

**UGANDA: JOINT BANK-FUND DEBT SUSTAINABILITY ANALYSIS<sup>1</sup>**

*Having achieved debt sustainability, the authorities are planning to address long-overdue infrastructure constraints aiming at reaching high economic growth. The Joint DSA assesses the challenges and trade-offs of increasing public investment and maintaining the hard-achieved debt sustainability.*

**Uganda has achieved debt sustainability by implementing sound macroeconomic policies and receiving debt relief.** The HIPC and MDRI debt relief have improved Uganda's debt sustainability outlook substantially by leading to a drastic reduction in Uganda's debt burden indicators (see Box 1)<sup>2</sup>. Thus, all debt burden indicators are below their policy-dependent thresholds: Uganda's NPV of debt-to-exports ratio will decrease to 31 percent in 2006/07 from 179 percent in 2004/05 while the debt service to export ratio will sharply decline to 4 percent in 2006/07 from 16 percent in 2004/05. Uganda's NPV debt-to-GDP ratio will be reduced to 5 percent in 2006/07 from 24 percent in 2004/05.

**Uganda's current risk of debt distress is low, and based on this fact the authorities are planning to address infrastructure constraints.** The authorities are planning to build the Bujagali hydropower plant to help address power shortage constraints, as it will contribute to a steady and secure supply of energy while strengthening private sector confidence. The authorities are still negotiating with a private consortium the terms, conditions, and guarantees for financing Bujagali. The Government intends to start the planning process for the construction of a second hydropower project at Karuma.

**The Joint DSA assesses an increase in investments** for hydroelectric power in a four-year period between 2007/08 and 2010/11. The DSA assumes that the government contracts or guarantees debt on commercial terms up to US\$400 million. The DSA assumes that the government would finance by borrowing or providing guarantees on commercial terms with annual average disbursements of about 0.8 percent of GDP. Thus, the baseline scenario shows the impact of partial public financing of the construction of infrastructure on commercial terms. Debt indicators would be lower if a greater proportion of these investments were financed on concessional terms. In addition, it is assumed that multilateral and bilateral official debt would be contracted on concessional terms.

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<sup>1</sup> During the review mission, the staff discussed with the authorities the basic assumptions of the scenario shown in this appendix, and its implications for debt accumulation and debt management strategy. Prospective oil production has not been incorporated in the DSA, as the scale of production needs to be determined (Box 3).

<sup>2</sup> The AfDF will deliver its share of debt relief by end-2006.

## EXTERNAL DEBT SUSTAINABILITY ANALYSIS<sup>3</sup>

**Under the baseline scenario, Uganda’s debt burden indicators are below their policy-dependent thresholds during the projection period.** The NPV of debt-to-GDP ratio is projected to increase to 13 percent in 2016/17, a level that is well below its policy-dependent threshold of 50 percent, while dropping to 10 percent by the end of the projection period. Uganda’s NPV of debt-to-exports ratio in 2016/17 will stand at 87 percent, below its policy-dependent debt burden threshold of 200 percent. Debt service is manageable through the projection period, reflecting the delivery of HIPC and MDRI assistance. Debt service payments will be at their peak of 6 percent of exports in 2013/14.

### Box 1. Macroeconomic Assumptions

**Real GDP** growth averages 6.3 percent between 2006/07 and 2026/27, higher than its ten-year historical average by 0.5 percent and lower than the Government’s projection of 7 percent, recognizing the current constraints imposed by the power shortage. Higher investment in energy and roads is expected to lead to subsequent increase in production.

**Exports of goods and services** are projected to grow about 8 percent on average between 2006/07 and 2026/27, driven largely by an increase in the export volume of non-traditional exports and some higher volume increase in fish and maize, and cotton and coffee resulting from recovering plantation areas.

**The current account deficit** (excluding interest payments) in terms of GDP will be above its historical average of 4.5 percent by about 3 percent of GDP between 2006/07-2011/12 on the account of higher imports related to the construction of Bujagali, and is projected to decrease to an average of 6.2 percent thereafter.

**Fiscal policy.** Tax revenues are assumed to increase gradually from 13 percent of GDP 2004/05 to 15 percent of GDP in 2012/13 and to 16 percent in 2015/16. With grants tapering off to 3 percent of GDP, noninterest expenditures are projected initially to decline to about 17.5 percent of GDP and then to increase to about 19 percent of GDP, consistent with a primary balance close to zero in the outer years.

**Official external loan financing** is projected to amount to US\$590 million on average throughout the entire projection period. The DSA assumes that IDA will support Uganda through the projection period with lending operations.

**Macroeconomic shocks would worsen Uganda’s NPV of debt-to-exports ratio significantly.** If exports grow less by one standard deviation in 2007/2009, Uganda’s NPV of debt-to-exports ratio would increase to 147 percent in 2011/12. Thus, an export shock and low growth performance would have a significant impact on debt sustainability, as it would put the Ugandan economy at a high indebtedness level for a prolonged period of time.

<sup>3</sup> Uganda’s policies and institutions rank as a “strong performer” according to the World Bank’s Country Policy and Institutional Assessment (CPIA). Debt burden thresholds for strong performers are NPV of debt to GDP ratio of 50 percent, NPV of debt-to-exports ratio of 200 percent, NPV of debt to revenue ratio of 300 percent, debt service to exports ratio of 25 percent, and debt service to revenue ratio of 35 percent.

Uganda's NPV of debt-to-GDP ratio and debt service ratio would nonetheless remain below their policy-dependent thresholds.

**An alternative scenario has been developed to reflect higher government investment in infrastructure.** For illustrative purposes, this scenario assumes additional new borrowing of US\$1.5 billion during the first decade, and US\$3.5 billion for the 20-year period projection, over and above what is assumed in the baseline through a blend of concessional and nonconcessional financing. Under this scenario, Uganda's NPV of debt-to-exports ratio would be higher than in the baseline scenario by 31 percentage points to 118 percent in 2016/17. If these investments coincided with a shock to exports, this ratio would rise further to 184 percent. These results points to the need of scaling up donor support to finance infrastructure projects until a steady high economic growth materializes.

Table 1. Uganda: DSA Baseline Scenarios under Alternative Government Investment Program

	2007	2010	2014	2017	2027
<b>NPV of debt-to-GDP ratio</b>					
Baseline scenario	5	12	13	13	10
High investment scenario	5	13	16	17	14
<b>NPV of debt-to-exports ratio</b>					
Baseline scenario	31	83	88	87	68
High investment scenario	31	89	112	118	96
<b>Debt service ratio</b>					
Baseline scenario	4	6	6	5	5
High investment scenario	4	6	11	10	7

Source: Fund staff projections.

**Contracting commercial debt should be approached with caution.** While Uganda's debt situation is currently robust, the use of nonconcessional debt would add to Uganda's external debt burden and should be based on a careful selection of objectives and infrastructure projects to minimize debt risks related to external shocks. Overall, the authorities would have to weigh the costs and benefits of nonconcessional borrowing. International community support in providing concessional resources remains critical.

### FISCAL SUSTAINABILITY ANALYSIS

**The fiscal DSA is based on the assumption of continued fiscal consolidation, though initially at a more moderate pace due to the power crisis, and on a gradual tapering off of grant inflows.** Specifically, it is assumed that emergency budget spending on the energy

crisis will amount to about 3 percent of GDP cumulatively in the next three years, and that grants will continue to decline from 6½ percent of GDP in FY 2005/06, before stabilizing at 3 percent of GDP. Domestic budget revenues are projected to increase gradually to 16 percent of GDP, in line with the authorities' policy objective. After a spike related to the energy crisis, noninterest expenditures will decline moderately as a percent of GDP, but then will increase again to about 19 percent of GDP, in line with projected improvement in domestic revenue collection, with primary balance close to zero.

**Under the baseline scenario, the NPV of public debt is projected to increase gradually after a sharp decline resulting from MDRI.** It will reach about 20 percent of GDP by the middle of the next decade, and then decline gradually. Debt-service indicators remain manageable, with debt-service peaking at about 10 percent of budget revenues.

**Uganda's public debt remains sustainable under alternative scenarios.** Even under the extreme stress test, the NPV of public debt reaches only about 30 percent of GDP in 2016/17, and then declines continuously. Similarly, the stress tests do not indicate any debt service problems.

#### CONCLUSION

**The DSA analysis shows that Uganda's public debt remains sustainable under the baseline scenario.** Uganda's public debt has been reduced significantly as a result of the MDRI, and with a prudent borrowing strategy and the continuation of the stability-oriented fiscal policy, debt should remain comfortably low during the projected period. While the alternative scenario shows that Uganda can adopt a higher investment program, caution on borrowing is warranted and concessional financing remains essential.

Table 1a. Uganda: External Debt Sustainability Framework, Baseline Scenario, 2006-2027 1/  
(In percent of GDP, unless otherwise indicated)

	Actual		Historical Average 6/	Standard Deviation 6/	Projections									
	2005	2006			2007	2008	2009	2010	2011	2012	2007-12 Average	2017	2027	2013-27 Average
<b>External debt (nominal) 1/</b>	<b>50.6</b>	<b>47.3</b>			<b>17.6</b>	<b>21.5</b>	<b>24.0</b>	<b>26.6</b>	<b>28.1</b>	<b>28.5</b>		<b>27.5</b>	<b>18.9</b>	
o/w public and publicly guaranteed (PPG)	50.6	47.3			17.6	21.5	24.0	26.6	28.1	28.5		27.5	18.9	
Change in external debt	-14.9	-3.3			-29.7	3.9	2.4	2.6	1.6	0.3		-0.4	-1.0	
Identified net debt-creating flows	-14.7	-2.1			0.4	4.3	3.4	4.1	2.7	2.0		1.5	0.7	
<b>Non-interest current account deficit</b>	<b>1.7</b>	<b>3.7</b>	<b>4.5</b>	<b>2.5</b>	<b>5.6</b>	<b>8.4</b>	<b>8.2</b>	<b>8.8</b>	<b>7.7</b>	<b>7.2</b>		<b>6.8</b>	<b>5.7</b>	6.4
Deficit in balance of goods and services	13.3	15.7			16.2	17.6	17.0	18.0	17.1	17.2		17.6	18.5	
Exports	13.8	14.4			15.0	14.6	14.3	14.6	14.8	14.8		14.6	14.4	
Imports	27.1	30.1			31.2	32.3	31.3	32.6	31.9	32.0		32.3	32.9	
Net current transfers (negative = inflow)	-13.1	-13.1	-9.4	4.0	-11.8	-10.4	-10.0	-10.1	-10.2	-10.1		-10.1	-10.1	-10.1
Other current account flows (negative = net inflow)	1.5	1.1			1.2	1.2	1.2	0.9	0.8	0.1		-0.7	-2.7	
<b>Net FDI (negative = inflow)</b>	<b>-2.5</b>	<b>-2.4</b>	<b>-2.1</b>	<b>0.5</b>	<b>-2.6</b>	<b>-3.2</b>	<b>-3.7</b>	<b>-3.5</b>	<b>-3.6</b>	<b>-4.0</b>		<b>-4.0</b>	<b>-4.0</b>	-4.0
<b>Endogenous debt dynamics 2/</b>	<b>-13.9</b>	<b>-3.4</b>			<b>-2.6</b>	<b>-0.9</b>	<b>-1.1</b>	<b>-1.2</b>	<b>-1.4</b>	<b>-1.2</b>		<b>-1.3</b>	<b>-0.9</b>	
Contribution from nominal interest rate	0.4	0.4			0.1	0.1	0.2	0.3	0.4	0.4		0.3	0.2	
Contribution from real GDP growth	-3.4	-2.5			-2.7	-1.0	-1.3	-1.6	-1.8	-1.6		-1.5	-1.1	
Contribution from price and exchange rate changes	-10.9	-1.3			...	...	...	...	...	...		...	...	
<b>Residual 3/</b>	<b>-0.1</b>	<b>-1.2</b>			<b>-30.0</b>	<b>-0.4</b>	<b>-1.0</b>	<b>-1.5</b>	<b>-1.1</b>	<b>-1.7</b>		<b>-1.9</b>	<b>-1.7</b>	
o/w exceptional financing	0.0	0.2			0.2	0.2	0.2	0.1	0.1	0.0		0.0	0.0	
NPV of external debt 4/	...	4.8			4.6	8.6	10.3	12.1	13.0	13.0		12.8	9.8	
In percent of exports	...	33.3			30.8	58.8	72.1	82.9	87.5	88.3		87.3	68.1	
<b>NPV of PPG external debt</b>	<b>...</b>	<b>4.8</b>			<b>4.6</b>	<b>8.6</b>	<b>10.3</b>	<b>12.1</b>	<b>13.0</b>	<b>13.0</b>		<b>12.8</b>	<b>9.8</b>	
In percent of exports	...	33.3			30.8	58.8	72.1	82.9	87.5	88.3		87.3	68.1	
Debt service-to-exports ratio (in percent)	15.4	9.9			3.9	3.2	4.8	5.7	6.0	6.3		5.1	4.5	
<b>PPG debt service-to-exports ratio (in percent)</b>	<b>15.4</b>	<b>9.9</b>			<b>3.9</b>	<b>3.2</b>	<b>4.8</b>	<b>5.7</b>	<b>6.0</b>	<b>6.3</b>		<b>5.1</b>	<b>4.5</b>	
Total gross financing need (billions of U.S. dollars)	116.2	255.8			364.7	637.8	632.6	788.1	676.7	595.9		753.8	1063.1	
Non-interest current account deficit that stabilizes debt ratio	16.5	7.0			35.2	4.5	5.7	6.3	6.2	6.8		7.2	6.6	
<b>Key macroeconomic assumptions</b>														
Real GDP growth (in percent)	6.7	5.4	5.7	1.4	6.2	6.5	6.5	6.8	7.1	6.0	6.5	6.0	6.0	6.0
GDP deflator in US dollar terms (change in percent)	20.1	2.5	-0.4	9.5	2.1	2.3	2.5	-1.5	-1.5	1.9	1.0	1.9	1.9	1.9
Effective interest rate (percent) 5/	0.8	0.8	1.0	0.2	0.2	0.7	1.1	1.4	1.5	1.5	1.1	1.0	0.9	1.0
Growth of exports of G&S (US dollar terms, in percent)	24.6	12.6	7.7	15.9	12.6	6.7	6.9	6.9	7.2	7.8	8.0	7.8	7.8	7.8
Growth of imports of G&S (US dollar terms, in percent)	25.5	20.3	7.6	11.7	12.2	12.7	6.0	9.4	3.4	8.2	8.6	8.2	8.2	8.2
Grant element of new public sector borrowing (in percent)	...	...	...	...	47.3	31.2	31.4	33.1	40.5	45.3	38.1	45.9	45.9	45.8
<i>Memorandum item:</i>														
Nominal GDP (billions of US dollars)	8733.8	9442.7			10234.9	11151.7	12177.7	12807.8	13513.5	14594.6		21444.3	46296.6	

Source: Staff simulations.

1/ Includes both public and private sector external debt.

2/ 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.

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 NPV 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.

Table 1b. Uganda: Sensitivity Analyses for Key Indicators of Public and Publicly Guaranteed External Debt, 2006-27  
(In percent)

	Projections							
	2007	2008	2009	2010	2011	2012	2017	2027
<b>NPV of debt-to-GDP ratio</b>								
<b>Baseline</b>	5	9	10	12	13	13	<b>13</b>	10
<b>A. Alternative Scenarios</b>								
A1. Key variables at their historical averages in 2007-26 1/	5	7	8	8	8	8	<b>7</b>	10
A2. New public sector loans on less favorable terms in 2007-26 2/	5	9	13	16	18	19	<b>21</b>	18
<b>B. Bound Tests</b>								
B1. Real GDP growth at historical average minus one standard deviation in 2007-08	5	9	11	13	14	14	<b>13</b>	10
B2. Export value growth at historical average minus one standard deviation in 2007-08 3/	5	10	14	15	16	16	<b>15</b>	11
B3. US dollar GDP deflator at historical average minus one standard deviation in 2007-08	5	10	13	16	17	17	<b>17</b>	13
B4. Net non-debt creating flows at historical average minus one standard deviation in 2007-08 4/	5	12	18	19	20	20	<b>18</b>	12
B5. Combination of B1-B4 using one-half standard deviation shocks	5	12	19	21	22	22	<b>20</b>	13
B6. One-time 30 percent nominal depreciation relative to the baseline in 2007 5/	5	12	15	17	18	18	<b>18</b>	14
<b>NPV of debt-to-exports ratio</b>								
<b>Baseline</b>	31	59	72	83	87	88	<b>87</b>	68
<b>A. Alternative Scenarios</b>								
A1. Key variables at their historical averages in 2007-26 1/	31	49	55	55	53	53	<b>51</b>	73
A2. New public sector loans on less favorable terms in 2007-26 2/	31	64	89	110	121	127	<b>142</b>	124
<b>B. Bound Tests</b>								
B1. Real GDP growth at historical average minus one standard deviation in 2007-08	31	59	72	83	87	88	<b>87</b>	68
B2. Export value growth at historical average minus one standard deviation in 2007-08 3/	31	78	128	142	147	147	<b>140</b>	100
B3. US dollar GDP deflator at historical average minus one standard deviation in 2007-08	31	59	72	83	87	88	<b>87</b>	68
B4. Net non-debt creating flows at historical average minus one standard deviation in 2007-08 4/	31	84	122	132	135	134	<b>123</b>	80
B5. Combination of B1-B4 using one-half standard deviation shocks	31	82	128	139	143	142	<b>132</b>	89
B6. One-time 30 percent nominal depreciation relative to the baseline in 2007 5/	31	59	72	83	87	88	<b>87</b>	68
<b>Debt service ratio</b>								
<b>Baseline</b>	4	3	5	6	6	6	<b>5</b>	5
<b>A. Alternative Scenarios</b>								
A1. Key variables at their historical averages in 2007-26 1/	4	3	5	6	6	6	<b>4</b>	4
A2. New public sector loans on less favorable terms in 2007-26 2/	4	3	4	5	5	6	<b>9</b>	9
<b>B. Bound Tests</b>								
B1. Real GDP growth at historical average minus one standard deviation in 2007-08	4	3	5	6	6	6	<b>5</b>	5
B2. Export value growth at historical average minus one standard deviation in 2007-08 3/	4	4	7	8	9	9	<b>9</b>	7
B3. US dollar GDP deflator at historical average minus one standard deviation in 2007-08	4	3	5	6	6	6	<b>5</b>	5
B4. Net non-debt creating flows at historical average minus one standard deviation in 2007-08 4/	4	3	5	7	7	7	<b>8</b>	6
B5. Combination of B1-B4 using one-half standard deviation shocks	4	3	6	7	8	8	<b>8</b>	6
B6. One-time 30 percent nominal depreciation relative to the baseline in 2007 5/	4	3	5	6	6	6	<b>5</b>	5
<i>Memorandum item:</i>								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	44	44	44	44	44	44	<b>44</b>	44

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.

Table 2a. Uganda: Public Sector Debt Sustainability Framework, Baseline Scenario, 2005-2027  
(Percent of GDP, unless otherwise indicated)

	Actual		Historical Average 5/	Standard Deviation 5/	Estimate						Projections					
	2005	2006			2007	2008	2009	2010	2011	2012	2007-12 Average	2017	2027	2013-27 Average		
<b>Public sector debt 1/</b>	63.9	52.4			26.4	23.9	27.4	29.8	32.1	33.8						
<i>Of which:</i> foreign currency-denominated	50.6	47.3			17.6	21.5	24.0	26.6	28.1	28.5				33.6	26.3	
Change in public sector debt	-3.7	-11.5			-25.9	-2.6	3.5	2.4	2.3	1.7				-0.3	-0.9	
Identified debt-creating flows	-9.4	-4.4			-33.7	-1.2	0.2	-0.6	-1.5	-1.9				-1.6	-1.1	
Primary deficit	-0.3	-0.8	1.7	2.3	-0.5	0.8	1.2	0.4	-0.2	-0.1	0.3			0.0	0.0	0.0
Revenue and grants	18.8	18.3			17.6	18.2	17.3	17.5	17.5	17.7				19.0	19.0	
<i>Of which:</i> grants	7.8	7.0			5.9	6.0	4.6	4.2	4.0	3.7				3.0	3.0	
Primary (noninterest) expenditure	18.5	17.4			17.1	19.0	18.6	17.9	17.3	17.6				19.0	19.0	
Automatic debt dynamics	-8.7	-3.2			-2.6	-1.7	-0.8	-0.7	-1.0	-1.7				-1.5	-1.1	
Contribution from interest rate/growth differential	-4.0	-3.4			-3.1	-0.7	-1.4	-1.5	-1.9	-1.7				-1.6	-1.1	
<i>Of which:</i> contribution from average real interest rate	0.2	-0.1			-0.1	0.9	0.1	0.2	0.1	0.1				0.4	0.4	
<i>Of which:</i> contribution from real GDP growth	-4.2	-3.3			-3.1	-1.6	-1.5	-1.7	-2.0	-1.8				-1.9	-1.5	
Contribution from real exchange rate depreciation	-4.6	0.2			0.5	-1.0	0.6	0.8	0.9	0.1				...	...	
Other identified debt-creating flows	-0.4	-0.4			-30.6	-0.3	-0.3	-0.2	-0.2	-0.2				-0.1	0.0	
Privatization receipts (negative)	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	
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	
Debt relief (HIPC and other)	-0.4	-0.4			-30.6	-0.3	-0.3	-0.2	-0.2	-0.2				-0.1	0.0	
Residual, including asset changes	5.7	-7.1			7.8	-1.4	3.3	2.9	3.7	3.7				1.4	0.2	
<b>NPV of public sector debt</b>	8.8	13.7			13.5	17.5	19.1	20.9	21.7	21.8				21.5	18.5	
<i>Of which:</i> foreign-currency denominated	...	4.8			4.6	8.6	10.3	12.1	13.0	13.0				12.8	9.8	
<i>Of which:</i> external	...	4.8			4.6	8.6	10.3	12.1	13.0	13.0				12.8	9.8	
NPV of contingent liabilities (not included in public sector debt)	...	...			...	...	...	...	...	...				...	...	
Gross financing need 2/	9.7	7.0			5.9	6.5	7.2	6.3	4.9	5.8				5.7	5.7	
NPV of public sector debt-to-revenue ratio (percent) 3/	46.9	75.3			76.3	96.0	110.3	119.2	123.6	122.9				113.1	97.3	
<i>Of which:</i> external	...	...			26.1	47.3	59.6	68.9	73.9	73.7				67.3	51.5	
Debt service-to-revenue ratio (percent) 3/ 4/	18.7	13.3			10.1	8.5	10.3	10.0	10.1	9.3				8.0	7.5	
Primary deficit that stabilizes the debt-to-GDP ratio	3.4	10.7			25.4	3.4	-2.3	-2.0	-2.5	-1.8				0.3	0.9	
<b>Key macroeconomic and fiscal assumptions</b>																
Nominal GDP (billions of Uganda shillings)	15,176	17,234			19,307	21,374	23,715	26,102	28,813	31,430				48,536	115,749	
Real GDP growth (percent)	6.7	5.4	5.7	1.4	6.2	6.5	6.5	6.8	7.1	6.0	6.5	6.0	6.0	6.0	6.0	6.0
Average nominal interest rate on forex debt (percent)	0.8	0.9	1.2	0.4	0.4	1.6	1.2	1.5	1.6	1.5	1.3	1.0	0.9	1.0	1.0	1.0
Average real interest rate on domestic currency debt (percent)	59.8	0.3	-1.5	23.9	8.2	10.4	9.1	9.9	6.7	7.0	8.6	10.7	9.3	9.3	9.9	9.9
Real exchange rate depreciation (percent, + indicates depreciation)	-7.7	0.4	2.2	8.4	1.1	...	...	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, percent)	7.8	7.7	5.9	4.4	5.5	4.0	4.2	3.1	3.1	2.9	3.8	2.9	2.9	2.9	2.9	2.9
Growth of real primary spending (deflated by GDP deflator, percent)	-1.0	2.2			16.5	4.3	1.8	3.5	7.8	7.1	6.8	6.1	6.0	6.0	6.5	6.5

Sources: Ugandan authorities; and Fund staff estimates and projections.

1/ Gross debt of the central government.

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 including 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 2b. Uganda: Sensitivity Analysis for Key Indicators of Public Debt 2005-2027

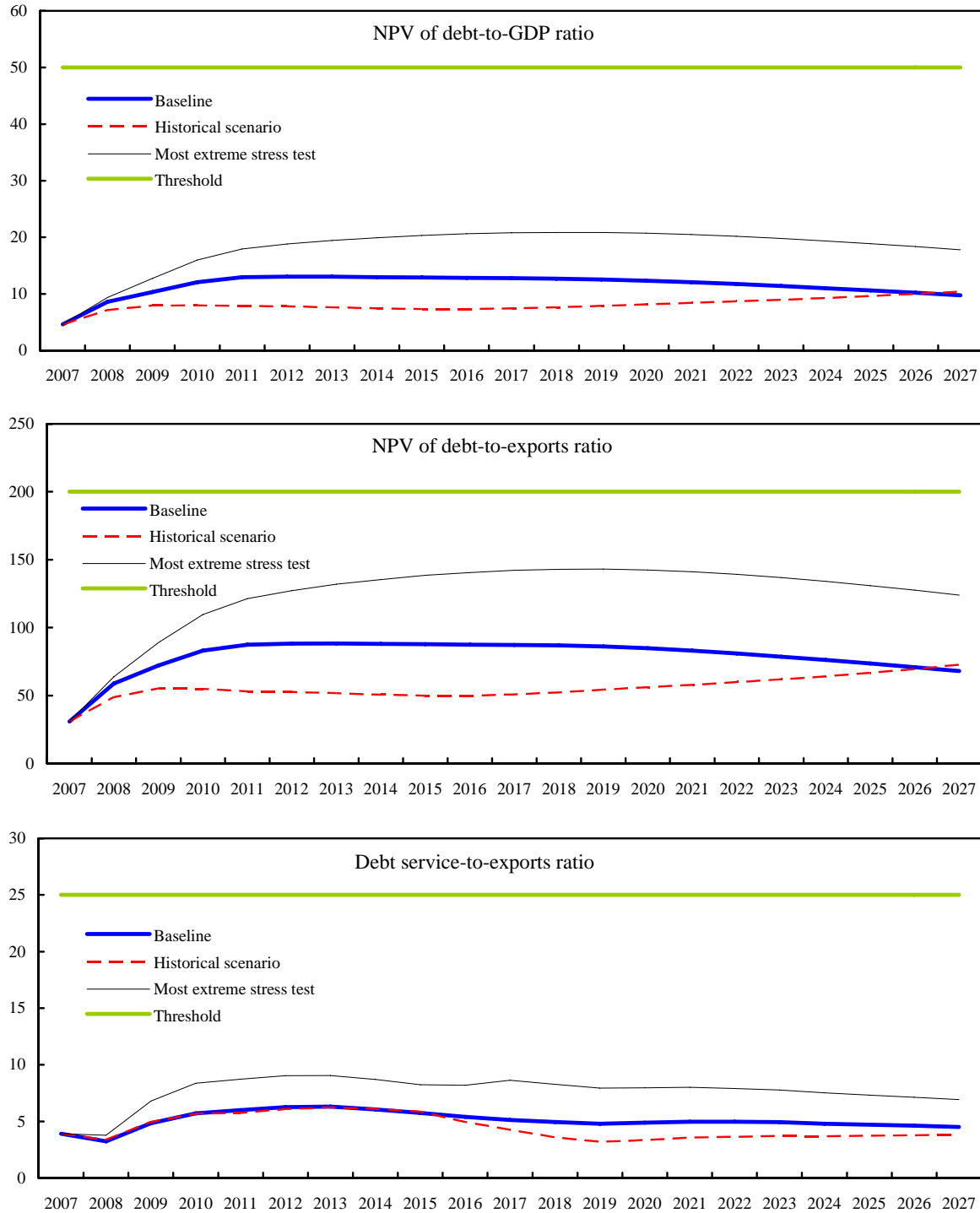
	Projections							
	2007	2008	2009	2010	2011	2012	2017	2027
<b>NPV of Debt-to-GDP Ratio</b>								
<b>Baseline</b>	13	17	19	21	22	22	21	18
<b>A. Alternative scenarios</b>								
A1. Real GDP growth and primary balance at historical averages	13	12	16	19	23	26	33	40
A2. Primary balance unchanged from 2007	13	10	12	13	15	16	15	10
A3. Permanently lower GDP growth 1/	13	11	15	17	19	21	23	26
<b>B. Bound tests</b>								
B1. Real GDP growth at historical average minus one standard deviation in 2008-2009	13	12	16	19	21	23	26	27
B2. Primary balance at historical average minus one standard deviation in 2008-2009	13	14	20	22	24	25	25	21
B3. Combination of B1-B2 using one half standard deviation shocks	13	13	18	20	22	24	23	19
B4. One-time 30 percent real depreciation in 2008	13	12	15	17	19	20	19	18
B5. 10 percent of GDP increase in other debt-creating flows in 2008	13	20	24	26	27	29	28	23
<b>NPV of Debt-to-Revenue Ratio 2/</b>								
<b>Baseline</b>	76	96	110	119	124	123	113	97
<b>A. Alternative scenarios</b>								
A1. Real GDP growth and primary balance at historical averages	76	66	92	109	130	147	173	211
A2. Primary balance unchanged from 2007	76	55	69	75	85	93	80	54
A3. Permanently lower GDP growth 1/	76	62	86	97	109	119	121	137
<b>B. Bound tests</b>								
B1. Real GDP growth at historical average minus one standard deviations in 2008-2009	76	64	92	105	119	131	136	143
B2. Primary balance at historical average minus one standard deviations in 2008-2009	76	78	116	126	136	144	131	110
B3. Combination of B1-B2 using one half standard deviation shocks	76	72	106	115	126	134	121	100
B4. One-time 30 percent real depreciation in 2008	76	68	89	97	107	114	103	94
B5. 10 percent of GDP increase in other debt-creating flows in 2008	76	111	137	146	156	163	146	120
<b>Debt Service-to-Revenue Ratio 2/</b>								
<b>Baseline</b>	10	8	10	10	10	9	8	7
<b>A. Alternative scenarios</b>								
A1. Real GDP growth and primary balance at historical averages	10	8	11	11	11	12	12	17
A2. Primary balance unchanged from 2007	10	8	9	8	9	9	7	4
A3. Permanently lower GDP growth 1/	10	8	10	10	10	10	9	11
<b>B. Bound tests</b>								
B1. Real GDP growth at historical average minus one standard deviations in 2008-2009	10	9	11	11	11	11	10	12
B2. Primary balance at historical average minus one standard deviations in 2008-2009	10	8	13	13	12	11	9	10
B3. Combination of B1-B2 using one half standard deviation shocks	10	9	12	12	11	11	9	9
B4. One-time 30 percent real depreciation in 2008	10	9	11	11	11	11	9	9
B5. 10 percent of GDP increase in other debt-creating flows in 2008	10	8	18	13	12	12	10	11

Sources: Ugandan authorities; and Fund staff estimates and projections.

1/ Assumes that real GDP growth is at baseline minus one standard deviation divided by the square root of 20 (the length of the projection period).

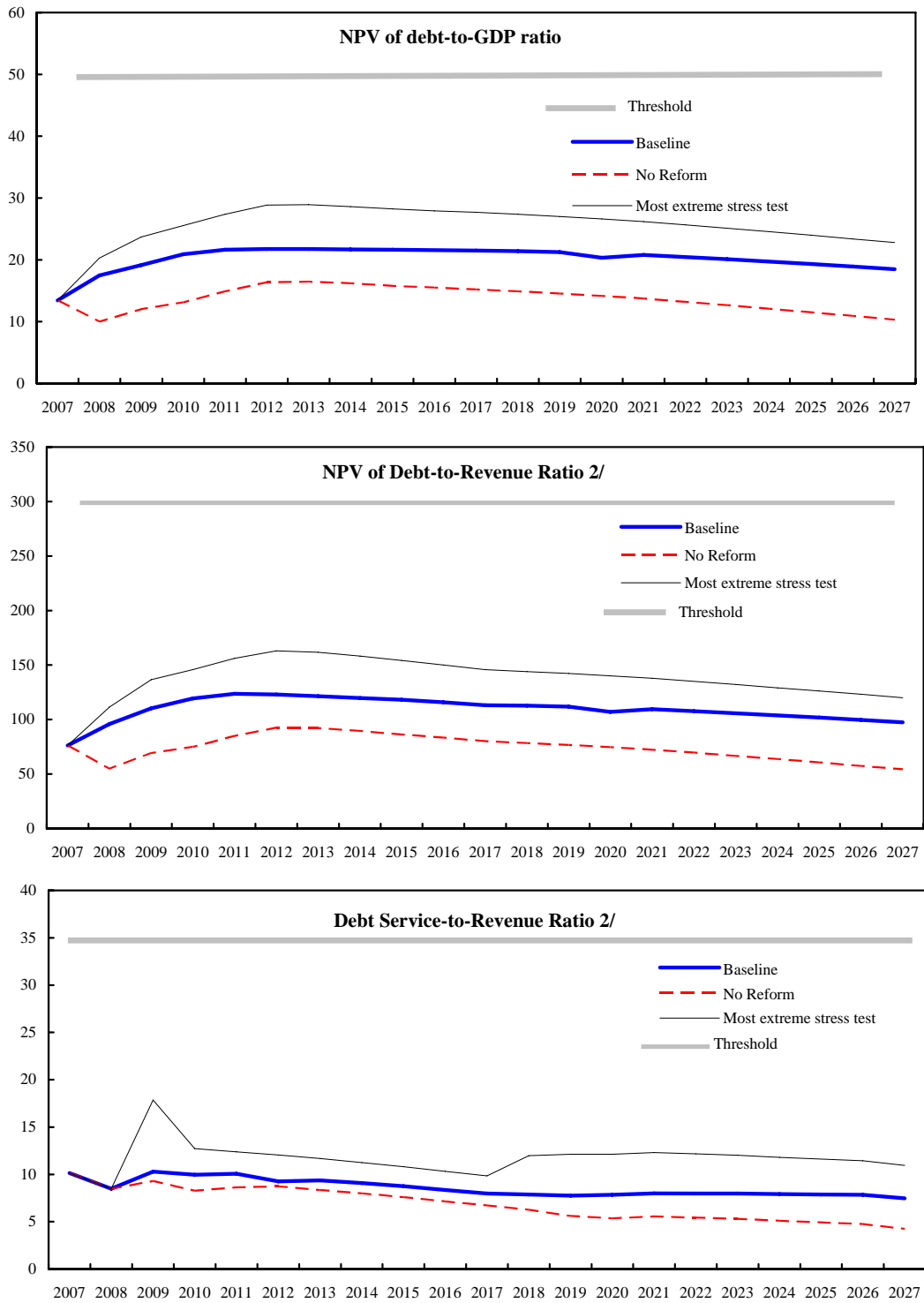
2/ Revenues are defined inclusive of grants.

Figure 1. Uganda: Indicators of Public and Publicly Guaranteed External Debt  
 Government Guarantee for Building Bujagali Hydropower Plant  
 (In percent)



Source: Staff projections and simulations.

**Figure 2. Uganda: Indicators of Total Public and Publicly-Guaranteed Debt, 2007-2027 1/**  
(Percent)



Source: Staff projections and simulations.

1/ Most extreme stress test is test that yields highest ratio in 2017.

2/ Revenue including grants.

