Uganda: Joint Bank-Fund Debt Sustainability Analysis

1. **Uganda's risk of debt distress is moderate.** Its net present value (NPV) of debt-to-exports ratio stands at 179 percent in 2004/05, or below its policy-dependent threshold of 200 percent, but this threshold is breached under various stress tests during the projection period. Debt-service payments remain manageable at about 16 percent of exports in 2004/05. The implementation of the Multilateral Debt Relief Initiative (MDRI) would provide additional debt relief that could decrease Uganda's NPV of debt-to-exports ratio to 46 percent in 2006/07.[1] The Fund-World Bank staff agreed that this joint debt sustainability analysis (DSA) will focus mainly on Uganda's situation before the full implementation of the MDRI, as certain technical aspects of International Development Association (IDA) and African Development Fund (AfDF) debt relief are not yet defined. A reassessment of Uganda's debt sustainability after implementation of MDRI may become necessary once the technical details with respect to the Initiative are finalized.

2. **This joint DSA has been prepared using the Fund-World Bank debt sustainability framework for low-income countries**. The debt data underlying this DSA was updated jointly by the Ugandan authorities and the World Bank in July 2005. New information on some creditors that became available after 2002 has been included.[2] The macro economic framework is based on the Fund's macro framework agreed with the authorities during the discussions for the Policy Support Instrument (PSI) in October 2005.[3]

I. Evolution of Uganda's External Debt Since the HIPC Completion Point

3. **Uganda graduated from the HIPC Initiative with an NPV of debt-to-exports of 171 percent in 2000/01.**[4] A DSA for Uganda for 2002, using the HIPC methodology, projected that Uganda's NPV of debt-to-exports ratio would continue to increase from 2000/01 onwards, peaking at 209 percent in 2002/03 and declining to 198 percent in 2004/05. The current DSA, however, shows that Uganda's NPV of debt-to-exports ratio, based on the HIPC methodology, would have amounted to 229 percent in 2004/05, exceeding projections by about 31 percentage points (Text Table 1). The depreciation of the US dollar explains the bulk of the increase in the NPV of debt-to-exports ratio, raising it by more than 41 percentage points.

[1] These figures are based on the assumption that debt relief under the MDRI is provided on debt outstanding as of end-2004 for IMF and AfDF and as of end-2003 for IDA. Implementation dates for MDRI are January 2006 for IMF and AfDF, and July 2006 for IDA. Any possible effect on disbursement projections has been ignored. Uganda received US$1.95 billion in total debt service relief under the HIPC Initiative, out of which US$1.3 billion under the Enhanced HIPC Initiative.

[2] The new data refers to bilateral non-Paris Club creditors, as well as the East African Development Bank and the Islamic Development Bank.

[3] See the statistical tables attached to this staff report.

[4] See "Uganda: Updated Debt Sustainability Analysis and Assessment of Public External Debt Management Capacity," August, 2002; IDA/SecM2002-0419/1.

Table 1. Uganda: Projected versus actual NPV of Debt-to-Export Ratio in FY05 1/

NPV of debt-to-exports ratio (as projected in FY02) 2/ 3/	**198.0**
Total Change in Ratio (based on HIPC methodology) 4/	**31.5**
1. Due to changes in the parameters	65.3
o/w due to changes in the discount rates	*24.8*
o/w due to changes in the exchange rates	*40.5*
2. Due to unanticipated new borrowing 5/	-14.3
o/w due to higher than expected disbursements	*-16.2*
o/w due to lower concessionality of loans	*1.9*
3. Due to unanticipated change in exports	-27.0
4. Other factors 6/	7.4
Actual NPV of debt-to-exports ratio (HIPC Methodology) 3/	**229.4**

Source: WB Staff estimates

1/ NPV of debt-to-exports ratio under assumption of full delivery of HIPC assistance in percent.

2/see "Uganda: Updated Debt Sustainability Analysis and Assessment of Public External Debt Management Capacity.", August 2002, IDA/SecM2002-0419/1.

3/ Exports are three-year backward looking moving average of exports of goods and services.

4/ Changes are expressed in percentage points.

5/ Reflects calculation error in the calculation of NPV of new debt in the DSA 2002.

6/Other factors capture arrears accumulation, revision of debt relief agreements and data since FY02.

4. **Nominal export growth exceeded projections**, largely due to strong export performance of noncoffee exports, such as fish, cotton and flowers. Exports of goods and services grew by 18 percent in this fiscal year, raising the average export growth rate between 2001/02 and 2004/05 to 14 percent. Average export growth had been projected to amount to only 10 percent during this period. Since export growth outperformed projections, the NPV of debt to three-year average of exports ratio is 27 percentage points lower than projected.

II. External Debt Sustainability Analysis[5]

5. **Uganda's debt burden indicators remain below their policy-dependent thresholds throughout the projection period under the baseline scenario**.[6] The NPV of debt-to-GDP ratio amounts to 24 percent in 2004/05, lying well below its policy-dependent threshold of 50 percent. It is projected to decline continuously thereafter, dropping below 13 percent by the end of the projection period.[7] Uganda's NPV of debt-to-exports ratio in 2004/05 amounts to 179 percent, below its policy-dependent debt burden threshold. Debt-service payments continue to be manageable, reflecting the delivery of HIPC assistance as well as the fact that

[5] The Low-Income Countries (LIC) DSA methodology differs from the HIPC on a number of aspects, notably on (i) the current year exports are used as denominators for estimating debt-to-exports ratio rather than the backward-looking three-year moving average of exports; (ii) the use of the WEO exchange rate projections instead of exchange rates at the end of the base year; and (iii) a 5 percent discount rate instead of currency specific discount rates.

[6] Uganda's policies and institutions rank as a "strong performer" according to the latest World Bank's Country Policy and Institutional Assessment (CPIA). Under this rank policy-dependent debt burden thresholds 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.

[7] Similarly, the NPV of debt-to-revenue of 187 percent in 2004/05 is well below its policy-dependent threshold.

most of Uganda's debt has been contracted on concessional terms. Uganda's debt service-to-exports ratio was 16 percent in 2004/05 and is projected to decline to 6 percent by 2010/11.

Box 1. Macroeconomic Assumptions

Real GDP growth averages 6 percent between 2006 and 2025, equal to its ten-year historical average.

Exports of goods and services are projected to grow about 9 percent on average between 2005/06 and 2010/11, driven largely by an increase in the export volume of fish, maize, cotton and coffee. After 2010/11 export growth slows down to about 7 percent.

The current account deficit (including official transfers) in terms of GDP is above its historical average of 4.7 percent by about 0.4 percent of GDP between 2005/06-2010/11 and is projected to increase to 5.5 percent on average thereafter.

Fiscal policy. Tax revenues are assumed to increase gradually from 13 percent of GDP 2004/05 to 15 percent of GDP in 2010/11 and thereafter. With grants tapering off to about 4.5 percent, noninterest expenditures are projected to decline gradually to a level of 18.5 percent of GDP, consistent with a primary deficit of 1 percent of GDP in the outer years.

Official external loan financing is projected to amount to US$350 million on average throughout the entire projection period. The DSA assumes that only IDA grants committed before June 2005 will be disbursed.

6. **Adverse macroeconomic shocks would worsen Uganda's NPV of debt-to-exports ratio significantly.** If exports were to grow less by one standard deviation in 2006/07, Uganda's NPV of debt-to-exports ratio would jump up to 208 percent in 2006/07. An export shock would have long lasting negative effects on Uganda's debt dynamics, keeping the NPV of debt-to-exports ratio above 200 percent until 2020/21. However, Uganda's NPV of debt-to-exports ratio would remain below its policy-dependent threshold when key macroeconomic variables are set at their historical average.

7. **Imprudent debt management would worsen Uganda's NPV of debt-to-exports ratio significantly.** If new borrowing were to be contracted on less concessional terms during the projection period, Uganda's NPV of debt-to-exports ratio would increase substantially. Reducing the grant element by 8 percentage points[8] would lead to an increase in the NPV of debt-to-exports ratio by 17 percentage points in 2011/12.

8. **Uganda is projected to continue to rely heavily on donor support in order to finance its projected current account deficit.** In 2004/05 net donor support amounts to 9.4 percent of GDP, with grants constituting approximately 8.4 percent of GDP.

III. Fiscal Sustainability Analysis

9. **The fiscal DSA is based on the assumption of continued fiscal consolidation in the context of lower grant inflows.** Specifically, it is assumed that grants will decline from about 8.5 percent of GDP in 2004/05 to about 5 percent of GDP during the projection period, reflecting increased autonomy from donor support. Domestic public revenues are projected to rise to 15 percent of GDP, from currently at 13 percent, reflecting authorities' efforts to raise

[8] This would correspond to an increase in the average interest rate on new disbursements by 1 percentage point.

domestic revenues. This should allow noninterest public expenditures to level off at about 18.5 percent of GDP, while limiting the deficit of the primary balance to 1 percent of GDP.

10. **Under the baseline scenario,** NPV of public debt is projected to decline from 36 percent of GDP in 2004/5 to about 11 percent at the end of the projection period. In terms of public sector revenues, the NPV of Uganda's public debt under the baseline scenario remains at about 160 percent in the first several years. After 2010, reflecting continued fiscal consolidation, the decline of the NPV of debt-to-revenue ratio accelerates, and falls to about 60 percent at the end of the projection period. Debt-service indicators also seem to remain manageable.

11. **Uganda's achievement of public debt sustainability remains valid even under alternative scenarios** and most of them continue to decline over the projection period. It is noticeable that under the nonreform scenario, which assumes unchanged primary balance from 2004/05, debt indicators remain better than under the baseline scenario.

12. **Standard bound tests suggests that under the standardized alternative shocks,** NPV of Uganda's public debt stays below 40 percent of GDP. The 30 percent one-time depreciation shock takes the NPV of debt to 40 percent of GDP and 200 percent of revenues, but after about ten years the two indicators returns to figures close to the baseline.

IV. THE EFFECTS OF MDRI

13. **Uganda is at a moderate risk of debt distress before the implementation of the MDRI.** While all debt burden indicators are below their policy-dependent debt burden thresholds under the baseline, Uganda remains vulnerable to exogenous shocks. The MDRI debt relief would improve Uganda's debt sustainability outlook substantially by leading to a drastic reduction in Uganda's debt burden indicators (Text Table 2). The NPV debt-to-export ratio will remain volatile year-on-year, but like other indicators will stay well within presently defined policy-dependent thresholds.[9]

Table 2. Uganda: MDRI and Bujagali Project: Likely Impact on DSA Baseline Scenarios
(In percent)

	Estimate	Projections			
	2006	2009	2012	2015	2025
	NPV of debt-to-GDP ratio				
Before MDRI	23	23	22	21	12
With Bujagali Project 1/	23	25	24	22	12
After MDRI	6	9	11	12	10
With Bujagali Project 1/	6	11	13	13	10
	NPV of debt-to-exports ratio				
Before MDRI	169	160	160	155	106
With Bujagali Project 1/	169	175	175	161	106
After MDRI	45	64	80	90	83
With Bujagali Project 1/	45	79	95	96	83
	Debt service ratio				
Before MDRI	13	8	6	6	7
With Bujagali Project 1/	13	9	9	8	7
After MDRI	13	3	2	2	4
With Bujagali Project 1/	13	4	5	4	4

Source: Staff projections and simulations.

1/ Assuming Bujagali is built during 2008-11 and fully financed in commercial terms.

14. **The authorities are planning to build the Bujagali hydropower plant to address power shortage constraints that negatively affect Uganda's growth perspective**. Building Bujagali will guarantee a steady and secure supply of energy and strengthen private sector confidence. While the terms

[9] The MDRI scenario assumes that disbursement projections remain the same as under the baseline. Netting out IDA's MDRI debt relief from disbursement projections could lower debt burden indicators significantly.

and conditions for financing the project are not finished, the staffs have prepared a DSA scenario, in which it is assumed that Bujagali would be financed on commercial terms and commissioned by 2010/11. Under the baseline scenario, the NPV of debt-to-exports ratio increases by 6 percentage points in 2015. However, if a combination of shocks impact Uganda, the NPV of debt-to-exports ratio would increase by 11 percentage points to 247 percent in 2015. These risks show the importance of maintaining a prudent debt management policy even under the debt relief scenario.

15. **The full implementation of the MDRI would substantially lower Uganda's probability of debt distress.** The debt relief under the MDRI would decrease Uganda's NPV of debt-to-exports ratio to 46 percent in 2006/07 from 179 percent in 2004/05 while the debt service to export ratio would sharply decrease to 4 percent in 2006/07 from 16 percent in 2004/05. Uganda's NPV debt-to-GDP ratio will be reduced to 7 percent in 2006/07 from 24 percent in 2004/05.

V. CONCLUSION

16. **While Uganda is at a moderate risk of debt distress, it will be better protected against the risk of shocks by embarking upon a second generation of structural reforms.** These reforms will help diversify the export base and strengthen export competitiveness. While these measures would reduce Uganda's vulnerability to exogenous shocks, the implementation of prudent debt management policies and efficient allocation of donor support would be required in order to ensure that debt burden indicators remain low in the long-term.

Table 1a. Uganda: External Debt Sustainability Framework, Baseline Scenario, 2005–25 1/
(In percent of GDP, unless otherwise indicated)

			Historical	Standard	Estimate			Projections						
	2004	2005	Average 7/	Deviation 7/	2006	2007	2008	2009	2010	2011	2006-11 Average	2024	2025	2012-25 Average
External debt (nominal) 2/	**63.1**	**44.5**			**41.8**	**42.6**	**42.2**	**41.6**	**41.3**	**40.1**		**21.4**	**20.0**	
o/w public and publicly guaranteed (PPG)	63.1	44.5			41.8	42.6	42.2	41.6	41.3	40.1		21.4	20.0	
Change in external debt	0.3	-18.6			-2.8	0.8	-0.4	-0.6	-0.3	-1.2		-1.5	-1.4	
Identified net debt-creating flows	-5.8	-15.0			0.3	-0.7	-0.1	-0.5	0.0	0.1		1.8	1.9	
Non-interest current account deficit	**1.2**	**0.7**	**4.7**	**2.7**	**3.8**	**3.8**	**4.5**	**4.3**	**4.6**	**4.7**		**6.1**	**6.2**	5.5
Net current transfers (negative = inflow)	-13.5	-13.8	-8.7	3.7	-12.3	-11.2	-10.2	-11.5	-11.5	-11.5		-11.5	-11.5	-11.5
o/w official	-10.2	-9.0			-7.4	-5.7	-4.4	-5.0	-5.0	-5.0		-5.0	-5.0	
Net FDI (negative = inflow)	**-2.4**	**-2.5**	**-2.1**	**0.5**	**-2.5**	**-2.5**	**-2.6**	**-2.6**	**-2.6**	**-2.6**		**-3.2**	**-3.2**	-2.7
Endogenous debt dynamics 3/	**-4.6**	**-13.2**			**-1.0**	**-2.1**	**-2.1**	**-2.2**	**-2.1**	**-2.0**		**-1.1**	**-1.0**	
Contribution from nominal interest rate	0.6	0.4			1.5	0.2	0.3	0.3	0.3	0.3		0.2	0.2	
Contribution from real GDP growth	-2.8	-2.8			-2.5	-2.4	-2.3	-2.4	-2.3	-2.3		-1.3	-1.2	
Contribution from price and exchange rate changes	-2.3	-10.9			…	…	…	…	…	…		…	…	
Residual 4/	**6.1**	**-3.6**			**-2.1**	**1.4**	**0.5**	**0.6**	**-0.1**	**-0.5**		**-2.8**	**-2.9**	
o/w exceptional financing	-0.1	0.0			0.2	0.2	0.1	0.1	0.0	0.0		0.0	0.0	
NPV of external debt 5/	...	23.7			22.6	23.1	22.9	22.8	22.9	22.5		13.4	12.5	
In percent of exports	...	179.1			168.6	159.7	158.8	159.7	159.9	159.8		112.0	106.1	
NPV of PPG external debt	**...**	**23.7**			**22.6**	**23.1**	**22.9**	**22.8**	**22.9**	**22.5**		**13.4**	**12.5**	
In percent of exports	...	179.1			168.6	159.7	158.8	159.7	159.9	159.8		112.0	106.1	
Debt service-to-exports ratio (in percent)	17.1	16.1			12.9	9.4	8.2	7.5	6.8	5.8		7.3	7.1	
PPG debt service-to-exports ratio (in percent)	17.1	16.1			12.9	9.4	8.2	7.5	6.8	5.8		7.3	7.1	
Total gross financing need (billions of U.S. dollars)	82.4	35.2			285.9	270.6	337.9	322.0	371.7	398.3		1384.7	1521.5	
Non-interest current account deficit that stabilizes debt ratio	0.9	19.3			6.5	3.0	5.0	4.9	4.9	5.9		7.6	7.6	
Key macroeconomic assumptions														
Real GDP growth (in percent)	4.9	5.6	5.9	2.3	6.0	5.9	5.9	6.2	6.0	6.0	6.0	6.0	6.0	6.0
GDP deflator in US dollar terms (change in percent)	3.8	20.9	-0.8	13.3	2.2	-0.5	1.9	1.7	0.4	2.0	1.3	2.0	2.0	2.0
Effective interest rate (percent) 6/	1.0	0.9	1.1	0.3	3.6	0.6	0.6	0.7	0.7	0.7	1.1	0.8	0.8	0.7
Growth of exports of G&S (US dollar terms, in percent)	27.7	17.7	6.6	31.5	10.0	13.5	7.8	6.7	6.7	6.7	8.6	6.7	6.7	6.7
Growth of imports of G&S (US dollar terms, in percent)	13.5	21.8	6.6	19.6	15.4	6.8	6.2	9.5	7.9	7.9	8.9	7.9	7.9	7.9
Grant element of new public sector borrowing (in percent)	...	...	...	...	56.3	56.9	56.9	56.9	56.9	56.9	56.8	56.9	56.9	56.9

Source: Staff simulations.

1/ In fiscal year, which ends in June.
2/ The stock of external debt in 2005 includes a simulated stock reduction operation related to the debt relief provided by the Fund, AfDF and IDA under the enhanced HIPC Initiative.
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 ρ = 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 devided 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. Uganda: Sensitivity Analyses for Key Indicators of Public and Publicly Guaranteed External Debt, 2006-25 1/
(In percent)

	Estimate	Projections								
	2006	2007	2008	2009	2010	2011	2012	2015	2016	2025
NPV of debt-to-GDP ratio										
Baseline	23	23	23	23	23	23	22	21	**20**	12
A. Alternative Scenarios										
A1. Key variables at their historical averages in 2004-23 2/	23	24	24	25	26	26	27	27	**27**	19
A2. New public sector loans on less favorable terms in 2004-23 3/	23	24	25	25	26	26	26	25	**25**	18
B. Bound Tests										
B1. Real GDP growth at historical average minus one standard deviation in 2004-05	23	23	24	24	24	23	23	21	**21**	13
B2. Export value growth at historical average minus one standard deviation in 2004-05 4/	23	24	26	26	26	25	25	23	**22**	14
B3. US dollar GDP deflator at historical average minus one standard deviation in 2004-05	23	26	29	29	29	29	28	26	**26**	16
B4. Net non-debt creating flows at historical average minus one standard deviation in 2004-05 5/	23	26	29	28	28	28	27	25	**24**	14
B5. Combination of B1-B4 using one-half standard deviation shocks	23	28	34	33	33	32	32	29	**28**	17
B6. One-time 30 percent nominal depreciation relative to the baseline in 2004 6/	23	33	33	33	33	32	32	30	**29**	18
NPV of debt-to-exports ratio										
Baseline	169	160	159	160	160	160	160	155	**152**	106
A. Alternative Scenarios										
A1. Key variables at their historical averages in 2004-23 2/	169	164	169	177	181	186	191	200	**201**	161
A2. New public sector loans on less favorable terms in 2004-23 3/	169	166	171	177	181	184	187	190	**190**	155
B. Bound Tests										
B1. Real GDP growth at historical average minus one standard deviation in 2004-05	169	160	159	160	160	160	160	155	**152**	106
B2. Export value growth at historical average minus one standard deviation in 2004-05 4/	169	208	263	263	263	262	261	252	**247**	167
B3. US dollar GDP deflator at historical average minus one standard deviation in 2004-05	169	160	159	160	160	160	160	155	**152**	106
B4. Net non-debt creating flows at historical average minus one standard deviation in 2004-05 5/	169	182	199	199	198	197	196	188	**184**	122
B5. Combination of B1-B4 using one-half standard deviation shocks	169	206	249	249	248	247	245	236	**231**	152
B6. One-time 30 percent nominal depreciation relative to the baseline in 2004 6/	169	160	159	160	160	160	160	155	**152**	106
Debt service ratio										
Baseline	13	9	8	8	7	6	6	6	**6**	7
A. Alternative Scenarios										
A1. Key variables at their historical averages in 2004-23 2/	13	9	9	8	7	7	7	7	**7**	12
A2. New public sector loans on less favorable terms in 2004-23 3/	13	9	9	8	8	7	8	8	**8**	10
B. Bound Tests										
B1. Real GDP growth at historical average minus one standard deviation in 2004-05	13	9	8	8	7	6	6	6	**6**	7
B2. Export value growth at historical average minus one standard deviation in 2004-05 4/	13	12	12	11	10	9	9	9	**9**	11
B3. US dollar GDP deflator at historical average minus one standard deviation in 2004-05	13	9	8	8	7	6	6	6	**6**	7
B4. Net non-debt creating flows at historical average minus one standard deviation in 2004-05 5/	13	9	9	8	7	6	6	6	**7**	8
B5. Combination of B1-B4 using one-half standard deviation shocks	13	11	11	10	9	8	8	8	**9**	10
B6. One-time 30 percent nominal depreciation relative to the baseline in 2004 6/	13	9	8	8	7	6	6	6	**6**	7
Memorandum item:										
Grant element assumed on residual financing (i.e., financing required above baseline) 7/	56	56	56	56	56	56	56	56	**56**	56

Source: Staff projections and simulations.

1/ In fiscal years ending in June of the calendar year.
2/ 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.
3/ 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.
4/ 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).
5/ Includes official and private transfers and FDI.
6/ Depreciation is defined as percentage decline in dollar/local currency rate, such that it never exceeds 100 percent.
7/ 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, 2003-2026

(In percent of GDP, unless otherwise indicated)

	Actual			Estimate						Projections			
	2005	Historical Average 5/	Standard Deviation 5/	2006	2007	2008	2009	2010	2011	2006-11 Average	2016	2026	2012-26 Average
Public sector debt 1/	54.4			52.8	50.5	48.4	46.3	42.9	41.1		30.8	21.3	
o/w foreign-currency denominated	44.6			45.4	44.7	43.8	42.5	41.2	40.7		33.1	17.9	
Change in public sector debt	-13.6			-1.6	-2.3	-2.1	-2.1	-3.4	-1.8		-2.2	-0.9	
Identified debt-creating flows	-9.7			-1.6	-2.3	-2.1	-2.1	-3.4	-1.8		-2.2	-0.9	
Primary deficit	-1.2	1.9	2.6	0.3	1.2	1.2	1.2	0.9	0.6	0.9	0.8	0.9	0.8
Revenue and grants	21.3			19.7	19.0	18.5	18.9	19.2	19.4		19.4	19.4	
of which : grants	8.4			6.8	5.4	4.4	4.4	4.4	4.4		4.4	4.4	
Primary (noninterest) expenditure	20.1			20.0	20.2	19.8	20.1	20.1	20.0		20.2	20.3	
Automatic debt dynamics	-8.6			-1.4	-3.0	-2.9	-3.0	-3.9	-2.1		-2.8	-1.8	
Contribution from interest rate/growth differential	-3.5			-2.6	-2.8	-2.9	-3.1	-2.9	-2.8		-2.2	-1.5	
of which : contribution from average real interest rate	0.0			0.4	0.1	-0.1	-0.2	-0.3	-0.4		-0.4	-0.3	
of which : contribution from real GDP growth	-3.6			-3.1	-3.0	-2.8	-2.8	-2.6	-2.4		-1.9	-1.3	
Contribution from real exchange rate depreciation	-5.0			1.2	-0.2	0.0	0.1	-1.1	0.7		...	...	
Other identified debt-creating flows	0.0			-0.5	-0.4	-0.4	-0.3	-0.3	-0.3		-0.2	0.0	
Privatization receipts (negative)	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	
Debt relief (HIPC and other)	0.0			-0.5	-0.4	-0.4	-0.3	-0.3	-0.3		-0.2	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	
Residual, including asset changes	-3.8			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
NPV of public sector debt	33.5			31.3	29.2	27.6	26.3	23.7	22.4		16.6	14.2	
o/w foreign-currency denominated	23.7			23.9	23.4	23.0	22.5	22.0	22.0		18.9	10.8	
o/w external	23.7			23.9	23.4	23.0	22.5	22.0	22.0		18.9	10.8	
NPV of contingent liabilities (not included in public sector debt)	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	2.0			3.5	3.4	3.1	2.8	2.3	1.6		1.6	1.7	
NPV of public sector debt-to-revenue ratio (in percent) 3/	157.4			158.7	153.9	149.0	138.9	123.8	115.4		85.7	73.2	
o/w external	111.3			121.1	123.3	124.3	119.0	114.7	113.3		97.5	55.8	
Debt service-to-revenue ratio (in percent) 3/ 4/	15.1			16.0	11.9	10.2	8.6	7.3	5.1		3.9	4.1	
Primary deficit that stabilizes the debt-to-GDP ratio	12.4			1.9	3.5	3.3	3.3	4.3	2.4		3.0	1.8	
Key macroeconomic and fiscal assumptions													
Real GDP growth (in percent)	5.6	5.9	1.7	6.0	5.9	5.9	6.2	6.0	6.0	6.0	6.0	6.0	6.0
Average nominal interest rate on forex debt (in percent)	0.8	1.1	0.3	0.7	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Average real interest rate on domestic currency debt (in percent)	4.0	9.9	6.4	6.8	8.6	8.6	8.7	8.7	8.8	8.4	...	10.8	9.7
Real exchange rate depreciation (in percent, + indicates depreciation)	-9.1	3.2	9.8	2.9	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	8.6	5.2	4.8	9.3	4.3	4.1	4.0	3.2	2.2	4.5	2.8	2.8	2.8
Growth of real primary spending (deflated by GDP deflator, in percent)	-2.5	9.3	17.7	5.6	6.8	3.6	8.0	3.2	5.7	5.5	6.0	6.1	6.1
Grant element of new external borrowing (in percent)	0.0	0.0	0.0	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	...

Sources: Country authorities; and Fund 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 including grants.

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

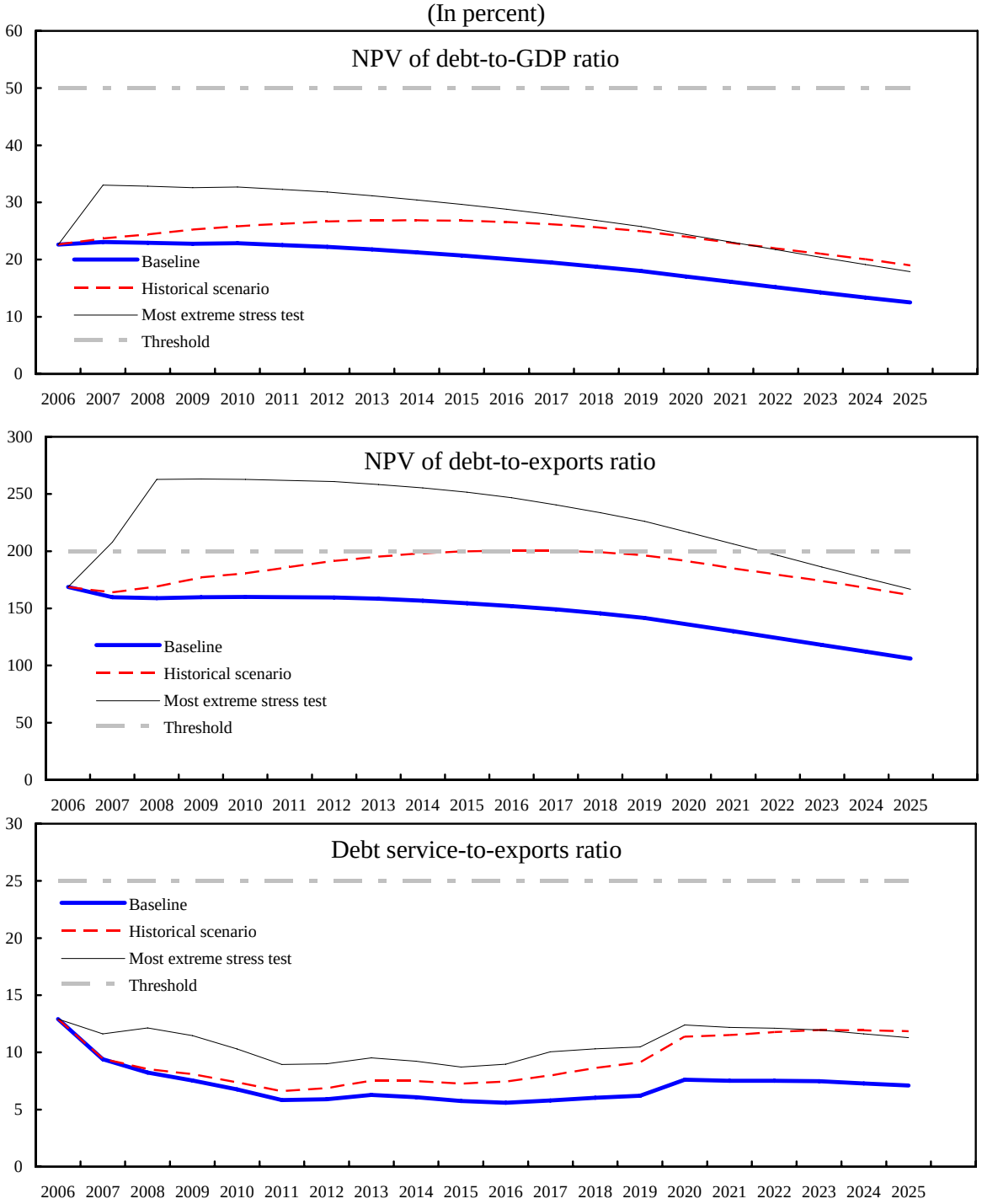
5/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.

Table 2b.Uganda: Sensitivity Analysis for Key Indicators of Public Debt 2006-2026

	Estimate	Projections						
	2006	2007	2008	2009	2010	2011	2016	2026
NPV of Debt-to-GDP Ratio								
Baseline	31	29	28	26	24	22	17	14
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	31	30	28	27	26	25	21	21
A2. Primary balance is unchanged from 2005	31	27	25	23	20	18	9	2
A3. Permanently lower GDP growth 1/	31	29	28	27	25	23	18	17
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2007-2008	31	30	29	28	26	24	18	15
B2. Primary balance is at historical average minus one standard deviations in 2007-2008	31	31	31	29	27	25	18	13
B3. Combination of B1-B2 using one half standard deviation shocks	31	30	30	28	26	24	17	12
B4. One-time 30 percent real depreciation in 2007	31	39	36	34	30	28	19	14
B5. 10 percent of GDP increase in other debt-creating flows in 2007	31	34	32	30	28	27	20	16
NPV of Debt-to-Revenue Ratio 2/								
Baseline	159	154	149	139	124	115	86	73
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	159	156	152	144	134	128	108	106
A2. Primary balance is unchanged from 2005	155	145	134	119	104	92	45	9
A3. Permanently lower GDP growth 1/	159	154	150	141	129	120	91	87
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2007-2008	159	156	155	145	133	124	93	79
B2. Primary balance is at historical average minus one standard deviations in 2007-2008	159	162	165	154	140	129	93	68
B3. Combination of B1-B2 using one half standard deviation shocks	159	160	161	149	135	125	88	64
B4. One-time 30 percent real depreciation in 2007	159	203	193	177	159	146	100	72
B5. 10 percent of GDP increase in other debt-creating flows in 2007	159	179	173	160	147	138	103	82
Debt Service-to-Revenue Ratio 2/								
Baseline	16	12	10	9	7	5	4	4
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	16	12	10	9	8	6	5	6
A2. Primary balance is unchanged from 2005	16	11	9	7	6	4	2	0
A3. Permanently lower GDP growth 1/	16	12	10	9	7	5	4	5
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2007-2008	16	12	11	9	8	5	4	4
B2. Primary balance is at historical average minus one standard deviations in 2007-2008	16	12	12	10	8	5	4	4
B3. Combination of B1-B2 using one half standard deviation shocks	16	12	11	10	8	5	4	4
B4. One-time 30 percent real depreciation in 2007	16	12	11	9	8	6	4	4
B5. 10 percent of GDP increase in other debt-creating flows in 2007	16	14	13	11	8	5	5	5

Sources: Country 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 (i.e., the length of the projection period).
2/ Revenues are defined inclusive of grants.

Figure 1. Uganda: Indicators of Public and Publicly Guaranteed External Debt Under Alternative Scenarios, 2006–25
(In percent)



WB Staff Simulations and Projections.

Figure 2. Uganda: Indicators of Public and Publicly Guaranteed External Debt Under Alternative Scenarios After MDRI, 2006–25
(In percent)