INTERNATIONAL MONETARY FUND

NIGER

STAFF REPORT FOR THE 2016 ARTICLE IV CONSULTATION AND REQUEST FOR A THREE-YEAR ARRANGEMENT UNDER THE EXTENDED CREDIT FACILITY—DEBT SUSTAINABILITY ANALYSIS

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Prepared by the Staffs of the International Monetary Fund and the World Bank.

Risk of external debt distress:	*Moderate*
Augmented by significant risks stemming from domestic public debt?	*yes*

Niger's risk of external debt distress continues to be assessed as moderate, but the heightened risk of overall debt distress requires close monitoring. This assessment is unchanged from the previous Debt Sustainability Analysis (DSA) conducted during the 2014 Article IV Consultation and updated during the sixth and seventh review of the 2012-16 ECF program. Debt sustainability is highly sensitive to shocks on exports stemming from fluctuations in commodity prices (oil and uranium) and severe drought. It is also vulnerable to a large reduction in combined FDI and project grants, and tightening of borrowing conditions. Niger's overall public debt dynamic also highlights vulnerabilities, with the rapid increase in domestic debt and debt-to-GDP ratio exceeding the benchmark under unchanged policies and larger deterioration of the fiscal balance due to significant loss in revenue or spending pressure. This result calls for continued efforts to improve debt management and macroeconomic policies to contain the recent increase in public debt while strengthening fiscal revenues and for infrastructure gaps to be filled through highly concessional funding and private sector involvement.

BACKGROUND

1. **This joint International Monetary Fund (IMF) and World Bank (WB) DSA, updates the DSA conducted in 2015 for the sixth and seventh reviews under the ECF**. The DSA is based on end-2015 data and the baseline scenario of the 2016 Article IV consultation and the new arrangement under the Extended Credit Facility. It uses the standard debt dynamics template for low-income countries. The debt data cover external and domestic debt of the central government, debt of public enterprises and parastatals, state guarantees and private external debts. Domestic debt includes government arrears, debt to the regional central bank (*Banque Centrale des Etats de l'Afrique de l'Ouest*-BCEAO) resulting from statutory advances, Niger's Special Drawing Rights (SDR) allocation, government issued securities, and government public-private-partnership contracts (PPP) to finance capital projects.

Text Table 1. Niger: Public Debt Composition, 2005–15

	End-2005[1]			End-2010			End-2013			End-2015		
	Billions of CFAF	Percent of public debt	Percent of GDP	Billions of CFAF	Percent of public debt	Percent of GDP	Billions of CFAF	Percent of public debt	Percent of GDP	Billions of CFAF	Percent of public debt	Percent of GDP
Total Public Debt	**1,217.8**	**100**	**68.5**	**860.2**	**100**	**30.4**	**969.3**	**100**	**25.6**	**1,776.5**	**100**	**41.9**
External Debt	**956.9**	**78.6**	**53.9**	**651.2**	**75.7**	**23.0**	**799.9**	**82.5**	**21.1**	**1,290.7**	**72.7**	**30.4**
Central Government	**956.9**	**78.6**	**53.9**	**478.4**	**55.6**	**16.9**	**663.3**	**68.4**	**17.5**	**1,187.6**	**66.9**	**28.0**
Multilateral	848.6	69.7	47.8	364.9	42.4	12.9	505.6	52.2	13.3	968.9	54.5	22.8
Bilateral	108.4	8.9	6.1	113.5	13.2	4.0	157.6	16.3	4.2	218.7	12.3	5.2
Paris Club	0.0	0.0	0.0	0.0	0.0	0.0	26.2	2.7	0.7	26.2	1.5	0.6
Non-Paris Club	108.4	8.9	6.1	113.5	13.2	4.0	137.7	14.2	3.6	192.5	10.8	4.5
Commercial Banks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Public guarantee (SORAZ)	**0**	**0.0**	**0.0**	**172.8**	**20.1**	**6.1**	**136.6**	**14.1**	**3.6**	**103.1**	**5.8**	**2.4**
Domestic Debt	**260.9**	**21.4**	**14.7**	**209.0**	**24.3**	**7.4**	**169.4**	**17.5**	**4.5**	**485.8**	**27.3**	**11.5**
T-Bills + Bonds	14.5	1.2	0.8	35.6	4.1	1.3	71.0	7.3	1.9	352.4	19.8	8.3
Domestic Arrears	176.0	14.5	9.9	104.7	12.2	3.7	38.7	4.0	1.0	89.1	5.0	2.1
Others	70.4	5.8	4.0	68.7	8.0	2.4	59.7	6.2	1.6	44.3	2.5	1.0

Sources: Country authorities; and IMF staff calculations.

[1] Niger reaches the HIPC completion in April 2004 and benefitted from the MDRI in 2006.

2. **The previous DSA assessed Niger's risk of debt distress as moderate, largely on account of government debts contracted to support the development of the natural resource sector and to finance large infrastructure projects**. The ratio of nominal external debt to GDP declined from around 54 percent in 2005 to 23 percent in 2010. Niger reached the completion point under the Enhanced Highly Indebted Poor Countries (HIPC) Initiative in April 2004 and in 2006 benefited from Multilateral Debt Relief Initiative (MDRI) assistance from the African Development Fund, the International Development Association (IDA), and the International Monetary Fund (IMF). Niger's public external debt has increased significantly since 2010, as Niger has participated in developing natural resource projects[1] and launched an ambitious

[1] In 2011, the government contracted a Yuan 650 million loan for the financing of its share in the construction of the new Azelik uranium mine, adding to the state guarantee of 40 percent of a US$880 million loan to the SORAZ refinery.

public investment program largely financed by borrowing from multilaterals and domestic resources. Public external debt has since reached 30.4 percent of GDP in 2015 and is projected to reach 34 percent of GDP in 2016, partly due to government financing of public infrastructure. The composition of debt has also started to shift with the share of external debt declining slightly to 73 percent of total public debt in 2015, from about 76 percent in 2010, but with a significant increase in the share of obligations to multilateral creditors and a decline in the share of the government guarantee extended to the refinery.

3. Large issuance of securities has increased public domestic debt which had declined in 2013 after arrears were cleared in the context of the previous ECF (Text Table 1). The domestic-debt-to-GDP ratio had declined from 7.4 percent in 2010 to 4.5 percent in 2013, but leapt to 11.5 percent in 2015 as the government issued CFAF 119.8 billion in regional bonds (CFAF 18.2 billion taken by local banks) and CFAF 38.8 billion (entirely issued to local banks) to repay domestic arears.[2] Consequently, the stock of government securities on the regional market has increased from 1.3 percent of GDP to 8.3 percent of GDP between 2010 and 2015. Domestic debt is expected to rise further over the medium-term reflecting the expected signing with domestic resident investors, of public-private-partnership contracts (PPP) amounting to around 6.5 percent of GDP mainly in the area of road construction to be implemented in the next 4 years.

4. Debt management still faces low capacity, but efforts are being made to improve its framework. A June 18, 2015 Prime-Ministerial decree elevates the profile of the Inter-Ministerial Debt Management Committee, which is now chaired by the Prime Minister and also, oversees overall budget support. The committee is supported by a permanent secretary which ensures the coordination of debt management across ministries and that contracted debts are in line with fiscal and debt sustainability. In addition, a quarterly report on debt management is now regularly published, along with the three year borrowing plan that defines the debt strategy and identifies the investment projects and the sources of financing.

5. Niger is rated a medium policy performer for the purpose of determining the debt burden thresholds under the DSA framework. Niger's rating on the World Bank's Country Policy and Institutional Assessment (CPIA) is 3.4 making it a medium policy performer. Accordingly, the external public debt burden thresholds are as shown in Text Table 2.

Text Table 2. Niger: External Debt Burden Thresholds

External Debt Burden Thresholds	Without Remittances
PV of debt in % of	
Exports	150
GDP	40
Revenue	250
Debt service in % of	
Exports	20
Revenue	20
Total Public Debt Benchmark	
PV of total public debt in percent of GDP	56

Source: DSA template.
The remittances are low in Niger; therefore, the analysis will not consider the scenario with remittance.

[2] The terms of the regional bonds are 6.25 percent interest rate, 5 years' maturity and 1-year grace period.

UNDERLYING DSA ASSUMPTIONS

6. The medium-and long-term projections were updated to take into account recent developments. In addition to the financing under the proposed successor ECF program, these developments include lower oil prices, the impact of the regional security situation, delays in the implementation of major natural resource projects, and the economic slowdown in Nigeria. The aforementioned shocks materialized during the current ECF (2012–16) program, and contributed to recurrent fiscal slippages. The proposed successor ECF 2017–19 program comes with a maximum access of 75 percent of quota. In the framework for the proposed program, the fiscal situation is expected to improve only gradually in the medium-term as, relative to the previous DSA, revenue projections have been revised down reflecting the delay in completing the large natural resource projects and with a slightly higher expenditure envelope (on top of the already anticipated elevated spending of 2016) to preserve room for development spending despite the anticipated continued elevated security spending (including assistance to refugees). The increase in resource revenue is projected only in 2020 because of delays in the implementation of the crude oil export project which is expected to be operational in 2020, while the completion date for the Imouraren uranium project is still kept at 2021. The basic fiscal balance will gradually improve during the course of the new program, turning to a surplus when revenue from crude oil exports becomes significant.[3]

7. Growth and exports will be mainly affected by developments in the resource sector and spillovers from the economic downturn in Nigeria. The GDP growth path has been revised downward to reflect the slightly weaker than expected growth outcomes and the delay in implementing the resource projects; but longer-term growth is expected to be marginally higher once those projects come on stream. The DSA assumes a more conservative growth in export of goods and services compared to the previous DSA, reflecting the economic difficulties in Nigeria, Niger's main regional trading partner; and low commodity prices that are adversely affecting the resources sector mainly uranium exports. This scenario results into a lower export-to-GDP ratio throughout the medium and long-term. However, public investment in agriculture and infrastructure are expected to help promote export-oriented growth and efficiency gains that could ultimately improve exports (Text Table 2).

8. Reliance on external grants and loans to finance the current account deficit is projected to decline gradually as natural resource revenues increase. Besides debt-creating flows and Foreign Direct Investment (FDI), the current account deficit is expected to be financed by substantial inflows of project grants and private capital.

[3] This expenditure rationalization objective will require stepping-up the implementation of the recommendations of the multiple technical assistance missions the country has benefitted recently including the completed 2016-public expenditure and financial assessment. The authorities have recently put in place a budget regulation committee under the aegis of the Prime minister to ensure spending is in line with revenue mobilization. Also the preparation of the implementation of the 2012 budget law is progressing with the 2018 budget law expected to be prepared in the form of program budgeting. The recruitment in the near future of a long-term technical assistant, will accelerate the implementation of Treasury single account that has been delayed due to lack of capacity. Finally, on the basis of the recommendation of the 2016-PEFA report, the government will elaborate a new medium-term public finance reform program supported by the donors to ensure budget execution is in line with best practices and compatible with the long-term fiscal sustainability objectives.

Text Table 3. Niger: Key Macroeconomic Assumptions

(DSA 2016 vs. DSA 2015)[1]

	2014-15	2016-19	2020-36
Real GDP growth (percent)			
DSA 2016	5.3	5.2	5.4
DSA 2015	5.6	6.6	5.3
Total revenue (percent of GDP)[2]			
DSA 2016	23.3	21.0	24.4
DSA 2015	24.2	24.1	24.0
Exports of goods and services (percent of GDP)			
DSA 2016	19.8	17.2	22.9
DSA 2015	19.3	21.4	24.6

Sources: Niger authorities; and IMF staff calculations.

[1] See Box 1 for details on baseline scenario assumptions. The DSA 2015 forecasting period stops in 2035.
[2] Total revenue excluding grants.

9. The macroeconomic outlook remains subject to numerous risks mostly tilted to the downside. The country remains vulnerable to the effects of exogenous shocks, including political tensions, fluctuations in commodity prices, and frequent weather-related shocks (drought and flooding) on economic activity and on food security. The continued low oil and uranium prices may cause further delays in implementing the natural resource projects. Also, the persistence or intensification of violent conflicts could divert resources from social needs and development projects. On the upside, a rebound in uranium and oil prices, and recovery in the Nigerian economy would substantially increase Niger's exports, and also improve fiscal space.

EXTERNAL DSA

Baseline

10. The baseline scenario assumes that the US$1 billion credit line from EximBank of China[4] will be disbursed progressively over the period of 2020-27, when the export of crude oil starts. The baseline scenario assumes that US$50 million of the Chinese master facility is disbursed in 2020, US$100

[4] This line of credit, considered as a facility in total of US$1 billion, was signed in September 2013 and several loan agreements could be negotiated under the facility between the governments of Niger and China. Under the master facility agreement, individual loans are subject to 2 percent interest rate, 25 years, maturity, and 5 years, grace period. Any contracts under the facility should be tied to a Chinese contractor and are earmarked for infrastructure projects with high economic rates of return. Any potential projects need the preliminary approval of Eximbank of China about their eligibility.

million in 2021 and the same amount in 2022, and the disbursement of the remaining US$750 million will be spread over the following years.[5]

11. In the baseline scenario, external debt ratios remain below their policy-dependent thresholds throughout the projection period (2016–36). The present values (PV) of debt-to-GDP, debt-to-exports and debt-to-revenue ratios are expected to remain below the relevant thresholds over the medium term. Those ratios will slightly increase in the next 3 years, should the government borrow to finance its infrastructure investment plans. The debt-to-export and debt-to-revenue ratios will decline starting 2020 when the export of crude oil is expected to start, boosting both exports and growth (Figure 1). However, further delay in the resource projects could lead the debt-to-exports ratio to breach the threshold putting significant pressures on debt and fiscal sustainability. As the baseline debt-to-exports ratio increases to less than 5 percent of breaching the threshold, the probability approach was applied, which highlighted all debt ratios remain well below their relevant thresholds during the entire projection period (Figure 3).

Alternative Scenarios and Stress Tests

12. Under the most extreme shock scenarios, only the present values (PV) of debt-to-export ratio breach the relevant thresholds; the other debt ratios and the debt service ratios remain under their relevant thresholds (Figure 1). Under the historical scenario, which sets key macroeconomic parameters at their historical values, the debt ratios increase in the long term leading the debt-to-GDP ratio to breach the threshold in 2032 and the debt-to-export ratio to breach the threshold in 2028 and stays above the threshold. The stress tests' results suggest:

- The most extreme shock that affects the PV of external debt-to-GDP ratio (Figure 1, Table 1b) is a 30 percent depreciation of the national currency in 2017. Under that shock, the ratio of debt-to-GDP will rise to almost reach the policy dependent threshold of 40 percent in 2014-25 before declining progressively to 31.7 percent at the end of the projection period.

- The most extreme shock that affects the PV of external debt-to-export ratio (Figure 1, Table 1c) is an export shock–that assumes export values grow at their historical average minus one standard deviation in 2017 and 2018, stemming from disruption in the oil industry, low uranium and oil prices, and severe drought, lowering the country's exports. In this case, the ratio breaches the threshold in 2017 and increases to a maximum of 230.5 in 2018 before starting to decline as crude oil exports boost aggregate exports. The debt-to-export ratio breaches also the threshold in case of: (i) a shock on non-debt creating flows; (ii) a combined shock on growth and non-debt creating flows; and (iii) a tightening of new borrowing terms.

[5] The refinancing loan for the construction of the SORAZ refinery (US$880 million), that was reflected in the previous DSA is not taken into account in this current DSA as negotiations have stalled over the last two years; the old debt is assumed to continue to be serviced normally.

- Finally, under the most extreme shocks, the PV of external debt-to-revenue and the debt service ratios[6] remain under their policy relevant thresholds. (Figure 1, Table 1d, 1e, and 1f).

13. Based on Niger's high vulnerability to shocks, staff developed two alternative scenarios. The scenarios simulate security and terms of trade shocks.[7] In both scenarios, staff assume also a one-year delay of the crude oil export project completion. The simulation results show a significant macroeconomic impact, with GDP growth declining by 0.3 to 0.8 percentage points, and the current account widening by 0.8 to 1.7 percent of GDP, causing reserves to fall. The fiscal stance would also deteriorate as revenue would fall and security spending expand. From a DSA perspective, while under the security shock the debt ratios would remain under their respective thresholds, the large impact of the terms of trade shock on exports would cause the debt-to-export ratio to exceed the threshold by 15.4 percent in 2017 (Figure 4).

PUBLIC DSA

Baseline

14. The baseline scenario assumes that the government will continue to rollover the outstanding stock of treasury bills, issuing on annual average CFAF 130 million in treasury bonds over the medium term and around CFAF 70 billion in the long-term, as revenue collection improves. Niger's domestic debt, 11.5 percent of GDP in 2015, is projected to peak at 15.9 percent of GDP in 2018 as the government implements the 6.5 percent of GDP of PPP contracts. The 2016 budget includes a planned bond issuance of CFAF 170 billion of which CFAF 40 billion to be issued to local banks to repay domestic arears. However, due to delays in making the arrangement with the banks, the CFAF 40 billion security issuance will only be completed in 2017. The domestic public debt-to-GDP ratio is projected to fall over the long-term, reaching 1.7 percent of GDP in 2036. However, this rapid buildup in domestic borrowing, expected to generate debt service equivalent to 4.7 percent of GDP in 2017, could engender significant risks to the government's financial position if regional liquidity conditions deteriorate.

15. The inclusion of Niger's domestic public debt in the analysis highlights the vulnerability of the baseline scenario, as the public debt-to-GDP ratio exceeds the benchmark under the extreme shock scenario. Under the extreme shock with the primary balance set at the historical average minus one standard deviation in 2017-18, the public debt to GDP ratio will exceed the benchmark between 2018 and 2021 and decline in the long term. Also with an assumption of no improvement in the fiscal situation—the primary fiscal balance remaining at the 2016 level, a deficit of 5.3 percent of GDP—public debt will rise continuously. Consequently, the PV of debt-to-GDP ratio will exceed the benchmark in 2025 and reach 79.6 percent in 2036, significantly above the threshold of 56 percent of GDP (Figure 2, Table 2b).

[6] The spike in debt service ratios in 2016 in the previous DSA was due to the SORAZ refinancing loan, which is now excluded for reasons provided in Footnote 5.

[7] The security shock considers a security situation that generates 1 percent of GDP security spending and affects trade and some economic activities. The terms of trade shock considers a 25 percent decrease of the baseline oil and uranium price in 2017.

PRIVATE EXTERNAL DEBT DYNAMICS

16. The current DSA includes identified private debt flows, linked to the large oil and uranium projects. It incorporates the contracts of a loan by the SORAZ refinery (60 percent privately owned), part of the FDI that will finance the Niamey-Cotonou railroad and the Imouraren uranium mine project. The stock of external private debt is estimated at 27.5 percent of GDP in 2015 and is projected to stabilize at just above 9 percent of GDP over the long run. This is lower than in the previous DSA, reflecting a downward revision in FDI due to persistent security challenges and lower commodity prices.

CONCLUSION

17. Niger continues to be assessed as being at moderate risk of external debt distress — unchanged from the previous DSA conducted during the 2014 Article IV and updated during the sixth and seventh reviews of the ECF 2012-16 program. Debt sustainability is highly sensitive to shocks on exports stemming from the collapse of commodity prices (oil and uranium) and severe drought. It is also vulnerable to a large reduction in the combined FDI and donor project supports and tightening of borrowing conditions. Niger's overall public debt dynamics also highlights vulnerabilities, with the rapid increase in domestic debt and total public debt-to-GDP ratio exceeding the benchmark under an assumption of unchanged policies and larger deterioration of the fiscal balance due to significant loss in revenue or spending pressures. In addition, further delay in the implementation of the resource projects could add significant pressures on debt and fiscal sustainability.

18. Niger's continued moderate risk of debt distress calls for the authorities' sustained commitment to strengthen debt management and moderate the amount of new borrowing. The Inter-Ministerial Debt Committee should play an active role in strengthening institutional coordination and streamlining debt approval processes. In addition, the committee should continue to be actively involved in the evaluation of PPP contracts to ensure they are in line with procurement standards, the government borrowing plan, and debt sustainability. Staff advises the government to refrain from signing new PPP contracts until a new legal framework for PPP is established. Furthermore, staff recommends restricting external financing to grants and concessional borrowing. Also, staff encourages the authorities to review the debt portfolio on the basis of the Afritac-West technical assistance's recommendations to address the large amount of debt signed but not yet disbursed including the Chinese master facility agreement signed in 2013. For the latter it is important to ensure that loans contracted under the facility finance self-sustaining development projects. The authorities are also encouraged to build buffers to cope with exogenous shocks, strengthen revenue administration, and prioritize spending needs. Finally, continued technical assistance in debt management is recommended to help build capacity in developing comprehensive borrowing plans on a regular basis, that are consistent with medium-term debt sustainability and aligned with development priorities.

19. Finally, containing government's borrowing to local banks could help to reinforce the stability of the banking system and limit crowding out of the private sector. Like in other WAEMU countries, banks' exposure to government debt raises concern over systemic financial risks from sovereign default as fiscal positions become tight. Reducing government debt will reduce risks

to the banking system and free resources to finance private sector development, which is essential for strong and sustained long-term growth.

20. The Nigerien authorities welcomed the conclusions of the DSA that are broadly consistent with the previous DSA and also with their own assessment. The authorities reiterated their commitment to finance development projects primarily through grants and concessional loans. They also noted their intention to streamline the debt portfolio to ensure that contracted loans that have not been disbursed for many years are canceled to provide room for other priority projects. They also agreed to strengthen revenue mobilization and reinforce spending control to minimize the need for borrowing (including through bonds) to preserve fiscal sustainability. The authorities also noted the need to reinforce the debt management framework and to design a PPP framework that will minimize the budgetary risks from PPP implementation.

Box 1. Niger: Baseline Scenario Assumptions

The baseline macroeconomic scenario for 2016−36 is based on the following assumptions:

- Real GDP growth is projected to maintain 5.2 percent average growth over the medium-term, lower than assumed in the previous DSA, as the growth rebound expected from the resource sector is now expected only from 2020 due to the delays in completing the major uranium and crude oil projects. Consequently, average annual growth rate in the longer-run is higher at 5.4 percent. Continuation of steady agricultural production and of government food security program will help maintain inflation fairly stable at about 2 percent over the projection period in line with the WAEMU target. The export price for Niger's crude oil is assumed to be on average 85 percent of the international oil price projected in the current World Economic Outlook.

- Total revenue-to-GDP ratio (excluding grants) will decline from about 18.1 percent in 2015 (including 1.2 percent of GDP of exceptional revenue) to 15.3 percent in 2016 as a consequence of weak commodity prices and the slowdown in the Nigerian economy. This ratio will rise to average 21.8 percent in 2036 about the same level assumed in the previous DSA, reflecting the improvements expected from the ongoing tax administration reforms and the expected revenue boost from the natural resource sector.

- Primary fiscal expenditure was 32.4 percent of GDP in 2015 driven by large spending needs for security, humanitarian assistance and health, education, and transport infrastructure priorities envisaged in the *Plan de Developpement Economique et Social (PDES) 2012–15*. Current expenditure is expected to decline gradually from 15.6 percent of GDP in 2015 to 12 percent of GDP in 2036, while capital expenditure is expected to decline only gradually reflecting the large infrastructure needs of the country, and as a result, primary fiscal expenditure is projected at 24.1 percent of GDP in 2036. The basic balance (the fiscal balance net of grants and externally-financed capital expenditure) will gradually converge to zero and remain positive in the long run. The overall fiscal deficit (commitment basis excluding grants) will also decline from 14.6 percent of GDP in 2015 to 3 percent of GDP in 2036.

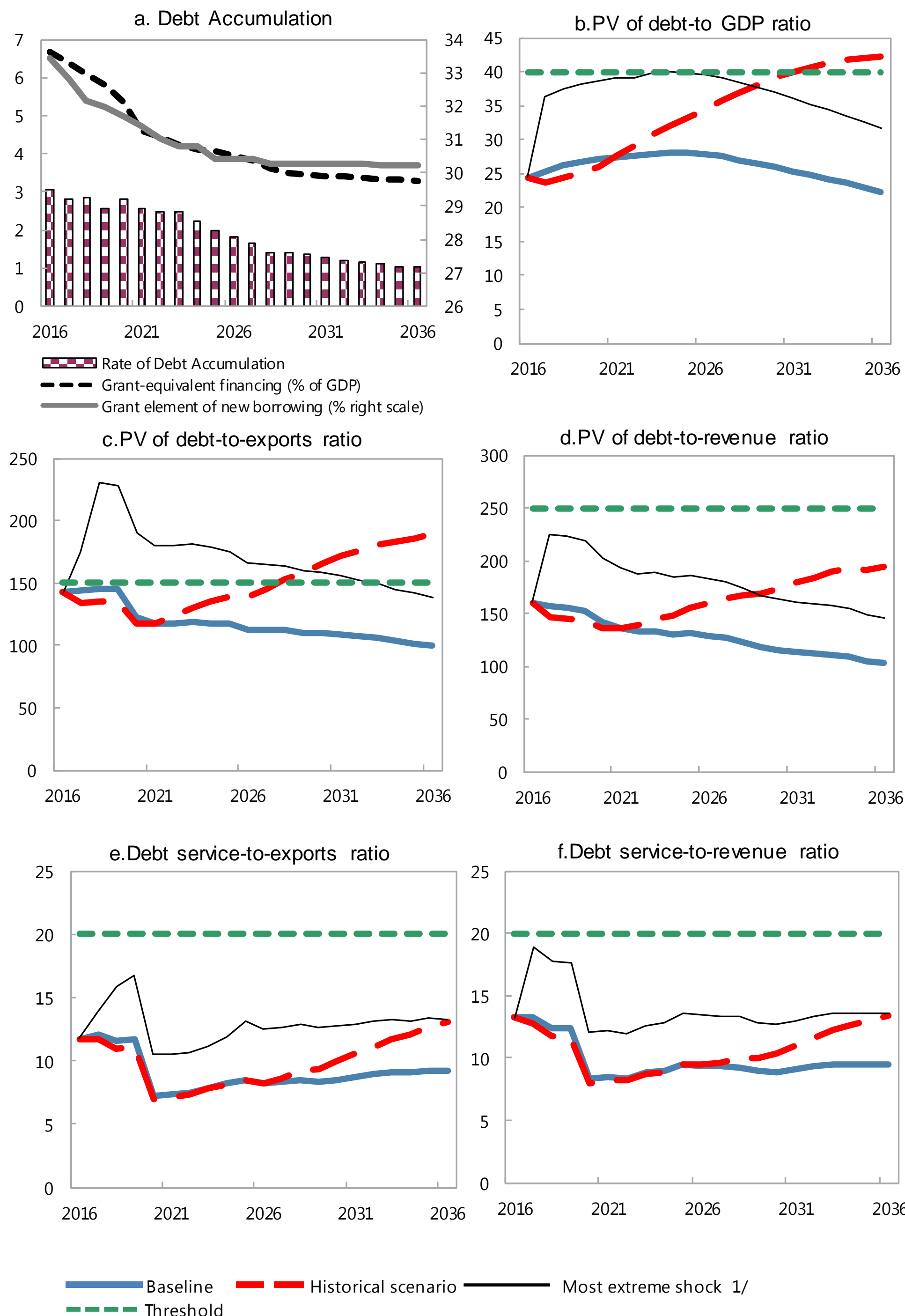
- The non-interest current account deficit is projected to gradually decline to 10.4 percent of GDP at the end of the projection period, from 17.9 percent of GDP in 2015. Export volumes would increase, mainly driven by much larger export growth of crude oil and uranium (after oil production comes on stream in 2020 and the Imouraren mine in 2021). The exports volume of non-resource products is also expected to grow as a result of the expected impact of gradual economic diversification and implementation of the second phase of the 3N (*Nigériens Nourissent les Nigériens*) initiative. Imports of goods and services, representing 41.1 percent of GDP in 2015, would slowdown initially, in line with the decline of FDI-related imports, before stabilizing at 35.6 percent of GDP in 2036.

- Net FDI is projected to increase in the medium-term from 6.9 percent of GDP in 2015 to above 10 percent of GDP in 2018-19 with the construction of the new oil pipeline. As assumed in the previous DSA, it is expected to decrease afterward as large investment projects come to completion, and earlier FDI loans are reimbursed. FDI is projected to average 7 percent of GDP in the long term.

- The average interest rate on external debt is projected to be around 2.1 percent. The rate of external debt accumulation is expected to decrease after the major resources projects are completed and the Chinese master facility is fully disbursed by 2026. The concessionality of new borrowing will decline from an average of 33.5 percent in 2016 to about 30.2 percent in 2036 as the share of commercial loans increases gradually to 10 percent of total loans. The analysis assumes continued inflow of grants and loans of about on average 3.1 percent and 3.3 percent of GDP, respectively. The discount rate remains at 5 percent.

- The domestic debt profile assumes no net accumulation of domestic arrears and that securitized domestic arrears will be repaid over the next 5 years. The baseline includes an average bond issuance of about CFAF 90 billion a year after 2017 under the present terms of regional bonds for Niger (i.e., 6.3 percent interest rate, 5 years' maturity and 1-year grace period) and 6.5 percent of GDP of PPP contracts to be implemented in the next four years starting 2017.

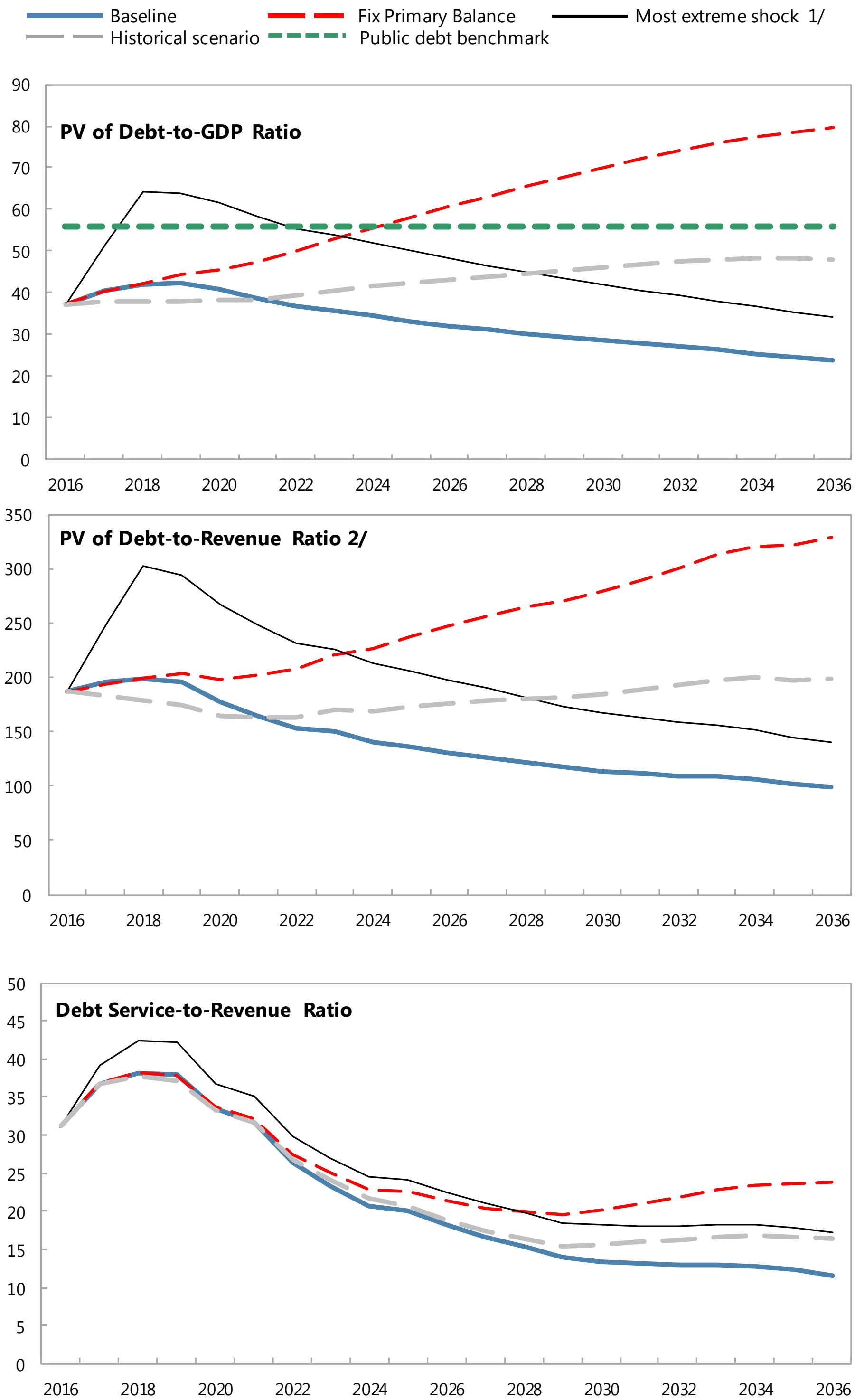
Figure 1. Niger: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2016–36



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio on or before 2026. In figure b. it corresponds to a One-time depreciation shock; in c. to a Exports shock; in d. to a One-time depreciation shock; in e. to a Exports shock and in figure f. to a One-time depreciation shock

Figure 2. Niger: Indicators of Public Debt Under Alternative Scenarios, 2016–36

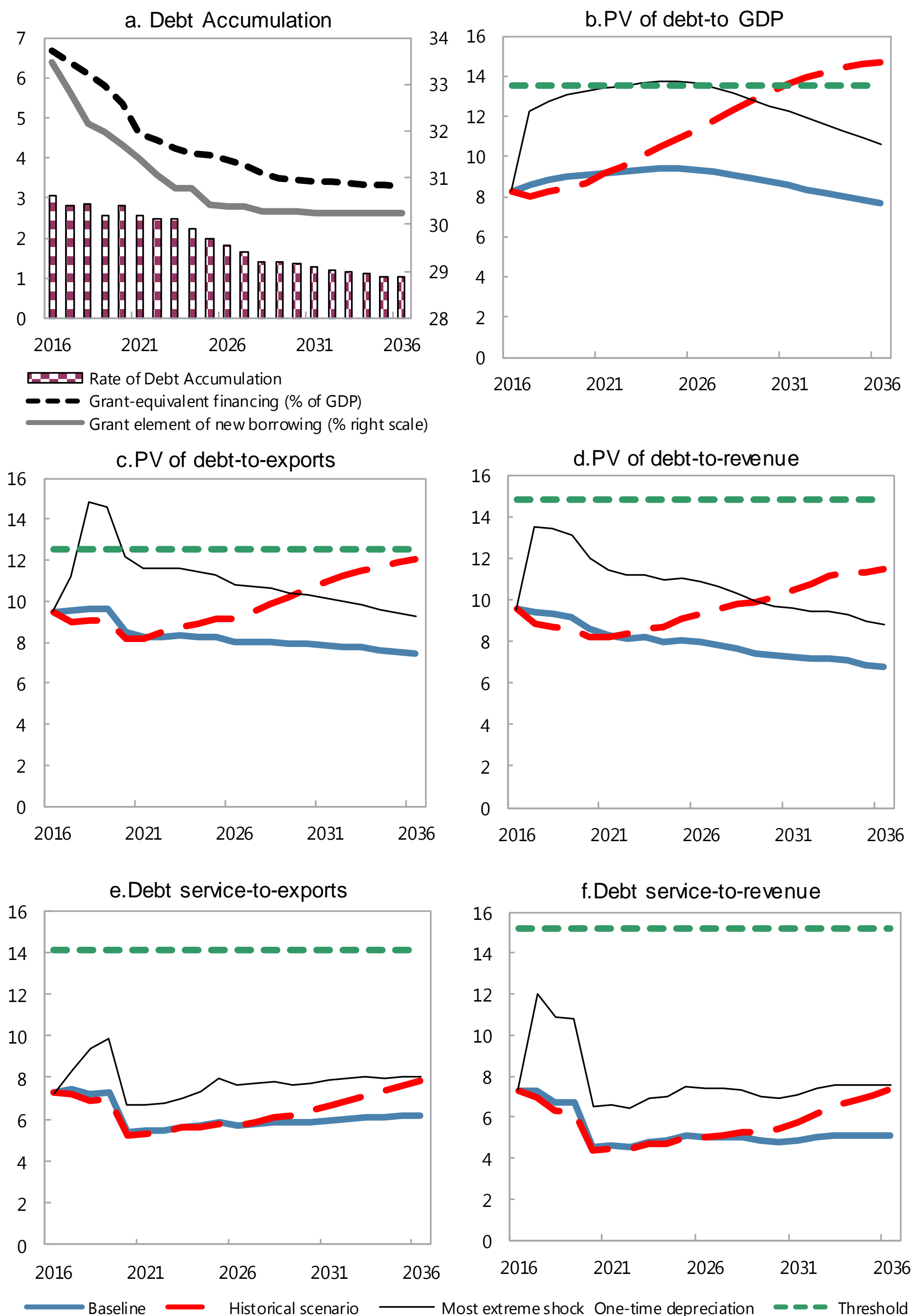


Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio on or before 2026.

2/ Revenues are defined inclusive of grants.

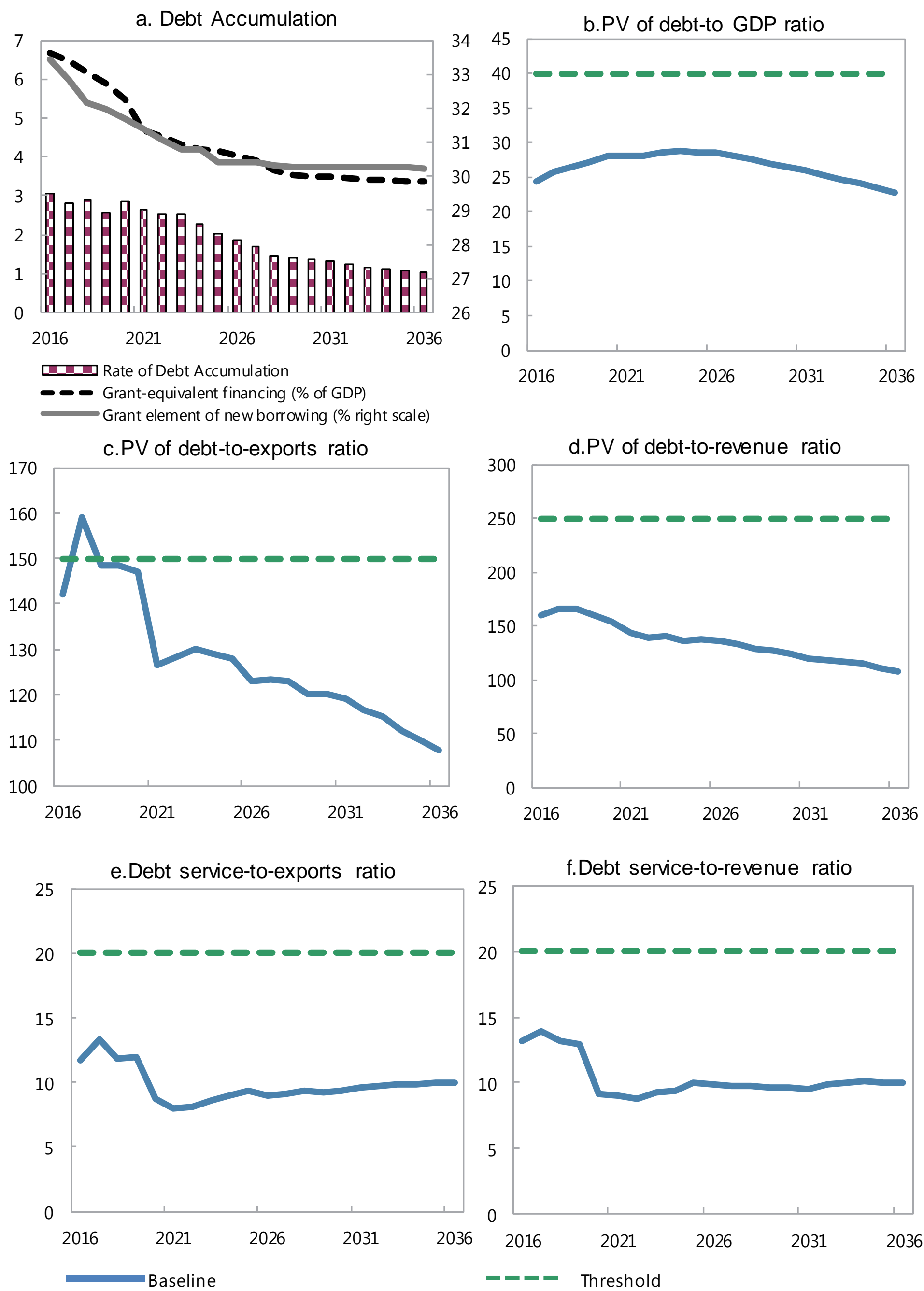
Figure 3. Niger: Probability of Debt Distress of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2016-2036 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio on or before 2026. In figure b. it corresponds to a One-time depreciation shock; in c. to a Exports shock; in d. to a One-time depreciation shock; in e. to a Exports shock and in figure f. to a One-time depreciation shock

Figure 4. Niger: Indicators of Public and Publicly Guaranteed External Debt Under a Terms of Trade Shock, 2016–36



Sources: Country authorities; and staff estimates and projections.

Table 1a. Niger: External Debt Sustainability Framework, Baseline Scenario, 2013–36

(In percent of GDP, unless otherwise indicated)

	Actual			Historical [6/]	Standard [6/]	Projections									
				Average	Deviation							2016-2021			2022-2036
	2013	2014	2015			2016	2017	2018	2019	2020	2021	Average	2026	2036	Average
External debt (nominal) 1/	**46.8**	**48.9**	**57.9**			**61.0**	**62.0**	**61.9**	**61.6**	**60.4**	**59.5**		**54.8**	**40.1**	
of which: public and publicly guaranteed (PPG)	21.1	25.1	30.4			34.1	35.8	37.1	38.1	38.5	39.0		39.1	30.6	
Change in external debt	-2.9	2.1	9.0			3.1	0.9	-0.1	-0.3	-1.3	-0.8		-1.2	-1.3	
Identified net debt-creating flows	2.2	3.2	18.6			5.2	5.9	4.4	4.4	3.1	2.3		2.3	2.2	
Non-interest current account deficit	**14.8**	**15.3**	**17.9**	**16.1**	**5.9**	**14.5**	**17.1**	**17.5**	**17.5**	**14.5**	**12.3**		**10.2**	**10.4**	10.6
Deficit in balance of goods and services	16.4	17.8	22.5			19.7	22.2	22.5	22.4	19.2	17.0		14.1	13.2	
Exports	22.6	21.0	18.6			17.2	17.7	18.0	18.5	22.1	23.5		24.8	22.4	
Imports	39.1	38.8	41.1			36.9	39.8	40.5	40.8	41.3	40.4		38.9	35.6	
Net current transfers (negative = inflow)	-3.9	-4.2	-4.2	-4.6	1.3	-4.1	-4.0	-3.9	-3.7	-3.6	-3.4		-2.9	-2.0	-2.6
of which: official	-2.1	-2.3	-1.7			-2.0	-1.6	-1.5	-1.5	-1.2	-1.0		-0.8	-0.5	
Other current account flows (negative = net inflow)	2.2	1.7	-0.4			-1.0	-1.1	-1.1	-1.2	-1.2	-1.3		-1.0	-0.8	
Net FDI (negative = inflow)	**-8.1**	**-8.9**	**-6.9**	**-9.4**	**5.5**	**-7.6**	**-9.1**	**-10.8**	**-10.9**	**-8.1**	**-7.5**		**-6.0**	**-6.9**	-6.7
Endogenous debt dynamics 2/	**-4.5**	**-3.2**	**7.6**			**-1.7**	**-2.1**	**-2.3**	**-2.2**	**-3.2**	**-2.4**		**-1.9**	**-1.3**	
Contribution from nominal interest rate	0.2	0.1	0.2			0.8	0.9	0.9	1.0	1.0	1.1		0.8	0.6	
Contribution from real GDP growth	-2.4	-3.1	-2.0			-2.5	-3.0	-3.2	-3.1	-4.2	-3.5		-2.7	-2.0	
Contribution from price and exchange rate changes	-2.3	-0.3	9.4			...	...	...	...	...	...		...	...	
Residual (3-4) 3/	**-5.1**	**-1.1**	**-9.6**			**-2.1**	**-5.0**	**-4.5**	**-4.7**	**-4.4**	**-3.2**		**-3.5**	**-3.5**	
of which: exceptional financing	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
PV of external debt 4/	...	...	49.6			51.4	51.6	51.0	50.3	49.0	48.0		43.6	31.8	
In percent of exports	...	...	266.6			298.8	291.7	282.8	272.3	221.7	204.6		175.3	142.0	
PV of PPG external debt	**...**	**...**	**22.1**			**24.4**	**25.4**	**26.2**	**26.8**	**27.1**	**27.4**		**27.8**	**22.3**	
In percent of exports	**...**	**...**	**118.8**			**142.2**	**143.5**	**145.4**	**145.1**	**122.8**	**117.0**		**112.0**	**99.6**	
In percent of government revenues	**...**	**...**	**121.9**			**160.1**	**157.2**	**155.7**	**152.8**	**141.9**	**135.3**		**128.7**	**102.2**	
Debt service-to-exports ratio (in percent)	**4.9**	**2.9**	**4.1**			**12.7**	**13.0**	**12.4**	**12.4**	**7.8**	**7.8**		**8.4**	**9.3**	
PPG debt service-to-exports ratio (in percent)	**2.4**	**2.2**	**3.2**			**11.8**	**12.1**	**11.6**	**11.7**	**7.3**	**7.3**		**8.2**	**9.2**	
PPG debt service-to-revenue ratio (in percent)	**3.2**	**2.6**	**3.3**			**13.2**	**13.2**	**12.4**	**12.3**	**8.4**	**8.5**		**9.4**	**9.5**	
Total gross financing need (Billions of U.S. dollars)	0.6	0.6	0.8			0.7	0.8	0.8	0.8	0.8	0.7		1.0	1.8	
Non-interest current account deficit that stabilizes debt ratio	17.7	13.2	8.9			11.4	16.1	17.6	17.8	15.7	13.1		11.4	11.7	
Key macroeconomic assumptions															
Real GDP growth (in percent)	5.3	7.0	3.5	5.6	3.8	4.6	5.2	5.5	5.4	7.4	6.2	5.7	5.2	5.1	5.3
GDP deflator in US dollar terms (change in percent)	4.9	0.6	-16.1	2.5	9.2	-0.2	-0.6	2.0	2.0	1.9	1.8	1.2	2.0	2.2	2.0
Effective interest rate (percent) 5/	0.4	0.3	0.3	1.3	1.3	1.5	1.6	1.6	1.7	1.7	1.9	1.7	1.6	1.6	1.6
Growth of exports of G&S (US dollar terms, in percent)	14.3	-0.2	-23.0	10.1	16.4	-3.5	7.5	9.7	10.2	30.9	14.9	11.6	11.1	6.4	7.1
Growth of imports of G&S (US dollar terms, in percent)	9.6	6.9	-7.9	12.2	18.6	-6.3	12.8	9.5	8.4	10.6	5.9	6.8	8.9	6.3	6.5
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	33.5	32.8	32.1	32.0	31.7	31.4	32.2	30.4	30.2	30.4
Government revenues (excluding grants, in percent of GDP)	16.6	17.5	18.1			15.3	16.1	16.8	17.5	19.1	20.3		21.6	21.8	21.8
Aid flows (in Billions of US dollars) 7/	0.9	0.7	0.7			0.6	0.6	0.6	0.6	0.6	0.5		0.6	1.2	
of which: Grants	0.6	0.4	0.4			0.4	0.4	0.4	0.4	0.4	0.4		0.4	0.8	
of which: Concessional loans	0.2	0.3	0.4			0.2	0.2	0.2	0.2	0.2	0.2		0.2	0.4	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			6.7	6.4	6.1	5.8	5.3	4.6		4.0	3.3	3.7
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			63.4	63.4	63.1	63.7	64.6	61.7		62.0	62.7	62.2
Memorandum items:															
Nominal GDP (Billions of US dollars)	7.7	8.3	7.2			7.5	7.8	8.4	9.1	9.9	10.7		15.5	31.3	
Nominal dollar GDP growth	10.4	7.7	-13.1			4.4	4.5	7.6	7.6	9.4	8.2	7.0	7.2	7.4	7.4
PV of PPG external debt (in Billions of US dollars)			1.6			1.8	2.0	2.2	2.4	2.7	2.9		4.3	6.9	
(PVt-PVt-1)/GDPt-1 (in percent)						3.0	2.8	2.9	2.5	2.8	2.6	2.8	1.8	1.0	1.6
Gross workers' remittances (Billions of US dollars)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
PV of PPG external debt (in percent of GDP + remittances)	...	...	22.1			24.4	25.4	26.2	26.8	27.1	27.4		27.8	22.3	
PV of PPG external debt (in percent of exports + remittances)	...	...	118.8			142.2	143.5	145.4	145.1	122.8	117.0		112.0	99.6	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	3.2			11.8	12.1	11.6	11.7	7.3	7.3		8.2	9.2	

Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt.

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

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

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

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

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

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

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

Table 1b. Niger: Public Sector Debt Sustainability Framework, Baseline Scenario, 2013–36

(In percent of GDP, unless otherwise indicated)

	Actual			Average 5/	Standard Deviation 5/	Estimate	Projections								
	2013	2014	2015			2016	2017	2018	2019	2020	2021	2016-21 Average	2026	2036	2022-36 Average
Public sector debt 1/	25.6	33.7	41.9			47.0	51.1	53.0	53.9	52.4	50.3		43.3	32.3	
of which: foreign-currency denominated	21.1	25.1	30.4			34.1	35.8	37.1	38.1	38.5	39.0		39.1	30.6	
	4.5	8.7	11.5			12.9	15.3	15.9	15.8	13.9	11.4		4.2	1.7	
Change in public sector debt	-0.8	8.1	8.2			5.1	4.0	2.0	0.8	-1.5	-2.1		-1.4	-0.9	
Identified debt-creating flows	0.0	8.4	11.0			5.1	3.9	2.4	1.0	-1.6	-3.1		-3.1	-1.8	
Primary deficit	2.5	7.9	8.8	2.3	19.1	5.3	6.0	4.5	3.0	1.1	-0.9	3.2	-1.1	-0.1	-0.9
Revenue and grants	24.6	23.0	23.6			20.0	20.7	21.2	21.8	23.1	23.6		24.5	24.3	
of which: grants	8.0	5.4	5.5			4.7	4.6	4.4	4.3	4.0	3.3		2.9	2.4	
Primary (noninterest) expenditure	27.1	30.9	32.4			25.3	26.7	25.7	24.8	24.2	22.7		23.5	24.1	
Automatic debt dynamics	-2.5	0.5	2.3			-0.2	-2.0	-2.1	-1.9	-2.7	-2.3		-2.0	-1.6	
Contribution from interest rate/growth differential	-1.6	-1.9	-1.1			-1.0	-1.8	-2.1	-2.1	-2.5	-2.0		-1.6	-1.3	
of which: contribution from average real interest rate	-0.3	-0.2	0.0			0.8	0.5	0.5	0.7	1.2	1.1		0.6	0.3	
of which: contribution from real GDP growth	-1.3	-1.7	-1.2			-1.8	-2.3	-2.7	-2.7	-3.7	-3.1		-2.2	-1.6	
Contribution from real exchange rate depreciation	-0.8	2.4	3.4			0.8	-0.2	0.0	0.1	-0.2	-0.3		...	...	
Other identified debt-creating flows	0.0	0.0	0.0			-0.1	-0.1	0.0	0.0	0.0	0.0		0.0	0.0	
Privatization receipts (negative)	0.0	0.0	0.0			-0.1	-0.1	0.0	0.0	0.0	0.0		0.0	0.0	
Recognition of implicit or contingent liabilities	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Debt relief (HIPC and other)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Other (specify, e.g. bank recapitalization)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Residual, including asset changes	-0.8	-0.3	-2.8			0.1	0.1	-0.4	-0.2	0.1	1.0		1.6	0.8	
Other Sustainability Indicators															
PV of public sector debt	...	...	33.5			37.4	40.7	42.1	42.5	41.0	38.8		32.1	24.0	
of which: foreign-currency denominated	...	...	22.1			24.4	25.4	26.2	26.8	27.1	27.4		27.8	22.3	
of which: external	...	...	22.1			24.4	25.4	26.2	26.8	27.1	27.4		27.8	22.3	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	8.4	11.7	15.7			11.6	13.6	12.6	11.2	8.9	6.6		3.4	2.7	
PV of public sector debt-to-revenue and grants ratio (in percent)	...	...	142.1			186.9	196.2	198.2	195.3	177.6	164.6		130.8	98.9	
PV of public sector debt-to-revenue ratio (in percent)	...	...	185.1			244.8	251.9	250.2	242.7	214.6	191.3		148.2	110.0	
of which: external 3/	...	...	121.9			160.1	157.2	155.7	152.8	141.9	135.3		128.7	102.2	
Debt service-to-revenue and grants ratio (in percent) 4/	23.9	16.6	29.3			31.1	36.8	38.2	37.8	33.5	31.6		18.2	11.5	
Debt service-to-revenue ratio (in percent) 4/	35.4	21.8	38.1			40.8	47.3	48.2	47.0	40.5	36.8		20.7	12.8	
Primary deficit that stabilizes the debt-to-GDP ratio	3.3	-0.3	0.6			0.2	2.0	2.5	2.1	2.6	1.2		0.3	0.8	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	5.3	7.0	3.5	5.6	3.8	4.6	5.2	5.5	5.4	7.4	6.2	5.7	5.2	5.1	5.3
Average nominal interest rate on forex debt (in percent)	0.0	0.0	0.0	1.5	1.5	2.4	2.4	2.3	2.4	2.5	2.6	2.4	2.0	2.1	2.1
Average real interest rate on domestic debt (in percent)	0.2	3.0	3.6	-1.5	3.1	4.9	2.7	3.4	4.0	4.5	4.1	3.9	3.8	0.7	3.3
Real exchange rate depreciation (in percent, + indicates depreciation)	-4.2	12.5	14.0	-0.2	9.4	2.8	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	1.5	0.5	0.5	3.4	2.4	-0.1	2.4	2.1	1.8	1.6	1.9	1.6	2.0	2.2	2.0
Growth of real primary spending (deflated by GDP deflator, in percent)	27.8	21.8	8.7	5.9	10.4	-18.2	11.1	1.5	1.5	5.1	-0.4	0.1	5.4	5.0	5.7
Grant element of new external borrowing (in percent)	...	...	...	...	...	33.5	32.8	32.1	32.0	31.7	31.4	32.2	30.4	30.2	...

Sources: Country authorities; and staff estimates and projections.

1/ [Indicate coverage of public sector, e.g., general government or nonfinancial public sector. Also whether net or gross debt is used.]

2/ Gross financing need is defined as the primary deficit plus debt service plus the stock of short-term debt at the end of the last period.

3/ Revenues excluding grants.

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

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

Table 2a. Niger: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2016–36
(In percent)

	Projections							
	2016	2017	2018	2019	2020	2021	**2026**	2036
PV of debt-to GDP ratio								
Baseline	24	25	26	27	27	27	**28**	22
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2016-2036 1/	24	24	24	25	26	28	**34**	42
A2. New public sector loans on less favorable terms in 2016-2036 2/	24	27	29	30	31	32	**36**	35
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2017-2018	24	26	28	29	29	29	**30**	24
B2. Export value growth at historical average minus one standard deviation in 2017-2018 3/	24	27	31	31	31	32	**31**	23
B3. US dollar GDP deflator at historical average minus one standard deviation in 2017-2018	24	27	30	31	31	32	**32**	26
B4. Net non-debt creating flows at historical average minus one standard deviation in 2017-2018 4/	24	29	35	36	35	35	**34**	24
B5. Combination of B1-B4 using one-half standard deviation shocks	24	29	37	37	37	37	**35**	26
B6. One-time 30 percent nominal depreciation relative to the baseline in 2017 5/	24	36	37	38	39	39	**40**	32
PV of debt-to-exports ratio								
Baseline	142	144	145	145	123	117	**112**	100
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2016-2036 1/	142	134	135	135	118	118	**139**	189
A2. New public sector loans on less favorable terms in 2016-2036 2/	142	150	158	163	141	138	**145**	155
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2017-2018	142	143	145	144	122	116	**111**	99
B2. Export value growth at historical average minus one standard deviation in 2017-2018 3/	142	174	230	228	190	180	**166**	138
B3. US dollar GDP deflator at historical average minus one standard deviation in 2017-2018	142	143	145	144	122	116	**111**	99
B4. Net non-debt creating flows at historical average minus one standard deviation in 2017-2018 4/	142	166	197	193	161	151	**135**	107
B5. Combination of B1-B4 using one-half standard deviation shocks	142	166	212	209	174	164	**149**	120
B6. One-time 30 percent nominal depreciation relative to the baseline in 2017 5/	142	143	145	144	122	116	**111**	99
PV of debt-to-revenue ratio								
Baseline	160	157	156	153	142	135	**129**	102
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2016-2036 1/	160	146	145	143	136	137	**159**	194
A2. New public sector loans on less favorable terms in 2016-2036 2/	160	164	170	172	163	159	**167**	159
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2017-2018	160	162	166	163	151	144	**137**	109
B2. Export value growth at historical average minus one standard deviation in 2017-2018 3/	160	167	184	179	164	155	**142**	106
B3. US dollar GDP deflator at historical average minus one standard deviation in 2017-2018	160	167	181	177	164	156	**149**	118
B4. Net non-debt creating flows at historical average minus one standard deviation in 2017-2018 4/	160	182	211	203	186	175	**156**	110
B5. Combination of B1-B4 using one-half standard deviation shocks	160	178	218	211	193	182	**164**	118
B6. One-time 30 percent nominal depreciation relative to the baseline in 2017 5/	160	224	223	218	202	193	**183**	145

Table 2a. Niger: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2016–36 (concluded)

(In percent)

	Projections							
	2016	2017	2018	2019	2020	2021	**2026**	2036
Debt service-to-exports ratio								
Baseline	12	12	12	12	7	7	**8**	9
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2016-2036 1/	12	12	11	11	7	7	**8**	13
A2. New public sector loans on less favorable terms in 2016-2036 2/	12	12	11	12	8	8	**9**	13
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2017-2018	12	12	12	12	7	7	**8**	9
B2. Export value growth at historical average minus one standard deviation in 2017-2018 3/	12	14	16	17	11	11	**13**	13
B3. US dollar GDP deflator at historical average minus one standard deviation in 2017-2018	12	12	12	12	7	7	**8**	9
B4. Net non-debt creating flows at historical average minus one standard deviation in 2017-2018 4/	12	12	12	13	8	8	**10**	11
B5. Combination of B1-B4 using one-half standard deviation shocks	12	13	14	15	9	9	**11**	12
B6. One-time 30 percent nominal depreciation relative to the baseline in 2017 5/	12	12	12	12	7	7	**8**	9
Debt service-to-revenue ratio								
Baseline	13	13	12	12	8	8	**9**	9
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2016-2036 1/	13	13	12	12	8	8	**9**	13
A2. New public sector loans on less favorable terms in 2016-2036 2/	13	13	12	13	9	9	**11**	13
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2017-2018	13	14	13	13	9	9	**10**	10
B2. Export value growth at historical average minus one standard deviation in 2017-2018 3/	13	13	13	13	9	9	**11**	10
B3. US dollar GDP deflator at historical average minus one standard deviation in 2017-2018	13	14	14	14	10	10	**11**	11
B4. Net non-debt creating flows at historical average minus one standard deviation in 2017-2018 4/	13	13	13	14	10	10	**12**	11
B5. Combination of B1-B4 using one-half standard deviation shocks	13	14	14	15	10	10	**13**	12
B6. One-time 30 percent nominal depreciation relative to the baseline in 2017 5/	13	19	18	18	12	12	**13**	14
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	29	29	29	29	29	29	**29**	29

Sources: Country authorities; and staff estimates and projections.

1/ Variables include real GDP growth, growth of GDP deflator (in U.S. dollar terms), non-interest current account in percent of GDP, and non-debt creating flows.
2/ Assumes that the interest rate on new borrowing is by 2 percentage points higher than in the baseline., while grace and maturity periods are the same as in the baseline.
3/ Exports values are assumed to remain permanently at the lower level, but the current account as a share of GDP is assumed to return to its baseline level after the shock (implicitly assuming an offsetting adjustment in import levels).
4/ Includes official and private transfers and FDI.
5/ Depreciation is defined as percentage decline in dollar/local currency rate, such that it never exceeds 100 percent.
6/ Applies to all stress scenarios except for A2 (less favorable financing) in which the terms on all new financing are as specified in footnote 2.

Table 2b. Niger: Sensitivity Analysis for Key Indicators of Public Debt 2016–36
(In percent)

		Projections						
	2016	2017	2018	2019	2020	2021	2026	2036
PV of Debt-to-GDP Ratio								
Baseline	37	41	42	43	41	39	32	24
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	37	38	38	38	38	38	43	48
A2. Primary balance is unchanged from 2016	37	40	42	44	46	48	61	80
A3. Permanently lower GDP growth 1/	37	41	43	44	43	42	41	50
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2017-2018	37	42	46	48	47	45	42	40
B2. Primary balance is at historical average minus one standard deviations in 2017-2018	37	51	64	64	61	58	48	34
B3. Combination of B1-B2 using one half standard deviation shocks	37	45	52	53	51	49	43	35
B4. One-time 30 percent real depreciation in 2017	37	50	50	50	48	45	36	26
B5. 10 percent of GDP increase in other debt-creating flows in 2017	37	48	49	49	47	45	37	27
PV of Debt-to-Revenue Ratio 2/								
Baseline	187	196	198	195	178	165	131	99
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	187	183	179	175	165	163	175	199
A2. Primary balance is unchanged from 2016	187	194	199	203	198	202	247	328
A3. Permanently lower GDP growth 1/	187	198	202	202	186	176	164	204
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2017-2018	187	203	214	215	200	190	171	165
B2. Primary balance is at historical average minus one standard deviations in 2017-2018	187	248	302	294	266	248	197	140
B3. Combination of B1-B2 using one half standard deviation shocks	187	218	245	242	221	208	174	144
B4. One-time 30 percent real depreciation in 2017	187	242	237	229	206	190	146	109
B5. 10 percent of GDP increase in other debt-creating flows in 2017	187	230	230	225	204	190	151	111
Debt Service-to-Revenue Ratio 2/								
Baseline	31	37	38	38	33	32	18	12
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	31	37	38	37	33	32	19	16
A2. Primary balance is unchanged from 2016	31	37	38	38	34	32	21	24
A3. Permanently lower GDP growth 1/	31	37	39	39	34	33	20	17
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2017-2018	31	38	40	40	36	34	20	15
B2. Primary balance is at historical average minus one standard deviations in 2017-2018	31	37	40	41	36	34	24	15
B3. Combination of B1-B2 using one half standard deviation shocks	31	37	40	40	36	34	21	15
B4. One-time 30 percent real depreciation in 2017	31	39	42	42	37	35	23	17
B5. 10 percent of GDP increase in other debt-creating flows in 2017	31	37	39	39	34	32	20	13

Sources: Country authorities; and staff estimates and projections.
1/ Assumes that real GDP growth is at baseline minus one standard deviation divided by the square root of the length of the projection period.
2/ Revenues are defined inclusive of grants.