INTERNATIONAL DEVELOPMENT ASSOCIATION

INTERNATIONAL MONETARY FUND

KENYA

Joint IMF/World Bank Debt Sustainability Analysis

Prepared by the Staffs of the International Monetary Fund and the World Bank

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This analysis updates the May 2009 joint Bank/Fund debt sustainability analysis (DSA).[1] *Compared to the 2009 analysis (Country Report No. 09/191), debt sustainability indicators have deteriorated somewhat, reflecting a projected faster debt accumulation over the medium term. Risks are somewhat greater for public debt, particularly in the event of lower growth. Nevertheless, Kenya remains at low risk of external debt distress.*[2,3] *The projected investment in infrastructure and the assumed improvement in the investment climate would be crucial to sustaining strong exports and GDP growth. Strategies to guard against shocks could include a build-up in international reserves as envisaged in the ECF framework.*

I. Background

1. **At end-2009, nominal public external debt was estimated at $7.1 billion (23¾ percent of GDP)**. About 60 percent of this debt was to multilateral creditors (including 47 percent owed to the World Bank) and 39 percent to bilateral creditors. A small share (under 2 percent), owed to commercial creditors, represents disputed arrears on security-related contracts.

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[1] It has benefited from consultation with African Development bank staff.

[2] Kenya still classifies as a medium performer in terms of the quality of its policies and institutions as measured by a three-year average of the World Bank's Country Policy and Institutional Assessment (CPIA) index. Available at http://go.worldbank.org/AXO6I14PK0.

[3] For a medium performer, the indicative thresholds for external debt sustainability are a net present value (NPV) of debt-to-GDP ratio of 40 percent, an NPV of debt-to-exports ratio of 150 percent, an NPV of debt-to-revenue ratio of 250 percent, a debt service-to-exports ratio of 20 percent, and a debt service-to-revenue ratio of 30 percent.

2. **Kenya has managed its debt relatively well and has regularly met its obligations, except for some disputed commercial arrears**. Limited external borrowing has left Kenya with more manageable debt ratios than many of its low-income country peers. Kenya benefited from Paris club rescheduling but did not qualify for heavily indebted poor countries (HIPC) debt relief as its debt indicators have been below the HIPC Initiative thresholds.

3. **The disputed external commercial arrears estimated at US$242 million are a subject of on-going investigations and litigation**. The time-line for clearance of these arrears has not been determined. The amount of arrears has been revised upward from an earlier estimate of US$91 million following completion of independent valuation of works, goods, and services delivered under each contract. The authorities think that it is more prudent to estimate a higher figure to reflect the likelihood of court rulings in favor of all creditors.

4. **Kenya's net domestic debt stood at Ksh 584 billion at end-2009 (20¾ percent of GDP), but potential contingent liabilities could be very large.** During 2003–07, domestic debt decline to 13½ percent of GDP, thanks to strong economic growth, prudent fiscal policies, and lower interest rates. The downward trend was reversed during 2008–09 reflecting fiscal stimulus measures implemented to mitigate the impact of adverse shocks. However, Kenya's relatively low reported domestic debt-to-GDP ratio masks vulnerabilities from possible realization of contingent liabilities associated with parastatals debt and unfunded obligations of the National Social Security Fund and government's current pay-as-you-go pension scheme for civil servants (equivalent to 11.8 percent of 2008/09 GDP).

5. **The DSA is based on nonreconciled debt data provided by the authorities, available data on private sector debt, and staff estimates**. It consists of two parts—**external and fiscal**.

- The external DSA covers external debt of the central government (including parastatal borrowing with a government guarantee) and the central bank, and also includes estimates of private sector debt based on available information. External debt sustainability is assessed in relation to policy-dependent debt-burden thresholds. A single discount rate is used.

- The fiscal DSA covers total debt—external and domestic—incurred or guaranteed by the central government.[4]

[4] Public domestic debt comprises central government debt. In this analysis, total public debt refers to the sum of public domestic and public external debt, but does not cover the entire public sector (e.g., parastatal borrowing without a government guarantee is not covered).

II. Macroeconomic Assumptions

6. **Key medium-term assumptions underlying the DSA are consistent with the Staff Report for Request for Access to Extended Credit Facility (ECF):**

- Real GDP growth is projected at 5 percent for 2010, a pickup from the average growth of 2.1 percent recorded during 2008–09, as a result of adverse shocks, including the global financial crisis. It is projected at an annual average of about

- 6⅓ percent during 2010–15, and just above 6 percent thereafter. While the projected growth exceeds the average of the past decade, it is not overly optimistic. It remains, on average, about the same as the pre-crisis five-year average of just above 6 percent and represents a deceleration from the 2007 growth of 7 percent. As such, the projected growth reflects in part a resumption of the momentum that was abruptly disrupted by the 2008 post-elections violence.[5] Growth is also predicated on the improvement in road and energy infrastructure, the business climate, and productivity. It is expected that private investment will accelerate, taking advantage of lower energy costs and new opportunities in an expanded regional market.

- Average inflation of about 5 percent for 20011–15 as measured by the GDP deflator.

- A broadly constant real exchange rate is assumed during the medium term.

- The noninterest external current account deficit rises to about 7¼ percent of GDP in 2010, before falling to about 3 percent of GDP by 2015 as the increase in the imports bill subsides and private transfers-to-GDP return to the pre-crisis levels.

- Assumptions in the fiscal area include broadly constant revenue and grants as a share of GDP (about 26 percent);[6] domestically financed development spending gradually increasing from just about 6.0 percent of GDP in 2008 to about 6.8 percent by 2029; a constant wage bill of 7.1 percent of GDP, and a gradual decline in other recurrent spending from 8.9 percent of GDP in 2008 to 7.2 percent of GDP over the long-term in line with the government's budget strategy. The primary fiscal deficit was 3.7 percent of GDP in 2009/10 and gradually declines to 1.2 by the end of the forecast period.

[5] The likelihood of the domestic shocks of this nature has been reduced following the August 2010 ratification of the new constitution.

[6] The increase from the average of about 23 percent of GDP in the past three years reflect an expected improvement in the revenue mobilization effort stemming from tax reforms, as well as in the capacity to absorb project grants.

- Real interest rates on domestic public debt are assumed at 3 percent for short-term debt and 5 percent for medium- and long-term debt.

- New domestic borrowings consist of a quarter of short-term debt and three-quarters of medium- and long-term debt, with the latter having an average maturity of about seven years. The NPV of domestic debt is assumed to be equal to its face value.

- New external borrowing as a share of GDP (including nonconcessional borrowing described below) increases over the medium and then declines gradually. It is projected to average 2½ percent of GDP during 2011–15, up from 2 percent of GDP in 2009. It subsequently declines, falling below 1 percent by the end of the forecast period. New external borrowing assumptions include sovereign bond issuance of $500 million in 2012, additional commercial borrowing of about US$450 million during 2013–14 and about US$200 million per year in the long run. Assumptions on terms include a 7½ percent fixed interest rate and a bullet amortization in year 10.

7. Continued eligibility for concessional borrowing from the International Development Association is assumed, although achievement of assumed growth rates could imply graduation during the forecast period.

III. External Debt Sustainability

8. **Kenya faces a low risk of external debt distress reflecting the limited reliance on external borrowing and an expected improvement in macroeconomic performance**.

- Under the *baseline scenario***,** initial debt ratios are well below all of the indicative thresholds for a medium performer, even if they increase over the medium-term reflecting a higher rate of debt accumulation (see Figure 1 and Table 2a and 2b).

- **Alternative scenarios and stress tests indicate that Kenya's external debt situation is generally resilient.** Standard stress tests reveal an initial upward trend for the debt indicators but do not result in a breach of the thresholds during the projection period. Over the period 2011–15, a shock combining lower GDP growth, weaker exports, a lower GDP deflator, and a fall in nondebt creating flows would push the NPV of public external debt as a share of GDP from 18¼ percent to 25 percent, and the NPV of debt-to-exports from almost 66 percent to 96⅓ percent. The most extreme shocks to debt dynamics by 2020 generally stem from a one-time 30 percent depreciation in 2011 or from a one standard deviation shock to the growth of exports proceeds.[7]

[7] The most extreme shock to the NPV of debt-to-GDP, the NPV of debt-to-revenue, and debt service-to-revenue results from a 30 percent exchange rate depreciation in 2011, whereas the most extreme shock to the PV of debt-to-exports results from an exports growth subdued during 2011–12 at only 1.3 percent (the historical average minus one standard deviation).

Summary: External Debt Sustainability Assessment

(In percent of GDP)

	2010	2011	2012	2013	2014	2015
NPV of PPG External Debt						
In percent of GDP (threshold=40)						
Baseline	18.2	18.2	19.3	19.6	19.4	18.9
Combined shocks	18.2	19.8	26.4	26.4	25.9	25.0
In percent of exports (threshold=150)						
Baseline	66.0	69.2	70.9	73.2	77.8	74.7
Combined shocks	66.0	71.5	94.7	96.2	101.1	96.3
PPG External Debt Service						
In percent of exports (threshold=20)						
Baseline	4.1	4.1	3.9	4.0	4.4	4.2
Combined shocks	4.1	4.1	4.4	4.9	5.3	5.0

IV. Public Debt Sustainability

9. **Kenya's public debt shows some vulnerability to growth shocks and potentially large contingent liabilities also pose additional risks to the sustainability of public debt**.

- Under the *baseline scenario*, the NPV of total public debt-to-GDP, at 42 percent in 2010, increases and peaks at 43 percent in 2012 and gradually trends down to 40 percent of GDP by 2015. Afterwards, it trends down to around 26 percent (Figure 2 and Table 1a). Given Kenya's relatively strong revenue performance, the NPV of debt-to-revenue ratio declines to below 150 percent after 2015. The debt service-to-revenue ratio falls to 22 percent by 2015, from 25 in 2009. It declines to below 20 percent by 2030.

- *Alternative scenarios* and *stress tests* indicate that Kenya's debt indicators are vulnerable to slower growth, unchanged primary balance, and materialization of contingent liabilities (see Figure 2 and Table 1b). A scenario assuming that 10 percent of 2010 GDP in potential domestic currency liabilities as of end-2010 would be paid by the government in equal tranches over a 10-year period shows that debt indicators deteriorate notably compared with the baseline. An alternative scenario shows that a two-year growth shock leads to a rise in the NPV of debt-to-GDP ratio to 55 percent by 2014, an NPV of debt-to-revenue ratio to over 200 percent by 2020, and a rise in the debt service-to-revenue ratio to over 31 percent by 2030. Also, the scenario of permanently lower growth—baseline minus half a percentage point—results in debt indicators that are considerably higher in the long-term (e.g., by the end of the forecast period, the NPV of debt-to-GDP ratio would be 50 percent). This result reinforces the importance of implementing fiscal consolidation and expanding productive capacity in the medium term, in addition to pursuing a prudent borrowing approach, to avoid a rising debt burden.

V. Conclusions

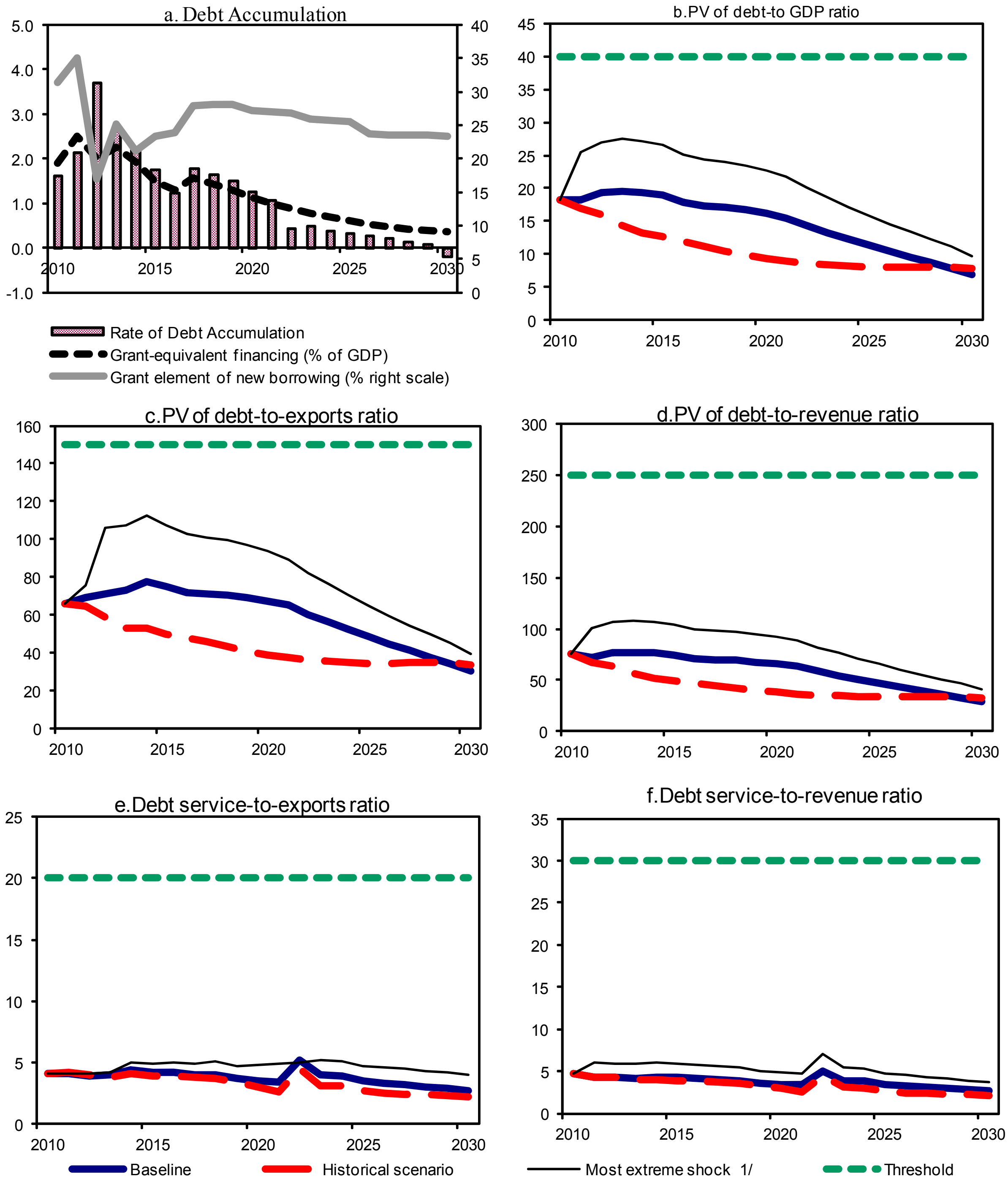
10. **Kenya faces a low risk of external debt distress, reflecting the limited reliance on external borrowing and an expected improvement in macroeconomic performance**. All external public debt indicators remain below the relevant country-specific debt burden thresholds. Further, although standard stress tests reveal a worsening in debt indicators, they do not result in a breach of the thresholds during the projection period.

11. **Total public debt, however shows greater risk of unfavorable debt developments, especially under a shock to GDP growth, unchanged fiscal policy, or materialization of some contingent liabilities**. Even temporarily lower GDP growth would set the NPV of public debt-to-GDP, the NPV of debt-to-revenue, and the ratio of debt service-to-revenue on a sharply increasing trend. A permanently unchanged primary balance from its 2010 level worsens debt dynamics notably. Potentially large but unreported contingent liabilities also pose additional risks to the sustainability of public debt.

12. **The sustainability of Kenya's debt depends on macroeconomic performance and a prudent borrowing strategy**. The projected investment in infrastructure and the assumed improvement in the investment climate would be crucial to sustaining strong exports and GDP growth. Additionally, Kenya's success in avoiding unsustainable debt to date reflects good management, but also limited willingness on the part of creditors to provide financing, at times due to governance concerns.

13. **The authorities were involved in the DSA exercise and concur with its conclusions.** The staffs encourage Kenyan authorities to build on their recent medium-term debt strategy and to use tools such as the joint IMF/WB DSA template to help maintain a prudent borrowing strategy. Such a strategy should continue to consider the total concessionality and interest costs of Kenya's borrowing, maturity structure, and steps that would help guard against volatility, whether due to shocks such as droughts or to fluctuations in external assistance. Strategies to guard against shocks could include a build-up in international reserves as envisaged in the ECF framework.

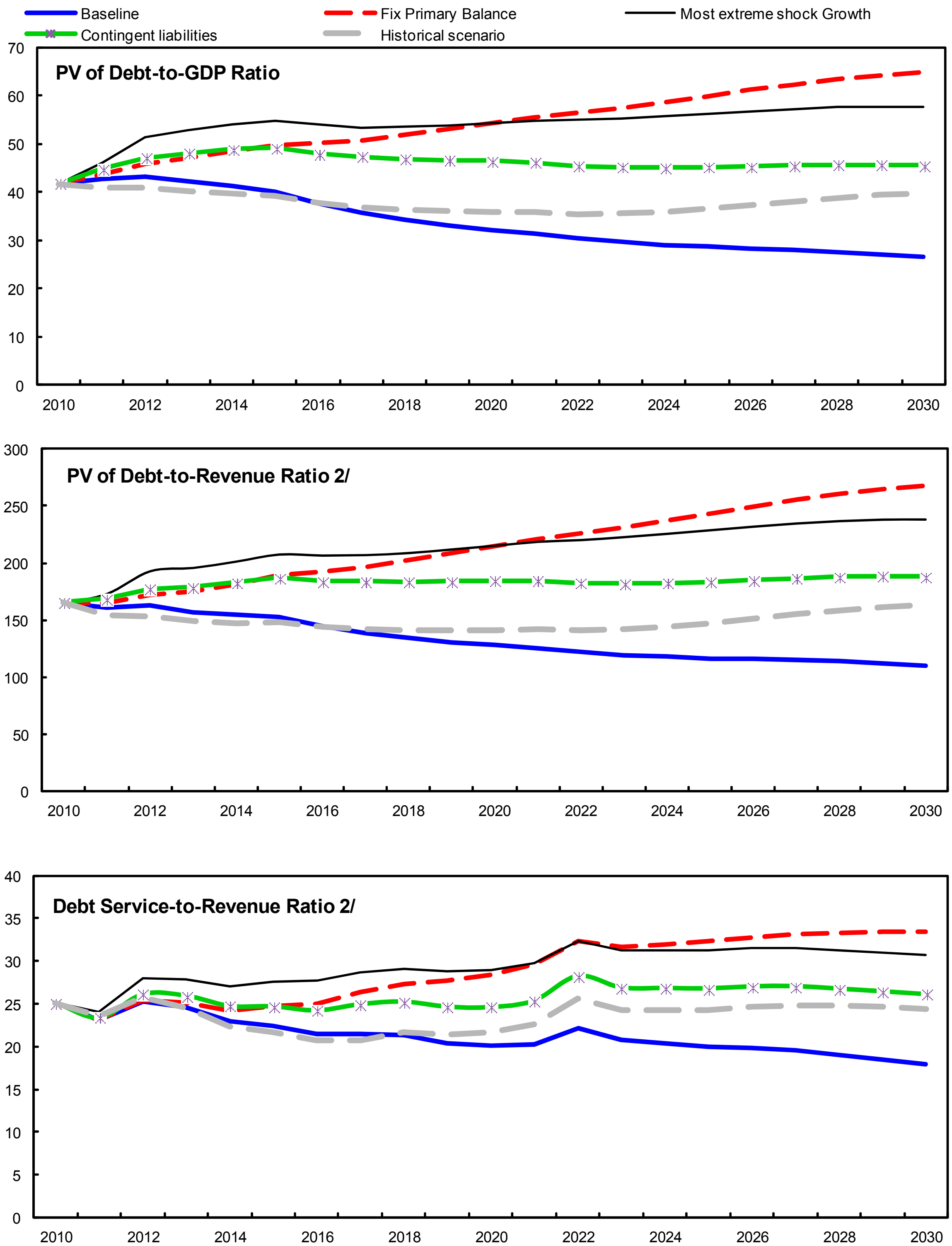
Figure 1. Kenya: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2010–30 1/



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 debt service shock and in figure f. to a One-time depreciation shock.

Figure 2.Kenya: Indicators of Public Debt Under Alternative Scenarios, 2010–30 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.

Table 1a.Kenya: Public Sector Debt Sustainability Framework, Baseline Scenario, 2007–30

(In percent of GDP, unless otherwise indicated)

	Actual			Average	Standard Deviation	Estimate	Projections								
	2007	2008	2009			2010	2011	2012	2013	2014	2015	2010-15 Average	2020	2030	2016-30 Average
Public sector debt 1/	34.6	41.3	44.4			47.6	49.0	49.1	48.1	47.0	45.4		36.9	28.8	
o/w foreign-currency denominated	21.1	23.7	23.8			24.2	24.4	25.2	25.5	25.1	24.3		20.9	9.2	
Change in public sector debt	-3.5	6.7	3.1			3.2	1.4	0.1	-1.0	-1.1	-1.6		-1.1	-0.6	
Identified debt-creating flows	-5.6	2.5	1.0			2.5	0.1	-1.2	-1.4	-1.6	-2.1		-1.5	-1.2	
Primary deficit	0.5	2.0	3.1	-0.1	1.7	3.8	3.2	2.3	1.6	1.3	0.8	2.2	0.5	0.1	0.3
Revenue and grants	23.1	23.2	23.7			25.2	26.6	26.5	26.8	26.8	26.3		25.2	24.2	
of which: grants	1.1	1.1	0.9			1.0	1.2	1.3	1.3	1.3	0.9		0.6	0.2	
Primary (noninterest) expenditure	23.6	25.3	26.7			29.0	29.8	28.9	28.4	28.1	27.1		25.7	24.3	
Automatic debt dynamics	-4.4	2.2	-2.1			-1.3	-3.1	-3.6	-2.9	-2.9	-2.9		-2.0	-1.3	
Contribution from interest rate/growth differential	-1.8	-0.5	-0.3			-1.3	-2.1	-2.5	-2.2	-2.2	-2.2		-1.4	-1.0	
of which: contribution from average real interest rate	0.6	0.0	0.8			0.8	0.5	0.6	0.9	0.9	0.8		0.8	0.7	
of which: contribution from real GDP growth	-2.5	-0.5	-1.0			-2.1	-2.6	-3.0	-3.1	-3.1	-2.9		-2.2	-1.7	
Contribution from real exchange rate depreciation	-2.6	2.7	-1.8			0.0	-1.0	-1.1	-0.7	-0.7	-0.7		...	...	
Other identified debt-creating flows	-1.6	-1.8	0.1			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Privatization receipts (negative)	-2.2	-1.8	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recognition of implicit or contingent liabilities	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Debt relief (HIPC and other)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Other (specify, e.g. bank recapitalization)	0.6	0.1	0.1			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Residual, including asset changes	2.1	4.2	2.1			0.7	1.2	1.3	0.4	0.5	0.5		0.4	0.6	
Other Sustainability Indicators															
PV of public sector debt	13.5	17.7	38.2			41.7	42.7	43.1	42.2	41.4	40.0		32.2	26.5	
o/w foreign-currency denominated	0.0	0.0	17.6			18.2	18.2	19.3	19.6	19.4	18.9		16.2	6.9	
o/w external	...	...	17.6			18.2	18.2	19.3	19.6	19.4	18.9		16.2	6.9	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	10.7	12.2	14.7			15.9	15.7	15.6	14.6	13.6	12.7		10.3	9.8	
PV of public sector debt-to-revenue and grants ratio (in percent)	58.3	76.0	161.5			165.0	160.8	162.5	157.1	154.6	152.3		127.8	109.6	
PV of public sector debt-to-revenue ratio (in percent)	61.3	79.7	167.8			172.1	168.5	170.5	165.2	162.4	157.6		130.9	110.7	
o/w external 3/	…	…	77.4			75.2	71.6	76.2	76.8	76.4	74.5		65.7	29.0	
Debt service-to-revenue and grants ratio (in percent) 4/	26.9	26.4	27.2			25.1	23.1	25.3	24.6	22.9	22.4		20.0	17.9	
Debt service-to-revenue ratio (in percent) 4/	28.3	27.7	28.3			26.2	24.3	26.6	25.9	24.1	23.2		20.5	18.0	
Primary deficit that stabilizes the debt-to-GDP ratio	4.0	-4.7	0.0			0.6	1.8	2.3	2.5	2.4	2.4		1.6	0.7	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	7.0	1.6	2.6	3.7	2.4	5.0	5.7	6.5	6.8	6.8	6.7	6.3	6.1	6.1	6.1
Average nominal interest rate on forex debt (in percent)	1.5	1.4	1.3	1.7	0.8	1.2	1.1	1.2	1.6	1.7	1.8	1.5	2.1	1.9	2.0
Average real interest rate on domestic debt (in percent)	7.3	1.1	4.0	7.4	5.6	3.8	2.5	2.5	4.1	4.2	3.7	3.4	5.1	3.9	4.4
Real exchange rate depreciation (in percent, + indicates depreciation)	-11.7	13.3	-7.7	-4.5	8.0	0.2	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	5.3	11.9	6.7	5.9	3.1	6.6	7.1	6.5	4.8	4.9	5.0	5.8	5.0	5.0	5.1
Growth of real primary spending (deflated by GDP deflator, in percent)	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1
Grant element of new external borrowing (in percent)	...	...	...	…	…	31.4	35.1	16.9	25.2	21.1	23.3	25.5	27.2	23.4	...

Sources: Country authorities; and staff estimates and projections.

1/ Public debt refers to net debt of the central government and parastatals.

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 1b. Kenya: Sensitivity Analysis for Key Indicators of Public Debt 2010–30

	Projections							
	2010	2011	2012	2013	2014	2015	2020	2030
PV of Debt-to-GDP Ratio								
Baseline	42	43	43	42	41	40	32	26
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	42	41	41	40	40	39	36	40
A2. Primary balance is unchanged from 2010	42	44	46	47	48	50	54	65
A3. Permanently lower GDP growth 1/	42	44	45	45	45	44	42	50
A4. Alternative Scenario: Recognition of Domestic Contingent Liabilities During 2011—20	42	45	47	48	49	49	47	45
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2011-2012	42	46	51	53	54	55	54	58
B2. Primary balance is at historical average minus one standard deviations in 2011-2012	42	42	42	41	41	40	34	30
B3. Combination of B1-B2 using one half standard deviation shocks	42	42	43	44	46	46	46	49
B4. One-time 30 percent real depreciation in 2011	42	50	50	48	47	46	37	32
B5. 10 percent of GDP increase in other debt-creating flows in 2011	42	52	52	51	50	49	40	33
PV of Debt-to-Revenue Ratio 2/								
Baseline	165	161	162	157	155	152	128	110
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	165	154	153	149	147	148	141	163
A2. Primary balance is unchanged from 2010	165	164	172	175	181	189	215	268
A3. Permanently lower GDP growth 1/	165	164	168	166	167	168	166	207
A4. Alternative Scenario: Recognition of Domestic Contingent Liabilities During 2011—20	166	169	177	179	183	187	185	188
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2011-2012	165	173	193	196	201	207	215	238
B2. Primary balance is at historical average minus one standard deviations in 2011-2012	165	157	158	154	153	152	134	123
B3. Combination of B1-B2 using one half standard deviation shocks	165	159	162	165	170	175	181	201
B4. One-time 30 percent real depreciation in 2011	165	188	188	180	177	174	149	133
B5. 10 percent of GDP increase in other debt-creating flows in 2011	165	196	197	190	187	185	157	135
Debt Service-to-Revenue Ratio 2/								
Baseline	25	23	25	25	23	22	20	18
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	25	24	26	24	22	22	22	24
A2. Primary balance is unchanged from 2010	25	23	25	25	24	25	28	33
A3. Permanently lower GDP growth 1/	25	23	26	25	24	23	23	27
A4. Alternative Scenario: Recognition of Domestic Contingent Liabilities During 2011—20	25	23	26	26	25	25	25	26
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2011-2012	25	24	28	28	27	28	29	31
B2. Primary balance is at historical average minus one standard deviations in 2011-2012	25	23	25	24	22	21	20	18
B3. Combination of B1-B2 using one half standard deviation shocks	25	24	26	25	23	23	25	26
B4. One-time 30 percent real depreciation in 2011	25	24	27	27	25	25	23	21
B5. 10 percent of GDP increase in other debt-creating flows in 2011	25	23	28	29	27	26	22	19

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 2a. Kenya: External Debt Sustainability Framework, Baseline Scenario, 2007–30 1/

(In percent of GDP, unless otherwise indicated)

	Actual			Historical	Standard	Projections						2010–15			2016–30
	2007	2008	2009	Average	Deviation	2010	2011	2012	2013	2014	2015	Average	2020	2030	Average
External debt (nominal) 1/	**23.0**	**25.4**	**24.9**			**25.1**	**24.9**	**26.0**	**27.2**	**26.9**	**25.8**		**21.7**	**9.2**	
o/w public and publicly guaranteed (PPG)	21.1	23.7	23.8			24.2	24.4	25.2	25.5	25.1	24.3		20.9	9.2	
Change in external debt	-2.9	2.4	-0.5			0.2	-0.2	1.2	1.1	-0.3	-1.1		-0.8	-1.0	
Identified net debt-creating flows	-4.1	2.3	4.8			5.2	4.5	2.9	2.2	1.6	0.6		-0.8	-4.3	
Non-interest current account deficit	**3.5**	**6.3**	**5.4**	**1.8**	**2.6**	**7.3**	**7.2**	**5.8**	**5.1**	**4.5**	**2.9**		**1.1**	**-3.3**	-0.1
Deficit in balance of goods and services	11.1	14.2	13.1			13.8	13.6	12.6	12.7	12.5	11.6		8.9	2.9	
Exports	26.0	27.6	25.2			27.6	26.2	27.2	26.8	25.0	25.3		23.9	23.1	
Imports	37.1	41.8	38.3			41.3	39.8	39.8	39.4	37.5	36.9		32.8	26.0	
Net current transfers (negative = inflow)	-7.7	-7.7	-7.6	-6.9	1.0	-6.3	-6.2	-6.6	-7.2	-7.6	-7.9		-7.2	-6.0	-6.8
o/w official	-0.1	0.1	0.1			0.1	0.1	0.1	0.0	0.0	0.0		0.0	0.0	
Other current account flows (negative = net inflow)	0.1	-0.2	-0.1			-0.1	-0.1	-0.3	-0.4	-0.5	-0.7		-0.7	-0.2	
Net FDI (negative = inflow)	**-3.6**	**-2.2**	**-1.5**	**-1.4**	**1.0**	**-1.3**	**-1.8**	**-1.7**	**-1.7**	**-1.6**	**-1.2**		**-1.1**	**-0.6**	-1.0
Endogenous debt dynamics 2/	**-4.0**	**-1.8**	**0.9**			**-0.8**	**-1.0**	**-1.1**	**-1.2**	**-1.3**	**-1.2**		**-0.8**	**-0.4**	
Contribution from nominal interest rate	0.4	0.4	0.4			0.3	0.3	0.3	0.4	0.4	0.4		0.4	0.2	
Contribution from real GDP growth	-1.5	-0.3	-0.7			-1.1	-1.3	-1.4	-1.6	-1.7	-1.6		-1.2	-0.6	
Contribution from price and exchange rate changes	-2.9	-1.9	1.2			...	...	...	...	...	...		...	...	
Residual (3-4) 3/	**1.2**	**0.1**	**-5.3**			**-5.0**	**-4.6**	**-1.8**	**-1.1**	**-1.9**	**-1.6**		**0.0**	**3.3**	
o/w exceptional financing	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
PV of external debt 4/	...	...	18.7			19	18.6	20.1	21.2	21.2	20.5		17.0	6.9	
In percent of exports	...	...	74.0			69	71	74	79.3	85.1	80.7		70.9	30.1	
PV of PPG external debt	...	...	**17.6**			**18.2**	**18.2**	**19.3**	**19.6**	**19.4**	**18.9**		**16.2**	**6.9**	
In percent of exports	...	...	**69.9**			**66.0**	**69.2**	**70.9**	**73.2**	**77.8**	**74.7**		**67.5**	**30.1**	
In percent of government revenues			**77.4**			**75.2**	**71.6**	**76.2**	**76.8**	**76.4**	**74.5**		**65.7**	**29.0**	
Debt service-to-exports ratio (in percent)	**6.4**	**5.2**	**5.4**			**5.1**	**5.5**	**4.6**	**4.6**	**4.9**	**4.6**		**3.5**	**2.7**	
PPG debt service-to-exports ratio (in percent)	**4.8**	**4.0**	**4.0**			**4.1**	**4.1**	**3.9**	**4.0**	**4.4**	**4.2**		**3.5**	**2.7**	
PPG debt service-to-revenue ratio (in percent)	**5.6**	**4.9**	**4.4**			**4.7**	**4.3**	**4.2**	**4.2**	**4.3**	**4.2**		**3.4**	**2.6**	
Total gross financing need (Billions of U.S. dollars)	0.4	1.7	1.5			2.4	2.5	2.1	2.1	2.1	1.7		0.8	-9.7	
Non-interest current account deficit that stabilizes debt ratio	6.4	3.9	5.9			7.1	7.4	4.6	4.0	4.0	4.0		1.9	-2.2	
Key macroeconomic assumptions															
Real GDP growth (in percent)	7.0	1.6	2.6	3.7	2.4	5.0	5.7	6.5	6.8	6.8	6.7	6.3	6.1	6.1	6.1
GDP deflator in US dollar terms (change in percent)	12.8	8.9	-4.6	6.1	6.2	4.0	5.0	6.4	4.8	4.9	5.0	5.0	5.0	5.0	5.1
Effective interest rate (percent) 5/	2.0	1.8	1.4	1.9	0.8	1.4	1.3	1.3	1.6	1.6	1.7	1.5	2.0	1.9	1.9
Growth of exports of G&S (US dollar terms, in percent)	18.2	17.4	-10.6	11.1	9.8	19.3	5.6	17.5	10.2	4.5	13.7	11.8	10.8	11.2	10.9
Growth of imports of G&S (US dollar terms, in percent)	23.2	24.6	-10.4	13.8	13.3	17.8	6.8	13.4	10.9	6.6	10.3	11.0	8.9	8.8	9.0
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	31.4	35.1	16.9	25.2	21.1	23.3	25.5	27.2	23.4	25.6
Government revenues (excluding grants, in percent of GDP)	22.0	22.1	22.8			24.2	25.4	25.3	25.5	25.5	25.4		24.8	23.9	24.4
Aid flows (in Billions of US dollars) 7/	0.3	0.7	0.3			0.7	1.1	1.1	1.3	1.2	1.0		1.4	1.3	
o/w Grants	0.3	0.3	0.3			0.3	0.4	0.5	0.6	0.7	0.5		0.6	0.7	
o/w Concessional loans	0.0	0.4	0.0			0.3	0.7	0.6	0.7	0.5	0.5		0.8	0.6	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			1.9	2.5	2.0	2.2	1.9	1.5		1.1	0.4	0.9
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			50.5	51.2	35.0	44.7	44.8	42.8		44.7	47.5	45.4
Memorandum items:															
Nominal GDP (Billions of US dollars)	27.2	30.0	29.4			32.1	35.6	40.3	45.2	50.6	56.7		100.0	293.7	
Nominal dollar GDP growth	20.7	10.5	-2.1			9.2	11.0	13.3	12.0	12.1	12.0	11.6	11.4	11.4	11.6
PV of PPG external debt (in Billions of US dollars)			5.3			5.8	6.5	7.8	8.9	9.8	10.7		16.2	20.4	
(PVt-PVt-1)/GDPt-1 (in percent)						1.6	2.1	3.7	2.7	2.2	1.8	2.4	1.3	-0.2	0.7
Gross workers' remittances (Billions of US dollars)	0.9	1.0	1.0			1.0	1.1	1.3	1.6	1.9	2.2		3.5	8.4	
PV of PPG external debt (in percent of GDP + remittances)	...	...	17.1			17.6	17.6	18.7	18.9	18.8	18.2		15.6	6.8	
PV of PPG external debt (in percent of exports + remittances)	...	...	61.8			59.3	61.9	63.1	64.7	67.9	64.9		59.0	26.8	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	3.5			3.7	3.7	3.5	3.5	3.9	3.7		3.1	2.4	

Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt.

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

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

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

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

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

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

8/ Grant-equivalent financing includes grants provided directly to the government and through new borrowing (difference between the face value and the PV of new debt).

Table 2b. Kenya: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2010–30
(In percent)

	Projections							
	2010	2011	2012	2013	2014	2015	**2020**	2030
PV of debt-to GDP ratio								
Baseline	18.2	18.2	19.3	19.6	19.4	18.9	**16.2**	6.9
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-2030 1/	18.2	17.0	16.0	14.3	13.3	12.6	**9.3**	7.8
A2. New public sector loans on less favorable terms in 2010-2030 2/	18.2	19.3	20.8	22.4	22.8	22.9	**22.0**	11.9
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	18.2	18.9	21.2	21.5	21.3	20.8	**17.7**	7.6
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	18.2	19.0	23.8	23.8	23.3	22.5	**18.5**	7.5
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	18.2	19.1	21.6	21.9	21.8	21.2	**18.1**	7.8
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	18.2	19.5	22.2	22.2	21.9	21.2	**17.6**	7.3
B5. Combination of B1-B4 using one-half standard deviation shocks	18.2	19.8	26.4	26.4	25.9	25.0	**20.7**	8.4
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	18.2	25.4	27.0	27.4	27.2	26.5	**22.6**	9.7
PV of debt-to-exports ratio								
Baseline	66.0	69.2	70.9	73.2	77.8	74.7	**67.5**	30.1
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-2030 1/	66.0	64.7	58.7	53.3	53.2	49.9	**39.0**	33.9
A2. New public sector loans on less favorable terms in 2010-2030 2/	66.0	73.5	76.4	83.8	91.5	90.3	**91.8**	51.5
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	66.0	69.1	70.9	73.2	77.8	74.7	**67.5**	30.1
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	66.0	75.5	105.8	107.3	112.8	107.3	**93.6**	39.4
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	66.0	69.1	70.9	73.2	77.8	74.7	**67.5**	30.1
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	66.0	74.3	81.4	83.1	87.6	83.6	**73.7**	31.6
B5. Combination of B1-B4 using one-half standard deviation shocks	66.0	71.5	94.7	96.2	101.1	96.3	**84.2**	35.6
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	66.0	69.1	70.9	73.2	77.8	74.7	**67.5**	30.1
PV of debt-to-revenue ratio								
Baseline	75.2	71.6	76.2	76.8	76.4	74.5	**65.7**	29.0
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-2030 1/	75.2	67.0	63.2	55.9	52.2	49.8	**38.0**	32.7
A2. New public sector loans on less favorable terms in 2010-2030 2/	75.2	76.0	82.2	87.8	89.7	90.1	**89.3**	49.7
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	75.2	74.6	83.6	84.2	83.8	81.8	**72.1**	31.8
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	75.2	74.8	94.1	93.1	91.5	88.5	**75.3**	31.4
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	75.2	75.1	85.3	85.9	85.5	83.4	**73.5**	32.5
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	75.2	76.9	87.6	87.1	86.0	83.4	**71.7**	30.5
B5. Combination of B1-B4 using one-half standard deviation shocks	75.2	78.2	104.4	103.5	101.8	98.5	**84.1**	35.2
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	75.2	100.1	106.7	107.4	106.9	104.4	**92.0**	40.6

Table 2b.Kenya: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2010–30 (concluded)

(In percent)

	Projections							
	2010	2011	2012	2013	2014	2015	**2020**	2030
Debt service-to-exports ratio								
Baseline	4.1	4.1	3.9	4.0	4.4	4.2	**3.5**	2.7
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-2030 1/	4.1	4.2	4.0	3.8	4.1	3.9	**3.0**	2.3
A2. New public sector loans on less favorable terms in 2010-2030 2/	4.1	4.1	4.1	4.2	5.0	4.9	**4.8**	4.0
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	4.1	4.1	3.9	4.0	4.4	4.2	**3.5**	2.7
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	4.1	4.3	4.9	5.4	5.9	5.6	**4.7**	3.7
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	4.1	4.1	3.9	4.0	4.4	4.2	**3.5**	2.7
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	4.1	4.1	4.1	4.3	4.7	4.5	**3.8**	2.9
B5. Combination of B1-B4 using one-half standard deviation shocks	4.1	4.1	4.4	4.9	5.3	5.0	**4.2**	3.3
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	4.1	4.1	3.9	4.0	4.4	4.2	**3.5**	2.7
Debt service-to-revenue ratio								
Baseline	4.7	4.3	4.2	4.2	4.3	4.2	**3.4**	2.6
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2010-2030 1/	4.7	4.3	4.3	4.0	4.0	3.9	**2.9**	2.2
A2. New public sector loans on less favorable terms in 2010-2030 2/	4.7	4.3	4.4	4.4	4.9	4.9	**4.7**	3.8
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	4.7	4.5	4.7	4.6	4.8	4.6	**3.8**	2.9
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	4.7	4.3	4.3	4.7	4.8	4.6	**3.8**	2.9
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	4.7	4.5	4.7	4.7	4.9	4.7	**3.8**	2.9
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	4.7	4.3	4.4	4.5	4.6	4.5	**3.7**	2.8
B5. Combination of B1-B4 using one-half standard deviation shocks	4.7	4.5	4.9	5.2	5.3	5.2	**4.2**	3.3
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	4.7	6.0	5.9	5.9	6.1	5.9	**4.8**	3.7
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	20.7	20.7	20.7	20.7	20.7	20.7	**20.7**	20.7

Sources: Country authorities; and staff estimates and projections.

1/ Variables include real GDP growth, growth of GDP deflator (in U.S. dollar terms), non-interest current account in percent of GDP, and non-debt creating flows.

2/ Assumes that the interest rate on new borrowing is by 2 percentage points higher than in the baseline., while grace and maturity periods are the same as in the baseline.

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

4/ Includes official and private transfers and FDI.

5/ Depreciation is defined as percentage decline in dollar/local currency rate, such that it never exceeds 100 percent.

6/ Applies to all stress scenarios except for A2 (less favorable financing) in which the terms on all new financing are as specified in footnote 2.