INTERNATIONAL DEVELOPMENT ASSOCIATION AND
INTERNATIONAL MONETARY FUND

REPUBLIC OF MOZAMBIQUE

Joint World Bank/IMF Debt Sustainability Analysis

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

Approved by Sudarshan Gooptu and Sudhir Shetty (World Bank)
and Roger Nord and Dominique Desruelle (IMF)

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The joint IMF-World Bank low-income country debt sustainability analysis (LIC DSA) based on end-2009 debt stocks indicates that Mozambique's risk of debt distress remains low. As in the previous DSA, the external debt indicators remain well below their respective thresholds. However, the government's plans to temporarily increase public investment financed by external borrowing on nonconcessional terms, in line with the Fund's revised Debt Limits Policy, will noticeably increase debt vulnerabilities, as stress tests approach, and in some instances temporarily and marginally exceed, the relevant thresholds. This calls for a cautious approach with such borrowing and resolve to improve debt management capacity. As public debt is largely external, the evolution of public debt indicators largely mirrors that of external debt.

I. BACKGROUND

External debt

1. **Mozambique's external public and publicly guaranteed (PPG) debt stock at end-2009 was US$3.45 billion in nominal terms or US$1.59 billion in PV terms** (Table 1). Of this, 67 percent was owed to multilateral creditors, 33 percent to bilateral creditors, while outstanding obligations to commercial creditors were negligible. The debt stock includes about US$0.7 billion in obligations to non-Paris Club creditors that at end-2009 had not yet granted debt relief comparable to the HIPC Initiative.

2. **The previous full DSA was conducted in late 2008 on the basis of end-2007 debt stocks.** At that time, the PV of PPG debt was US$0.84 billion, and the PV of debt at end-2009 was projected to be US$1.4 billion. The increase in the PV of PPG debt at end-2009 from the previous projection largely reflects in equal part the reduction in the discount rate from 5 to 4 percent and changes in the exchange rate. Borrowing in the interim was broadly

as expected: disbursements were about 30 percent lower than projected for 2008 but were about 20 percent higher in 2009.

3. **Private sector debt accounts for about two-fifths of Mozambique's total external debt, mainly because of borrowing to finance megaprojects**. Particularly significant was borrowing of about US$0.8 billion in 2007 related to the Cahora-Bassa hydroelectric power station.

Table 1. Mozambique: External and Domestic Nominal Debt Outstanding at end-2009

	Millions of US dollars	Percent of total external debt	Percent of GDP
Public and Publicly Guaranteed Debt	3,745		38.1
Domestic Debt [1]	294		3.0
External Debt	3,451	100.0	35.1
Multilateral Creditors	2,307	66.8	23.5
IMF	171	5.0	1.7
IDA [2]	1,339	38.8	13.6
African Development Bank [3]	385	11.2	3.9
Othe Multilaterals [3]	411	11.9	4.2
Bilateral Creditors [3]	1,144	33.2	11.6
Paris-Club [4]	74	2.1	0.8
Non-Paris Club [5]	1,070	31.0	10.9
Commercial Creditors	0.0	0.0	0.0
Total Private and Non-Guaranteed External Debt	2,605		26.5
Memorandum Items			
Total public and private external debt	6,055		61.6
PV of external Debt	4,510		45.9
PV of PPG external debt	1,589		16.2
PV of non-PPG external debt	2,921		29.7
Nominal GDP in US dollars	9,831		

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

[1] Central Government debt only, excluding deposits held at the banking sector.

[2] World Bank data.

[3] Mozambican authorities' data.

[4] Assumes implementation of debt relief.

[5] Only includes debt relief if concluded. Tables 2 and 4 include obligations assuming debt relief concluded by 2010.

Debt relief

4. **Mozambique in 2001 benefited from assistance under the HIPC Initiative provided by multilateral and Paris Club bilateral creditors.**[1] Mozambique received further assistance in 2006 under the Multilateral Debt Relief Initiative (MDRI) from the African Development Fund (AfDF), the International Development Association (IDA) of the World Bank, and the IMF, according to which Mozambique's debt stock fell by US$1.9 billion in nominal terms in 2006.[2]

5. **The authorities have continued working to conclude debt relief agreements with Paris Club creditors under the HIPC Initiative**. Since issuance of the last full DSA, the Mozambican authorities have contacted Japan on the formalization and signing of the agreement on all pending debt cancellation. They reconfirmed that Japan is still in the process of coordinating domestic legal and financial issues among relevant ministries to that end. Mozambique has also reached an agreement in principle with Russia that remains to be concluded.

6. **Mozambique has experienced delays in negotiating debt relief agreements with some of its non-Paris Club bilateral creditors.** Negotiations are still ongoing with Angola, Bulgaria, India, Iraq, Libya, and Poland. The DSA projections assume that negotiations with non-Paris Club creditors will be concluded during 2010.

Domestic debt

7. **The central government's domestic debt at end-2009 amounted to 3 percent of GDP**. This debt is low by regional standards, reflecting the government's long-standing commitment to generally avoid domestic financing in an effort to provide sufficient room for private sector credit growth. Most of the government's domestic debt originates from bonds issued to strengthen the central bank's balance sheet during 2005–07 and to restructure commercial banks. It excludes the central bank's securities issued for monetary operations.

Borrowing by state-owned enterprises

8. **The stock of external PPG debt incorporates external borrowing of the central government on-lent to state-owned enterprises (SOEs).** The Ministry of Finance holds a veto on SOE's external borrowing. The central government's domestic debt at end-2009, however, does not include domestic obligations incurred by the SOEs, though these are relatively small. The financial positions of the key SOEs do not currently pose any

[1] 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).

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

substantive threat to the central government's fiscal position and are not expected to pose a threat in the foreseeable future.

9. **Since late 2008, the government has concluded four-party framework agreements with Portugal for credit lines.** These credit lines, totaling €700 million (about 10 percent of GDP), are to help finance infrastructure investment spending during 2010–15.[3] Contractual partners are the governments of Mozambique and Portugal, the Portuguese savings bank (CGD), and a local bank (BCI). The agreement allows for the extension of external loans to BCI and on-lending of these funds to the road fund, a domestic public entity to finance road infrastructure. The terms for €400 million of the credit lines are concessional, but the terms on the remaining €300 million have a low grant element, as well as a relatively short maturity.[4] The government has refrained from providing external guarantees, but has guaranteed repayments to the domestic bank. These loans are incorporated into the DSA as part of public external debt, although they do not trigger an assessment under IDA's Nonconcessional Borrowing Policy on technical grounds.

II. UNDERLYING DSA ASSUMPTIONS

Macroeconomic assumptions

10. **The underlying macroeconomic assumptions (Box 1) are consistent with the medium-term macroeconomic framework under the Fund-supported program.** Projected real GDP growth is below the 8 percent average over the past decade. During the period, growth was supported by large aid flows, as well as high private capital inflows, mainly to the natural resource sector, that together averaged about 20 percent of GDP. But growth has been trending down and requires an ambitious agenda of structural reforms and infrastructure investment to be sustained. The government is therefore aiming to temporarily raise public investment from an average of 11 percent of GDP during the past decade to about 15 percent of GDP over the medium term (or to 17 percent of GDP including the Portuguese credit lines). To continue sustaining growth, public investment will probably remain around 13 percent of GDP beyond the medium term. However, while private capital inflows are likely to be sustained, a tapering off of the significant donor assistance seems likely. The government will therefore need to rely more heavily on domestic resources and resort to external financing on commercial terms.

11. **The recently adopted Fund's new Debt Limits Policy makes room for such nonconcessional financing**. In November 2009, Mozambique was classified as a lower vulnerability/lower capacity country. Its CPIA and PEFA ratings, reflecting the significant PFM and other institutional reforms undertaken by the authorities in recent years, put it at the

[3] Lines of credit for €100 million, €400 million, and €200 million were signed in late 2008, late 2009 and early 2010, respectively.

[4] According to the OECD DAC's methodology for assessing concessionality.

threshold of a classification as a high capacity country, although its debt management capacity was considered limited and prevented a higher classification. The authorities are receiving technical assistance from the World Bank through the Financial Sector Technical Assistance Project (FSTAP) to strengthen their debt management capacity. Under the new three-year economic program supported by the Fund's Policy Support Instrument, the authorities are committed to preserving macroeconomic stability, pursuing their reform agenda in public financial management, tax policy, and tax administration, and strengthening debt management.[5] In view of these commitments, some untied limits on nonconcessional borrowing are envisaged during this period, consistent with the Fund's new Debt Limits Policy.

Investment and growth

12. **The impact of new borrowing to finance infrastructure investment on debt sustainability hinges critically on its impact on growth**. A range of studies generally finds a positive impact of public investment on growth, operating not only through a direct impact on economic activity, but also through spillover effects on private investment. In a multi-country study, Burnside and Collier (1997) found that a sustained increase in grant-financed investment by one percent of GDP raised real GDP growth in low-income countries with good policy implementation on a sustained basis by about 0.4 percentage points.[6] A World Bank study focusing on Mozambique drew a comparable conclusion.[7] It suggested that an increase in grant-financed investment by one percent of GDP increased growth by 0.25 percentage points. A cross-country Fund study largely confirms these estimates and, for Mozambique, concluded that a one percent of GDP increase in public infrastructure investment would raise output growth by 0.5 percentage points.[8] How public investment is used also matters. For example, Aschauer (1989) found that investing in public infrastructure yields supernormal returns.[9] Similarly, Easterly and Rebelo (1993) found that investment in transportation and communications is consistently correlated with growth.[10] Hulton (1996), as

[5] Specific commitments include that the authorities complete their first own semiannual debt sustainability analysis by end-September 2010 and develop a multi-year debt strategy by end-November 2010. In these endeavors, they will benefit from Bank and Fund technical assistance; a Medium-Term Debt Strategy (MDTS) technical assistance mission is scheduled for June 2010.

[6] Burnside, Craig, and David Dollar, 1997. "Aid Spurs Growth in a Sound Policy Environment." Finance and Development, December 1997.

[7] Benito-Spinetto, Maria Teresa, and Peter G. Moll, 2005. "Macroeconomic Developments, Economic Growth and Consequences for Poverty." (Background paper for the Mozambique 2005 Country Economic Memorandum). February 2005.

[8] Vitek, Francis, forthcoming IMF Working Paper, 2010.

[9] Aschauer, D., "Is public expenditure productive?". Journal of Monetary Economics, 1989.

[10] Easterly W. and S. Rebelo, "Fiscal Policy and Economic Growth". Journal of Monetary Economics, December 1993.

well as Aschauer (2000), identified that a growth penalty is associated with the ineffective use of public infrastructure investment.[11]

13. **However, the growth impact of public investment on growth is also affected by how it is financed**. Costly financing can reduce the impact because of negative spillovers on fiscal and external balances and private investment. This is particularly pertinent when, as determined by Vitek (2010) and Aschauer (2000), private investment can have a larger impact on growth than public investment. Indeed, Aschauer (2000) found that external debt financing of public investment could reduce the impact on growth, depending on the quality and effective use of the investment, as well as the financing costs. These considerations emphasize the importance of using costly external financing exclusively for infrastructure projects with a high rate of return, based on feasibility studies to carefully assess projects.

Borrowing and growth impact assumptions

14. **The government is preparing impact studies and will initially focus on projects with a presumed high rate of return on growth and for which the financial viability is assured.** The government plans to undertake infrastructure investment financed by nonconcessional borrowing over the medium term ranging between 1½ and 3 percent of GDP and averaging about 2 percent of GDP per year (US$300 million from 2011 to 2013 then falling to US$250 million by 2015). The need for such investment is likely to persist, and the projections incorporate continued nonconcessional borrowing at around 1 percent of GDP.

15. **The growth impact projections for the DSA are broadly in line with recent studies, as noted above.** In line with these findings, this investment is expected to raise real GDP growth by about 1 to 1½ percentage points over the next few years, with limited spillover effects into the longer term. The rate of return of further investment can be expected to fall, and the investment beyond the medium term is conservatively projected to raise real GDP growth by 0.3 percentage points.

16. **The projections incorporate borrowing by the central government on concessional and nonconcessional terms.** Central government borrowing for its own budgetary spending is assumed to be on IDA and AfDB terms. The grant element on this borrowing averages about 47 percent over the projection period. The projections also incorporate a limited amount of borrowing on nonconcessional terms. The investment projects and the financing modalities are still being finalized, but are currently expected to be mainly financed by sovereign borrowing or through loans mediated by official bilateral creditors (such as the Portuguese credit line) that would be on-lent to implementing SOEs. Accordingly, such nonconcessional borrowing is assumed to have a 10-year maturity, with one year of grace and an interest rate of 5 percent.

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[11] Hulten, C.R. "Infrastructure Capital and Economic Growth: How Well You Use It May Be More Important than How Much You Have". NBER Working Paper No. 5847, December 1996.

Box 1. Macroeconomic Assumptions 2010–30

The medium-term assumptions in the baseline scenario for 2010–30 are consistent with the medium-term macroeconomic framework underlying the authorities' request for a successor PSI and with the preliminary outline of the government's updated medium-term development plan.

Real GDP growth is projected to approach 8 percent over the next few years and stabilize around 7½ percent in the longer term. This includes the impact of higher infrastructure investment raising growth by 1 to 1½ percentage points in the medium term and by about ⅓ percentage points in the longer term. This represents a deceleration from the annual average above 8 percent over the past decade.

Consumer price inflation is projected to stabilize around 5½ percent over the forecast period.

External financing. Mozambique is expected to remain reliant on aid flows for the foreseeable future, but this reliance is expected to decline. The grant-equivalent of total external financing is projected to fall from an average of over 11 percent of GDP during 2010-15 toward 7 percent of GDP by the end of the forecast period, in part reflecting a shift in the composition toward loan financing. Concessional borrowing through the budget is projected to trend down from 3.8 percent of GDP in the medium term to 3.4 percent in the longer term. All IDA financing is expected to be through loans. Public sector borrowing, including nonconcessional borrowing, is projected to rise from an annual average of around 5 percent of GDP during 1999–2009 to over 7 percent of GDP during 2010–15, declining toward 4½ percent of GDP thereafter.

Growth of exports of goods and services is projected to slightly accelerate from about 11 percent per year over 2010–15 to over 12 percent thereafter. This is largely driven by strong growth prospects for megaproject exports from the natural resource sector, for which investment is relatively advanced. Other exports are assumed to increase in line with import demand growth in Mozambique's trade partners.

Import growth is projected to remain steady around 10 percent per year in the medium term, then accelerating to about 11 percent. The strong import growth is driven by both private and public capital inflows. Other imports are assumed to grow at the rate of real GDP growth.

The noninterest current account deficit after grants is projected to widen from about 10 percent of GDP in 2009 to about 12 percent in the medium term because of the increase in public borrowing, as well as high private capital inflows. Beyond the medium term, private capital inflows are expected to rise relative to GDP, offsetting declining public borrowing. The noninterest current account deficit is projected to narrow toward 9 percent of GDP in the longer term, largely because of gains in the trade balance on goods and services.

Fiscal revenues are expected to rise from about 18 percent of GDP in 2009 to about 20 percent of GDP in 2015, largely reflecting a 0.5 percent of GDP annual revenue effort on account of improved revenue administration and a broadening tax base. Over time, nontax revenues from natural resource exploitation, particularly megaprojects, could make a growing contribution to the budget, but the increase of the overall revenue effort is conservatively projected to slow somewhat after 2015. Nevertheless, total revenue is projected to reach about 22 percent of GDP by the end of the forecast period, close to Mozambique's potential tax ratio, as estimated by a number of studies.[1]

The **domestic primary balance** is assumed to remain steady under 4 percent of GDP, with domestic financing between ½ and 1 percent of GDP. Primary spending is projected to rise to nearly 35 percent of GDP in 2015 because of the increase in externally-financed investment, but then levels off to around 31 percent of GDP as external financing declines and debt service payments increase.

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[1] See, for example, IMF, 2007, "Mozambique: Evaluation of the Post-Reforms Tax System".

III. External Debt Sustainability Analysis

17. **Under the baseline scenario, all debt indicators remain well below their respective thresholds, including in the longer term** (Table 2 and Figure 1). However, the debt indicators rise significantly towards their respective thresholds over the next five years, as the authorities make use of the already contracted Portuguese credit lines and step up their borrowing on nonconcessional terms to address the country's infrastructure gap.

- **PV of debt:** The PV of PPG external debt is projected to rise from 17 percent of GDP in 2009 to about 31 percent in 2015, still noticeably below the relevant debt burden threshold of 40 percent. It would then decline below 25 percent by 2030. In terms of exports, the PV of PPG debt increases from 67 percent in 2009 to about 112 percent by 2015—against a threshold of 150 percent—before falling to 68 percent by 2030. Relative to government revenues, with a debt burden threshold of 250 percent, the PV of PPG debt would rise from 94 percent in 2009 to 154 percent in 2015, before declining to 104 percent by 2030.
- **Debt service:** Debt service on PPG external debt would rise from nearly 2 percent of exports in 2009 to 7½ percent in 2016 before decreasing towards 4 percent by 2030, thus remaining well below the 20 percent threshold. Debt service on PPG external debt would rise from below 3 percent of fiscal revenues in 2009 to over 11 percent in 2016 before falling towards 6 percent by 2030.

18. **The debt sustainability indicators are sensitive to shocks (**Table 3 and Figure 1).[12] The analysis suggests that the threshold for the PV of debt-to-GDP would be temporarily and marginally breached under a 30 percent depreciation of the exchange rate versus the U.S. dollar (B6) as well as under the combination shock (B5). The stress tests also suggest a heightened vulnerability to adverse export developments (B2). Under the standard export shock, the PV of debt-to-exports ratio reaches 190 percent by 2015, thus exceeding the relevant threshold. However, this shock is extreme as it is based on a standard deviation of exports receipts largely driven by the exceptional circumstances faced in 2009. Export receipts fell sharply in 2009, mainly because aluminum prices fell by nearly half, and the standard export shock would have implausibly imposed an additional price drop of similar magnitude to the baseline. A modified export shock was designed to capture the historical volatility over the past two decades of prices for aluminum, which accounts for roughly half of Mozambique's export proceeds. Under this modified test, the PV of debt-to-exports ratio reaches, but not exceeds, the relevant threshold. Mozambique's export volatility is expected to decline over the medium term, as its export base will become more diversified. Such

[12] The year 2000 is excluded from the stress tests relying on historical data, as macroeconomic performance was skewed by very severe floods and because of large breaks in the data series for the national accounts and balance of payments.

diversification would mainly come from the natural resource sector, as projects are underway or planned to expand electricity, coal, minerals (e.g., titanium) and possibly oil exports.

19. **The debt sustainability indicators are also sensitive to a recurrence of past macroeconomic circumstances.** In this historical scenario (A1), the PV of debt relative to GDP approaches the relevant PV of debt-to-GDP threshold, but remains below it. However, this scenario does not take into account the significant structural changes in the Mozambican economy in the post-civil war period and the considerable improvements in Mozambique's macroeconomic policy environment under successive Fund-supported programs, all of which make a recurrence of the past economic performance unlikely. Among other things, there was a shift in the structure of the economy, as large private capital inflows in the early years of the decade in the natural resources sector subsequently supported a surge in exports and a sharp fall in the current account deficit. Significant donor support helped bolster economic development. On the policy side, the authorities adopted a tighter fiscal and monetary policy stance that helped bring inflation to single digits over time and provided more room for private sector credit. This was also accompanied by exchange rate liberalization and important structural reforms that enhanced the efficiency of the economy. Overall, key economic indicators became less volatile during the period.

20. **The external debt indicators would deteriorate, but remain below their respective thresholds, if nonconcessional resources are not used productively.**[13] In this high investment-low growth scenario (A3), real GDP growth would remain between 6½ and 7 percent, or about 1 to 1½ percentage points below the baseline in the medium term and about ½ percentage points in the longer term. This scenario assumes that foreign financing and related spending would remain unchanged relative to the baseline in nominal terms. However, lower domestic revenues generate higher financing requirements that are met by additional external borrowing on commercial terms. To meet the additional external debt service obligations, the government is assumed to reduce domestic primary spending relative to the baseline in nominal terms. By the end of the forecast period, the domestic primary balance deteriorates by about 1½ percent of GDP compared to the baseline and the additional financing rises to about 3 percent of GDP.

IV. PUBLIC SECTOR DEBT SUSTAINABILITY

21. **The evolution of the public debt indicators (including domestic debt) mirrors that of the external indicators because of the predominance of external debt** (Table 4 and Figure 2). This medium-term increase in public debt reflects the temporary surge in public investment financed by external borrowing on nonconcessional terms. However, over the longer term, the public debt stock projections also include a marginal

[13] This scenario maintains the baseline's assumptions regarding the exchange rate and public external borrowing in U.S. dollar terms.

increase in domestic debt from about 3 percent of GDP at end-2009 to 4 percent of GDP in 2030 that should not affect the availability of credit to the private sector.

22. **Public debt indicators will develop as follows:**

- Mozambique's public debt obligations are expected to rise from 29 percent of GDP at end-2009 to 48 percent of GDP in 2015 and then decline towards 42 percent of GDP by 2030.

- Similarly, the PV of public debt is projected to rise from 20 percent of GDP at end-2009 to over 35 percent of GDP in 2015 before trending back down to 29 percent of GDP by 2030.

- The evolution of the PV of debt and of debt service relative to revenues (including grants) is similar.

23. **The large proportion of external debt makes the public debt burden vulnerable to the same set of shocks as external debt (**Table 5)**.** There are, however, some additional risks related to the accumulation of domestic financing. The stress tests indicate that public sector debt ratios are most vulnerable to an increase in other debt-creating flows (B5), to a one-time depreciation of the exchange rate (B4), and also to temporarily lower GDP growth (B1). The debt indicators rise noticeably in the long run when the primary deficit is held unchanged from the high level in 2010 that reflected the easing of the fiscal policy stance during the recent global crisis (A2). This emphasizes the importance of now reversing this policy stance, which the authorities intend to pursue under their successor PSI. Consistent with the program, the primary deficit is projected to temporarily increase by about 1½ percent of GDP from 2009 to 2011 because of the temporary increase in externally-financed investment, but the domestic portion of the balance is projected to improve by nearly 1 percent of GDP between 2009 and 2015.

V. VIEWS OF THE AUTHORITIES

24. **The authorities are in broad agreement with the conclusions.** A preliminary draft of the DSA and, in particular, the implications of scaling up infrastructure investment financed by nonconcessional borrowing were extensively discussed with the authorities. While broadly agreeing with the findings, the authorities reiterated their intention to adopt a cautious approach to nonconcessional borrowing and ensure that such borrowing would exclusively be channeled to infrastructure projects with a high economic rate of return. In their view, such an approach would be consistent with their overriding objective of preserving their strong track record with respect to macroeconomic stability. Finally, as mentioned above, the authorities committed to strengthening their debt management and develop a medium-term debt strategy to be able to make informed borrowing decisions. These intentions have been anchored in their new PSI-supported economic program.

VI. Conclusions

25. **In the staffs' view, Mozambique continues to face a low risk of debt distress.** Its external debt levels are expected to remain below their indicative thresholds for debt distress. However, the government's plans to temporarily increase public investment financed by external borrowing on nonconcessional terms, in line with the Fund's revised Debt Limits Policy, will noticeably increase debt vulnerabilities, as debt ratios under the stress tests approach, and in some instances temporarily and marginally exceed, the relevant thresholds. Although Mozambique's public debt is expected to decline beyond the medium term, stress tests suggest vulnerabilities, mirroring the large share of external debt in total debt.

26. **This calls for a cautious approach with nonconcessional borrowing and resolve to improve debt management capacity.** Where possible, the authorities should continue to rely on concessional borrowing and grants to minimize future debt service, and any nonconcessional external 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. The authorities' commitments under the successor PSI, including with respect to the continued pursuit of prudent macroeconomic policies and structural reforms to boost their debt management capacity, should be conducive to containing debt vulnerabilities.

Table 2.: External Debt Sustainability Framework, Baseline Scenario, 2007-2030 1/
(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average	Standard Deviation	Projections									
	2007	2008	2009	2001-09	2001-09	2010	2011	2012	2013	2014	2015	2010-2015 Average	2020	2030	2016-2030 Average
External debt (nominal) 1/	**57.3**	**49.7**	**52.5**	**87.6**	**36.9**	**55.5**	**61.6**	**63.3**	**63.7**	**65.1**	**66.3**	**62.6**	**64.9**	**62.7**	**64.3**
o/w public and publicly guaranteed (PPG)	18.0	21.3	26.0	62.0	38.6	32.1	36.3	39.0	40.7	42.9	44.2	39.2	41.7	37.6	40.3
Change in external debt	-7.5	-7.6	2.8	-11.3	16.7	2.9	6.1	1.7	0.5	1.4	1.2	2.3	0.5	-0.4	-0.2
Identified net debt-creating flows	-2.8	-4.5	3.5	0.2	7.6	1.4	2.1	3.2	3.2	2.6	2.1	2.4	1.4	1.4	1.8
Non-interest current account deficit	**7.9**	**9.6**	**10.4**	**10.9**	**3.7**	**12.1**	**11.6**	**12.0**	**11.6**	**11.0**	**10.7**	**11.5**	**9.9**	**9.2**	**9.8**
Deficit in balance of goods and services	9.8	14.1	18.7	14.4	4.4	19.1	17.7	17.5	17.6	17.3	17.3	17.8	15.5	10.8	14.2
Exports	35.4	32.3	25.1	30.3	4.8	26.8	30.9	29.8	28.3	27.9	28.1	28.6	30.2	36.1	32.0
Imports	45.2	46.5	43.8	44.8	3.2	45.9	48.6	47.3	46.0	45.2	45.4	46.4	45.7	46.9	46.2
Net current transfers (negative = inflow)	-7.4	-8.6	-7.8	-7.4	3.2	-7.8	-8.5	-8.3	-8.2	-8.2	-8.2	-8.2	-6.9	-5.4	-6.4
o/w official	-6.3	-7.7	-6.9	-7.1	3.1	-6.9	-7.6	-7.5	-7.4	-7.4	-7.4	-7.4	-6.0	-4.5	-5.6
Other current account flows (negative = net inflow)	5.5	4.0	-0.6	3.9	3.5	0.7	2.4	2.7	2.2	1.9	1.6	1.9	1.2	3.8	2.0
Net FDI (negative = inflow)	**-5.3**	**-5.9**	**-8.9**	**-5.5**	**2.5**	**-9.0**	**-6.8**	**-6.1**	**-5.8**	**-5.9**	**-6.1**	**-6.6**	**-6.4**	**-5.9**	**-6.1**
Endogenous debt dynamics 2/	**-5.4**	**-8.1**	**2.0**	**-5.1**	**6.9**	**-1.7**	**-2.7**	**-2.6**	**-2.6**	**-2.4**	**-2.6**	**-2.4**	**-2.0**	**-1.9**	**-2.0**
Contribution from nominal interest rate	1.8	2.3	1.6	2.5	0.8	1.6	1.3	1.5	1.8	2.0	2.1	1.7	2.2	2.4	2.3
Contribution from real GDP growth	-4.2	-3.2	-3.2	-7.9	5.5	-3.3	-4.0	-4.2	-4.4	-4.5	-4.7	-4.2	-4.2	-4.3	-4.3
Contribution from price and exchange rate changes	-3.0	-7.2	3.6	0.2	10.6	…	…	…	…	…	…		…	…	
Residual (3-4) 3/	**-4.8**	**-3.1**	**-0.6**	**-11.5**	**17.1**	**1.5**	**4.0**	**-1.5**	**-2.8**	**-1.3**	**-0.8**	**-0.1**	**-0.9**	**-1.8**	**-2.0**
o/w exceptional financing	-1.8	-0.2	0.0	-9.9	13.3	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/	...	...	43.3	43.3		44.1	50.0	51.6	52.0	52.7	53.4	50.6	51.5	49.8	51.1
In percent of exports	...	...	172.6	172.6		164.2	161.7	173.1	183.4	188.9	190.4	176.9	170.9	137.9	160.7
PV of PPG external debt	**...**	**...**	**16.8**	**16.8**		**20.7**	**24.7**	**27.3**	**28.9**	**30.5**	**31.3**	**27.2**	**28.3**	**24.7**	27.1
In percent of exports	**...**	**...**	**66.9**	**66.9**		**77.0**	**79.8**	**91.6**	**101.9**	**109.2**	**111.5**	**95.2**	**93.9**	**68.2**	85.6
In percent of government revenues	**...**	**...**	**94.5**	**94.5**		**112.1**	**131.8**	**142.4**	**146.9**	**152.5**	**154.0**	**139.9**	**134.6**	**103.8**	124.3
Debt service-to-exports ratio (in percent)	**40.7**	**19.2**	**20.0**	**23.8**	7.0	**17.4**	**11.3**	**12.8**	**17.4**	**21.6**	**23.1**	17.3	**24.4**	**23.5**	24.6
PPG debt service-to-exports ratio (in percent)	**1.7**	**1.6**	**1.9**	**2.8**	1.0	**2.9**	**2.3**	**3.4**	**4.9**	**6.4**	**7.7**	4.6	**6.4**	**4.2**	5.8
PPG debt service-to-revenue ratio (in percent)	**3.7**	**3.1**	**2.7**	**6.2**	2.6	**4.2**	**3.7**	**5.3**	**7.1**	**8.9**	**10.7**	6.7	**9.2**	**6.4**	8.4
Total gross financing need (Billions of U.S. dollars)	1.4	1.0	0.6	0.9	0.3	0.8	0.9	1.2	1.5	1.7	1.9	1.3	2.9	8.7	4.8
Non-interest current account deficit that stabilizes debt ratio	15.5	17.2	7.6	22.2	17.8	9.1	5.5	10.3	11.2	9.6	9.5	9.2	9.3	9.6	10.1
Key macroeconomic assumptions															
Real GDP growth (in percent)	7.3	6.7	6.3	8.0	2.0	6.5	7.5	7.6	7.9	7.8	7.8	7.5	7.2	7.5	7.3
GDP deflator in US dollar terms (change in percent)	4.9	14.4	-6.8	2.2	9.0	-2.4	-2.1	5.2	5.3	3.0	0.7	1.6	3.0	2.9	2.9
Effective interest rate (percent) 5/	3.1	4.8	3.2	3.1	1.2	3.2	2.5	2.8	3.3	3.6	3.5	3.1	3.8	4.2	3.9
Growth of exports of G&S (US dollar terms, in percent)	3.7	11.8	-23.2	16.7	18.4	11.2	21.2	9.1	8.1	9.4	9.2	11.4	10.6	13.4	12.3
Growth of imports of G&S (US dollar terms, in percent)	7.6	25.7	-6.6	12.9	11.9	9.0	11.3	10.4	10.3	9.2	9.0	9.9	10.7	11.1	10.7
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	39.0	23.4	24.8	26.3	29.6	30.9	29.0	34.4	35.9	35.6
Government revenues (excluding grants, in percent of GDP)	15.9	16.0	17.8	14.2	2.1	18.4	18.7	19.2	19.7	20.0	20.3	19.4	21.1	23.8	21.9
Aid flows (in Billions of US dollars) 7/	0.9	1.2	0.9	0.8	0.2	1.4	1.4	1.6	1.8	2.0	2.2	1.7	3.0	6.3	3.9
o/w Grants	0.8	0.9	0.9	0.6	0.2	0.9	1.0	1.1	1.3	1.4	1.5	1.2	2.0	3.9	2.5
o/w Concessional loans	0.2	0.2	0.0	0.2	0.1	0.5	0.4	0.5	0.5	0.6	0.6	0.5	1.0	2.5	1.4
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			11.3	11.3	11.2	11.1	11.1	11.0	11.2	9.1	6.8	8.4
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			74.2	64.4	66.0	67.7	70.9	72.4	69.3	73.9	71.0	73.6
Memorandum items:															
Nominal GDP (Billions of US dollars)	8.1	9.9	9.8	6.7	2.3	10.2	10.8	12.2	13.8	15.4	16.7	13.2	27.2	74.0	40.2
Nominal dollar GDP growth	12.6	22.1	-0.9	10.3	8.9	3.9	5.3	13.2	13.6	11.0	8.6	9.3	10.4	10.6	10.4
PV of PPG external debt (in Billions of US dollars)			1.6			2.0	2.7	3.3	4.0	4.6	5.1	3.6	7.6	18.0	10.5
(PVt-PVt-1)/GDPt-1 (in percent)						4.0	**6.6**	**6.4**	**5.5**	4.2	3.4	**5.0**	2.5	2.4	2.4

Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt. Assumes the provision of debt relief by all bilateral creditors on comparable terms at the time of the HIPC completion point.

2/ Derived as [r - g - ρ(1+g)]/(1+g+ρ+gρ) times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, and ρ = growth rate of GDP deflator in U.S. dollar terms.

3/ Includes exceptional financing (i.e., changes in arrears and debt relief); changes in gross foreign assets; and valuation adjustments. For projections also includes contribution from price and exchange rate changes.

4/ Assumes that PV of private sector debt is equivalent to its face value.

5/ Current-year interest payments divided by previous period debt stock.

6/ Historical averages and standard deviations are generally derived over the years 2001-09, 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).

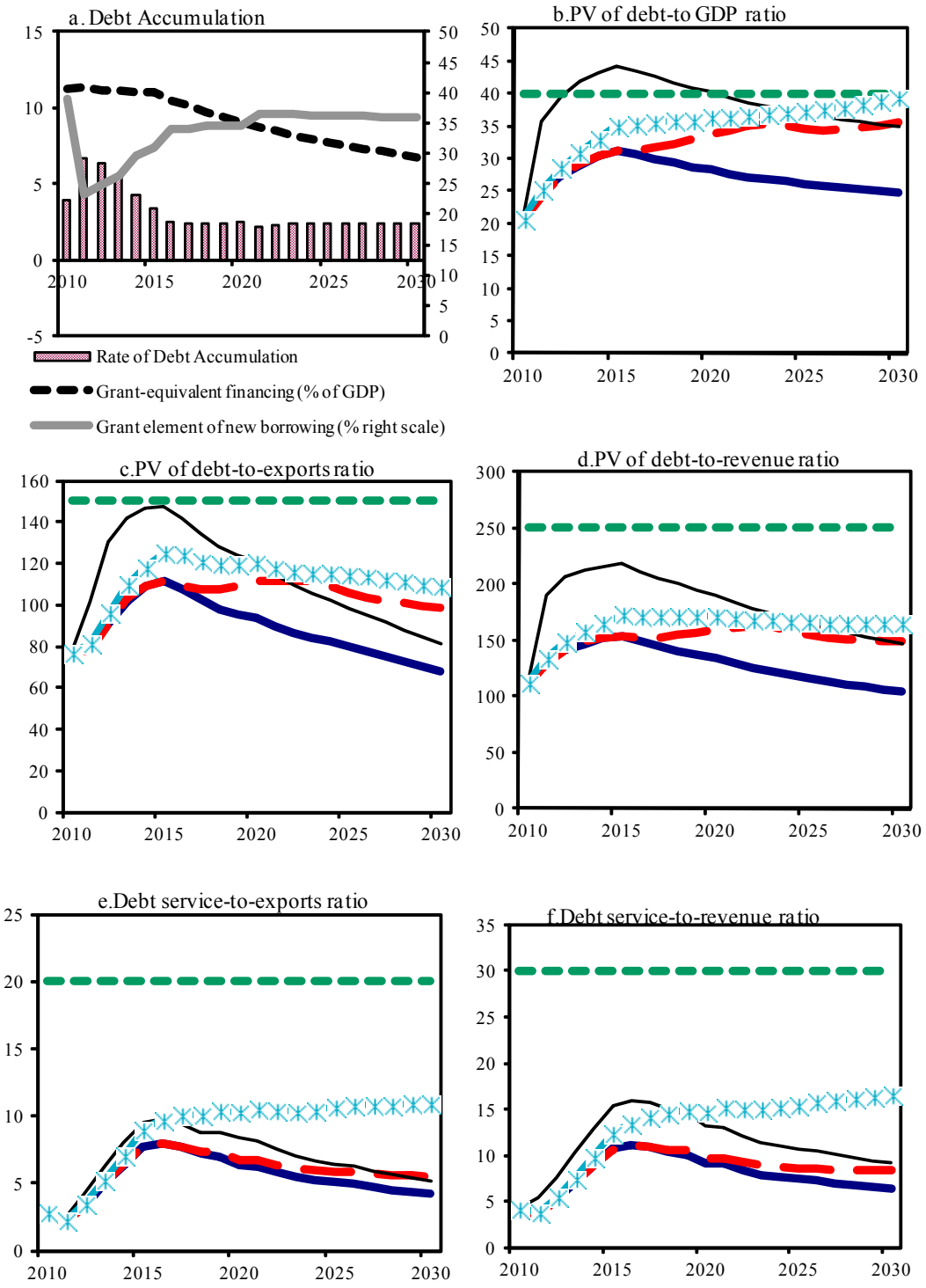
Table 3.Mozambique: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2010-2030
(In percent)

	Projections								
	2010	2011	2012	2013	2014	2015	**2020**	2025	2030
PV of debt-to GDP ratio									
Baseline	20.7	24.7	27.3	28.9	30.5	31.3	**28.3**	26.1	24.7
A. Alternative Scenarios									
A1. Key variables at their historical averages in 2010-2030 1/	20.7	24.2	27.2	29.2	30.5	31.3	**33.6**	34.6	35.6
A3. Alternative Scenario: No Growth Impact of NCB-Financed Investment	20.7	25.1	28.6	31.0	33.0	35.1	**36.3**	37.3	39.3
B. Bound Tests									
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	20.7	25.0	28.2	29.9	30.8	31.6	**28.7**	26.4	24.9
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	20.7	27.5	33.2	34.3	34.9	35.4	**31.0**	27.4	25.1
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	20.7	25.9	32.5	34.4	35.5	36.4	**33.0**	30.3	28.7
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	20.7	30.6	38.2	38.8	39.0	39.4	**33.7**	28.9	25.9
B5. Combination of B1-B4 using one-half standard deviation shocks	20.7	30.6	41.2	41.9	42.2	42.6	**36.5**	31.3	28.2
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	20.7	35.6	39.6	41.8	43.2	44.3	**40.2**	36.9	34.9
PV of debt-to-exports ratio									
Baseline	77.0	79.8	91.6	101.9	109.2	111.5	**93.9**	79.9	68.2
A. Alternative Scenarios									
A1. Key variables at their historical averages in 2010-2030 1/	77.0	78.4	91.3	103.1	109.2	111.5	**111.6**	106.1	98.4
A3. Alternative Scenario: No Growth Impact of NCB-Financed Investment	77.0	81.3	95.9	109.5	118.4	125.1	**120.2**	114.5	108.8
B. Bound Tests									
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	77.0	79.9	92.1	102.4	107.3	109.5	**92.5**	78.5	67.0
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	77.0	101.5	130.7	141.8	146.3	147.8	**120.6**	98.4	81.5
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	77.0	79.9	92.1	102.4	107.3	109.5	**92.5**	78.5	67.0
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	77.0	99.1	128.1	136.8	139.8	140.3	**111.8**	88.6	71.7
B5. Combination of B1-B4 using one-half standard deviation shocks	77.0	106.9	135.0	144.4	147.7	148.2	**118.3**	93.9	76.2
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	77.0	79.9	92.1	102.4	107.3	109.5	**92.5**	78.5	67.0
PV of debt-to-revenue ratio									
Baseline	112	132	142	147	152	154	**135**	117	104
A. Alternative Scenarios									
A1. Key variables at their historical averages in 2010-2030 1/	112	129	142	149	152	154	**160**	155	150
A3. Alternative Scenario: No Growth Impact of NCB-Financed Investment	112	134	149	158	165	173	**172**	167	166
B. Bound Tests									
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	112	134	147	152	154	156	**136**	118	105
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	112	147	173	175	174	174	**147**	122	106
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	112	139	170	175	178	179	**157**	136	121
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	112	164	199	197	195	194	**160**	129	109
B5. Combination of B1-B4 using one-half standard deviation shocks	112	164	215	213	211	210	**174**	140	119
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	112	190	206	213	216	218	**191**	165	147
Debt service-to-exports ratio									
Baseline	2.9	2.3	3.4	4.9	6.4	7.7	**6.4**	5.1	4.2
A. Alternative Scenarios									
A1. Key variables at their historical averages in 2010-2030 1/	2.9	2.2	3.4	5.0	6.5	7.7	**6.8**	5.9	5.5
A3. Alternative Scenario: No Growth Impact of NCB-Financed Investment	2.9	2.3	3.5	5.2	7.1	9.0	**10.3**	10.7	10.9
B. Bound Tests									
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	2.9	2.3	3.4	4.9	6.4	7.7	**6.4**	5.1	4.2
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	2.9	2.6	4.3	6.3	8.0	9.5	**8.4**	6.5	5.2
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	2.9	2.3	3.4	4.9	6.4	7.7	**6.4**	5.1	4.2
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	2.9	2.3	3.9	5.8	7.2	8.5	**7.8**	5.9	4.6
B5. Combination of B1-B4 using one-half standard deviation shocks	2.9	2.5	4.1	6.1	7.6	9.0	**8.2**	6.2	4.9
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	2.9	2.3	3.4	4.9	6.4	7.7	**6.4**	5.1	4.2
Debt service-to-revenue ratio									
Baseline	4.2	3.7	5.3	7.1	8.9	10.7	**9.2**	7.4	6.4
A. Alternative Scenarios									
A1. Key variables at their historical averages in 2010-2030 1/	4.2	3.6	5.3	7.2	9.0	10.7	**9.7**	8.6	8.3
A3. Alternative Scenario: No Growth Impact of NCB-Financed Investment	4.2	3.8	5.4	7.5	9.9	12.4	**14.7**	15.5	16.6
B. Bound Tests									
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	4.2	3.8	5.4	7.3	9.2	11.0	**9.4**	7.6	6.6
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	4.2	3.7	5.6	7.8	9.5	11.3	**10.2**	8.0	6.8
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	4.2	3.9	6.3	8.4	10.5	12.6	**10.8**	8.8	7.6
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	4.2	3.7	6.0	8.4	10.1	11.7	**11.1**	8.6	7.1
B5. Combination of B1-B4 using one-half standard deviation shocks	4.2	3.8	6.5	9.1	10.9	12.8	**12.0**	9.3	7.7
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	4.2	5.4	7.6	10.2	12.8	15.4	**13.2**	10.7	9.2
Memorandum item:									
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	26	26	26	26	26	26	**26**	26	26

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/ The stress test A2, borrowing on less favourable terms, has been dropped as it is not appropriate in this case. Given the commercial financing terms for the investment projects, the A2 scenario would yield unrealistic results, as marginal borrowing under this test is calculated on the average terms of new borrowing, therefore assuming harsher terms than Mozambique would face in the need to cover a financing gap.
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 A3 in which the terms on all new financing are on commercial terms.

Figure 1. Mozambique: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2010-2030 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2020. 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 and in figure f. to a One-time depreciation shock

Table 4.Mozambique: Public Sector Debt Sustainability Framework, Baseline Scenario, 2007-2030
(In percent of GDP, unless otherwise indicated)

	Actual			2001-09	2001-09	Estimate	Projections									
	2007	2008	2009	Average	Standard Deviation	2010	2011	2012	2013	2014	2015	2010-15 Average	2020	2030	2016-30 Average
Public sector debt 1/	21.9	25.4	29.3	66.4	38.1	35.1	39.2	42.4	44.4	46.8	48.4	42.7	46.4	42.0	45.2
o/w foreign-currency denominated	18.0	21.3	26.0	62.0	38.6	32.1	36.3	39.0	40.7	42.9	44.2	39.2	41.7	37.6	40.3
Change in public sector debt	-31.8	3.6	3.9	-11.4	20.7	5.8	4.1	3.2	2.0	2.4	1.5	3.2	-0.2	-0.5	-0.4
Identified debt-creating flows	-8.5	0.4	4.8	-4.6	11.4	3.8	3.3	2.1	1.0	1.7	1.2	2.2	0.1	-0.5	-0.2
Primary deficit	2.3	1.9	5.1	3.3	1.3	4.1	6.6	6.0	5.1	4.2	3.9	5.0	3.4	2.6	3.0
Revenue and grants	25.2	25.4	27.4	23.1	2.4	27.2	28.1	28.4	28.9	29.2	29.5	28.5	28.4	29.0	28.7
of which: grants	9.3	9.4	9.6	8.8	1.6	8.8	9.4	9.3	9.2	9.2	9.2	9.2	7.4	5.2	6.7
Primary (noninterest) expenditure	27.5	27.3	32.4	26.4	3.0	31.3	34.7	34.4	34.0	33.4	33.4	33.5	31.8	31.6	31.7
Automatic debt dynamics	-9.9	-1.2	0.0	-6.3	10.7	-0.1	-3.3	-3.9	-4.1	-2.5	-2.7	-2.8	-3.3	-3.1	-3.2
Contribution from interest rate/growth differential	-5.5	-3.2	0.3	-5.1	5.3	-0.8	-1.3	-3.8	-4.1	-3.4	-2.7	-2.7	-3.3	-3.1	-3.2
of which: contribution from average real interest rate	-1.9	-1.8	1.9	1.1	7.7	1.0	1.1	-1.0	-1.0	-0.2	0.7	0.1	-0.2	-0.1	-0.1
of which: contribution from real GDP growth	-3.6	-1.4	-1.5	-6.2	4.4	-1.8	-2.5	-2.8	-3.1	-3.2	-3.4	-2.8	-3.1	-3.0	-3.1
Contribution from real exchange rate depreciation	-4.4	2.0	-0.4	-1.2	8.4	0.7	-2.0	-0.1	0.0	0.9	0.0	-0.1	...	...	0.0
Other identified debt-creating flows	-0.9	-0.3	-0.3	-1.6	1.1	-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	0.0	-0.2	-0.3	0.6	-0.1	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	0.0	0.0	0.0	0.0
Debt relief (HIPC and other)	-0.9	-0.3	-0.1	-1.3	0.8	-0.1	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	0.0	0.0	0.0	0.0
Residual, including asset changes	-23.3	3.2	-0.9	-6.8	15.4	2.0	0.8	1.1	1.0	0.7	0.3	1.0	-0.3	-0.1	-0.2
Other Sustainability Indicators															
PV of public sector debt	35.2	33.2	20.0	13.0	13.1	23.7	27.6	30.7	32.7	34.4	35.4	30.8	33.0	29.1	32.0
o/w foreign-currency denominated	31.3	29.0	16.8	8.6	13.4	20.7	24.7	27.3	28.9	30.5	31.3	27.2	28.3	24.7	27.1
o/w external	31.3	29.0	16.8	25.7	7.8	20.7	24.7	27.3	28.9	30.5	31.3	27.2	28.3	24.7	27.1
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	3.5	3.1	6.0	5.0	1.2	5.4	7.7	7.4	7.0	6.4	6.6	6.8	5.9	4.8	5.5
PV of public sector debt-to-revenue and grants ratio (in percent)	139.6	130.7	73.2	52.9	50.2	87.2	98.2	108.0	113.2	118.1	120.2	107.5	116.1	100.5	111.6
PV of public sector debt-to-revenue ratio (in percent)	221.0	207.9	112.9	83.7	79.0	128.7	147.7	160.2	166.2	172.2	174.4	158.2	156.8	122.7	146.5
o/w external 3/	196.6	181.8	94.5	157.6	55.2	112.1	131.8	142.4	146.9	152.5	154.0	139.9	134.6	103.8	124.3
Debt service-to-revenue and grants ratio (in percent) 4/	4.8	4.8	3.5	7.6	3.3	4.9	4.0	4.9	6.6	7.7	9.0	6.2	8.8	7.3	8.5
Debt service-to-revenue ratio (in percent) 4/	7.6	7.6	5.4	12.4	5.5	7.3	6.0	7.3	9.8	11.2	13.1	9.1	11.8	8.9	11.2
Primary deficit that stabilizes the debt-to-GDP ratio	34.1	-1.7	1.2	11.2	19.9	-1.7	2.5	2.8	3.1	1.8	2.4	1.8	3.6	3.2	3.4
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	7.3	6.7	6.3	8.0	2.0	6.5	7.5	7.6	7.9	7.8	7.8	7.5	7.2	7.5	7.3
Average nominal interest rate on forex debt (in percent)	0.5	1.5	1.0	0.6	0.4	1.2	1.0	1.4	1.6	1.8	1.8	1.5	1.7	1.4	1.6
Average real interest rate on domestic debt (in percent)	0.2	1.7	4.8	12.9	17.0	2.6	6.7	8.4	8.2	7.6	8.0	6.9	7.9	8.5	8.3
Real exchange rate depreciation (in percent, + indicates depreciation)	-10.4	13.2	-1.7	0.1	12.8	2.7	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	7.4	8.2	3.3	8.1	3.3	9.3	5.6	5.8	5.6	5.6	5.6	6.3	5.6	5.6	5.6
Growth of real primary spending (deflated by GDP deflator, in percent)	0.1	0.1	0.3	0.1	0.1	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Grant element of new external borrowing (in percent)	...	...	...	...	...	39.0	23.4	24.8	26.3	29.6	30.9	29.0	34.4	35.9	35.6

Sources: Country authorities; and staff estimates and projections.

1/ Includes central government external PPG debt obligations and net domestic debt.

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 years 2001-09, subject to data availability.

Table 5.Mozambique: Sensitivity Analysis for Key Indicators of Public Debt 2010-2030

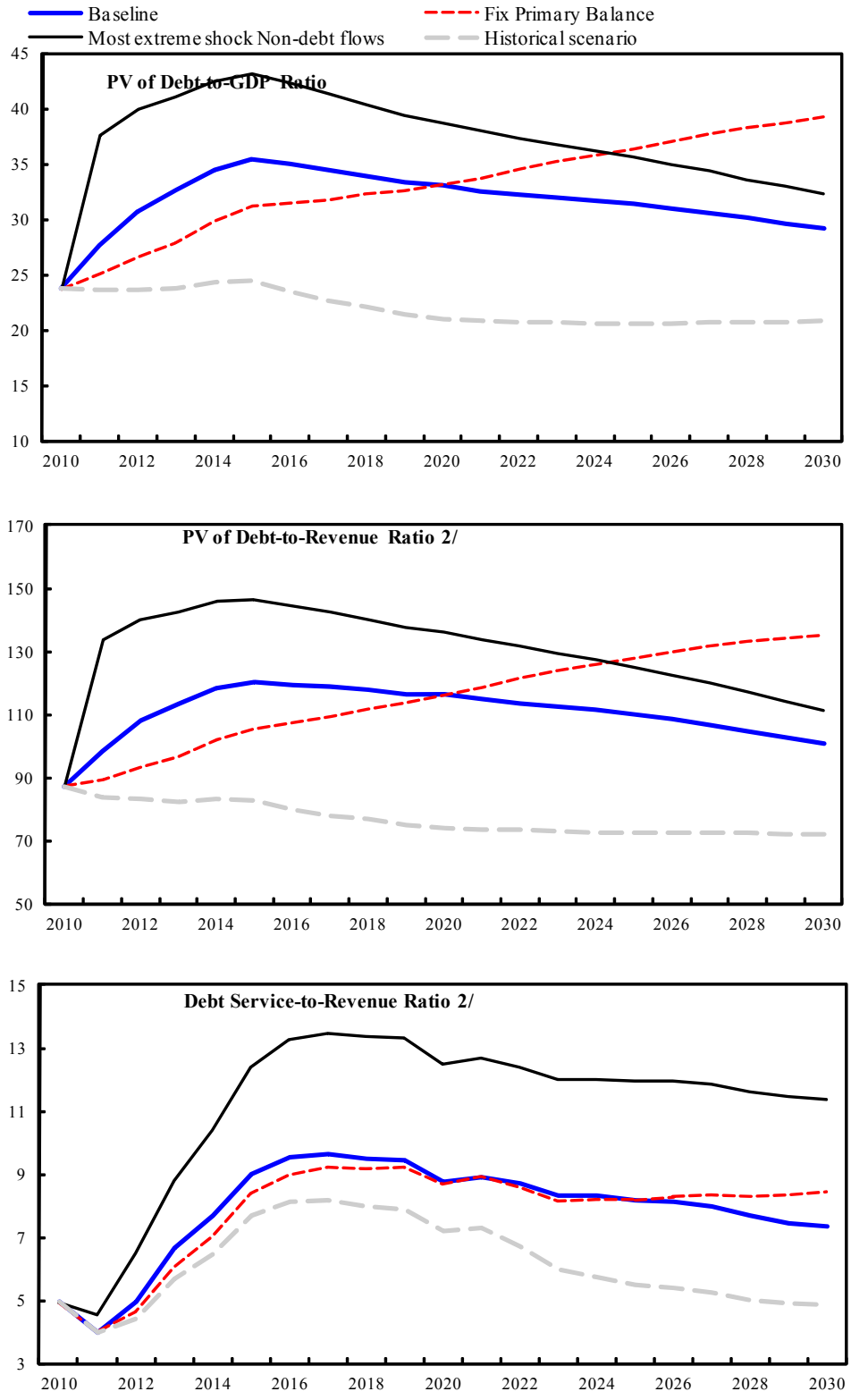
	Projections								
	2010	2011	2012	2013	2014	2015	2020	2025	2030
PV of Debt-to-GDP Ratio									
Baseline	23.7	27.6	30.7	32.7	34.4	35.4	33.0	31.3	29.1
A. Alternative scenarios									
A1. Real GDP growth and primary balance are at historical averages	23.7	23.6	23.7	23.7	24.3	24.4	21.0	20.5	20.8
A2. Primary balance is unchanged from 2010	23.7	25.1	26.6	27.9	29.7	31.1	33.1	36.4	39.2
A3. Permanently lower GDP growth 1/	23.7	27.7	31.0	33.1	35.2	36.5	36.0	37.0	38.3
B. Bound tests									
B1. Real GDP growth is at historical average minus one standard deviations in 2011-2012	23.7	28.1	32.0	34.4	36.6	38.0	37.1	36.6	35.4
B2. Primary balance is at historical average minus one standard deviations in 2011-2012	23.7	24.3	25.0	27.4	29.4	30.6	29.4	28.7	27.2
B3. Combination of B1-B2 using one half standard deviation shocks	23.7	24.1	24.5	27.3	29.5	31.0	30.8	30.9	30.0
B4. One-time 30 percent real depreciation in 2011	23.7	35.2	36.9	37.8	39.2	40.0	36.6	34.8	32.8
B5. 10 percent of GDP increase in other debt-creating flows in 2011	23.7	37.6	39.9	41.1	42.5	43.2	38.7	35.6	32.3
PV of Debt-to-Revenue Ratio 2/									
Baseline	87.2	98.2	108.0	113.2	118.1	120.2	116.1	110.0	100.5
A. Alternative scenarios									
A1. Real GDP growth and primary balance are at historical averages	87.2	83.9	83.1	82.1	83.1	82.7	74.0	72.3	71.9
A2. Primary balance is unchanged from 2010	87.2	89.3	93.4	96.5	101.9	105.6	116.3	127.8	135.1
A3. Permanently lower GDP growth 1/	87.2	98.5	108.8	114.6	120.3	123.3	125.9	129.1	131.0
B. Bound tests									
B1. Real GDP growth is at historical average minus one standard deviations in 2011-2012	87.2	99.6	111.7	118.2	124.5	128.0	129.7	128.0	121.8
B2. Primary balance is at historical average minus one standard deviations in 2011-2012	87.2	86.4	87.9	95.0	100.9	103.9	103.6	100.7	93.8
B3. Combination of B1-B2 using one half standard deviation shocks	87.2	85.4	86.0	94.2	100.9	104.8	108.2	108.2	103.4
B4. One-time 30 percent real depreciation in 2011	87.2	125.1	129.9	130.9	134.3	135.5	128.6	122.2	113.2
B5. 10 percent of GDP increase in other debt-creating flows in 2011	87.2	133.7	140.2	142.3	145.7	146.4	136.3	124.9	111.3
Debt Service-to-Revenue Ratio 2/									
Baseline	4.9	4.0	4.9	6.6	7.7	9.0	8.8	8.2	7.3
A. Alternative scenarios									
A1. Real GDP growth and primary balance are at historical averages	4.9	4.0	4.4	5.7	6.5	7.7	7.2	5.5	4.8
A2. Primary balance is unchanged from 2010	4.9	4.0	4.6	6.1	7.0	8.4	8.7	8.2	8.4
A3. Permanently lower GDP growth 1/	4.9	4.0	5.0	6.7	7.7	9.1	9.2	9.0	8.7
B. Bound tests									
B1. Real GDP growth is at historical average minus one standard deviations in 2011-2012	4.9	4.0	5.0	6.8	7.9	9.3	9.3	9.0	8.5
B2. Primary balance is at historical average minus one standard deviations in 2011-2012	4.9	4.0	4.5	5.8	6.9	8.4	8.3	7.2	6.6
B3. Combination of B1-B2 using one half standard deviation shocks	4.9	4.0	4.5	5.8	6.9	8.4	8.5	7.5	7.1
B4. One-time 30 percent real depreciation in 2011	4.9	4.5	6.5	8.8	10.4	12.4	12.5	11.9	11.4
B5. 10 percent of GDP increase in other debt-creating flows in 2011	4.9	4.0	6.2	8.1	8.7	10.0	9.5	9.7	8.4

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 2. Mozambique: Indicators of Public Debt Under Alternative Scenarios, 2010-2030 1/



Sources: Country authorities; and staff estimates and projections.
1/ The most extreme stress test is the test that yields the highest ratio in 2020.
2/ Revenues are defined inclusive of grants.