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

Approved by Saul Lizondo and Dominique Desruelle (IMF)
and Carlos Braga and John Panzer (World Bank)

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The debt sustainability analysis (DSA) was prepared jointly by Bank and Fund staffs in accordance with the standardized methodology for low-income countries. It is based on the general framework approved by the Executive Boards of the Fund and the World Bank in April 2005 and subsequently modified.[3] *The DSA has also benefited from consultation with African Development Bank staff. As in the previous DSA (Country Report No. 08/339), the findings indicate that the risk of external debt distress is low. Risks are somewhat greater for public debt, particularly in the event of lower growth.*

A. Methodology

1. **External debt sustainability is assessed in relation to policy-dependent debt burden thresholds**. Kenya is classified as a medium performer in terms of the quality of its policies and institutions as measured by a three-year average of Kenya's score on the World Bank's Country Policy and Institutional Assessment (CPIA) index.[4,5]

2. **The DSA is based on updated data provided by the authorities, available data on private sector debt, and estimates by the staffs**. The DSA uses non-reconciled debt data and a single discount rate.

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[3] http://www.imf.org/external/pubs/ft/dsa/lic.aspx

[4] http://go.worldbank.org/AXO6I14PK0

[5] For a medium performer, the indicative thresholds for external debt sustainability are an 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.

3. **This DSA 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. The fiscal DSA covers total debt—external and domestic—incurred or guaranteed by the central government.[6]

4. **Key assumptions underlying the DSA are consistent with the Staff Report for Request for Access to the Rapid-Access Component of the Exogenous Shock Facility:**

- Average annual real GDP growth of 4.7 percent for 2008 through 2014, which is well below the 7.0 percent growth recorded in 2007. Owing to the early 2008 political turmoil and the global financial crisis, average growth during 2008-09 is projected at 2½ percent, followed by an average growth of about 5½ percent during 2010–14, and just above 6 percent during 2015–29. Although the assumed growth level is below that achieved in 2007, it is well above the pre-2003 historical average for Kenya. In addition to increasing investment, this higher growth potential results from significant progress made in addressing some long-standing weaknesses in public finance management, the financial sector, and the business climate (see IMF Country Report No. 08/339). There is a risk that constraints to growth—including infrastructure bottlenecks and the need for further improvements in the business environment—will prove binding in the medium-term. Accordingly, an additional scenario that assumes real growth for 2010–14 as one standard deviation lower than in the baseline scenario, is included (average real growth for 2010–14 in this scenario is just over 2½ percent).

- Average inflation of about 7 percent for 2009–14 as measured by a GDP deflator, which falls to 5 percent for the 2015–29 period.

- A constant real exchange rate is assumed during the medium term, with some appreciation in the longer run reflecting sustained high growth. Nominal exchange rates are from the World Economic Outlook (WEO).

- The non-interest external current account deficit (CAD) rises to about 6.3 percent of GDP in 2008, reflecting primarily higher oil prices before falling to an average of about 4 percent of GDP by 2014 and to only 0.9 percent of GDP during 2015–29 period. The improvement in the non-interest CAD reflects primarily the improvement in the trade deficit, which declines from almost 13 percent of GDP in 2008 to just over 3½ percent of GDP over the forecast period.

- Assumptions in the fiscal area include, broadly constant revenue as a share of GDP (about 21.5 percent); domestically financed development spending gradually increasing from just about 4.8 percent of GDP in 2008 to about 6.0 percent by 2029; a

[6] Public domestic debt includes central government debt. External public debt includes public and publicly guaranteed central government and central bank 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).

constant wage bill of 6.4 percent of GDP, and a gradual decline in other recurrent spending from 7.4 percent of GDP in 2008 to 6.0 percent of GDP over the long-term in line with the government's budget strategy. The primary fiscal deficit was 2.3 percent of GDP in 2008 and gradually declines to 1.0 by the end of the forecast period.

- Interest on short-term public domestic debt is assumed at 8 percent, whereas medium- and long-term domestic debt carry an assumed interest rate of about 10.5 percent. 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 7 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) declines temporarily to 1 percent in 2008, from about 2 percent of GDP in 2007 before rising to an annual average of about 2½ percent during 2009–14, followed by a decline to just over 1½ percent by the end of the forecast period. In addition to borrowings from multilateral and bilateral creditors, new external borrowing assumptions include annual sovereign bond issuance of $200 million during 2010–14, which is consistent with the authorities' medium-term budget framework. Annual external sovereign bond issuance would then rise beginning in 2015 to about $500 million by 2029. Assumptions on terms include an 8 percent interest rate and a bullet amortization in year ten (implying a nine year grace period on principal payments).

- Continued eligibility for concessional borrowing from IDA is assumed although achievement of assumed growth rates could imply graduation during the forecast period.

- The only debt relief assumed under the DSA is an existing swap agreement with Italy, which would cancel about Euro 44 million in external obligations in 2015.

B. Outstanding Debt and Recent Developments

5. **At end-2008, nominal public external debt was estimated at $6.2 billion (20.4 percent of GDP)**. About 60 percent of this debt was to multilateral creditors (including 47 percent owed to the World Bank). About 39 percent of the debt was owed to bilateral creditors (largely the Paris Club), and a small share (under 2 percent) was owed to commercial creditors, some of which was for disputed security-related contracts, and in arrears (see para 8).

6. **Kenya has managed its debt burden relatively well and has regularly met its obligations to most creditors**. Limited external borrowing has left Kenya with more manageable debt ratios than many of its low-income country peers. Kenya's income level led it to be considered in the context of the Enhanced HIPC Initiative, but due to a debt levels

below the HIPC Initiative thresholds, Kenya did not qualify to receive HIPC relief.[7] Apart from disputed commercial arrears, described in greater detail in para 8, Kenya has regularly serviced its debts.

7. **Kenya's end-2008 external arrears of about $91 million were to commercial creditors and remain under dispute**. The arrears stem from non-payment on commercial credits for security-related contracts, many of which have been found by Kenya's Controller and Auditor-General to be fraudulent or deeply flawed (these projects are often referred to as the "Anglo-Leasing" scandal). The authorities are disputing the validity of the claims based on the contracts not being fulfilled, have obtained an external audit to determine the value of the goods and services provided, and intend to renegotiate the amounts owed based on the completed audit results. Once agreement on the amounts to be paid is reached, it is expected that Kenya will refinance these payments through commercial bank loans initially, although part of the proceeds of the planned sovereign bond issuance could be used to finance arrears clearance.

8. **Kenya's net domestic debt stood at Ksh 340.4 billion at end-2008, or 16.1 percent of GDP**. Since 2003, domestic debt has gradually declined as percent of GDP thanks to strong economic growth, prudent fiscal policies, and lower interest rates, despite primary surpluses below historical averages and the realization of some one-off contingent liabilities in recent years.[8] However, Kenya's relatively low reported domestic debt-to-GDP ratio masks vulnerabilities from further realization of contingent liabilities. In response, the government has launched a study of contingent liabilities in 24 parastatals and the National Social Security Fund. Results from this study will be incorporated into future debt sustainability analyses. In addition, the government's current pay-as-you-go pension scheme for civil servants has accumulated claims that were estimated at Ksh 271 billion (11.8 percent of 2008/09 GDP) in an August 2005 actuarial study. About 70 percent of Kenya's domestic debt is long-term borrowing with maturities extending up to 20 years.[9]

C. External Debt Sustainability

9. **Under the baseline scenario, Kenya's external debt indicators show a low risk of debt distress**. Kenya's initial debt ratios are well below all of the indicative thresholds for a medium performer and decline somewhat through the forecast period (see Figure 1 and Table 1a). Although external borrowing is projected to rise sharply over 2007–10, new obligations would fall gradually as a share of GDP thereafter. In addition to reasonably contained borrowing, the concessionality of new borrowing is slightly higher than in the past

[7] Kenya has benefited from Paris Club rescheduling.

[8] In 2006/07, the National Bank of Kenya was recapitalized and in 2007/08 contingent liabilities from Kenya Telkom were realized.

[9] Fiscal data, which are based on a July-June fiscal year, are converted to calendar year data for the purposes of the DSA. Averaging fiscal year data into calendar year data explains differences with Tables 2a and 2b in the staff report.

as shown in panel a of Figure 1), the improvement in the baseline scenario reflects favorable export growth and an improved trade balance projections in comparison to longer-term historical performance. Growth of both output and exports is projected to regain momentum once the global economy starts recovering from the ongoing financial crisis. Also, the infrastructure investments (financed partly through an assumed increase in external assistance) and structural reforms that the authorities are implementing are expected to boost productivity and support export and overall growth. It should be noted that the authorities' *Kenya Vision 2030* targets much faster growth than assumed in the DSA.

10. **The alternative scenarios and stress tests indicate that Kenya's external debt situation is generally resilient although shocks would lead to a sharp initial worsening in debt stock indicators (see Table 1b)**. Kenya would remain under its indicative debt stock and debt service thresholds under all alternative scenarios and stress tests. The most extreme stress tests are shown in Figure 1 and described here. Over the period 2010–14, a shock combining lower GDP growth, weaker exports, a lower GDP deflator, and a fall in non-debt creating flows would push the NPV of public external debt as a share of GDP from 14½ to 19 percent, the NPV of debt-to-exports from almost 57 to 67½ percent, and the NPV of debt-to-revenue from 54 to 71 percent. Despite an immediate worsening, the three debt stock measures would then improve with ratios only somewhat worse than under the baseline scenario by the end of the projection period. The combined shock described above would also raise the debt service-to-exports and debt-service-to-revenue ratios. The scenario of lower growth for 2010–14 shows external debt indicators only marginally above those in the baseline scenario. The "historical" scenario, which uses the 10-year average performance of key economic variables instead of the baseline assumptions, yields debt ratios that are better than in the baseline scenario. The better debt profile reflects primarily the fact that the historical annual average of non-debt creating inflows exceeds the annual flows used in the baseline projections by almost ¾ percentage points of GDP a year. The ensuing reduction in borrowing needs leads to lower debt ratios than under the baseline scenario.

Summary -- External Debt Sustainability Assessment
(in percent of GDP)

	2009	2010	2011	2012	2013	2014
NPV of PPG External Debt						
In percent of GDP (threshold=40)						
Baseline	11.8	11.2	10.6	10.9	11.2	11.5
Combined shocks	11.8	14.6	18.6	18.6	18.9	19.1
In percent of exports (threshold=150)						
Baseline	47.9	51.0	50.5	51.5	50.9	51.0
Combined shocks	47.9	56.9	69.6	69.6	67.6	66.6
PPG External Debt Service						
In percent of exports (threshold=20)						
Baseline	3.5	3.3	3.3	3.2	3.1	2.9
Combined shocks	3.5	3.4	3.7	3.9	3.7	3.4

D. Public Debt Sustainability

11. **Under the baseline scenario, the inclusion of domestic debt substantially increases the NPV of public debt-to-GDP** (see Figure 2 and Table 2a). The NPV of total public debt-to-GDP, at 31.1 percent in 2008, remains broadly stable at that level before gradually trending down toward the end of the forecast period. Throughout the projection period, the NPV of total public debt remains below 35 percent under the baseline scenario. Given Kenya's relatively strong revenue performance, the NPV of debt-to-revenue ratio remains stays around 150 percent during the period 2009–2029. The debt service-to-revenue ratio, which includes debt service on longer-term domestic and external debt, increases to 26½ by 2012 from 25 percent in 2008, and then gradually declines over time.

12. **Alternative scenarios and stress tests indicate that Kenya's debt indicators are vulnerable to slower growth, while being broadly resilient under other alternative assumptions** (see Figure 2 and Table 2b). A two-year growth shock leads to a rise in the NPV of debt-to-GDP ratio to 48 percent by 2029, an NPV of debt-to-revenue ratio to over 200 percent during the second half of the forecast period, and a rise in the debt service-to-revenue ratio to around 30 percent by 2029. Permanently lower growth would also increase the NPV of debt-to-GDP beyond 40 percent, and would raise the debt service-to-revenue ratio close to 30 percent, even though the NPV of debt-to-revenue ratio would remain below 250 percent. The NPV of debt-to-GDP ratio also under a scenario with primary balances unchanged from 2009. The scenario of lower growth for 2010-14 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 49 percent). This result reinforces the importance of expanding productive capacity in the medium term, in addition to a prudent borrowing approach, to avoid a rising debt burden.

E. Conclusions

13. **Reflecting the limited reliance on external borrowing and an expected improvement in macroeconomic performance, Kenya faces a low risk of external debt distress**. All external public debt indicators remain below the relevant country-specific debt burden thresholds. 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.

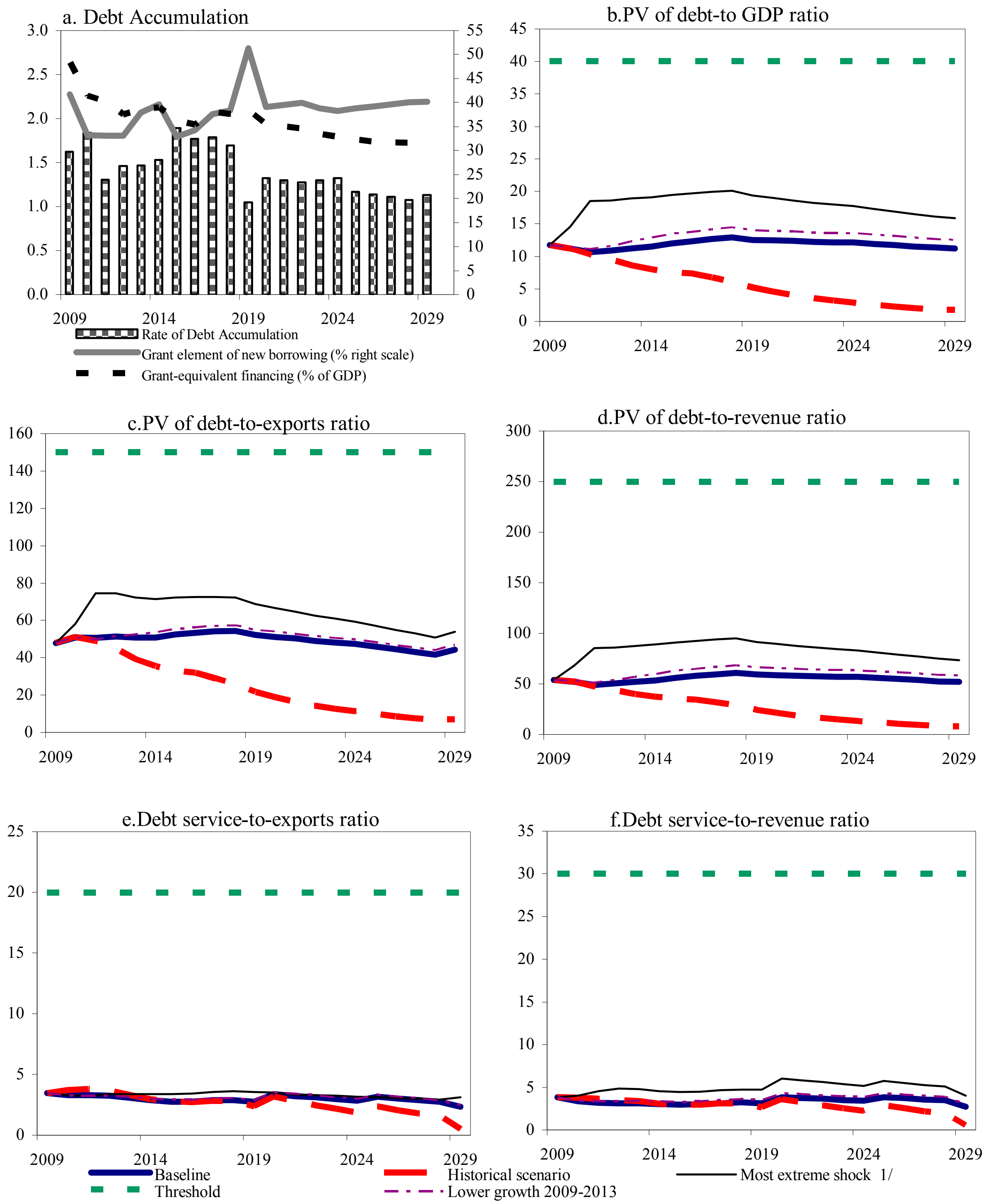
14. **Taking all public debt into account, however, the DSA shows greater risk of unfavorable debt developments, especially under a shock to GDP growth**. Even temporarily lower GDP growth would set the NPV of public debt-to-GDP, the NPV of debt-to-revenue, and the ratio of debt service-to-revenue on a sharply increasing trend as shown in Figure 2. Potentially large but unreported contingent liabilities also pose additional risks to the sustainability of public debt.

15. **The sustainability of Kenya's debt depends on macroeconomic performance and a prudent borrowing strategy**. Achieving the growth and export figures in the baseline scenario depends on: policies to sustain macroeconomic stability, substantial investment in infrastructure, and regulatory and governance reforms to improve the investment climate.

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. As Kenya is likely to have greater access to external financing in the future, it will be important to avoid excessive borrowing and to limit nonconcessional borrowing.

16. **The staffs continue to encourage Kenya to use tools such as the joint Fund-Bank DSA template to develop a prudent borrowing strategy to maintain both external and fiscal debt sustainability**. Efforts to use the DSA template and to develop a debt management strategy, including through a workshop in 2007 and the recent joint Bank-Fund technical assistance mission on the subject, are welcome. Such a strategy should 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 some further build-up in international reserves. A better understanding of holdings of shilling-denominated debt by non-residents would also help guide efforts to assess and reduce vulnerabilities.

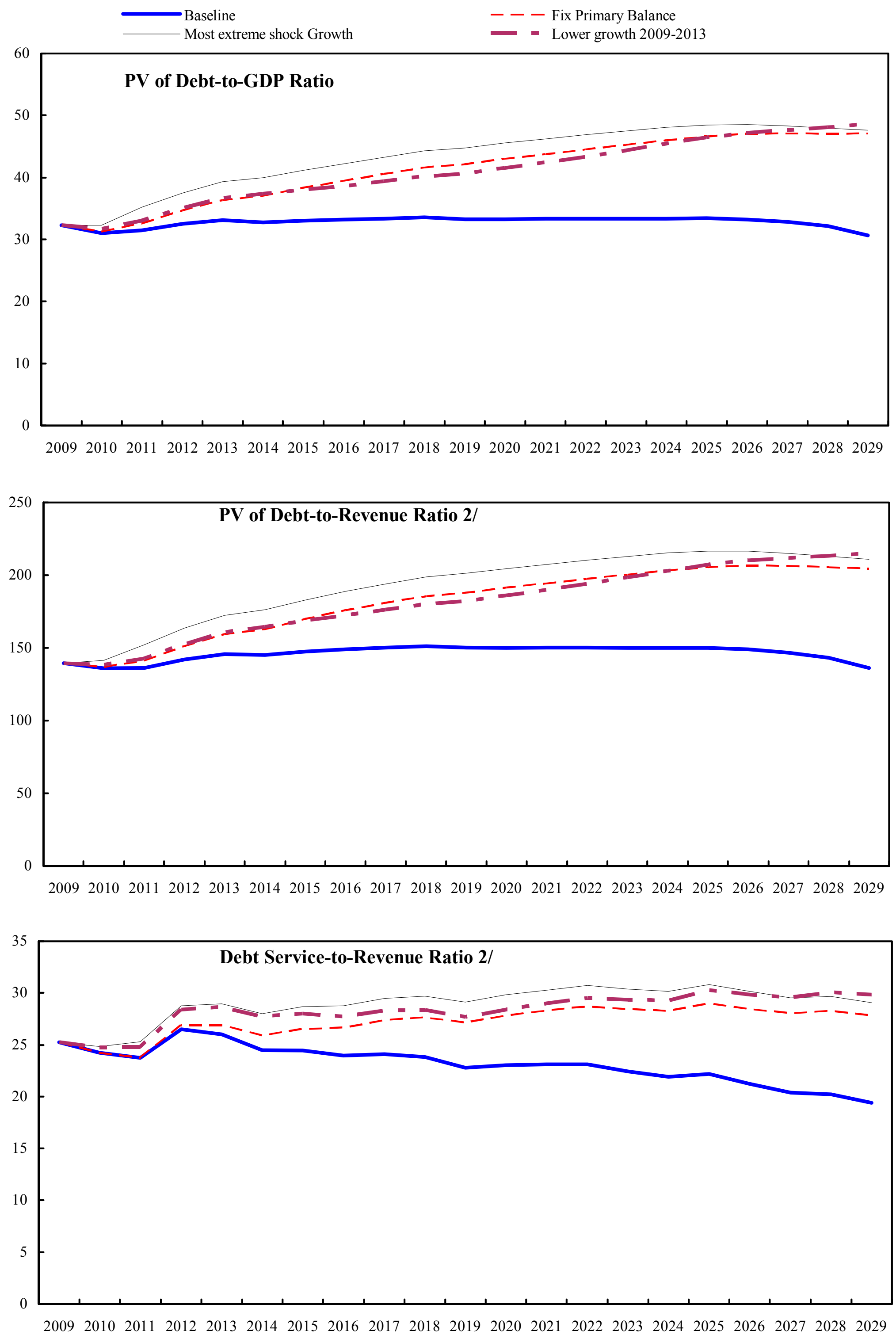
Figure 1. Kenya: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2009-2029 1/



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 Combination shock; in c. to a Exports shock; in d. to a Combination shock; in e. to a Terms shock and in picture f. to a Combination shock.

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



Sources: Country authorities and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2019.

2/ Revenues are defined inclusive of grants.

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

	Actual			Historical Average 2/	Standard Deviation 2/	Projections									
	2006	2007	2008			2009	2010	2011	2012	2013	2014	2009-2014 Average	2019	2029	2015-2029 Average
External debt (nominal) 1/	**26.8**	**24.7**	**22.0**			**24.7**	**22.2**	**20.8**	**20.7**	**21.0**	**21.0**		**21.0**	**18.0**	
o/w public and publicly guaranteed (PPG)	24.9	22.8	20.4			23.3	21.2	19.6	19.5	19.8	20.0		20.6	18.0	
Change in external debt	-4.5	-2.1	-2.8			2.7	-2.5	-1.5	-0.1	0.3	0.0		-0.4	-0.3	
Identified net debt-creating flows	-5.0	-4.0	1.9			1.4	2.7	2.3	2.0	1.3	1.0		-0.1	-1.1	
Non-interest current account deficit	**2.0**	**3.7**	**6.3**	**1.1**	**3.1**	**3.4**	**4.6**	**4.5**	**4.3**	**3.6**	**3.3**		**1.1**	**-0.2**	0.9
Deficit in balance of goods and services	9.3	10.1	12.9			10.2	10.1	9.5	9.1	8.5	8.2		5.7	3.6	
Exports	25.9	26.1	27.2			24.6	21.9	21.0	21.1	22.1	22.6		24.0	25.2	
Imports	35.1	36.2	40.2			34.8	32.0	30.5	30.3	30.5	30.8		29.6	28.8	
Net current transfers (negative = inflow)	-7.0	-6.4	-6.3	-6.1	1.0	-6.5	-5.4	-4.9	-4.7	-4.8	-4.7		-4.4	-3.5	-4.2
o/w official 3/	-0.3	-0.2	0.0			0.1	0.1	0.1	0.0	0.0	0.0		0.0	0.0	
Other current account flows (negative = net inflow)	-0.3	0.0	-0.3			-0.2	-0.1	-0.1	-0.1	-0.1	-0.1		-0.2	-0.3	
Net FDI (negative = inflow)	**-2.2**	**-3.6**	**-2.2**	**-1.2**	**1.1**	**-1.6**	**-1.3**	**-1.4**	**-1.4**	**-1.4**	**-1.4**		**-0.5**	**-0.2**	-0.4
Endogenous debt dynamics 4/	**-4.7**	**-4.0**	**-2.2**			**-0.4**	**-0.6**	**-0.7**	**-0.9**	**-0.9**	**-0.9**		**-0.8**	**-0.7**	
Contribution from nominal interest rate	0.5	0.4	0.4			0.3	0.2	0.2	0.3	0.3	0.3		0.4	0.3	
Contribution from real GDP growth	-1.7	-1.6	-0.4			-0.7	-0.8	-0.9	-1.2	-1.2	-1.2		-1.2	-1.0	
Contribution from price and exchange rate changes	-3.5	-2.9	-2.2			…	…	…	…	…	…		…	…	
Residual (3-4) 5/	**0.5**	**1.9**	**-4.6**			**1.3**	**-5.2**	**-3.8**	**-2.1**	**-0.9**	**-1.0**		**-0.2**	**0.8**	
o/w exceptional financing	-1.1	0.0	0.0			-0.1	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
PV of external debt 6/	...	...	11.6			13.2	12.2	11.8	12.1	12.5	12.5		12.8	11.2	
In percent of exports	...	...	42.6			53.7	55.8	55.8	57.2	56.6	55.4		53.6	44.5	
PV of PPG external debt	**...**	**...**	**10.0**			**11.8**	**11.2**	**10.6**	**10.9**	**11.2**	**11.5**		**12.5**	**11.2**	
In percent of exports	**...**	**...**	**36.7**			**47.9**	**51.0**	**50.5**	**51.5**	**50.9**	**51.0**		**52.3**	**44.5**	
In percent of government revenues	**...**	**...**	**45.0**			**53.8**	**52.1**	**49.1**	**50.3**	**52.1**	**53.7**		**59.3**	**52.0**	
Debt service-to-exports ratio (in percent)	**6.5**	**5.8**	**5.1**			**4.5**	**4.2**	**4.0**	**3.8**	**3.7**	**3.5**		**2.9**	**2.3**	
PPG debt service-to-exports ratio (in percent)	**5.5**	**4.8**	**4.2**			**3.5**	**3.3**	**3.3**	**3.2**	**3.1**	**2.9**		**2.7**	**2.3**	
PPG debt service-to-revenue ratio (in percent)	**6.7**	**5.6**	**5.1**			**3.9**	**3.4**	**3.2**	**3.2**	**3.1**	**3.0**		**3.1**	**2.7**	
Total gross financing need (billions of U.S. dollars)	0.3	0.4	1.7			0.9	1.6	1.7	1.8	1.6	1.6		1.3	0.5	
Non-interest current account deficit that stabilizes debt ratio	6.5	5.7	9.0			0.6	7.1	5.9	4.4	3.3	3.3		1.5	0.1	
Key macroeconomic assumptions															
Real GDP growth (in percent)	6.4	7.0	2.0	3.7	2.4	3.0	4.0	5.0	6.3	6.5	6.5	5.2	6.0	6.0	6.1
GDP deflator in US dollar terms (change in percent)	12.8	12.2	9.7	4.8	9.0	-4.4	17.2	11.9	4.8	3.1	3.9	6.1	5.0	5.0	5.0
Effective interest rate (percent) 7/	2.0	2.0	1.7	1.8	1.0	1.4	1.2	1.3	1.4	1.5	1.6	1.4	2.0	1.8	1.9
Growth of exports of G&S (US dollar terms, in percent)	9.2	21.3	16.5	11.6	9.2	-10.9	8.5	12.8	11.6	14.8	13.4	8.4	12.7	3.3	12.2
Growth of imports of G&S (US dollar terms, in percent)	17.4	23.6	24.1	13.8	16.8	-14.7	12.0	12.1	10.4	10.8	11.6	7.0	11.6	3.0	10.9
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	41.8	33.2	33.1	33.1	38.0	39.6	36.4	51.3	40.2	39.2
Government revenues (excluding grants, in percent of GDP)	21.1	22.2	22.2			21.9	21.5	21.7	21.6	21.5	21.5		21.1	21.5	21.3
Aid flows (in billions of US dollars) 8/	0.2	0.3	0.4			1.4	2.3	3.2	4.0	5.1	6.4		15.1	47.9	
o/w Grants	0.2	0.3	0.4			0.4	0.5	0.6	0.6	0.6	0.7		1.0	2.8	
o/w Concessional loans	0.0	0.0	0.0			1.0	1.8	2.5	3.4	4.5	5.7		14.1	45.1	
Grant-equivalent financing (in percent of GDP) 9/	...	...	...			2.6	2.3	2.2	2.0	2.1	2.1		2.1	1.7	1.9
Grant-equivalent financing (in percent of external financing) 9/	...	...	...			57.4	56.2	58.5	57.4	58.0	58.3		67.2	60.7	57.5
Memorandum items:															
Nominal GDP (billions of US dollars)	22.5	27.0	30.2			29.8	36.3	42.6	47.4	52.1	57.6		99.5	290.4	
Nominal dollar GDP growth	20.0	20.0	11.9			-1.5	21.9	17.5	11.3	9.8	10.6	**11.6**	11.3	11.3	11.4
PV of PPG external debt (in billions of US dollars)			3.0			3.5	4.1	4.5	5.2	5.9	6.6		12.5	32.5	
(PVt-PVt-1)/GDPt-1 (in percent)						1.6	1.8	1.3	1.5	1.5	1.5	1.5	1.0	1.1	1.4

Sources: Country authorities and staff estimates and projections.

1/ Includes both public and private sector external debt.
2/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.
3/ Includes only program grants.
4/ Derived as [r - g - r(1+g)]/(1+g+r+gr) times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, and r = growth rate of GDP deflator in U.S. dollar terms.
5/ 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.
6/ Assumes that PV of private sector debt is equivalent to its face value.
7/ Current-year interest payments divided by previous period debt stock.
8/ Defined as grants (program and project), concessional loans, and debt relief.
9/ 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 1b. Kenya: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2009-2029
(In percent)

	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																					
Baseline	12	11	11	11	11	12	12	12	13	13	**13**	12	12	12	12	12	12	12	12	11	11
A. Alternative Scenarios																					
A1. Key variables at their historical averages in 2009-2029 1/	12	11	10	10	9	8	8	7	7	6	**5**	5	4	4	3	3	3	2	2	2	2
A2. New public sector loans on less favorable terms in 2009-2029 2/	12	11	11	12	13	13	14	15	15	16	**16**	16	16	16	16	16	16	16	16	15	15
A3. Alternative Scenario: Growth lower by one standard deviation 2010-2014	12	11	11	12	12	13	13	14	14	14	14	14	14	14	14	14	13	13	13	13	13
B. Bound Tests																					
B1. Real GDP growth at historical average minus one standard deviation in 2010-2011	12	11	11	12	12	12	13	13	13	14	**13**	13	13	13	13	13	13	12	12	12	12
B2. Export value growth at historical average minus one standard deviation in 2010-2011 3/	12	12	13	13	14	14	14	14	15	15	**14**	14	14	13	13	13	13	12	12	12	12
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010-2011	12	14	15	16	16	16	17	18	18	18	**18**	18	18	17	17	17	17	17	17	16	16
B4. Net non-debt creating flows at historical average minus one standard deviation in 2010-2011 4/	12	12	12	12	13	13	13	13	14	14	**13**	13	13	13	13	13	12	12	12	12	11
B5. Combination of B1-B4 using one-half standard deviation shocks	12	15	19	19	19	19	19	20	20	20	**19**	19	19	18	18	18	17	17	17	16	16
B6. One-time 30 percent nominal depreciation relative to the baseline in 2010 5/	12	15	14	15	15	16	16	17	17	17	**17**	17	17	16	16	16	16	16	16	15	15
PV of debt-to-exports ratio																					
Baseline	48	51	51	51	51	51	53	53	54	54	**52**	51	50	49	48	47	46	45	43	42	44
A. Alternative Scenarios																					
A1. Key variables at their historical averages in 2009-2029 1/	48	51	49	45	39	35	33	32	29	26	**22**	19	17	14	13	11	10	9	8	7	7
A2. New public sector loans on less favorable terms in 2009-2029 2/	48	51	52	55	57	58	60	63	66	67	**67**	64	64	63	62	62	61	60	58	57	60
A3. Alternative Scenario: Growth lower by one standard deviation 2010-2014	48	51	50	52	52	54	55	56	57	57	55	54	53	52	51	50	48	47	45	44	47
B. Bound Tests																					
B1. Real GDP growth at historical average minus one standard deviation in 2010-2011	48	51	51	51	51	51	53	53	54	54	**52**	51	50	49	48	47	46	45	43	42	44
B2. Export value growth at historical average minus one standard deviation in 2010-2011 3/	48	58	74	74	72	71	72	72	73	72	**69**	67	65	63	61	59	57	55	53	51	54
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010-2011	48	51	51	51	51	51	53	53	54	54	**52**	51	50	49	48	47	46	45	43	42	44
B4. Net non-debt creating flows at historical average minus one standard deviation in 2010-2011 4/	48	55	58	58	57	57	58	58	59	59	**56**	55	53	52	50	49	48	46	44	43	45
B5. Combination of B1-B4 using one-half standard deviation shocks	48	57	70	70	68	67	67	67	67	67	**64**	62	60	58	56	55	53	51	49	47	50
B6. One-time 30 percent nominal depreciation relative to the baseline in 2010 5/	48	51	51	51	51	51	53	53	54	54	**52**	51	50	49	48	47	46	45	43	42	44
PV of debt-to-revenue ratio																					
Baseline	54	52	49	50	52	54	56	58	60	61	**59**	59	58	58	57	57	56	55	54	53	52
A. Alternative Scenarios																					
A1. Key variables at their historical averages in 2009-2029 1/	54	52	48	44	40	37	36	35	32	29	**25**	22	19	17	15	14	12	11	10	9	8
A2. New public sector loans on less favorable terms in 2009-2029 2/	54	52	51	54	58	61	64	68	72	75	**75**	74	74	74	74	74	74	73	73	72	71
A3. Alternative Scenario: Growth lower by one standard deviation 2010-2014	54	53	51	54	57	60	63	65	67	68	66	66	65	65	64	64	63	61	60	59	58
B. Bound Tests																					
B1. Real GDP growth at historical average minus one standard deviation in 2010-2011	54	54	52	54	55	57	60	62	64	65	**63**	63	62	61	61	60	59	58	57	56	55
B2. Export value growth at historical average minus one standard deviation in 2010-2011 3/	54	56	62	62	64	64	66	67	69	69	**67**	65	64	63	62	61	59	58	57	55	54
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010-2011	54	64	70	72	75	77	80	83	85	87	**85**	84	83	82	82	81	80	78	77	75	74
B4. Net non-debt creating flows at historical average minus one standard deviation in 2010-2011 4/	54	57	56	57	59	60	62	63	65	66	**64**	63	62	61	60	59	58	57	55	54	53
B5. Combination of B1-B4 using one-half standard deviation shocks	54	68	86	86	88	89	91	93	94	95	**92**	90	88	86	84	83	81	79	77	75	74
B6. One-time 30 percent nominal depreciation relative to the baseline in 2010 5/	54	70	66	68	70	72	76	78	80	82	**80**	79	78	77	77	76	75	74	72	71	70

Table 1b. Kenya: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2009-2029 (continued)
(In percent)

	Projections																				
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	**2019**	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Debt service-to-exports ratio																					
Baseline	3	3	3	3	3	3	3	3	3	3	**3**	3	3	3	3	3	3	3	3	3	2
A. Alternative Scenarios																					
A1. Key variables at their historical averages in 2009-2029 1/	3	4	4	4	3	3	3	3	3	3	**2**	3	3	2	2	2	2	2	2	2	1
A2. New public sector loans on less favorable terms in 2009-2029 2/	3	3	3	3	3	3	3	3	4	4	**4**	3	3	3	3	3	3	3	3	3	3
A3. Alternative Scenario: Growth lower by one standard deviation 2010-2014	3	3	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3	3	3	3	2
B. Bound Tests																					
B1. Real GDP growth at historical average minus one standard deviation in 2010-2011	3	3	3	3	3	3	3	3	3	3	**3**	3	3	3	3	3	3	3	3	3	2
B2. Export value growth at historical average minus one standard deviation in 2010-2011 3/	3	4	4	4	4	4	4	4	4	4	**4**	5	4	4	4	4	4	4	4	3	3
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010-2011	3	3	3	3	3	3	3	3	3	3	**3**	3	3	3	3	3	3	3	3	3	2
B4. Net non-debt creating flows at historical average minus one standard deviation in 2010-2011 4/	3	3	3	3	3	3	3	3	3	3	**3**	4	3	3	3	3	3	3	3	3	2
B5. Combination of B1-B4 using one-half standard deviation shocks	3	3	4	4	4	3	3	3	3	3	**3**	4	4	4	4	3	4	4	3	3	3
B6. One-time 30 percent nominal depreciation relative to the baseline in 2010 5/	3	3	3	3	3	3	3	3	3	3	**3**	3	3	3	3	3	3	3	3	3	2
Debt service-to-revenue ratio																					
Baseline	4	3	3	3	3	3	3	3	3	3	**3**	4	4	4	4	3	4	4	4	3	3
A. Alternative Scenarios																					
A1. Key variables at their historical averages in 2009-2029 1/	4	4	4	4	3	3	3	3	3	3	**3**	4	3	3	3	2	3	3	2	2	1
A2. New public sector loans on less favorable terms in 2009-2029 2/	4	3	3	3	3	4	4	4	4	4	**4**	4	4	4	4	4	4	4	4	4	4
A3. Alternative Scenario: Growth lower by one standard deviation 2010-2014	4	3	3	3	3	3	3	3	4	4	3	4	4	4	4	4	4	4	4	4	3
B. Bound Tests																					
B1. Real GDP growth at historical average minus one standard deviation in 2010-2011	4	3	3	3	3	3	3	3	3	3	**3**	4	4	4	4	4	4	4	4	4	3
B2. Export value growth at historical average minus one standard deviation in 2010-2011 3/	4	3	3	4	3	3	3	3	3	3	**3**	4	4	4	4	4	4	4	4	4	3
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010-2011	4	4	5	5	4	4	4	4	5	5	**4**	6	5	5	5	5	6	5	5	5	4
B4. Net non-debt creating flows at historical average minus one standard deviation in 2010-2011 4/	4	3	3	3	3	3	3	3	3	3	**3**	4	4	4	4	4	4	4	4	4	3
B5. Combination of B1-B4 using one-half standard deviation shocks	4	4	5	5	5	5	4	4	5	5	**5**	6	6	6	5	5	6	5	5	5	4
B6. One-time 30 percent nominal depreciation relative to the baseline in 2010 5/	4	5	4	4	4	4	4	4	4	4	**4**	5	5	5	5	5	5	5	5	5	4
Memorandum item:																					
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	33	33	33	33	33	33	33	33	33	33	**33**	33	33	33	33	33	33	33	33	33	33

Sources: Country authorities and staff estimates and projections.

1/ Variables include real GDP growth, growth of GDP deflator (in U.S. dollar terms), non-interest current account in percent of GDP, and non-debt creating flows.
2/ Assumes that the interest rate on new borrowing is by 2 percentage points higher than in the baseline., while grace and maturity periods are the same as in the baseline.
3/ Exports values are assumed to remain permanently at the lower level, but the current account as a share of GDP is assumed to return to its baseline level after the shock (implicitly assuming an offsetting adjustment in import levels).
4/ Includes official and private transfers and FDI.
5/ Depreciation is defined as percentage decline in dollar/local currency rate, such that it never exceeds 100 percent.
6/ Applies to all stress scenarios except for A2 (less favorable financing) in which the terms on all new financing are as specified in footnote 2.

Table 2a. Kenya: Public Sector Debt Sustainability Framework, Baseline Scenario, 2006-2029
(In percent of GDP, unless otherwise indicated)

	Actual			Historical	Standard	Estimate	Projections								
	2006	2007	2008	Average 5/	Deviation 5/	2009	2010	2011	2012	2013	2014	2009-14 Average	2019	2029	2015-29 Average
Public sector debt 1/	42.8	39.6	40.4			43.5	41.3	40.6	41.1	41.5	41.3		41.4	37.5	
o/w foreign-currency denominated	24.9	22.8	20.4			23.3	21.2	19.6	19.5	19.8	20.0		20.6	18.0	
Change in public sector debt	-3.4	-3.2	0.8			3.1	-2.2	-0.6	0.5	0.4	-0.2		-0.2	-0.9	
Identified debt-creating flows	-4.2	-5.4	1.8			1.5	-2.8	-0.7	0.2	0.2	-0.3		-0.2	-0.8	
Primary deficit	0.0	0.6	2.3	-0.7	1.5	2.9	2.5	2.0	1.7	1.6	1.6	2.1	1.5	1.1	1.4
Revenue and grants	22.2	23.3	23.4			23.2	22.8	23.1	22.9	22.7	22.6		22.2	22.5	
of which: grants	1.1	1.1	1.2			1.2	1.4	1.4	1.3	1.2	1.1		1.0	1.0	
Primary (noninterest) expenditure	22.2	23.9	25.7			26.1	25.4	25.1	24.6	24.4	24.2		23.7	23.6	
Automatic debt dynamics	-4.5	-4.4	1.3			-1.2	-5.1	-2.4	-1.4	-1.4	-1.8		-1.7	-1.9	
Contribution from interest rate/growth differential	-2.4	-1.8	-1.1			-1.1	-1.3	-0.8	-1.3	-1.4	-1.3		-1.2	-1.1	
of which: contribution from average real interest rate	0.4	1.0	-0.4			0.1	0.4	1.1	1.1	1.1	1.2		1.2	1.1	
of which: contribution from real GDP growth	-2.8	-2.8	-0.8			-1.2	-1.7	-2.0	-2.4	-2.5	-2.5		-2.4	-2.2	
Contribution from real exchange rate depreciation	-2.1	-2.6	2.4			-0.2	-3.8	-1.6	-0.1	0.0	-0.5		...	...	
Other identified debt-creating flows	0.3	-1.6	-1.8			-0.1	-0.2	-0.2	-0.1	0.0	0.0		0.0	0.0	
Privatization receipts (negative)	-0.3	-2.2	-1.8			-0.1	-0.2	-0.2	-0.1	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	0.6	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Residual, including asset changes	0.8	2.2	-0.9			1.5	0.6	0.0	0.3	0.2	0.0		0.0	-0.1	
Other Sustainability Indicators															
PV of public sector debt	17.9	16.8	31.1			32.3	31.0	31.5	32.5	33.1	32.8		33.3	30.7	
o/w foreign-currency denominated	0.0	0.0	11.1			12.1	10.9	10.5	10.9	11.4	11.5		12.5	11.2	
o/w external	...	...	11.1			12.1	10.9	10.5	10.9	11.4	11.5		12.5	11.2	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	11.6	10.8	11.6			10.9	12.3	12.6	12.3	12.5	12.2		11.5	10.4	
PV of public sector debt-to-revenue and grants ratio (in percent)	80.6	71.9	132.8			139.4	135.8	136.4	142.1	145.8	145.1		150.2	136.4	
PV of public sector debt-to-revenue ratio (in percent)	84.8	75.6	139.9			147.3	144.6	145.3	150.6	153.6	152.7		157.4	142.5	
o/w external 3/	…	…	49.8			55.3	50.9	48.4	50.5	52.7	53.7		59.3	52.0	
Debt service-to-revenue and grants ratio (in percent) 4/	29.6	26.9	25.1			25.3	24.2	23.7	26.5	26.0	24.5		22.8	19.4	
Primary deficit that stabilizes the debt-to-GDP ratio	3.4	3.8	1.4			-0.2	4.7	2.6	1.3	1.2	1.8		1.7	2.0	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	6.4	7.0	2.0	3.7	2.4	3.0	4.0	5.0	6.3	6.5	6.5	5.2	6.0	6.0	6.1
Average nominal interest rate on forex debt (in percent)	1.7	1.5	1.4	1.6	0.9	1.1	0.9	1.1	1.3	1.5	1.6	1.2	2.0	1.8	1.9
Average real interest rate on domestic debt (in percent)	4.9	7.7	-0.9	15.2	27.5	24.1	0.1	4.0	10.7	11.9	11.3	10.3	9.7	7.3	8.9
Real exchange rate depreciation (in percent, + indicates depreciation)	-12.3	-17.3	15.9	-4.2	10.7	16.3	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	12.8	12.2	9.7	4.8	9.0	-4.4	17.2	11.9	4.8	3.1	3.9	6.1	5.0	5.0	5.0
Growth of real primary spending (deflated by GDP deflator, in percent)	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1
Grant element of new external borrowing (in percent)	...	...	...	…	…	41.8	33.2	33.1	33.1	38.0	39.6	36.4	51.3	40.2	...

Sources: Country authorities and staff estimates and projections.

1/ Public sector debt includes domestic central government debt and external debt issued or guaranteed by the central government and central bank.

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 2b. Kenya: Sensitivity Analysis for Key Indicators of Public Debt 2009-2029

	Projections							
	2009	2010	2011	2012	2013	2014	2019	2029
PV of Debt-to-GDP Ratio								
Baseline	32	31	31	33	33	33	33	31
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	32	28	27	26	26	24	21	13
A2. Primary balance is unchanged from 2009	32	31	33	35	36	37	42	47
A3. Permanently lower GDP growth 1/	32	31	32	34	35	35	40	49
A4. Alternative Scenario: Growth lower by one standard deviation 2010-2014	32	32	33	35	37	37	41	49
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2010-2011	32	32	35	38	39	40	45	48
B2. Primary balance is at historical average minus one standard deviations in 2010-2011	32	29	29	30	31	31	32	30
B3. Combination of B1-B2 using one half standard deviation shocks	32	29	29	31	32	33	36	36
B4. One-time 30 percent real depreciation in 2010	32	34	34	35	35	34	34	31
B5. 10 percent of GDP increase in other debt-creating flows in 2010	32	40	40	41	41	40	39	34
PV of Debt-to-Revenue Ratio 2/								
Baseline	139	136	136	142	146	145	150	136
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	139	123	115	115	113	108	93	58
A2. Primary balance is unchanged from 2009	139	137	141	151	159	163	188	205
A3. Permanently lower GDP growth 1/	139	137	139	147	153	155	178	218
A4. Alternative Scenario: Growth lower by one standard deviation 2010-2014	139	139	143	153	161	164	182	215
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2010-2011	139	141	152	163	172	176	201	211
B2. Primary balance is at historical average minus one standard deviations in 2010-2011	139	129	125	132	136	135	143	133
B3. Combination of B1-B2 using one half standard deviation shocks	139	127	124	134	141	144	162	158
B4. One-time 30 percent real depreciation in 2010	139	148	147	152	155	152	152	136
B5. 10 percent of GDP increase in other debt-creating flows in 2010	139	175	173	178	180	178	174	149

Table 2b. Kenya: Sensitivity Analysis for Key Indicators of Public Debt 2009-2029 (continued)

	Projections							
	2009	2010	2011	2012	2013	2014	2019	2029
Debt Service-to-Revenue Ratio 2/								
Baseline	25	24	24	27	26	24	23	19
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	25	24	23	25	24	21	17	10
A2. Primary balance is unchanged from 2009	25	24	24	27	27	26	27	28
A3. Permanently lower GDP growth 1/	25	24	24	27	27	25	26	29
A4. Alternative Scenario: Growth lower by one standard deviation 2010-2014	25	25	25	28	29	28	28	30
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2010-2011	25	25	25	29	29	28	29	29
B2. Primary balance is at historical average minus one standard deviations in 2010-2011	25	24	23	25	25	23	22	19
B3. Combination of B1-B2 using one half standard deviation shocks	25	25	24	26	25	24	24	22
B4. One-time 30 percent real depreciation in 2010	25	25	25	28	27	26	25	22
B5. 10 percent of GDP increase in other debt-creating flows in 2010	25	24	26	32	31	29	26	21

Sources: Country authorities and staff estimates and projections.
1/ Assumes that real GDP growth is at baseline minus one standard deviation divided by the length of the projection period.
2/ Revenues are defined inclusive of grants.