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UNITED REPUBLIC OF TANZANIA

Joint World Bank/IMF Debt Sustainability Analysis

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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 external non-concessional borrowing (USD1.5 billion over the three-year PSI period and 1 percent of GDP per year thereafter) increases the present value (PV) of debt-to-GDP and other indicators, it should not jeopardize long-term debt sustainability. However, alternative scenarios suggest that debt indicators would be sensitive to further borrowing on expensive terms. In addition, public debt sustainability analysis 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.

I. Background

1. **Tanzania's macroeconomic performance over the last decade has been strong.** Growth averaged 7 percent per year during 2002–09 which, together with a sharp increase in revenue collection and increased donor funding, provided room for a substantial expansion in public spending. Inflation was kept in check for much of this period, but accelerated in 2008 (13.5 percent at end year), driven mainly by the spike in international food and fuel prices. However, it slowed back to around 5 percent by 2009. Tanzania has coped well with the global crisis, in part thanks to supportive fiscal policies. Growth quickly rebounded to its pre-crisis level, reaching about 7 percent by end of 2010.

The positive overall economic outlook is tempered in the near term by below-normal rains and power rationing. Growth is projected to slow to 6 percent in the coming months but to

[1] Prepared by the IMF and World Bank staff in consultation with the authorities. This DSA replaces the previous one prepared in May 2010. Tables and figures are in fiscal years (July–June). For example, 2011 refers to fiscal year 2010/11.

rebound to an average of 6.6 percent in the next fiscal year, once the power situation normalizes, and 7.4 percent by 2012/13. Growth is expected to rise to 7.5 percent of GDP over the medium term, thanks to large investments in mining and continued growth in the non-mining economy. Higher international food and fuel prices could push up inflation in the second half of 2011 before it slows back down to 5 percent. Official international reserves are at a comfortable level (US$3.9 billion as of end-June 2011, more than 4.7 months of current year imports of goods and services), partly reflecting solid export growth, Fund balance of payments support under the Exogenous Shock Facility (ESF), and the SDR allocation.

2. **Tanzania has benefited from extensive debt relief.** HIPC and MDRI debt relief reduced Tanzania's debt burden sharply to US$3.4 billion, or 20.6 percent of GDP at end-June 2007. Debt policy has remained prudent since the provision of debt relief, and total external debt amounted to US$6.5 billion or 30 percent of GDP by end-June 2010.[2] In present value (PV) terms, the public and publicly guaranteed sector (PPG) external debt stood at about 22.7 percent of GDP at end-June 2010, or 90.5 percent of exports, while public external debt service was around 0.8 percent of exports.[3] 64 percent of PPG external debt was owed to multilateral (mainly IDA) and 15 percent to bilateral creditors. Tanzania's public domestic debt stood at TSh 3.96 trillion (13.1 percent of GDP) at end-June 2010, up slightly from the previous year. About half of the domestic debt is in short-term Treasury bills.

End-June 2010 Debt Stocks

External Debt (USD, Million)	6,558.3
By Creditor Category	
Multilateral Debt	4,204.8
Bilateral Debt	955.4
Commercial Debt	815.2
Other	582.9
Domestic Debt (USD, Million)	2841.7

3. **The authorities' medium-term policy is focused on stepping up public investment.** One of the thrusts of the new poverty reduction strategies (MKUKUTA II and MKUZA II) which cover 2010-2015, is to support growth through increased infrastructure spending, especially in transportation, power generation, and irrigation.[4] 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.[5] While concessional loans and grants will remain the main source of financing for development

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[2] The debt stock excludes about US$560 million in HIPC-eligible arrears, which are expected to be canceled upon conclusion of formal agreements on HIPC debt relief.

[3] Only refers to central government debt. Work is ongoing to broaden the coverage to include contingent liabilities, including government guarantees to state-owned enterprises.

[4] A Joint Staff Advisory Note (JSAN), reviews Tanzania's Second National Strategy for Growth and Reduction of Poverty (NSGRP-MKUKUTA II) which was made public in December 2010 (EBD/11/4, 28/1/2011).

[5] See IMF Working Paper 08/256 "Creating Sustainable Fiscal Space for Infrastructure: the Case of Tanzania," IMF Board paper "Public Investment and Fiscal Policy" (SM/04/93), and *Africa's infrastructure: a time for transformation* (World Bank, 2010).

spending, the authorities are currently exploring sources for semi-concessional and non-concessional external borrowing, as well as domestic funding sources.

II. Baseline Assumptions

4. **Changes in baseline assumptions are minimal from the previous DSA (Box 1).** The growth path (with medium-term growth at about 7.5 percent annually) is virtually unchanged. Similarly, inflation (GDP deflator) is projected at the Bank of Tanzania's medium-term objective of 5 percent; the real exchange rate is assumed to stay constant at 2009/10 levels throughout the projection period; and export/import price index deflators are assumed to grow 2 percent annually. The noninterest current account deficit is expected to increase in 2010–12 before improving steadily to below 6 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 largely limited to updating prices and interest rates in view of prevailing market conditions; and incorporating 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 at 7.5 percent over the medium- and long-term, slightly above the rate recorded prior to the global financial crisis on account of the stepping up of infrastructure.
- **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 8.6 percent of GDP in 2009/10 to an average of 9.8 percent during 2010–13, and thereafter 9.4 percent.
- **External non-concessional borrowing:** As in the previous DSA, non-concessional borrowing is assumed to increase by 1 percent of GDP a year after the PSI program period. The average interest rate has been lowered from 9 to 8 percent in line with prevailing market conditions.
- **Foreign concessional loans and grants:** External grants decline to about 3 percent of GDP by 2019/20 and thereafter, compared to 4.5 percent in the previous DSA. Foreign concessional loans also decline in percent of GDP to reflect a gradual reduction in aid dependency.
- **Fiscal financing gap:** The fiscal financing gap increased substantially in 2010/11 from the previous year. The alternative scenario whereby the primary deficit is fixed at 2010/11 level throughout the entire projection period shows substantial deterioration in all debt indicators.

5. **Borrowing assumptions are also largely unchanged.** Domestic and external non-concessional borrowing is expected to be used to finance infrastructure investment. This includes non-concessional external financing of US$1.5 billion over the PSI program period

(US$525 million in 2010/11 and 2011/12, and US$450 million in 2012/13) and 1 percent of GDP for the remainder of the projection period. Domestic financing is projected at about 1 percent of GDP for 2010/11–2014/15 and not exceeding 1 percent of GDP thereafter. The new domestic borrowing is assumed to be at an interest rate of 10 percent (with automatic rollover), while external borrowing is assumed to have an average interest rate of 8 percent, with a 1-year grace period and 10-years' maturity. The authorities are also considering issuance of a Eurobond, likely in 2011/12.

6. **Government revenues are assumed to increase as a percent of GDP while external grants and concessional loans will decline.** Domestic revenues grow from 16.1 percent of GDP in 2010/11 to about 20 percent of GDP by 2018/19 and then 21.4 percent by 2030/31—within IMF staff estimates of Tanzania's tax potential. On the other hand, external grants decline from 5.7 percent of GDP in 2010/11 to about 3 percent of GDP by 2019/20 and thereafter. External concessional loans (both program and project loans) would fall from 4 percent of GDP in 2010/11 to about 2.7 percent of GDP by 2030/31, consistent with a gradual reduction in Tanzania's aid dependency. Annual development spending is assumed to stabilize at 9.4 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. **Work is underway to strengthen institutional mechanisms to ensure the quality of new infrastructure spending and an appropriate risk management strategy.** The authorities have developed a list of priority projects consistent with strategic planning documents, including the Medium Term Public Sector Investment Plan and the new PRS. The IMF and World Bank have recently provided technical assistance on debt management and institutional and legal frameworks for PPPs. Drawing on this assistance, the authorities have put in place a new medium-term debt strategy and a new PPP framework. Similarly, the President has approved a "roadmap" with recommendations to improve the business environment, and thus, the private sector response to scaled up infrastructure investment.

8. **Debt data revisions by the authorities reveal weaknesses in debt recording**. As Tanzania's debt is rising and its composition becoming more complex, it is crucial to be able to track all external debt accurately. The authorities are committed to improve their debt monitoring capacities (including through structural benchmarks in the context of the PSI-supported program). They would benefit greatly from technical assistance on properly collecting, compiling and maintaining debt data.[6]

[6] Currently, there are two parallel databases for the external debt, at the Debt Management Department of the BOT and the Accountant General's Office of the MOFEA. The MTDS TA mission recommended that consolidation of the debt database is a priority and capacity enhancements in this area are urgently needed.

III. External and Fiscal Debt Sustainability Analysis

9. **The risk of external debt distress remains low under the baseline scenario.** As a result of the planned non-concessional external borrowing, debt indicators rise but do not jeopardize long-run sustainability (Figure 1). Debt service indicators increase gradually throughout the projection period, but stay well below risk thresholds. The PV of public external debt-to-GDP ratio would increase from 26.6 percent of GDP in 2010/11 to 28.8 percent by 2015/16, before falling to 16.2 percent by the end of the projection period. The PV of debt-to-exports is expected to peak at 97.4 percent of GDP in 2012/13, before declining to 46.5 percent in 2030/31. The debt service-to-export and debt service-to-revenues ratios would reach 6.3 and 10.3 percent, respectively, by 2030/31.

10. **Alternative scenario and shock analysis indicate that Tanzania's debt dynamics is 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.[7] However, an alternative scenario with less favorable financing terms (the interest rate on new borrowing is 2 percentage points higher than in the baseline) shows a much larger deterioration in most indicators (e.g. the PV of debt-to-GDP ratio increases from 27 percent in 2010/11 to 37 percent by 2020/21) before converging down to 32 percent in 2030/31.

11. **The path of total public debt, which includes external debt and domestic debt, also appears to be sustainable**. The PV of public debt-to-GDP ratio increases from 39 percent in 2010/11 to 41.2 percent by 2012/13, before declining to 19.2 percent by the end of the projection period. Similarly the PV of public debt-to revenue ratio peaks at 183.6 percent in 2012/13 before declining to 78 in 2030/31. Debt service-to-revenue increases from 6.8 percent in 2010/11 to 11.5 percent by end of the projection period (Figure 2).

12. **Public debt sustainability is particularly sensitive to the fiscal position (Figure 2).** As the 2010/11 fiscal financing gap increased substantially from the previous year, the alternative scenario whereby the primary deficit is fixed through the entire projection period shows substantial deterioration in all debt indicators. Under this scenario, the PV of debt-to-GDP ratio would accelerate from 39 percent to 69 percent (A2 in Table 4). The large fiscal deficit partly reflects the counter-cyclical response to the Global Financial Crisis (GFC). Restoring a more balanced fiscal position is an urgent requirement to prevent an unsustainable debt buildup. Given ambitious assumptions on revenue increases in the

[7] 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 35 percent.

baseline, revenue 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 WB TA has recently been provided.

IV. Conclusion

13. **Based on the updated DSA, Tanzania's debt indicators are expected to remain below indicative, country-specific thresholds.** The additional borrowing to finance a stepping up of infrastructure investment over the medium term will increase the present value (PV) of debt-to-GDP and other indicators, 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, borrowing non-concessionally 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.

Table 1: External Debt Sustainability Framework, Baseline Scenario, 2008-2031 1/
(In percent of GDP, unless otherwise indicated)

	Actual			Historical 0 Average 0	Standard Deviation	Projections									
	2008	2009	2010			2011	2012	2013	2014	2015	2016	2011-2016 Average	2021	2031	2017-2031 Average
External debt (nominal) 1/	**25.1**	**27.1**	**30.0**			**35.1**	**38.4**	**40.2**	**40.7**	**41.3**	**41.7**		**41.9**	**35.5**	
o/w public and publicly guaranteed (PPG)	20.9	22.4	24.6			28.7	31.3	32.8	33.1	33.3	33.3		31.1	23.8	
Change in external debt	4.5	2.1	2.9			5.1	3.4	1.8	0.5	0.6	0.3		-0.1	-0.8	
Identified net debt-creating flows	4.4	5.9	4.7			5.7	5.9	4.6	3.4	2.1	1.5		-0.5	-0.5	
Non-interest current account deficit	**11.0**	**9.9**	**8.5**	**6.9**	**3.1**	**9.1**	**9.7**	**8.9**	**8.0**	**7.0**	**6.8**		**5.4**	**5.8**	5.8
Deficit in balance of goods and services	14.2	13.3	11.4			12.7	12.6	11.6	10.6	9.6	9.3		7.5	7.2	
Exports	25.4	24.3	25.1			29.7	30.2	30.4	30.7	31.6	32.0		34.1	34.9	
Imports	39.7	37.6	36.5			42.4	42.8	42.1	41.3	41.2	41.2		41.5	42.1	
Net current transfers (negative = inflow)	-3.6	-3.5	-2.9	-3.1	1.2	-3.3	-2.6	-2.4	-2.2	-2.1	-2.0		-1.5	-0.9	-1.4
o/w official	-3.5	-3.4	-2.7			-3.2	-2.4	-2.2	-2.1	-2.0	-1.9		-1.4	-0.9	
Other current account flows (negative = net inflow)	0.3	0.1	0.0			-0.2	-0.3	-0.3	-0.4	-0.4	-0.5		-0.5	-0.5	
Net FDI (negative = inflow)	**-2.6**	**-2.0**	**-1.9**	**-3.4**	**1.1**	**-1.9**	**-2.3**	**-2.4**	**-2.6**	**-2.9**	**-3.3**		**-3.9**	**-4.6**	-4.1
Endogenous debt dynamics 2/	**-4.0**	**-2.0**	**-1.9**			**-1.5**	**-1.5**	**-1.9**	**-2.0**	**-2.0**	**-2.0**		**-2.0**	**-1.6**	
Contribution from nominal interest rate	0.1	0.3	0.2			0.4	0.6	0.7	0.7	0.8	0.8		0.8	0.8	
Contribution from real GDP growth	-1.2	-1.5	-1.6			-1.9	-2.1	-2.6	-2.8	-2.8	-2.8		-2.9	-2.5	
Contribution from price and exchange rate changes	-3.0	-0.8	-0.4			…	…	…	…	…	…		…	…	
Residual (3-4) 3/	**0.1**	**-3.8**	**-1.8**			**-0.6**	**-2.6**	**-2.8**	**-2.9**	**-1.5**	**-1.2**		**0.4**	**-0.3**	
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 4/	...	...	28.1			33.0	35.8	37.1	37.1	37.2	37.2		36.0	27.9	
In percent of exports	...	...	112.2			111.1	118.5	121.9	120.7	118.0	116.3		105.8	79.9	
PV of PPG external debt	**...**	**...**	**22.7**			**26.6**	**28.7**	**29.6**	**29.5**	**29.2**	**28.8**		**25.3**	**16.2**	
In percent of exports	**...**	**...**	**90.5**			**89.5**	**95.0**	**97.4**	**96.0**	**92.6**	**90.0**		**74.2**	**46.5**	
In percent of government revenues	**...**	**...**	**143.6**			**165.0**	**176.2**	**180.0**	**176.5**	**163.5**	**154.5**		**123.9**	**75.9**	
Debt service-to-exports ratio (in percent)	**3.0**	**2.0**	**1.6**			**2.1**	**3.3**	**4.2**	**4.9**	**5.3**	**5.6**		**6.4**	**7.6**	
PPG debt service-to-exports ratio (in percent)	**0.8**	**0.9**	**0.8**			**1.4**	**2.6**	**3.5**	**4.3**	**4.7**	**4.9**		**5.6**	**6.3**	
PPG debt service-to-revenue ratio (in percent)	**1.2**	**1.4**	**1.3**			**2.5**	**4.8**	**6.5**	**7.9**	**8.3**	**8.4**		**9.3**	**10.3**	
Total gross financing need (Billions of U.S. dollars)	1.8	1.8	1.6			1.9	2.2	2.2	2.1	1.9	1.9		2.1	5.4	
Non-interest current account deficit that stabilizes debt ratio	6.5	7.8	5.6			4.1	6.4	7.1	7.5	6.4	6.5		5.6	6.5	
Key macroeconomic assumptions															
Real GDP growth (in percent)	7.3	6.7	6.5	7.0	0.4	6.4	6.6	7.4	7.5	7.5	7.5	7.2	7.5	7.5	7.5
GDP deflator in US dollar terms (change in percent)	16.7	3.3	1.7	2.1	6.3	-3.6	2.2	2.0	1.9	1.5	1.9	1.0	1.9	1.9	1.9
Effective interest rate (percent) 5/	0.8	1.3	0.7	0.7	0.4	1.3	1.8	1.9	2.0	2.1	2.1	1.9	2.1	2.5	2.3
Growth of exports of G&S (US dollar terms, in percent)	28.9	5.2	12.0	16.2	9.9	21.5	10.9	10.3	10.5	12.2	10.9	12.7	10.9	9.8	10.1
Growth of imports of G&S (US dollar terms, in percent)	32.7	4.4	5.1	15.4	11.4	19.3	10.2	7.5	7.6	8.7	9.6	10.5	9.6	9.6	9.6
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	18.6	22.1	24.5	29.9	29.5	29.1	25.6	26.9	24.5	26.1
Government revenues (excluding grants, in percent of GDP)	15.9	16.2	15.8			16.1	16.3	16.5	16.7	17.9	18.6		20.4	21.4	20.6
Aid flows (in Billions of US dollars) 7/	1.3	1.0	1.1			2.0	2.2	2.3	2.4	2.2	2.2		2.8	6.5	
o/w Grants	…	…	…			1.5	1.6	1.7	1.8	1.5	1.5		1.8	4.5	
o/w Concessional loans	…	…	…			0.5	0.6	0.6	0.6	0.7	0.7		0.9	2.0	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			7.4	7.5	7.1	6.9	5.6	5.3		4.1	3.9	4.1
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			63.5	64.4	67.0	72.3	68.2	67.2		63.4	64.7	64.2
Memorandum items:															
Nominal GDP (Billions of US dollars)	19.0	21.0	22.7			23.3	25.4	27.8	30.5	33.3	36.4		57.3	141.8	
Nominal dollar GDP growth	25.2	10.2	8.3			2.6	9.0	9.5	9.5	9.2	9.5	8.2	9.5	9.5	9.5
PV of PPG external debt (in Billions of US dollars)			4.9			6.1	7.2	8.1	8.9	9.6	10.3		14.3	22.7	
(PVt-PVt-1)/GDPt-1 (in percent)						4.9	4.7	3.8	2.6	2.4	2.2	3.4	1.5	0.6	1.3
Gross workers' remittances (Billions of US dollars)	…	…	…			…	…	…	…	…	…		…	…	
PV of PPG external debt (in percent of GDP + remittances)	...	...	22.7			26.6	28.7	29.6	29.5	29.2	28.8		25.3	16.2	
PV of PPG external debt (in percent of exports + remittances)	...	...	90.5			89.5	95.0	97.4	96.0	92.6	90.0		74.2	46.5	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	0.8			1.4	2.6	3.5	4.3	4.7	4.9		5.6	6.3	

Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt.
2/ Derived as $[r - g - \rho(1+g)]/(1+g+\rho+g\rho)$ times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, and 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.Tanzania: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2011-2031
(In percent)

	Projections							
	2011	2012	2013	2014	2015	2016	**2021**	2031
PV of debt-to GDP ratio								
Baseline	27	29	30	29	29	29	**25**	16
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	27	25	23	22	21	21	**25**	32
A2. New public sector loans on less favorable terms in 2011-2031 2	27	30	33	34	35	36	**37**	33
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	27	28	29	29	29	29	**25**	16
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	27	29	32	32	32	31	**27**	16
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	27	30	33	33	33	32	**28**	18
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	27	29	30	30	30	29	**25**	16
B5. Combination of B1-B4 using one-half standard deviation shocks	27	29	30	30	30	29	**26**	17
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	27	40	41	41	41	40	**35**	23
PV of debt-to-exports ratio								
Baseline	90	95	97	96	93	90	**74**	47
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	90	81	76	70	67	66	**74**	92
A2. New public sector loans on less favorable terms in 2011-2031 2	90	101	109	112	112	112	**107**	94
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	90	93	96	95	91	89	**73**	46
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	90	101	115	113	109	105	**85**	51
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	90	93	96	95	91	89	**73**	46
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	90	95	100	98	94	92	**75**	46
B5. Combination of B1-B4 using one-half standard deviation shocks	90	92	92	91	88	85	**71**	45
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	90	93	96	95	91	89	**73**	46
PV of debt-to-revenue ratio								
Baseline	165	176	180	177	164	155	**124**	76
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	165	151	140	129	118	113	**124**	150
A2. New public sector loans on less favorable terms in 2011-2031 2	165	187	202	206	198	193	**179**	153
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	165	173	178	175	162	153	**123**	75
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	165	180	197	192	177	167	**131**	77
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	165	185	201	197	183	173	**138**	84
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	165	177	184	180	166	157	**125**	75
B5. Combination of B1-B4 using one-half standard deviation shocks	165	176	184	180	167	158	**127**	79
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	165	245	251	246	228	215	**172**	105

Table 2b.Tanzania: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2011-2031 (continued)
(In percent)

Debt service-to-exports ratio

Baseline	1	3	4	4	5	5	**6**	6
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	1	3	3	4	4	4	**5**	8
A2. New public sector loans on less favorable terms in 2011-2031 2	1	3	2	3	3	4	**6**	8
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	1	3	4	4	5	5	**6**	6
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	1	3	4	5	5	6	**6**	7
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	1	3	4	4	5	5	**6**	6
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	1	3	4	4	5	5	**6**	6
B5. Combination of B1-B4 using one-half standard deviation shocks	1	3	3	4	5	5	**5**	6
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	1	3	4	4	5	5	**6**	6

Debt service-to-revenue ratio

Baseline	2	5	7	8	8	8	**9**	10
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	2	5	6	7	7	7	**8**	13
A2. New public sector loans on less favorable terms in 2011-2031 2	2	5	4	6	6	6	**9**	14
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	2	5	7	8	8	8	**9**	10
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	2	5	7	9	9	9	**10**	11
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	2	5	7	9	9	10	**11**	12
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	2	5	7	8	8	9	**10**	10
B5. Combination of B1-B4 using one-half standard deviation shocks	2	5	7	8	9	9	**10**	11
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	2	7	9	11	12	12	**13**	15
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	10	10	10	10	10	10	**10**	10

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, 2008-2031
(In percent of GDP, unless otherwise indicated)

	Actual			Average	Standard Deviation	Estimate	Projections								
	2008	2009	2010			2011	2012	2013	2014	2015	2016	2011-16 Average	2021	2031	2017-31 Average
Public sector debt 1/	35.2	34.5	37.6			41.1	43.2	44.3	44.0	43.5	42.8		37.6	26.8	
o/w foreign-currency denominated	20.9	22.4	24.6			28.7	31.3	32.8	33.1	33.3	33.3		31.1	23.8	
Change in public sector debt	-3.4	-0.7	3.1			3.4	2.2	1.1	-0.4	-0.4	-0.7		-1.0	-1.2	
Identified debt-creating flows	-4.0	0.3	3.4			3.8	2.1	1.0	-0.4	-0.5	-0.8		-1.0	-1.2	
Primary deficit	-1.2	3.1	5.1	2.0	1.7	5.1	4.6	3.7	2.0	1.7	1.4	3.1	0.7	-0.1	0.4
Revenue and grants	22.8	21.2	20.7			22.5	22.7	22.4	22.5	22.4	22.8		23.6	24.6	
of which: grants	6.9	5.0	4.9			6.4	6.4	6.0	5.8	4.5	4.2		3.2	3.2	
Primary (noninterest) expenditure	21.7	24.3	25.8			27.6	27.2	26.1	24.5	24.1	24.2		24.3	24.5	
Automatic debt dynamics	-2.8	-2.6	-1.6			-1.3	-2.5	-2.7	-2.4	-2.2	-2.2		-1.6	-1.1	
Contribution from interest rate/growth differential	-3.6	-1.8	-1.6			-2.1	-2.3	-2.6	-2.5	-2.3	-2.2		-1.7	-1.1	
of which: contribution from average real interest rate	-1.0	0.4	0.5			0.1	0.3	0.4	0.6	0.8	0.8		1.0	0.8	
of which: contribution from real GDP growth	-2.6	-2.2	-2.1			-2.3	-2.5	-3.0	-3.1	-3.1	-3.0		-2.7	-1.9	
Contribution from real exchange rate depreciation	0.8	-0.8	0.0			0.8	-0.2	-0.1	0.0	0.1	0.0		...	...	
Other identified debt-creating flows	0.0	-0.2	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Privatization receipts (negative)	0.0	-0.2	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	0.5	-1.0	-0.4			-0.3	0.1	0.1	0.0	0.0	0.0		0.0	0.0	
Other Sustainability Indicators															
PV of public sector debt	...	...	35.8			39.0	40.6	41.2	40.3	39.5	38.3		31.8	19.2	
o/w foreign-currency denominated	...	...	22.7			26.6	28.7	29.6	29.5	29.2	28.8		25.3	16.2	
o/w external	...	...	22.7			26.6	28.7	29.6	29.5	29.2	28.8		25.3	16.2	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	12.4	11.0	12.7			12.9	12.3	11.4	10.0	9.6	9.1		7.0	4.4	
PV of public sector debt-to-revenue and grants ratio (in percent)	…	…	173.0			173.2	179.3	183.6	179.4	176.3	167.8		134.6	78.0	
PV of public sector debt-to-revenue ratio (in percent)	…	…	226.3			242.0	249.3	250.1	241.5	220.6	205.6		155.7	89.7	
o/w external 3/	…	…	143.6			165.0	176.2	180.0	176.5	163.5	154.5		123.9	75.9	
Debt service-to-revenue and grants ratio (in percent) 4/	5.2	8.6	8.3			6.8	7.6	8.8	10.5	11.4	11.7		12.7	11.5	
Debt service-to-revenue ratio (in percent) 4/	7.5	11.3	10.9			9.5	10.6	12.0	14.1	14.3	14.3		14.7	13.2	
Primary deficit that stabilizes the debt-to-GDP ratio	2.3	3.8	2.0			1.6	2.4	2.6	2.4	2.1	2.2		1.6	1.1	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	7.3	6.7	6.5	7.0	0.4	6.4	6.6	7.4	7.5	7.5	7.5	7.2	7.5	7.5	7.5
Average nominal interest rate on forex debt (in percent)	0.7	0.7	0.4	0.5	0.3	1.2	1.9	2.2	2.3	2.4	2.5	2.1	2.7	3.3	2.9
Average real interest rate on domestic debt (in percent)	-3.8	4.0	6.2	1.6	3.4	2.4	2.1	3.0	4.8	6.2	6.9	4.2	12.9	15.5	13.2
Real exchange rate depreciation (in percent, + indicates depreciation)	5.5	-4.0	0.1	0.6	7.1	3.6	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	9.5	8.7	7.5	6.8	1.8	7.3	6.3	5.4	4.9	4.6	5.0	5.6	5.0	5.0	5.0
Growth of real primary spending (deflated by GDP deflator, in percent)	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Grant element of new external borrowing (in percent)	...	...	...	…	…	18.6	22.1	24.5	29.9	29.5	29.1	25.6	26.9	24.5	...

Sources: Country authorities; and 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 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 2011-2031

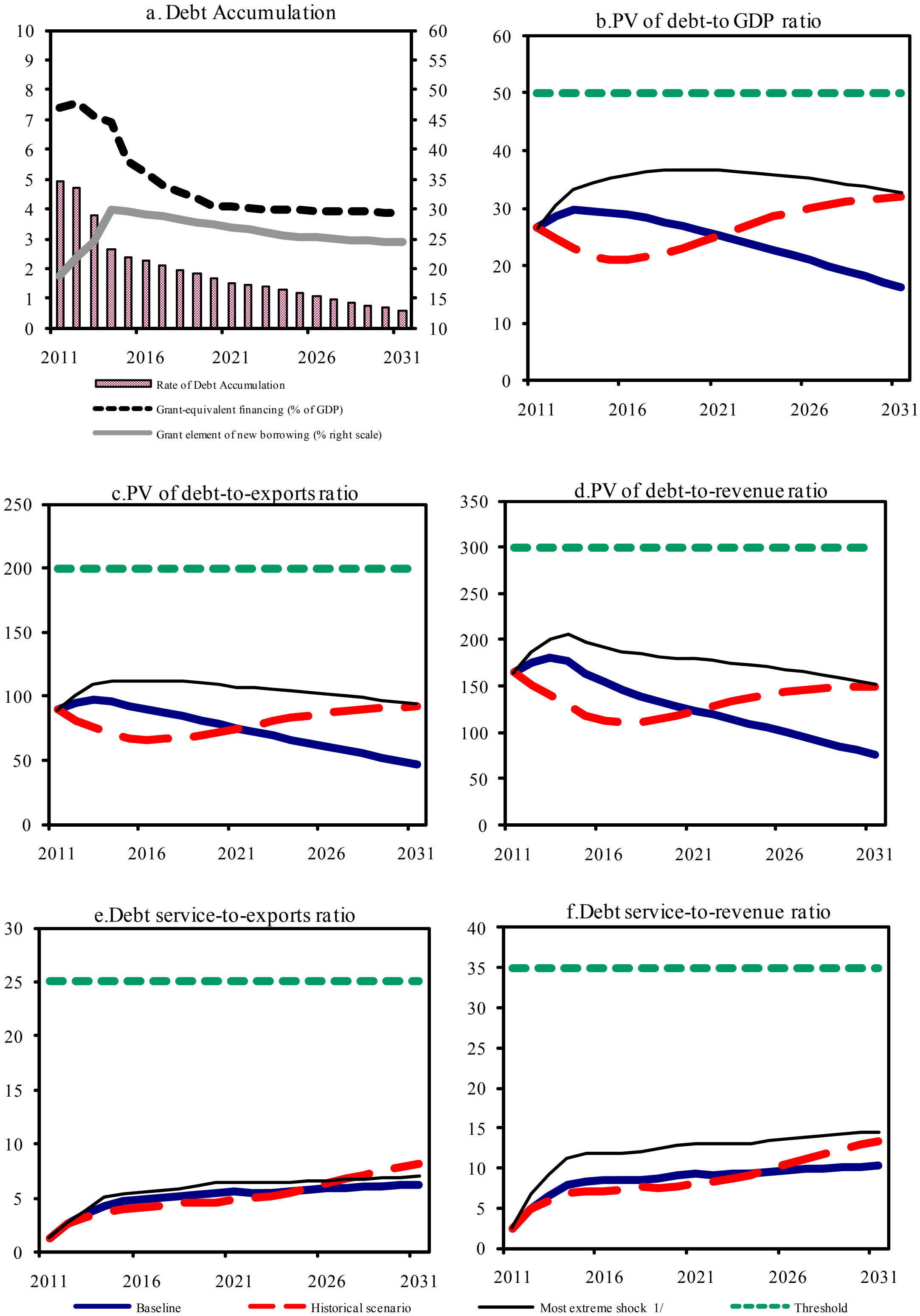
	Projections							
	2011	2012	2013	2014	2015	2016	2021	2031
PV of Debt-to-GDP Ratio								
Baseline	39	41	41	40	39	38	32	19
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	39	38	37	37	37	36	36	36
A2. Primary balance is unchanged from 2011	39	41	43	45	47	48	57	69
A3. Permanently lower GDP growth 1/	39	41	41	40	40	39	33	22
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	39	41	42	41	40	39	33	21
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	39	40	41	40	39	38	31	19
B3. Combination of B1-B2 using one half standard deviation shocks	39	39	39	38	38	37	31	19
B4. One-time 30 percent real depreciation in 2012	39	52	51	50	48	46	38	25
B5. 10 percent of GDP increase in other debt-creating flows in 2012	39	50	50	48	47	46	37	22
PV of Debt-to-Revenue Ratio 2/								
Baseline	173	179	184	179	176	168	135	78
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	173	168	167	164	163	159	151	144
A2. Primary balance is unchanged from 2011	173	181	191	199	208	212	241	279
A3. Permanently lower GDP growth 1/	173	179	184	180	177	169	138	88
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	173	179	185	181	178	170	139	84
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	173	176	181	177	174	165	133	77
B3. Combination of B1-B2 using one half standard deviation shocks	173	172	174	171	168	161	130	78
B4. One-time 30 percent real depreciation in 2012	173	228	228	220	214	203	161	101
B5. 10 percent of GDP increase in other debt-creating flows in 2012	173	219	222	216	211	200	158	90
Debt Service-to-Revenue Ratio 2/								
Baseline	7	8	9	10	11	12	13	12
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	7	8	8	10	11	11	13	16
A2. Primary balance is unchanged from 2011	7	8	9	11	12	13	18	25
A3. Permanently lower GDP growth 1/	7	8	9	10	11	12	13	12
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	7	8	9	11	12	12	13	12
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	7	8	9	10	11	12	13	11
B3. Combination of B1-B2 using one half standard deviation shocks	7	8	9	10	11	11	12	11
B4. One-time 30 percent real depreciation in 2012	7	8	11	13	15	15	17	18
B5. 10 percent of GDP increase in other debt-creating flows in 2012	7	8	10	13	14	14	15	13

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.

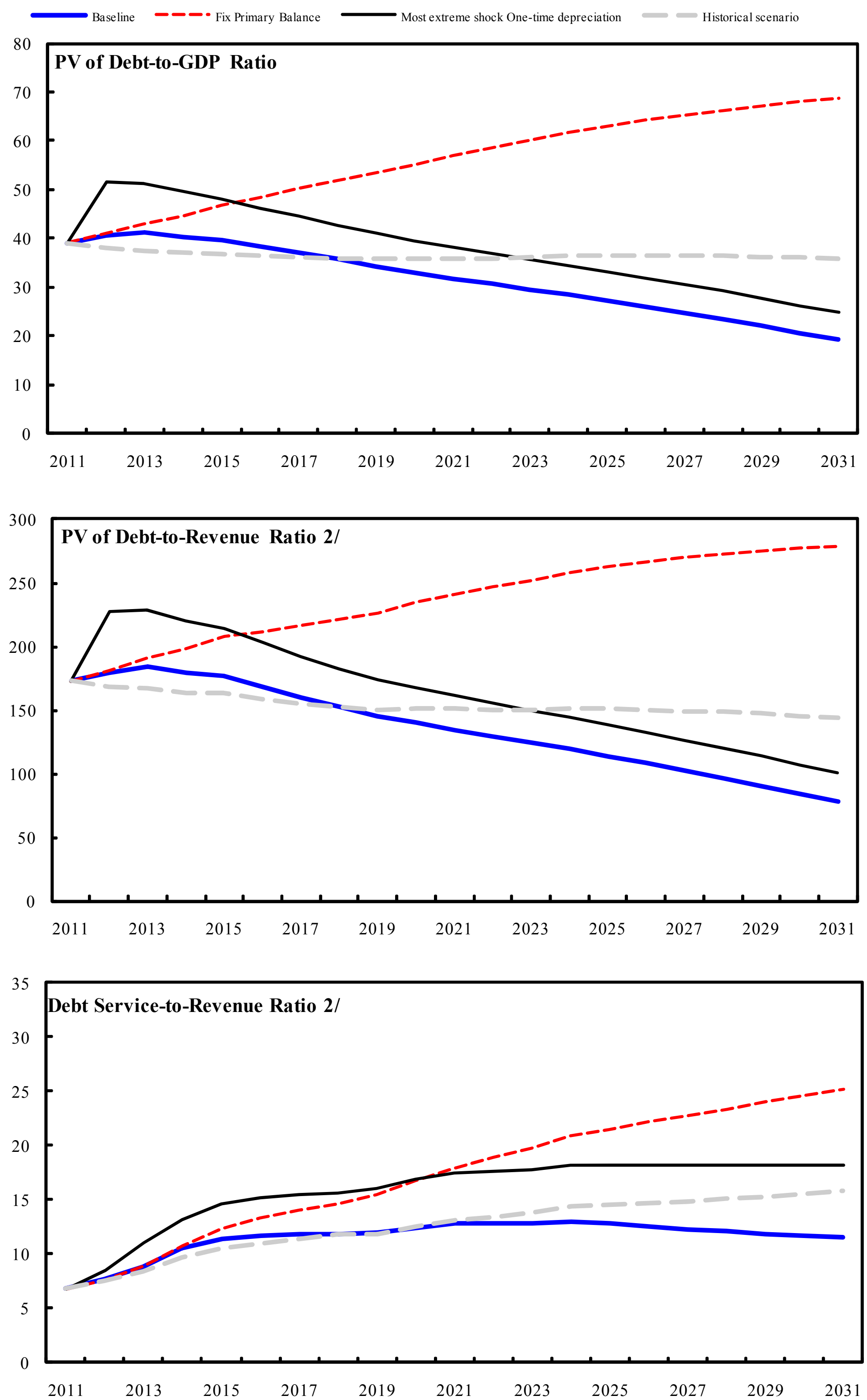
Figure 1. Tanzania: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2011-2031 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2021. In figure b. it corresponds to a One-time depreciation shock; in c. to a Exports shock; in d. to a One-time depreciation shock; in e. to a Exports shock; in f. to a One-time depreciation shock.

Figure 2.Tanzania: Indicators of Public Debt Under Alternative Scenarios, 2011-2031 1/



Sources: Country authorities; and staff estimates and projections.
1/ The most extreme stress test is the test that yields the highest ratio in 2021.
2/ Revenues are defined inclusive of grants.