INTERNATIONAL DEVELOPMENT ASSOCIATION

INTERNATIONAL MONETARY FUND

CHAD

JOINT WORLD BANK-IMF DEBT SUSTAINABILITY ANALYSIS

July 2020

Prepared jointly by the staffs of the International Development Association (IDA)

and the International Monetary Fund (IMF)

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Chad: Joint Bank-Fund Debt Sustainability Analysis[1]	
Risk of external debt distress	High[2]
Overall risk of debt distress	High
Granularity in the risk rating	Sustainable
Application of judgement	No
Macroeconomic projections	The previous DSA in April 2020 reflected reduced growth and significant deterioration in fiscal and external balances. The current DSA reflects a further downward revision to growth of 0.7 percentage point in 2020, with a deterioration of 2.3 percentage points in fiscal and 0.9 percentage points in external balances. The shock is still expected to be temporary and a gradual recovery is forecast in 2021.
Financing strategy	Since the last DSA, Chad has identified significant donor support for 2020 and oil revenue has surprised on the upside. The authorities are expected to request a successor IMF arrangement later this year.
Realism tools flagged	Large unexpected increase in public debt in the last 5 years.
Mechanical risk rating under the external DSA	High
Mechanical risk rating under the public DSA	High

[1] The debt coverage has expanded since the last DSA (April 2020) to include domestic arrears in the domestic debt stock (5.8 percent of GDP). Previously domestic arrears only appeared in the contingent risk analysis. Accordingly, "other elements of general government" in the contingent liability tailored test has been reduced to zero

[2] With a score of 2.47, Chad's composite indicator, which is based on the October 2019 WEO and the 2018 CPIA, signals a weak debt-carrying capacity.

This debt sustainability analysis (DSA) updates the joint World Bank-IMF analysis of April 2020 to reflect the most recent outlook. Debt remains sustainable under the baseline forecast, but uncertainty remains high. For instance, the outlook includes large unfinanced fiscal and external financing gaps for several years. Historically the authorities have been able to service debt at baseline forecast levels, and program performance under the ECF suggests a strong commitment to obligations. In sum, the debt sustainability picture has not appreciably changed since April. Chad's risks of external and overall debt distress remain high.

The macroeconomic outlook has deteriorated with the pandemic's more pronounced presence in Chad. In 2020, growth is modestly weaker, but Q1 oil revenues—which are based on 2019 oil exports—have surprised to the upside and donor support has crystalized. In particular, the World Bank i) disbursed (US$ 16.95 million) to prevent, detect, and respond to health threat posed by COVID-19; ii) is preparing a COVID-19 education project; and iii) is preparing a Development Policy Operation in response to the short and long term challenges faced by the country. In the medium term, oil price forecasts have changed very little since the last DSA. The debt sustainability analysis is based on projected continued fiscal prudence and an increase in non-oil revenues after the pandemic crisis abates The RCF request comprises the only substantial change on the external debt side.

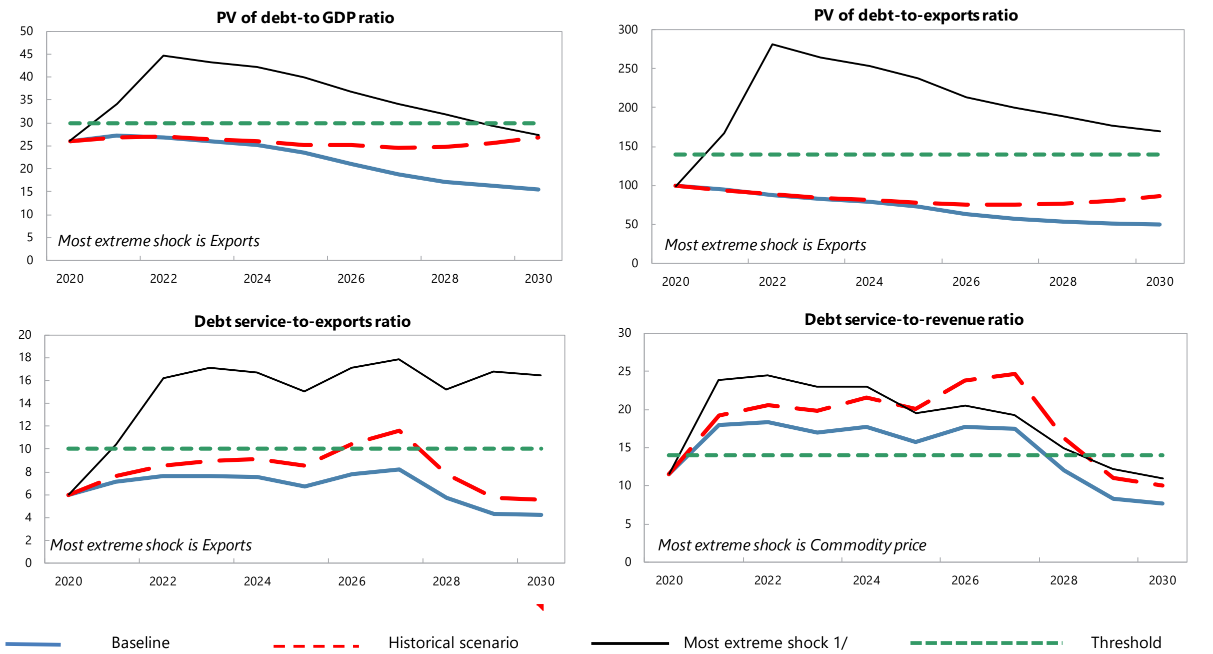
Chad requested treatment under the Debt Service Suspension Initiative (DSSI) from all creditors, public and private, and intends to adhere to the commitments noted in the LOI. The DSA assumes all official bilateral creditors from the G-20 and Paris Club, plus Kuwait and the UAE, will provide debt reprofiling in 2020, totaling CFAF 7.5 billion. The authorities have begun clearing arrears in accordance with the government clearance strategy adopted in January. Clearance in 2020 may be financed through a CFAF 85 billion, 8-year loan arrangement with banks and (ii) a series of 3- to 5-year treasury bonds amounting to CFAF 25 billion. Thereafter the DSA assumes cash payment of arrears. Finally, this assessment assumes debt relief from the IMF of CFAF 8.2 billion across 2020 and 2021 under the Catastrophe Containment window of the CCRT through April 2022 (subject to the availability of CCRT resources for the next 18 months).

Under the baseline, three of the external debt sustainability indicators stay below their respective thresholds, but the debt-to-revenue ratio breaches its threshold from 2021 through 2027. Under stress scenarios—in particular the customized oil price shock and the exports shock—indicators approach levels seen during Chad's last episode of debt distress. Total public debt vulnerabilities are elevated, and under the baseline the pandemic pushes the present value (PV) of public debt-to-GDP ratio above its benchmark from 2020 to 2024.

Following the restructuring in 2018, the new Glencore debt contract contingencies have allowed lower debt service to cushion low oil prices and should provide additional cushion through 2023 under the baseline, with additional cushion capacity remaining.[1] However, the contingency mechanisms could become exhausted in 2021 under the conditions of the customized oil price shock stress test, which would likely lead to a sharp rise in Chad's debt service-to-revenue ratio, potentially pushing the country back in a situation of debt distress.

[1] Under the Glencore debt restructuring agreement, for the period 2021-2026 mandatory amortization could be deferred up to US$75 million mainly if (i) government oil export receipts are lower than Glencore debt service, and (ii) oil prices are lower than US$42 per barrel.

Figure 1. Chad: Indicators of Public and Publicly Guaranteed External Debt under Alternative Scenarios, 2020–2030



Customization of Default Settings	Size	Interactions
Tailored Tests		
Combined CLs	Yes	
Natural Disasters	n.a.	n.a.
Commodity Prices [2/]	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 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	1.0%	1.0%
USD Discount rate	5.0%	5.0%
Avg. maturity (incl. grace period)	17	20
Avg. grace period	8	6

* 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.

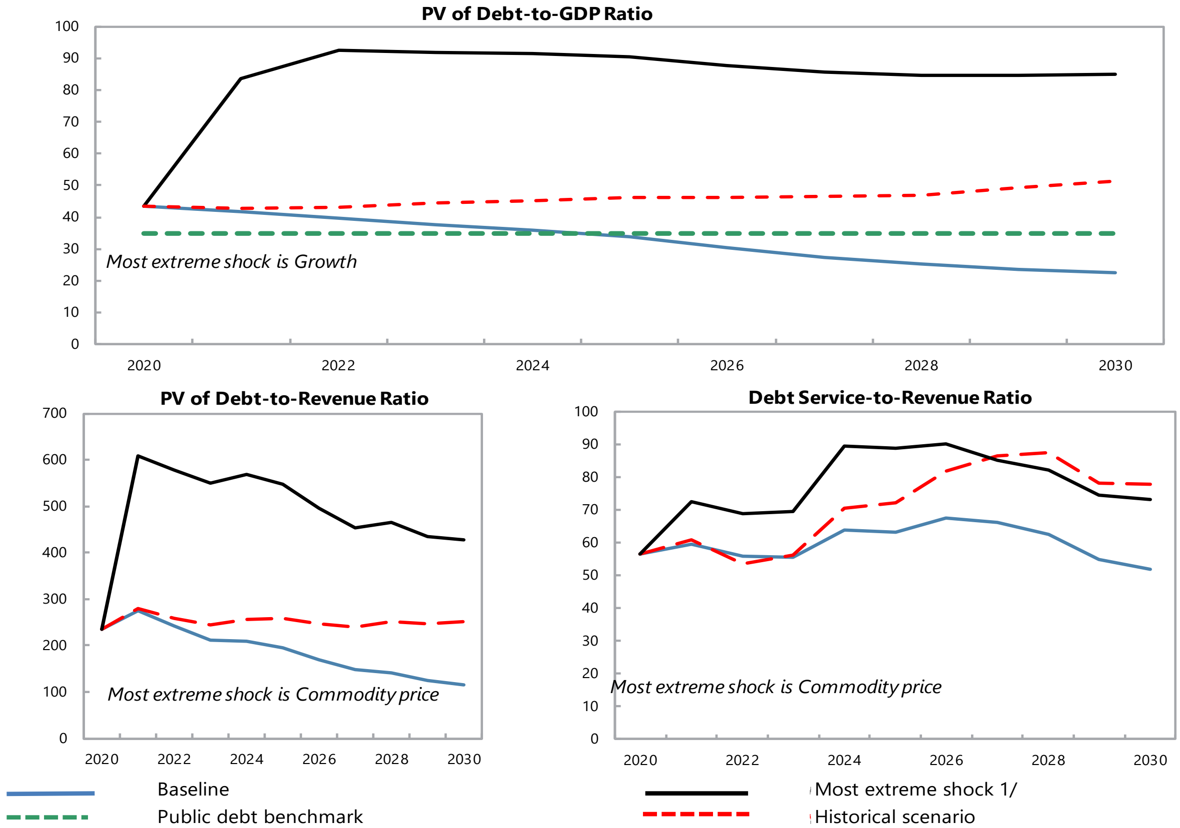
Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in or before 2030. 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 exterme 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.

The tailored commodity price stress test presented here does not account for the contingency mechanisms in the Glencore debt as Text Figure 1 does.

Figure 2. Chad: Indicators of Public Debt Under Alternative Scenarios, 2020–2030



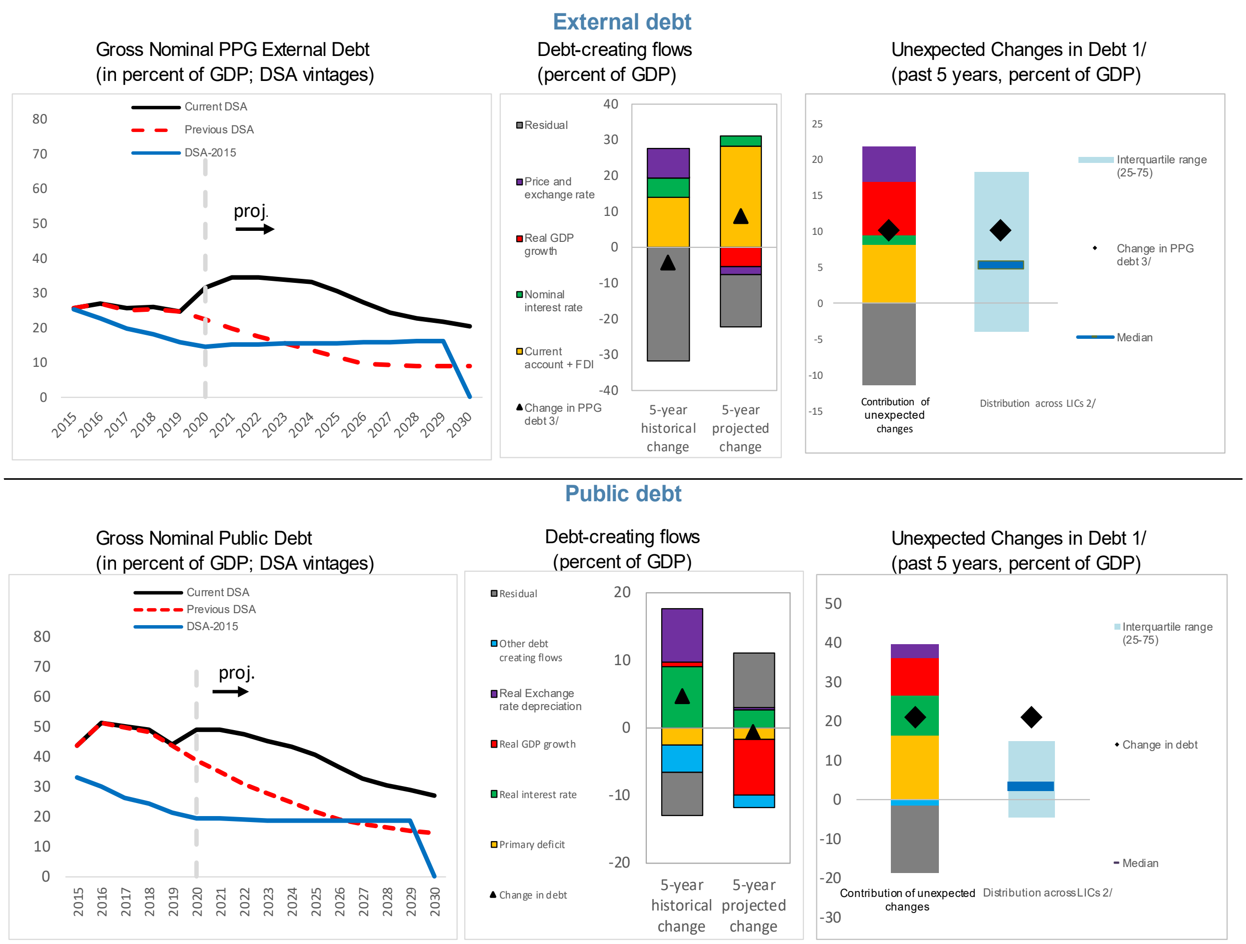
Borrowing Assumptions for Stress Tests*	Default	User defined
Shares of marginal debt		
External PPG medium and long-term	35%	65%
Domestic medium and long-term	10%	5%
Domestic short-term	109%	30%
Terms of marginal debt		
External MLT debt		
Avg. nominal interest rate on new borrowing in USD	1.0%	1.0%
Avg. maturity (incl. grace period)	17	20
Avg. grace period	8	6
Domestic MLT debt		
Avg. real interest rate on new borrowing	9.3%	5.0%
Avg. maturity (incl. grace period)	1	1
Avg. grace period	0	0
Domestic short-term debt		
Avg. real interest rate	0%	2.0%

* 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 2030. 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



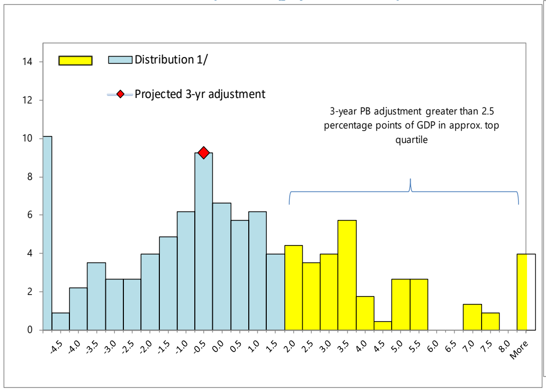
1/ Difference between anticipated and actual contributions on debt ratios.

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.

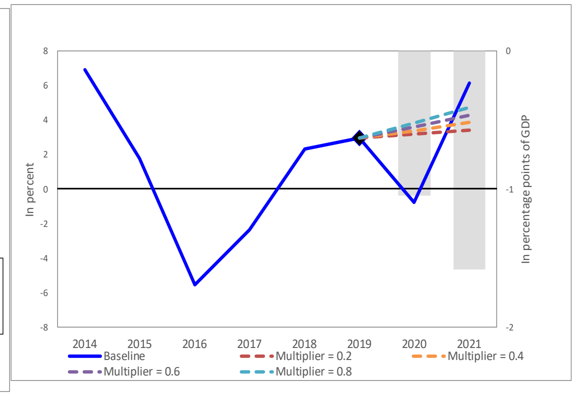
Figure 4. Chad: Realism Tools

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



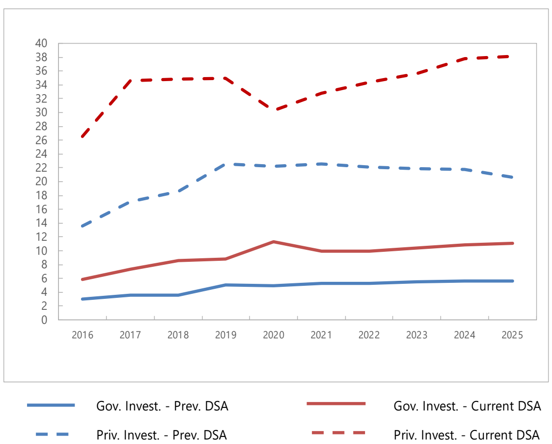
1/ Data cover Fund-supported programs for LICs (excluding emergency financing) approved since 1990. The size of 3-year adjustment from program inception is found on the horizontal axis; the percent of sample is found on the vertical axis.

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
(% of GDP)



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

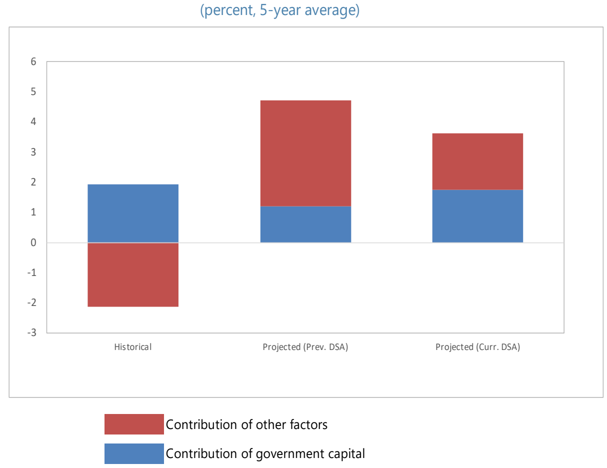
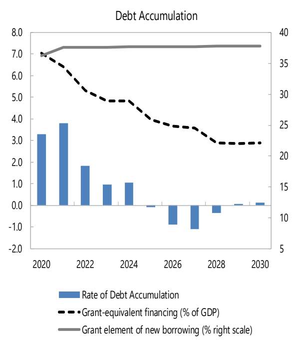


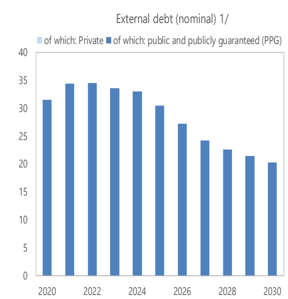
Table 1. Chad: External Debt Sustainability Framework, Baseline Scenario, 2009–2040

(In percent of GDP, unless otherwise indicated)

	Actual											Projections								Average 8/	
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2030	2040	Historical	Projections
External debt (nominal) 1/	**26.1**	**24.6**	**21.8**	**20.0**	**21.1**	**29.1**	**25.5**	**26.8**	**25.6**	**25.8**	**24.6**	**31.5**	**34.4**	**34.5**	**33.6**	**33.1**	**30.5**	**20.3**	**10.5**	**24.5**	**28.5**
of which: public and publicly guaranteed (PPG)	**26.1**	**24.6**	**21.8**	**20.0**	**21.1**	**29.1**	**25.5**	**26.8**	**25.6**	**25.8**	**24.6**	**31.5**	**34.4**	**34.5**	**33.6**	**33.1**	**30.5**	**20.3**	**10.5**	**24.5**	**28.5**
Change in external debt	...	-1.5	-2.8	-1.7	1.1	8.0	-3.7	1.4	-1.3	0.2	-1.3	7.0	2.9	0.1	-0.9	-0.6	-2.5	-1.2	0.5		
Identified net debt-creating flows	**...**	**0.0**	**-1.7**	**2.7**	**4.2**	**2.2**	**16.8**	**9.9**	**3.8**	**-3.8**	**0.8**	**10.0**	**5.1**	**3.3**	**3.6**	**3.3**	**2.1**	**0.9**	**5.1**	**3.5**	**2.8**
Non-interest current account deficit	**8.0**	**8.4**	**5.4**	**7.1**	**8.5**	**8.2**	**12.6**	**8.7**	**6.0**	**0.7**	**4.2**	**13.6**	**11.0**	**8.9**	**8.8**	**8.5**	**7.4**	**2.2**	**5.9**	**7.0**	**6.5**
Deficit in balance of goods and services	11.5	10.8	7.5	9.8	9.6	12.5	16.5	16.2	15.2	8.7	9.7	20.2	17.0	14.4	13.7	12.8	11.7	6.7	9.3	**11.6**	**11.6**
Exports	35.2	37.8	40.6	38.2	33.4	31.5	26.4	22.9	26.5	33.3	34.7	26.2	28.6	30.5	31.4	32.0	32.3	30.9	17.6		
Imports	46.8	48.6	48.1	48.0	43.1	43.9	42.9	39.1	41.7	42.0	44.3	46.4	45.7	44.9	45.2	44.8	44.1	37.6	27.0		
Net current transfers (negative = inflow)	-7.5	-5.6	-4.3	-4.4	-5.1	-7.9	-7.1	-7.6	-9.4	-8.9	-7.4	-9.6	-8.8	-8.3	-7.7	-7.1	-7.2	-5.4	-4.1	**-6.8**	**-7.2**
of which: official	-0.6	-0.3	-0.3	-0.7	-1.3	-4.0	-2.5	-2.4	-3.1	-3.2	-1.3	-3.1	-2.6	-2.5	-2.3	-1.8	-2.1	-1.3	-1.2		
Other current account flows (negative = net inflow)	3.9	3.2	2.2	1.7	3.9	3.6	3.2	0.1	0.3	0.9	2.0	3.0	2.7	2.8	2.8	2.8	2.8	0.9	0.6	**2.1**	**2.0**
Net FDI (negative = inflow)	**-6.5**	**-5.2**	**-4.5**	**-4.7**	**-4.0**	**-5.2**	**-5.1**	**-2.4**	**-3.6**	**-3.0**	**-4.3**	**-4.3**	**-4.7**	**-4.7**	**-4.5**	**-4.6**	**-4.5**	**-0.9**	**-0.6**	**-4.2**	**-3.2**
Endogenous debt dynamics 2/	**...**	**-3.2**	**-2.6**	**0.3**	**-0.3**	**-0.8**	**9.3**	**3.6**	**1.4**	**-1.6**	**0.9**	**0.7**	**-1.2**	**-0.9**	**-0.7**	**-0.7**	**-0.8**	**-0.4**	**-0.2**		
Contribution from nominal interest rate	...	0.2	0.4	0.7	0.6	0.7	1.1	1.7	1.0	0.6	0.7	0.5	0.6	0.6	0.6	0.5	0.4	0.2	0.1		
Contribution from real GDP growth	...	-3.1	0.0	-1.9	-1.1	-1.4	-0.7	1.5	0.6	-0.5	-0.8	0.2	-1.8	-1.6	-1.3	-1.2	-1.2	-0.6	-0.3		
Contribution from price and exchange rate changes	...	-0.3	-3.0	1.5	0.2	-0.2	8.8	0.4	-0.3	-1.7	1.0	...	...	...	...	...	...	...	...		
Residual 3/	**...**	**-1.4**	**-1.1**	**-4.5**	**-3.1**	**5.8**	**-20.4**	**-8.5**	**-5.1**	**4.1**	**-2.0**	**-3.1**	**-2.2**	**-3.2**	**-4.5**	**-3.8**	**-4.6**	**-2.1**	**-4.6**	**-3.6**	**-3.2**
of which: exceptional financing	...	0.0	0.0	0.0	0.0	-0.1	-0.8	-1.1	-1.0	-1.3	-1.6	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	-0.1		
Sustainability indicators																					
PV of PPG external debt-to-GDP ratio	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**20.7**	**26.0**	**27.3**	**26.9**	**25.9**	**25.2**	**23.5**	**15.4**	**7.6**		
PV of PPG external debt-to-exports ratio	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**59.7**	**99.2**	**95.4**	**88.0**	**82.5**	**78.8**	**72.6**	**50.0**	**43.2**		
PPG debt service-to-exports ratio	**2.0**	**1.5**	**2.2**	**3.2**	**3.9**	**15.6**	**9.6**	**14.4**	**9.0**	**6.1**	**4.0**	**6.0**	**7.1**	**7.7**	**7.7**	**7.5**	**6.8**	**4.3**	**4.4**		
PPG debt service-to-revenue ratio	**5.7**	**3.1**	**3.9**	**5.7**	**7.1**	**31.0**	**24.0**	**34.5**	**22.4**	**16.9**	**10.9**	**11.5**	**18.0**	**18.3**	**17.0**	**17.7**	**15.8**	**7.7**	**4.7**		
Gross external financing need (Million of U.S. dollars)	...	...	...	...	755.2	1114.1	1101.1	980.4	486.4	-25.0	137.6	1101.8	916.6	784.8	861.5	871.1	742.8	525.6	2242.2		
Key macroeconomic assumptions																					
Real GDP growth (in percent)	4.1	13.6	0.1	8.8	5.8	6.9	1.8	-5.6	-2.4	2.3	3.0	-0.8	6.1	4.9	4.0	3.8	3.8	3.0	3.2	**3.4**	**3.6**
GDP deflator in US dollar terms (change in percent)	-14.2	1.1	13.7	-6.4	-1.0	0.8	-23.2	-1.4	1.2	7.0	-3.8	-6.9	3.0	3.3	3.2	3.1	3.1	2.9	3.2	**-1.2**	**2.1**
Effective interest rate (percent) 4/	...	0.7	1.8	3.3	3.4	3.7	3.1	6.2	3.8	2.8	2.6	1.9	2.0	2.0	1.8	1.7	1.2	1.0	1.0	**3.1**	**1.8**
Growth of exports of G&S (US dollar terms, in percent)	-26.0	23.2	22.3	-4.1	-8.4	1.4	-34.4	-19.2	14.5	37.6	3.1	-30.2	19.3	15.7	10.5	8.9	8.2	2.5	1.7	**3.6**	**5.5**
Growth of imports of G&S (US dollar terms, in percent)	2.2	19.4	12.7	1.6	-6.0	9.9	-23.7	-15.1	5.4	10.3	4.5	-3.3	7.5	6.6	8.0	6.2	5.3	2.4	4.3	**1.9**	**4.3**
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	...	...	...	...	...	...	36.2	37.6	37.6	37.6	37.6	37.7	37.8	37.8	**...**	**37.5**
Government revenues (excluding grants, in percent of GDP)	12.3	18.9	23.2	21.7	18.5	15.8	10.5	9.5	10.6	12.0	12.6	13.7	11.4	12.7	14.2	13.6	13.8	17.1	16.6	**15.3**	**14.4**
Aid flows (in Million of US dollars) 5/	350.8	263.4	279.6	477.1	377.5	369.1	433.3	326.8	527.7	511.9	303.8	834.0	1059.8	877.5	811.2	878.9	680.8	683.2	1177.2		
Grant-equivalent financing (in percent of GDP) 6/	...	...	...	...	...	...	...	...	...	...	...	7.1	6.4	5.3	4.8	4.8	4.0	2.9	2.4	**...**	**4.4**
Grant-equivalent financing (in percent of external financing) 6/	...	...	...	...	...	...	...	...	...	...	...	63.6	59.7	65.7	70.3	69.0	80.9	81.0	68.9	**...**	**74.7**
Nominal GDP (Million of US dollars)	9,315	10,701	12,183	12,411	12,994	14,003	10,952	10,202	10,079	11,036	10,934	10,097	11,035	11,964	12,840	13,746	14,720	20,328	36,997		
Nominal dollar GDP growth	...	14.9	13.8	1.9	4.7	7.8	-21.8	-6.8	-1.2	9.5	-0.9	-7.7	9.3	8.4	7.3	7.1	7.1	6.0	6.5	**2.2**	**5.9**
Memorandum items:																					
PV of external debt 7/	...	...	...	...	...	...	...	...	...	...	20.7	26.0	27.3	26.9	25.9	25.2	23.5	15.4	7.6		
In percent of exports	...	...	...	...	...	...	...	...	...	...	59.7	99.2	95.4	88.0	82.5	78.8	72.6	50.0	43.2		
Total external debt service-to-exports ratio	2.0	1.5	2.2	3.2	3.9	15.6	9.6	14.4	9.0	6.1	4.0	6.0	7.1	7.7	7.7	7.5	6.8	4.3	4.4		
PV of PPG external debt (in Million of US dollars)											2265.7	2626.9	3011.3	3214.6	3329.0	3463.8	3453.7	3136.9	2818.4		
(PVt-PVt-1)/GDPt-1 (in percent)												3.3	3.8	1.8	1.0	1.0	-0.1	0.1	0.7		
Non-interest current account deficit that stabilizes debt ratio	...	9.8	8.3	8.8	7.4	0.2	16.3	7.4	7.3	0.5	5.5	6.6	8.1	8.8	9.8	9.1	9.9	3.4	5.4		

Definition of external/domestic debt	Currency-based
Is there a material difference between the two criteria?	Yes





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.

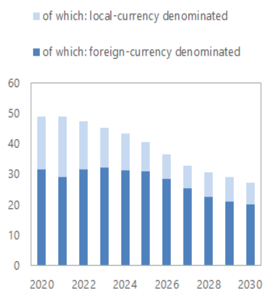
Table 2. Chad: Public Sector Debt Sustainability Framework, Baseline Scenario, 2017–2040

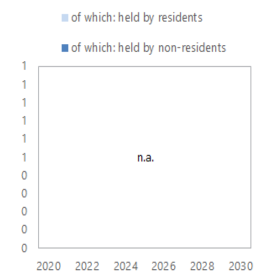
(In percent of GDP, unless otherwise indicated)

	Actual			Projections								Average 7/	
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2030	2040	Historical	Projection
Public sector debt 1/	50.3	49.1	44.3	49.1	49.0	47.5	45.2	43.6	40.8	27.3	12.3	39.3	39.2
of which: external debt	25.6	25.8	24.6	31.5	34.4	34.5	33.6	33.1	30.5	20.3	10.5	24.5	28.5
Change in public sector debt	-1.1	-1.2	-4.8	4.8	0.0	-1.6	-2.3	-1.6	-2.8	-1.8	-1.2		
Identified debt-creating flows	-3.1	-3.8	2.4	3.5	-1.3	-3.1	-4.4	-3.6	-4.2	-4.8	-1.9	0.6	-3.4
Primary deficit /2	-1.3	-3.0	-0.8	0.2	1.8	-0.2	-2.0	-1.5	-2.0	-3.8	-1.3	0.2	-1.9
Revenue and grants	14.6	15.3	14.2	18.4	15.2	16.4	17.8	17.1	17.2	19.6	18.4	17.8	17.7
of which: grants	4.0	3.3	1.7	4.8	3.8	3.6	3.6	3.5	3.4	2.5	1.8		
Primary (noninterest) expenditure	13.3	12.3	13.4	18.7	17.0	16.2	15.8	15.6	15.2	15.8	17.0	18.1	15.8
Automatic debt dynamics	0.0	-0.2	3.7	3.7	-2.7	-2.5	-2.0	-1.8	-1.9	-0.9	-0.5		
Contribution from interest rate/growth differential	2.4	-1.2	3.0	2.0	-2.4	-2.1	-1.6	-1.4	-1.5	-0.7	-0.4		
of which: contribution from average real interest rate	1.2	-0.1	4.4	1.6	0.5	0.2	0.2	0.2	0.1	0.2	0.1		
of which: contribution from real GDP growth	1.3	-1.1	-1.4	0.3	-2.8	-2.3	-1.8	-1.7	-1.6	-0.8	-0.4		
Contribution from real exchange rate depreciation	-2.4	1.0	0.7	...	...	...	...	...	...	...	...		
Other identified debt-creating flows	-1.8	-0.6	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	-0.1	-0.9	-0.3
Privatization receipts (negative)	-1.2	-0.1	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 recapitalizatior	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)	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	-0.1		
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		
Residual	2.0	2.6	-7.2	3.0	1.0	1.1	1.7	1.6	1.0	2.9	0.6	1.2	1.7
Sustainability indicators													
PV of public debt-to-GDP ratio 3/	...	...	40.6	43.5	41.9	39.8	37.5	35.7	33.7	22.4	9.4		
PV of public debt-to-revenue and grants ratio	...	...	285.0	235.8	275.9	243.1	211.1	209.0	195.7	114.5	51.3		
Debt service-to-revenue and grants ratio 4/	46.5	18.3	59.1	56.5	59.7	55.8	55.5	64.0	63.3	52.1	27.7		
Gross financing need 5/	4.1	-1.3	7.6	11.4	11.4	10.0	9.4	10.7	9.6	6.5	3.8		
Key macroeconomic and fiscal assumptions													
Real GDP growth (in percent)	-2.4	2.3	3.0	-0.8	6.1	4.9	4.0	3.8	3.8	3.0	3.2	3.4	3.6
Average nominal interest rate on external debt (in percent)	4.0	2.7	2.7	1.9	2.0	2.0	1.8	1.7	1.2	1.0	1.0	3.2	1.8
Average real interest rate on domestic debt (in percent)	2.3	-0.5	18.6	6.5	2.0	0.8	1.4	2.1	2.7	4.6	4.3	2.9	3.3
Real exchange rate depreciation (in percent, + indicates depreciati	-8.5	4.1	2.6	...	...	...	...	...	...	...	...	4.3	...
Inflation rate (GDP deflator, in percent)	-0.8	2.3	1.5	-4.7	2.1	3.4	3.5	3.3	3.2	2.9	3.2	0.7	2.3
Growth of real primary spending (deflated by GDP deflator, in perc	5.0	-5.7	12.8	37.8	-3.3	-0.1	1.3	3.0	0.8	6.1	3.2	-1.2	5.6
Primary deficit that stabilizes the debt-to-GDP ratio 6/	-0.3	-1.8	3.9	-4.5	1.8	1.4	0.3	0.2	0.8	-2.0	-0.2	0.6	-0.4
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		

Definition of external/domestic debt	**Currency-based**
Is there a material difference between the two criteria?	**Yes**

Public sector debt 1/





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 Currency-based.

2/ The primary balance assumes debt relief under the CCRT as a capital grant (subject to availability of resources).

3/ 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.

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

5/ 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.

6/ 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.

7/ 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: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2020–2030

(In percent)

	Projections 1/										
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
PV of debt-to GDP ratio											
Baseline	26.0	27.3	26.9	25.9	25.2	23.5	21.0	18.7	17.2	16.2	15.4
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2039 2/	26.0	26.8	27.0	26.3	25.9	25.1	25.1	24.5	24.7	25.6	26.7
B. Bound Tests											
B1. Real GDP growth	26.0	**31.1**	**34.2**	**33.0**	**32.1**	29.9	26.8	23.8	21.9	20.7	19.7
B2. Primary balance	26.0	27.9	28.1	26.5	25.0	22.6	19.7	17.1	15.4	14.2	13.2
B3. Exports	26.0	**34.0**	**44.7**	**43.2**	**42.1**	**39.8**	**36.8**	**34.0**	**31.8**	29.3	27.2
B4. Other flows 3/	26.0	**30.6**	**33.0**	**31.9**	**31.0**	29.1	26.5	24.1	22.3	20.7	19.5
B6. One-time 30 percent nominal depreciation	26.0	**34.3**	29.7	28.7	27.8	25.8	22.8	19.9	18.2	17.3	16.6
B6. Combination of B1-B5	26.0	**39.3**	**41.9**	**40.5**	**39.4**	**37.1**	**33.9**	**30.8**	28.3	26.3	24.6
C. Tailored Tests											
C1. Combined contingent liabilities	26.0	26.9	25.7	23.8	22.2	19.8	17.0	14.4	12.7	11.6	10.7
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	26.0	**31.2**	**34.5**	**33.5**	**32.4**	**30.1**	27.0	24.0	21.6	19.6	18.0
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	99.2	95.4	88.0	82.5	78.8	72.6	63.4	57.1	53.3	50.8	50.0
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2039 2/	99.2	93.7	88.4	83.6	80.9	77.7	75.6	74.9	76.4	80.2	86.5
B. Bound Tests											
B1. Real GDP growth	99.2	95.4	88.0	82.5	78.8	72.6	63.4	57.1	53.3	50.8	50.0
B2. Primary balance	99.2	97.5	91.9	84.4	78.1	69.8	59.4	52.2	47.6	44.4	42.8
B3. Exports	99.2	**166.7**	**281.1**	**264.2**	**252.7**	**237.0**	**213.5**	**200.1**	**189.1**	**176.6**	**169.5**
B4. Other flows 3/	99.2	106.8	108.0	101.3	96.9	90.1	80.0	73.6	68.9	65.0	63.1
B6. One-time 30 percent nominal depreciation	99.2	95.4	77.5	72.6	69.3	63.5	54.7	48.5	44.7	43.1	42.8
B6. Combination of B1-B5	99.2	**154.4**	112.3	**168.7**	**161.3**	**150.3**	133.8	123.5	114.6	107.9	104.5
C. Tailored Tests											
C1. Combined contingent liabilities	99.2	93.9	84.3	75.7	69.3	61.1	51.2	44.0	39.4	36.4	34.6
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	99.2	131.7	130.5	118.9	109.8	98.2	83.5	75.1	68.7	63.1	59.7
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	**140**	**140**	**140**	**140**	**140**	**140**	**140**	**140**	**140**	**140**	**140**
Debt service-to-exports ratio											
Baseline	6.0	7.1	7.7	7.7	7.5	6.8	7.8	8.2	5.7	4.4	4.3
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2039 2/	6.0	7.6	8.6	9.0	9.2	8.6	**10.5**	**11.6**	7.8	5.7	5.6
B. Bound Tests											
B1. Real GDP growth	6.0	7.1	7.7	7.7	7.5	6.8	7.8	8.2	5.7	4.4	4.3
B2. Primary balance	6.0	7.1	7.7	7.7	7.5	6.7	7.7	8.0	5.7	4.4	4.2
B3. Exports	6.0	**10.4**	**16.2**	**17.1**	**16.7**	**15.1**	**17.1**	**17.8**	**15.2**	**16.8**	**16.4**
B4. Other flows 3/	6.0	7.1	7.8	7.9	7.8	7.0	8.0	8.4	6.6	5.9	5.8
B6. One-time 30 percent nominal depreciation	6.0	7.1	7.7	7.5	7.4	6.6	7.7	8.1	5.6	3.5	3.5
B6. Combination of B1-B5	6.0	9.2	**12.8**	**12.8**	**12.5**	**11.3**	**12.9**	**13.5**	**12.0**	9.9	9.7
C. Tailored Tests											
C1. Combined contingent liabilities	6.0	7.1	7.6	7.6	7.4	6.6	7.6	8.0	5.5	4.2	4.1
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	6.0	8.8	9.4	9.4	9.0	7.9	8.9	9.3	7.3	6.5	6.3
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	11.5	**18.0**	**18.3**	**17.0**	**17.7**	**15.8**	**17.7**	**17.4**	12.0	8.3	7.7
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2039 2/	11.5	**19.2**	**20.5**	**19.9**	**21.6**	**20.1**	**23.7**	**24.7**	**16.2**	11.0	10.1
B. Bound Tests											
B1. Real GDP growth	11.5	**20.5**	**23.4**	**21.7**	**22.6**	**20.1**	**22.5**	**22.2**	**15.3**	10.6	9.8
B2. Primary balance	11.5	**17.9**	**18.3**	**17.1**	**17.7**	**15.7**	**17.5**	**17.0**	11.9	8.5	7.6
B3. Exports	11.5	**18.6**	**20.2**	**19.8**	**20.5**	**18.3**	**20.1**	**19.8**	**16.6**	**16.7**	**15.4**
B4. Other flows 3/	11.5	**18.0**	**18.7**	**17.6**	**18.3**	**16.3**	**18.2**	**17.9**	13.9	11.3	10.4
B6. One-time 30 percent nominal depreciation	11.5	**22.6**	**23.0**	**20.9**	**21.8**	**19.4**	**21.8**	**21.6**	**14.8**	8.5	7.9
B6. Combination of B1-B5	11.5	**20.5**	**23.4**	**21.7**	**22.5**	**20.1**	**22.3**	**22.0**	**19.2**	**14.5**	13.4
C. Tailored Tests											
C1. Combined contingent liabilities	11.5	**17.9**	**18.2**	**16.8**	**17.4**	**15.4**	**17.3**	**17.0**	11.6	8.0	7.4
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	11.5	**23.9**	**24.5**	**22.9**	**22.9**	**19.5**	**20.5**	**19.3**	**14.9**	12.2	11.0
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. Chad: Sensitivity Analysis for Key Indicators of Public Debt, 2020–2030

	Projections 1/										
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	PV of Debt-to-GDP Ratio										
Baseline	**43.5**	**41.9**	**39.8**	**37.5**	**35.7**	33.7	30.3	27.3	25.2	23.7	22.4
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2039 2/	**43**	**43**	**43**	**44**	**45**	**46**	**46**	**46**	**47**	**49**	**51**
B. Bound Tests											
B1. Real GDP growth	**43**	**84**	**93**	**92**	**91**	**90**	**88**	**86**	**85**	**85**	**85**
B2. Primary balance	**43**	**45**	**45**	**42**	**41**	**39**	**35**	32	30	28	26
B3. Exports	**43**	**47**	**55**	**52**	**50**	**48**	**44**	**41**	**38**	35	33
B4. Other flows 3/	**43**	**45**	**46**	**43**	**42**	**39**	**36**	33	30	28	26
B6. One-time 30 percent nominal depreciation	**43**	**87**	**83**	**79**	**76**	**72**	**67**	**63**	**59**	**56**	**54**
B6. Combination of B1-B5	**43**	**44**	**45**	**43**	**43**	**42**	**39**	**36**	34	33	31
C. Tailored Tests											
C1. Combined contingent liabilities	**43**	**57**	**54**	**52**	**49**	**47**	**42**	**39**	**36**	34	32
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	**43**	**77**	**81**	**85**	**88**	**89**	**87**	**86**	**85**	**85**	**85**
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	235.8	275.9	243.1	211.1	209.0	195.7	169.2	147.4	140.8	123.9	114.5
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2039 2/	236	280	259	244	257	258	247	240	252	247	251
B. Bound Tests											
B1. Real GDP growth	236	532	532	489	506	498	465	441	455	427	420
B2. Primary balance	236	295	272	238	237	224	196	172	166	146	135
B3. Exports	236	312	335	293	292	276	245	219	211	183	166
B4. Other flows 3/	236	297	280	245	243	229	200	176	169	148	135
B6. One-time 30 percent nominal depreciation	236	587	514	453	451	426	380	343	334	298	279
B6. Combination of B1-B5	236	291	270	240	248	240	216	193	189	169	158
C. Tailored Tests											
C1. Combined contingent liabilities	236	378	332	290	288	270	236	209	200	176	162
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	236	609	579	550	568	547	496	453	466	436	428
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	56.5	59.7	55.8	55.5	64.0	63.3	67.4	66.1	62.4	54.7	52.1
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2019-2039 2/	56	61	53	56	71	72	82	87	87	78	78
B. Bound Tests											
B1. Real GDP growth	56	65	68	70	81	82	88	89	87	78	76
B2. Primary balance	56	59	59	59	61	59	64	64	61	54	51
B3. Exports	56	60	56	57	65	64	68	67	65	61	58
B4. Other flows 3/	56	60	56	56	65	64	68	67	64	57	54
B6. One-time 30 percent nominal depreciation	56	58	58	54	65	64	68	67	61	52	49
B6. Combination of B1-B5	56	60	58	58	67	66	70	70	66	58	56
C. Tailored Tests											
C1. Combined contingent liabilities	56	59	54	52	59	58	63	64	60	53	51
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	56	73	69	70	90	89	90	85	82	75	73
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 threshold.

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

3/ Includes official and private transfers and FDI.