JOINT IMF/WORLD BANK DEBT SUSTAINABILITY ANALYSIS[14]

The staff's debt sustainability analysis for low-income countries (LIC DSA) shows that Malawi is at medium risk of external debt distress. Although the debt ratios are currently low as a result of Heavily Indebted Poor Countries (HIPC) debt relief and Multilateral Debt Relief Initiative (MDRI), the country's debt carrying capacity has not increased substantially in recent years. Malawi's concentrated export base, reliance on rain-fed agriculture, and weak international reserves leave it vulnerable in the face of adverse shocks such as the sharp rise in fuel prices in 2008. A cautious approach to the contracting of external debt continues to be warranted, together with a sufficiently tight fiscal policy to avoid excessive domestic borrowing by the public sector. Measures to support a diversification of the export base will also be important.

I. BACKGROUND

1. **HIPC and MDRI debt relief, supported by strong growth and fiscal consolidation, allowed Malawi to attain a sustainable debt situation,** such that by 2006 Malawi's external debt was under 15 percent of GDP. Malawi's stock of public external debt as of end-2008 is estimated at US$683 million, 90 percent of which is multilateral, with the balance being official bilateral debt. The previous DSA found Malawi to be at medium risk of debt distress. Reliable figures on private external debt are not available, although the amounts are not believed to be large.

Malawi: Structure of Medium- and Long-Term External Public and Publicly Guaranteed Debt (DOD) as of end-2008

	US$ millions
Total	**683.1**
Multilateral	611.5
Of which: IDA	187.7
Of which: IMF	124.3
Of which: AfDB	132,1
Other multilateral	167.4
Official bilateral debt	71.6
Of which: Paris Club	0
Of which: non-Paris Club	71.6
Commercial debt	0

Source: Malawi Ministry of Finance

[14] The draft DSA was discussed with the authorities in November and shared with the African Development Bank.

II. Developments in Fiscal Year 2008/9

2. **Real GDP growth has also been strong.** However, much of the growth has been in maize production, the staple food of Malawian households (accounting for over 60 percent of calories consumed), which has dramatically improved household consumption. However, for the most part maize is not exported and has, therefore, not led to improved debt servicing capacity.

3. **The increase in the price of fuel and fertilizer in 2008 had a dramatic impact on Malawi's balance of payments.** Despite strong prices for Malawi's major exports (particularly tobacco), the rapid increase in prices of key imports and loose fiscal and monetary policies contributed to a loss of official reserves. While declining fuel and fertilizer prices in 2009, together with another strong tobacco season, brought some relief, the reserve situation became increasingly precarious as donors delayed disbursements while awaiting clarification on the government's steps to address macroeconomic weaknesses.

4. **The worsening foreign exchange shortage forced the government to resort to extraordinary external financing to address the balance of payments pressure.** Malawi sold the 2009 special allocation of SDRs in November 2009. Petroleum Importers Limited, the private consortium that imports the majority of Malawi's petrol, contracted a $50 million nonconcessional external loan to purchase petrol. A $22 million nonconcessional loan was contracted by the government in late 2009 to purchase a new presidential jet. However, after mid year, the government began to take measures to improve the foreign exchange situation, including tightening fiscal and monetary policies and gradually depreciating the exchange rate.

III. Medium-Term Macro and DSA Assumptions

5. **Despite recent external shocks and some policy slippages, Malawi's growth prospects remain solid.** Malawi's growth and development strategy to 2011 aims to transform the nation from a "predominantly importing and consuming economy to a predominantly manufacturing and exporting economy." In the last 5 years growth has averaged about 7 percent. Exports will remain the key driver of growth, supported by the gradual dismantling of barriers within the region through the Common Market for Eastern and Southern Africa (COMESA) and Southern Africa Development Community (SADC) free trade areas. Uranium production, which began in 2009, is expected to increase significantly next year, and the prospects for further mining operations are good. While agricultural production has grown strongly in recent years, yields are still low by international standards, and improved fertilizer use and irrigation could increase both yields and cultivated acreage. Malawi is a relatively low-cost producer of a number of cash crops, including sugar, and further investment in this sector is likely to yield steady growth. It will be vital that policy makers provide appropriate opportunities and prices, and avoid damaging the incentives necessary to support the dynamic smallholder farming sector. Tourism also offers growth

opportunities thanks to a relatively safe environment and attractions such as Lake Malawi, albeit starting from a low base. Prospects for the country's main export, tobacco, are less favorable, and the baseline assumes negative real growth over the projection period.

6. **The baseline macroeconomic framework is consistent with the government's economic program supported by an ECF arrangement with the IMF.** It assumes that robust real growth rates continue, buttressed by sound macroeconomic policies and increased investment, a gradual reduction in the external current account deficit through export diversification, prudent fiscal and monetary policies, and reliance on grants and concessional financing in the medium term. It is assumed that not only that the current mining projects continue as planned but that additional projects in uranium and other minerals such as niobium prove viable. It also assumes that no contingent risks stemming from parastatal organizations fall due. The key macroeconomic assumptions are summarized in Box 1.

7. **The projected evolution of the key debt indicators in this DSA is broadly consistent with the projections in the previous DSA (December 2007).** However, the situation as of end-2009 is now estimated to be slightly worse than had been projected in December 2007: the PV debt-to-export ratio was 64 percent rather than 59 percent, the debt-to-GDP ratio was 14 percent rather than 12 percent, and the debt-to-revenue ratio was 85 percent as opposed to the projection of 74 percent. The debt service ratios, on the other hand, are considerably lower than had been projected: less than 2 percent of exports and revenues compared with a projection of 3 and 4 percent respectively. This discrepancy between the solvency and liquidity measures partly reflects the current low interest rate environment, which has resulted in the retention of a lower discount rate.

The projections in the 2007 DSA for growth in exports and GDP in 2008 and 2009 were slightly lower than the actual outturn, reflecting strong tobacco prices in 2008 and strong volumes in 2009. Uranium exports were somewhat lower in 2009 than projected, reflecting longer project implementation times than anticipated: contracts tend to be set over the medium-to-long term, and the price assumptions for uranium exports have only been revised down slightly since the previous DSA.

8. **Growth in imports was substantially higher than projected in the previous DSA for 2008 and 2009, reflecting loose fiscal policy and high prices for fuel and fertilizer.** Moving forward, the current DSA assumes that tighter fiscal and monetary policies, combined with a real exchange rate depreciation, bring the rate of import growth down to five percent a year in line with the previous DSA's projection, and that the loose policies of 2008/09 prove to be an aberration. The current DSA assumes slightly higher longer-term growth rates than the previous DSA, at 5.4 percent vs. 3.9 percent, reflecting increased investor interest and a more favorable long-term outlook for commodities. The 5.4 percent is considerably lower than average growth over the last five years, and reflects Malawi's growth potential and current low base.

Box 1: Key Macroeconomic Assumptions in the Baseline Scenario

The Kayelekera uranium mine is expected to operate for ten years starting in 2009 and act as a major driver for GDP and export growth. The mine is adding to overall economic growth while production is being ramped up during the first four years, but will then detract from overall growth as production is wound down at the end of the mine's life. At its peak, the mine could add 10 percent to Malawi's overall GDP and 25 percent to exports. This DSA assumes that additional mining projects are expected to come on stream as Kayelekera winds down, reflecting considerable interest in Malawi's natural resources, including uranium and niobium, with projects expected to be viable at current prices.

Real GDP growth is projected to average 6.7 percent over 2009–14, thereafter averaging 5.4 percent. Growth is slightly higher than the 4.5 percent average over the past decade, which reflected poor macroeconomic management in the earlier period and a sequence of negative shocks, including a food crisis in 2005, but lower than the average over the last five years.

Inflation is expected to remain in single digits, declining moderately from current rates of around 7.7 percent to around 7 percent over the long run. The real exchange rate is assumed to remain stable.

The external current account, including aid transfers but excluding interest payments, is assumed to improve over the medium term as the reserve position improves, before returning to its historical average as a reflection of strong donor flows and increasing FDI (assumed to be on average 1 percent higher over the forecast period than the historical period, reflecting an improved business environment and potential for additional mining projects). The current account is projected to improve towards the outer years as increased investment begins to be reflected in exports.

Imports are expected to rise at a more moderate pace than in the past—rising 5 percent each year compared to 13 percent over the past decade (reflecting loose fiscal and monetary policy and high fuel and fertilizer prices in 2008). The moderation in import growth is underpinned by increased domestic production.

Export growth is expected to remain strong, averaging 6.9 percent over the medium term to 2014 and 6.2 percent thereafter, lower than the 9.5 percent over the past decade. Strong growth in non-traditional exports contrasts with the more negative picture for tobacco exports, projected to grow at 1 percent per annum in nominal terms.

Revenues (excluding grants) are projected to increase relative to GDP due to the expansion of the tax base and reforms aimed at improving tax administration. Domestic revenues are projected to average 22 percent over the projection period, improving gradually from 16.8 percent in 2010 (the historical average for the last 10 years) to stabilize at just over 23 percent in the outer years.

Aid is projected to average 14.5 percent of GDP over 2009–14, and decline gradually thereafter, averaging 8 percent over the projection period. Aid flow projections are based on the data provided by the government and donors for the ECF. Grant equivalent financing (loans and grants) is expected to decline from about 85 percent of total external financing over the medium term to 67 percent by 2029, as the government becomes less reliant on grants and highly concessional financing.

Highly concessional financing from multilaterals is assumed to be the major source of debt (two-thirds), with somewhat less concessional financing from non-Paris Club creditors providing the balance. A small but increasing amount of borrowing on commercial terms is assumed for the outer years.

IV. External Debt Sustainability

9. **In the baseline scenario, all external debt indicators remain below the indicative, policy-dependent debt burden thresholds, although some do come close to those thresholds** (Table 1).[15,16] The debt burden increases gradually after the dramatic fall resulting from HIPC and MDRI: the ratio of the present value of debt to exports comes closest to breaching a threshold, increasing gradually from 64 percent in 2009 to 79 in 2014, and peaking at 128 percent in 2024, before declining to 124 percent at the end of the projection period. The present value (PV) of external debt to GDP also increases from around 14 percent of GDP after HIPC relief to stabilize at around 22 percent of GDP. The PV debt-to-revenues ratio remains comfortable throughout the projection period at under 100 percent, reflecting the expected improvements in revenue collection in Malawi.

10. **Debt service obligations are expected to remain manageable, reflecting the impact of debt relief and the expected continued high concessionality of Malawi's external financing.** The debt-service to-exports ratio is expected to remain under 10 percent throughout the projection period, while the debt-service-to-revenue ratio remains under 7 percent.

11. **However, stress testing reveals potential vulnerabilities in Malawi's external debt situation**. Under the historical scenario, for example, the debt ratios would increase rapidly, reflecting the high current account deficits of recent years, and would breach the PV debt-to-GDP and PV debt-to-exports thresholds, while the trajectory remains below the relevant debt-to-revenue ratio threshold (A1 in Table 3).

12. **Tobacco still accounts for more than half of Malawi's export earnings, and though this proportion is expected to decline to less than one-fifth by the end of the projection period, Malawi will remain vulnerable to a shock on tobacco prices for some time.** Burley accounts for the majority of production, leaving Malawi vulnerable to changes in tastes and regulatory actions that could dramatically shrink what is already a stagnant global market. A country-specific shock simulating a permanent one-third fall in tobacco prices would lead to an increase in Malawi's debt-to-export ratio of almost 30 percentage points over the medium term, leading Malawi to exceed the 150 percent threshold, albeit marginally and for a short period of time, after 2022 (A3 in Table 3). Malawi would, however, fall back under the threshold by the end of the projection period. While Malawi is also vulnerable to further falls in the price of exports, these risks are somewhat mitigated by the longer-term contracts that characterize this market.

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[15] With a three-year average CPIA rating of 3.40, Malawi is classified as a medium performer under the Debt Sustainability Framework. Accordingly, the relevant debt-burden thresholds used to indicate the risk of debt distress are a present value of debt equivalent to 40 percent of GDP, 150 percent of exports, and 250 percent of revenues; and debt service equivalent to 20 percent of exports and 30 percent of revenues.

[16] This analysis excludes external debts of state-owned enterprises.

13. **Malawi also remains vulnerable to less favorable financing terms**. Assuming that the interest rate on new borrowing were 2 percentage points higher than in the baseline, Malawi would breach the debt-to-exports ratio by 2018, although the other two PV ratios would stay below their thresholds. The additional bounds tests (B1–5 in Table 3) further underline these vulnerabilities: in particular, the combination shock, which shows the impact of lower GDP, exports, inflation, and non-debt creating flows using one-half standard deviation shocks, would result in a breach of the debt-to-exports and debt-to-revenue ratios.

V. COUNTRY SPECIFIC DEPRECIATION SCENARIO

14. In recent years Malawi has suffered from persistent balance-of-payment problems as import growth has not been matched by growth in exports. Periodic shortages of foreign exchange have made for a more difficult business environment, and the over-valued exchange rate has disincentivized investments in the import-substituting and export sectors. **The depreciation scenario** (Figure 1 and A4 in Table 3) is designed to show the impact of a sharper up-front nominal depreciation on Malawi's key debt indicators than in the baseline scenario. This scenario assumes a depreciation of 21 percent at the start of 2010, aimed at bringing the exchange rate rapidly into line with staff's estimate of its equilibrium value. This should in turn stimulate FDI and export growth: under this scenario the devaluation leads to export growth higher by 3 percentage points per annum in 2010–13 over the baseline scenario, reflecting our assessment of considerable underutilized potential to increase exports to neighboring countries.

15. Under our projections, ratios would deteriorate slightly in the short term as a result of the decline in dollar terms of GDP and government revenues: PV external debt-to-GDP would be 2 percentage points higher in 2010 than under the baseline scenario, and PV debt-to-revenue ratios would also rise. However, over time, we project that faster export growth would lead to debt-to-export ratios peaking at a level around 20 percentage points lower in this scenario than under the baseline, and, if accompanied by appropriate monetary and fiscal policy to limit the pass through into inflation, would enhance Malawi's external sustainability.

VI. PUBLIC DEBT SUSTAINABILITY

16. **The public debt ratios in Malawi are expected to remain at manageable levels, reflecting the baseline assumption of continued revenue efforts and appropriate expenditure controls.**[17] The public sector PV debt-to-GDP ratio is projected to decline from its 2009 level of just under 35 percent to reach under 25 percent by the end of the projection period. The public sector debt-to-revenue ratio is expected to decline gradually from

[17] Based on net debt (total stock of government liabilities less liquid assets).

115 percent to just under 90 percent, while the debt service-to-revenue ratio is expected to remain under 10 percent throughout the projection period.

17. **However, public debt also remains vulnerable to shocks**. Stress testing (Table 4) indicates that the key ratios could increase significantly from their current levels in the face of less favorable macroeconomic conditions. An unchanged primary balance from 2009 could lead to a PV debt-to-GDP ratio of 59 percent at the end of the projection period, while GDP growth permanently lower than that in the baseline[18] could see the debt-to-GDP ratio reach 49 percent by 2029. Furthermore, Malawi is subject to a number of contingent fiscal risks stemming from the activities of loss-making parastatal institutions, and which it is not yet possible to quantify, but which could potentially have an impact on public debt sustainability. To address this risk, the government has set out its intention to establish a clear regulatory regime for public utilities infrastructure that covers operating costs and avoids the need for budgetary transfers, and has recently taken measures to increase tariffs on electricity and water. However, Air Malawi continues to operate at a loss and could have implications for the public debt stock. Some question marks also remain with regard to parastatal agricultural operations, whose finances are somewhat nontransparent.

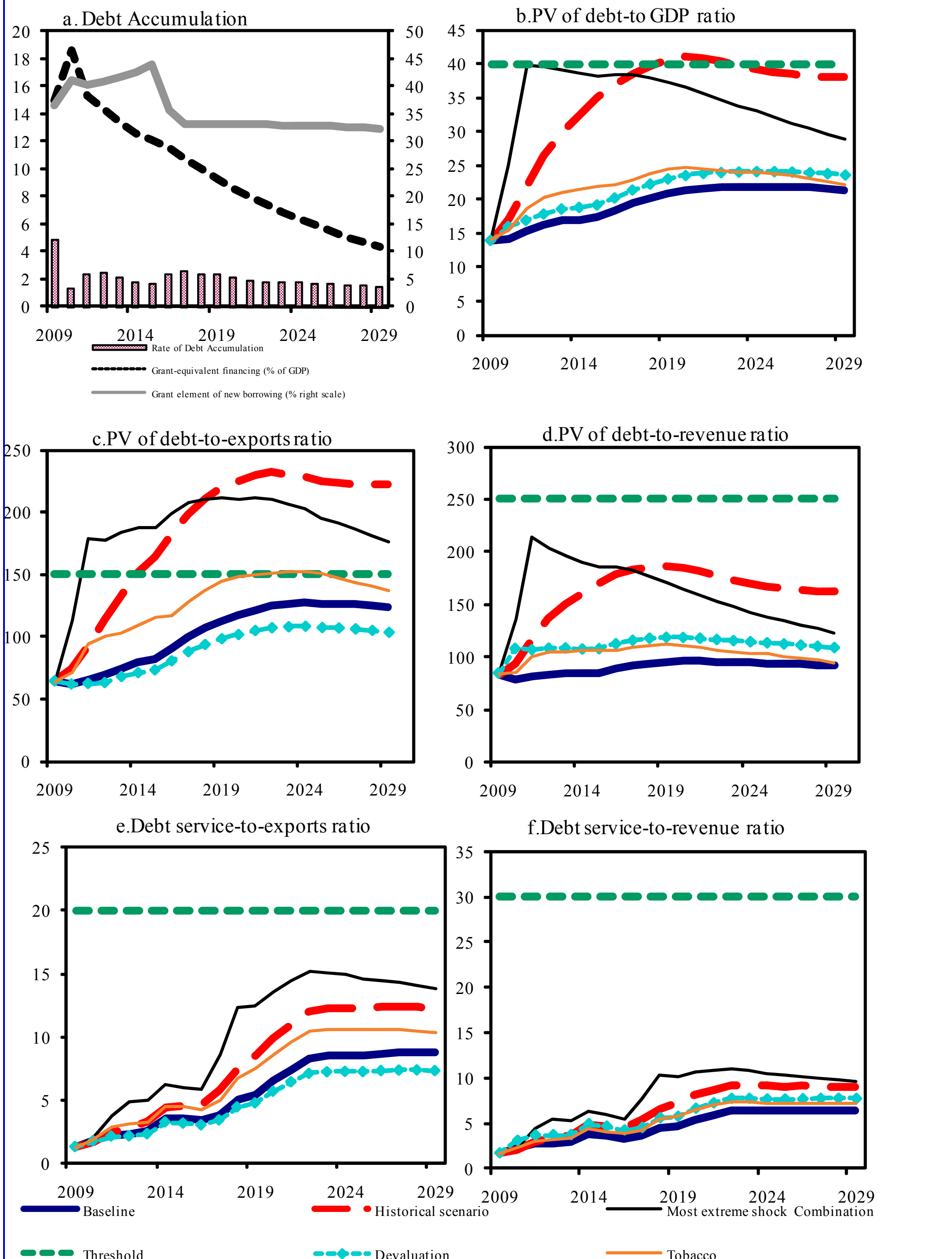
VII. Conclusions

Despite its current relatively low debt ratios, Malawi is assessed to be at moderate risk of external debt stress. The baseline scenario reflects a positive outlook for macroeconomic developments in Malawi, with strong GDP growth and improvements in the external current account. However, Malawi remains vulnerable to price fluctuations for key imports and exports, heavily reliant on rain-fed agriculture and the narrow export base.

Reducing the risk of debt distress will depend on maintaining sound macroeconomic policies, diversifying the export base, sustaining a sound fiscal position as well as on strengthening the foundations for growth.

[18] Assuming that real GDP growth is at baseline minus one standard deviation divided by the square root of the length of the projection period.

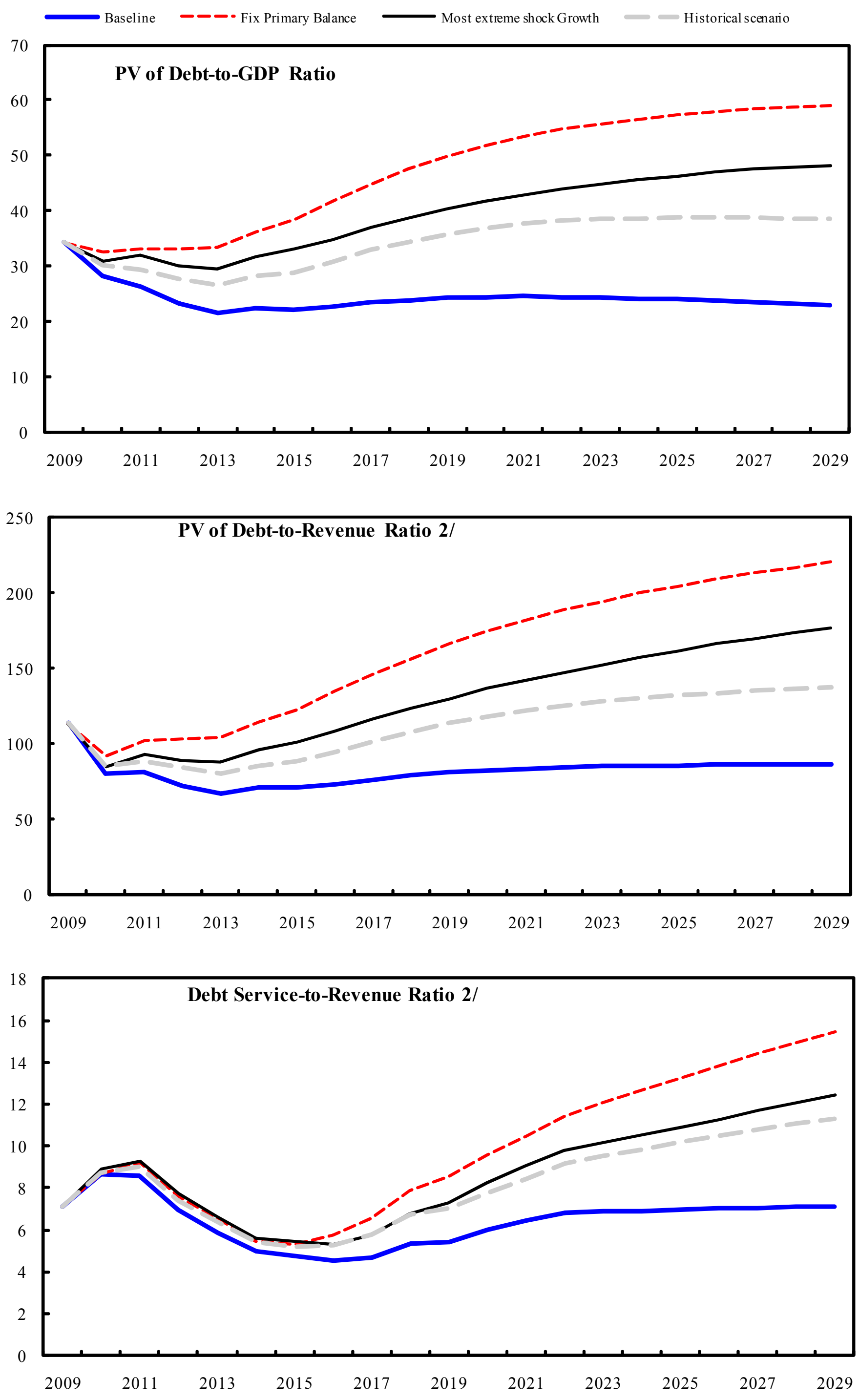
Figure 1. Malawi: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2009–29 1/
(Percent, unless otherwise noted)



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2019. In figure b. it corresponds to a Devaluation shock; in c. to a Combination shock; in d. to a Combination shock; in e. to a Combination shock and in figure f. to a Tobacco shock

Figure 2.Malawi: Indicators of Public Debt Under Alternative Scenarios, 2009-2029 1/



Sources: Country authorities; and staff estimates and projections.

1/ The baseline is the staff projection. The most extreme stress test is the test that yields the highest ratio in 2019, in this case the shock to GDP growth. The "fix primary balance" scenario assumes the primary balance remains as it was last year, and the historical scenario assumes key variables remain at their historical values.

2/ Revenues are defined inclusive of grants.

Table 1.: External Debt Sustainability Framework, Baseline Scenario, 2006-2029 1/
(Percent of GDP, unless otherwise indicated)

	Actual			Historical Average	Esimate	Projections										
											2009-2014					2015-2029
	2006	2007	2008		2009	2010	2011	2012	2013	2014	Average	2015	2020	2025	2029	Average
External debt (nominal) 1/	14.6	14.5	16.0		19.1	21.8	23.3	24.7	25.7	26.1		26.7	31.1	31.6	30.8	30.5
o/w public and publicly guaranteed (PPG)	14.6	14.5	16.0		19.1	21.8	23.3	24.7	25.7	26.1		26.7	31.1	31.6	30.8	30.5
Change in external debt	-97.7	-0.2	1.5		3.1	2.7	1.5	1.4	1.0	0.4		0.6	0.5	0.0	-0.3	0.3
Identified net debt-creating flows	-7.3	-2.9	-1.0		4.6	-1.8	-1.9	-2.7	-1.9	-1.7		-1.2	0.5	0.9	0.0	0.4
Non-interest current account deficit	7.1	1.4	6.2	6.9	7.7	1.7	1.9	1.3	2.2	2.5	2.9	2.6	4.4	4.8	3.9	4.4
Deficit in balance of goods and services	24.1	18.5	25.2		24.8	22.9	19.9	18.2	18.1	17.4		16.9	14.9	11.9	9.1	13.7
Exports	19.1	22.4	24.6		21.7	22.9	23.3	23.3	22.4	21.6		21.3	18.2	17.3	17.2	18.1
Imports	43.2	40.9	49.8		46.5	45.8	43.2	41.5	40.5	39.0		38.2	33.1	29.1	26.3	31.8
Net current transfers (negative = inflow)	-17.5	-17.6	-18.6		-16.2	-21.0	-17.8	-16.7	-15.6	-14.7		-14.1	-10.2	-6.7	-4.8	-9.0
o/w official	-13.3	-14.0	-15.5		-13.4	-16.9	-13.8	-12.8	-12.0	-11.3		-10.8	-7.5	-4.8	-3.4	-6.7
Other current account flows (negative = net inflow)	0.5	0.5	-0.4		-0.9	-0.2	-0.2	-0.2	-0.2	-0.2		-0.2	-0.3	-0.4	-0.4	-0.3
Net FDI (negative = inflow)	-0.9	-2.6	-5.0	-2.0	-2.2	-2.7	-2.7	-2.9	-2.8	-2.7	-2.6	-2.7	-2.7	-2.7	-2.7	-2.7
Endogenous debt dynamics 2/	-13.5	-1.6	-2.2		-0.9	-0.9	-1.1	-1.2	-1.4	-1.5		-1.1	-1.2	-1.2	-1.2	-1.2
Contribution from nominal interest rate	0.7	0.1	0.1		0.1	0.2	0.2	0.2	0.2	0.2		0.2	0.3	0.4	0.3	0.3
Contribution from real GDP growth	-6.6	-1.1	-1.2		-1.0	-1.1	-1.3	-1.4	-1.6	-1.7		-1.3	-1.5	-1.6	-1.6	-1.5
Contribution from price and exchange rate changes	-7.6	-0.7	-1.1		…	…	…	…	…	…		…	…	…	…	
Residual (3-4) 3/	-90.4	2.7	2.5		-1.5	4.5	3.4	4.1	2.9	2.1		1.8	0.0	-0.9	-0.3	-0.1
o/w exceptional financing	-3.2	-0.1	0.0		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	...	...	10.4		14.0	14.2	15.2	16.2	16.8	17.0		17.4	21.3	21.8	21.4	20.8
In percent of exports	...	...	42.1		64.3	62.1	65.4	69.4	75.1	79.0		81.6	117.1	126.6	124.3	115.9
PV of PPG external debt	...	...	10.4		14.0	14.2	15.2	16.2	16.8	17.0		17.4	21.3	21.8	21.4	20.8
In percent of exports	...	...	42.1		64.3	62.1	65.4	69.4	75.1	79.0		81.6	117.1	126.6	124.3	115.9
In percent of government revenues	...	...	65.9		83.5	77.9	82.1	83.4	84.1	83.9		84.6	96.1	94.1	91.3	93.1
Debt service-to-exports ratio (in percent)	16.1	10.2	6.7		1.3	1.8	2.2	2.4	2.6	3.6		3.5	6.6	8.6	8.8	7.0
PPG debt service-to-exports ratio (in percent)	16.1	10.2	6.7		1.3	1.8	2.2	2.4	2.6	3.6		3.5	6.6	8.6	8.8	7.0
PPG debt service-to-revenue ratio (in percent)	17.6	13.1	10.5		1.7	2.2	2.8	2.8	2.9	3.8		3.6	5.4	6.4	6.5	5.5
Total gross financing need (Billions of U.S. dollars)	0.3	0.0	0.1		0.3	0.0	0.0	-0.1	0.0	0.0		0.0	0.3	0.6	0.6	0.4
Non-interest current account deficit that stabilizes debt ratio	104.9	1.5	4.7		4.6	-0.9	0.3	-0.1	1.3	2.1		2.0	3.9	4.9	4.2	4.1
Key macroeconomic assumptions																
Real GDP growth (in percent)	6.7	8.6	9.8	4.1	7.6	6.0	6.3	6.6	6.8	7.1	6.7	5.4	5.4	5.4	5.4	5.4
GDP deflator in US dollar terms (change in percent)	7.3	4.9	8.5	6.5	8.0	-0.9	1.9	2.8	2.0	1.5	2.6	2.4	2.4	2.4	2.4	2.4
Effective interest rate (percent) 4/	0.7	1.1	1.1	1.0	1.0	1.1	0.9	0.9	0.9	0.8	1.0	0.8	1.2	1.2	1.2	1.1
Growth of exports of G&S (US dollar terms, in percent)	7.7	33.5	30.9	7.2	2.5	10.8	10.3	9.4	4.9	4.6	7.1	6.4	6.1	8.7	8.2	6.3
Growth of imports of G&S (US dollar terms, in percent)	0.5	7.9	45.1	13.2	8.5	3.3	2.2	5.3	6.3	4.7	5.1	5.6	4.9	5.2	5.2	5.1
Grant element of new public sector borrowing (in percent)	...	...	...	…	36.6	41.1	40.3	40.8	41.6	42.5	40.5	44.1	33.1	32.9	32.4	33.9
Government revenues (excluding grants, in percent of GDP)	17.5	17.6	15.7	16.8	16.7	18.3	18.6	19.4	20.0	20.3	18.9	20.5	22.2	23.2	23.4	22.4
Aid flows (in Billions of US dollars) 5/	0.6	0.6	0.9	0.4	0.9	1.1	1.0	1.0	1.0	1.1	1.0	1.1	1.2	1.2	1.3	1.2
o/w Grants	0.5	0.5	0.7	0.3	0.7	0.9	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.8	0.8	0.8
o/w Concessional loans	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.5	0.4
Grant-equivalent financing (in percent of GDP) 6/	...	...	...		15.0	18.7	15.3	14.4	13.4	12.6	14.9	12.1	8.6	5.9	4.4	7.8
Grant-equivalent financing (in percent of external financing) 6/	...	...	...		84.6	88.3	87.4	86.7	87.3	87.7	87.0	88.1	78.4	72.4	67.5	76.2
Memorandum items:																
Nominal GDP (Billions of US dollars)	3.1	3.6	4.3		5.0	5.2	5.6	6.2	6.7	7.3		7.9	11.6	16.9	23.0	
Nominal dollar GDP growth	14.5	14.0	19.1		16.2	5.0	8.4	9.6	9.0	8.7	9.5	7.9	7.9	7.9	7.9	7.9
PV of PPG external debt (in Billions of US dollars)			0.4		0.6	0.7	0.8	1.0	1.1	1.2		1.3	2.4	3.6	4.8	
(PVt-PVt-1)/GDPt-1 (in percent)					4.8	1.4	2.4	2.4	2.1	1.7	2.5	1.6	2.1	1.7	1.5	1.9

Sources: Country authorities; and staff estimates and projections.

1/ This analysis covers public sector external debt only, since insufficient information is available on private sector external debt.

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

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

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

5/ Defined as grants, concessional loans, and debt relief.

6/ 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 2. Malawi: Public Sector Debt Sustainability Framework, Baseline Scenario, 2006–29
(Percent of GDP, unless otherwise indicated)

	Actual				Estimate	Projections								
	2006	2007	2008	Average	2009	2010	2011	2012	2013	2014	2009-14 Average	2019	2029	2015-29 Average
Public sector debt 1/	27.3	26.3	35.0		39.4	35.9	34.3	31.9	30.4	31.4		34.0	32.4	
o/w foreign-currency denominated	14.6	14.5	16.0		19.1	21.8	23.3	24.7	25.7	26.1		30.6	30.8	
Change in public sector debt	-101.6	-1.0	8.7		4.4	-3.5	-1.5	-2.5	-1.4	1.0		0.4	-0.4	
Identified debt-creating flows	-22.0	0.5	5.5		1.9	-3.5	-2.0	-3.0	-1.7	-1.7		-2.6	-1.9	
Primary deficit	-6.2	1.0	2.8	0.2	4.0	-1.9	-0.7	-1.4	-0.2	0.0	-0.1	-1.0	-0.2	-0.6
Revenue and grants	32.9	31.6	31.2	27.0	30.1	35.2	32.4	32.2	32.0	31.6		30.0	26.8	29.0
of which: grants	15.5	14.1	15.5	10.2	13.4	16.9	13.8	12.9	12.0	11.3		8.1	3.4	6.6
Primary (noninterest) expenditure	26.8	32.6	34.0		34.1	33.2	31.6	30.9	31.8	31.6		29.0	26.6	
Automatic debt dynamics	-15.4	-0.4	-2.1		-2.1	-1.5	-1.3	-1.6	-1.4	-1.7		-1.7	-1.7	
Contribution from interest rate/growth differential	-9.4	0.1	-1.3		-2.1	-1.3	-0.9	-1.4	-1.4	-1.7		-1.7	-1.8	
of which: contribution from average real interest rate	-1.3	2.2	1.0		0.4	0.9	1.2	0.8	0.6	0.3		0.0	-0.1	
of which: contribution from real GDP growth	-8.1	-2.2	-2.3		-2.5	-2.2	-2.1	-2.1	-2.0	-2.0		-1.7	-1.7	
Contribution from real exchange rate depreciation	-5.9	-0.5	-0.8		0.0	-0.2	-0.4	-0.2	0.0	0.0		...	...	
Other identified debt-creating flows	-0.5	-0.1	4.8		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Privatization receipts (negative)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recognition of implicit or contingent liabilities	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Debt relief (HIPC and other)	-0.5	-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	4.8		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Residual, including asset changes	-79.6	-1.4	3.2		2.5	-0.1	0.5	0.5	0.3	2.7		3.1	1.5	
Other Sustainability Indicators														
PV of public sector debt	12.6	11.8	29.4		34.3	28.3	26.3	23.3	21.6	22.4		24.2	23.0	
o/w foreign-currency denominated	0.0	0.0	10.4		14.0	14.2	15.2	16.2	16.8	17.0		20.9	21.4	
o/w external	...	...	10.4		14.0	14.2	15.2	16.2	16.8	17.0		20.9	21.4	
PV of contingent liabilities (not included in public sector debt)	...	...	...		...	...	...	...	...	...		...	...	
Gross financing need 2/	13.6	17.3	16.3		22.3	18.5	14.3	10.5	7.9	5.7		4.0	3.3	
PV of public sector debt-to-revenue and grants ratio (in percent)	38.3	37.3	94.1		113.8	80.5	81.1	72.3	67.4	70.8		81.0	86.1	
PV of public sector debt-to-revenue ratio (in percent)	72.3	67.2	186.8		204.8	155.2	141.4	120.2	107.8	110.1		111.1	98.4	
o/w external 3/	…	…	65.9		83.5	77.9	82.1	83.4	84.1	83.9		95.5	91.3	
Debt service-to-revenue and grants ratio (in percent) 4/	22.0	17.4	11.8		7.1	8.7	8.6	7.0	5.9	4.9		5.4	7.1	
Debt service-to-revenue ratio (in percent) 4/	41.4	31.4	23.4		12.8	16.7	15.0	11.6	9.4	7.7		7.5	8.1	
Primary deficit that stabilizes the debt-to-GDP ratio	95.4	1.9	-5.9		-0.5	1.6	0.8	1.1	1.2	-1.0		-1.4	0.2	
Key macroeconomic and fiscal assumptions														
Real GDP growth (in percent)	6.7	8.6	9.8	4.1	7.6	6.0	6.3	6.6	6.8	7.1	6.7	5.4	5.4	5.4
Average nominal interest rate on forex debt (in percent)	0.7	1.1	1.1	1.0	1.0	1.1	0.9	0.9	0.9	0.8	1.0	1.1	1.2	1.1
Average real interest rate on domestic debt (in percent)	8.0	21.0	10.6	17.8	2.5	4.6	9.6	9.2	13.0	12.1	8.5	11.1	16.5	12.7
Real exchange rate depreciation (in percent, + indicates depreciation)	-5.8	-3.6	-6.0	-6.7	0.0	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	23.3	7.3	8.9	23.5	8.8	10.1	8.0	7.8	6.9	5.9	7.9	7.0	7.0	7.0
Growth of real primary spending (deflated by GDP deflator, in percent)	0.1	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0
Grant element of new external borrowing (in percent)	...	...	...	…	36.6	41.1	40.3	40.8	41.6	42.5	40.5	33.1	32.4	...

Sources: Country authorities; and staff estimates and projections.

1/ General government public sector.

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 3. Malawi: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2009–29
(Percent)

	Estimate										Projections										
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	**2019**	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
					PV of debt-to GDP ratio (threshold is 40 percent)																
Baseline	14	14	15	16	17	17	17	18	19	20	**21**	21	22	22	22	22	22	22	22	22	21
A. Alternative Scenarios																					
A1. Key variables at their historical averages in 2009-2029 1/	14	17	22	26	30	33	35	37	39	40	**41**	41	41	40	40	39	39	38	38	38	38
A2. New public sector loans on less favorable terms in 2009-2029 2/	14	15	17	19	20	21	22	24	25	27	**29**	30	31	32	32	33	34	34	35	35	35
A3. Lower tobacco prices 3/	14	15	19	20	21	21	22	22	23	24	24	25	25	24	24	24	24	23	23	23	22
A4. Equilibrium real exchange rate 4/	14	16	17	18	19	19	19	20	21	22	23	24	24	24	24	24	24	24	24	24	24
B. Bound Tests																					
B1. Real GDP growth at historical average minus one standard deviation in 2010-2011	14	15	17	18	19	19	19	20	21	22	**23**	23	24	24	24	24	24	24	24	24	24
B2. Export value growth at historical average minus one standard deviation in 2010-2011 5/	14	17	23	23	23	23	23	24	25	25	**25**	25	25	25	24	24	24	23	23	23	22
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010-2011	14	16	20	22	22	23	23	24	26	27	**28**	28	29	29	29	29	29	29	29	29	28
B4. Net non-debt creating flow s at historical average minus one standard deviation in 2010-2011 6/	14	23	30	30	30	30	30	30	30	30	**30**	29	29	28	27	27	26	26	25	24	24
B5. Combination of B1-B4 using one-half standard deviation shocks	14	25	40	39	39	39	38	38	38	38	**37**	37	36	35	34	33	32	31	30	30	29
					PV of debt-to-exports ratio (threshold is 150 percent)																
Baseline	64	62	65	69	75	79	82	91	99	107	**113**	117	122	125	127	128	127	127	127	126	124
A. Alternative Scenarios																					
A1. Key variables at their historical averages in 2009-2029 1/	64	75	93	114	134	151	164	183	198	210	**219**	225	230	232	230	229	225	223	222	222	222
A2. New public sector loans on less favorable terms in 2009-2029 2/	64	66	74	81	91	99	105	117	131	144	**155**	164	174	182	188	194	196	199	202	204	205
A3. Lower tobacco prices 3/	64	71	95	101	103	109	115	117	128	138	145	148	149	151	152	152	151	146	144	141	137
A4. Equilibrium real exchange rate 4/	64	62	62	63	68	71	73	81	88	94	99	102	105	107	108	109	108	107	106	105	104
B. Bound Tests																					
B1. Real GDP growth at historical average minus one standard deviation in 2010-2011	64	60	64	68	73	77	80	88	97	104	**110**	114	119	122	124	125	124	124	123	123	121
B2. Export value growth at historical average minus one standard deviation in 2010-2011 5/	64	87	141	144	151	157	159	172	184	191	**197**	200	204	206	206	205	201	199	196	193	189
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010-2011	64	60	64	68	73	77	80	88	97	104	**110**	114	119	122	124	125	124	124	123	123	121
B4. Net non-debt creating flow s at historical average minus one standard deviation in 2010-2011 6/	64	99	130	130	135	138	139	148	155	158	**160**	160	161	161	159	156	152	149	146	142	138
B5. Combination of B1-B4 using one-half standard deviation shocks	64	114	179	178	183	187	188	199	207	211	**211**	211	211	210	206	202	195	191	186	181	176
					PV of debt-to-revenue ratio (threshold is 250 percent)																
Baseline	83	78	82	83	84	84	85	89	92	94	**96**	96	96	96	95	95	94	94	93	92	91
A. Alternative Scenarios																					
A1. Key variables at their historical averages in 2009-2029 1/	83	94	117	137	150	160	170	179	183	185	**186**	185	182	177	173	169	167	165	163	163	163
A2. New public sector loans on less favorable terms in 2009-2029 2/	83	83	93	98	102	105	108	114	121	127	**131**	135	137	140	142	144	145	147	148	150	151
A3. Lower tobacco prices 3/	83	85	100	106	105	106	107	107	109	111	112	111	109	107	105	104	103	101	99	97	95
A4. Equilibrium real exchange rate 4/	85	108	107	108	109	108	108	113	116	118	119	118	118	117	115	114	113	112	111	110	109
B. Bound Tests																					
B1. Real GDP growth at historical average minus one standard deviation in 2010-2011	83	80	90	92	93	93	93	98	101	104	**105**	106	106	105	105	104	103	103	102	101	100
B2. Export value growth at historical average minus one standard deviation in 2010-2011 5/	83	90	122	119	117	114	113	116	117	116	**115**	113	111	108	106	104	102	101	99	97	95
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010-2011	83	87	109	111	112	112	113	118	123	125	**127**	128	128	127	127	126	125	124	124	123	122
B4. Net non-debt creating flow s at historical average minus one standard deviation in 2010-2011 6/	83	125	163	157	151	147	144	145	143	140	**136**	132	127	123	119	116	113	110	107	104	102
B5. Combination of B1-B4 using one-half standard deviation shocks	83	137	214	204	196	190	185	186	183	177	**171**	165	159	153	148	143	138	134	130	127	123

Table 3. Malawi: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2009–29 (continued)
(Percent)

										Debt service-to-exports ratio (threshold is 20 percent)											
Baseline	1	2	2	2	3	4	4	3	4	5	**5**	7	7	8	8	9	9	9	9	9	9
A. Alternative Scenarios																					
A1. Key variables at their historical averages in 2009-2029 1/	1	2	2	3	3	4	5	5	6	8	**9**	10	11	12	12	12	12	12	12	12	12
A2. New public sector loans on less favorable terms in 2009-2029 2/	1	2	2	3	3	4	5	5	5	6	**6**	7	8	9	9	11	11	12	12	12	13
A3. Lower tobacco prices 3/	1	2	3	3	3	4	4	4	5	7	**7**	9	10	10	11	11	11	11	11	11	10
A4. Equilibrium real exchange rate 4/	1	2	2	2	2	3	3	3	3	4	**5**	6	6	7	7	7	7	7	7	7	7
B. Bound Tests																					
B1. Real GDP growth at historical average minus one standard deviation in 2010-2011	1	2	2	2	3	4	4	3	4	5	**5**	7	7	8	8	9	9	9	9	9	9
B2. Export value growth at historical average minus one standard deviation in 2010-2011 5/	1	2	4	4	5	6	6	6	7	10	**11**	12	13	14	15	15	14	14	14	14	14
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010-2011	1	2	2	2	3	4	4	3	4	5	**5**	7	7	8	8	9	9	9	9	9	9
B4. Net non-debt creating flows at historical average minus one standard deviation in 2010-2011 6/	1	2	3	4	4	5	5	5	7	9	**9**	10	11	12	12	11	11	11	11	11	11
B5. Combination of B1-B4 using one-half standard deviation shocks	1	2	4	5	5	6	6	6	9	12	**13**	14	14	15	15	15	15	14	14	14	14
B6. One-time 30 percent nominal depreciation relative to the baseline in 2010 5/	1	2	2	2	3	4	4	3	4	5	**5**	7	7	8	8	9	9	9	9	9	9
										Debt service-to-revenue ratio (threshold is 30 percent)											
Baseline	2	2	3	3	3	4	4	3	4	4	**5**	5	6	6	6	6	6	6	6	6	6
A. Alternative Scenarios																					
A1. Key variables at their historical averages in 2009-2029 1/	2	2	3	3	4	5	5	5	5	7	**7**	8	9	9	9	9	9	9	9	9	9
A2. New public sector loans on less favorable terms in 2009-2029 2/	2	2	3	3	3	5	5	5	5	5	**5**	6	6	7	7	8	8	9	9	9	9
A3. Lower tobacco prices 3/	2	2	3	3	3	4	4	4	4	5	6	6	7	7	7	7	7	7	7	7	7
A4. Equilibrium real exchange rate 4/	2	3	4	4	4	5	5	4	4	6	6	7	7	8	8	8	8	8	8	8	8
B. Bound Tests																					
B1. Real GDP growth at historical average minus one standard deviation in 2010-2011	2	2	3	3	3	4	4	4	4	5	**5**	6	7	7	7	7	7	7	7	7	7
B2. Export value growth at historical average minus one standard deviation in 2010-2011 5/	2	2	3	4	4	4	4	4	5	6	**6**	7	7	8	8	7	7	7	7	7	7
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010-2011	2	3	4	4	4	5	5	5	5	6	**6**	7	8	9	9	9	9	9	9	9	9
B4. Net non-debt creating flows at historical average minus one standard deviation in 2010-2011 6/	2	2	4	4	4	5	5	4	6	8	**8**	8	9	9	9	8	8	8	8	8	8
B5. Combination of B1-B4 using one-half standard deviation shocks	2	2	4	6	5	6	6	5	8	10	**10**	11	11	11	11	11	10	10	10	10	10
Memorandum item:																					
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	30	30	30	30	30	30	30	30	30	30	**30**	30	30	30	30	30	30	30	30	30	30

Sources: Country authorities; and staff estimates and projections.

1/ Variables include real GDP growth, growth of GDP deflator (in U.S. dollar terms), non-interest current account in percent of GDP, and non-debt creating flows.
2/ Assumes that the interest rate on new borrowing is by 2 percentage points higher than in the baseline., while grace and maturity periods are the same as in the baseline.
3/ Assumes tobacco exports 25 percent lower than in baseline scenario and offsetting adjustment in import levels.
4/ Assumes an upfront nominal depreciation of 21 percent at start of 2010.
5/ 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).
6/ Includes official and private transfers and FDI.
6/ Applies to all stress scenarios except for A2 (less favorable financing) in which the terms on all new financing are as specified in footnote 2.

Table 4. Malawi: Sensitivity Analysis for Key Indicators of Public Debt 2009–29

	Estimate	Projections						
	2009	2010	2011	2012	2013	2014	2019	2029
PV of Debt-to-GDP Ratio								
Baseline	34	28	26	23	22	22	24	23
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	34	30	29	28	27	28	36	38
A2. Primary balance is unchanged from 2009	34	32	33	33	33	36	50	59
A3. Permanently lower GDP growth 1/	34	29	27	25	23	25	32	49
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2010-2011	34	31	32	30	29	32	40	48
B2. Primary balance is at historical average minus one standard deviations in 2010-2011	34	32	33	29	27	28	28	25
B3. Combination of B1-B2 using one half standard deviation shocks	34	32	33	30	29	31	36	40
B4. One-time 30 percent real depreciation in 2010	34	33	30	27	24	25	26	25
B5. 10 percent of GDP increase in other debt-creating flows in 2010	34	35	32	29	27	27	28	25
PV of Debt-to-Revenue Ratio 2/								
Baseline	114	81	81	72	67	71	81	86
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	114	85	89	84	80	85	114	138
A2. Primary balance is unchanged from 2009	114	92	102	103	105	114	166	221
A3. Permanently lower GDP growth 1/	114	81	83	75	72	78	105	180
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2010-2011	114	85	94	89	88	96	130	177
B2. Primary balance is at historical average minus one standard deviations in 2010-2011	114	92	102	91	85	88	95	93
B3. Combination of B1-B2 using one half standard deviation shocks	114	90	98	91	89	95	119	148
B4. One-time 30 percent real depreciation in 2010	114	95	94	82	76	78	85	93
B5. 10 percent of GDP increase in other debt-creating flows in 2010	114	100	100	90	84	87	94	93
Debt Service-to-Revenue Ratio 2/								
Baseline	7	9	9	7	6	5	5	7
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	7	9	9	7	6	5	7	11
A2. Primary balance is unchanged from 2009	7	9	9	8	7	5	9	15
A3. Permanently lower GDP growth 1/	7	9	9	7	6	5	6	12
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2010-2011	7	9	9	8	7	6	7	12
B2. Primary balance is at historical average minus one standard deviations in 2010-2011	7	9	9	8	6	5	7	8
B3. Combination of B1-B2 using one half standard deviation shocks	7	9	9	8	6	5	7	11
B4. One-time 30 percent real depreciation in 2010	7	9	9	8	7	6	7	11
B5. 10 percent of GDP increase in other debt-creating flows in 2010	7	9	10	7	6	5	7	8

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.

Table 1. Malawi: Selected Economic Indicators, 2007–11[1]

	2007	2008	2009	2010	2011
	Act.	Act.	Prel.	Proj.	Proj.
National accounts and prices (percent change, unless otherwise indicated)					
GDP at constant market prices	8.6	9.8	7.7	6.0	6.3
Consumer prices (end of period)	7.5	9.9	7.6	9.2	8.5
Consumer prices (annual average)	7.9	8.7	8.4	10.1	8.3
Central government (percent of GDP)					
Revenue and grants	31.6	31.2	30.1	35.2	32.2
Tax and non tax revenue	18.7	19.9	21.4	22.6	22.8
Grants	12.9	11.3	8.8	12.7	9.4
Expenditure and net lending	36.0	36.2	36.1	36.0	33.9
Overall balance (excluding grants)	-17.2	-16.5	-14.6	-13.5	-11.2
Overall balance	-4.3	-5.0	-5.8	-0.8	-1.8
Money and credit (change in percent of broad money at the beginning of the period, unless otherwise indicated)					
Money and quasi money	36.9	33.1	19.4	16.7	13.9
Net foreign assets [2]	41.9	-10.1	-18.4	13.6	10.4
Credit to the rest of the economy (percent change)	32.8	45.5	27.9	28.4	19.4
External sector (US$ millions, unless otherwise indicated)					
Exports, f.o.b.	731.7	969.2	1,004.8	1,119.9	1,229.7
Imports, c.i.f.	-1,182.3	-1,722.8	-1,809.6	-1,739.8	-1,843.0
Usable gross official reserves [2]	217.1	239.0	114.0	276.9	407.3
(months of imports)	1.2	1.3	0.6	1.4	2.1
(percent of reserve money)		93.2	35.0	81.3	126.6
Current account (percent of GDP)	-1.5	-6.4	-8.6	-1.8	-2.2
Current account, excl. official transfers (percent of GDP)	-15.5	-21.8	-21.9	-18.7	-15.9
Nominal effective exchange rate (percent change)	-8.8	20.2	…	…	…
Real effective exchange rate (percent change)	-7.8	24.9	…	…	…
Overall balance (percent of GDP)	0.5	-1.0	-1.8	4.4	3.6
Terms of trade (percent change)	-1.7	5.9	13.7	-3.1	-2.9
Debt stock and service (percent of GDP, unless otherwise indicated)					
External debt (public sector)	14.4	16.0	19.1	21.8	23.3
NPV of debt (percent of avg. exports)	0.0	42.1	64.3	62.1	65.4
NPV of debt (percent of avg. exports)	41.9	51.5	58.7	66.4	72.3
External debt service (percent of exports)	3.2	6.7	1.3	1.8	2.2
Net domestic debt (central government)	11.8	19.0	20.3	14.0	11.0
Treasury bill rate (period average)[3]	13.9	10.9	11.9	…	…

Sources: Reserve Bank of Malawi, Malawi Ministry of Finance, and IMF staff estimates and projections.

[1] The ECF scenario assumes an initial depreciation and that the real exchange rate is kept constant during the program period. Correcting the underlying exchange rate misalignment is a key element of the macroeconomic framework.
[2] Programmed usable reserves in 2009 excludes the SDR allocation, while the projection includes the SDR allocation.
[3] Average t-bill rate. Data for 2009 are shown as of November 30th.