US\$57 billion at end-2020 (163 percent of GDP). Out of this total, 41 percent is owed

Sudan: Nominal Stock as of End-December 2020, By Creditors Group

	Legal Situation			
	Nominal Debt Stock 1/		Arrears Stock	
	US\$ million	Percent	US\$ million	Percent
Total	56,578.3	100.0	51,883.4	100.0
Multilateral	5,976.4	10.6	3,125.0	6.0
IDA	1,479.6	2.6	1,085.3	2.1
IMF	1,389.1	2.5	1,389.1	2.7
AfDB Group	505.9	0.9	391.2	0.8
AFESD	1,429.0	2.5	30.6	0.1
AMF	485.7	0.9	65.2	0.1
EU	106.6	0.2	106.3	0.2
IFAD	131.1	0.2	0.0	0.0
IsDB	361.7	0.6	0.0	0.0
OFID	87.8	0.2	57.3	0.1
Bilateral	44,100.7	77.9	42,257.2	81.4
Paris Club	23,753.1	42.0	23,677.3	45.6
Non-Paris Club	20,347.6	36.0	18,579.9	35.8
Commercial	6,501.2	11.5	6,501.2	12.5

Sources: Sudan authorities and staff estimates and projections.

1/ Includes Arrears

² As part of the HIPC Initiative framework, the amount of HIPC Initiative debt relief is determined on the basis of a DRA using the most recent data for the year immediately prior to Decision Point, which is end-2020.

³ Methodologically, the LIC DSA differs from the HIPC Debt Relief Analysis (DRA) in that it compares the evolution over the projection period of debt-burden indicators (based on single-year denominators) against policy dependent indicative thresholds. In contrast, under a HIPC DRA, the debt burden indicators (based on three-year backward-looking averages of denominators) are compared to uniform thresholds in order to evaluate eligibility or to calculate HIPC debt relief as of a historical reference date. In addition, the results of the LIC DSA differ from the HIPC DRA because of two other methodological differences related to the definition of: (i) discount rates; and (ii) exchange rates.

⁴ These were recorded as debt when issued only as commitment.

to Paris Club creditors, 36 percent to Non-Paris Club creditors, 11 percent to multilateral institutions and the remaining 12 percent to commercial creditors.

3. Most of Sudan's external and domestic debt is in arrears. Arrears on external PPG debt at end-December 2020 are estimated at US\$51.9 billion, corresponding to about 92 percent of external debt stock. Sudan continued to accumulate arrears in 2020. As of end-March 2021, Sudan's outstanding arrears to the IMF estimated at SDR 964 million (about US\$1,392 million). Sudan's arrears to IDA amounting to US\$1,097 million and those to the African Development Bank group were cleared on March 26 and May 12, 2021 respectively.

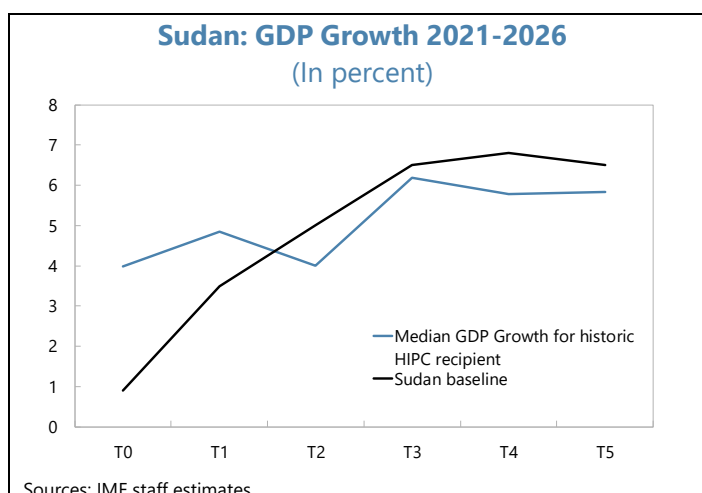
4. The Central Bank of Sudan is the main creditor and holder of domestic government debt. The government has been accumulating interest and principal arrears to the CBOS on these obligations. CBOS continues the practice of monetizing the fiscal deficit and accumulating domestic arrears. Domestic public debt does not exist beyond the accumulation of government arrears.

Subsectors of the public sector	Check box
1 Central government	<input checked="" type="checkbox"/>
2 State and local government	<input checked="" type="checkbox"/>
3 Other elements in the general government	<input type="checkbox"/>
4 o/w: Social security fund	<input type="checkbox"/>
5 o/w: Extra budgetary funds (EBFs)	<input type="checkbox"/>
6 Guarantees (to other entities in the public and private sector, including to SOEs)	<input type="checkbox"/>
7 Central bank (borrowed on behalf of the government)	<input checked="" type="checkbox"/>
8 Non-guaranteed SOE debt	<input type="checkbox"/>

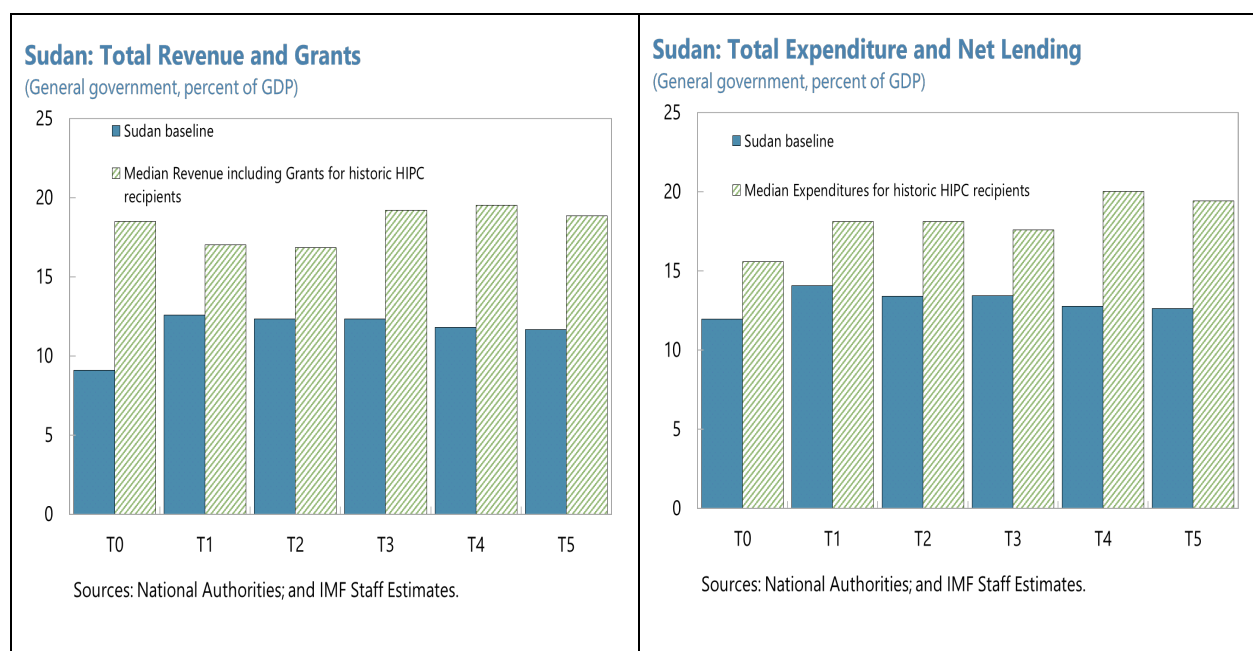
BACKGROUND ON MACRO FORECASTS

5. The assumptions underpinning the baseline scenario are consistent with a macroeconomic framework that envisages a new IMF ECF arrangement. The baseline scenario assumes full delivery of traditional debt relief. The main assumptions are:

- Growth.** The growth outlook has improved and is expected to pick up over the medium term mainly due to well-paced structural reforms and the elimination of macroeconomic imbalances. Inflation is expected to decline significantly and remain moderate in the medium term due to eliminated fiscal dominance, full implementation of the reserve money target framework by the CBOS, and lower passthrough form a stabilized exchange rate. Growth projections for Sudan are in line with those of other HIPC debt relief recipients.



- **External.** The current account balance is expected to remain in deficit, while improving over the medium term as the fiscal deficit declines and exchange rate reforms allow for gains in price competitiveness. FDI is expected to pick up with reforms to the investment climate, while remittances are expected to grow with removal of distortions in the foreign exchange market. International reserves increase over the projection horizon.
- **Fiscal adjustment.** The projected path of the primary balance reflects fiscal consolidation through revenue mobilization and rationalization of spending. Projections include a substantial revenue increase due to the effects of the reforms in the customs exchange rate and tax policy measures, including elimination of exemptions under PIT and VAT. There is a large increase in grants in 2022 due mainly to the expected implementation of the SFSP. Despite an improvement in revenue indicators, Sudan will lag other HIPC recipients. Expenditures are projected to remain compressed but with an important shift in composition, including a contraction in subsidies and an increase in social spending. The fiscal stance is expected to remain broadly in balance over the medium term.
- **Debt relief.** The analysis under the baseline assumes only the full application of traditional debt relief mechanisms, but no debt relief under the HIPC Initiative.⁵



⁵ According to the LIC DSF, for countries that have not yet reached the decision point, but for which the IMF and IDA Executive Boards have reviewed the HIPC preliminary document, the baseline scenario should incorporate only traditional debt relief. Interim HIPC relief starting at the assumed decision point date should be incorporated in a customized scenario.

6. Under the baseline scenario fiscal financing needs are met mostly from external sources. The baseline scenario under traditional debt relief assumes that Sudan will start servicing its debt. Financing needs triggered by this are expected to be met mostly from concessional and from non-concessional external borrowing, the latter starting from 2025 onwards. It is assumed that concessional borrowing will be provided by IFIs, while non-concessional borrowing will be from non-Paris club official bilateral creditors. In accordance with the LIC DSF guidance note and the HIPC Debt Relief Analysis, the baseline does not include relief from the HIPC Initiative or MDRI. Full impact of multilateral arrears clearance, interim debt relief, HIPC, MDRI and beyond HIPC debt relief is presented in an alternative scenario. Sudan is assumed to reach the HIPC Completion Point in-mid 2024.

Sudan: Baseline DSA Assumptions, 2021-31						
(In percent of GDP, unless otherwise indicated)						
	Previous DSA		CURRENT DSA		(current vs previous)	
	2021-26	2021-31	2021-26	2021-31	2021-26	2021-31
Real GDP growth, percent	2.9	3.6	4.9	5.0	2.0	1.4
GDP deflator, percent	44.7	31.7	46.6	28.4	1.9	-3.3
Nominal GDP (Billions of \$US Dollars)	33.8	37.2	42.4	52.1	8.6	14.9
Revenue and grants	14.1	14.3	11.6	11.7	-2.5	-2.6
Expenditure and net lending	16.5	16.6	13.0	13.0	-3.5	-3.6
Overall balance (incl. PIP)	-2.4	-2.2	-1.4	-1.3	1.0	0.9
Exports of goods and services	23.5	24.2	21.0	21.6	-2.5	-2.6
Imports of goods and services	30.0	28.8	31.2	31.4	1.2	2.6
Current account balance	-8.7	-6.9	-8.9	-8.4	-0.2	-1.5

Sources: National authorities and IMF staff estimates

7. The realism tools largely suggest that staff forecasts are realistic. Under the baseline scenario, debt is expected to decline significantly mainly due to the traditional debt relief. The contribution of primary deficits to future debt accumulation is expected to be smaller than in the past few years due to planned fiscal consolidation. The projected three-year adjustment in the primary balance is in the top quartile of adjustment under Fund-supported programs, indicating ambitious adjustment targets (Figure 4). However, given the ECF-supported program is targeting to address very low revenue and large subsidies, staff considers the adjustment as achievable. Even after the adjustment revenue in Sudan will lag significantly when compared to other historic HIPC cases. Due to the low fiscal multiplier, the impact of the central government fiscal adjustment on GDP is expected to be marginal. Sustained structural reforms under the ECF-supported program and World Bank technical assistance and operations are assumed to result in robust GDP growth despite fiscal consolidation. GDP is expected to grow robustly, compared with past assumptions underpinning the previous LIC DSA, and contribute negatively to debt accumulation. The contribution of exchange rate depreciation to external and public debt accumulation is much lower than in recent years as reforms are expected to arrest the pace of depreciation.

COUNTRY CLASSIFICATION AND DETERMINATION OF SCENARIO STRESS TESTS

8. Sudan is assessed to have a weak debt-carrying capacity based on the CI Index. The CI index has been calculated based on the April 2021 WEO and the World Bank's 2019 CPIA released in 2020. Corresponding thresholds apply in the analysis.

Debt Carrying Capacity		Weak		
Final	Classification based on current vintage	Classification based on the previous vintage	Classification based on the two previous vintages	
Weak	Weak 1.65	Weak 1.88	Weak 1.87	

9. Sudan's debt was subjected to contingent liabilities stress test and a tailored stress test for a commodity price shock. The coverage of debt in Sudan excludes most other elements of general government. Consequently, due to the uncertainties associated with contingent liabilities from other elements of general government, the magnitude of the shock differs from the default setting and is set to more than 6 percent of GDP, allowing for a more conservative assessment. Default settings are applied to other elements of the contingent liability stress test. A commodity price tailored stress test is applied to Sudan given the significant share of commodities in country's exports.

1 The country's coverage of public debt	The central, state, and local governments, central bank		
	Default	Used for the analysis	Reasons for deviations from the default settings
2 Other elements of the general government not captured in 1.	0 percent of GDP	6.2	64 percent of total general government expenditure is covered by central government
3 SoE's debt (guaranteed and not guaranteed by the government) 1/	2 percent of GDP	2	
4 PPP	35 percent of PPP stock	0.00	PPP information from the World Bank
5 Financial market (the default value of 5 percent of GDP is the minimum value)	5 percent of GDP	5	
Total (2+3+4+5) (in percent of GDP)		13.2	

1/ The default shock of 2% of GDP will be triggered for countries whose government-guaranteed debt is not fully captured under the country's public debt definition (1). If it is already included in the government debt (1), and risks associated with SoE's debt not guaranteed by the government is assessed to be negligible, a country team may reduce this to 0%.

DEBT SUSTAINABILITY

B. External Debt Sustainability Analysis

10. Sudan remains in debt distress under the baseline even after delivery of traditional debt relief (Figure 1). Despite delivery of full traditional debt relief all baseline indicators breach respective thresholds. Breaches are significant and protracted. The baseline indicator for the PV of debt-to-GDP ratio and PV of debt-to-exports ratio remain above the threshold beyond the medium-term. Baseline indicators for the debt service-to-exports ratio and debt service-to revenue remain above the thresholds until 2027.

11. Debt deteriorates significantly with application of standardized stress tests. The most extreme and impactful shocks are shocks to growth and exports. All stress indicators breach threshold significantly and do not fall below it throughout the forecast horizon. This confirms Sudan's debt is subject to considerable vulnerabilities. The contingent liabilities shock and the commodity price shocks lead to a deterioration in debt profile, but are not the most extreme shocks.

12. Debt improves dramatically with the delivery of HIPC Initiative, MDRI, and beyond HIPC debt relief. Under the alternative scenario, which in addition to the traditional debt relief incorporates HIPC, MDRI, and beyond HIPC debt relief assumptions, all debt indicators fall and remain below thresholds.

C. Public Sector Debt Sustainability Analysis

13. Under the baseline scenario, the overall public debt indicator remains above threshold throughout the horizon. Despite the delivery of full traditional debt relief, the PV of the PPG debt-to-GDP ratio remains above the threshold, reflecting mostly the dynamics of external debt.

14. The standardized sensitivity analysis shows that the shock to growth leads to the highest debt figures. This is in line with the shock to external debt as it comprises most of the overall public debt in the absence of vibrant domestic government securities market.

15. Debt improves dramatically with the delivery of HIPC Initiative, MDRI, and beyond HIPC debt relief. Under the alternative scenario, which in addition to the traditional debt relief incorporates HIPC, MDRI, and beyond HIPC debt relief assumptions, public debt indicators fall and remain below thresholds.

RISK RATING AND VULNERABILITIES

16. Sudan's external and public debt remains in distress with delivery of traditional debt relief alone. Despite full delivery of traditional debt relief all baseline debt indicators breach and remain above respective thresholds for an extended period. Debt burden and liquidity indicators do not fall below the threshold until 2027 and remain close to their respective thresholds afterwards. This confirms that traditional debt relief alone is not sufficient to return Sudan to a sustainable debt path.

17. Sudan's public debt is assessed to be sustainable after the full delivery of HIPC, MDRI and beyond HIPC. With delivery of debt relief under the alternative scenario, Sudan's debt indicators improve dramatically. All baseline external and public debt indicators fall and remain below the respective thresholds throughout the forecast horizon. On this premise and contingent on the delivery of HIPC, MDRI and beyond HIPC debt relief at Completion Point, Sudan's debt is judged sustainable post-debt relief.

AUTHORITIES' VIEWS

18. The authorities broadly agree with the conclusions of the DSA. They concurred with the need to have a better control over the debt, including by reforming debt management agency and practices in coordination with international financial institutions. They agreed with the importance of prioritizing concessional borrowing and avoiding non-concessional borrowing. The authorities are committed to implementing gradual domestic arrears clearance and strengthening debt management.

Table 1. Sudan: External Debt Sustainability Framework, Baseline Scenario, 2020-2041
(In percent of GDP, unless otherwise indicated)

	Actual	Projections											Average 8/ Historical Projections		
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2041		
External debt (nominal) 1/	247.1	111.8	95.1	85.0	79.9	74.4	69.2	64.9	60.7	56.8	53.5	50.3	29.1	131.8	72.9
of which: public and publicly guaranteed (PPG)	239.4	105.4	89.3	79.6	74.6	69.1	63.9	59.6	55.4	51.5	48.2	45.0	23.9	127.5	67.4
Change in external debt	48.5	-135.3	-16.8	-10.1	-5.1	-5.5	-5.2	-4.3	-4.2	-3.9	-3.4	-3.2	-1.4		
Identified net debt-creating flows	10.7	5.2	2.8	1.3	-0.3	-0.8	-0.4	0.1	0.4	1.0	1.5	1.7	2.6	18.2	1.1
Non-interest current account deficit	17.2	10.0	9.5	9.1	8.6	8.0	8.0	8.0	7.9	8.0	8.0	8.1	8.2	10.2	8.5
Deficit in balance of goods and services	14.7	10.2	11.0	10.6	10.3	9.4	9.3	9.3	9.3	9.4	9.5	9.5	9.5	8.8	9.8
Exports	14.8	19.3	20.0	20.8	21.5	22.2	22.3	22.3	22.4	22.2	22.2	22.1	22.1		
Imports	29.5	29.5	31.0	31.4	31.8	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6		
Net current transfers (negative = inflow)	-1.6	-4.8	-5.9	-5.6	-5.5	-4.8	-4.5	-4.3	-4.1	-4.1	-4.2	-4.1	-3.3	-2.0	-4.7
of which: official	-23.4	-1281.5	-2262.9	-2286.1	-2254.1	-1846.9	-1691.6	-1434.9	-1426.9	-1362.2	-1299.3	-1222.1	-343.5		
Other current account flows (negative = net inflow)	4.0	4.6	4.4	4.1	3.8	3.5	3.2	2.9	2.7	2.7	2.7	2.7	2.0	3.4	3.4
Net FDI (negative = inflow)	-2.1	-3.6	-3.9	-4.1	-4.5	-4.5	-4.5	-4.5	-4.5	-4.5	-4.5	-4.5	-4.5	-2.7	-4.3
Endogenous debt dynamics 2/	-4.4	-1.2	-2.9	-3.7	-4.4	-4.4	-3.9	-3.4	-2.9	-2.4	-2.0	-1.9	-1.1		
Contribution from nominal interest rate	0.2	0.9	0.8	0.8	0.7	0.6	0.5	0.5	0.4	0.4	0.4	0.3	0.2		
Contribution from real GDP growth	7.0	-2.1	-3.7	-4.5	-5.1	-5.0	-4.5	-3.8	-3.3	-2.8	-2.4	-2.3	-1.3		
Contribution from price and exchange rate changes	-11.7	...	...	...	...	...	...	...	...	...	...	...	...
Residual 3/	37.3	-140.4	-19.5	-11.4	-4.8	-4.7	-4.8	-4.4	-4.7	-4.9	-4.8	-4.8	-4.0	0.7	-19.0
Exceptional financing	0.0	-70.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Sustainability indicators															
PV of PPG external debt-to-GDP ratio	49.7	48.4	47.0	45.8	42.5	38.7	35.2	32.2	29.3	27.9	26.5	25.1	13.3		
PV of PPG external debt-to-exports ratio	335.9	250.2	235.4	219.6	198.0	174.3	158.1	144.2	131.1	125.8	119.7	113.3	60.4		
PPG debt service-to-exports ratio	8.3	10.7	9.3	6.5	22.5	19.5	17.6	17.1	16.7	6.0	6.7	7.0	7.6		
PPG debt service-to-revenue ratio	26.5	33.4	20.1	14.2	48.8	43.2	38.5	36.3	34.6	12.0	13.3	13.7	14.3		
Gross external financing need (Million of U.S. dollars)	5625.9	3025.6	2816.5	2539.9	3863.0	3705.8	3775.6	4025.8	4197.4	3064.2	3370.5	3710.6	7361.0		
Key macroeconomic assumptions															
Real GDP growth (in percent)	-3.6	0.9	3.5	5.0	6.5	6.8	6.5	6.0	5.5	5.0	4.5	4.5	4.5	-1.6	5.0
GDP deflator in US dollar terms (change in percent)	6.3	2.8	1.4	1.6	1.8	1.8	1.9	2.0	2.0	2.0	2.0	2.0	2.0	-4.7	1.9
Effective interest rate (percent) 4/	0.1	0.4	0.8	0.9	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.6	0.3	0.7
Growth of exports of G&S (US dollar terms, in percent)	-0.5	35.6	8.3	11.5	11.7	12.6	8.9	8.1	7.9	6.3	6.4	6.4	6.6	-5.2	11.2
Growth of imports of G&S (US dollar terms, in percent)	3.4	3.8	10.0	8.3	9.7	8.1	8.6	8.1	7.6	7.1	6.6	6.6	6.6	-0.6	7.7
Grant element of new public sector borrowing (in percent)	...	45.8	36.7	40.0	48.7	53.0	52.9	52.9	52.9	51.2	51.1	51.3	52.7	...	48.8
Government revenues (excluding grants, in percent of GDP)	4.7	6.2	9.2	9.6	9.9	10.0	10.2	10.5	10.8	11.0	11.2	11.3	11.8	8.1	10.0
Aid flows (in Million of US dollars) 5/	53.6	1126.9	1463.0	1555.3	3301.8	3094.0	2826.3	2870.5	2983.3	1509.9	1504.9	1540.2	2550.7		
Grant-equivalent financing (in percent of GDP) 6/	...	3.1	4.0	3.9	5.9	4.6	3.9	3.5	3.4	1.9	1.8	1.7	1.1	...	3.4
Grant-equivalent financing (in percent of external financing) 6/	...	94.7	90.6	80.8	66.1	69.5	69.8	67.4	67.1	79.3	78.8	77.3	58.4	...	76.5
Nominal GDP (Million of US dollars)	34,370	35,664	37,440	39,959	43,330	47,133	51,129	55,254	59,459	63,680	67,877	72,350	136,963		
Nominal dollar GDP growth	2.4	3.8	5.0	6.7	8.4	8.8	8.5	8.1	7.6	7.1	6.6	6.6	6.6	-5.9	7.0
Memorandum items:															
PV of external debt 7/	57.3	54.8	52.7	51.2	47.8	44.1	40.6	37.5	34.6	33.2	31.8	30.3	18.6		
In percent of exports	387.5	283.4	264.1	245.4	222.9	198.3	182.0	168.1	154.9	149.6	143.5	137.2	84.3		
Total external debt service-to-exports ratio	8.3	10.7	9.3	6.5	22.5	19.5	17.6	17.1	16.7	6.0	6.7	7.0	7.6		
PV of PPG external debt (in Million of US dollars)	17080.6	17260.1	17586.7	18288.0	18418.0	18251.2	18022.4	17765.4	17425.9	17780.6	17992.6	18127.5	18281.4		
(PVt-PVt-1)/GDPt-1 (in percent)	...	0.5	0.9	1.9	0.3	-0.4	-0.5	-0.5	-0.6	0.6	0.3	0.2	-0.2		
Non-interest current account deficit that stabilizes debt ratio	-31.3	145.3	26.3	19.1	13.7	13.5	13.2	12.3	12.1	11.9	11.4	11.3	9.6		

Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt.

2/ Derived as $(r - g - p(1+g)) \times E_t(1+r)^t / (1+g)^t (1+g)^t$ times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate; p = growth rate of GDP deflator in U.S. dollar terms; E_t = nominal appreciation of the local currency, and α = share of local currency-denominated external debt in total external debt.

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

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

6/ 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).

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

8/ Historical averages are generally derived over the past 10 years, subject to data availability, whereas projections averages are over the first year of projection and the next 10 years.

Definition of external/domestic debt	Residency-based
Is there a material difference between the two criteria?	No

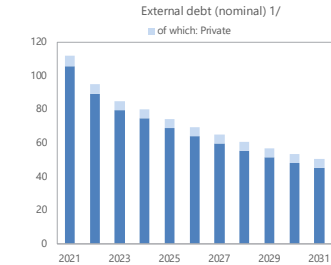
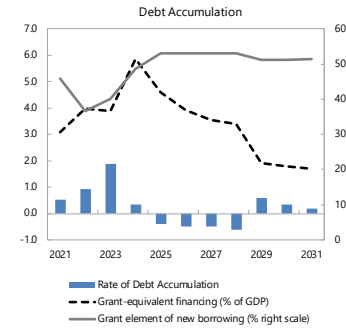


Table 2. Sudan: Public Sector Debt Sustainability Framework, Baseline Scenario, 2020-2041
(In percent of GDP, unless otherwise indicated)

	Actual										Projections										Average 6/				
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	Historical	Projections	
Public sector debt 1/	273.0	122.4	104.9	95.0	89.9	84.1	78.9	74.5	70.4	66.9	64.1	61.8	59.6	58.0	56.8	56.2	55.8	55.5	55.2	55.2	55.2	55.5	139.3	83.0	
of which: external debt	239.4	105.4	89.3	79.6	74.6	69.1	63.9	59.6	55.4	51.5	48.2	45.0	42.0	39.3	36.8	34.6	32.5	30.5	28.6	26.9	25.3	23.9	127.5	67.4	
Change in public sector debt	72.6	-150.6	-17.4	-9.9	-5.1	-5.9	-5.2	-4.3	-4.1	-3.5	-2.8	-2.3	-2.2	-1.6	-1.1	-0.6	-0.4	-0.3	-0.3	0.0	0.1	0.2	17.8	-11.4	
Identified debt-creating flows	42.8	-63.1	-17.8	-10.8	-6.4	-5.9	-5.2	-4.3	-4.1	-3.3	-2.4	-2.0	-1.9	-1.4	-1.0	-0.6	-0.4	-0.3	-0.3	0.0	0.1	0.2	5.3	1.1	
Primary deficit	5.9	2.8	1.4	0.9	0.9	0.7	0.7	0.8	0.9	0.9	1.0	1.2	1.1	1.3	1.4	1.5	1.4	1.4	1.3	1.5	1.4	1.4	8.5	12.2	
Revenue and grants	4.8	9.1	12.9	12.9	12.9	12.3	12.2	12.1	12.3	12.4	12.4	12.5	12.6	12.4	12.3	12.3	12.6	12.4	12.3	12.2	12.1	12.0	13.8	13.3	
of which: grants	0.2	2.9	3.7	3.3	3.0	2.3	2.0	1.6	1.5	1.4	1.3	1.2	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.4	0.3	0.2	13.8	13.3	
Primary (noninterest) expenditure	10.7	11.9	14.3	13.8	13.8	13.0	12.9	12.9	13.2	13.3	13.4	13.7	13.7	13.7	13.8	14.0	13.8	13.7	13.7	13.6	13.6	13.4	13.8	13.3	
Automatic debt dynamics	36.9	-65.9	-19.1	-11.7	-7.3	-6.6	-5.9	-5.1	-5.0	-4.3	-3.4	-3.2	-3.0	-2.7	-2.4	-2.1	-1.9	-1.7	-1.6	-1.5	-1.4	-1.2	3.0	7.0	
Contribution from interest rate/growth differential	-121.5	-180.3	-37.0	-18.7	-12.1	-10.5	-9.5	-8.5	-7.6	-6.2	-5.1	-4.8	-4.5	-4.1	-3.7	-3.3	-3.0	-2.8	-2.6	-2.4	-2.3	-2.0	0.0	0.0	
of which: contribution from average real interest rate	-129.1	-177.9	-32.8	-13.7	-6.3	-4.8	-4.4	-4.0	-3.7	-2.8	-2.2	-2.0	-1.9	-1.5	-1.2	-0.8	-0.6	-0.4	-0.2	-0.1	0.1	0.4	0.0	0.0	
of which: contribution from real GDP growth	7.5	-2.4	-4.1	-5.0	-5.8	-5.7	-5.1	-4.5	-3.9	-3.4	-2.9	-2.8	-2.7	-2.6	-2.5	-2.4	-2.4	-2.4	-2.4	-2.4	-2.4	-2.4	0.0	0.0	
Contribution from real exchange rate depreciation	158.4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.0	0.0
Other identified debt-creating flows	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Privatization receipts (negative)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	
Recognition of contingent liabilities (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	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	
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	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	
Other debt creating or reducing flow (please specify)	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Residual	29.8	26.9	18.2	7.8	6.1	3.9	3.6	3.3	2.5	1.7	1.4	1.3	1.2	1.2	1.2	1.2	1.1	1.1	1.0	0.9	0.9	0.8	3.0	7.0	
Sustainability indicators																									
PV of public debt-to-GDP ratio 2/	106.7	76.7	67.5	62.9	59.1	54.7	51.2	48.1	45.1	43.8	42.9	42.3	41.7	41.5	41.6	42.0	42.6	43.1	43.5	44.1	44.7	45.2	139.3	83.0	
PV of public debt-to-revenue and grants ratio	2211.2	839.7	521.4	488.9	458.4	443.6	420.0	396.7	366.4	353.1	345.4	338.6	331.0	334.4	336.7	341.9	338.8	346.2	352.6	361.2	369.2	376.1	127.5	67.4	
Debt service-to-revenue and grants ratio 3/	26.1	47.0	46.2	48.5	80.6	83.2	82.7	84.9	75.4	59.3	65.5	66.0	68.0	79.4	91.6	101.1	107.1	115.1	115.3	122.6	130.5	138.3	139.3	83.0	
Gross financing need 4/	72	7.1	7.3	7.3	11.3	11.0	10.8	11.1	10.2	8.3	9.1	9.4	9.7	11.1	12.7	13.9	14.9	15.7	15.5	16.5	17.2	18.0	139.3	83.0	
Key macroeconomic and fiscal assumptions																									
Real GDP growth (in percent)	-3.6	0.9	3.5	5.0	6.5	6.8	6.5	6.0	5.5	5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	-1.6	5.0	
Average nominal interest rate on external debt (in percent)	0.2	0.6	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.6	0.6	0.5	0.4	0.4	0.4	0.3	0.9	
Average real interest rate on domestic debt (in percent)	-61.8	-63.0	-23.1	-7.4	-1.3	-0.9	-1.1	-1.1	-1.3	-0.2	0.6	0.8	0.9	2.2	3.4	4.3	4.9	5.1	5.1	5.2	5.2	5.3	-22.4	-8.9	
Real exchange rate depreciation (in percent, + indicates depreciation)	209.3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	63.9	...
Inflation rate (GDP deflator, in percent)	164.2	197.1	41.5	17.4	9.2	8.0	7.9	7.7	7.5	6.4	5.8	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	45.9	28.6	
Growth of real primary spending (deflated by GDP deflator, in percent)	-44.1	12.1	24.1	1.1	6.7	1.1	5.6	6.1	7.9	5.8	5.3	6.5	4.8	4.3	4.7	4.8	6.3	3.2	3.3	4.9	3.4	3.4	-2.1	7.5	
Primary deficit that stabilizes the debt-to-GDP ratio 5/	-66.7	153.4	18.8	10.8	6.0	6.6	5.9	5.1	5.1	4.5	3.8	3.5	3.3	2.9	2.5	2.1	1.9	1.7	1.6	1.5	1.4	1.2	-31.9	20.3	
PV of contingent liabilities (not included in public sector debt)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	

Sources: Country authorities; and staff estimates and projections.

1/ Coverage of debt: The central, state, and local governments, central bank. Definition of external debt is Residency-based.

2/ The underlying PV of external debt-to-GDP ratio under the public DSA differs from the external DSA with the size of differences depending on exchange rates projections.

3/ Debt service is defined as the sum of interest and amortization of medium and long-term, and short-term debt.

4/ 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 and other debt creating/reducing flows.

5/ Defined as a primary deficit minus a change in the public debt-to-GDP ratio (i.e., a primary surplus), which would stabilize the debt ratio only in the year in question.

6/ Historical averages are generally derived over the past 10 years, subject to data availability, whereas projections averages are over the first year of projection and the next 10 years.

Definition of external/domestic debt	Residency-based
Is there a material difference between the two criteria?	No

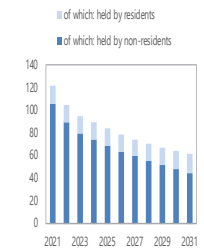
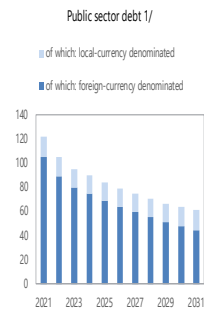
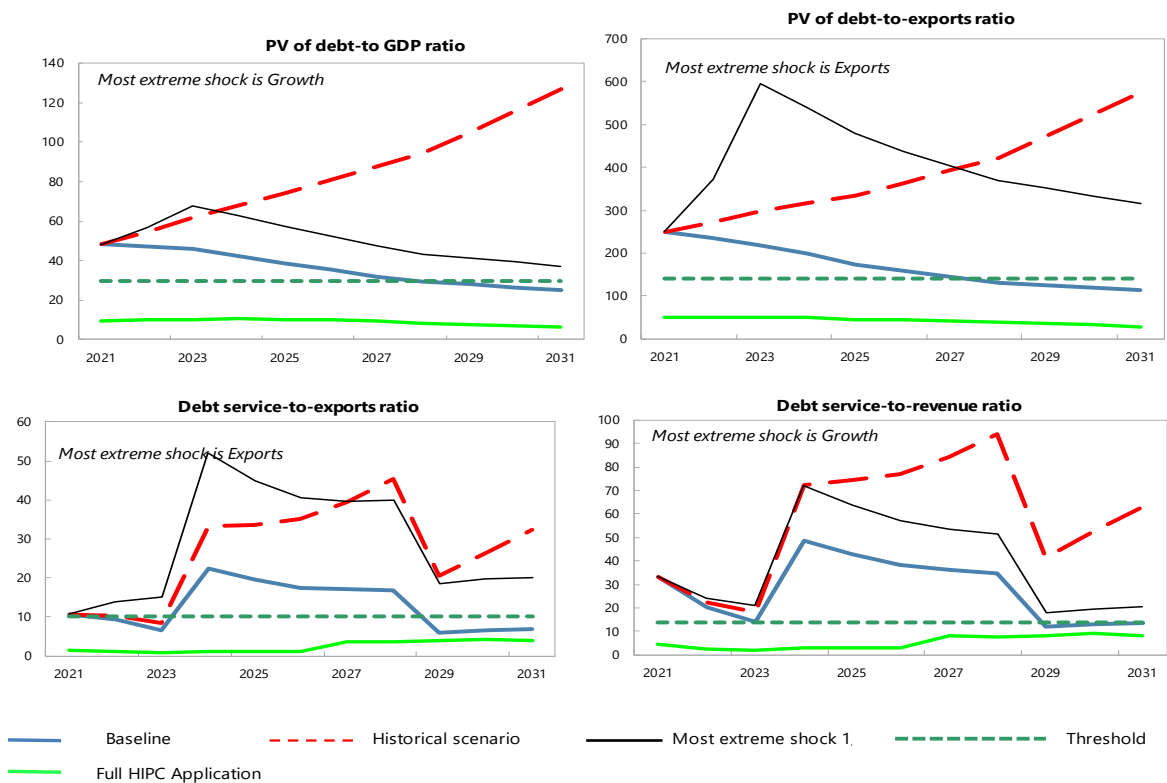


Figure 1. Sudan: Indicators of Public and Publicly Guaranteed External Debt under Alternative Scenarios, 2021–2031



Customization of Default Settings		
	Size	Interactions
Standardized Tests		Yes
Tailored Tests		
Combined CLs	Yes	
Natural Disasters	n.a.	n.a.
Commodity Prices ^{2/}	No	Yes
Market Financing	n.a.	n.a.

Note: "Yes" indicates any change to the size or interactions of the default settings for the stress tests. "n.a." indicates that the stress test does not apply.

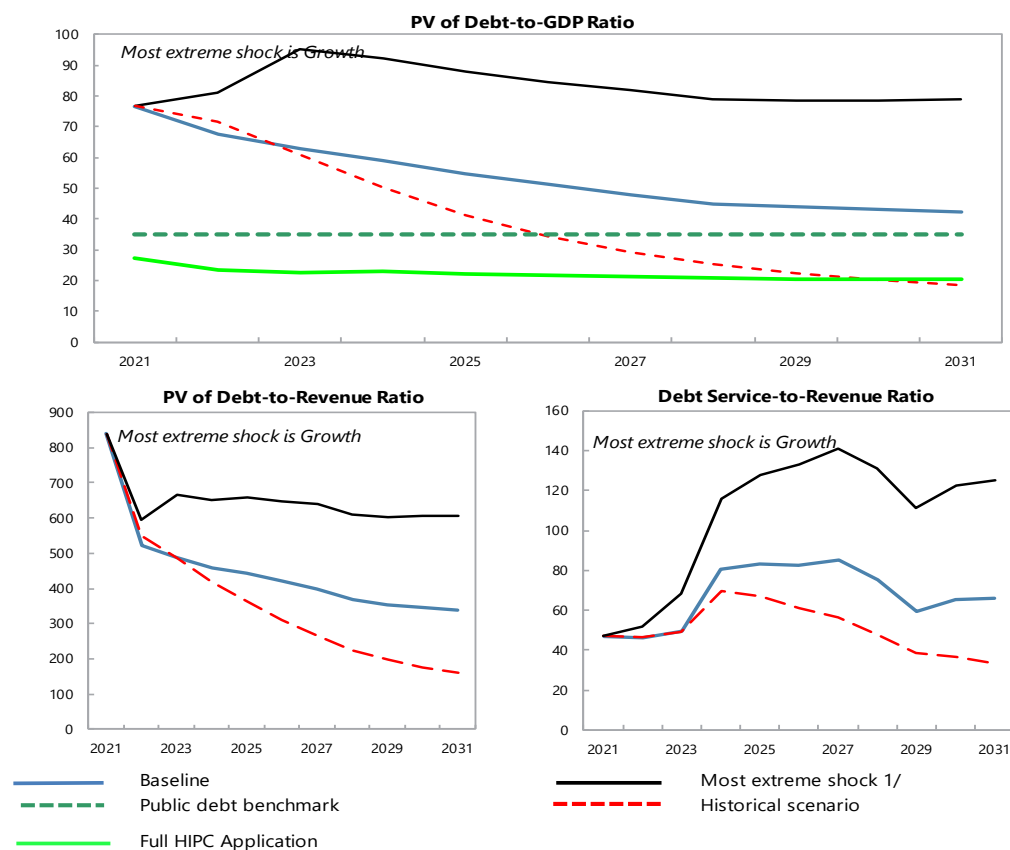
Borrowing Assumptions for Stress Tests*		
	Default	User defined
Shares of marginal debt		
External PPG MLT debt	100%	
Terms of marginal debt		
Avg. nominal interest rate on new borrowing in USD	0.6%	0.6%
USD Discount rate	5.0%	5.0%
Avg. maturity (incl. grace period)	32	32
Avg. grace period	5	5

* Note: All the additional financing needs generated by the shocks under the stress tests are assumed to be covered by PPG external MLT debt in the external DSA. Default terms of marginal debt are based on baseline 10-year projections.

Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in or before 2031. Stress tests with one-off breaches are also presented (if any), while these one-off breaches are deemed away for mechanical signals. When a stress test with a one-off breach happens to be the most extreme shock even after disregarding the one-off breach, only that stress test (with a one-off breach) would be presented.

2/ The magnitude of shocks used for the commodity price shock stress test are based on the commodity prices outlook prepared by the IMF research department.

Figure 2. Sudan: Indicators of Public Debt Under Alternative Scenarios, 2021–31


Borrowing Assumptions for Stress Tests*	Default	User defined
Shares of marginal debt		
External PPG medium and long-term	23%	23%
Domestic medium and long-term	54%	54%
Domestic short-term	22%	23%
Terms of marginal debt		
External MLT debt		
Avg. nominal interest rate on new borrowing in USD	0.6%	0.6%
Avg. maturity (incl. grace period)	32	32
Avg. grace period	5	5
Domestic MLT debt		
Avg. real interest rate on new borrowing	-22.6%	-22.6%
Avg. maturity (incl. grace period)	3	3
Avg. grace period	0	0
Domestic short-term debt		
Avg. real interest rate	-11.7%	-11.7%

* Note: The public DSA allows for domestic financing to cover the additional financing needs generated by the shocks under the stress tests in the public DSA. Default terms of marginal debt are based on baseline 10-year projections.

Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in or before 2031. The stress test with a one-off breach is also presented (if any), while the one-off breach is deemed away for mechanical signals. When a stress test with a one-off breach happens to be the most extreme shock even after disregarding the one-off breach, only that stress test (with a one-off breach) would be presented.

Table 3. Sudan: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2021–2031

	Projections 1/										
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
PV of debt-to-GDP ratio											
Baseline	48	47	46	43	39	35	32	29	28	27	25
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2021-2031 2/	48	54	62	68	74	81	87	94	105	116	127
B. Bound Tests											
B1. Real GDP growth	48	56	68	63	57	52	48	43	41	39	37
B2. Primary balance	48	48	48	45	41	38	35	32	30	29	27
B3. Exports	48	52	59	55	50	46	43	39	37	35	33
B4. Other flows 3/	48	50	52	49	45	41	38	35	33	31	29
B5. Depreciation	48	48	46	43	39	36	32	30	28	27	25
B6. Combination of B1-B5	48	53	62	58	53	49	45	41	39	37	35
C. Tailored Tests											
C1. Combined contingent liabilities	48	48	48	45	41	38	35	32	30	29	27
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	48	48	47	44	41	37	34	30	29	27	25
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	30	30	30	30	30	30	30	30	30	30	30
PV of debt-to-exports ratio											
Baseline	250	235	220	198	174	158	144	131	126	120	113
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2021-2031 2/	250	272	298	318	335	362	392	422	473	522	573
B. Bound Tests											
B1. Real GDP growth	250	235	220	198	174	158	144	131	126	120	113
B2. Primary balance	250	239	229	208	185	170	156	143	137	131	124
B3. Exports	250	373	594	539	478	438	404	371	353	334	315
B4. Other flows 3/	250	252	251	227	201	184	169	155	148	140	132
B5. Depreciation	250	235	216	194	171	155	141	128	123	117	111
B6. Combination of B1-B5	250	337	253	392	348	318	293	267	255	241	228
C. Tailored Tests											
C1. Combined contingent liabilities	250	243	229	208	185	169	155	142	136	130	124
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	250	241	229	208	183	166	150	136	129	121	113
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	140	140	140	140	140	140	140	140	140	140	140
Debt service-to-exports ratio											
Baseline	11	9	7	22	19	18	17	17	6	7	7
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2021-2031 2/	11	10	8	33	34	35	40	45	21	27	32
B. Bound Tests											
B1. Real GDP growth	11	9	7	22	19	18	17	17	6	7	7
B2. Primary balance	11	9	7	23	20	18	17	17	6	7	8
B3. Exports	11	14	15	52	45	41	39	40	18	20	20
B4. Other flows 3/	11	9	7	23	20	18	17	18	8	8	8
B5. Depreciation	11	9	7	22	19	18	17	17	6	6	7
B6. Combination of B1-B5	11	12	12	39	34	31	30	31	13	14	15
C. Tailored Tests											
C1. Combined contingent liabilities	11	9	7	23	20	18	17	17	6	7	7
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	11	9	7	23	20	19	18	18	6	7	7
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	10	10	10	10	10	10	10	10	10	10	10
Debt service-to-revenue ratio											
Baseline	33	20	14	49	43	38	36	35	12	13	14
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2021-2031 2/	33	22	18	72	75	77	84	94	42	53	63
B. Bound Tests											
B1. Real GDP growth	33	24	21	72	64	57	54	51	18	20	20
B2. Primary balance	33	20	14	49	43	39	37	35	13	14	15
B3. Exports	33	21	16	53	47	42	40	39	18	19	19
B4. Other flows 3/	33	20	15	50	44	39	37	37	15	16	16
B5. Depreciation	33	21	15	50	44	40	37	36	12	13	14
B6. Combination of B1-B5	33	20	18	59	52	46	44	44	18	19	20
C. Tailored Tests											
C1. Combined contingent liabilities	33	20	14	49	43	39	36	35	12	13	14
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	33	25	18	62	52	45	40	37	13	14	14
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	14	14	14	14	14	14	14	14	14	14	14

Sources: Country authorities; and staff estimates and projections.

1/ A bold value indicates a breach of the threshold.

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

3/ Includes official and private transfers and FDI.

Table 4. Sudan: Sensitivity Analysis for Key Indicators of Public Debt, 2021-2031

	Projections 1/										
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
PV of Debt-to-GDP Ratio											
Baseline	77	67	63	59	55	51	48	45	44	43	42
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2021-2031 2/	77	72	61	50	41	35	29	25	22	20	18
B. Bound Tests											
B1. Real GDP growth	77	81	95	92	88	85	82	79	79	79	79
B2. Primary balance	77	74	74	68	62	57	53	49	47	46	45
B3. Exports	77	71	72	68	63	59	56	53	51	49	48
B4. Other flows 3/	77	71	70	66	61	57	54	51	49	48	47
B5. Depreciation	77	60	55	51	47	43	40	37	35	34	32
B6. Combination of B1-B5	77	73	74	66	62	58	55	52	50	49	49
C. Tailored Tests											
C1. Combined contingent liabilities	77	79	72	66	60	55	52	48	47	46	45
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	77	72	65	60	56	53	51	51	52	52	54
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Public debt benchmark	35	35	35	35	35	35	35	35	35	35	35
PV of Debt-to-Revenue Ratio											
Baseline	840	521	489	458	444	420	397	366	353	345	339
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2021-2031 2/	840	550	488	418	364	311	264	225	197	176	160
B. Bound Tests											
B1. Real GDP growth	840	595	667	651	661	649	638	609	604	605	607
B2. Primary balance	840	569	578	528	500	465	434	398	381	371	361
B3. Exports	840	549	561	527	512	487	462	427	408	396	385
B4. Other flows 3/	840	550	542	509	494	469	444	410	393	382	372
B5. Depreciation	840	483	442	410	389	362	334	302	285	273	262
B6. Combination of B1-B5	840	563	564	505	492	469	446	414	401	393	387
C. Tailored Tests											
C1. Combined contingent liabilities	840	610	558	511	486	455	427	392	376	367	359
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	840	649	614	582	542	499	462	433	433	438	443
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Debt Service-to-Revenue Ratio											
Baseline	47	46	49	81	83	83	85	75	59	65	66
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2021-2031 2/	47	47	49	70	67	61	56	48	38	36	33
B. Bound Tests											
B1. Real GDP growth	47	52	68	116	128	133	141	131	112	122	125
B2. Primary balance	47	46	68	109	105	100	95	83	65	70	70
B3. Exports	47	46	50	81	84	83	86	77	63	69	69
B4. Other flows 3/	47	46	50	81	84	83	85	77	62	68	68
B5. Depreciation	47	42	45	71	74	74	76	67	52	58	58
B6. Combination of B1-B5	47	46	53	92	95	96	99	88	71	78	79
C. Tailored Tests											
C1. Combined contingent liabilities	47	46	83	100	102	94	92	81	63	68	68
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	47	54	64	104	109	109	109	101	91	96	97
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

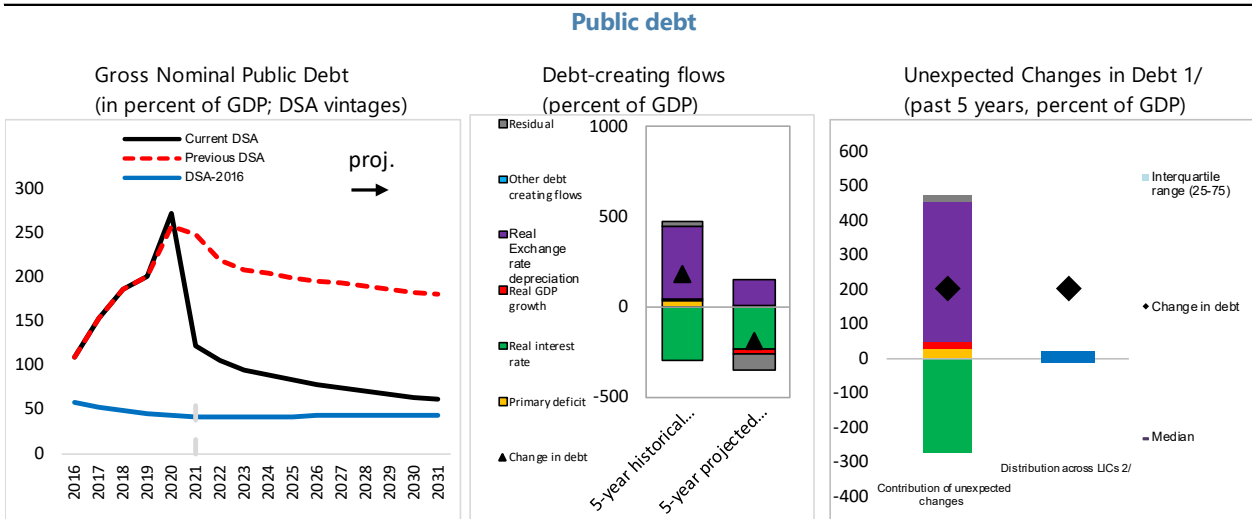
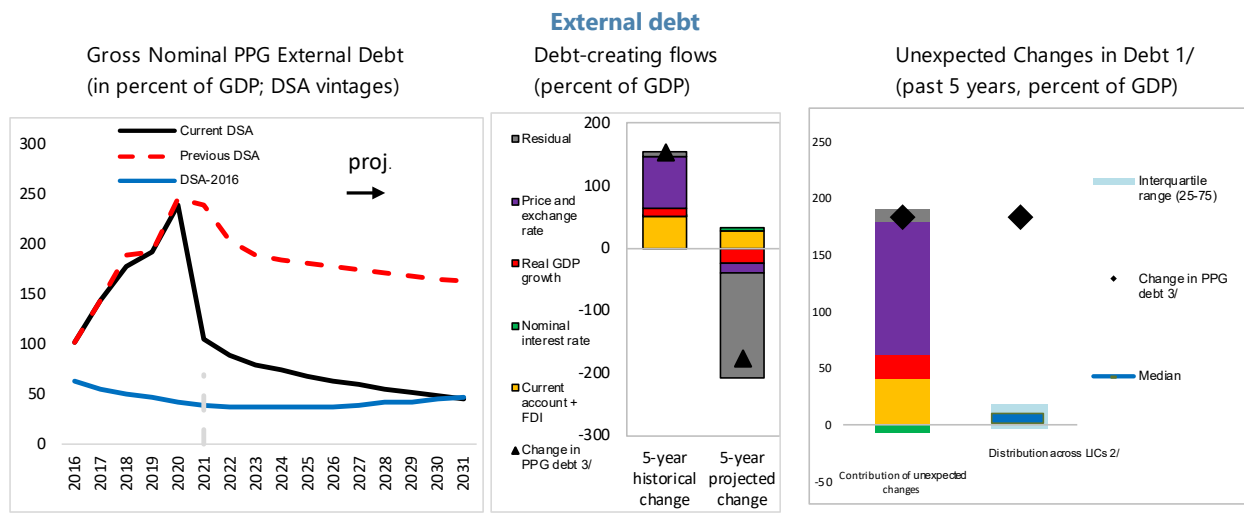
Sources: Country authorities; and staff estimates and projections.

1/ A bold value indicates a breach of the benchmark.

2/ Variables include real GDP growth, GDP deflator and primary deficit in percent of GDP.

3/ Includes official and private transfers and FDI.

Figure 3. Sudan: Drivers of Debt Dynamics – Baseline Scenario External Debt



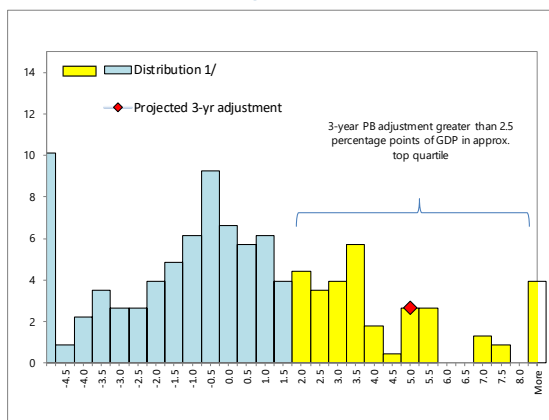
1/ Difference between anticipated and actual contributions on debt ratios.

2/ Distribution across LICs for which LIC DSAs were produced.

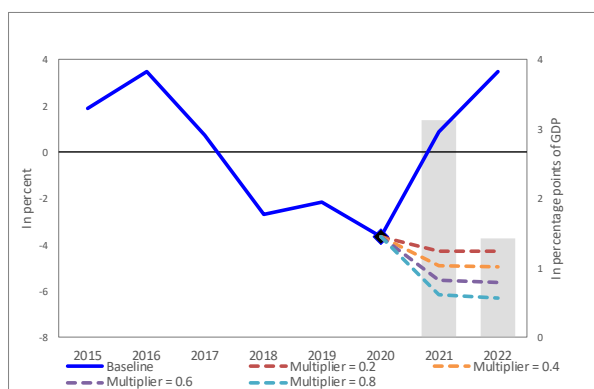
3/ Given the relatively low private external debt for average low-income countries, a ppt change in PPG external debt should be largely explained by the drivers of the external debt dynamics equation.

Figure 4. Sudan: Realism Tools

3-Year Adjustment in Primary Balance
(Percentage points of GDP)



Fiscal Adjustment and Possible Growth Paths 1/



1/ Data cover Fund-supported programs for LICs (excluding emergency financing) approved since 1990. The size of 3-year adjustment from program inception is found on the horizontal axis; the percent of sample is found on the vertical axis.

1/ Bars refer to annual projected fiscal adjustment (right-hand side scale) and lines show possible real GDP growth paths under different fiscal multipliers (left-hand side scale).