INTERNATIONAL DEVELOPMENT ASSOCIATION AND
INTERNATIONAL MONETARY FUND

REPUBLIC OF MOZAMBIQUE

Joint World Bank/IMF Debt Sustainability Analysis

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the International Monetary Fund

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The joint IMF-World Bank low-income country debt sustainability analysis (LIC DSA) indicates that Mozambique's risk of debt distress remains classified as low. [1] *The country's external debt is expected to remain well below the indicative thresholds both under the baseline and under various stress tests. Similarly, public debt is expected to decline over the medium-to-long term under the baseline. Stress tests indicate, however, that the public debt trajectory could become unsustainable if the country continues running primary deficits at the order of 4 percent of GDP as expected in 2008. With substantially lower real growth rates over the projection period, public debt could also rise to an unsustainable level over time.*

I. Background

1. **At end-2007, Mozambique's external public and publicly guaranteed (PPG) debt stock, including arrears,**[2] **was US$3.3 billion in nominal terms or US$832 million in NPV terms** (Table 1). Of this, 47 percent was owed to multilateral creditors, 53 percent to bilateral creditors, and less than 1 percent to commercial creditors. Thanks to the Multilateral Debt Relief Initiative (MDRI), from the African Development Fund (AfDF), the

[1] The 2006 and 2007 DSAs already concluded that the risk of debt distress for Mozambique was low, even with the inclusion of the domestic debt, which was absent in the 2006 DSA. Some of the expected bilateral debt relief agreements envisaged in the 2007 DSA did not materialize but are expected to be concluded during the course of this year.

[2] As of end-2007, arrears to bilateral creditors amounted to approximately US$959 million of which US$799 million to Paris Club creditors and US$160 million to non-Paris Club creditors. This amount was reduced substantially through a debt relief agreement concluded with Portugal, and will further be reduced when Japan and Russia deliver their debt relief. Following the a debt-buy back in 2007, there were no more arrears to commercial creditors.

International Development Association (IDA) of the World Bank, and the IMF, Mozambique's debt stock fell by US$1.9 billion in nominal terms in 2006.[3]

Table 1. Mozambique: External and Domestic Nominal Debt Outstanding at End-2007

	Millions of U.S. dollars	Percent of total external debt	Percent of GDP
Public and Publicly Guaranteed Debt	**3,660.2**	**71.8**	**42.1**
Domestic Debt [1]	**337.6**	**6.6**	**3.9**
External Debt	**3,322.6**	**65.2**	**38.2**
Multilateral Creditors	**1,549.1**	**30.4**	**17.8**
IDA	902.1	17.7	10.4
IMF	15.3	0.3	0.2
African Development Bank	295.0	5.8	3.4
Other Multilaterals	336.7	6.6	3.9
Bilateral Creditors [2]	**1,763.6**	**34.6**	**20.3**
Paris Club	799.5	15.7	9.2
Non-Paris Club	964.1	18.9	11.1
Commercial Creditors [2]	**9.9**	**0.2**	**0.1**
Total Private Non-guaranteed Debt	**1,436.0**	**28.2**	**16.5**
Memorandum items:			
Total External debt	5,096.1	100.0	58.6
PV of external debt	2,275.4	-	28.2
PV of PPG external debt	839.4	-	10.4

Sources: Mozambican authorities; and World Bank and IMF staff estimates.

[1] Central government debt only.

[2] Including arrears.

2. **Mozambique had previously benefited from assistance under the HIPC Initiative provided by multilateral and Paris Club bilateral creditors.**[4] At end-2007, bilateral agreements were reached with all Paris Club creditors except Portugal, Russia, and Japan, who together accounted for about 20 percent of total Paris Club debt in NPV terms at end-2000, the reference year for enhanced HIPC debt relief. In July 2008, an agreement with Portugal was signed, in which Portugal canceled all Mozambican debt which amounted to US$393.5 million. The Mozambican authorities are making best efforts to reach agreement

[3] The amount of MDRI relief provided by the AfDF was US$464.5 million; IDA provided US$1.3 billion; and IMF provided US$120.6 million.

[4] See "Mozambique−HIPC Debt Initiative: President's Memorandum and Recommendation and Completion Point Document" (IDA/R99–139), and "Mozambique–Enhanced HIPC Debt Initiative: President's Memorandum and Recommendation and Completion Point Document" (IDA/R2001–0150).

on debt cancellation with Japan and Russia, both of which have announced their intentions to cancel a 100 percent to HIPCs that reach completion point.

3. **Mozambique has experienced some difficulties in negotiating debt relief agreements with some of its non-Paris Club bilateral creditors.** Negotiations are still ongoing with Algeria, Angola, Bulgaria, India, Iraq, Libya, and Poland. Negotiations with Libya are reportedly difficult. The Chinese government cancelled Mozambique's outstanding debt in February 2007, Hungary cancelled 96.75 percent of Mozambique's debt in September 2007, and Kuwait provided comparable treatment with the Paris Club.

4. **Mozambique benefited from a commercial debt buy-back operation in 2007.** This operation covered all outstanding commercial debt in arrears, which amounted to US$153 millions.[5] The Government of Norway and IDA financed the operation through grants.

5. **Total external debt in Mozambique has a significant private component due to "megaproject" related lending.** Most of the megaproject investments were debt-creating. In 2007, mega projects borrowing were mainly explained by Cahora Bassa's large borrowing of about US$805 million. Private external debt accounts for 28 percent of the country's total external debt at end-2007 (Table 1).

6. **Mozambique's domestic government debt stock is dominated by recapitalization bonds.** The total stock of domestic government debt was about 3.9 percent of GDP at end-2007, which is low by regional levels. The Ministry of Finance is committed to non-recourse to domestic financing and has not issued treasury bills for deficit financing purposes since 2006. The current stock of outstanding treasury bills has all been issued by the Bank of Mozambique for sterilization purposes. The majority of the stock of treasury bonds is accounted for by bonds issued to strengthen the central bank's balance sheet in 2005, 2006 and 2007, and related to the process of restructuring commercial banks, which is now complete.

7. **A debt management reform program is ongoing, which should address some of the weaknesses in debt management.** Debt management functions have recently been moved from the Central Bank to the Treasury, and a process is underway to organize operations according to international standards. The government is also working on a debt strategy, which is expected to be published in 2009 following consultations with stakeholders. The debt office has a complete set of external debt records, but the way disbursements are processed at present often leads to delays in accurately recording the amounts outstanding and disbursed. On the domestic debt side, there is no complete set of data originating from honored guarantees. The debt office does not currently produce a statistical bulletin, although its annual report of activities does contain some debt data.

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[5] The amount was initially estimated at US$175.4 million at end-2006.

II. Methodology and Key Assumptions

8. **Following the guidelines of the LIC debt sustainability framework, staffs have analyzed the evolution of the external public debt stock and debt service indicators for Mozambique under a baseline scenario and a series of stress tests.**[6] The stress tests are designed to assess the probability of Mozambique facing debt distress in the future under a set of shocks.

9. **The analysis is guided by indicative, performance-based debt burden thresholds, which take into account the empirical finding that the debt levels that a low-income country can sustain increase with the quality of its policies and institutions.** The quality of policies and institutions is measured by the three-year average of Country Policy and Institutional Assessment (CPIA) scores of the World Bank, according to which Mozambique ranks as a 'medium performer'. The indicative external debt burden thresholds for countries in this category are an NPV of debt-to-exports ratio of 150 percent, an NPV of debt-to-revenue ratio of 250 percent, an NPV of debt-to-GDP ratio of 40 percent, and debt-service-to-exports and debt-service-to-revenue ratios of 20 and 30 percent, respectively.

10. **The baseline scenario is subject to a number of assumptions.** The underlying macroeconomic assumptions, summarized in Box 1, are consistent with the medium-term macroeconomic framework described in the IMF staff report for the 3rd review under the PSI. In addition, the external debt numbers take into account the debt cancellation signed with Portugal in July 2008 and assume the full delivery of HIPC debt relief by all creditors, 100 percent debt reduction by Russia and Japan. Finally, the authorities are assumed to borrow predominantly from the IDA and AfDF, resulting in an average grant element on new borrowing of 50 percent over the projection period. This assumption is based on the authorities' medium-term projections, which were informed by consultations with donors.

III. External Debt Sustainability

11. **Under the baseline scenario presented in Table 2, all the debt indicators remain below their respective thresholds.** The PV of PPG external debt-to-GDP ratio is projected to rise from 11.6 percent in 2008 to 20.8 percent by 2021, after which it slowly declines over the remainder of the projection period to 19.1 percent by 2028. It thus remains well below the country-specific threshold of 40 percent. The PV of PPG debt-to-exports ratio increases from 35.7 percent in 2008 to 72.5 percent by 2017—also far below the threshold of 150 percent—before falling back to about 49.4 percent again by 2028. The NPV of PPG debt-to-revenue ratio increases to a peak of 107.1 percent in 2017, significantly below the threshold of

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[6] The executive Boards of the Fund and the Bank approved the Operational Framework for Debt Sustainability Assessments in Low-Income Countries in April 2005 and reviewed it in April 2006 and in November 2006 (www.imf.org).

250 percent. It then declines rapidly to 69.9 percent by 2028, driven in part by the assumed increase in revenue collection.

12. **The debt service indicators also remain below their thresholds under the baseline.** As a result of the assumed full delivery of remaining HIPC debt relief in 2008, the PPG debt would fall from 2.6 percent in 2006 to 1.2 percent in 2008. It would then increase to 4.0 percent in 2023, then decreasing to 3.6 percent by 2028, and always well below the 20 percent threshold. The ratio of PPG debt service to fiscal revenues falls from 3.9 percent in 2007 to 2.2 percent in 2009, increasing slowly to a peak of 5.8 percent in 2023 before declining to 5.1 by 2028, well below the 30-percent threshold (Table 2).

13. **As in the 2007 DSA, external debt sustainability appears resilient to a number of shocks.** As indicated in Table 3 and Figure 1, even under the most extreme shocks, all the ratios would remain below their indicative threshold. The debt ratios appear particularly sensitive to a 30 percent nominal depreciation against the dollar (scenario B6) and to a decline in transfers and FDI (scenario B4). In scenario B6, the ratio of NPV of debt-to GDP would reach 29 percent in 2018, the NPV of debt-to-revenue ratio would reach 150 percent. In both cases this is a 40 percent increase over the baseline. In scenario B4, the NPV of debt-to GDP would jump from 12 percent in 2008 to 24 percent in 2010 and 28 percent in 2018; the debt-to-export ratio would almost double by 2009 to 70 percent and 100 percent as early as 2013; and the debt-to-revenue would reach 143 percent in 2018. Debt ratios would, under all scenarios, remain very low, but appear particularly sensitive to the depreciation of the currency and to borrowing on terms less favorable than in the baseline.

IV. PUBLIC SECTOR DEBT SUSTAINABILITY

14. **Mozambique's public debt (including domestic debt) as percent of GDP is expected to increase steadily until 2016 and then begin to decline under the baseline scenario** (Table 4 and Figure 2). These projections rest on the assumption that there will be no recourse to domestic financing over the long run. In addition, the revenue to GDP ratio will continue to increase (by 0.5 percent per year until 2011 and then by a smaller magnitude afterward) and foreign aid gradually falls as a percentage of GDP (Box 1), while government expenditures will increase only gradually over time. After peaking at about 35 percent of GDP, the debt ratio eventually falls back to close to its 2008 level of about 25 percent of GDP. This debt dynamics is largely driven by developments in external debt, given the low and declining level of domestic debt as a result of the discontinuation of treasury bill issuance for deficit financing purposes, the gradual redemption of bonds issued to restructure the banking system, and predominant use of foreign exchange sales for sterilization purposes. The NPV of public sector debt-to GDP ratio shows a similar pattern over time, as do the NPV of debt-to-revenue and debt service-to-revenue ratios. However, the NPV of debt-to-revenue ratio falls faster and to a significantly lower level than in 2008 after reaching its peak in 2017, whereas the debt service-to-revenue ratio begins to fall much later (in 2024) and more slowly.

15. **The large proportion of external debt makes the public debt burden vulnerable to the same set of shocks as external debt.** There are, however, some additional risks related to the potential sterilization needs to mop up excess liquidity, which would increase in the event of lower revenues and/or higher expenditures—even if financed by higher aid, as long as its disbursement is volatility and/or there is reluctance to sell foreign exchange due to fears of possible Dutch-Disease effects of aid inflows. The stress tests indicate that public sector debt ratios are most vulnerable to a persistent large primary deficit and a permanent lower GDP growth, which would result in sharp increases in the public debt ratios over time.

V. Conclusions

16. **In staffs' view, Mozambique faces a low risk of debt distress.** Mozambique's external debt levels are expected to remain well below their indicative thresholds for debt distress both under the baseline and under various stress tests. Mozambique's public debt is expected to decline over the medium-to-long term under the baseline, while the stress tests indicate that public sector debt ratios are most vulnerable to a permanently large primary deficit and lower GDP growth.

17. **A prudent new borrowing policy and fiscal stance remain important.** Where possible, the authorities should continue to rely on concessional borrowing and grants to minimize future debt service, and any non-concessional financing of new projects ought to be considered case by case based on economic return, impact on debt sustainability, and potential effects on the financing decisions of donors and concessional lenders. Also, the authorities would still need to closely monitor any substantial scaling-up of concessional external borrowing and to avoid issuance of a large amount of domestic debt to sterilize the additional liquidity injected from increased government spending.

Box 1. Macroeconomic Assumptions 2007–28

The medium-term assumptions in the baseline scenario for 2008–28 are consistent with the medium-term macroeconomic framework described in the IMF staff report for the 3rd review under the PSI and in the authorities' medium-term macroeconomic framework described in the government's Plano de Acção para Redução da Pobreza Absoluta II (PARPA II).

Real GDP growth is projected to average 6.5 percent per year during 2008–12 and 6.8 percent thereafter, representing a deceleration from the annual average of 8.4 percent achieved during 2001–07.

Consumer price inflation is projected to fall to about 4½ percent during 2008–28, as oil and food prices stabilize.

Export growth is projected to accelerate slowly from about 5 percent per year over 2008–13 to about 8 percent thereafter. This is driven to a large extent by the growth of traditional (non-megaproject) exports at the rate of import demand growth in Mozambique's trade partners and by the prospects for megaproject exports that are affected by world prices of aluminum and gas.

Import growth is projected to increase slightly from about 6 percent per year over the period 2008–13 to 7 percent in the long term. Import growth associated with megaprojects is assumed to equal the rate of megaproject export growth, assuming that the import content of megaprojects remains roughly constant on average. All other imports are assumed to grow at the rate of real GDP growth.

The non–interest current account deficit after grants is projected to decline slightly from 5.5 percent of GDP during 2008–13 to 5.0 percent in 2013–26.

Fiscal revenue is expected to rise from about 15 percent of GDP in 2006 to just under 18 percent of GDP in 2011, largely reflecting a 0.5 percent of GDP annual revenue effort on account of improved revenue administration and a broadening tax base.[7] Over time, non–tax revenues from natural resource exploitation, particularly megaprojects, are expected to make a growing fiscal contribution, but the increase of overall revenue effort slows somewhat after 2011. Nevertheless, total revenue is projected to reach about 23½ percent of GDP by 2028, of which about 21 percent of GDP comes from taxes, a level close to Mozambique's potential tax ratio as estimated by a number of studies.[8] Total expenditures as a percent of GDP are projected to increase only moderately over time.

External financing. External grants are projected to remain high over the medium term. They would nonetheless decline slightly from an average of 13.5 percent of GDP during 2001–07 to 10.8 percent during 2008–15. No grant financing is assumed to come forward from IDA after 2008 (a grant of US$10 million was provided in 2008 from IDA's Food Price Crisis Response Trust Fund). Public sector loans for the period 2008–15 are projected to remain at their average level during 2005–07, or 4.3 percent of GDP. This high level of external financing over the medium term will help additional reforms that are ongoing to sustain broad-based growth and to achieve the Millennium Development Goals by 2015. After 2015, external financing is expected to decline as a share of GDP to an average of about 10 percent of GDP for grants and about 2.5 percent of GDP for public loans.

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[7] In 2008, the tax-to-GDP ratio is affected by the suspension of the fuel-related taxes to limit pressures on domestic prices arising from higher world prices. This suspension will end in 2009.

[8] IMF, 2007, "Mozambique: Evaluation of the Post-Reforms Tax System".

Table 2. Mozambique: External Debt Sustainability Framework, Baseline Scenario, 2005–28 [1]

(Percent of GDP, unless otherwise indicated)

	Actual			Historical Average [6]	Standard Deviation [6]	Projections									
	2005	2006	2007			2008	2009	2010	2011	2012	2013	2008–13 Average	2018	2028	2014–28 Average
External debt (nominal) [1]	94.9	66.6	56.0			36.6	38.4	39.4	40.8	41.5	42.2		43.5	37.9	
of which: public and publicly guaranteed (PPG)	74.1	47.1	38.2			22.0	25.9	28.4	30.6	31.9	32.9		33.6	25.0	
Change in external debt	7.8	-28.3	-10.6			-19.4	1.8	1.0	1.4	0.6	0.8		-0.3	-0.5	
Identified net debt-creating flows	-3.8	-30.6	-6.2			0.6	1.1	1.5	0.7	0.0	-0.1		-0.4	-1.3	
Non-interest current account deficit	7.3	-22.4	4.4	3.2	9.9	5.8	5.3	6.2	5.7	5.4	5.1		5.1	5.3	4.9
Deficit in balance of goods and services	11.1	7.4	7.9			11.9	14.5	8.7	8.3	9.1	9.4		8.6	7.5	
Exports	32.9	39.9	37.6			32.3	26.7	30.4	28.3	26.3	25.6		28.5	38.7	
Imports	44.0	47.3	45.5			44.2	41.2	39.1	36.6	35.5	34.9		37.1	46.2	
Net current transfers (negative = inflow)	-7.0	-35.6	-9.8	-12.5	8.4	-12.7	-12.3	-10.1	-9.7	-10.1	-10.4		-9.9	-9.6	-10.2
of which: official	-7.0	-35.6	-9.8			-12.7	-12.3	-10.1	-9.7	-10.1	-10.4		-9.9	-9.6	
Other current account flows (negative = net inflow)	3.2	5.9	6.3			6.7	3.0	7.5	7.2	6.4	6.1		6.4	7.3	
Net FDI (negative = inflow)	-1.6	-2.1	-5.3	-5.3	2.5	-4.7	-4.4	-4.4	-4.3	-4.2	-4.1		-4.2	-5.1	-4.5
Endogenous debt dynamics [2]	-9.5	-6.1	-5.2			-0.5	0.2	-0.2	-0.7	-1.2	-1.1		-1.2	-1.5	
Contribution from nominal interest rate	2.1	2.3	1.8			2.5	2.3	2.1	1.6	1.4	1.4		1.5	1.1	
Contribution from real GDP growth	-6.3	-7.5	-4.2			-3.0	-2.1	-2.3	-2.4	-2.6	-2.5		-2.7	-2.6	
Contribution from price and exchange rate changes	-5.3	-0.8	-2.9			…	…	…	…	…	…		…	…	
Residual (3–4) [3]	11.6	2.3	-4.4			-20.0	0.7	-0.5	0.7	0.6	0.9		0.1	0.8	
of which: 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]	...	...	28.2			26.2	25.8	26.1	26.5	26.6	27.0		30.5	32.0	
In percent of exports	...	...	75.0			80.9	96.8	86.0	93.9	101.1	105.8		107.0	82.7	
PV of PPG external debt	...	...	10.4			11.6	13.3	15.1	16.3	17.0	17.7		20.6	19.1	
In percent of exports	...	...	27.7			35.7	49.9	49.7	57.7	64.7	69.2		72.2	49.4	
In percent of government revenues	...	...	68.9			73.0	78.9	86.7	91.2	94.8	97.9		106.9	69.9	
Debt service-to-exports ratio (percent)	19.0	14.1	42.3			20.9	24.3	20.1	20.3	20.6	19.6		16.8	13.9	
PPG debt service-to-exports ratio (percent)	4.3	2.6	1.6			1.2	1.4	1.5	1.8	2.3	2.3		3.1	3.6	
PPG debt service-to-revenue ratio (percent)	10.2	7.0	3.9			2.5	2.2	2.6	2.8	3.3	3.3		4.6	5.1	
Total gross financing need (billions of U.S. dollars)	0.8	-1.4	1.2			0.8	0.8	0.9	0.9	0.9	0.9		1.1	1.8	
Non-interest current account deficit that stabilizes debt ratio	-0.5	5.9	15.0			25.2	3.5	5.1	4.3	4.8	4.3		5.3	5.8	
Key macroeconomic assumptions															
Real GDP growth (percent)	8.4	8.7	7.0	8.2	3.0	6.5	6.2	6.5	6.6	7.0	6.5	6.6	6.5	7.0	6.8
GDP deflator in US dollar terms (percent change)	6.5	0.9	4.5	0.0	7.9	13.2	2.9	1.3	2.3	2.1	1.7	3.9	-0.4	-2.2	-1.4
Effective interest rate (percent) [5]	2.8	2.6	3.1	3.0	0.5	5.3	6.9	5.8	4.5	3.8	3.7	5.0	3.5	2.9	3.5
Growth of exports of G&S (US dollars, percent)	18.4	33.0	5.4	20.1	11.8	3.7	-9.8	22.7	1.5	1.7	5.1	4.2	8.2	8.2	8.2
Growth of imports of G&S (US dollars, percent)	21.4	17.9	7.6	14.1	10.2	17.3	1.8	2.3	2.1	5.9	6.7	6.0	7.1	7.3	7.3
Grant element of new public sector borrowing (percent)	...	...	...	...	...	48.9	45.8	48.8	48.9	50.2	50.4	48.8	50.3	49.1	49.8
Government revenues (excluding grants, percent of GDP)	13.9	14.7	15.1			15.8	16.9	17.4	17.9	18.0	18.1		19.2	27.3	21.6
Aid flows (billions of US dollars) [7]	0.9	1.0	1.0			1.6	1.6	1.6	1.7	1.8	1.9		2.4	3.5	
of which: Grants	0.6	0.8	0.8			1.2	1.3	1.2	1.3	1.4	1.5		2.0	3.1	
of which: Concessional loans	0.3	0.2	0.2			0.4	0.3	0.4	0.4	0.4	0.4		0.4	0.4	
Grant-equivalent financing (percent of GDP) [8]	...	...	...			14.7	14.3	12.5	12.7	12.1	11.9		11.3	10.5	11.4
Grant-equivalent financing (percent of external financing) [8]	...	...	...			83.9	84.7	82.9	84.6	86.1	87.1		89.0	92.2	90.2
Memorandum items:															
Nominal GDP (billions of US dollars)	6.6	7.2	8.1			9.7	10.6	11.5	12.5	13.7	14.8		19.8	32.0	
Nominal dollar GDP growth	15.4	9.7	11.9			20.6	9.3	7.8	9.1	9.3	8.3	**10.7**	6.1	4.6	5.3
PV of PPG external debt (billions of US dollars)			0.8			1.1	1.4	1.7	2.0	2.3	2.6		4.1	6.1	
(PVt-PVt-1)/GDPt-1 (percent)						3.5	3.0	3.0	2.7	2.3	2.1	2.8	1.6	0.4	1.2

Source: World Bank and IMF staff simulations.

[1] Includes both public and private sector external debt.

[2] Derived as [r - g - r(1+g)]/(1+g+r+gr) times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, and r = 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 3. Mozambique: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2008–28

(Percent)

	Projections							
	2008	2009	2010	2011	2012	2013	**2018**	2028
PV of debt-to GDP ratio								
Baseline	12	13	15	16	17	18	21	19
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2008–28 [1]	12	14	15	16	17	18	19	18
A2. New public sector loans on less favorable terms in 2008–28 [2]	12	14	16	18	19	20	23	24
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2009–10	12	13	15	17	17	18	21	20
B2. Export value growth at historical average minus one standard deviation in 2009–10 [3]	12	10	11	13	14	14	18	18
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2009–10	12	15	19	20	21	22	25	24
B4. Net non-debt creating flows at historical average minus one standard deviation in 2009–10 [4]	12	19	24	25	25	26	28	23
B5. Combination of B1-B4 using one-half standard deviation shocks	12	13	15	16	17	18	21	21
B6. One-time 30 percent nominal depreciation relative to the baseline in 2009 [5]	12	19	21	23	24	25	29	28
PV of debt-to-exports ratio								
Baseline	36	50	50	58	65	69	72	49
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2008–28 [1]	36	51	49	57	64	69	67	47
A2. New public sector loans on less favorable terms in 2008–28 [2]	36	51	53	62	71	77	82	62
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2009–10	36	50	50	57	64	69	72	51
B2. Export value growth at historical average minus one standard deviation in 2009–10 [3]	36	32	35	42	49	53	58	45
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2009–10	36	50	50	57	64	69	72	51
B4. Net non-debt creating flows at historical average minus one standard deviation in 2009–10 [4]	36	70	80	89	96	100	97	61
B5. Combination of B1-B4 using one-half standard deviation shocks	36	36	37	43	49	53	57	42
B6. One-time 30 percent nominal depreciation relative to the baseline in 2009 [5]	36	50	50	57	64	69	72	51
PV of debt-to-revenue ratio								
Baseline	73	79	87	91	95	98	107	70
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2008–28 [1]	73	80	85	90	94	97	100	66
A2. New public sector loans on less favorable terms in 2008–28 [2]	73	81	92	99	104	108	122	89
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2009–10	73	80	88	93	96	99	109	74
B2. Export value growth at historical average minus one standard deviation in 2009–10 [3]	73	62	65	71	75	79	92	67
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2009–10	73	88	106	112	116	120	131	89
B4. Net non-debt creating flows at historical average minus one standard deviation in 2009–10 [4]	73	110	140	140	141	142	143	86
B5. Combination of B1-B4 using one-half standard deviation shocks	73	78	84	90	95	99	111	79
B6. One-time 30 percent nominal depreciation relative to the baseline in 2009 [5]	73	111	122	128	133	137	150	103
Debt service-to-exports ratio								
Baseline	1.2	1.4	1.5	1.8	2.3	2.3	3.1	3.6
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2008–28 [1]	1.2	1.4	1.5	1.8	2.3	2.3	2.9	2.8
A2. New public sector loans on less favorable terms in 2008–28 [2]	1.2	1.4	1.5	2.2	3.0	3.4	3.9	3.5
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2009–10	1.2	1.4	1.5	1.8	2.3	2.3	3.1	3.6
B2. Export value growth at historical average minus one standard deviation in 2009–10 [3]	1.2	1.2	1.2	1.4	1.9	1.9	2.3	3.1
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2009–10	1.2	1.4	1.5	1.8	2.3	2.3	3.1	3.6
B4. Net non-debt creating flows at historical average minus one standard deviation in 2009–10 [4]	1.2	1.4	1.9	2.5	3.0	3.0	4.3	4.5
B5. Combination of B1-B4 using one-half standard deviation shocks	1.2	1.1	1.2	1.4	1.8	1.9	2.4	2.9
B6. One-time 30 percent nominal depreciation relative to the baseline in 2009 [5]	1.2	1.4	1.5	1.8	2.3	2.3	3.1	3.6
Debt service-to-revenue ratio								
Baseline	2.5	2.2	2.6	2.8	3.3	3.3	4.6	5.1
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2008–28 [1]	2.5	2.3	2.6	2.8	3.4	3.3	4.3	3.9
A2. New public sector loans on less favorable terms in 2008–28 [2]	2.5	2.2	2.7	3.5	4.4	4.7	5.8	4.9
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2009–10	2.5	2.3	2.6	2.9	3.4	3.4	4.7	5.3
B2. Export value growth at historical average minus one standard deviation in 2009–10 [3]	2.5	2.2	2.2	2.4	2.9	2.9	3.7	4.7
B3. U.S. dollar GDP deflator at historical average minus one standard deviation in 2009–10	2.5	2.5	3.2	3.5	4.1	4.1	5.6	6.3
B4. Net non-debt creating flows at historical average minus one standard deviation in 2009–10 [4]	2.5	2.2	3.3	4.0	4.4	4.3	6.3	6.4
B5. Combination of B1-B4 using one-half standard deviation shocks	2.5	2.4	2.7	2.9	3.5	3.5	4.7	5.5
B6. One-time 30 percent nominal depreciation relative to the baseline in 2009 [5]	2.5	3.2	3.6	4.0	4.7	4.7	6.4	7.3
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) [6]	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0

Source: World Bank and IMF staff projections and simulations.

[1] Variables include real GDP growth, growth of GDP deflator (in U.S. dollar terms), non-interest current account in percent of GDP (excluding 2006, an outlier because of the MDRI grants), 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.

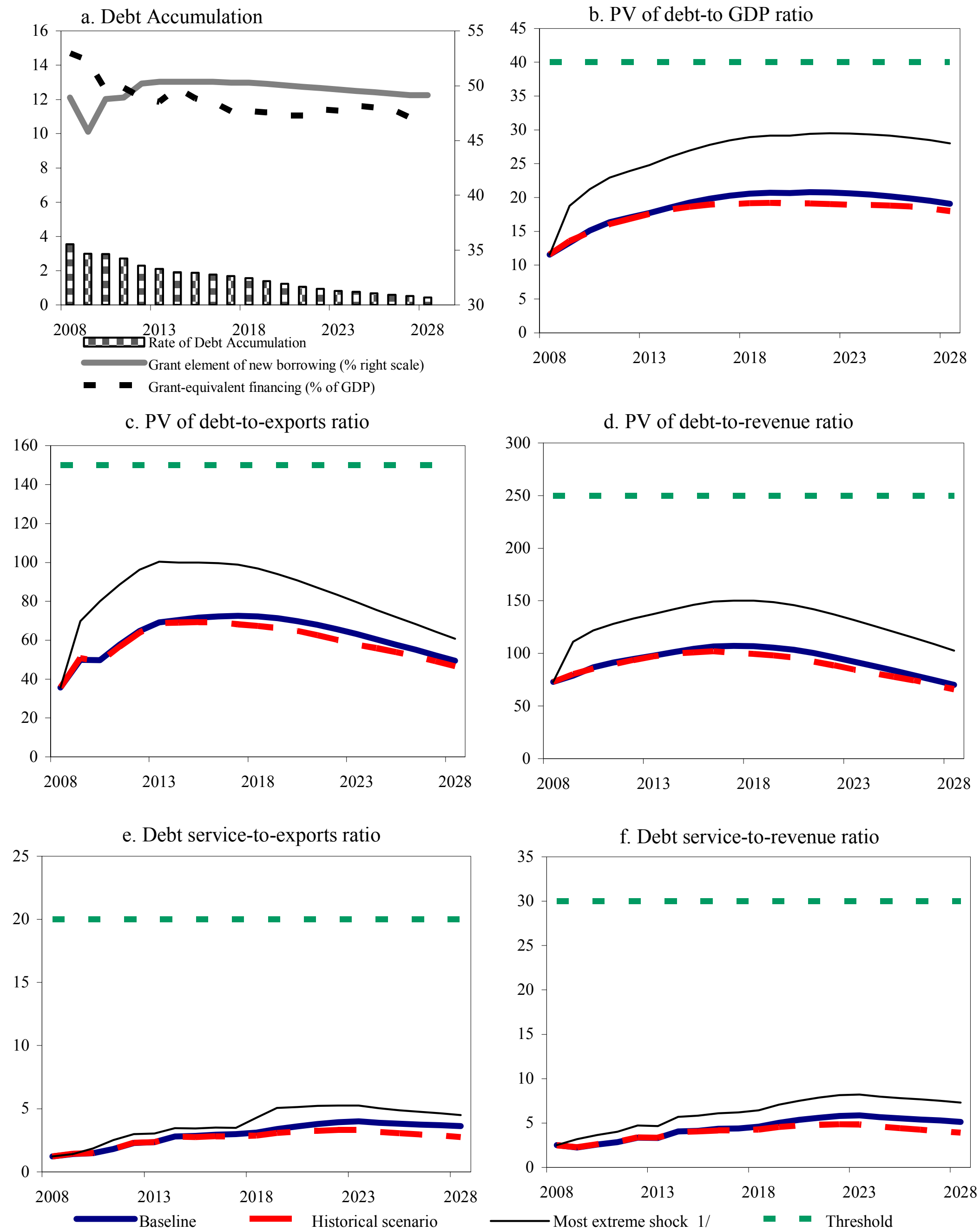
[3] Exports values are assumed to remain permanently at the lower level, but the current account as a share of GDP is assumed to return to its baseline level after the shock (implicitly assuming an offsetting adjustment in import levels).

[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.

Figure 1. Mozambique: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2008–28 [1]



Source: World Bank and IMF staff projections and simulations.

[1] The most extreme stress test is the test that yields the highest ratio in 2018. In figure b. it corresponds to a one-time depreciation shock; in c. to a non-debt flows shock; in d. to a one-time depreciation shock; in e. to a Non-debt flows shock and in picture f. to a one-time depreciation shock

Table 4. Mozambique: Public Sector Debt Sustainability Framework, Baseline Scenario, 2005–28

(Percent of GDP, unless otherwise indicated)

	Actual					Estimate	Projections								
	2005	2006	2007	Average[5]	Standard Deviation[5]	2008	2009	2010	2011	2012	2013	2008–13 Average	2018	2028	2014–28 Average
Public sector debt [1]	81.0	53.5	42.1			24.3	28.6	30.7	32.6	33.6	34.4		34.5	25.3	
of which: foreign-currency denominated	74.1	47.1	38.2			22.0	25.9	28.4	30.6	31.9	32.9		33.6	25.0	
Change in public sector debt	11.1	-27.5	-11.4			-17.8	4.3	2.1	1.9	1.0	0.7		-0.5	-1.1	
Identified debt-creating flows	2.9	-7.6	-6.9			0.4	3.6	1.7	1.6	1.0	0.7		-0.3	-0.1	
Primary deficit	-0.9	0.8	3.2	1.0	3.1	4.0	4.9	4.0	3.5	3.2	2.8	3.7	1.9	1.2	1.5
Revenue and grants	22.9	25.3	24.4			27.8	29.0	27.5	28.4	28.1	28.1		29.2	36.9	
of which: grants	9.0	10.6	9.3			12.0	12.1	10.1	10.5	10.1	10.1		9.9	9.6	
Primary (noninterest) expenditure	22.0	26.1	27.6			31.8	33.8	31.5	31.8	31.3	30.9		31.0	38.1	
Automatic debt dynamics	5.5	-7.4	-9.7			-3.4	-0.7	-2.2	-1.9	-2.2	-2.1		-2.2	-1.3	
Contribution from interest rate/growth differential	-8.6	-6.8	-5.2			-6.4	-1.6	-1.6	-2.0	-2.3	-2.1		-1.5	-0.9	
of which: contribution from average real interest rate	-3.2	-0.3	-1.7			-3.9	-0.2	0.1	-0.1	-0.1	0.0		0.7	0.9	
of which: contribution from real GDP growth	-5.4	-6.5	-3.5			-2.6	-1.4	-1.7	-1.9	-2.1	-2.1		-2.1	-1.7	
Contribution from real exchange rate depreciation	14.1	-0.6	-4.5			3.0	0.9	-0.6	0.1	0.1	0.0		...	...	
Other identified debt-creating flows	-1.7	-1.1	-0.3			-0.2	-0.5	0.0	0.0	0.0	0.0		0.0	0.0	
Privatization receipts (negative)	-0.3	0.0	0.0			-0.1	-0.4	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)	-1.5	-1.1	-0.3			-0.1	-0.1	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	8.2	-19.9	-4.5			-18.2	0.6	0.4	0.4	0.0	0.0		-0.2	-1.0	
Other Sustainability Indicators															
PV of public sector debt	6.9	6.3	13.5			14.0	16.8	17.9	18.9	19.5	19.9		20.2	15.0	
of which: foreign-currency denominated	0.0	0.0	9.7			11.7	14.1	15.6	16.9	17.7	18.4		19.4	14.7	
of which: external	...	...	9.7			11.7	14.1	15.6	16.9	17.7	18.4		19.4	14.7	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need [2]	10.8	4.0	5.0			7.1	4.9	5.3	4.7	4.2	4.0		3.2	2.9	
PV of public sector debt-to-revenue and grants ratio (percent)	29.9	25.0	55.5			50.4	57.9	65.0	66.6	69.2	70.7		69.3	40.8	
PV of public sector debt-to-revenue ratio (percent)	49.1	43.0	89.6			88.5	99.4	102.5	105.6	108.2	110.0		105.1	55.2	
of which: external [3]	…	…	63.9			74.1	83.5	89.4	94.5	98.5	101.7		100.6	54.0	
Debt service-to-revenue and grants ratio (percent) [4]	9.0	6.8	5.1			3.5	2.4	3.0	3.0	3.2	3.1		3.6	4.1	
Debt service-to-revenue ratio (percent) [4]	6.5	5.6	4.1			3.7	3.2	3.2	3.2	3.1	3.1		2.7	1.5	
Primary deficit that stabilizes the debt-to-GDP ratio	-12.0	28.3	14.6			21.8	0.6	1.9	1.5	2.2	2.0		2.4	2.3	
Key macroeconomic and fiscal assumptions															
Real GDP growth (percent)	8.4	8.7	7.0	8.2	3.0	6.5	6.2	6.5	6.6	7.0	6.5	6.6	6.5	7.0	6.8
Average nominal interest rate on forex debt (percent)	0.5	0.4	0.5	1.4	1.2	0.7	1.1	1.2	1.2	1.2	1.2	1.1	1.2	1.2	1.2
Average real interest rate on domestic debt (percent)	4.7	8.8	3.0	24.5	24.3	-2.7	12.7	11.1	10.1	10.7	11.1	8.8	12.9	15.1	14.1
Real exchange rate depreciation (percent, + indicates depreciation)	28.0	7.4	-8.3	9.4	20.1	3.0	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, percent)	6.5	0.9	4.5	0.0	7.9	13.2	2.9	1.3	2.3	2.1	1.7	3.9	-0.4	-2.2	-1.4
Growth of real primary spending (deflated by GDP deflator, percent)	-0.1	0.3	0.1	0.1	0.2	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Grant element of new external borrowing (percent)	...	...	...	…	…	48.9	45.8	48.8	48.9	50.2	50.4	48.8	50.3	49.1	...

Sources: Mozambican authorities; and World Bank and IMF 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 5. Mozambique: Sensitivity Analysis for Key Indicators of Public Debt 2008–28

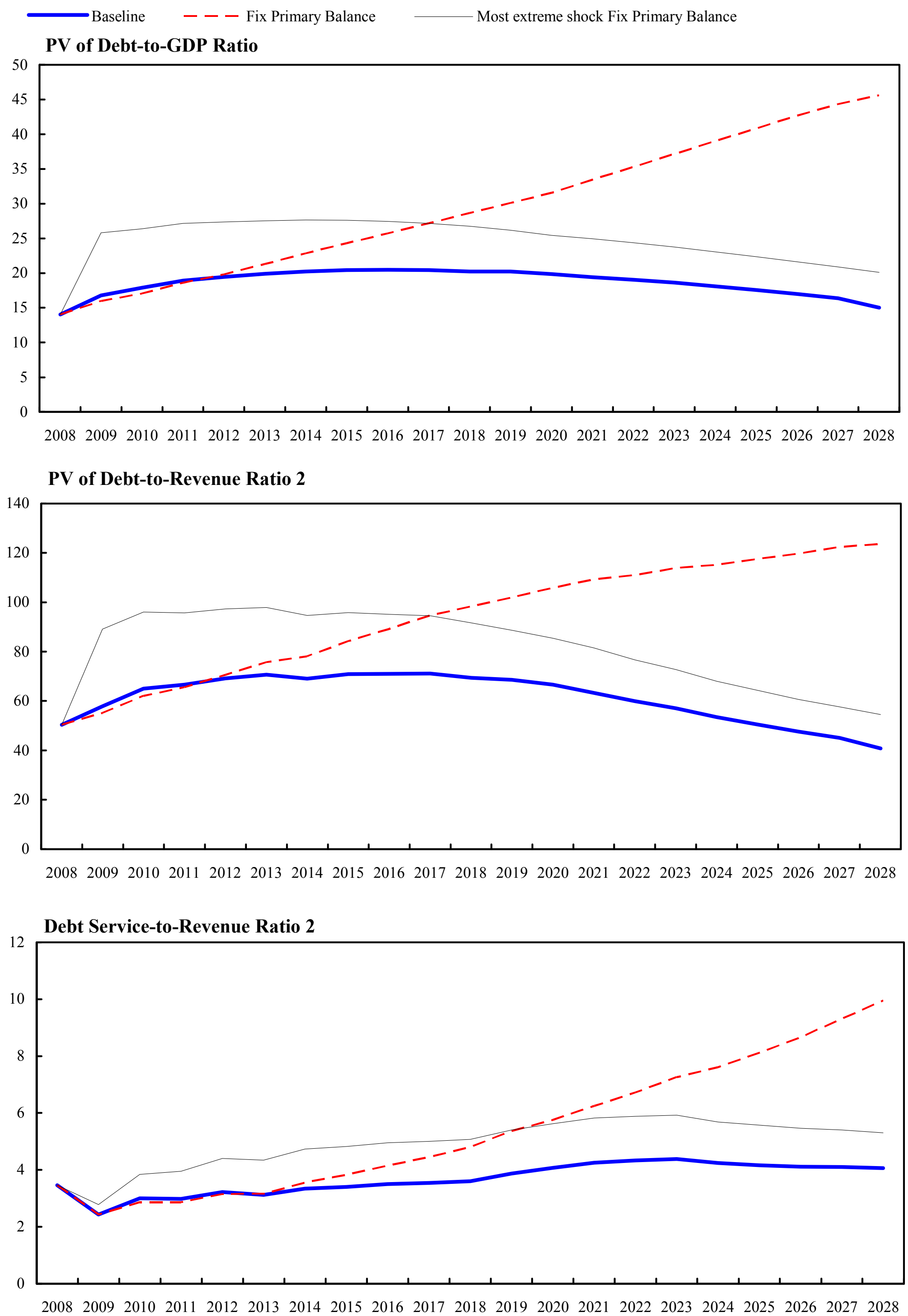
	Projections							
	2008	2009	2010	2011	2012	2013	2018	2028
PV of Debt-to-GDP Ratio								
Baseline	14	17	18	19	19	20	20	15
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	14	13	11	10	9	8	5	4
A2. Primary balance is unchanged from 2008	14	16	17	19	20	21	29	46
A3. Permanently lower GDP growth [1]	14	17	18	20	21	22	27	42
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2009–10	14	17	19	20	21	22	24	22
B2. Primary balance is at historical average minus one standard deviations in 2009–10	14	16	17	18	19	19	20	15
B3. Combination of B1-B2 using one half standard deviation shocks	14	15	14	16	16	17	17	11
B4. One-time 30 percent real depreciation in 2009	14	21	21	21	21	21	21	18
B5. 10 percent of GDP increase in other debt-creating flows in 2009	14	26	26	27	27	28	27	20
PV of Debt-to-Revenue Ratio [2]								
Baseline	50	58	65	67	69	71	69	41
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	50	45	42	37	34	30	19	12
A2. Primary balance is unchanged from 2008	50	55	62	66	71	76	98	124
A3. Permanently lower GDP growth [1]	50	58	67	69	74	77	90	109
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2009–10	50	59	68	70	74	77	81	59
B2. Primary balance is at historical average minus one standard deviations in 2009–10	50	55	63	65	67	69	68	40
B3. Combination of B1-B2 using one half standard deviation shocks	50	51	53	55	57	59	58	31
B4. One-time 30 percent real depreciation in 2009	50	74	77	75	76	76	72	48
B5. 10 percent of GDP increase in other debt-creating flows in 2009	50	89	96	96	97	98	92	54
Debt Service-to-Revenue Ratio [2]								
Baseline	3	2	3	3	3	3	4	4
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	3	2	2	2	2	1	1	0
A2. Primary balance is unchanged from 2008	3	2	3	3	3	3	5	10
A3. Permanently lower GDP growth [1]	3	2	3	3	3	3	4	9
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2009–10	3	2	3	3	3	3	4	6
B2. Primary balance is at historical average minus one standard deviations in 2009–10	3	2	3	3	3	3	4	4
B3. Combination of B1-B2 using one half standard deviation shocks	3	2	3	2	3	3	3	3
B4. One-time 30 percent real depreciation in 2009	3	3	4	4	4	4	5	5
B5. 10 percent of GDP increase in other debt-creating flows in 2009	3	2	5	4	5	5	5	6

Sources: Mozambican authorities; and World Bank and IMF staff estimates and projections.

[1] Assumes that real GDP growth is at baseline minus one standard deviation divided by the length of the projection period.

[2] Revenues are defined inclusive of grants.

Figure 2. Mozambique: Indicators of Public Debt Under Alternative Scenarios, 2008–28 [1]



Sources: Mozambican authorities; and World Bank and IMF staff estimates and projections.

[1] The most extreme stress test is the test that yields the highest ratio in 2018.

[2] Revenues are defined inclusive of grants.