INTERNATIONAL DEVELOPMENT ASSOCIATION AND
INTERNATIONAL MONETARY FUND[1]

UNITED REPUBLIC OF TANZANIA

Joint World Bank/IMF Debt Sustainability Analysis

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June 22, 2012

Tanzania's risk of debt distress remains low even when taking into account government borrowing from both domestic and external sources, including on non-concessional terms. While the planned contracted external non-concessional borrowing (US$1.77 billion over the three-year PSI period through 2013 and 1 percent of GDP per year thereafter) increases the present value (PV) of debt-to-GDP and other indicators, it is not projected to jeopardize long-term debt sustainability. Alternative scenarios continue to suggest that debt indicators are sensitive to further borrowing on expensive terms. In addition, public debt sustainability analysis (DSA) raises some concern under an alternative scenario of persistently large primary deficits. This highlights that a sound debt management strategy, a conservative approach to non-concessional borrowing, and commitment to fiscal discipline are important factors for maintaining debt and fiscal sustainability. On the positive side, debt- and debt service indicators could be substantially more favorable than in the current DSA if recent favorable deep-water gas exploration results were to result in successful commercialization of new large-scale reserves over the coming decade with a rise in natural gas exports and associated government revenues.

I. Background

1. **Tanzania's macroeconomic performance over the last decade has been strong.** Growth averaged 7 percent per year during 2002–2011 which, together with increased revenue collection, donor funding, and HIPC debt relief, provided room for an expansion in public spending. Higher global food and fuel prices and a regional drought in 2011 caused a drop in hydroelectric generation and increased fuel prices, leading to a peak in headline

[1] Prepared by the IMF and World Bank staff in consultation with the authorities. This DSA replaces the previous one prepared in April 2011. Tables and figures are in fiscal years (July–June). For example, 2012 refers to fiscal year 2011/12.

inflation of almost 20 percent and a widening current account deficit of about 15 percent of GDP in 2012. Core inflation (excluding food and energy) has stabilized at 9 percent, up from about 4 percent a year earlier. Despite these supply shocks, real GDP growth in 2011 was 6.4 percent, supported by strong construction and services expansion.

2. **Tanzania has benefited from extensive debt relief.** HIPC and MDRI debt relief reduced Tanzania's debt burden sharply to 20.6 percent of GDP at end-June 2007. External debt has steadily crept upwards since then, amounting to 34.7 percent of GDP by end-June 2011.[2,3] In present value (PV) terms, the public and publicly guaranteed sector (PPG) external debt stood at about 26.7 percent of GDP at end-June 2011, or 88.1 percent of exports, while public external debt service was around 1 percent of exports. The current DSA only refers to central government debt, except for a US$135 million guarantee extended to the power utility, TANESCO, but contingent risk from debt by other state-owned enterprises and pension funds could be sizable.[4] The authorities intend to broaden their coverage to include contingent liabilities, including stepping up their compilation of data on debt guarantees. Public domestic debt stood at 10.6 percent of GDP at end-June 2011, up by 1.5 percent of GDP from the previous year.

3. **The authorities' medium-term policy is focused on stepping up public investment.** The poverty reduction strategy for 2011–2015 (MKUKUTA II) and the five-year development plan for 2012–2016 support growth, including through increased infrastructure spending, especially in transportation, power generation, and irrigation. Inadequate infrastructure is considered a key constraint to capacity building, the business environment, productivity and subsequently higher growth in the country and in the region. The authorities have been using the space provided under the PSI program for non-concessional external borrowing for development and infrastructure spending.

II. Baseline Assumptions

4. **Changes in baseline assumptions are minimal from the previous DSA (Box 1).** The medium-term growth path (of about 7.5 percent annually) is virtually unchanged. Similarly, inflation (GDP deflator) is projected at the Bank of Tanzania's medium-term

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[2] The debt stock excludes about US$907 million in HIPC-eligible arrears as of April 2012, which are expected to be canceled upon the conclusion of formal agreements on HIPC debt relief.

[3] Tanzania's average CPIA score from 2009-2011 was 3.77, which places it in the "strong" performance category.

[4] A recent World Bank study indicates that the first scheme PSPF, among existing pension funds, would be bankrupt by 2015 and would have to call on the implicit government guarantee. The system remains underfunded and creates new fiscal obligations for the government every year until pension system reforms take place. The Bank estimates that, in the absence of reforms, contingent liabilities related to pension funds could amount to US$15 billion in present value terms as of 2011 (59 percent of 2012 GDP).

objective of 5 percent. The noninterest current account deficit is expected to increase in 2012 and 2013 before improving steadily to about 7.9 percent of GDP in the long term, due to the supply response to the buildup in infrastructure.

Box 1. Comparison with the Previous DSA

Changes in assumptions with respect to the previous DSA are mostly limited to updating prices and interest rates to reflect prevailing market conditions and incorporating the terms of external nonconcessional borrowing and revisions in the debt stock as provided by the authorities as they proceed with upgrading their data base and debt monitoring capacity.

- **Growth:** Growth is projected to remain at 7.5 percent over the medium and long term.
- **Exports and imports:** Export growth is kept somewhat higher than import growth to reflect higher infrastructure spending and export-led growth.
- **Development spending:** Development spending increases from 7.9 percent of GDP in 2011 to an average of 9.8 percent during 2012-2014, which then declines to around 8 percent due to an assumed decline in external non-concessional borrowing, before going back to 9.5 percent in the long run.
- **External nonconcessional borrowing:** Contracting and guaranteeing of external non-concessional debt during the PSI program period through 2013 is projected at US$1.77 billion, up from an earlier assumption of US$1.5 billion; this figure includes US$135 million of government guarantee for the power utility TANESCO. The estimated terms of this borrowing are incorporated. As in the previous DSA, non-concessional borrowing is assumed to average 1 percent of GDP a year after the PSI program period. The assumed average interest rate remains at 8 percent, in line with prevailing market conditions.
- **Foreign concessional loans and grants:** External grants decline to about 3 percent of GDP by 2015 and thereafter, lower than in the previous DSA. Foreign concessional loans also decline in percent of GDP to reflect a gradual reduction in aid dependency.
- **Fiscal deficit:** The projected fiscal deficit for 2012 is slightly higher compared to the previous DSA. However, the overall fiscal deficit declines to 3 percent of GDP by 2017 and then further toward 2.5 percent of GDP. This is consistent with a decline in the primary deficit to below its debt-stabilizing level of 2-2½ percent of GDP (Table 3). The fiscal consolidation is expected to be achieved through efficiency gains from strengthened tax administration, tax reforms, including the introduction of a new VAT law, and prioritization of expenditure. The alternative scenario whereby the primary deficit is fixed throughout the entire projection period shows substantial deterioration in all debt indicators.

5. **Borrowing assumptions are slightly revised.** Domestic and external non-concessional borrowing is expected to be used to finance infrastructure investment. This includes contracted non-concessional external financing of US$1.77 billion over the PSI

program period (with disbursements of US$55.3 million in 2011, US$642.7 million in 2012, and US$978.1 million expected in 2013) and 1 percent of GDP for the remainder of the projection period. Domestic financing is projected at about 1 percent of GDP for 2012–2015 and not exceeding 1 percent of GDP thereafter. The real interest rates on new domestic borrowing are assumed to increase gradually toward 3.5 percent (with automatic rollover), while external nonconcessional borrowing is assumed to have an average nominal interest rate of 8 percent, with a 1-year grace period and 10-years' maturity.

6. **Government revenues are assumed to increase as a percent of GDP while external grants and concessional loans will decline.** Domestic revenues (excluding grants) grow from 17.4 percent of GDP in 2012 to about 22.1 percent of GDP by 2032, consistent with IMF staff estimates of Tanzania's tax potential. On the other hand, external grants decline from 6.0 percent of GDP in 2012 to 3 percent of GDP by 2015 and thereafter. External concessional loans (both program and project loans) would increase from 3.2 percent of GDP in 2012 to 4.6 percent of GDP in 2013 due to expected concessional project loans from China to build a new gas pipeline to bring lower cost natural gas from shallow water offshore reserves to the Dar es Salaam area. External concessional loans are then expected to start declining, reaching 2 percent of GDP by 2017, consistent with a gradual reduction in Tanzania's aid dependency. Annual development spending is assumed to stabilize at 9.5 percent of GDP for the long term. Annual maintenance costs equal to 5 percent of the total value of the accumulated additional infrastructure spending are added to government recurrent spending throughout the period.

7. **Further strengthening of Tanzania's debt management capacity and operations is needed, and the authorities are taking steps in this direction.** The authorities have developed a medium-term debt management strategy based on quantitative analysis of costs and risks of alternative strategies. To further consolidate debt management, the authorities intend to establish a new Debt Management Office in the Ministry of Finance, which is expected to consolidate Tanzania's fragmented debt management functions, improve capacity, debt monitoring, and compile data on government debt guarantees on a quarterly basis. Given Tanzania's rising debt, it is important to be able to monitor debt accurately, promote effective inter-agency coordination on debt management and debt sustainability issues, and improve consistency and accuracy in compiling and reporting debt data. In addition, investment projects need to be subject to a sound evaluation and prioritization process, including assessing economic returns from infrastructure investments from external non-concessional borrowing, to ensure high returns and growth benefits from additional borrowing.

III. External and Fiscal Debt Sustainability Analysis

8. **The risk of external debt distress remains low under the baseline scenario.** Debt indicators are slightly higher than in the last DSA exercise, but do not jeopardize long-run

sustainability (Figure 1). Debt service indicators increase gradually throughout the projection period, but stay below risk thresholds. The PV of public external debt-to-GDP ratio would increase from 28.2 percent of GDP in 2012 to 31.8 percent by 2013, before falling to 15.6 percent by the end of the projection period. The PV of debt-to-exports is expected to peak at 98.7 percent of GDP in 2013, before declining to 38.4 percent in 2032. The debt service-to-export and debt service-to-revenues ratios would reach 5.5 and 10.3 percent by 2022, respectively, before falling to 4.6 and 8.4 percent, respectively, by 2032. The rising debt service-to-revenue ratio for both external and total public debt despite a rising revenue-to-GDP ratio and a declining debt-GDP path reflects the shorter maturity and grace period of external nonconcessional borrowing, which has risen significantly in recent years with a bunching of disbursements in 2013.

9. **Alternative scenario and shock analysis indicate that Tanzania's debt dynamics remains sensitive to the terms of external borrowing.** Tanzania's public external debt would remain below the relevant risk thresholds under the standard bound tests and extreme shocks.[5] The alternative scenario based on less favorable financing terms shows the largest deterioration for most indicators (e.g. the PV of debt-to-GDP ratio increases from 28 percent in 2012 to 39 percent in 2016, before declining to 32 percent in 2032). The high investment, low growth alternative scenario shows a rapid increase in PV of debt-to-GDP, exports, and revenue, in the medium term—close to the levels of the most extreme shock scenarios—before falling close to the baseline scenarios in the long run.

10. **The path of total public debt, which includes external debt and domestic debt, is also projected to be sustainable**. The PV of public debt-to-GDP ratio increases from 38.2 percent in 2012 to 41.3 percent by 2013, before declining to 25.0 percent by the end of the projection period. Similarly the PV of public debt-to revenue ratio peaks at 186.8 percent in 2015 before declining to 99.4 in 2032. Debt service-to-revenue increases from 5.9 percent in 2012 to 12.0 in 2022, before falling to10.2 by end of the projection period (Figure 2).

11. **Public debt sustainability is particularly sensitive to the fiscal position (Figure 2).** Under an alternative scenario, for which the primary deficit is fixed at recent levels throughout the projection period, all debt indicators deteriorate substantially. Under this scenario, the PV of debt-to-GDP ratio would keep rising throughout the projection period, from 38 percent to 65 percent (A2 in Table 4). Although some reduction in the primary deficit is projected to have been achieved in 2012 (after increases in earlier years on account of expansionary fiscal policies during the global recession), further strengthening of the primary balance will be critical to prevent an unsustainable debt buildup. Revenue

[5] Debt burden thresholds for Tanzania 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 22 percent.

reform will be imperative to generate sufficient revenues in a non-distortionary manner. Balancing higher demands on the budget against financing constraints will also call for significant increases in spending efficiency. Reducing the deficit, while funding additional expenditures in areas where they are critically needed, such as health and education, will likely require ambitious tax policy and PFM measures, areas where IMF and World Bank technical assistance has recently been provided.

IV. Possible Impact of Exploiting Natural Gas Resources

12. **The DSA does not take into account the possible long-term impact of exploiting Tanzania's deep water natural gas resources**. Shallow water natural gas reserves of around 2 trillion cubic feet (TCF) have already been commercialized for the domestic market, and recent deep water exploration by major petroleum companies has confirmed further large deposits. By June 2012, estimated total recoverable natural gas volumes have been increased by 12 TCF, and press reports speculate that the upside potential is as much as 60 TCF, reflecting newly discovered deep water reserves (thereby approaching the size of Mozambique's offshore reserves, currently confirmed at 70–100 TCF). If current discoveries are developed, commercial production of liquid natural gas (LNG) could be upwards of 0.4 TCF per annum.

13. **Commercialization of the offshore reserves would take about a decade**. The next five to ten years would see continuing exploration. After commerciality has been declared this would be followed by design and negotiation of investment proposals. If an LNG export project were to advance, cumulative foreign direct investments could be in the $20–30 billion range; one scenario would be for the peak level of direct investment to be concentrated in 2017–2020, with LNG production starting between 2020 and 2025 and extending over perhaps two decades. The balance of payments and fiscal impact is highly uncertain, not least given the recent variation in natural gas prices.[6] Prices have declined over the past decade from $10 per 1,000 cubic foot to the $2–3 range, following the expansion of US natural gas production. At a prospective price of $10 per 1,000 cubic foot in the Far East export market, export earnings could significantly exceed $3 billion annually (10 percent of current GDP). The fiscal impact would build up gradually, with tax yields initially depressed by deductions on investments. But from the mid-2020s, fiscal receipts might be in the range of two-thirds of net gas export revenues.

14. **Debt dynamics would be substantially enhanced by expanded gas production**. The potential start of large-scale gas exports around 2020 would reduce debt- and debt service to export ratios in the second half of the DSA period. Public debt accumulation would also be favorably impacted over this period, with rising gas sector revenues reducing

[6] Prices have declined over the past decade from $10 per 1,000 cubic foot to the $2–3 range, following the expansion of US natural gas production.

public borrowing needs and surplus fiscal resources potentially saved in a "future generations" fund, thereby also reducing net public debt. A more specific DSA scenario incorporating new gas sector production could be developed in the coming years when the size of Tanzania's gas reserves is known with more confidence.

V. Conclusion

15. **Based on the updated DSA, Tanzania's debt indicators are expected to remain below indicative, country-specific thresholds.** The projected borrowing to finance infrastructure investments over the medium term will increase the present value (PV) of debt-to-GDP and other indicators in the near term, but should not jeopardize long-term debt sustainability. While in general the downside scenarios and sensitivity analysis support the assessment of a low risk of debt distress, increased non-concessional borrowing on expensive terms, and large and persistent primary deficits can reverse this outlook. Therefore a sound debt management strategy, a conservative approach to non-concessional borrowing, and commitment to fiscal discipline are key factors for maintaining debt and fiscal sustainability. There is also potential for significantly more favorable debt- and debt service indicators than in the current DSA if the ongoing deep-water gas exploration leads to successful commercialization of large-scale reserves in the coming decade and if the fiscal revenues from these resources are managed wisely.

Table 1: External Debt Sustainability Framework, Baseline Scenario, 2009–2032 1/

(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average 7/	Standard Deviation 7/	Projections									
	2009	2010	2011			2012	2013	2014	2015	2016	2017	2012-2017 Average	2022	2032	2018-2032 Average
External debt (nominal) 1/	**27.1**	**29.9**	**34.7**			**35.4**	**39.4**	**40.0**	**41.0**	**41.8**	**42.6**		**40.4**	**34.0**	
o/w public and publicly guaranteed (PPG)	22.4	24.9	28.5			30.3	35.3	36.3	36.2	35.7	34.8		29.0	22.2	
Change in external debt	3.7	2.8	4.8			0.7	4.0	0.6	1.0	0.8	0.8		-0.8	-0.4	
Identified net debt-creating flows	2.7	2.7	3.8			7.1	7.1	3.9	3.6	3.4	3.1		1.4	1.2	
Non-interest current account deficit	**9.9**	**8.9**	**9.1**	**6.8**	**3.8**	**14.5**	**14.1**	**11.8**	**11.4**	**11.1**	**10.5**		**8.9**	**7.9**	8.6
Deficit in balance of goods and services	13.3	11.6	12.3			17.1	15.6	12.9	12.4	12.1	11.6		9.7	7.9	
Exports	24.3	25.4	30.3			32.0	32.3	33.2	33.8	34.2	34.8		37.1	40.7	
Imports	37.6	37.0	42.5			49.0	47.9	46.0	46.2	46.3	46.4		46.8	48.6	
Net current transfers (negative = inflow)	-4.5	-3.9	-4.2	-3.7	0.9	-3.6	-3.0	-2.8	-2.6	-2.5	-2.3		-1.8	-1.1	-1.6
o/w official	-3.4	-2.8	-3.1			-2.6	-2.0	-1.9	-1.7	-1.6	-1.5		-1.2	-0.7	
Other current account flows (negative = net inflow)	1.1	1.2	1.1			1.0	1.5	1.7	1.6	1.5	1.3		1.0	1.1	
Net FDI (negative = inflow)	**-5.2**	**-4.4**	**-4.5**	**-4.3**	**0.8**	**-5.7**	**-5.6**	**-6.1**	**-6.0**	**-5.9**	**-5.7**		**-5.9**	**-5.5**	-5.8
Endogenous debt dynamics 2/	**-1.9**	**-1.8**	**-0.8**			**-1.7**	**-1.5**	**-1.8**	**-1.8**	**-1.8**	**-1.7**		**-1.6**	**-1.2**	
Contribution from nominal interest rate	0.2	0.2	0.2			0.4	0.6	0.7	0.8	0.9	1.0		1.3	1.2	
Contribution from real GDP growth	-1.4	-1.6	-1.9			-2.1	-2.1	-2.5	-2.6	-2.7	-2.7		-2.8	-2.4	
Contribution from price and exchange rate changes	-0.7	-0.3	0.9			…	…	…	…	…	…		…	…	
Residual (3-4) 3/ 4/	**1.0**	**0.0**	**1.0**			**-6.5**	**-3.1**	**-3.3**	**-2.6**	**-2.7**	**-2.2**		**-2.2**	**-1.6**	
o/w exceptional financing	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
PV of external debt 5/	...	...	32.9			33.3	36.0	35.3	36.0	36.7	37.6		35.2	27.4	
In percent of exports	...	...	108.5			104.2	111.6	106.5	106.5	107.4	108.0		94.9	67.4	
PV of PPG external debt	**...**	**...**	**26.7**			**28.2**	**31.8**	**31.6**	**31.2**	**30.6**	**29.8**		**23.9**	**15.6**	
In percent of exports	**...**	**...**	**88.1**			**88.2**	**98.7**	**95.3**	**92.4**	**89.5**	**85.5**		**64.3**	**38.4**	
In percent of government revenues	**...**	**...**	**162.3**			**161.9**	**169.8**	**167.9**	**167.2**	**160.5**	**152.8**		**119.6**	**70.7**	
Debt service-to-exports ratio (in percent)	**4.6**	**3.0**	**4.0**			**3.1**	**4.5**	**4.8**	**5.2**	**5.7**	**6.6**		**8.9**	**7.9**	
PPG debt service-to-exports ratio (in percent)	**0.9**	**0.9**	**1.0**			**1.8**	**3.2**	**3.6**	**4.3**	**4.3**	**4.8**		**5.5**	**4.6**	
PPG debt service-to-revenue ratio (in percent)	**1.4**	**1.5**	**1.9**			**3.3**	**5.5**	**6.4**	**7.7**	**7.8**	**8.5**		**10.3**	**8.4**	
Total gross financing need (Billions of U.S. dollars)	1.2	1.2	1.4			2.5	2.8	2.3	2.4	2.6	2.9		4.0	8.8	
Non-interest current account deficit that stabilizes debt ratio	6.2	6.1	4.3			13.8	10.1	11.1	10.4	10.3	9.7		9.6	8.3	
Key macroeconomic assumptions															
Real GDP growth (in percent)	6.7	6.5	6.7	7.0	0.3	6.4	6.6	6.9	7.1	7.1	7.0	6.9	7.5	7.5	7.5
GDP deflator in US dollar terms (change in percent)	3.2	1.3	-2.9	2.3	6.0	2.0	4.9	2.1	1.9	2.0	2.0	2.5	1.9	1.9	1.9
Effective interest rate (percent) 6/	1.1	0.8	0.8	0.6	0.5	1.2	2.0	2.0	2.2	2.3	2.5	2.0	3.3	3.7	3.5
Growth of exports of G&S (US dollar terms, in percent)	5.2	12.8	23.7	16.7	7.3	14.5	12.9	12.3	11.3	10.5	11.1	12.1	11.0	10.5	10.7
Growth of imports of G&S (US dollar terms, in percent)	4.4	6.2	19.1	18.9	11.4	25.0	9.2	5.0	9.6	9.4	9.3	11.3	10.0	10.0	9.9
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	20.3	18.7	30.8	29.0	26.2	25.0	25.0	23.8	22.8	23.6
Government revenues (excluding grants, in percent of GDP)	16.2	15.9	16.4			17.4	18.8	18.8	18.7	19.1	19.5		20.0	22.1	20.6
Aid flows (in Billions of US dollars) 8/	1.1	1.1	1.1			2.1	2.1	1.9	1.7	1.7	1.8		2.7	6.7	
o/w Grants	1.1	1.1	1.1			1.5	1.2	1.1	1.0	1.1	1.2		1.9	4.8	
o/w Concessional loans	0.0	0.0	0.0			0.6	0.9	0.8	0.6	0.6	0.6		0.8	1.9	
Grant-equivalent financing (in percent of GDP) 9/	...	...	...			7.1	5.7	5.1	4.1	3.8	3.7		3.7	3.6	3.7
Grant-equivalent financing (in percent of external financing) 9/	...	...	...			62.0	46.3	58.6	61.0	61.9	62.5		62.9	63.1	62.9
Memorandum items:															
Nominal GDP (Billions of US dollars)	21.0	22.6	23.4			25.4	28.4	31.0	33.9	37.0	40.4		63.8	159.4	
Nominal dollar GDP growth	10.1	7.9	3.5			8.5	11.8	9.2	9.2	9.2	9.1	9.5	9.6	9.6	9.6
PV of PPG external debt (in Billions of US dollars)			5.8			7.0	8.8	9.7	10.4	11.2	11.9		15.1	24.8	
(PVt-PVt-1)/GDPt-1 (in percent)						**5.1**	**6.9**	3.1	2.5	2.2	1.9	3.6	1.1	0.9	1.1
Gross workers' remittances (Billions of US dollars)	…	…	…			…	…	…	…	…	…		…	…	
PV of PPG external debt (in percent of GDP + remittances)	...	...	26.7			28.2	31.8	31.6	31.2	30.6	29.8		23.9	15.6	
PV of PPG external debt (in percent of exports + remittances)	...	...	88.1			88.2	98.7	95.3	92.4	89.5	85.5		64.3	38.4	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	1.0			1.8	3.2	3.6	4.3	4.3	4.8		5.5	4.6	

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/ About 3 percent of the residual in 2012 and a large part in later years is explained by capital transfers.
5/ Assumes that PV of private sector debt is equivalent to its face value.
6/ Current-year interest payments divided by previous period debt stock.
7/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.
8/ Defined as grants, concessional loans, and debt relief.
9/ 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: Tanzania: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2012–2032

(In percent)

	Projections																
	2012	2013	2014	2015	2016	2017	**2022**	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
PV of debt-to GDP ratio																	
Baseline	28	32	32	31	31	30	**24**	23	22	21	20	19	18	18	17	16	16
A. Alternative Scenarios																	
A1. Key variables at their historical averages in 2012-2032 1/	28	26	23	21	18	16	**10**	10	10	10	10	11	11	11	11	12	12
A2. New public sector loans on less favorable terms in 2012-2032 2	28	34	38	38	39	38	**36**	35	35	34	34	33	33	33	32	32	32
A3. High investment, low growth	28	33	35	36	36	36	**31**	30	29	27	26	25	23	22	21	20	18
B. Bound Tests																	
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	28	31	31	31	30	29	**24**	23	22	21	20	19	18	17	17	16	16
B2. Export value growth at historical average minus one standard deviation in 2013-2014 3/	28	32	34	33	33	32	**25**	24	23	22	21	20	19	18	17	17	16
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	28	34	36	36	35	34	**27**	26	25	24	23	22	21	20	19	19	18
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 4/	28	33	36	35	34	33	**26**	25	24	22	21	20	19	19	18	17	16
B5. Combination of B1-B4 using one-half standard deviation shocks	28	34	38	37	36	35	**28**	26	25	24	23	22	21	20	19	18	17
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 5/	28	43	44	43	42	41	**33**	31	30	29	28	26	25	24	23	22	22
PV of debt-to-exports ratio																	
Baseline	88	99	95	92	90	86	**64**	61	57	54	52	49	47	44	42	40	38
A. Alternative Scenarios																	
A1. Key variables at their historical averages in 2012-2032 1/	88	80	70	61	53	45	**27**	26	26	26	27	28	28	28	29	29	29
A2. New public sector loans on less favorable terms in 2012-2032 2	88	106	114	113	112	110	**96**	93	91	89	87	85	84	82	81	79	78
A3. High investment, low growth	87	101	105	106	105	103	**84**	80	76	71	67	63	60	56	52	49	45
B. Bound Tests																	
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	88	96	94	91	88	84	**63**	60	57	54	51	48	46	44	42	40	38
B2. Export value growth at historical average minus one standard deviation in 2013-2014 3/	88	102	108	104	101	96	**72**	67	63	60	57	54	51	48	46	43	41
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	88	96	94	91	88	84	**63**	60	57	54	51	48	46	44	42	40	38
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 4/	88	102	107	103	100	95	**70**	66	62	59	55	52	49	47	44	42	40
B5. Combination of B1-B4 using one-half standard deviation shocks	88	101	103	100	97	92	**68**	64	60	57	54	51	48	46	43	41	39
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 5/	88	96	94	91	88	84	**63**	60	57	54	51	48	46	44	42	40	38
PV of debt-to-revenue ratio																	
Baseline	162	170	168	167	161	153	**120**	113	107	102	96	91	86	82	78	74	71
A. Alternative Scenarios																	
A1. Key variables at their historical averages in 2012-2032 1/	162	138	124	110	94	80	**49**	48	49	49	50	51	52	52	53	53	54
A2. New public sector loans on less favorable terms in 2012-2032 2	162	183	200	205	202	197	**178**	174	170	166	162	158	155	152	149	146	144
A3. High investment, low growth	159	174	184	191	188	184	**157**	149	142	133	125	118	110	103	96	90	84
B. Bound Tests																	
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	162	165	166	165	158	151	**118**	112	106	100	95	90	85	81	77	73	70
B2. Export value growth at historical average minus one standard deviation in 2013-2014 3/	162	170	179	178	170	162	**125**	118	112	105	100	94	89	84	80	76	72
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	162	179	191	190	183	174	**136**	129	122	116	110	104	98	93	89	85	81
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 4/	162	176	189	187	179	170	**131**	123	116	109	103	97	91	86	82	77	73
B5. Combination of B1-B4 using one-half standard deviation shocks	162	183	199	198	189	180	**139**	131	123	116	110	103	98	92	87	83	79
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 5/	162	231	231	231	221	211	**165**	156	148	140	133	126	119	113	108	102	98

Table 2b: Tanzania: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2012–2032 (continued)

(In percent)

Debt service-to-exports ratio

Baseline	2	3	4	4	4	5	**6**	5	5	5	5	5	5	5	5	5	5
A. Alternative Scenarios																	
A1. Key variables at their historical averages in 2012-2032 1/	2	3	3	4	3	4	**3**	3	3	3	3	3	3	3	3	3	3
A2. New public sector loans on less favorable terms in 2012-2032 2	2	3	5	3	3	4	**6**	6	6	6	6	6	6	6	6	6	6
A3. High investment, low growth	2	3	4	5	5	6	**8**	7	7	7	7	7	7	7	6	6	6
B. Bound Tests																	
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	2	3	4	4	4	5	**6**	5	5	5	5	5	5	5	5	5	5
B2. Export value growth at historical average minus one standard deviation in 2013-2014 3/	2	3	4	5	5	5	**6**	6	6	6	6	6	5	5	5	5	5
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	2	3	4	4	4	5	**6**	5	5	5	5	5	5	5	5	5	5
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 4/	2	3	4	5	5	5	**6**	6	6	6	6	5	5	5	5	5	5
B5. Combination of B1-B4 using one-half standard deviation shocks	2	3	4	5	5	5	**6**	6	5	5	5	5	5	5	5	5	5
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 5/	2	3	4	4	4	5	**6**	5	5	5	5	5	5	5	5	5	5

Debt service-to-revenue ratio

Baseline	3	6	6	8	8	8	**10**	10	10	10	10	9	9	9	9	9	8
A. Alternative Scenarios																	
A1. Key variables at their historical averages in 2012-2032 1/	3	6	6	6	6	6	**6**	6	6	6	6	6	6	6	6	6	6
A2. New public sector loans on less favorable terms in 2012-2032 2	3	6	9	6	6	7	**11**	11	11	12	12	12	12	12	12	12	12
A3. High investment, low growth	3	6	7	9	9	10	**14**	14	13	13	13	13	12	12	12	11	11
B. Bound Tests																	
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	3	6	6	8	8	9	**10**	10	10	10	10	9	9	9	9	9	8
B2. Export value growth at historical average minus one standard deviation in 2013-2014 3/	3	6	7	8	8	9	**11**	11	10	10	10	10	10	9	9	9	9
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	3	6	7	9	9	10	**12**	11	11	11	11	11	11	10	10	10	10
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 4/	3	6	7	8	9	9	**11**	11	10	10	10	10	10	10	9	9	9
B5. Combination of B1-B4 using one-half standard deviation shocks	3	6	7	9	9	10	**12**	12	11	11	11	11	11	10	10	10	9
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 5/	3	8	9	11	11	12	**14**	14	13	13	13	13	13	13	12	12	12
Memorandum item:																	
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	8	8	8	8	8	8	**8**	8	8	8	8	8	8	8	8	8	8

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 3: Tanzania: 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/	30.8	34.0	39.2			40.3	44.7	45.6	45.5	44.9	44.0		38.3	31.5	
o/w foreign-currency denominated	22.4	24.9	28.5			30.3	35.3	36.3	36.2	35.7	34.8		29.0	22.2	
Change in public sector debt	-2.8	3.2	5.1			1.1	4.4	0.9	-0.1	-0.6	-0.9		-1.1	-0.4	
Identified debt-creating flows	1.9	4.3	4.6			1.0	4.2	1.0	-0.1	-0.6	-0.9		-1.2	-0.5	
Primary deficit	3.9	6.2	4.9	2.8	2.2	5.1	4.1	3.1	2.5	2.0	1.6	3.1	1.1	1.2	1.2
Revenue and grants	21.3	20.5	21.1			23.4	22.9	22.3	21.7	22.1	22.5		23.0	25.1	
of which: grants	5.1	4.6	4.7			6.0	4.2	3.5	3.0	3.0	3.0		3.0	3.0	
Primary (noninterest) expenditure	25.2	26.7	26.0			28.5	27.0	25.4	24.2	24.1	24.1		24.1	26.3	
Automatic debt dynamics	-1.8	-1.8	-0.3			-4.0	-3.0	-3.2	-2.7	-2.6	-2.6		-2.2	-1.7	
Contribution from interest rate/growth differential	-2.4	-1.9	-2.2			-2.4	-2.4	-2.7	-2.7	-2.6	-2.6		-2.2	-1.7	
of which: contribution from average real interest rate	-0.3	0.0	-0.1			-0.1	0.2	0.2	0.3	0.4	0.4		0.5	0.5	
of which: contribution from real GDP growth	-2.1	-1.9	-2.1			-2.4	-2.5	-2.9	-3.0	-3.0	-2.9		-2.7	-2.2	
Contribution from real exchange rate depreciation	0.6	0.0	1.9			-1.6	-0.7	-0.5	0.0	0.0	0.0		...	...	
Other identified debt-creating flows	-0.2	0.0	0.0			0.0	3.1	1.2	0.0	0.0	0.0		0.0	0.0	
Privatization receipts (negative)	-0.2	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	3.1	1.2	0.0	0.0	0.0		0.0	0.0	
Residual, including asset changes	-4.7	-1.1	0.6			0.1	0.2	-0.1	0.0	0.0	0.0		0.1	0.1	
Other Sustainability Indicators															
PV of public sector debt	...	...	37.3			38.2	41.3	40.9	40.5	39.9	39.1		33.1	25.0	
o/w foreign-currency denominated	...	...	26.7			28.2	31.8	31.6	31.2	30.6	29.8		23.9	15.6	
o/w external	...	...	26.7			28.2	31.8	31.6	31.2	30.6	29.8		23.9	15.6	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	11.0	11.2	10.4			11.4	10.6	9.6	9.2	8.7	8.5		8.3	8.3	
PV of public sector debt-to-revenue and grants ratio (in percent)	…	…	176.8			162.9	180.4	183.1	186.8	180.7	173.6		144.0	99.4	
PV of public sector debt-to-revenue ratio (in percent)	…	…	226.9			219.3	220.3	217.3	216.8	209.1	200.4		165.6	112.8	
o/w external 3/	…	…	162.3			161.9	169.8	167.9	167.2	160.5	152.8		119.6	70.7	
Debt service-to-revenue and grants ratio (in percent) 4/	4.8	4.5	5.4			5.9	8.2	8.7	9.7	9.9	10.5		12.0	10.2	
Debt service-to-revenue ratio (in percent) 4/	6.3	5.8	6.9			7.9	10.0	10.4	11.3	11.5	12.1		13.8	11.6	
Primary deficit that stabilizes the debt-to-GDP ratio	6.7	2.9	-0.2			3.9	-0.3	2.2	2.7	2.6	2.5		2.2	1.6	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	6.7	6.5	6.7	7.0	0.3	6.4	6.6	6.9	7.1	7.1	7.0	6.9	7.5	7.5	7.5
Average nominal interest rate on forex debt (in percent)	0.7	0.5	0.8	0.5	0.4	1.2	2.1	2.1	2.2	2.2	2.2	2.0	2.7	3.1	2.9
Average real interest rate on domestic debt (in percent)	-2.1	2.0	2.0	-0.1	2.4	-1.5	-0.4	2.0	2.8	3.3	3.3	1.6	3.5	3.5	3.5
Real exchange rate depreciation (in percent, + indicates depreciation)	3.6	0.1	8.3	1.0	6.6	-5.9	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	8.6	7.2	8.2	7.6	1.1	10.7	10.3	6.9	5.0	5.0	5.0	7.2	5.0	5.0	5.0
Growth of real primary spending (deflated by GDP deflator, in percent)	0.2	0.1	0.0	0.1	0.1	0.2	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Grant element of new external borrowing (in percent)	...	...	...	…	…	20.3	18.7	30.8	29.0	26.2	25.0	25.0	23.8	22.8	...

Sources: Country authorities; and staff estimates and projections.

1/ Covers central government debt, except for a US$135 million guarantee extended to the power utility TANESCO.

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.

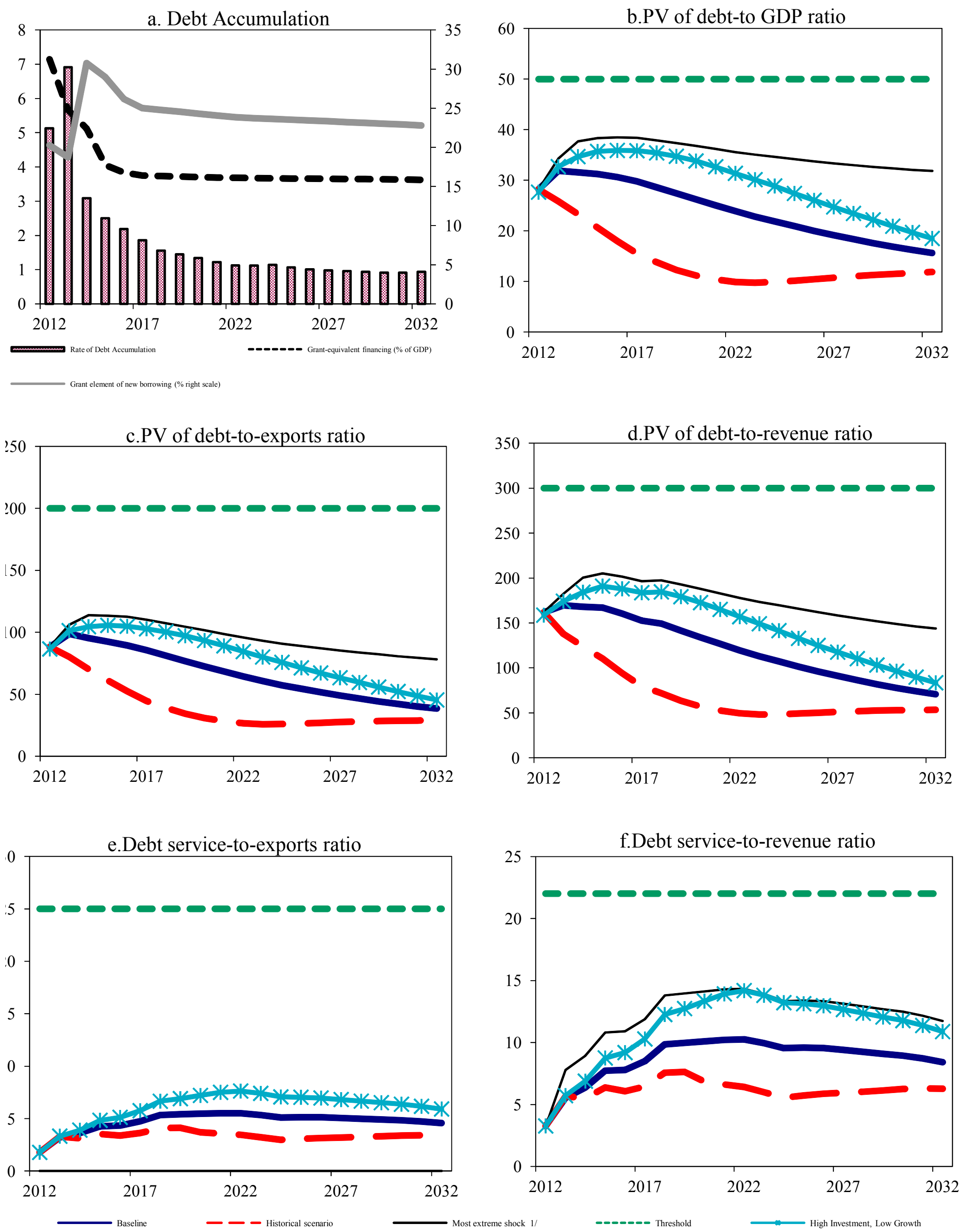
5/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.

Table 4: Tanzania: 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	38	41	41	41	40	39	33	25
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	38	40	39	39	39	40	41	42
A2. Primary balance is unchanged from 2012	38	42	43	45	47	49	56	65
A3. Permanently lower GDP growth 1/	38	41	41	41	40	39	34	27
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2013-2014	38	41	41	41	40	39	33	26
B2. Primary balance is at historical average minus one standard deviations in 2013-2014	38	42	43	43	42	41	35	26
B3. Combination of B1-B2 using one half standard deviation shocks	38	41	41	41	40	39	33	25
B4. One-time 30 percent real depreciation in 2013	38	53	51	50	49	48	40	31
B5. 10 percent of GDP increase in other debt-creating flows in 2013	38	50	49	49	48	47	39	29
PV of Debt-to-Revenue Ratio 2/								
Baseline	163	180	183	187	181	174	144	99
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	163	175	177	181	179	176	176	166
A2. Primary balance is unchanged from 2012	163	184	195	209	213	218	244	260
A3. Permanently lower GDP growth 1/	163	181	183	187	182	175	147	109
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2013-2014	163	180	184	187	181	175	145	101
B2. Primary balance is at historical average minus one standard deviations in 2013-2014	163	184	194	197	191	183	151	103
B3. Combination of B1-B2 using one half standard deviation shocks	163	179	185	189	183	175	145	99
B4. One-time 30 percent real depreciation in 2013	163	231	228	230	221	211	175	123
B5. 10 percent of GDP increase in other debt-creating flows in 2013	163	218	220	224	216	208	171	114
Debt Service-to-Revenue Ratio 2/								
Baseline	6	8	9	10	10	10	12	10
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	6	8	9	9	10	10	13	14
A2. Primary balance is unchanged from 2012	6	8	9	10	11	12	16	20
A3. Permanently lower GDP growth 1/	6	8	9	10	10	11	12	11
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2013-2014	6	8	9	10	10	11	12	10
B2. Primary balance is at historical average minus one standard deviations in 2013-2014	6	8	9	10	10	11	13	11
B3. Combination of B1-B2 using one half standard deviation shocks	6	8	9	10	10	11	12	10
B4. One-time 30 percent real depreciation in 2013	6	9	11	13	13	14	17	16
B5. 10 percent of GDP increase in other debt-creating flows in 2013	6	8	10	12	12	12	15	12

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.

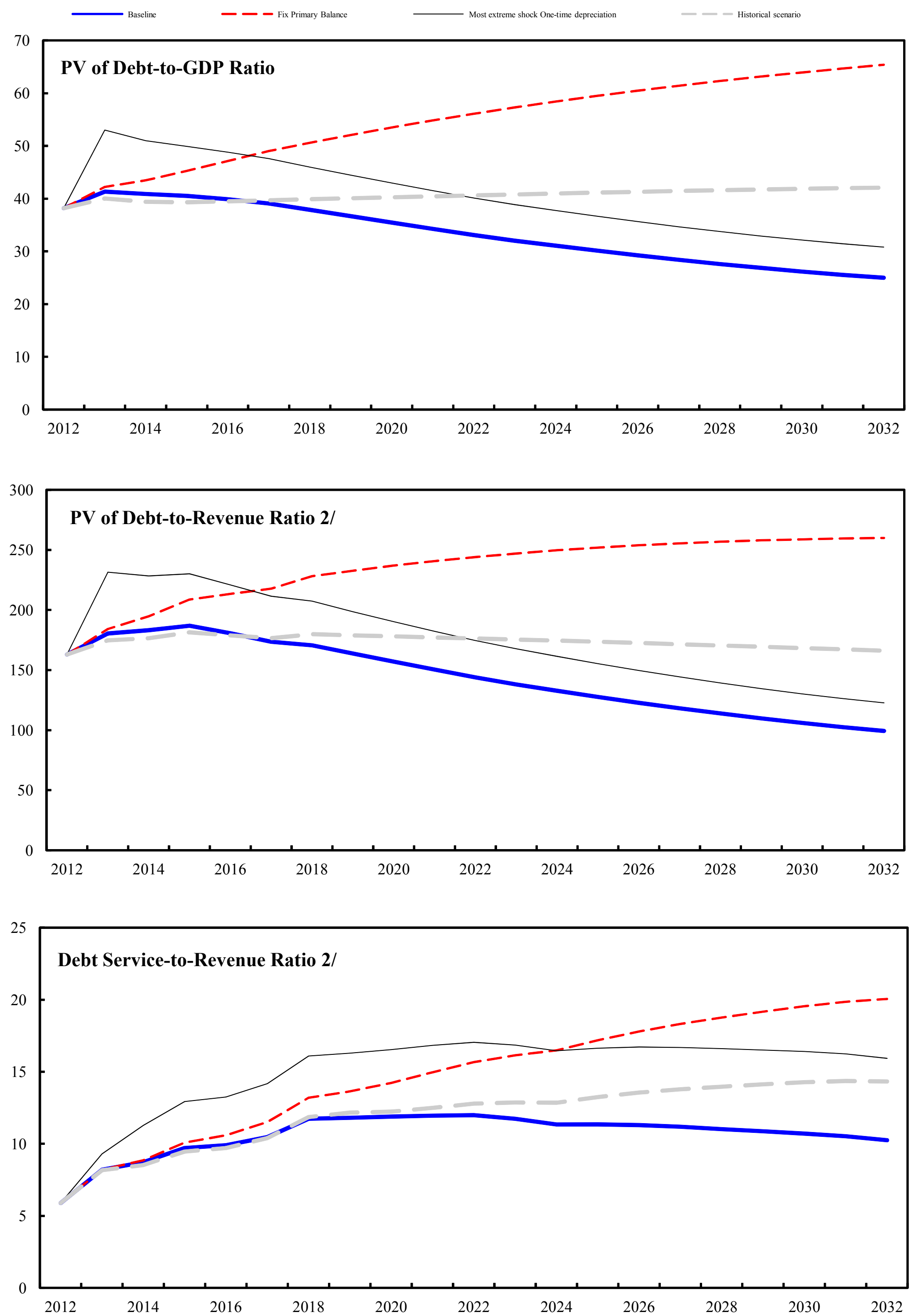
Figure 1: Tanzania: Indicators of Public and Publicly Guaranteed External Debt under Alternative Scenarios, 2012–2032 [1]



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2022. 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 shock and in figure f. to a One-time depreciation shock

Figure 2: Tanzania: 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.