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CHAD

JOINT WORLD BANK-IMF DEBT SUSTAINABILITY ANALYSIS

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CHAD: JOINT BANK-FUND DEBT SUSTAINABILITY ANALYSIS	
Risk of external debt distress	High
Overall risk of debt distress	High
Granularity in the risk rating	Sustainable
Application of judgment	No

Chad's debt ratios have improved from the last DSA (December 2021) due to higher oil prices and the debt treatment agreed by official and commercial creditors under the G20 Common Framework. With the conclusion of this agreement, Chad is no longer in debt distress, but is at high risk of external debt distress as the external debt service-to-revenue ratio breaches its threshold in 2022-23[1]. This ratio is, however, expected to decrease below the 14-percent threshold in 2024 on account of the debt treatment signed under the G20 Common Framework. Downside risks remain high given the uncertainties around oil price volatility, increased insecurity, and social unrest due to the political transition, and possible shortfalls in financing. The risk of debt distress is expected to be 'moderate' by the end of the program period as the debt service-to-revenue ratio is expected to be below the threshold of 14 percent in 2024. The likelihood of this outcome is enhanced by the agreement on the contingent debt treatment and the implementation of the debt restructuring agreement with the main private creditor. The PV of total public debt-to-GDP indicator is above the 35 percent high-risk benchmark in 2022-23 associated heightened public debt vulnerabilities with a weak debt carrying capacity. Chad's public debt is assessed to be sustainable. Identified domestic and external funding sources together with the identified ambitious fiscal consolidation would be essential for debt to remain sustainable.

[1] With a score of 2.30, Chad's composite indicator, which is based on the October 2022 WEO and the 2021 CPIA, signals a weak debt-carrying capacity.

BACKGROUND

DEBT COVERAGE

1. Public debt coverage includes central state debt, as well as government guaranteed external debt owed by the public oil company (*Société des Hydrocarbures du Tchad* or SHT). Almost all other public sector entities (including other state-owned enterprises (SOEs) and local governments) do not have access to external financing. The exception is the N'Djamena Oil Refinery (*Société de Raffinage de N'Djaména*, or SRN), in which the central government holds a 40 percent share, and which has two loans with CNPC Finance and EXIM Bank China. As in previous DSAs, external debt is defined on a currency basis. Therefore, CFAF-denominated debt contracted with the regional development bank (BDEAC)[2] and with bilateral creditors in the currency union (Cameroon, Equatorial Guinea, and Republic of Congo) are not considered external debt. Debt owed to Angola, which is being repaid in kind, is classified as external debt.

2. The contingent liability stress test accounts for vulnerabilities associated with nonguaranteed SOE debt and contingent fiscal liabilities associated with financial sector recapitalization (Text Table 2). Contingent liabilities from financial markets are set at 5 percent of GDP, which represents the average cost to the government of a financial crisis in a low-income country since 1980. The size of the contingent liabilities for the SOE debt is set at 9.5 percent, reflecting the liabilities of SRN, *Société Nationale d'Electricité* (SNE), and *Société Nationale de Ciment* (SONACIM) following the results of a 2017 SOE Census supported by the World Bank. The size of domestic arrears in 2021 amounted to CFAF 393 billion, about 7.5 percent of non-oil GDP. The authorities aim to reduce the stock of domestic arrears by CFAF 95 billion in 2022, about 1.7 of non-oil GDP, and by CFAF 200 billion over 2022-24 by increasing the amount of repayment gradually throughout the program period, depending on the availability of liquidity buffers created from oil revenues. The stock of audited domestic arrears reached CFAF 354 billion at end-2021, while the unaudited arrears (Reste A Payer) were at CFAF 39 billion. The audited arrears include arrears to banks and arrears to the domestic private sector.

EVOLUTION AND COMPOSITION OF PUBLIC DEBT

3. Chad's public and publicly guaranteed (PPG) debt burden has been on the rise since 2019. Gross public debt increased from 54.1 percent of GDP at end-2020 to 55.9 percent of GDP in 2021 (Text Figure 1), above the average for DSSI-eligible countries of 53 percent of GDP. This is due to the increase in domestic debt, from 27.6 percent in GDP in 2020 to 30.4 percent of GDP in 2021, as domestic financing significantly expanded to compensate for lower-than-expected external budget support. The stock of external debt decreased by about 1 percentage point of GDP to 25.5 percent of GDP in 2021. At end-2021, outstanding PPG external debt stood at US$2.9 billion.

[2] The *Banque de Développement des Etats de l'Afrique Centrale* (BDEAC) is the development bank of the CEMAC region. The main shareholder is BEAC (33.43 percent). CEMAC countries, including Chad, are equal shareholders (8.48 percent each).

Text Table 1. Chad: Coverage of Public-Sector Debt and Design of Contingent Liability Stress Tests

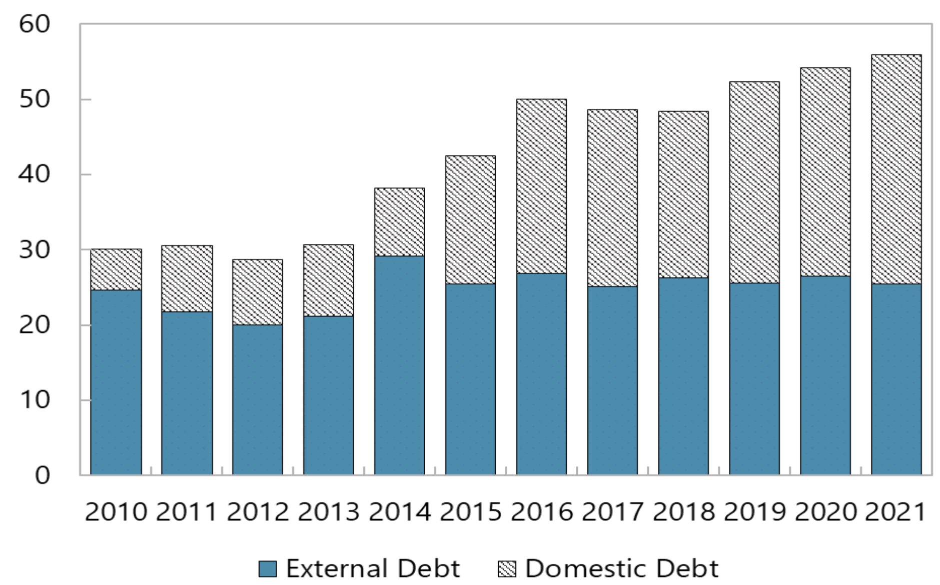
	Subsectors of the public sector	Check box
1	Central government	X
2	State and local government	X
3	Other elements in the general government	
4	o/w: Social security fund	
5	o/w: Extra budgetary funds (EBFs)	
6	Guarantees (to other entities in the public and private sector, including to SOEs)	X
7	Central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

Public debt coverage and the magnitude of the contingent liability tailored stress test

1	The country's coverage of public debt	The central, state, and local governments, central bank, government-guaranteed debt			
		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	0	
3	SoE's debt (guaranteed and not guaranteed by the government) 1/	2	percent of GDP	9.5	From SOE census, 2017 levels.
4	PPP	35	percent of PPP stock	0.0	
5	Financial market (the default value of 5 percent of GDP is the minimum value)	5	percent of GDP	5.0	
	Total (2+3+4+5) (in percent of GDP)			14.5	

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%.

Text Figure 1. Chad: Public and Publicly Guaranteed Debt
(Percent of GDP)



Source: Country authorities, IMF and World Bank staff estimates

4. **The composition of external PPG debt is dominated by commercial, multilateral organizations, and non-Paris Club lenders**. (Text Table 2). The share of external debt is similarly split between multilateral, bilateral, and commercial creditors. However, non-Paris Club creditors hold the largest share of official bilateral debt. Nearly all commercial debt is held by one creditor.

Table 1. Chad: Decomposition of Public Debt and Debt Service by Creditor, 2021-23[1]
(US$ million, unless otherwise indicated)

	Debt Stock (end of period)			Debt Service					
	2021			2021	2022	2023	2021	2022	2023
	(In US$)	*(% total debt)*	*(% GDP)*	*(In US$)*			*(% GDP)*		
Total	6296	100.00	55.88	385	920	1089	3.42	7.07	8.00
External	2869	45.58	25.47	282	517	506	2.51	3.98	3.72
Multilateral creditors[2,3]	941	14.95	8.35	34	52	80	0.30	0.40	0.59
IMF	651	10.33	5.77						
World Bank	163	2.59	1.45						
African Development Bank	100	1.58	0.89						
Other Multilaterals	28	0.44	0.25						
o/w: IFAD	28	0.44	0.25						
Bilateral Creditors[2]	810	12.86	7.19	37	49	73	0.33	0.38	0.53
Paris Club	113	1.80	1.00	-	1	5	-	0.01	0.04
o/w: France	113	1.80	1.00						
Non-Paris Club	697	11.07	6.18	37	48	67	0.33	0.37	0.49
o/w: China	264	4.20	2.35						
o/w: Libya	263	4.17	2.33						
Commercial creditors	949	15.08	8.42	208	414	361	1.84	3.18	2.65
o/w: Glencore Energy	926	14.70	8.21						
o/w: Mega International (Taiwan, China)	10	0.16	0.09						
Other international creditors	170	2.69	1.51	25	20	20	0.23	0.16	0.15
o/w: Islamic Development Bank	80	1.26	0.71						
o/w: BADEA	70	1.11	0.62						
Domestic	3426	54.42	30.41	103	403	583	0.91	3.10	4.29
BEAC (incl. SDR allocation)	1006	15.98	8.93						
Arrears	676	10.73	6.00						
T-Bills (Net)	665	10.56	5.90	-	234	177	-	1.80	1.30
Bonds	281	4.46	2.49	-	21	142	-	0.16	1.04
Loans	799	12.69	7.09	40	63	75	0.35	0.48	0.55
Memo items:									
Collateralized debt[4]	926	14.70	8.21						
o/w: Related	-	0.00	-						
o/w: Unrelated	926	14.70	8.21						
Contingent liabilities	196	3.11	1.74						
o/w: Public guarantees	196	3.11	1.74						
o/w: Other explicit contingent liabilities[5]									

1/As reported by country authorities according to their classification of creditors, including by official and commercial. Debt coverage is the same as the DSA.

2/Some public debt may not be shown in the table due to confidentiality clauses and/or capacity constraints.

3/Multilateral creditors" are simply institutions with more than one official shareholder and may not necessarily align with creditor classification under other IMF policies (e.g. Lending Into Arrears)

4/Debt is collateralized when the creditor has rights over an asset or revenue stream that would allow it, if the borrower defaults on its payment obligations, to rely on the asset or revenue stream to secure repayment of the debt. Collateralization entails a borrower granting liens over specific existing assets or future receivables to a lender as security against repayment of the loan. Collateral is "unrelated" when it has no relationship to a project financed by the loan. An example would be borrowing to finance the budget deficit, collateralized by oil revenue receipts. See the joint IMF-World Bank note for the G20 "Collateralized Transactions: Key Considerations for Public Lenders and Borrowers" for a discussion of issues raised by collateral.

5/Includes other-one off guarantees not included in publicly guaranteed debt (e.g. credit lines) and other explicit contingent liabilities not elsewhere classified (e.g. potential legal claims, payments resulting from PPP arrangements).

5. **No new arrears remain outstanding while discussions to restructure old outstanding arrears are ongoing**. Technical arrears were recorded at end-2021 and were cleared within the six-week grace period in early 2022 and the government has continued to pay external debt obligations in a timely manner, so the ECF performance criterion on the non-accumulation of new external arrears was met. Two restructuring agreements were finalized, one with BDEAC at end-December 2021, and one with the Republic of Congo in February 2022. Negotiations with Libya have significantly progressed, and an agreement is expected to be signed in the coming weeks. The restructuring of official debt with Equatorial Guinea is currently under discussion. The authorities have engaged with Belgian officials on a claim made by a Belgian company for a furnishing contract of a hotel in N'Djamena and intent on resolving the problem in good faith.

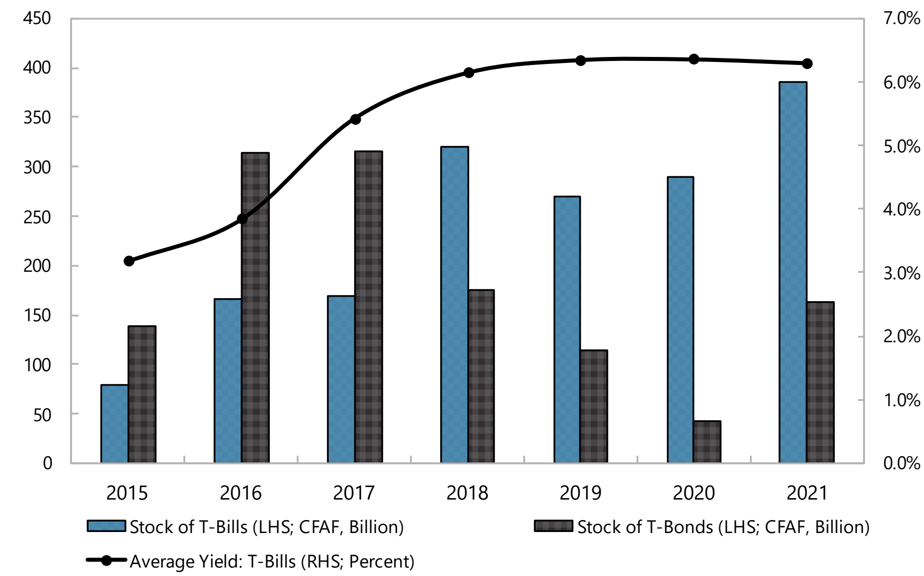
6. **Chad has benefited from IDA financial support since 2013 and is also benefiting from debt relief under the CCRT as well as a small amount of debt suspension under the Debt Service Suspension Initiative (DSSI).** IDA has significantly stepped up its support since 2013, which has entirely been provided in the form of grants, reflecting IDA's policy to provide grants to countries at moderate and high risk of debt distress. In turn, this has translated into IDA commitments of over $1.5 billion, with positive net flows of over half a billion USD over the past five years. Chad is benefiting from debt relief under the CCRT on its scheduled repayments to the Fund of SDR 10.1 million in 2020 and 2021. In 2020 Chad applied for debt suspension under the terms of the G20's DSSI not only from its G20 creditors, but from all its official bilateral and private commercial creditors. It signed a MOU with France and Kuwait. Chad requested its official bilateral creditors to extend the DSSI to end-2021. In 2020, DSSI led to a debt relief of US$1.2 million in 2020 and US$0.1 million in 2021.

7. **The authorities relied on domestic borrowing to fill its residual gap in 2021**. This includes the utilization of BEAC's public securities' program which expired in September 2021 and mitigated severe liquidity pressures on the treasury in 2021. In 2022, the stock of outstanding Treasuries has been rising significantly despite high yields, albeit with significant improvement in the maturity profile. The volume of outstanding securities reached CFAF 668 billion (8.8 percent of GDP) in October 2022. Efforts to lengthen maturities conducted by the Treasury, however, mitigated roll-over risk via shift to longer-term securities (OTAs), with their share in domestic debt portfolio rising sharply from 12 percent in March 2021 to 76 percent in October 2022. The increase in oil revenues is expected to support a gradual reduction in the total domestic financing stock during the program period. The stock of domestic securities issued by the Republic of Chad is expected to decline by CFAF 235 billion over the program period, as the government will try to reduce its costly debt service rather than accumulating large deposits at the central bank.

8. **Official bilateral and the main private creditors have reached an agreement with the authorities on a debt treatment under the G20 Common Framework to restore debt sustainability consistent with a moderate risk of external debt distress**. Official creditors are expected to sign an MOU on debt treatment in the coming days. In parallel, the authorities signed an agreement in principle with Glencore. Both agreements are in line with the ECF program parameters. The debt treatment envelope is based on the joint IMF-WB DSA and is consistent with the parameters of the ECF Fund-supported program and contain three important components. First, Creditors committed to reconvene and address the need for a debt treatment should such a need appear based on the IMF-WBG DSA and the Creditor Committee Members' collective assessment and consistent with the paraments of the current ECF. Second, Glencore agreed to reprofile part of the debt service due in 2024 to ensure Chad's public

debt is sustainable with moderate risk of debt distress by the end of the program period, while official creditors will contribute in proportion of the debt service due to each official bilateral creditor if the private creditor contribution is not sufficient to bring the debt service to revenue ratio below 14 percent in 2024. Third, Official Creditor Committee Members will reconvene well before end-2024 to examine and address the need for a debt treatment for the period 2025-28 should such a need appear. They will continue to coordinate closely and share information on the status of implementation of the MOU.

Text Figure 2. Chad: Domestic Marketable Securities



Source: BEAC

MACROECONOMIC FORECASTS

9. **The DSA's baseline scenario reflects policies and financing assumptions consistent with the baseline of the first and second reviews of the ECF**. Macroeconomic assumptions, including the oil price assumptions, have been updated with the latest WEO (October 2022). Relative to the previous DSA (December 2021), forecasted real GDP growth in 2022 has been revised up from 2.2 percent to 2.5 percent. After contracting by about 11 percent in 2020–21, oil production is expected to bounce back in 2022–23, as the one-off factors (technical difficulties, labor strike, fire) that affected production are not expected to recur and as two new oil operators are expected to reopen some fields that had been temporarily closed. Growth is expected to accelerate in 2023, as the economy will continue to recover from the pandemic slump and benefit from a steady increase in public investment and from the continued repayment of domestic arrears to the private sector, which will support the economy and strengthen the banking sector. Non-oil GDP is expected to grow at a more modest rate than previously anticipated in 2022. Oil production is expected to resume growth in the medium term, leading to higher oil revenues, exports, and overall GDP growth. The outlook assumes that fiscal consolidation will continue beyond the program period at a gradual pace. The fiscal consolidation aims to strengthen non-oil revenue while maintaining public investment at reasonable levels and protect social spending while improving its efficiency. If oil revenue remains high until then, further deposit accumulation, additional accelerated repayment of domestic arrears, and additional high-priority spending over the medium term could be considered. Chad ranks second to last in the World Bank's Human Capital Index 2020 and about 6.5 million

Chadians, 42 percent of the population, are below the poverty line according to national statistics. Furthermore, Chad is highly vulnerable to climate change,[3] however, social spending and spending on climate adaptation are among the lowest in the world. Any fiscal consolidation should therefore not only protect but also allow for increased spending on critical social sectors and climate adaptation.

10. The forecast is subject to substantial uncertainty and downside risks as the economic impact of the pandemic unfolds and as ongoing insecurity and vulnerabilities to climatic shocks persist. Chad is one of the poorest and most vulnerable countries in the world. Its heavy dependency on oil has increased economic volatility as evidenced by four recessions since 2006 with significant consequences for debt sustainability. Insecurity and increasing frequency and severity of climatic shocks exacerbate an already fragile economic environment. The authorities have a financing plan that should underpin a gradual repayment of audited domestic arrears.

11. Over the long term, the DSA assumes an average real growth rate of 3.6 percent between 2025-29. While higher than recent growth trends in Chad, forecasted growth takes into consideration the implementation of a strong reform agenda by the authorities in the coming years. Steps are already being taken to mobilize more non-oil revenues, including by digitizing customs procedures for livestock and streamlining tax exemptions. Improving fiscal space will support an increase in public investment to 6.7 percent of non-oil GDP by the end of the program. More efficient and transparent allocation of public investments in energy and connectivity infrastructure coupled with reforms to improve the business environment is expected to support a recovery in the private non-oil sector in Chad. In the long run, the DSA is also projecting a GDP deflator of 2.1 percent, consistent with historical trends.

12. Financing assumptions have been updated based on most recent information. With respect to external financing, the DSA includes IDA grant financing during the period July 2022-June 2024. In addition, Chad is eligible for an annual Prevention and Resilience Allocation (PRA) contingent on the successful attainment of PRA milestones. Chad also has access to additional IDA resources under the Regional Window, Crisis Response Window, Window for Host Communities and Refugees, and the Private Sector Window, subject to meeting the respective window eligibility criteria. Subsequently, annual IDA allocations assume a similar level of resources as the IDA19 performance-based allocation. Actual IDA financing would be dependent on the performance of Chad's reforms and subsequent replenishments by IDA Deputies, with terms based on current IDA policies[4]. New financing is also assumed starting in 2023 from the AfDB, and other international and bilateral partners, which is conditional on a successful debt restructuring. Overall, the authorities' financing strategy mainly relies on concessional external financing and grants given the limited capacity of the regional debt market.

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[3] World Bank. 2020. The Next Generation Africa Climate Business Plan: Ramping Up Development-Centered Climate Action. World Bank, Washington, DC.

[4] The projection of grants to 2023 reflects a proposed change to the LIC DSF guidance under review. Regular credit terms on all lending are assumed starting in 2024 when Chad is projected to be at moderate risk of debt distress.

Text Table 2. Chad: Selected Macroeconomic Assumptions

	2017-20	2021	2022	2023	2024	2025-29 (avg.)
	(Annual percentage change, unless otherwise indicated)					
Real GDP growth						
Current DSA	0.3	-1.1	2.5	3.5	3.7	3.6
December 2021 DSA	0.3	0.6	2.2	3.1	3.6	3.8
Oil GDP						
Current DSA	2.0	-6.9	5.6	5.6	2.0	1.3
December 2021 DSA	1.9	2.3	2.3	2.0	2.4	2.9
Non-oil GDP						
Current DSA	0.0	0.2	1.8	3.1	4.1	4.1
December 2021 DSA	0.0	3.1	3.4	3.8	4.1	4.1
Current account (incl. expected budget grants; percent of GDP)						
Current DSA	-5.0	-4.5	2.8	-1.4	-5.2	-5.2
December 2021 DSA	-5.4	-6.5	-5.8	-7.3	-7.9	-5.4
	(percent of non-oil GDP, unless otherwise indicated)					
Overall budget balance /2						
Current DSA	0.5	-2.4	6.3	8.6	5.3	6.0
December 2021 DSA	0.5	-3.4	0.8	0.2	0.0	0.9
Revenue and grants						
Current DSA	19.2	20.6	28.4	31.5	26.4	24.6
December 2021 DSA	19.2	19.2	22.0	21.3	20.7	20.4
of which: oil revenues						
Current DSA	7.0	9.8	17.6	18.1	13.4	10.9
December 2021 DSA	7.0	7.0	9.1	7.8	6.7	5.6
of which: non-oil revenue						
Current DSA	8.8	9.6	10.0	10.3	10.7	11.7
December 2021 DSA	8.8	9.3	9.8	10.3	10.8	11.9
of which: grants						
Current DSA	3.4	1.2	0.9	3.1	2.3	1.9
December 2021 DSA	3.4	3.0	3.0	3.2	3.2	3.0
Grant Element of new External Borrowing (Current DSA, percent)	....	35.4	39.4	40.2	40.9	42.4

Source: Country authorities, IMF and World Bank staff estimates
1/ DSA Vintage of 2021 ECF Program Approval.
2/ Commitment basis, including grants.

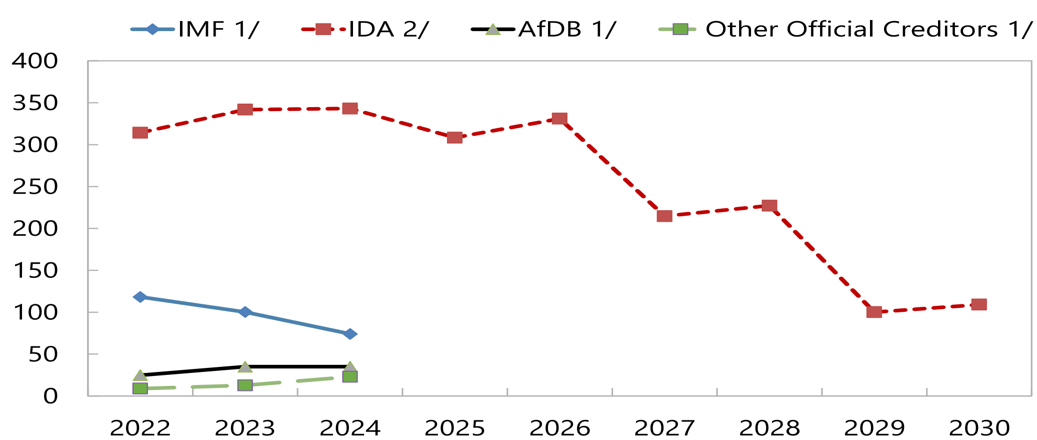
13. **The non-oil primary fiscal balance is projected to improve by about 4.7 percent of non-oil GDP from 2021 to the end of the program period.** This relies on a combination of increases in non-oil revenue and streamlining of non-essential expenditures. Over the 36 months, the program envisages a consolidation of the NOPB of about 4.7 percentage points of non-oil GDP through the mobilization of non-oil revenues and streamlining expenditures, while promoting social spending. Tax revenues are targeted to increase by 1.1 percentage points of non-oil GDP. Current primary expenditures would drop by 2.2 percentage points of non-oil GDP by gradually reducing the wage bill and other spending, such as subsidies and transfers. Capital expenditures are expected to remain at an average of 6.2 percent of non-oil GDP, above pre-pandemic levels. The rationalization of public spending, mainly through strengthening expenditure controls, prudent increases and efficiency gains in social spending, and improvements in

public investment efficiency, combined with greater transparency and oversight over debt management, will be required to reduce the risk of future debt distress.

14. The DSA assumes a gradual improvement in social spending (34 percent of current spending over 2022-24) within the overall fiscal consolidation.[5] Ensuring greater transparency and strengthening procedures and processes in critical sectors, such as health, education, energy, agriculture, transport, and public investment management, will help to promote better economic and social outcomes.

15. The forecast is broadly realistic. The projected 3-year fiscal adjustment is in line with historical data on LIC adjustment programs. Continued fiscal prudence and efforts to raise non-oil revenue beyond the current ECF arrangement horizon are expected to ensure a sustainable adjustment. The fiscal multiplier tool suggests that growth in 2022 and 2023 could differ from the projected consolidation. However, current extreme volatility weakens established relationships. The economic activity is projected to recover driven by both oil and non-oil production (primarily agriculture) in the next five years. Staff expects the private sector to drive growth, led by private investment, with the two new oil operators that are expected to reopen some fields that were temporarily closed, while public investment will remain moderate, as shown in the lower left panel of Figure 4.

Text Figure 3. Chad: Official External Financing, Net
(US, millions)



Sources: IMF and World Bank Staff estimates

1/ Financing commitments currently unavailable beyond 2024

2/ Includes project grants

[5] Poverty–reducing social spending, according to the latest general structure of Government , comprises public spending by the following ministries: (i) National Education and Civic Promotion; (ii) Public Health, including military health services and National Solidarity; (iii) Women, Early Childhood Protection and National Solidarity; (iv) Production, Irrigation and Agricultural Equipment; (v) Livestock and Animal Production; (vi) Environment Water and Sanitation; (vii) Professional Training and Small Job Promotion; and (viii) Higher Education.

COUNTRY CLASSIFICATION AND DETERMINATION OF STRESS TEST SCENARIOS

16. The composite indicator (CI) indicates weak debt carrying capacity for Chad. The CI is calculated based on the CPIA score, a proxy of external conditions defined by world economic growth, and country-specific factors. Data as of October 2022 indicate weak debt carrying capacity, mainly reflecting a low CPIA, very low remittances, and a low level of foreign reserves (Text Table 4). Debt-carrying capacity was also rated as weak prior to the latest update. The relevant external debt burden high-risk thresholds are: (i) 30 percent for the present value (PV) of external debt-to-GDP ratio; (ii) 140 percent for the PV of debt-to-exports ratio; (iii) 10 percent for the debt service-to-exports ratio; and (v) 14 percent for the debt service-to-revenue ratio.

17. The debt sustainability analysis relies on six standard stress tests and a customized oil commodity price shock stress test. Of the standard stress tests, the exports shock and the commodity price shock have the most relevance for Chad (Table 3 and 4). The commodity price shock assumes a one-standard deviation decline in oil prices from 2022-2027. The customized shock accounts for a more severe commodity price shock (50 percent).

Text Table 3. Chad: CI Score

Components	Coefficients (A)	10-year average values (B)	CI Score components (A*B) = (C)	Contribution of components
CPIA	0.39	2.75	1.06	46%
Real growth rate (in percent)	2.72	1.74	0.05	2%
Import coverage of reserves (in percent)	4.05	25.97	1.05	46%
Import coverage of reserves^2 (in percent)	-3.99	6.75	-0.27	-12%
Remittances (in percent)	2.02	1.00	0.02	1%
World economic growth (in percent)	13.52	2.90	0.39	17%
CI Score			2.30	100%
CI rating			Weak	

Final	Classification based on current vintage	Classification based on the previous vintage	Classification based on the two previous vintage
Weak	Weak	Weak	Weak
	2.30	2.40	2.40

APPLICABLE	
EXTERNAL debt burden thresholds	
PV of debt in % of	
Exports	140
GDP	30
Debt service in % of	
Exports	10
Revenue	14

APPLICABLE	
TOTAL public debt benchmark	
PV of total public debt in percent of GDP	35

Source: IMF and WB staff calculations.

The CI cutoff for medium debt carrying capacity is 2.69.

DEBT SUSTAINABILITY

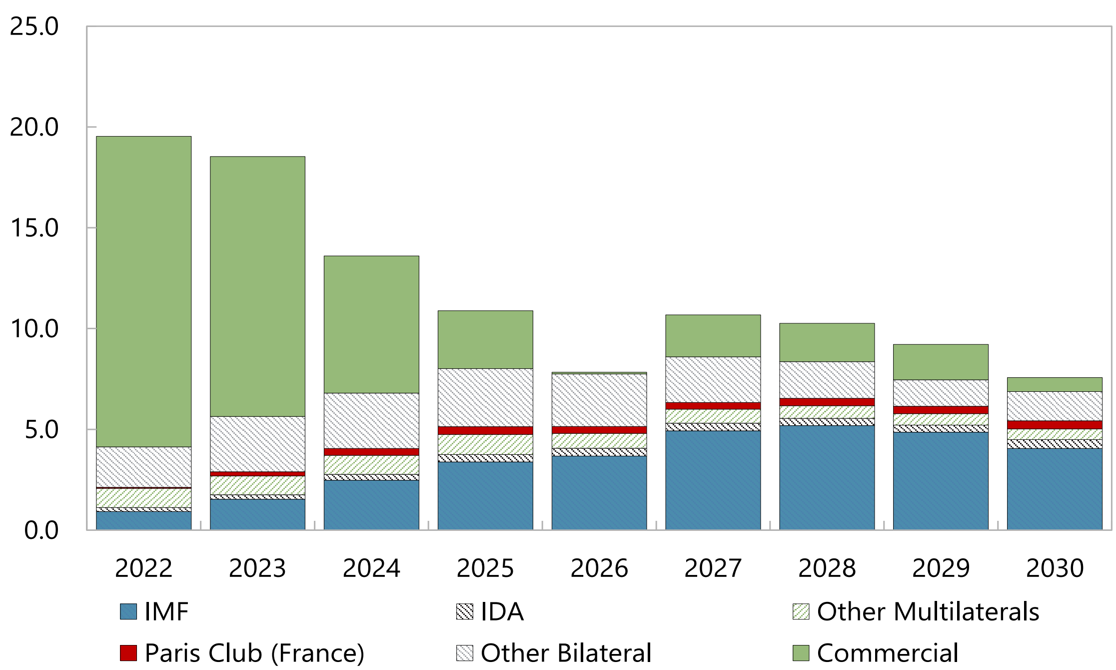
BASELINE SCENARIO

External Debt Sustainability

18. Chad's risk of external debt distress is high. The external debt service-to-revenue ratio threshold is breached in 2022-23 under the baseline scenario. Despite higher oil revenue, the debt service-to-revenue ratio rises above the 14-percent threshold mainly due to accelerated debt service to Glencore, as a cash-sweep clause provides that this debt service increases with oil prices. However, the debt treatment agreement under the G20 Common Framework provides assurances that this ratio will fall below 14 percent in 2024 and remain at moderate risk of debt distress with some margin (that is, below 12.3 percent on average) from 2025 onwards, consistent with the IMF exceptional access policies (Text Figure 4). Under the baseline scenario, other liquidity and solvency ratios remain below specified thresholds (Figure 4).

19. External debt sustainability is vulnerable to the export and exchange rate shocks. Under the shock scenarios, the exports stress test produces the most extreme scenario for all indicators except the debt service-to-revenue ratio, for which a one-time depreciation is the most extreme. Under the exports stress test, three indicator thresholds (the PV of debt-to GDP, the PV of debt-to-exports, and the debt service-to-exports ratios) are breached for the entire projection horizon (Figure 1).

Text Figure 4. Chad: External Debt Service by Creditor[1]
(Percent of government revenue, excluding grants)



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

1/ In line with the LIC DSF Guidance Note, IDA disbursements starting in 2024 are assumed in the form of concessional loans.

Public Debt Sustainability

20. Chad's overall risk of public debt distress is high. The benchmark for public debt is breached in 2022-23 under the baseline scenario**.** Public debt reached its highest point in 2021 compounded by the covid crisis. In 2022, total public debt decreased with the accelerated payments to the main private creditor due to the high oil prices. However, liquidity pressures remained, especially in the first half of 2022 in the context of higher budget deficits due to spending pressures on food insecurity and increased food and fertilizer prices stemming from the Russian invasion of Ukraine. The PV of total public debt-to-GDP ratio peaked in 2021 at 52.2 percent and is expected to decrease to 46.3 percent in 2022 and 39.3 percent in 2023, but still above the 35 percent high-risk threshold associated with heightened public debt vulnerabilities with a weak debt carrying capacity. The PV of total public debt-to-GDP ratio only falls below the threshold from 2024 onwards.

21. Stress tests indicate that public debt is vulnerable to the combined contingent liabilities shock. The commodity price shock is the most extreme shock to the PV of debt-to-GDP ratio. The tailored test for the combined contingent liability shock is the most extreme shock impacting the debt service-to-revenue ratio.

RISK RATING AND VULNERABILITIES

22. Chad has a high risk of external and overall risk of debt distress, but debt is sustainable. Based on the assessment of external public debt indicators under the current baseline scenario and by the debt treatment from official and private creditors that will provide relief if downside risks (including lower oil prices) were to materialize and a residual financing gap to reemerge, Chad's classification has been changed from "in debt distress" in the previous DSA (December 2021) to "high risk" of debt distress. With high oil prices and therefore, oil revenues, there is no residual financing gap. Nonetheless, Chad's outlook is subject to significant downside risks including potential difficulties mobilizing needed domestic financing, regional insecurity, a fragile socio-political environment, vulnerability to climate shocks, disruptions to oil production, and exposure to spillovers from Russian invasion of Ukraine impacting food and fertilizer prices.

23. The debt treatment agreed with official and public creditors under the G20 Common Framework is vital to maintain debt sustainability. It ensures that if downside risks materialize and residual financing gaps reemerge, creditors will reconvene and address these financing needs in a timely manner. In addition, the terms agreed guarantee that the risk of debt distress is brought to "moderate" by the end of the program period and will remain moderate beyond the program period in the medium term, under the ECF program's assumptions. This is consistent with the exceptional access policies, that require restoring debt sustainability with high probability.

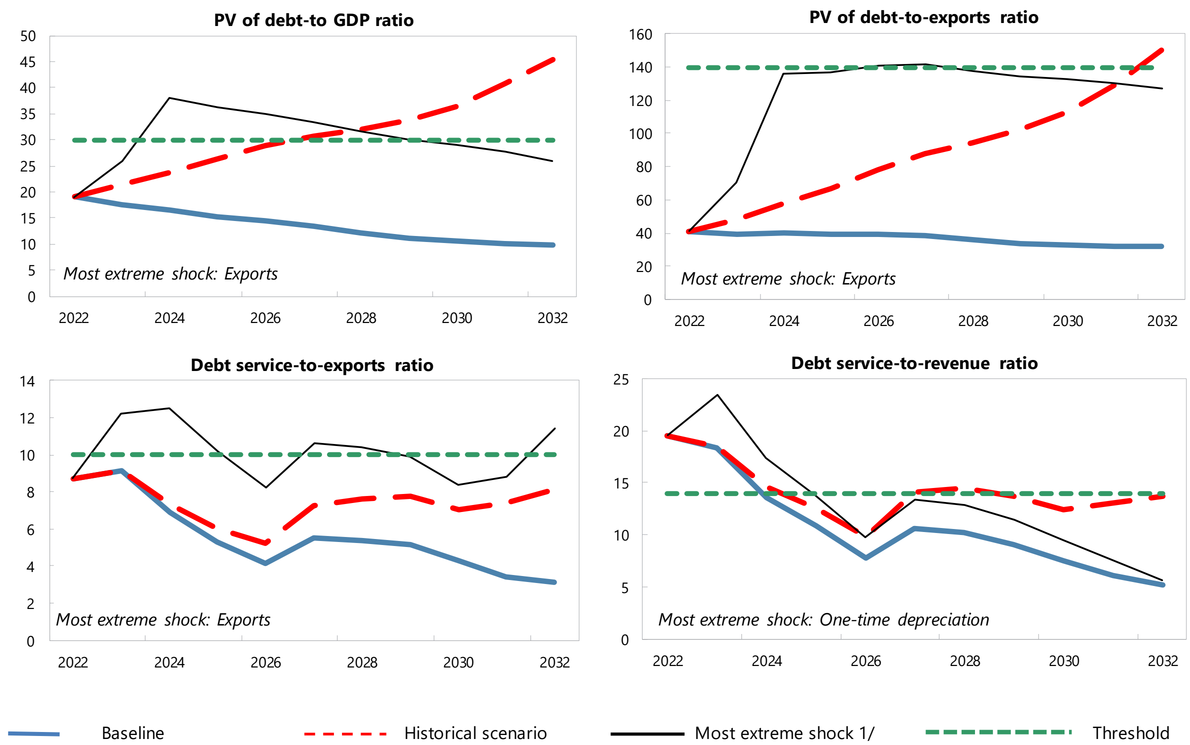
24. Significant concessional financing and implementation of the debt treatment agreement will still be required to ensure a durable improvement to a moderate risk of external and overall debt distress by the end of the program in 2024. While the agreed debt treatment is expected to provide the necessary fiscal space to face a lower oil price scenario, significant concessional financing commitments by multilateral and bilateral creditors over the longer term will be needed to avoid a recurrence of either external and/or domestic debt service problems. A zero NCB limit is an important feature of debt conditionality under the ECF arrangement. The World Bank, through its Sustainable

Development Finance Policy (SDFP), supports the authorities' efforts to improve debt management and enhance debt transparency with commitments: (i) to improve the accuracy of debt transactions and payments recording and reporting, and transfer debt data currently in Excel to the new SYGADE-6 database; and (ii) to adopt an *arrêté* to ensure that annual debt reports are published on time (no later than 6 months after the end of the year), in addition to their compliance with a zero non-concessional borrowing policy. The government would also need to take action to further enhance debt management capacity and public debt transparency while strengthening fiscal policies including improving control of SOE liabilities and enhancing domestic revenue mobilization and expenditure efficiency. These policy measures are important to build resilience against adverse shocks to revenues (i.e., from oil production shocks, insecurity) and climatic conditions, which are likely to be a persistent challenge in Chad over the long term.

AUTHORITIES' VIEWS

25. The authorities broadly agreed with the overall assessment of the country's debt sustainability. Debt sustainability has been restored by the concluded restructuring agreements, donors support, and the reforms envisaged under the ECF Arrangement. The authorities are committed to continue strengthening debt management.

Figure 1. Chad: Indicators of Public and Publicly Guaranteed External Debt under Restructuring Scenarios, 2022-32



Customization of Default Settings	Size	Interactions
Tailored Stress		
Combined CL	Yes	
Natural disaster	n.a.	n.a.
Commodity price	No	No
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 on additional financing needs resulting from the 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	0.7%	0.7%
USD Discount rate	5.0%	5.0%
Avg. maturity (incl. grace period)	27	27
Avg. grace period	7	7

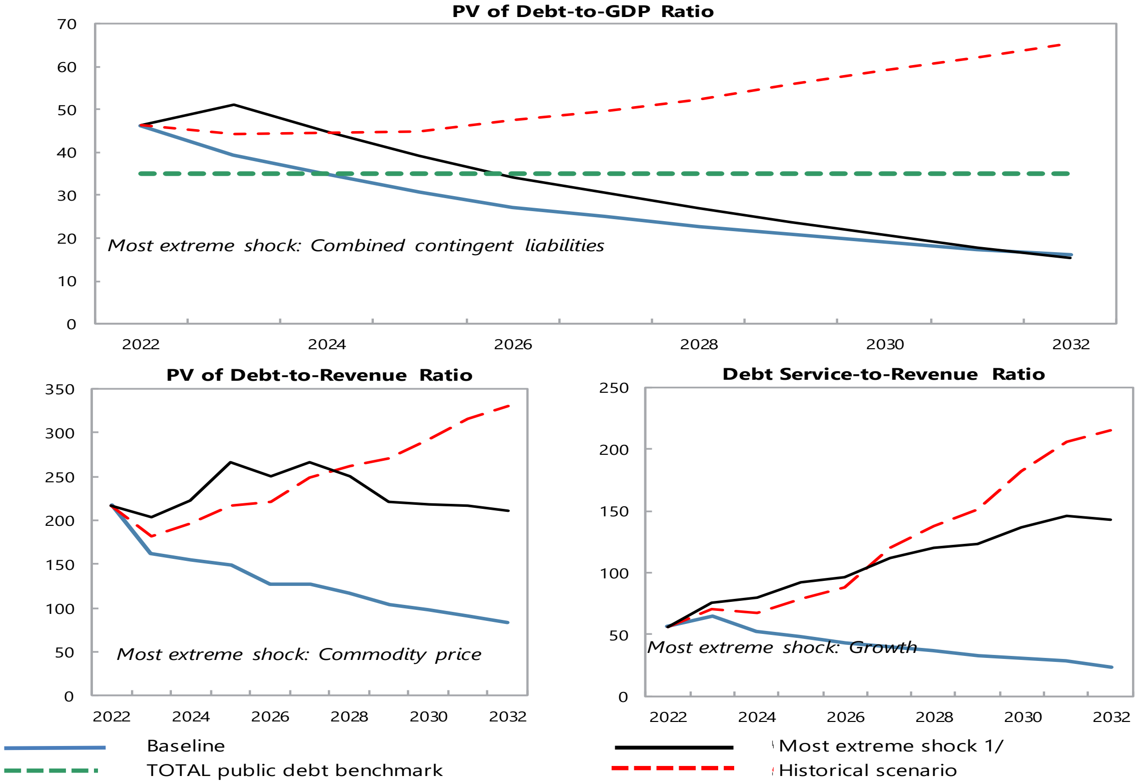
* Note: All the additional financing needs generated by the shocks under the stress tests are assumed to be covered by PPG external MLT debt in the external DSA. Default terms of marginal debt are based on baseline 10-year projections.

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 2032. 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 exterme shock even after disregarding the one-off breach, only that stress test (with a one-off breach) would be presented.

Note: Consistent with the 2018 contract with Glencore, the 4 million barrels transferred to the refinery are valued at market prices when estimating the revenue and external debt service in 2024.

Figure 2. Chad: Indicators of Public Debt Under Alternative Scenarios, 2022-32



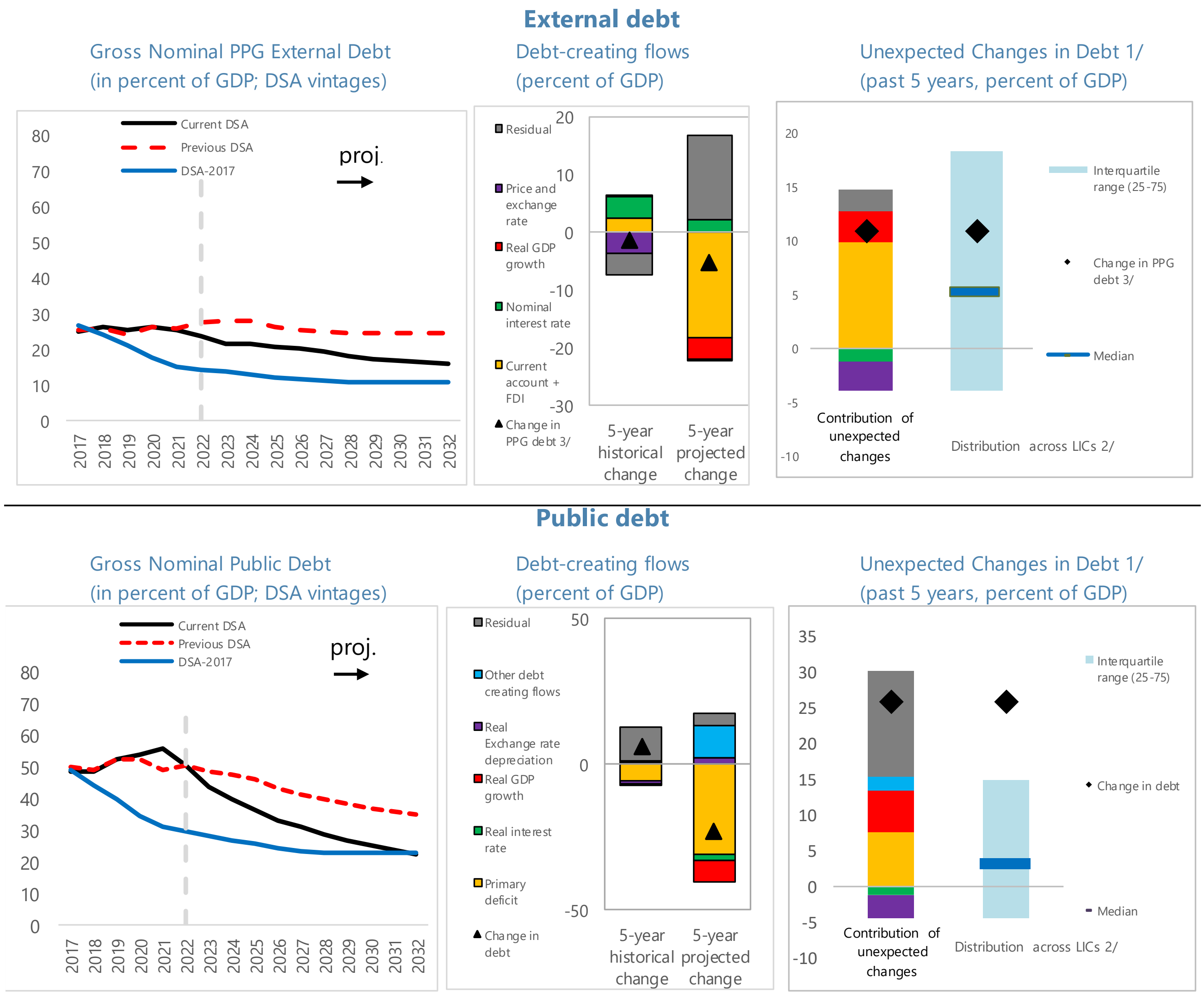
Borrowing assumptions on additional financing needs resulting from the stress tests*	Default	User defined
Shares of marginal debt		
External PPG medium and long-term	30%	30%
Domestic medium and long-term	36%	36%
Domestic short-term	35%	35%
Terms of marginal debt		
External MLT debt		
Avg. nominal interest rate on new borrowing in USD	0.7%	0.7%
Avg. maturity (incl. grace period)	27	27
Avg. grace period	7	7
Domestic MLT debt		
Avg. real interest rate on new borrowing	4.2%	4.2%
Avg. maturity (incl. grace period)	1	1
Avg. grace period	0	0
Domestic short-term debt		
Avg. real interest rate	0.0%	0.0%

* 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 2032. 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 exterme shock even after disregarding the one-off breach, only that stress test (with a one-off breach) would be presented.

Figure 3. Chad: Drivers of Debt Dynamics—Baseline Scenario



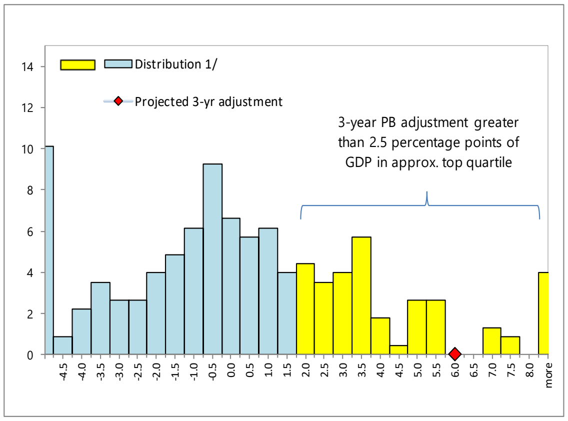
1/ Difference between anticipated and actual contributions on debt ratios.

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.

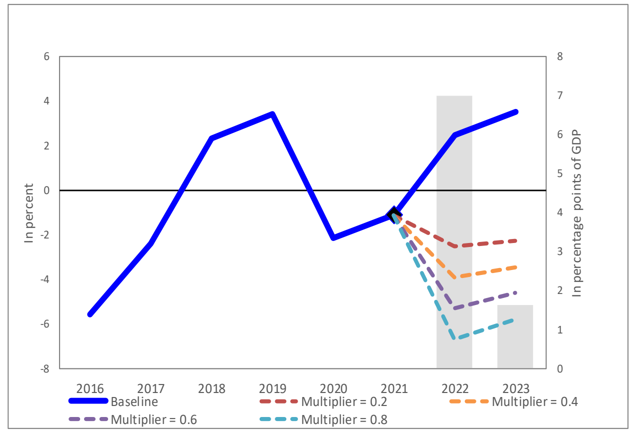
Figure 4. Chad: Realism Tools

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



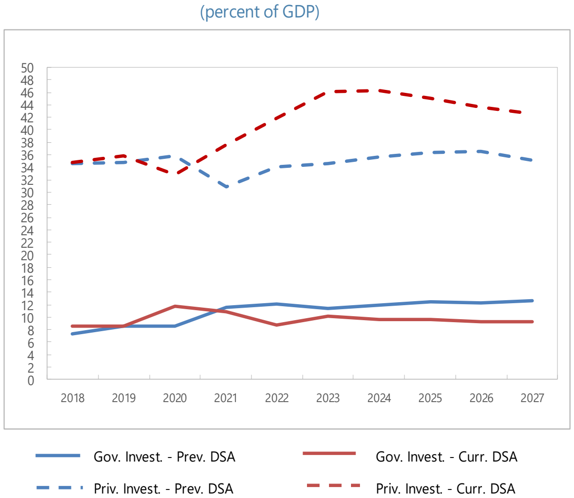
1/ Data cover Fund-supported programs for LICs (excluding emergency financing) approved since 1990. The size of 3-year adjustment from program inception is found on the horizontal axis; the percent of sample is found on the vertical axis.

Fiscal Adjustment and Possible Growth Paths 1/

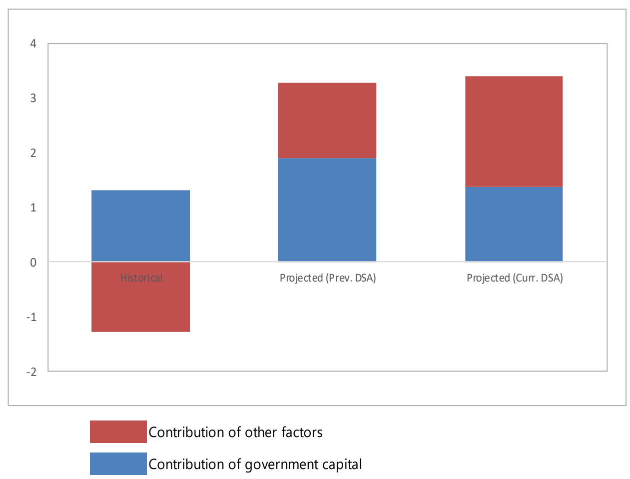


1/ Bars refer to annual projected fiscal adjustment (right-hand side scale) and lines show possible real GDP growth paths under different fiscal multipliers (left-hand side scale).

Public and Private Investment Rates
(percent of GDP)



Contribution to Real GDP growth
(percent, 5-year average)



Source: Country authorities, IMF and World Bank staff estimates

Table 2. Chad: External Debt Sustainability Framework, Baseline Scenario, 2019–42
(In percent of GDP, unless otherwise indicated)

	Actual			Projections								Average 8/	
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2032	2042	Historical	Projections
External debt (nominal) 1/	**25.6**	**26.4**	**25.5**	**23.8**	**21.7**	**21.6**	**20.8**	**20.3**	**19.5**	**16.1**	**15.1**	**25.2**	**19.3**
of which: public and publicly guaranteed (PPG)	**25.6**	**26.4**	**25.5**	**23.8**	**21.7**	**21.6**	**20.8**	**20.3**	**19.5**	**16.1**	**15.1**	**25.2**	**19.3**
Change in external debt	-0.6	0.8	-0.9	-1.7	-2.0	-0.1	-0.8	-0.5	-0.8	-0.3	-0.1		
Identified net debt-creating flows	**0.1**	**4.3**	**-1.6**	**-7.7**	**-5.4**	**-2.4**	**-2.5**	**-1.8**	**-1.1**	**-5.8**	**-17.0**	**3.8**	**-3.1**
Non-interest current account deficit	**3.6**	**6.7**	**3.9**	**-3.4**	**0.9**	**4.6**	**3.8**	**4.7**	**5.0**	**-1.1**	**-14.0**	**6.6**	**2.6**
Deficit in balance of goods and services	9.0	16.1	9.7	-1.2	3.4	6.9	5.6	6.4	6.7	0.8	0.5	**12.3**	**4.4**
Exports	35.4	27.7	34.5	46.4	44.2	41.1	39.2	36.9	34.9	30.3	25.0		
Imports	44.5	43.8	44.2	45.2	47.6	48.1	44.7	43.3	41.6	31.1	25.5		
Net current transfers (negative = inflow)	-7.4	-10.9	-7.9	-5.5	-5.5	-4.8	-4.4	-4.0	-3.6	-2.1	-0.9	**-7.6**	**-3.7**
of which: official	-1.3	-3.3	-1.5	-1.3	-2.0	-1.5	-1.5	-1.4	-1.4	-1.3	-1.2		
Other current account flows (negative = net inflow)	2.0	1.6	2.1	3.3	3.0	2.5	2.6	2.2	1.8	0.2	-13.7	**1.9**	**1.9**
Net FDI (negative = inflow)	**-4.3**	**-3.6**	**-3.8**	**-4.2**	**-6.0**	**-6.5**	**-6.2**	**-5.9**	**-5.5**	**-4.2**	**-2.5**	**-4.0**	**-5.3**
Endogenous debt dynamics 2/	**0.8**	**1.1**	**-1.7**	**-0.1**	**-0.3**	**-0.5**	**0.0**	**-0.6**	**-0.6**	**-0.4**	**-0.4**		
Contribution from nominal interest rate	0.7	0.6	0.6	0.6	0.5	0.3	0.7	0.1	0.1	0.1	0.1		
Contribution from real GDP growth	-0.9	0.6	0.3	-0.6	-0.8	-0.8	-0.7	-0.7	-0.7	-0.6	-0.5		
Contribution from price and exchange rate changes	1.0	0.0	-2.6	...	...	...	...	...	...	...	...		
Residual 3/	**-0.7**	**-3.5**	**0.6**	**5.9**	**3.4**	**2.3**	**1.6**	**1.3**	**0.3**	**5.5**	**16.9**	**-3.5**	**2.2**
of which: exceptional financing	-1.6	-0.4	-1.0	-1.7	-1.6	-1.6	-0.4	-0.3	-0.3	-0.2	0.0		
Sustainability indicators													
PV of PPG external debt-to-GDP ratio	**...**	**...**	**20.8**	**19.1**	**17.4**	**16.5**	**15.2**	**14.5**	**13.4**	**9.8**	**9.6**		
PV of PPG external debt-to-exports ratio	**...**	**...**	**60.2**	**41.0**	**39.4**	**40.0**	**38.9**	**39.3**	**38.4**	**32.2**	**38.6**		
PPG debt service-to-exports ratio	**4.0**	**6.4**	**7.5**	**8.7**	**9.1**	**6.9**	**5.3**	**4.2**	**5.5**	**3.1**	**2.5**		
PPG debt service-to-revenue ratio	**11.3**	**10.4**	**16.8**	**19.5**	**18.4**	**13.6**	**10.9**	**7.8**	**10.6**	**5.2**	**4.0**		
Gross external financing need (Million of U.S. dollars)	81.3	527.4	326.1	-424.6	-128.9	119.5	-49.4	46.2	201.0	-903.6	-6188.3		
Key macroeconomic assumptions													
Real GDP growth (in percent)	3.4	-2.1	-1.1	2.5	3.5	3.7	3.4	3.8	3.7	3.7	3.9	**1.8**	**3.5**
GDP deflator in US dollar terms (change in percent)	-3.7	0.0	10.9	-1.5	-3.0	1.4	2.1	2.4	2.7	2.8	2.9	**-1.6**	**1.6**
Effective interest rate (percent) 4/	2.5	2.1	2.6	2.3	2.1	1.3	3.2	0.7	0.7	0.8	0.8	**3.3**	**1.4**
Growth of exports of G&S (US dollar terms, in percent)	4.9	-23.5	36.8	35.7	-4.4	-2.1	0.5	0.1	0.7	2.8	29.1	**0.7**	**4.4**
Growth of imports of G&S (US dollar terms, in percent)	5.3	-3.7	10.8	3.1	5.8	6.1	-1.8	3.0	2.3	-1.7	280.3	**-0.5**	**1.9**
Grant element of new public sector borrowing (in percent)	...	...	...	36.8	36.7	46.3	47.9	52.3	53.2	48.7	42.3	**...**	**47.3**
Government revenues (excluding grants, in percent of GDP)	12.5	16.9	15.5	20.7	21.9	20.7	18.9	19.6	18.0	18.0	15.7	**14.4**	**19.2**
Aid flows (in Million of US dollars) 5/	236.0	533.5	193.7	155.4	375.9	478.1	398.5	480.4	514.6	508.2	797.9		
Grant-equivalent financing (in percent of GDP) 6/	...	...	...	1.5	3.3	3.5	2.6	2.8	2.7	2.0	1.4	**...**	**2.5**
Grant-equivalent financing (in percent of external financing) 6/	...	...	...	50.6	68.4	64.5	74.1	73.4	72.8	71.0	62.7	**...**	**69.7**
Nominal GDP (Million of US dollars)	10,993	10,757	11,800	11,909	11,962	12,577	13,282	14,127	15,038	20,550	38,908		
Nominal dollar GDP growth	-0.5	-2.1	9.7	0.9	0.4	5.1	5.6	6.4	6.4	6.6	6.9	**0.1**	**5.2**
Memorandum items:													
PV of external debt 7/	...	...	20.8	19.1	17.4	16.5	15.2	14.5	13.4	9.8	9.6		
In percent of exports	...	...	60.2	41.0	39.4	40.0	38.9	39.3	38.4	32.2	38.6		
Total external debt service-to-exports ratio	4.0	6.4	7.5	8.7	9.1	6.9	5.3	4.2	5.5	3.1	2.5		
PV of PPG external debt (in Million of US dollars)			2453.4	2269.5	2082.0	2071.2	2020.5	2046.7	2015.7	2007.6	3748.7		
(PVt-PVt-1)/GDPt-1 (in percent)				-1.6	-1.6	-0.1	-0.4	0.2	-0.2	0.4	0.7		
Non-interest current account deficit that stabilizes debt ratio	4.3	5.9	4.8	-1.7	3.0	4.7	4.6	5.2	5.8	-0.8	-14.0		

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/ 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.

Table 3. Chad: Public Sector Debt Sustainability Framework, Baseline Scenario, 2019–42
(In percent of GDP, unless otherwise indicated)

	Actual			Projections								Average 6/	
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2032	2042	Historical	Projections
Public sector debt 1/	**52.3**	**54.1**	**55.9**	**50.4**	**43.7**	**40.1**	**36.4**	**33.0**	**31.0**	**22.4**	**17.5**	**45.0**	**32.9**
of which: external debt	**25.6**	**26.4**	**25.5**	**23.8**	**21.7**	**21.6**	**20.8**	**20.3**	**19.5**	**16.1**	**15.1**	**25.2**	**19.3**
Change in public sector debt	3.9	1.7	1.9	-5.5	-6.7	-3.6	-3.8	-3.4	-1.9	-1.4	-0.2		
Identified debt-creating flows	**-3.2**	**-1.7**	**2.5**	**-8.5**	**-7.9**	**-4.7**	**-4.3**	**-4.1**	**-2.6**	**-1.4**	**-0.7**	**0.7**	**-3.7**
Primary deficit	**-0.4**	**-2.6**	**0.7**	**-6.3**	**-7.9**	**-5.1**	**-5.2**	**-6.4**	**-5.0**	**-5.5**	**-3.4**	**0.2**	**-5.9**
Revenue and grants	13.7	20.7	16.5	21.4	24.3	22.5	20.6	21.3	19.6	19.2	16.5	**16.8**	**20.7**
of which: grants	1.2	3.8	1.0	0.7	2.4	1.8	1.7	1.7	1.6	1.2	0.8		
Primary (noninterest) expenditure	13.4	18.1	17.2	15.1	16.4	17.4	15.5	14.9	14.6	13.7	13.0	**17.0**	**14.8**
Automatic debt dynamics	**-0.7**	**0.8**	**0.2**	**-5.0**	**-1.2**	**-1.2**	**-0.7**	**-1.3**	**-1.2**	**-0.9**	**-0.8**		
Contribution from interest rate/growth differential	-1.4	2.3	-1.1	-5.0	-1.2	-1.2	-0.7	-1.3	-1.2	-0.9	-0.8		
of which: contribution from average real interest rate	0.2	1.2	-1.7	-3.7	0.5	0.3	0.6	0.0	0.0	0.0	-0.1		
of which: contribution from real GDP growth	-1.6	1.1	0.6	-1.4	-1.7	-1.6	-1.3	-1.3	-1.2	-0.8	-0.7		
Contribution from real exchange rate depreciation	0.7	-1.5	1.3	...	...	...	...	...	...	...	...		
Other identified debt-creating flows	**-2.1**	**0.1**	**1.6**	**2.8**	**1.2**	**1.7**	**1.6**	**3.6**	**3.6**	**5.0**	**3.5**	**-0.8**	**3.6**
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		
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		
Debt relief (HIPC and other)	-0.4	-0.4	-0.3	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	0.0		
Deposit accumulation/withdrawals	-1.6	0.6	1.9	3.2	1.6	2.0	2.0	3.9	3.9	5.2	3.5		
Residual	**7.1**	**3.4**	**-0.6**	**2.9**	**1.2**	**1.1**	**0.6**	**0.7**	**0.6**	**0.0**	**0.5**	**1.8**	**0.7**
Sustainability indicators													
PV of public debt-to-GDP ratio 2/	**...**	**...**	**52.2**	**46.3**	**39.3**	**34.9**	**30.7**	**27.1**	**24.9**	**16.0**	**12.1**		
PV of public debt-to-revenue and grants ratio	**...**	**...**	**316.1**	**216.8**	**161.9**	**154.8**	**148.8**	**127.6**	**127.2**	**83.5**	**73.2**		
Debt service-to-revenue and grants ratio 3/	**20.3**	**21.4**	**21.3**	**56.6**	**65.3**	**52.9**	**48.1**	**43.5**	**40.0**	**23.1**	**11.3**		
Gross financing need 4/	0.3	1.9	5.8	5.8	8.1	6.8	4.8	2.8	2.7	-1.2	-1.6		
Key macroeconomic and fiscal assumptions													
Real GDP growth (in percent)	3.4	-2.1	-1.1	2.5	3.5	3.7	3.4	3.8	3.7	3.7	3.9	**1.8**	**3.5**
Average nominal interest rate on external debt (in percent)	2.6	2.1	2.4	2.4	2.2	1.3	3.2	0.7	0.7	0.8	0.8	**3.4**	**1.4**
Average real interest rate on domestic debt (in percent)	0.0	3.5	-4.5	-8.7	3.1	2.2	1.8	1.6	2.1	1.9	2.1	**2.1**	**1.0**
Real exchange rate depreciation (in percent, + indicates depreciation)	2.6	-5.8	4.8	...	...	...	...	...	...	...	...	**4.2**	**...**
Inflation rate (GDP deflator, in percent)	1.6	-1.9	7.0	10.3	0.0	1.1	1.5	1.8	2.0	2.8	2.9	**-0.3**	**2.7**
Growth of real primary spending (deflated by GDP deflator, in percent)	12.7	32.3	-5.6	-10.3	12.5	10.0	-8.0	-0.2	1.9	3.5	3.1	**0.8**	**1.6**
Primary deficit that stabilizes the debt-to-GDP ratio 5/	-4.3	-4.4	-1.1	-0.7	-1.2	-1.6	-1.4	-3.0	-3.1	-4.1	-3.2	**-3.3**	**-2.8**
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		

Sources: Country authorities; and staff estimates and projections.
1/ Coverage of debt: The central, state, and local governments, central bank, government-guaranteed debt . Definition of external debt is Currency-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 ((-): a primary surplus), which would stabilizes 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.

Table 4. Chad: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2022–2032
(In percent)

	Projections 1/										
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
PV of debt-to GDP ratio											
Baseline	19	17	16	15	14	13	12	11	10	10	10
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2022-2032 2/	19	21	24	26	29	**31**	**32**	**34**	**36**	**41**	**45**
B. Bound Tests											
B1. Real GDP growth	19	19	20	19	18	16	15	14	13	12	12
B2. Primary balance	19	20	21	22	23	24	25	26	27	29	**30**
B3. Exports	19	26	**38**	**36**	**35**	**33**	**32**	**30**	29	28	26
B4. Other flows 3/	19	20	22	20	20	18	17	16	15	15	14
B5. Depreciation	19	22	18	17	16	14	13	12	11	10	10
B6. Combination of B1-B5	19	25	27	25	24	23	21	20	19	18	17
C. Tailored Tests											
C1. Combined contingent liabilities	19	20	21	22	23	23	23	24	26	27	29
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	19	24	29	28	27	26	24	22	21	20	19
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	41	39	40	39	39	38	36	34	32	32	32
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2022-2032 2/	41	49	58	67	78	88	94	102	113	129	**150**
B. Bound Tests											
B1. Real GDP growth	41	39	40	39	39	38	36	34	32	32	32
B2. Primary balance	41	45	52	57	64	69	73	78	84	91	100
B3. Exports	41	70	136	137	**140**	**141**	137	134	132	130	127
B4. Other flows 3/	41	45	53	52	53	53	50	48	47	46	46
B5. Depreciation	41	39	35	33	34	32	30	28	26	26	26
B6. Combination of B1-B5	41	58	55	71	72	72	69	66	64	63	62
C. Tailored Tests											
C1. Combined contingent liabilities	41	46	52	55	61	66	69	73	80	87	96
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	41	72	90	87	86	82	74	71	69	67	65
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	9	9	7	5	4	5	5	5	4	3	3
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2022-2032 2/	9	9	7	6	5	7	8	8	7	7	8
B. Bound Tests											
B1. Real GDP growth	9	9	7	5	4	5	5	5	4	3	3
B2. Primary balance	9	9	7	5	4	6	6	6	5	4	5
B3. Exports	9	**12**	**13**	**10**	8	**11**	**10**	10	8	9	**11**
B4. Other flows 3/	9	9	7	5	4	6	6	5	4	4	4
B5. Depreciation	9	9	7	5	4	5	5	5	4	3	3
B6. Combination of B1-B5	9	**10**	9	7	6	7	7	7	6	6	6
C. Tailored Tests											
C1. Combined contingent liabilities	9	9	7	5	4	6	6	5	5	4	4
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	9	**12**	9	7	6	7	7	6	5	6	6
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	**20**	**18**	14	11	8	11	10	9	8	6	5
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2022-2032 2/	**20**	**18**	**15**	13	10	**14**	**14**	14	12	13	14
B. Bound Tests											
B1. Real GDP growth	**20**	**20**	**17**	13	10	13	13	11	9	7	6
B2. Primary balance	**20**	**18**	14	11	8	11	11	10	9	8	8
B3. Exports	**20**	**21**	**17**	**14**	10	14	13	12	10	11	13
B4. Other flows 3/	**20**	**18**	14	11	8	11	10	9	8	7	7
B5. Depreciation	**20**	**23**	**17**	14	10	13	13	11	9	8	6
B6. Combination of B1-B5	**20**	**20**	**17**	13	10	13	12	11	9	10	9
C. Tailored Tests											
C1. Combined contingent liabilities	**20**	**18**	14	11	8	11	11	10	8	7	6
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	**20**	**23**	**18**	**15**	11	14	12	10	9	9	10
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 5. Chad: Sensitivity Analysis for Key Indicators of Public Debt, 2022–32
(In percent)

		Projections 1/									
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
PV of Debt-to-GDP Ratio											
Baseline	**46**	**39**	35	31	27	25	23	21	19	17	16
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2022-2032 2/	**46**	**44**	**45**	**45**	**48**	**50**	**52**	**56**	**59**	**62**	**66**
B. Bound Tests											
B1. Real GDP growth	**46**	**45**	**48**	**45**	**43**	**41**	**40**	**39**	**37**	**36**	35
B2. Primary balance	**46**	**47**	**48**	**42**	**37**	33	29	26	23	20	17
B3. Exports	**46**	**45**	**50**	**46**	**42**	**39**	**37**	35	33	30	28
B4. Other flows 3/	**46**	**42**	**40**	**36**	32	30	28	26	24	22	20
B5. Depreciation	**46**	**41**	35	29	23	19	14	10	6	2	-2
B6. Combination of B1-B5	**46**	**48**	**41**	**35**	30	25	21	16	12	7	2
C. Tailored Tests											
C1. Combined contingent liabilities	**46**	**51**	**45**	**39**	34	30	27	24	21	18	15
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	**46**	**42**	**42**	**45**	**47**	**48**	**47**	**45**	**44**	**42**	**41**
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.
TOTAL public debt benchmark	35	35	35	35	35	35	35	35	35	35	35
PV of Debt-to-Revenue Ratio											
Baseline	217	162	155	149	128	127	116	103	97	91	84
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2022-2032 2/	217	182	197	216	221	250	262	271	293	315	331
B. Bound Tests											
B1. Real GDP growth	217	183	208	214	197	207	201	188	186	185	180
B2. Primary balance	217	195	213	204	172	167	149	127	115	103	89
B3. Exports	217	186	221	221	196	200	188	171	166	159	145
B4. Other flows 3/	217	172	178	174	151	153	141	127	121	115	105
B5. Depreciation	217	172	155	141	109	95	73	49	29	9	(9)
B6. Combination of B1-B5	217	196	183	170	139	129	106	81	60	36	13
C. Tailored Tests											
C1. Combined contingent liabilities	217	211	199	189	160	155	138	117	105	93	80
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	217	204	223	266	251	266	250	221	219	217	210
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	57	65	53	48	43	40	37	33	31	28	23
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2022-2032 2/	57	71	67	79	88	120	138	152	182	206	215
B. Bound Tests											
B1. Real GDP growth	57	76	80	92	96	112	120	124	137	146	143
B2. Primary balance	57	69	92	110	91	89	85	81	86	89	85
B3. Exports	57	65	53	49	44	41	38	34	32	31	28
B4. Other flows 3/	57	65	53	48	44	40	37	34	31	29	25
B5. Depreciation	57	68	57	54	49	54	57	58	64	67	63
B6. Combination of B1-B5	57	69	61	83	75	80	81	81	88	92	88
C. Tailored Tests											
C1. Combined contingent liabilities	57	69	104	93	79	80	79	76	83	86	81
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	57	84	67	65	93	120	129	126	136	143	141
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.