INTERNATIONAL MONETARY FUND
AND INTERNATIONAL DEVELOPMENT ASSOCIATION

UGANDA

JOINT IMF/WORLD BANK DEBT SUSTAINABILITY ANALYSIS 2012 UPDATE[1]

Prepared by the Staffs of the International Monetary Fund
and the International Development Association

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Uganda continues to be assessed at a low risk of debt distress based on the low-income country debt sustainability analysis (LIC DSA) despite recent challenges to the economy from high inflation, weakening external demand, and slower growth. Both baseline public and external DSA suggest Uganda's public sector debt is sustainable given the current size and evolution of the debt stock. Compared to the 2011 DSA assessment, overall public debt sustainability deteriorates modestly, because of a much tighter monetary policy in FY2011/12 and lower-than-expected growth. While the authorities will continue to rely primarily on highly concessional financing to fund their infrastructure investment needs, they are planning to scale up non-concessional sources for several critical infrastructure projects. The DSA hence includes an increase in the non-concessional borrowing ceiling under the PSI to US$1 billion from US$800 million. In addition, it incorporates an envisaged oil sector scenario.

The oil scenario suggests that external financing needs for oil sector development and deterioration of current account could add to medium-term debt vulnerabilities before production comes on stream in full capacity. Yet, beyond oil, downside risks on public debt cannot be ruled out, as implied by the shock scenarios of fixed primary deficits and permanently lower growth. These results highlight the need to maintain fiscal prudence and improve the efficiency of growth enhancing expenditure, particularly through improvements in investment planning, project selection, implementation capacity, and debt management.

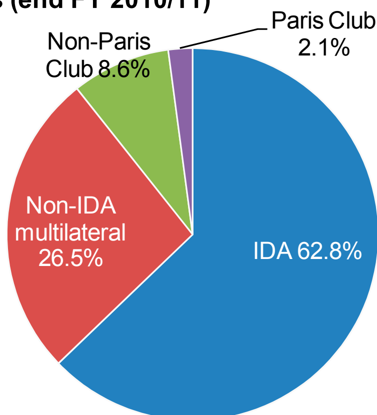
[1] As Uganda is an IDA-only country, this DSA update is prepared jointly by the IMF and World Bank staff under the IMF-WB DSA framework for Low-Income Countries. The fiscal year of Uganda starts from July 1st.

I. BACKGROUND AND RECENT DEVELOPMENTS

1. **Uganda has effectively maintained a sustainable public and external debt position over the past year amid a challenging economic environment.** The Ugandan economy suffered from rising food and energy prices, as well as adverse weather conditions in 2011. Inflation peaked at around 30 percent in last October accompanied by exchange rate depreciation, but both are now considerably improved following a decisive tightening of monetary conditions in the latter part of the year. This episode notwithstanding, Uganda's generally sound macroeconomic policies and cautious approach to public borrowing have kept the overall public debt burden manageable and sustainable, with all debt indicators well below their policy-dependent thresholds (Box 1).[2]

2. **Prudent fiscal management and modest public sector deficits helped safeguard Uganda's debt position.** Debt management has remained cautious since debt relief (HIPC and MDRI). New external borrowing was mainly used to finance infrastructure-related projects, including in energy and transportation, and was contracted on highly concessional terms, mostly from the IDA and the AfDB (text Figure 1). In mid-2011 the authorities requested an increase in the non-concessional borrowing ceiling under the PSI from US$500 million to US$800 million.[3] In light of their commitment to enhance infrastructure, the authorities recently requested a further augmentation to US$1 billion to fund additional projects. However, actual commitments and disbursements under the nonconcessional borrowing limit remain moderate, and public and publically guaranteed external debt remains low, estimated at around 19.7 percent of GDP by end-FY2011/12. Most of the external debt is owed to multilaterals on concessional terms, with IDA accounting for 62.8 percent of total debt (Figure 1). The domestic debt stock remains modest, currently at around 13percent of GDP (Table 1a).

Figure 1. PPG external debt breakdown by creditors (end FY 2010/11)



[2] Uganda is ranked as a "strong performer" under the Country Policy and Institutional Assessment (CPIA) framework of the World Bank. Accordingly, debt burden thresholds for Uganda are PV of debt to GDP ratio of 50 percent, PV of debt-to-exports ratio of 200 percent, PV 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.

[3] A contract with China was signed for US$110 million on non-concessional terms in 2010, and Parliament approved another US$350 million with China in 2011.

Box 1. Changes in Debt Indicators since the Last DSA

- **Public and publicly guaranteed (PPG) external debt** increased from US$ 2.3 billion (15.3 percent of GDP) to US$ 2.9 billion (19.5 percent of GDP) between FY2009/10 and FY2010/11, partially due to planned non-concessional borrowings and large exchange rate devaluation (Table 1b).
- The **PPG debt-service-to-exports ratio** has remained stable at 2.7 percent over this period (Table 1b).
- Domestic debt increased from 9.3 percent of GDP to 13.4 percent in FY2010/11, contributing to the increase of **total public debt** from 24.6 percent to 32.9 percent of GDP (Table 1a).
- The PV of **PPG debt-service-to-revenue ratio** remained at 4.5-4.6 percent over this period reflecting a large portion of concessional borrowing (Table 1b).
- The **PSI ceiling** on external non-concessional borrowing is maintained at US$800 million, but is assumed to rise to US$1 billion starting from June 2012.

3. **The authorities plan to implement large-scale critical infrastructure projects to remove persistent growth bottlenecks.** Uganda's main medium-term development priorities are in the energy and transportation sectors, as described in its National Development Plan. The construction of Karuma hydropower plant is expected to commerce in FY2012/13 after some delays, and several road projects are being planned. Some of the projects will be funded through private-pubic-partnerships. Furthermore, the authorities are making progress in sorting out the development strategy for the oil sector, which has been stalled for some time. A small refinery is likely to be built starting from late FY2012/13, and there is at now some discussion of an export pipeline, possibly in the context of a regional complex involving South Sudan. In the long run, oil sector development would greatly lift Uganda's growth prospects, but its implications for medium-term fiscal and debt burdens need to be carefully examined.[4]

II. Assumptions and Comparisons with the Previous DSA

4. **Near-term projections have been revised from the previous DSA to reflect recent developments in the economy, with medium to long-term assumptions broadly unchanged.** Contrasting a resilient performance in the past two years, growth in FY2011/12 and FY2012/13 is projected to slow down to 4.2 and 5.4 percent respectively—somewhat below the historical average of 6-7 percent, due to weakening global demand and the tighter stance of monetary and fiscal policy in FY2011/12. Average inflation (GDP deflator) in FY2011/12 is projected to be 22.5 percent—almost twice as high as in the previous DSA—although the recent inflationary episode is currently under correction and the authorities aim to bring it back to its central bank's target range of 5 percent for core inflation by June 2013.

[4] An alternative scenario incorporating elements of oil sector developments is presented in the external debt sustainability analysis, and Box 3 outlines the underlying assumptions of this scenario.

5. **The baseline scenario underlying the DSA assumes medium-term growth to rebound to 7 percent and inflation to revert to its historical average,** in line with the projections from the forthcoming IMF Staff Report for the 4th review of the PSI. Sources of growth in the medium term include services and trade recovery, as well as more public investments in roads and energy expected to begin removing capacity bottlenecks and unlock additional growth potential.[5] A sound monetary policy, supported by a prudent fiscal stance would help reduce inflation to single digit by end-2012, helped by an easing of food and fuel prices. The public sector deficit (including grants) increases slightly in the near term in response to rising public investment demand before stabilizing at about 3 percent of GDP. Compared with the 2011 Joint IMF-World Bank DSA Update, the current baseline scenario assumes a less ambitious growth path in the near term, reflecting both sluggish global demand and the back-loading of infrastructure investment (Box 2).

Box 2: Ex post analysis of the 2011 DSA update

- **Exports have under-performed since the last DSA**, as global demand remained sluggish, especially in the Euro area, which is a major trading partner.

- **With high import content in infrastructure projects, the current account balance deteriorated in FY2011/12, due also in part to depreciation in the first half of the year as well as lower official transfers** (rescheduled capital gain tax payment)**.** The Uganda Shilling depreciated more than 20 percent in nominal terms in early 2011 before rebounding to historical levels recently, resulting in rising import costs.

- **The current baseline scenario includes slightly more external borrowing** than in the previous DSA, in line with the envisaged US$200 million increase of the ceiling on non-concessional borrowing and back-loading of infrastructure projects.

- **On the fiscal side, both public revenue and expenditure have not performed as well as projected in the previous DSA**. Revenue collection is estimated to decline as percentage of GDP in both FY2010/11 and 2011/12, reflecting slower growth and delayed reforms in tax policy. Looking forward, the fiscal position would improve moderately as tax measures—such as the removal of tax exemptions—are implemented in FY2012/13.

- **The external position in the medium term is worse than in the previous DSA.** Nonetheless, reserve cover and the underlying external position are expected to improve amid downside risks including uncertainties regarding oil sector development**.**

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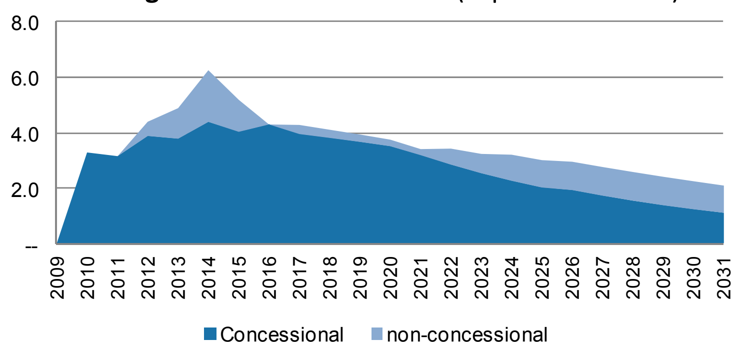
[5] The Bujagali hydropower plant began operation in early 2012. It is expected to be fully operational by end-year and should help mitigate power shortages that have contributed to reduced growth through FY2011/12, and contain both power generation costs and power subsidies.

6. **External public financing continues to be dominated by concessional donor inflows, but commercial borrowing will become increasingly important.** As concessional assistance including aid inflows is projected to decline in the outer years, the use of nonconcessional resources is programmed to rise to about half the new external financing by the end of the projection period[6] (Figure 2). Despite the fact that Uganda will not graduate from IDA in the medium term, the overall grant element of new public borrowing declines gradually over time, from over 40 percent to below10 percent by 2032 (Figure 1a). Although aid flows are projected to decline as GDP per capita rises, more access to less concessional resources from both multilateral (such as IBRD) and bilateral lenders are expected to fill this gap. Public domestic debt[7] is expected to remain relatively stable from 10 to 13 percent of GDP, addressing the need for further development of domestic financial markets.

Figure 2. New concessional and non-concessional borrowing in the baseline scenario (in percent of GDP)



III. External Debt Sustainability Update

7. **Public and publicly guaranteed (PPG) external debt is assessed to be sustainable over the projection period** (Figure 1a and Table 1b), with all five debt-burden indicators staying well below their policy-dependent thresholds throughout the period. The PV of debt-to-GDP ratio is expected to rise moderately (from 13 percent in FY 2010/11 to 24.3 percent in FY2016/17) due to external borrowing for productive investment, before stabilizing at 20 percent in the outer years. Similarly, the PV of debt-to-exports ratio is expected to peak at 112 percent in FY2015/16 before going down gradually to 65.7 percent. The debt service-to-exports and to- revenue ratios remain very low, in a range of 1-2 percent, reflecting the large proportion of concessional borrowing in the debt stock.

8. **The PPG external debt position remains sustainable in the face of all standardized shocks** (Figure 1a, Tables 1b and 2a). All stress tests show a low risk of debt distress with the debt-to-GDP, debt-to-exports, debt-to-revenue, debt service-to-exports, and debt service-to-revenue indicators remaining below their indicative threshold values

[6] Nonconcessional borrowing is assumed to be contracted on IBRD-like terms with an interest rate ranging between 4 to 5 percent with10 years of grace period and 20 years of repayment.

[7] The recent increase in public domestic debt in FY2010/11 was mainly due to the much tightened monetary policy which introduced a strong appetite on domestic bonds. But the trend is assumed to revert after inflation drops to meet the annual targets.

throughout the projection period. The most severe shocks include a further weakening of global demand and less favorable borrowing terms, which only modestly increase the external debt burden.

9. **The alternative scenario of oil sector development presents a more favorable long-run external debt path, while it has to be interpreted with caution.** Given the ongoing debates among all stake holders on the oil sector development strategy, uncertainties remain from many aspects, including modality (refinery or pipeline), revenue sharing, and export potential. This alternative scenario relies on certain normative assumptions outlined in Box 3. The key message is that, although the bulk of investments on oil sector would be financed through FDIs, external financing needs and deterioration of current account could add to medium-term debt vulnerabilities before production comes into stream in full capacity (Table 2a).

Box 3: Assumptions for the oil sector development

- **Construction of both a small refinery and pipeline** would start from late FY2012/13 and continue towards 2020, and total capital expenditure is estimated at between US$7 to 10 billion with 90 percent of import contents.
- **Small testing production of about 1,000 barrels per day begins late 2013,** and would gradually increase to full capacity by 2020 at about 100,000 barrels per day. As a result, oil products are expected to meet domestic demands before exporting to the region.
- **The current account would deteriorate significantly during the construction phase,** although such investment would carry its own financing mainly through FDIs (90 percent assumed) and ultimately result in a significantly improved external position after large-scale exports begin.
- **Real growth would pick up during the investment phase as well as the beginning of full production.** Based on the investment and production profile, real GDP growth is estimated to be 3-5 percent higher over the medium term and long-run potential growth would increase by 3 percent.

IV. Fiscal Debt Sustainability Update

10. **Both baseline scenario and stress tests suggest that the evolution of total public debt including PPG external and domestic debt is sustainable over the projection period** (Figure 1b, Tables 1a and 2b). Under the baseline, the PV of public debt to GDP and to revenue increases moderately in the medium term, mainly driven by infrastructure-related external borrowing, but both would remain at comfortable levels in the long run. It is worth noting that the implied moderate decline in domestic debt in the near term reflects higher

domestic interest costs due to the recent monetary tightening. Similar to the stress test of the previous DSA, fixing the primary deficit at the level of FY2011/12 would show a less favorable scenario– however, under the PSI framework the fiscal stance is being tightened significantly in FY2011/12 compared to the previous fiscal year, leading to less severe debt path implied by the stress test in this DSA.

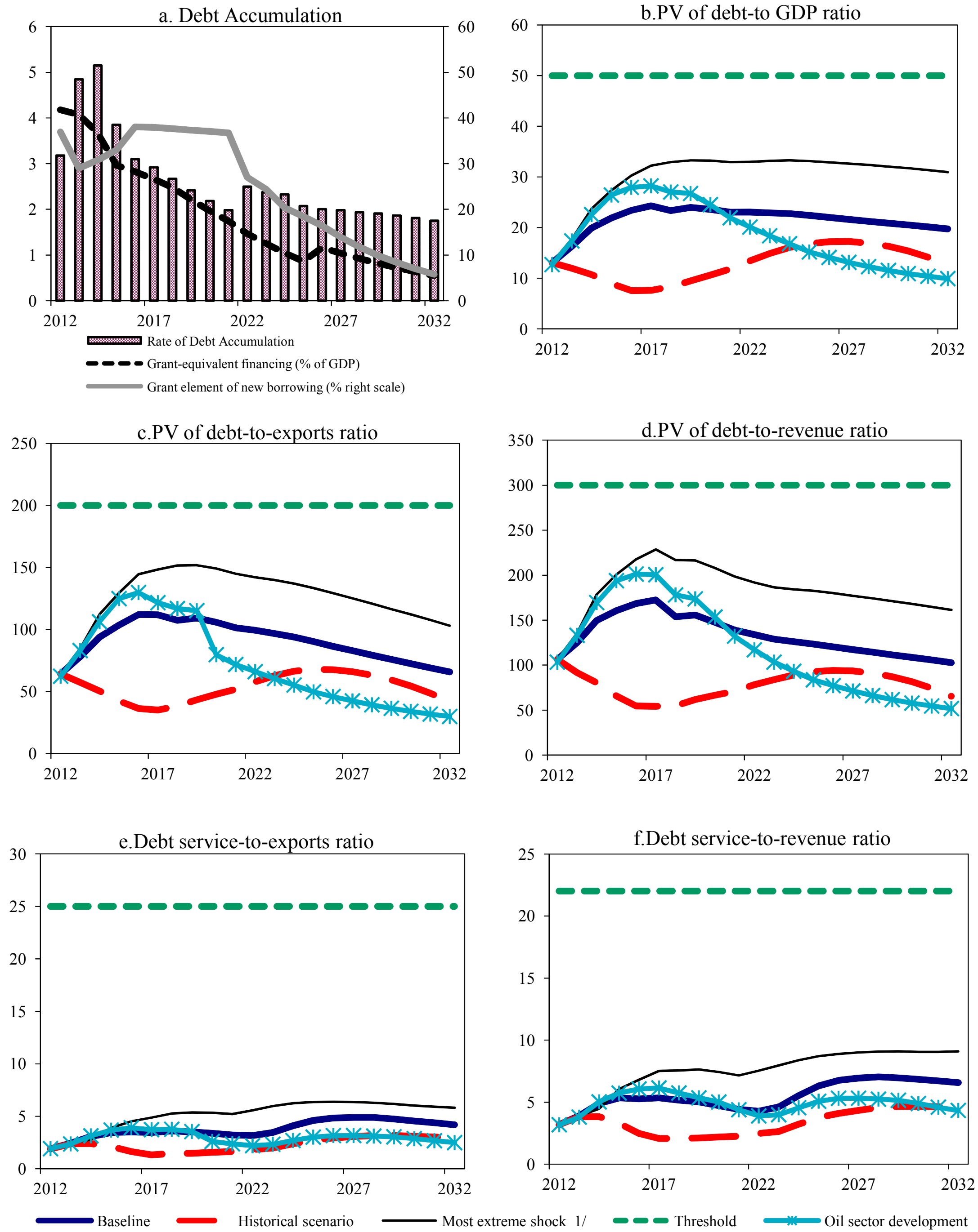
11. **Of all other alternative scenarios and bound tests, a permanent shock to growth has the second strongest impact on the public debt burden**. Under this scenario, the PV of debt-to-GDP ratio increases to 52 percent (Table 2b), illustrating the importance of ensuring the planned investments generate growth dividends to maintain a healthy debt path. The PV of debt to GDP is relatively unaffected by other bound tests, staying close to the baseline under all scenarios. Furthermore, in most cases the PV of debt and debt service to revenue ratios are broadly consistent with the baseline, with the exception of the two above-mentioned alternative scenarios of fixing primary balance and a permanent shock to growth. This reveals how critical a prudent fiscal position and careful project appraisal, selection, and execution would be to ensuring long-term debt sustainability for Uganda.

12. **The authorities broadly agree with the results of the DSA, which are consistent with the results of their own DSA exercise.** The authorities are using more conservative assumptions for non-concessional borrowing, while relying primarily on highly concessional financing in the pipeline to prioritize project needs. However, they are fully aware of the implications of non-concessional borrowing and the envisaged oil development on debt burdens.

V. CONCLUSION

13. **Overall, Uganda's public and external debt positions are projected to remain sustainable over the projection period**. The scenarios outlined above are consistent with the authorities' National Development Plan—which details a cautious approach combining reliance on concessional borrowing with careful selection of commercially financed infrastructure projects, and supported by a prudent fiscal stance in line with the PSI. The oil scenario suggests that external financing needs for oil sector development and deterioration of current account could add to medium-term debt vulnerabilities before production comes into stream in full capacity. To help strengthen the fiscal position and smooth the transition, tax and revenue policies should continue to focus on improving non-oil revenue, given that oil is a finite and volatile source of income. In this regard, government borrowing should be conducted in accordance with revised National Debt Strategy as well as the forthcoming PFA. Beyond oil, vulnerabilities could result from both rising deficits and a protracted negative growth shock, stressing the needs for improvement in investment planning, project selection, and implementation capacity.

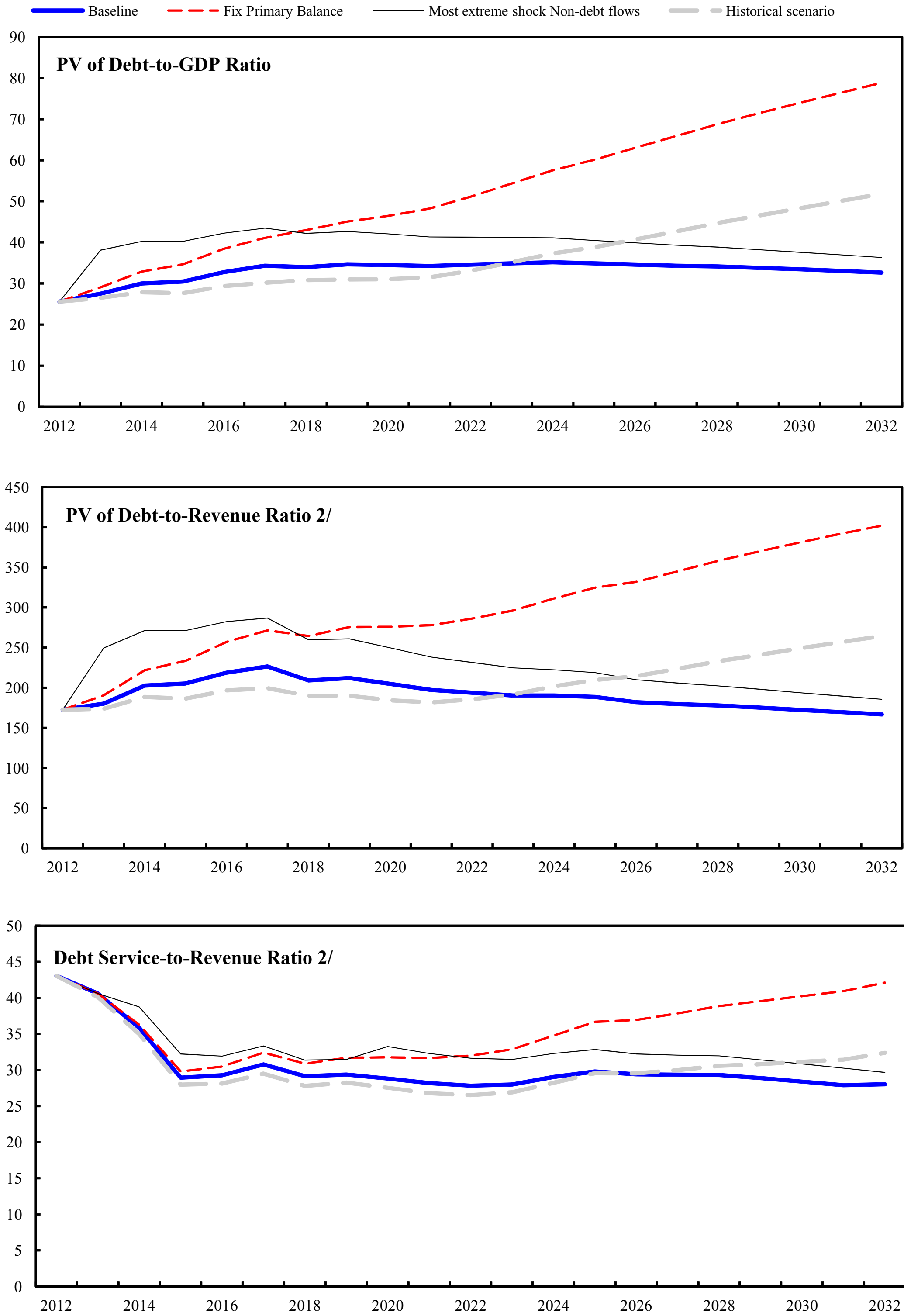
Figure 1a. Uganda: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2012-2032 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2022. In figure b. it corresponds to a Terms shock; in c. to a Terms shock; in d. to a Terms shock; in e. to a Terms shock and in figure f. to a Terms shock

Figure 1b. Uganda: Indicators of Public Debt Under Alternative Scenarios, 2012-2032 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2022.

2/ Revenues are defined inclusive of grants.

Table 1a.Uganda: Public Sector Debt Sustainability Framework, Baseline Scenario, 2009-2032
(In percent of GDP, unless otherwise indicated)

	Actual					Estimate	Projections								
	2009	2010	2011	Average 5/	Standard Deviation 5/	2012	2013	2014	2015	2016	2017	2012-17 Average	2022	2032	2018-32 Average
Public sector debt 1/	22.2	24.6	32.9			32.2	35.2	39.2	40.4	43.6	45.7		44.7	37.3	
o/w foreign-currency denominated	13.8	15.3	19.5			19.7	24.0	29.1	31.8	34.3	35.6		33.2	24.4	
Change in public sector debt	-0.3	2.3	8.4			-0.7	3.0	3.9	1.2	3.2	2.1		-0.1	-0.9	
Identified debt-creating flows	0.7	2.9	6.6			-2.3	0.3	0.8	0.0	0.3	0.1		-2.6	-3.7	
Primary deficit	1.1	3.5	6.1	1.3	2.3	3.4	2.0	2.2	2.0	1.9	2.2	2.3	0.3	-1.6	-0.4
Revenue and grants	15.0	15.0	15.6			14.8	15.3	14.8	14.8	15.0	15.1		17.8	19.6	
of which: grants	2.6	2.7	2.3			2.6	2.2	1.5	1.2	1.1	1.1		0.7	0.4	
Primary (noninterest) expenditure	16.1	18.5	21.7			18.3	17.2	17.0	16.9	16.9	17.4		18.1	18.0	
Automatic debt dynamics	-0.4	-0.7	0.6			-5.8	-1.6	-1.4	-2.1	-1.6	-2.2		-2.9	-2.1	
Contribution from interest rate/growth differential	-1.7	-0.8	-0.9			-2.7	-1.1	-1.4	-2.2	-2.2	-2.3		-2.3	-1.7	
of which: contribution from average real interest rate	-0.2	0.4	0.6			-1.4	0.6	0.6	0.4	0.5	0.6		0.6	0.8	
of which: contribution from real GDP growth	-1.5	-1.2	-1.5			-1.3	-1.6	-2.0	-2.6	-2.6	-2.9		-2.9	-2.5	
Contribution from real exchange rate depreciation	1.4	0.2	1.5			-3.1	-0.5	0.0	0.1	0.6	0.1		...	...	
Other identified debt-creating flows	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	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	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	-1.0	-0.5	1.7			1.6	2.7	3.1	1.3	2.9	2.0		2.5	2.9	
Other Sustainability Indicators															
PV of public sector debt	...	...	26.4			25.6	27.5	30.0	30.4	32.7	34.3		34.6	32.6	
o/w foreign-currency denominated	...	...	13.0			13.1	16.3	19.9	21.9	23.4	24.3		23.0	19.7	
o/w external	...	...	13.0			13.1	16.3	19.9	21.9	23.4	24.3		23.0	19.7	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	9.3	11.4	16.0			12.2	10.5	9.5	8.9	9.2	10.2		9.4	8.8	
PV of public sector debt-to-revenue and grants ratio (in percent)	…	…	169.0			172.4	180.3	202.6	205.2	218.7	226.5		193.8	166.5	
PV of public sector debt-to-revenue ratio (in percent)	…	…	197.9			208.3	211.0	225.5	223.3	235.8	243.5		201.3	170.2	
o/w external 3/	…	…	97.2			106.4	125.0	149.7	160.7	168.7	172.4		134.1	102.9	
Debt service-to-revenue and grants ratio (in percent) 4/	24.8	28.9	43.1			43.1	40.6	35.9	28.9	29.3	30.8		27.8	28.0	
Debt service-to-revenue ratio (in percent) 4/	29.9	35.3	50.4			52.0	47.5	39.9	31.5	31.6	33.1		28.9	28.7	
Primary deficit that stabilizes the debt-to-GDP ratio	1.4	1.2	-2.3			4.2	-1.1	-1.8	0.8	-1.3	0.1		0.4	-0.8	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	7.2	5.9	6.7	6.9	2.5	4.2	5.4	6.0	7.0	7.0	7.0	6.1	7.0	7.0	7.0
Average nominal interest rate on forex debt (in percent)	1.4	1.4	1.6	1.1	0.4	1.3	1.7	1.9	1.8	1.9	1.9	1.8	1.9	2.8	2.2
Average real interest rate on domestic debt (in percent)	-2.4	3.1	5.6	4.4	4.9	-10.4	5.2	6.0	4.8	6.1	6.9	3.1	5.9	5.1	5.8
Real exchange rate depreciation (in percent, + indicates depreciation)	12.3	1.4	10.2	0.2	10.8	-16.5	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	14.6	9.6	4.9	6.8	5.0	22.5	5.3	4.1	6.3	6.2	6.0	8.4	6.9	6.9	6.5
Growth of real primary spending (deflated by GDP deflator, in percent)	0.0	0.2	0.3	0.1	0.1	-0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1
Grant element of new external borrowing (in percent)	...	...	...	…	…	36.9	29.0	30.7	33.0	38.0	38.0	34.3	27.0	5.8	...

Sources: Country authorities; and staff estimates and projections.
1/ Public sector includes general government only and gross debt is used for all presentations.
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 1b. Uganda: External Debt Sustainability Framework, Baseline Scenario, 2009-2032 1/
(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average 6/	Standard Deviation 6/	Projections									
	2009	2010	2011			2012	2013	2014	2015	2016	2017	2012-2017 Average	2022	2032	2018-2032 Average
External debt (nominal) 1/	**21.2**	**23.0**	**27.5**			**26.7**	**30.6**	**35.3**	**37.8**	**40.3**	**41.7**		**39.6**	**31.5**	
o/w public and publicly guaranteed (PPG)	13.8	15.3	19.5			19.7	24.0	29.1	31.8	34.3	35.6		33.2	24.4	
Change in external debt	3.1	1.9	4.5			-0.8	3.9	4.8	2.5	2.5	1.4		-0.4	-0.8	
Identified net debt-creating flows	2.9	3.0	7.6			7.0	3.9	4.6	3.2	2.0	0.0		-2.8	0.9	
Non-interest current account deficit	**7.8**	**9.0**	**10.7**	**4.0**	**3.9**	**12.1**	**10.3**	**11.5**	**10.3**	**9.0**	**8.0**		**4.3**	**6.9**	5.3
Deficit in balance of goods and services	14.5	13.0	18.2			16.9	15.6	15.8	14.3	13.1	11.9		8.7	10.6	
Exports	19.6	20.4	22.1			20.4	20.9	21.2	21.1	20.9	21.7		23.2	30.0	
Imports	34.1	33.4	40.3			37.3	36.5	37.0	35.4	34.0	33.7		31.9	40.6	
Net current transfers (negative = inflow)	-7.6	-5.3	-9.0	-9.8	2.3	-6.0	-6.3	-5.2	-4.8	-4.8	-4.7		-3.7	-2.8	-3.4
o/w official	-1.7	-1.3	-4.0			-2.0	-2.4	-0.8	-0.6	-0.6	-0.6		-0.8	-0.4	
Other current account flows (negative = net inflow)	1.0	1.3	1.6			1.2	1.0	0.9	0.8	0.7	0.8		-0.7	-0.8	
Net FDI (negative = inflow)	**-4.2**	**-4.8**	**-4.0**	**-4.0**	**1.2**	**-4.5**	**-5.5**	**-5.7**	**-5.4**	**-5.2**	**-6.1**		**-5.3**	**-4.8**	-5.1
Endogenous debt dynamics 2/	**-0.7**	**-1.1**	**0.9**			**-0.6**	**-0.9**	**-1.2**	**-1.7**	**-1.8**	**-1.9**		**-1.8**	**-1.3**	
Contribution from nominal interest rate	0.8	0.6	0.4			0.3	0.4	0.6	0.6	0.7	0.7		0.7	0.8	
Contribution from real GDP growth	-1.2	-1.1	-1.6			-1.0	-1.3	-1.7	-2.3	-2.5	-2.6		-2.5	-2.0	
Contribution from price and exchange rate changes	-0.4	-0.6	2.1			…	…	…	…	…	…		…	…	
Residual (3-4) 3/	**0.2**	**-1.2**	**-3.2**			**-7.8**	**0.0**	**0.1**	**-0.7**	**0.5**	**1.4**		**2.4**	**-1.7**	
o/w exceptional financing	0.1	0.1	0.0			0.1	0.1	0.0	0.0	0.0	0.0		0.0	0.0	
PV of external debt 4/	...	...	21.0			20.1	22.9	26.2	27.9	29.5	30.4		29.5	26.8	
In percent of exports	...	...	94.7			98.5	109.4	123.4	131.9	140.8	139.9		126.9	89.3	
PV of PPG external debt	**...**	**...**	**13.0**			**13.1**	**16.3**	**19.9**	**21.9**	**23.4**	**24.3**		**23.0**	**19.7**	
In percent of exports	**...**	**...**	**58.6**			**64.1**	**78.1**	**93.9**	**103.6**	**112.0**	**111.8**		**99.3**	**65.7**	
In percent of government revenues	**...**	**...**	**97.2**			**106.4**	**125.0**	**149.7**	**160.7**	**168.7**	**172.4**		**134.1**	**102.9**	
Debt service-to-exports ratio (in percent)	**7.9**	**7.4**	**4.6**			**4.0**	**4.4**	**5.1**	**5.3**	**6.6**	**6.7**		**5.3**	**6.2**	
PPG debt service-to-exports ratio (in percent)	**2.9**	**2.7**	**2.7**			**1.9**	**2.4**	**3.1**	**3.4**	**3.5**	**3.5**		**3.2**	**4.2**	
PPG debt service-to-revenue ratio (in percent)	**4.5**	**4.5**	**4.6**			**3.2**	**3.9**	**4.9**	**5.3**	**5.3**	**5.3**		**4.3**	**6.6**	
Total gross financing need (Billions of U.S. dollars)	0.8	1.0	1.3			1.6	1.2	1.6	1.5	1.4	1.0		0.1	5.6	
Non-interest current account deficit that stabilizes debt ratio	4.7	7.1	6.3			12.9	6.4	6.8	7.8	6.5	6.5		4.7	7.7	
Key macroeconomic assumptions															
Real GDP growth (in percent)	7.2	5.9	6.7	6.9	2.5	4.2	5.4	6.0	7.0	7.0	7.0	6.1	7.0	7.0	7.0
GDP deflator in US dollar terms (change in percent)	2.0	2.8	-8.4	4.2	9.6	10.8	3.7	1.4	2.1	0.7	1.4	3.3	3.8	3.8	3.8
Effective interest rate (percent) 5/	5.1	3.2	1.6	2.6	1.2	1.5	1.7	2.0	1.8	1.9	2.0	1.8	2.0	2.7	2.2
Growth of exports of G&S (US dollar terms, in percent)	-2.7	13.3	5.9	19.7	18.3	6.2	12.0	9.2	8.8	6.7	12.7	9.3	13.4	14.4	13.4
Growth of imports of G&S (US dollar terms, in percent)	16.3	6.6	17.9	17.6	10.6	6.7	7.0	9.1	4.4	3.5	7.5	6.4	11.5	14.7	12.4
Grant element of new public sector borrowing (in percent)	…	…	…	…	…	36.9	29.0	30.7	33.0	38.0	38.0	34.3	27.0	5.8	20.8
Government revenues (excluding grants, in percent of GDP)	12.5	12.2	13.3			12.3	13.0	13.3	13.6	13.9	14.1		17.2	19.2	17.7
Aid flows (in Billions of US dollars) 7/	0.8	0.9	0.7			1.1	1.3	1.4	1.2	1.2	1.2		1.1	1.2	
o/w Grants	0.4	0.5	0.4			0.5	0.5	0.3	0.3	0.3	0.3		0.3	0.6	
o/w Concessional loans	0.4	0.5	0.3			0.6	0.8	1.0	0.9	0.9	0.9		0.8	0.7	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			4.2	4.1	3.7	3.0	2.8	2.7		1.5	0.6	1.3
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			60.2	47.4	42.9	45.4	49.9	50.4		40.3	20.6	35.3
Memorandum items:															
Nominal GDP (Billions of US dollars)	15.8	17.2	16.8			19.4	21.2	22.8	24.9	26.8	29.1		49.1	139.7	
Nominal dollar GDP growth	9.4	8.8	-2.3			15.4	9.2	7.5	9.2	7.8	8.5	9.6	11.0	11.0	11.0
PV of PPG external debt (in Billions of US dollars)			1.9			2.5	3.4	4.5	5.4	6.1	6.9		11.1	27.2	
(PVt-PVt-1)/GDPt-1 (in percent)						3.2	4.8	5.1	3.8	3.1	2.9	3.8	2.5	1.7	2.1
Gross workers' remittances (Billions of US dollars)	0.9	0.7	0.8			0.8	0.8	1.0	1.0	1.1	1.2		2.0	5.1	
PV of PPG external debt (in percent of GDP + remittances)	...	...	12.3			12.6	15.7	19.1	21.0	22.5	23.3		22.2	19.0	
PV of PPG external debt (in percent of exports + remittances)	...	...	47.9			53.7	65.8	78.0	86.5	93.2	93.8		84.7	58.7	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	2.2			1.6	2.1	2.6	2.9	2.9	2.9		2.7	3.7	

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 2a.Uganda: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2012-2032
(In percent)

	Projections							
	2012	2013	2014	2015	2016	2017	**2022**	2032
PV of debt-to GDP ratio								
Baseline	13	16	20	22	23	24	**23**	20
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2012-2032 1/	13	12	11	9	8	8	**13**	13
A2. New public sector loans on less favorable terms in 2012-2032 2	13	18	24	27	30	32	**33**	31
A3. Oil sector development starting from FY2013/14	13	17	23	26	28	28	**20**	10
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	13	16	20	22	23	24	**23**	20
B2. Export value growth at historical average minus one standard deviation in 2013-2014 3/	13	18	24	26	27	27	**25**	20
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	13	18	23	25	27	28	**27**	23
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 4/	13	17	21	23	24	25	**24**	20
B5. Combination of B1-B4 using one-half standard deviation shocks	13	17	21	23	24	25	**24**	21
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 5/	13	23	28	30	32	33	**32**	27
PV of debt-to-exports ratio								
Baseline	64	78	94	104	112	112	**99**	66
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2012-2032 1/	64	57	51	42	36	35	**58**	42
A2. New public sector loans on less favorable terms in 2012-2032 2	64	85	112	129	145	148	**142**	103
A3. Oil sector development starting from FY2013/14	62	83	106	125	130	122	**66**	30
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	64	77	93	102	109	109	**98**	65
B2. Export value growth at historical average minus one standard deviation in 2013-2014 3/	64	93	134	144	152	150	**129**	80
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	64	77	93	102	109	109	**98**	65
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 4/	64	83	101	109	117	116	**102**	66
B5. Combination of B1-B4 using one-half standard deviation shocks	64	80	93	102	109	109	**98**	65
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 5/	64	77	93	102	109	109	**98**	65
PV of debt-to-revenue ratio								
Baseline	106	125	150	161	169	172	**134**	103
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2012-2032 1/	106	92	81	66	55	54	**78**	65
A2. New public sector loans on less favorable terms in 2012-2032 2	106	136	179	201	218	229	**192**	161
A3. Oil sector development starting from FY2013/14	103	133	170	194	201	200	**117**	52
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	106	124	152	162	169	173	**135**	104
B2. Export value growth at historical average minus one standard deviation in 2013-2014 3/	106	135	180	188	193	195	**147**	105
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	106	135	174	186	194	198	**155**	119
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 4/	106	132	160	170	176	179	**138**	103
B5. Combination of B1-B4 using one-half standard deviation shocks	106	131	158	169	176	180	**141**	108
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 5/	106	173	208	223	232	237	**186**	142

Table 2a. Uganda: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2012-2032 (continued)

(In percent)

Debt service-to-exports ratio

Baseline	2	2	3	3	3	3	**3**	4
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2012-2032 1/	2	2	2	2	2	1	**2**	3
A2. New public sector loans on less favorable terms in 2012-2032 2	2	2	3	4	5	5	**6**	6
A3. Oil sector development starting from FY2013/14	2	2	3	4	4	4	**2**	2
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	2	2	3	3	3	3	**3**	4
B2. Export value growth at historical average minus one standard deviation in 2013-2014 3/	2	3	4	5	5	5	**4**	5
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	2	2	3	3	3	3	**3**	4
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 4/	2	2	3	4	4	4	**3**	4
B5. Combination of B1-B4 using one-half standard deviation shocks	2	2	3	3	3	3	**3**	4
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 5/	2	2	3	3	3	3	**3**	4

Debt service-to-revenue ratio

Baseline	3	4	5	5	5	5	**4**	7
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2012-2032 1/	3	4	4	3	2	2	**2**	5
A2. New public sector loans on less favorable terms in 2012-2032 2	3	4	4	6	7	8	**8**	9
A3. Oil sector development starting from FY2013/14	3	4	5	6	6	6	**4**	4
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	3	4	5	5	5	5	**4**	7
B2. Export value growth at historical average minus one standard deviation in 2013-2014 3/	3	4	5	6	6	6	**5**	7
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	3	4	6	6	6	6	**5**	8
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 4/	3	4	5	6	6	6	**4**	7
B5. Combination of B1-B4 using one-half standard deviation shocks	3	4	5	6	6	6	**5**	7
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 5/	3	5	7	8	7	8	**6**	9
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	19	19	19	19	19	19	**19**	19

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. Uganda: Sensitivity Analysis for Key Indicators of Public Debt 2012-2032

	Projections							
	2012	2013	2014	2015	2016	2017	2022	2032
PV of Debt-to-GDP Ratio								
Baseline	26	28	30	30	33	34	35	33
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	26	26	28	28	29	30	33	52
A2. Primary balance is unchanged from 2012	26	29	33	35	38	41	51	79
A3. Permanently lower GDP growth 1/	26	28	31	31	34	36	41	52
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2013-2014	26	28	31	32	35	37	39	39
B2. Primary balance is at historical average minus one standard deviations in 2013-2014	26	29	33	33	36	37	37	34
B3. Combination of B1-B2 using one half standard deviation shocks	26	28	31	31	34	35	35	33
B4. One-time 30 percent real depreciation in 2013	26	32	34	34	36	37	37	38
B5. 10 percent of GDP increase in other debt-creating flows in 2013	26	38	40	40	42	43	41	36
PV of Debt-to-Revenue Ratio 2/								
Baseline	172	180	203	205	219	226	194	167
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	172	174	188	187	197	199	186	264
A2. Primary balance is unchanged from 2012	172	191	222	234	257	271	286	402
A3. Permanently lower GDP growth 1/	172	182	206	211	228	239	227	263
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2013-2014	172	183	211	216	232	242	216	199
B2. Primary balance is at historical average minus one standard deviations in 2013-2014	172	192	224	226	238	245	205	172
B3. Combination of B1-B2 using one half standard deviation shocks	172	183	208	211	224	232	198	170
B4. One-time 30 percent real depreciation in 2013	172	210	227	226	238	245	207	192
B5. 10 percent of GDP increase in other debt-creating flows in 2013	172	249	271	271	282	287	231	185
Debt Service-to-Revenue Ratio 2/								
Baseline	43	41	36	29	29	31	28	28
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	43	40	35	28	28	30	27	32
A2. Primary balance is unchanged from 2012	43	41	36	30	31	32	32	42
A3. Permanently lower GDP growth 1/	43	41	36	29	30	32	30	35
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2013-2014	43	41	37	30	30	32	29	31
B2. Primary balance is at historical average minus one standard deviations in 2013-2014	43	41	36	30	30	32	29	29
B3. Combination of B1-B2 using one half standard deviation shocks	43	41	36	29	30	31	28	28
B4. One-time 30 percent real depreciation in 2013	43	41	38	31	32	33	30	33
B5. 10 percent of GDP increase in other debt-creating flows in 2013	43	41	39	32	32	33	32	30

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.