

## Niger: Joint Bank-Fund Debt Sustainability Analysis

- 1. This debt sustainability analysis is based on end-2004 data for external debt outstanding provided by the Direction de la Dette for most creditors and Staff estimates for debts outstanding to IDA, the IMF, and the AfDB.<sup>1</sup> This is a joint assessment of the IMF and World Bank.**
- 2. Under the baseline scenario, Niger would be at a high risk of external debt distress.<sup>2</sup>** In the baseline, the NPV of debt-to-GDP ratio remains below the indicative threshold for this metric even under various bound tests. However, the dynamics are much less favorable with respect to the NPV of debt-to-exports. The ratio, at approximately 136 percent in 2005, rises to a peak of about 163 percent in 2015 before slowly declining in later years as the current account deficit narrows. By 2025, the NPV of debt-to-exports stands at about 134 percent.
- 3. Sensitivity tests show that Niger's debt burden would worsen significantly in the event of an adverse macroeconomic shock or weaker economic performance.** All bound tests and alternative scenarios lead to a marked increase in the risk of debt distress. In particular, less favorable terms on new public borrowing would push the NPV of the debt-to-exports ratio to 229 percent in 2022. A temporary reduction in export growth, in line with historical experience, would put Niger on an unsustainable path in the short-term, with a high risk of distress as early as 2006. This risk is all the more important given Niger's relatively undiversified export base and frequent droughts.
- 4. Reducing the grant element to 50 percent materially increases the risk of debt distress (Alternative 3, Table 1b).** Though debt dynamics remain roughly the same, all debt burden indicators peak at higher values, and the NPV of debt-to-exports ratio declines only to 147 percent in 2025.
- 5. Debt relief through the Multilateral Debt Cancellation Initiative would only provide temporary relief (Alternative 4, Table 1b).** While G8 debt cancellation substantially reduces the NPV of debt in 2005, the effect is short-lived. The NPV of debt-to-exports ratio rises rapidly; from 52 percent in 2005 to 124 percent by 2025 owing to the country's large financing requirements. Bound tests reflecting higher borrowing costs and weaker exports each lead to a breach in the indicative thresholds.

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<sup>1</sup> This analysis does not capture HIPC relief that is in negotiation in 2005. It also does not account for domestic debt, for which no reliable estimates exist.

<sup>2</sup> The indicative debt-burden thresholds for Niger are NPV of debt-to-exports ratio of 150 percent; NPV of debt-to-GDP of 40 percent, and debt service to exports ratio of 20 percent.

6. **The results from the DSA stress the need for authorities to pursue sound macroeconomic policies and reforms, with a particular focus on growth-enhancing measures and investments, and prudent debt policies.** The staff's assessment is that there is a high risk of debt distress, and the DSA suggests that this risk will become greater in the next few years. This highlights the need to ensure quality of expenditure and strengthen debt management now to reduce the likelihood of debt distress going forward.

### **Box 1. Baseline scenario assumptions**

The baseline and alternative scenarios for 2005-2025 is based on the following assumptions, which are broadly consistent with those used in the HIPC Completion Point document:

- Over the length of projection period, real GDP growth is expected to rise from its historical average of 3.4 percent to an average of 4.3 percent in the medium term (2005-08), continuing to about 5 percent by 2025. This results from investments in irrigation and infrastructure, which would raise productivity in the agriculture sector. These, combined with efforts to diversify the economy, including through the development of tourism, would reduce vulnerability to macroeconomic shocks.
- Average inflation, as measured by the implicit GDP deflator, would average at about 2.0 percent.
- The revenue to GDP ratio is projected to rise gradually from 10.4 percent in 2005 to 12.2 percent by 2008 and to about 17 percent by 2025, reflecting the gradual convergence of the tax revenue ratio to the 17 percent WAEMU norm.
- Public expenditures, currently at 19.6 percent of GDP would stabilize at about 19 percent by 2008, reflecting the authorities' budgetary efforts to prioritize expenditures. Over the 2009-2025 period, total expenditures remain at about 20 percent of GDP, with a slightly higher proportion spent on capital expenditures, with the aim of enabling the authorities to make progress towards meeting the Millennium Development Goals (MDGs).
- Total exports of goods and services, which benefited from a temporary boost in gold exports in 2005, are projected to grow at an annual average rate of 6.2 percent, spurred by the strengthening of non-mineral exports over 2009-2025. Imports are projected to grow at an annual average of 5.8 percent, broadly in line with nominal growth. These assumptions lead to an improvement in the non-interest current account deficit from an average of 7 percent of GDP in 2006-2010 to about 5 percent of GDP by 2025.

As of 2009, the baseline scenario assumes that 50 percent of total external financing needs (including project assistance) will be in loans with a minimum a 60 percent grant element excluding the borrowings from the IMF, while the remaining financial requirements are met by grants and net-FDI. Two sensitivity analysis are included (alternative-1 and 2), and the third alternative scenario reflects the effect of reducing the grant element to 50 percent (alternative-3). Finally, the last scenario (alternative-4) takes into consideration the effect of the Multilateral Debt Cancellation Initiative applied on top of alternative-3 scenario.

Table 1a. Niger: External Debt Sustainability Framework, Baseline Scenario (60 percent grant element on loans), 2004-2025 1/  
(In percent of GDP, unless otherwise indicated)

	Actual	Historical Average 7/	Standard Deviation 7/	Estimate		Projections							
	2004			2005	2006	2007	2008	2009	2010	2005-10 Average	2015	2025	2011-25 Average
<b>External debt (nominal) 1/</b>	<b>63.0</b>			<b>58.6</b>	<b>57.1</b>	<b>54.3</b>	<b>52.5</b>	<b>52.4</b>	<b>52.4</b>		<b>51.6</b>	<b>46.0</b>	
o/w public and publicly guaranteed (PPG)	63.0			58.6	57.1	54.3	52.5	52.4	52.4		51.6	46.0	
Change in external debt	-5.2			-4.4	-1.5	-2.8	-1.8	-0.1	0.0		-0.3	-0.8	
Identified net debt-creating flows	-2.3			3.2	3.4	4.1	3.4	3.7	4.0		3.6	2.1	
<b>Non-interest current account deficit 2/</b>	<b>6.1</b>	<b>5.7</b>	<b>0.7</b>	<b>5.5</b>	<b>6.2</b>	<b>6.3</b>	<b>5.7</b>	<b>5.9</b>	<b>6.3</b>		<b>5.8</b>	<b>4.2</b>	5.3
Deficit in balance of goods and services	10.2			12.0	11.7	8.8	8.6	8.8	9.2		8.6	6.5	
Exports	16.2			16.1	15.8	16.2	16.0	15.5	14.8		13.6	13.6	
Imports	26.4			28.1	27.5	25.0	24.6	24.2	23.9		22.2	20.0	
Net current transfers (negative = inflow)	-4.1	-3.1	0.9	-5.4	-2.1	-2.1	-2.4	-2.3	-2.3		-2.2	-1.7	-2.1
Other current account flows (negative = net inflow)	0.0			-1.0	-3.4	-0.4	-0.4	-0.6	-0.6		-0.6	-0.5	
<b>Net FDI (negative = inflow)</b>	<b>-0.5</b>	<b>-0.5</b>	<b>0.5</b>	<b>-0.2</b>	<b>-0.4</b>	<b>-0.3</b>	<b>-0.5</b>	<b>-0.4</b>	<b>-0.4</b>		<b>-0.4</b>	<b>-0.3</b>	-0.4
<b>Endogenous debt dynamics 3/</b>	<b>-7.8</b>			<b>-2.1</b>	<b>-2.3</b>	<b>-1.9</b>	<b>-1.9</b>	<b>-1.8</b>	<b>-1.8</b>		<b>-1.8</b>	<b>-1.8</b>	
Contribution from nominal interest rate	0.4			0.4	0.0	0.4	0.4	0.5	0.5		0.5	0.3	
Contribution from real GDP growth	0.0			-2.5	-2.3	-2.3	-2.2	-2.3	-2.3		-2.2	-2.2	
Contribution from price and exchange rate changes	-8.2			...	...	...	...	...	...		...	...	
<b>Residual (3-4) 4/</b>	<b>-2.9</b>			<b>-7.5</b>	<b>-5.0</b>	<b>-6.9</b>	<b>-5.2</b>	<b>-3.8</b>	<b>-4.0</b>		<b>-3.9</b>	<b>-2.9</b>	
o/w exceptional financing	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
NPV of external debt 5/	21.7			21.9	22.2	22.5	22.8	22.8	22.8		22.2	18.2	
In percent of exports	133.4			136.0	141.0	139.2	143.2	147.5	154.4		163.0	134.5	
<b>NPV of PPG external debt</b>	<b>21.7</b>			<b>21.9</b>	<b>22.2</b>	<b>22.5</b>	<b>22.8</b>	<b>22.8</b>	<b>22.8</b>		<b>22.2</b>	<b>18.2</b>	
In percent of exports	133.4			136.0	141.0	139.2	143.2	147.5	154.4		163.0	134.5	
Debt service-to-exports ratio (in percent)	14.1			5.9	5.8	6.2	6.8	7.5	8.7		9.2	9.8	
<b>PPG debt service-to-exports ratio (in percent)</b>	<b>14.1</b>			<b>5.9</b>	<b>5.8</b>	<b>6.2</b>	<b>6.8</b>	<b>7.5</b>	<b>8.7</b>		<b>9.2</b>	<b>9.8</b>	
Total gross financing need (billions of U.S. dollars)	0.2			0.2	0.3	0.3	0.3	0.3	0.4		0.4	0.7	
Non-interest current account deficit that stabilizes debt ratio	11.3			9.9	7.7	9.1	7.5	6.0	6.2		6.0	5.0	
<b>Key macroeconomic assumptions</b>													
Real GDP growth (in percent)	0.0	3.4	36.8	4.5	4.2	4.3	4.4	4.6	4.7	4.4	4.6	4.9	4.7
GDP deflator in US dollar terms (change in percent)	13.7	4.7	9.8	6.8	2.1	2.3	2.3	2.0	2.0	2.9	2.3	2.0	2.2
Effective interest rate (percent) 6/	0.7	0.7	0.3	0.7	0.0	0.8	0.8	1.0	1.0	0.7	0.9	0.7	0.9
Growth of exports of G&S (US dollar terms, in percent)	18.1	7.9	40.0	11.0	3.9	9.6	5.2	3.6	1.8	5.8	6.5	7.5	6.4
Growth of imports of G&S (US dollar terms, in percent)	19.9	9.7	41.0	18.9	3.9	-3.0	4.9	5.4	5.5	5.9	5.6	5.9	5.7
Grant element of new public sector borrowing (in percent)	...	...	...	30.0	52.2	52.0	52.0	52.0	52.0	48.4	52.0	52.0	52.0
<i>Memorandum item:</i>													
Nominal GDP (billions of US dollars)	3.1			3.5	3.7	3.9	4.2	4.5	4.8		6.7	13.2	

Source: Staff simulations.

1/ Includes both public and private sector external debt.

2/ For 2005 and 2006, the figures include additional financing assurances to cover the residual financing gap.

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

4/ 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.

5/ Assumes that NPV of private sector debt is equivalent to its face value.

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

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

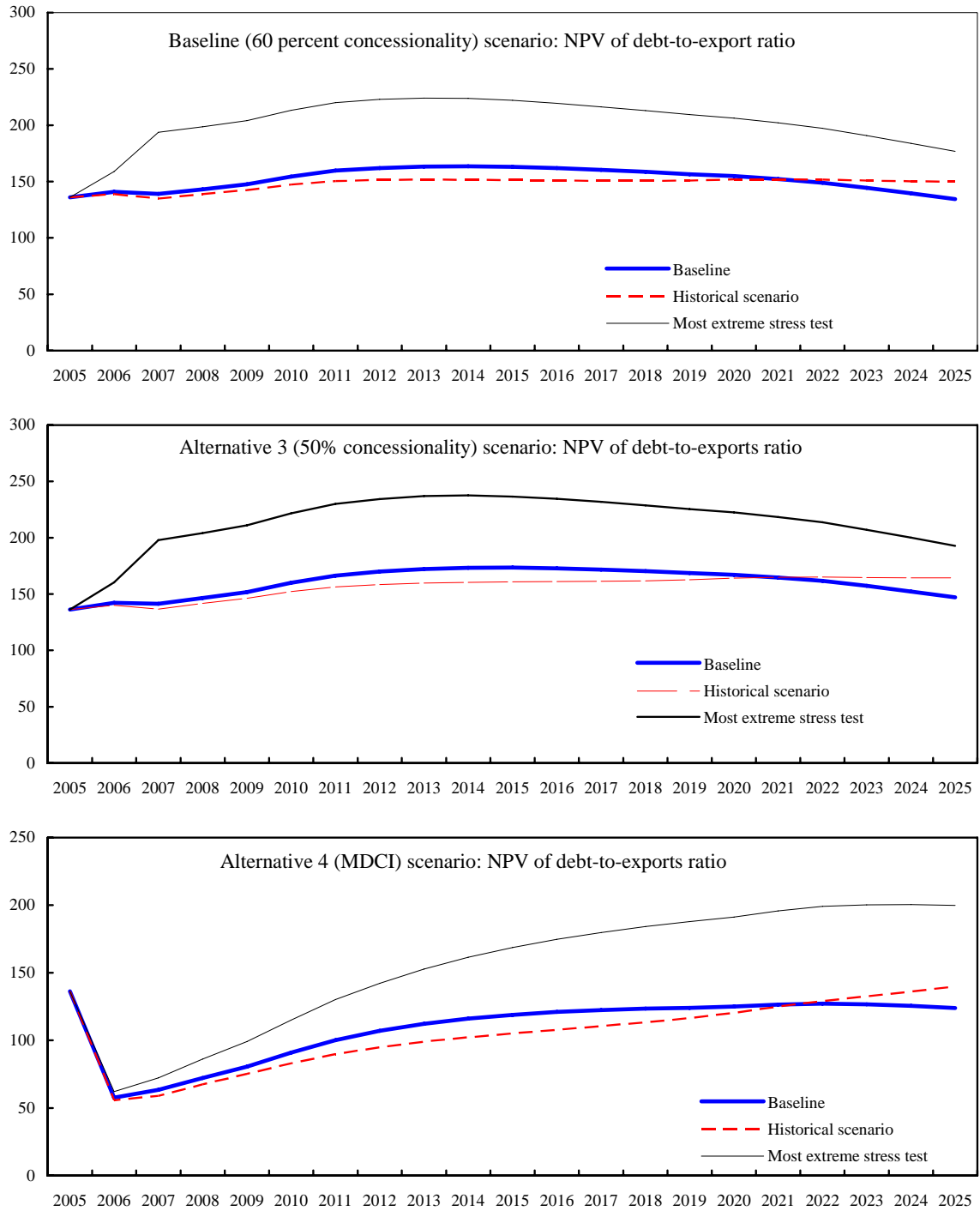
Table 1b. Niger: Sensitivity Analyses for Key Indicators of Public and Publicly Guaranteed External Debt, 2005-25  
(In percent)

	Estimate					Projections								
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2022	2025
<b>NPV of debt-to-GDP ratio</b>														
<b>Baseline</b>	21.9	22.2	22.5	22.8	22.8	22.8	22.7	22.6	22.5	22.4	<b>22.2</b>	22.0	20.0	18.2
<b>A. Alternative Scenarios</b>														
A1. Key variables at their historical averages in 2006-25 1/	21.9	21.9	21.9	22.2	22.1	21.7	21.4	21.1	20.9	20.7	<b>20.6</b>	20.5	20.3	20.3
A2. New public sector loans on less favorable terms in 2006-25 2/	21.9	23.0	24.1	25.3	26.0	26.7	27.4	28.0	28.6	29.2	<b>29.6</b>	30.0	30.6	29.7
A3. Grant element of 50 percent on new loans	21.9	22.4	22.9	23.4	23.5	23.6	23.7	23.7	23.7	23.7	<b>23.6</b>	23.5	21.7	19.9
A4. Alternative 3 with MDCI	8.3	9.1	10.3	11.5	12.5	13.4	14.3	14.9	15.5	15.9	<b>16.2</b>	16.4	17.1	16.8
<b>Bound Tests</b>														
B1. Key variables at their historical averages in 2006-25 1/	21.9	21.9	21.9	22.2	22.1	21.7	21.4	21.1	20.9	20.7	<b>20.6</b>	20.5	20.3	20.3
B2. New public sector loans on less favorable terms in 2006-25 2/	21.9	23.0	24.1	25.3	26.0	26.7	27.4	28.0	28.6	29.2	<b>29.6</b>	30.0	30.6	29.7
B3. Real GDP growth at historical average minus one standard deviation in 2006-07	21.9	23.4	25.0	25.3	25.3	25.3	25.2	25.1	24.9	24.8	<b>24.6</b>	24.4	22.1	20.2
B4. Export value growth at historical average minus one standard deviation in 2006-07 3/	21.9	22.9	24.8	25.1	25.0	24.9	24.8	24.6	24.4	24.2	<b>23.9</b>	23.6	20.9	19.0
B5. US dollar GDP deflator at historical average minus one standard deviation in 2006-07	21.9	24.3	27.1	27.4	27.4	27.4	27.3	27.1	27.0	26.8	<b>26.6</b>	26.4	24.0	21.9
B6. Net non-debt creating flows at historical average minus one standard deviation in 2006-07 4/	21.9	22.4	22.8	23.1	23.1	23.0	22.8	22.7	22.5	<b>22.4</b>	22.1	20.1	18.3	
B7. Combination of B1-B4 using one-half standard deviation shocks	21.9	23.8	26.7	27.0	27.0	26.9	26.8	26.7	26.5	26.3	<b>26.1</b>	25.8	23.3	21.2
B8. One-time 30 percent nominal depreciation relative to the baseline in 2006 5/	21.9	31.5	31.9	32.3	32.3	32.3	32.2	32.0	31.9	31.7	<b>31.4</b>	31.1	28.3	25.8
<b>NPV of debt-to-exports ratio</b>														
<b>Baseline</b>	136	141	139	143	147	154	160	162	163	163	<b>163</b>	162	149	134
<b>A. Alternative Scenarios</b>														
A1. Key variables at their historical averages in 2006-25 1/	136.0	138.9	134.9	138.9	142.4	147.3	150.4	151.5	151.8	151.6	<b>151.3</b>	150.9	151.8	150.0
A2. New public sector loans on less favorable terms in 2006-25 2/	136.0	145.7	149.0	158.4	167.7	180.9	192.5	200.7	207.6	213.2	<b>217.7</b>	221.1	228.6	219.2
A3. Grant element of 50 percent on new loans	136.3	142.1	141.4	146.5	151.8	160.0	166.5	169.9	172.2	173.3	<b>173.5</b>	173.0	161.7	147.1
A4. Alternative 3 with MDCI	51.5	57.7	63.3	72.2	80.7	90.9	100.3	107.0	112.3	116.2	<b>119.0</b>	121.0	127.3	123.9
<b>Bound Tests</b>														
B1. Key variables at their historical averages in 2006-25 1/	136	139	135	139	142	147	150	151	152	152	<b>151</b>	151	152	150
B2. New public sector loans on less favorable terms in 2006-25 2/	136	146	149	158	168	181	192	201	208	213	<b>218</b>	221	229	219
B3. Real GDP growth at historical average minus one standard deviation in 2006-07	136	141	139	143	147	154	160	162	163	163	<b>163</b>	162	149	134
B4. Export value growth at historical average minus one standard deviation in 2006-07 3/	136	159	194	199	204	213	220	223	224	224	<b>222</b>	219	197	177
B5. US dollar GDP deflator at historical average minus one standard deviation in 2006-07	136	141	139	143	147	154	160	162	163	163	<b>163</b>	162	149	134
B6. Net non-debt creating flows at historical average minus one standard deviation in 2006-07 4/	136	142	141	145	149	156	161	164	165	165	<b>164</b>	163	150	135
B7. Combination of B1-B4 using one-half standard deviation shocks	136	145	159	163	168	176	182	184	186	186	<b>185</b>	183	167	151
B8. One-time 30 percent nominal depreciation relative to the baseline in 2006 5/	136	141	139	143	147	154	160	162	163	163	<b>163</b>	162	149	134
<b>Debt service ratio</b>														
<b>Baseline</b>	5.9	5.8	6.2	6.8	7.5	8.7	9.0	9.3	9.0	9.2	<b>9.2</b>	9.3	10.4	9.8
<b>A. Alternative Scenarios</b>														
A1. Key variables at their historical averages in 2006-25 1/	5.9	5.8	6.1	6.8	7.5	8.6	8.9	9.2	8.9	9.0	<b>8.9</b>	9.0	10.2	10.0
A2. New public sector loans on less favorable terms in 2006-25 2/	5.9	5.8	6.1	7.2	8.3	8.7	8.9	8.8	8.3	8.3	<b>8.7</b>	9.2	12.8	13.0
A3. Grant element of 50 percent on new loans	5.9	5.8	6.2	6.9	7.6	8.7	9.0	9.4	9.1	9.3	<b>9.5</b>	9.7	11.0	10.5
A4. Alternative 3 with MDCI	5.9	4.6	3.4	3.3	3.4	4.4	5.0	6.0	6.5	7.2	<b>7.6</b>	7.9	7.7	7.6
<b>Bound Tests</b>														
B1. Key variables at their historical averages in 2006-25 1/	5.9	5.8	6.1	6.8	7.5	8.6	8.9	9.2	8.9	9.0	<b>8.9</b>	9.0	10.2	10.0
B2. New public sector loans on less favorable terms in 2006-25 2/	5.9	5.8	6.1	7.2	8.3	8.7	8.9	8.8	8.3	8.3	<b>8.7</b>	9.2	12.8	13.0
B3. Real GDP growth at historical average minus one standard deviation in 2006-07	5.9	5.8	6.2	6.8	7.5	8.7	9.0	9.3	9.0	9.2	<b>9.2</b>	9.3	10.4	9.8
B4. Export value growth at historical average minus one standard deviation in 2006-07 3/	5.9	6.4	7.9	9.0	9.8	11.3	11.6	12.0	11.7	12.1	<b>12.7</b>	12.7	13.8	13.0
B5. US dollar GDP deflator at historical average minus one standard deviation in 2006-07	5.9	5.8	6.2	6.8	7.5	8.7	9.0	9.3	9.0	9.2	<b>9.2</b>	9.3	10.4	9.8
B6. Net non-debt creating flows at historical average minus one standard deviation in 2006-07 4/	5.9	5.8	6.2	6.9	7.6	8.7	9.0	9.3	9.0	9.2	<b>9.2</b>	9.3	10.4	9.9
B7. Combination of B1-B4 using one-half standard deviation shocks	5.9	6.0	6.9	7.7	8.4	9.7	10.0	10.3	10.0	10.2	<b>10.4</b>	10.5	11.7	11.1
B8. One-time 30 percent nominal depreciation relative to the baseline in 2006 5/	5.9	5.8	6.2	6.8	7.5	8.7	9.0	9.3	9.0	9.2	<b>9.2</b>	9.3	10.4	9.8
<b>Memorandum item:</b>														
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	<b>51.7</b>	51.7	51.7	51.7

Source: Staff projections and simulations.

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.

Figure 1. Niger: External Debt to Exports Ratio, 2005-2025  
(In percent)



Source: Staff projections and simulations.