KENYA

SECOND REVIEWS UNDER THE STAND-BY ARRANGEMENT AND THE ARRANGEMENT UNDER THE STANDBY CREDIT FACILITY, AND REQUESTS FOR A NEW TWENTY-FOUR MONTH STAND-BY ARRANGEMENT, AND A NEW TWENTY-FOUR MONTH ARRANGEMENT UNDER THE STANDBY CREDIT FACILITY—DEBT SUSTAINABILITY ANALYSIS UPDATE

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Risk of external debt distress:	Low
Augmented by significant risks stemming from domestic public and/or private external debt?	No

Kenya's risk of external debt distress remains low, while overall public sector debt dynamics continue to be sustainable.[1] However, margins have generally narrowed.

Public debt has risen in recent years, with most new debt financing infrastructure intended to address bottlenecks and boost sustainable growth. The bulk of Kenya's external public debt carries concessional terms, but recent commercial borrowing entails significant repayment needs in 2017 (2015 syndicated loan), in 2019 and, especially, in 2024 (2014 sovereign bond issuance). In the event of a more permanent substitution of external for domestic finance, longer maturities would be needed to avoid bunching of repayments. Reduction of the fiscal deficit over the medium term is also essential to limit and eventually reverse the rise in public debt ratios.

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[1] Kenya's policies and institutions are classified as "strong" under the World Bank's Country Policy and Institutional Assessment (CPIA) Index (average score in 2012–14: 3.84). The relevant indicative thresholds for this category are: 50 percent for the NPV of debt-to-GDP ratio, 200 percent for the NPV of debt-to-exports ratio, 300 percent for the NPV of debt-to-revenue ratio, 25 percent for the debt service-to-exports ratio, and 22 percent for the debt service-to-revenue ratio. These thresholds are applicable to public and publicly guaranteed external debt.

BACKGROUND

1.   **This DSA consists of two parts: external and public.** The external DSA covers external debt of the central government and the central bank, as well as of the private sector; stress tests apply to public and publicly guaranteed (PPG) debt. The public DSA covers total debt—external and domestic—incurred or guaranteed by the central government. Public domestic debt comprises central government debt. Government finance statistics are to be expanded to cover the recently created county governments. 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).

2.   **Kenya's overall public debt has increased in the past two years.** Gross public debt increased from 44 percent of GDP at end-2013 to 52 percent at end-September 2015. In the baseline, public debt is expected to stabilize around 54–55 percent of GDP in 2017–19 and gradually decline thereafter. Half of Kenya's public debt is owed to external creditors.

3.   **Most of Kenya's external public debt remains on concessional terms, but its commercial component has increased.** Nominal public external debt at end-September 2015 was US$14.7 billion (text table), equivalent to 27½ percent of GDP—somewhat above the average for comparable SSA countries (text chart).

- Multilateral creditors continue to account for nearly half of external credit to Kenya. Debt to bilateral creditors is roughly half to Paris Club creditors, and half to other bilateral creditors, mainly semi-concessional loans from China to finance construction of the first phase (Mombasa-Nairobi) of the Standard Gauge Railway project (SGR; at end-August 2015, some US$2.5 billion was disbursed out of US$3.8 billion contracted). In December 2015, Kenya contracted a further US$1.5 billion, to be disbursed in coming years, for the second SGR phase (Nairobi-Naivasha),

- Kenya's commercial financing has two main elements. In 2014, Kenya issued its inaugural sovereign bonds, at 5-year and 10-year maturities, raising US$2 billion in June and a further US$750 million in December 2014.[2] More recently, in October 2015, Kenya contracted a two-year US$750 million syndicated loan at LIBOR plus 570 basis points, equivalent to an effective yield of 8 percent.

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[2] The June 2014 issuance comprised two tranches: a five-year $500 million bond at a yield of 5.875 percent, and a 10-year $1.5 billion bond at 6.875 percent. In December 2014, Kenya added $250 million to the five-year tranche at a 5.0 percent yield and $500 million to the 10-year tranche at 5.9 percent.

Kenya: External Public Debt

	2012		2013		2014		September 2015	
	Billion US$	Share	Billion US$	Share	Billion US$	Share	Billion US$	Share
Multilateral creditors	5.56	57.6	6.47	60.5	7.07	49.2	7.21	49.0
Bilateral creditors	2.71	28.1	2.84	26.6	3.86	26.9	4.08	27.7
Commercial creditors	0.68	7.0	0.69	6.5	2.82	19.6	2.81	19.1
Others (supplier credits)	0.18	1.9	0.18	1.7	0.18	1.3	0.17	1.1
Total (excluding guarantees)	9.13	94.6	10.18	95.2	13.92	96.9	14.27	96.9
Publicly guaranteed debt	0.52	5.4	0.51	4.8	0.44	3.1	0.45	3.1
Total (including guarantees)	9.65	100.0	10.69	100.0	14.36	100.0	14.72	100.0

Source: Kenyan National Treasury.

4.   **Kenya's gross domestic public debt was 24½ percent of GDP at end-September 2015.**
Domestic debt is issued mostly in the form of Treasury bonds (75 percent of domestic debt) and Treasury
bills (19 percent). Commercial banks hold half of the domestic debt, with nonbanks holding another 42
percent and the central bank holding most of the remainder. The domestic debt is of relatively large size by
regional standards (text figure). Rollover risks appear moderate. The average maturity of Kenya's domestic
debt shortened, from 5.8 years in June 2011 to 5.2 years in June 2013 and 4.9 years in June 2014.

UNDERLYING ASSUMPTIONS

5.   **This DSA is based on macroeconomic assumptions that are consistent with the framework
for the accompanying staff report, notably a modestly weaker outlook and higher external
borrowing compared with previous projections**:

- Real GDP growth is modestly weaker in the short term, reflecting the impact of external
  shocks, but recovers in the medium term (though somewhat less than projected in the
  September 2015 DSA update). Faster growth in the longer term is predicated on the
  assumption that the present infrastructure push successfully addresses key bottlenecks.

Kenya: Selected Macroeconomic Assumptions

	2014	2015	2016	2017	Long term 1/
Real GDP Growth					
Current DSA	5.3	5.6	6.0	6.1	6.5
Previous DSA (September 2015)	5.3	6.5	6.8	7.0	6.8
Primary Fiscal Deficit (percent of GDP)					
Current DSA	4.6	5.4	4.1	2.6	0.6
Previous DSA (September 2015)	4.8	5.4	4.3	2.7	0.7
Non-interest Current Account Deficit (percent of GDP)					
Current DSA	9.7	7.4	7.0	5.5	5.9
Previous DSA (September 2015)	10.2	9.2	8.8	6.5	5.7

Source: IMF staff estimates.
1/ For current DSA update, average 2021-35. For previous DSA update, average 2021-34.

- The primary fiscal deficit is projected to peak in 2015 owing to a frontloading of the SGR-related spending, and then to be brought down in the medium to longer term consistent with the East African Community (EAC) Monetary Union convergence criteria.[3] In the long term, the primary deficit would converge to its previously projected level, consistent with keeping the overall deficit below 3 percent while making room for higher interest payments.

- The current account deficit is estimated to have narrowed in 2015 owing to lower imports of oil products and aircraft. It is projected to narrow further, in 2016 on account of lower oil prices despite an expected peak in SGR-related imports, and in the medium term reflecting fiscal consolidation as well as a pickup in trade as progress is made in regional integration. The current account projections do not include potential exports from recent oil discoveries pending confirmation that these will be commercially viable. Both oil and non-oil exports and imports are lower than previously projected.

EXTERNAL DEBT SUSTAINABILITY ANALYSIS

6.   **Under the DSA baseline scenario, all external debt indicators remain well below the policy-dependent debt burden thresholds.** In this scenario, the debt burden increases over the next 10 years but remains within sustainable bounds (Table 1). The NPV of external PPG debt would peak at 25 percent of GDP in 2016 and remain around this level through 2025, falling gradually thereafter. This trajectory remains well below the 50-percent indicative threshold. The NPV of the debt-to-exports ratio would reach 141 percent in 2016 and ease gradually in following years, remaining well under an indicative threshold of 200 percent.

7.   **The standard stress tests do not indicate breaches of the relevant indicative thresholds, though in one case indicate a temporary near-breach in 2024:**

- The shock that would have the largest impact on the PV of PPG external debt-to-GDP and the PV of debt-to-revenue ratios is a one-time 30-percent nominal depreciation of the exchange rate in 2016—in which case the PV of debt to GDP could increase by 13 percentage points (Figure 1 and Table 2). The depreciation shock results in a near breach of the debt service-to-revenue indicator in 2024, when the bulk of the 2014 sovereign bond is due.

- The largest medium-term impacts on the PV of debt-to-exports ratio are from temporary shocks to export value growth and to non-debt creating flows. The PV of debt-to-exports ratio would reach around 160 percent in the medium term (compared with a 200 percent

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[3] The EAC Monetary Union Protocol provides for fiscal convergence criteria, including a ceiling on the fiscal deficit (defined including grants) of 3 percent of GDP; and a ceiling on the gross public debt of 50 percent of GDP in net present value terms. The other macroeconomic convergence criteria include a ceiling on headline inflation (8 percent) and a floor on reserve cover (4.5 months of imports). The fiscal plans outlined in the authorities' budget policy statement are consistent with Kenya meeting the EAC convergence criteria by 2021.

threshold) and fall only gradually in the longer term. This ratio also increases steadily under the historical scenario, in which infrastructure gaps—intended to be closed by the present investment push[4]—are implicitly assumed to continue to constrain output and exports in the longer term.

8.   **Under the probability approach applicable to borderline cases, debt burden indicators remain below the relevant thresholds in the baseline and stress-test scenarios.** The estimated probability of external debt distress remains below 10 percent for all variables under all stress tests (Figure 2), compared with the relevant thresholds (ranging from 12.5 percent for the PV of debt to exports, to 15.2 percent for the debt service to revenue ratio.

9.   **The authorities intend to rely on concessional external financing while maintaining a limited window for borrowing on commercial terms, in order to minimize costs and refinancing risks.** Concessional financing is complementing private investment, domestic revenues, and public investment financed through nonconcessional sources. The African Development Bank is financing power connections to take full advantage of the expanded energy capacity. The World Bank is financing capacity building at the Ministry of Energy to prepare for the eventual exploitation of oil and oil products. The authorities currently envisage the share of commercial borrowing to increase gradually over time.

10.   **Commercial borrowing needs to be managed carefully to minimize the impact of repayment spikes.** Kenya's multilateral and bilateral borrowing, which accounts for most of the external debt, has smooth repayment profiles. However, recent commercial borrowing entails large repayment needs in 2017 for the syndicated loan, and in 2019 and 2024 for the sovereign bond issuance. The authorities had intended the October 2015 syndicated loan as a one-off operation, taking pressure off the temporarily disturbed domestic market; but in the event of a more permanent substitution of external for domestic finance, longer maturities would be needed to avoid bunching of repayments.

11.   **Private sector external debt is tentatively estimated at about 13–15 percent of GDP.** Estimates of private sector external debt stocks used in this DSA are based on the results of the Foreign Investment Survey (FIS), which covers assets and liabilities in stock and flow terms for 2012 and 2013 (for the private sector, including banks and nonfinancial enterprises). The published results are aggregates of survey responses and do not reflect estimation or scaling; thus, the published responses reflect lower bounds on asset and liability positions. The Kenyan Bureau of National Statistics is scheduled in spring 2016 to produce its initial International Investment Position estimates and to revise historical information on the financial accounts of the balance of payments, drawing on information from the FIS.

12.   **As noted in previous DSAs, recent resource discoveries represent upside potential to Kenya's external position.** Kenya is currently a net importer of petroleum products. Significant oil resources were discovered in Kenya in 2014. Oil and gas exploration activities are so far continuing, despite the weakness in oil prices since late 2014. In the event that recent discoveries are found to be commercially viable—which

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[4] IMF Country Report No. 15/31 estimated that the planned increase in public investment would add around 1 percentage point to annual real GDP growth over the medium term.

could be influenced by oil price movements—Kenya's medium- to long-term external position could improve significantly.

PUBLIC DEBT SUSTAINABILITY ANALYSIS

13.   **In the baseline scenario, public debt continues to increase in 2015 and stabilizes in 2017–19 before the projected medium-term fiscal consolidation sets debt on a declining trajectory.** In 2015, overall public debt is projected to have risen by another 3½ percentage points of GDP, to 52.7 percent of GDP. In subsequent years, on the basis of a primary deficit below 3 percent of GDP by 2017 and declining further thereafter, public debt eases to 50 percent of GDP after 2020 (Table 3). In PV terms, the public debt-to-GDP ratio would remain stable around 48–49 percent through end-2019, falling gradually thereafter. The authorities' medium-term debt anchor is 45 percent in PV terms (within the EAC convergence criterion threshold of 50 percent). The PV of public debt-to-revenue ratio would ease from 227 percent in 2015 to 215 percent in 2020 (Table 4).

14.   **The projected debt path remains well below the relevant LIC DSA public debt benchmark, but this result is qualified by limits to the coverage of the debt statistics.** The baseline scenario debt trajectory is below the relevant LIC DSA public debt benchmark—in PV terms, 74 percent of GDP, applicable for LICs whose CPIA score for quality of policies and institutions is assessed as strong—above which the risk of public debt distress is heightened. However, this public debt benchmark applies conceptually to the widest possible coverage of the public sector, and ideally should include the obligations of regional and local governments, and government-controlled enterprises (especially in cases where the government owns more than half of the voting shares). The measured public debt path excludes legacy debts of the pre-devolution county governments (whose size is not yet fully clear) as well as borrowings of state-owned enterprises. In addition, public debt should include planned annuities intended to finance road construction: although the annuity obligations may not necessarily be classified as debt under local law, they nevertheless represent public debt obligations according to international (GFS) methodology.

15.   **Excluding a fixed-primary-balance scenario that is distorted by temporary factors, the alternative scenarios and bound tests indicate that the projected paths for public debt indicators remain within the relevant thresholds** (Table 4 and Figure 3). Under a standard scenario that keeps the primary balance unchanged from its 2015 level, the PV of public debt to GDP would remain on a steady upwards trajectory, remaining permanently above the EAC convergence criterion reference value and exceeding the 74 percent benchmark by the mid-2020s. Since the 2015 primary deficit is boosted by temporary SGR-related spending, Figure 3 also includes a scenario fixing the primary balance excluding SGR-spending. In this case, public debt in PV terms increases more gradually, remaining below 60 percent of GDP and within sustainable bounds, but above 50 percent of GDP (the EAC convergence criterion threshold).
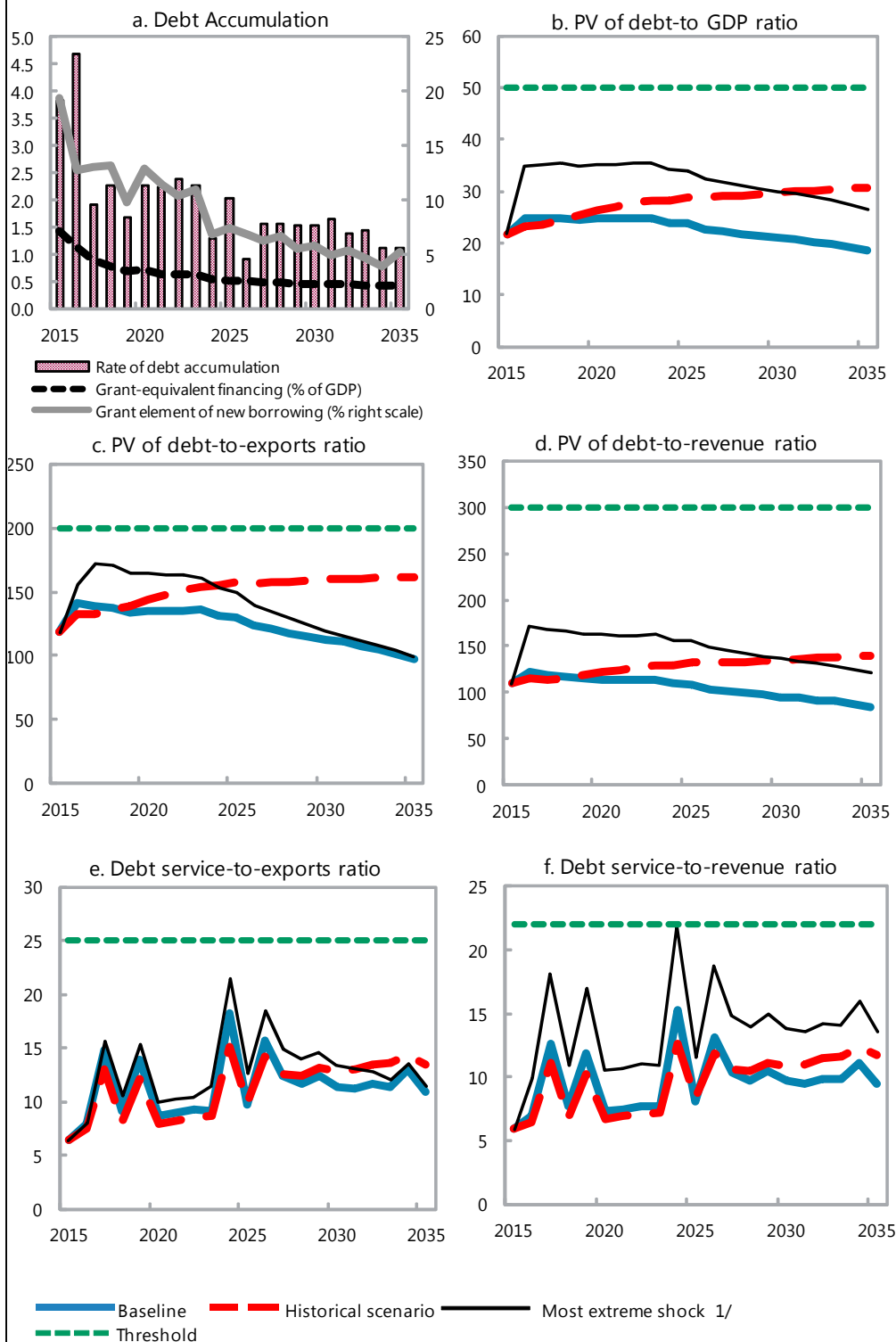
MAIN FINDINGS AND CONCLUSIONS

16.   **This DSA finds that Kenya continues to face low risk of external debt distress, but margins are narrower.** Standard stress tests suggest scenarios in which external debt would increase, but remain within sustainable bounds. But the safety margins to the indicative thresholds are lower than previously. A large exchange rate shock continues to represent a significant risk to external debt. The authorities intend to continue making use of concessional resources to the extent possible—which is beneficial from both cost (present value) and maturity perspectives. Commercial borrowing needs to be managed carefully to minimize the impact of repayment spikes. Given the bunched repayments in coming years, strong debt management capacity will be especially important. In the medium term, the authorities' planned fiscal consolidation will help limit external borrowing requirements. In the longer term, the debt outlook will be influenced by the payoff from the present efforts to close infrastructure gaps and address bottlenecks that have constrained growth and exports in the recent past.

17.   **Overall public debt remains sustainable, as long as the authorities implement their medium-term fiscal consolidation plans.** The baseline public debt path remains consistent with the EAC convergence criteria (deficit and debt) and below the relevant public debt benchmark, subject to coverage issues. Recent increases in public debt reflect increased borrowing to address infrastructure needs, and the related temporarily high primary deficits. Standard stress-testing scenarios show that if the primary deficit were to remain at current levels, public debt would remain on an upward path. These scenarios are more pessimistic than the authorities' stated policy intentions—which are to reduce the primary deficits in the medium term consistent with the convergence criteria for the EAC monetary union—but also highlight the need to follow through on the intended medium-term fiscal consolidation.

18.   **The authorities see their program of externally financed infrastructure investments as improving prospects for growth in output and exports, and consistent with debt sustainability.** The authorities plan to continue their infrastructure push balanced with maintaining debt sustainability. They agree that they remain at low risk of external debt distress. However, they emphasize that their externally financed infrastructure investments will address bottlenecks that have constrained past growth and export performance.

Figure 1. Kenya: Indicators of Public and Publicly Guaranteed External Debt under Alternative Scenarios, 2015-2035 1/

a. Debt Accumulation

Legend:
- Rate of debt accumulation
- Grant-equivalent financing (% of GDP)
- Grant element of new borrowing (% right scale)

b. PV of debt-to GDP ratio

c. PV of debt-to-exports ratio

d. PV of debt-to-revenue ratio

e. Debt service-to-exports ratio

f. Debt service-to-revenue ratio

Legend:
- Baseline
- Historical scenario
- Most extreme shock 1/
- Threshold

Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio on or before 2025. In figure b. it corresponds to a One-time depreciation shock; in c. to a Non-debt flows shock; in d. to a One-time depreciation shock; in e. to a Non-debt flows shock and in figure f. to a One-time depreciation shock.

Figure 2. Kenya: Probability of Debt Distress of Public and Publicly Guaranteed External Debt under Alternative Scenarios, 2015-2035 1/

a. Debt Accumulation

Rate of Debt Accumulation
Grant-equivalent financing (% of GDP)
Grant element of new borrowing (% right scale)

b.PV of debt-to GDP

c.PV of debt-to-exports

d.PV of debt-to-revenue

e.Debt service-to-exports

f.Debt service-to-revenue

Baseline   Historical scenario   Most extreme shock One-time depreciation   Threshold
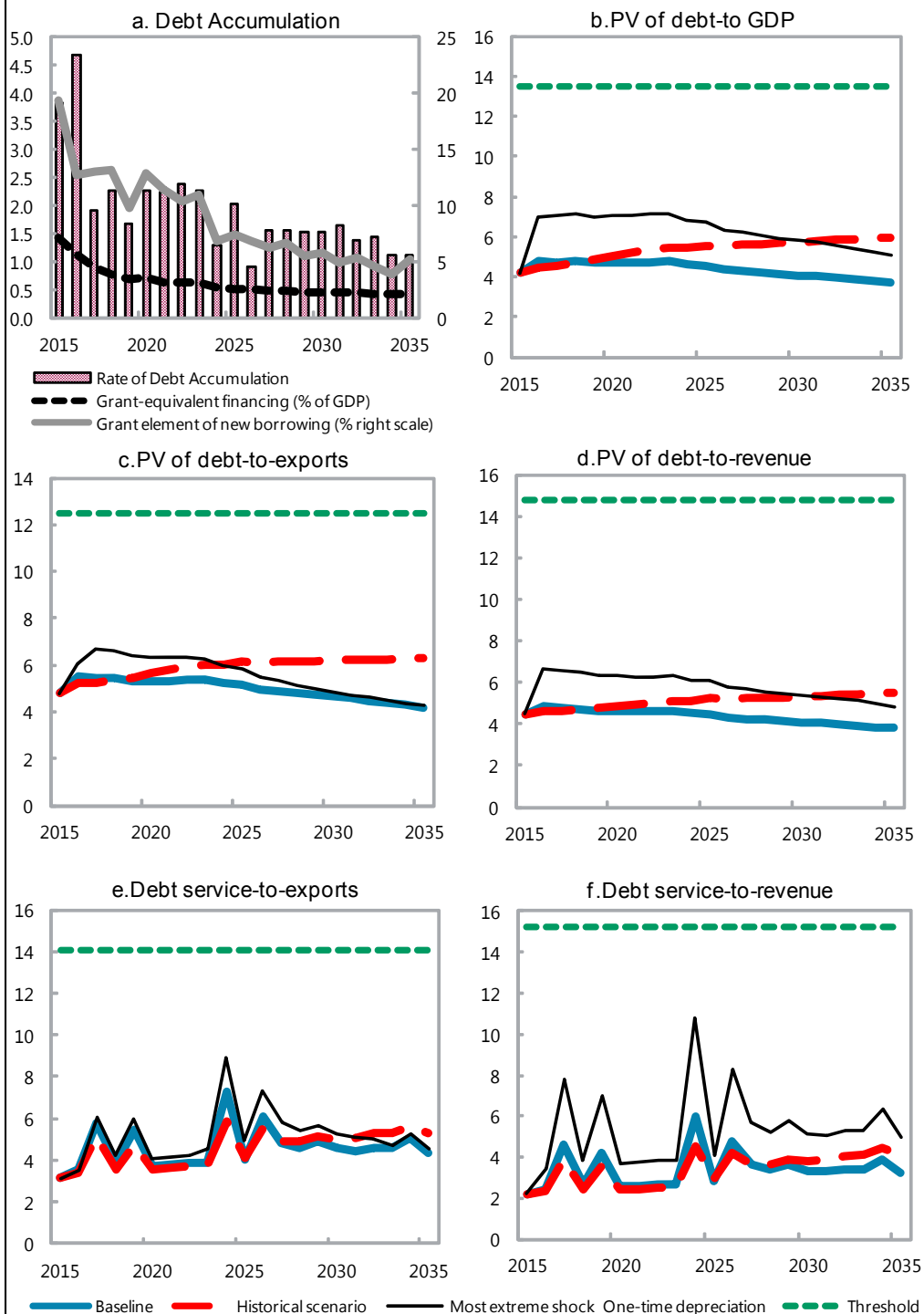
Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio on or before 2025. In figure b. it corresponds to a One-time depreciation shock; in c. to a Non-debt flows shock; in d. to a One-time depreciation shock; in e. to a Non-debt flows shock and in figure f. to a One-time depreciation shock

Figure 3. Kenya: Indicators of Public Debt Under Alternative Scenarios, 2015-2035 1/
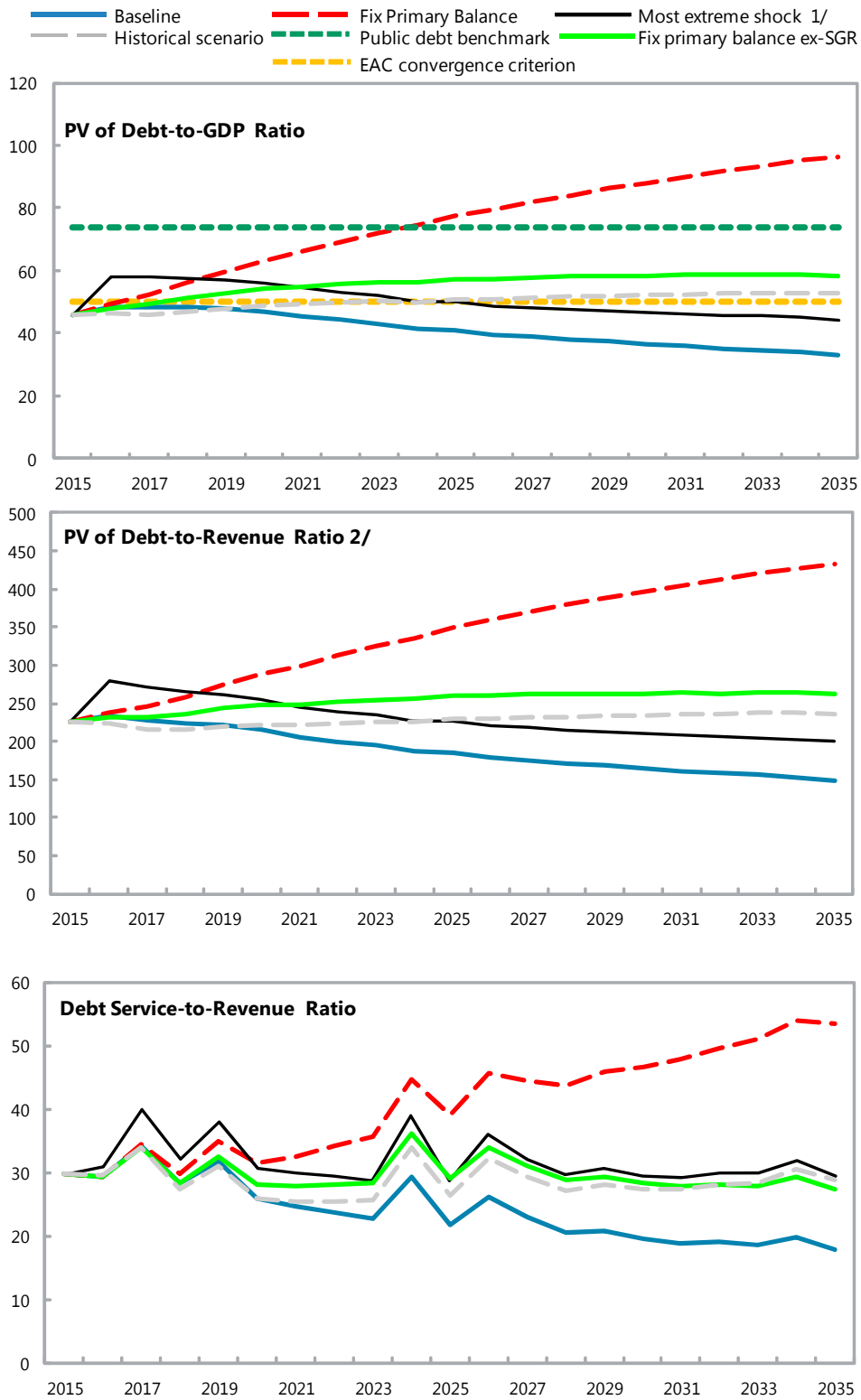
- Baseline
- Historical scenario
- Fix Primary Balance
- Public debt benchmark
- EAC convergence criterion
- Most extreme shock 1/
- Fix primary balance ex-SGR

PV of Debt-to-GDP Ratio

PV of Debt-to-Revenue Ratio 2/

Debt Service-to-Revenue Ratio

Sources: Country authorities; and staff estimates and projections.
1/ The most extreme stress test is the test that yields the highest ratio on or before 2025.
2/ Revenues are defined inclusive of grants.

Table 1. Kenya: External Debt Sustainability Framework, Baseline Scenario, 2012-2035[1]

(In percent of GDP, unless otherwise indicated)

	Actual			Historical [6] Average	Standard [6] Deviation	Projections						2015-2020 Average	2025	2035	2021-2035 Average
	2012	2013	2014			2015	2016	2017	2018	2019	2020				
External debt (nominal) 1/	**28.4**	**29.5**	**37.2**			**42.5**	**45.1**	**46.2**	**46.2**	**47.3**	**48.0**		**51.7**	**59.9**	
of which: public and publicly guaranteed (PPG)	19.3	19.4	24.0			28.5	31.6	31.3	30.9	30.1	30.1		27.9	20.9	
Change in external debt	1.3	1.0	7.7			5.4	2.6	1.1	0.1	1.0	0.7		1.6	0.3	
Identified net debt-creating flows	3.4	5.6	5.8			4.4	3.3	1.9	1.5	1.5	1.6		2.3	1.6	
Non-interest current account deficit	**8.0**	**8.4**	**9.7**	**5.4**	**3.2**	**7.4**	**7.0**	**5.5**	**5.4**	**5.4**	**5.5**		**6.1**	**5.4**	5.9
Deficit in balance of goods and services	13.7	14.0	15.5			13.6	13.4	12.1	12.0	11.9	12.0		12.2	11.1	
Exports	21.9	19.6	18.2			18.3	17.6	17.8	18.2	18.2	18.3		18.3	19.0	
Imports	35.5	33.6	33.7			31.9	31.0	29.9	30.0	30.1	30.4		30.5	30.1	
Net current transfers (negative = inflow)	-5.6	-5.7	-6.2	-6.2	0.4	-6.7	-6.7	-6.7	-6.6	-6.6	-6.5		-6.2	-5.5	-6.0
of which: official	-0.4	-0.4	-0.5			-0.4	-0.4	-0.3	-0.3	-0.3	-0.3		-0.3	-0.3	
Other current account flows (negative = net inflow)	-0.1	0.1	0.4			0.5	0.3	0.2	0.1	0.0	0.0		0.1	-0.1	
Net FDI (negative = inflow)	**-0.5**	**-0.9**	**-1.7**	**-0.7**	**0.7**	**-1.7**	**-2.3**	**-2.2**	**-2.4**	**-2.3**	**-2.3**		**-2.3**	**-1.9**	**-2.2**
Endogenous debt dynamics 2/	**-4.1**	**-1.8**	**-2.2**			**-1.2**	**-1.4**	**-1.4**	**-1.6**	**-1.5**	**-1.6**		**-1.5**	**-1.9**	
Contribution from nominal interest rate	0.4	0.5	0.7			0.8	1.0	1.1	1.2	1.2	1.3		1.5	1.7	
Contribution from real GDP growth	-1.0	-1.5	-1.4			-2.1	-2.4	-2.6	-2.7	-2.8	-2.9		-3.0	-3.6	
Contribution from price and exchange rate changes	-3.5	-0.9	-1.5			...	...	...	...	...	...		...	...	
Residual (3-4) 3/	-2.1	-4.6	1.9			1.0	-0.7	-0.8	-1.4	-0.5	-0.9		-0.7	-1.3	
of which: exceptional financing	-0.1	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/	...	...	30.9			35.7	38.3	39.6	40.1	41.6	42.6		47.6	57.5	
In percent of exports	...	...	169.5			195.3	217.5	222.1	223.5	228.5	232.3		260.6	302.5	
PV of PPG external debt	**...**	**...**	**17.7**			**21.7**	**24.8**	**24.8**	**24.8**	**24.4**	**24.7**		**23.8**	**18.6**	
In percent of exports	...	...	97.0			118.5	140.9	138.8	138.0	134.3	134.6		130.3	97.6	
In percent of government revenues	...	...	91.1			109.5	122.2	118.6	116.5	114.5	114.4		109.3	84.7	
Debt service-to-exports ratio (in percent)	39.3	51.1	59.3			28.8	24.8	43.1	33.9	46.0	35.9		48.8	53.6	
PPG debt service-to-exports ratio (in percent)	4.0	4.5	16.6			6.4	8.0	14.8	9.1	13.9	8.7		9.7	10.9	
PPG debt service-to-revenue ratio (in percent)	4.6	4.5	15.6			5.9	6.9	12.7	7.7	11.9	7.4		8.1	9.4	
Total gross financing need (Billions of U.S. dollars)	9.7	11.5	13.5			10.0	10.0	11.9	12.3	15.8	17.0		35.7	123.8	
Non-interest current account deficit that stabilizes debt ratio	6.7	7.3	2.0			2.0	4.4	4.5	5.4	4.3	4.8		4.5	5.1	
Key macroeconomic assumptions															
Real GDP growth (in percent)	4.6	5.7	5.3	5.2	2.2	5.6	6.0	6.1	6.5	6.5	6.5	6.2	6.5	6.5	6.5
GDP deflator in US dollar terms (change in percent)	14.9	3.1	5.3	7.6	7.0	-4.6	-0.8	0.6	1.9	1.9	1.6	0.1	2.5	2.5	2.5
Effective interest rate (percent) 5/	1.8	1.9	2.7	2.2	0.6	2.2	2.6	2.7	2.8	2.9	2.9	2.7	3.3	3.1	3.1
Growth of exports of G&S (US dollar terms, in percent)	11.3	-2.3	3.1	10.5	11.2	1.0	1.2	8.3	9.2	9.9	9.0	6.4	9.2	9.8	9.4
Growth of imports of G&S (US dollar terms, in percent)	9.6	2.9	11.4	15.1	11.6	-4.7	2.4	3.0	8.8	8.9	9.2	4.6	9.2	9.0	9.1
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	19.4	12.8	13.1	13.2	12.9	12.9	13.5	7.4	5.2	6.8
Government revenues (excluding grants, in percent of GDP)	18.7	19.3	19.4			19.8	20.3	20.9	21.3	21.3	21.6		21.8	21.9	21.9
Aid flows (in Billions of US dollars) 7/	...	...	...			1.1	1.3	0.8	0.8	0.8	0.8		0.6	1.4	
of which: Grants	0.2	0.3	0.3			0.3	0.3	0.3	0.3	0.3	0.3		0.4	1.0	
of which: Concessional loans	...	...	...			0.8	1.0	0.5	0.5	0.5	0.5		0.2	0.4	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			1.4	1.1	0.9	0.8	0.7	0.7		0.5	0.4	0.5
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			26.1	18.9	21.5	23.2	19.0	21.9		16.8	16.2	16.1
Memorandum items:															
Nominal GDP (Billions of US dollars)	50.4	54.9	60.9			61.4	64.6	69.0	74.8	81.1	87.8		135.7	327.7	
Nominal dollar GDP growth	20.2	9.0	10.9			0.8	5.2	6.8	8.5	8.4	8.3	6.3	9.2	9.2	9.2
PV of PPG external debt (in Billions of US dollars)			10.5			12.8	15.7	16.9	18.5	19.7	21.6		32.2	60.6	
(PVt-PVt-1)/GDPt-1 (in percent)						3.8	4.7	1.9	2.3	1.7	2.3	2.8	2.0	1.1	1.6
Gross workers' remittances (Billions of US dollars)	1.2	1.3	1.4			1.6	1.6	1.7	1.8	2.0	2.1		3.1	6.6	
PV of PPG external debt (in percent of GDP + remittances)	...	...	17.3			21.1	24.2	24.2	24.2	23.9	24.1		23.3	18.2	
PV of PPG external debt (in percent of exports + remittances)	...	...	85.9			104.1	123.2	121.7	121.3	118.4	118.9		115.8	88.2	
Debt service of PPG external debt (in percent of exports + remittance	...	...	14.7			5.6	7.0	13.0	8.0	12.3	7.7		8.6	9.8	

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 cha
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 2. Kenya: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2015–35
(In percent)

				Projections				
	2015	2016	2017	2018	2019	2020	**2025**	2035
PV of debt-to GDP ratio								
Baseline	22	25	25	25	24	25	**24**	19
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2015-2035 1/	22	23	24	25	25	26	**29**	31
A2. New public sector loans on less favorable terms in 2015-2035 2	22	26	27	27	28	28	**30**	27
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2016-2017	22	25	26	26	26	26	**25**	20
B2. Export value growth at historical average minus one standard deviation in 2016-2017 3/	22	25	26	27	26	26	**25**	19
B3. US dollar GDP deflator at historical average minus one standard deviation in 2016-2017	22	24	24	24	24	24	**23**	18
B4. Net non-debt creating flows at historical average minus one standard deviation in 2016-2017 4/	22	27	31	31	30	30	**27**	19
B5. Combination of B1-B4 using one-half standard deviation shocks	22	25	27	27	27	27	**25**	18
B6. One-time 30 percent nominal depreciation relative to the baseline in 2016 5/	22	35	35	35	35	35	**34**	26
PV of debt-to-exports ratio								
Baseline	119	141	139	138	134	135	**130**	98
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2015-2035 1/	119	132	132	136	139	144	**158**	161
A2. New public sector loans on less favorable terms in 2015-2035 2	119	146	149	152	151	155	**163**	142
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2016-2017	119	138	137	137	133	134	**130**	97
B2. Export value growth at historical average minus one standard deviation in 2016-2017 3/	119	142	165	164	159	159	**151**	109
B3. US dollar GDP deflator at historical average minus one standard deviation in 2016-2017	119	138	137	137	133	134	**130**	97
B4. Net non-debt creating flows at historical average minus one standard deviation in 2016-2017 4/	119	156	172	170	165	164	**149**	100
B5. Combination of B1-B4 using one-half standard deviation shocks	119	143	159	158	153	152	**142**	98
B6. One-time 30 percent nominal depreciation relative to the baseline in 2016 5/	119	138	137	137	133	134	**130**	97
PV of debt-to-revenue ratio								
Baseline	110	122	119	116	115	114	**109**	85
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2015-2035 1/	110	115	113	115	119	122	**132**	140
A2. New public sector loans on less favorable terms in 2015-2035 2	110	126	127	128	129	131	**137**	123
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2016-2017	110	123	124	123	121	121	**115**	89
B2. Export value growth at historical average minus one standard deviation in 2016-2017 3/	110	121	127	125	122	122	**114**	85
B3. US dollar GDP deflator at historical average minus one standard deviation in 2016-2017	110	118	116	114	112	112	**107**	83
B4. Net non-debt creating flows at historical average minus one standard deviation in 2016-2017 4/	110	135	147	144	141	139	**125**	87
B5. Combination of B1-B4 using one-half standard deviation shocks	110	125	130	128	125	125	**114**	82
B6. One-time 30 percent nominal depreciation relative to the baseline in 2016 5/	110	171	168	166	163	163	**156**	121

Table 2. Kenya: Sensitivity Analysis for Key Indicators of
Public and Publicly Guaranteed External Debt, 2015–35 (concluded)
(In percent)

Debt service-to-exports ratio

Baseline	6	8	15	9	14	9	**10**	11
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2015-2035 1/	6	7	13	8	12	8	**10**	14
A2. New public sector loans on less favorable terms in 2015-2035 2	6	8	8	9	14	9	**11**	16
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2016-2017	6	8	15	9	14	9	**10**	11
B2. Export value growth at historical average minus one standard deviation in 2016-2017 3/	6	8	17	11	16	10	**12**	12
B3. US dollar GDP deflator at historical average minus one standard deviation in 2016-2017	6	8	15	9	14	9	**10**	11
B4. Net non-debt creating flows at historical average minus one standard deviation in 2016-2017 4/	6	8	16	11	15	10	**13**	11
B5. Combination of B1-B4 using one-half standard deviation shocks	6	8	15	10	15	9	**12**	11
B6. One-time 30 percent nominal depreciation relative to the baseline in 2016 5/	6	8	15	9	14	9	**10**	11

Debt service-to-revenue ratio

Baseline	6	7	13	8	12	7	**8**	9
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2015-2035 1/	6	6	11	7	10	7	**8**	12
A2. New public sector loans on less favorable terms in 2015-2035 2	6	7	7	7	12	8	**10**	14
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2016-2017	6	7	13	8	13	8	**9**	10
B2. Export value growth at historical average minus one standard deviation in 2016-2017 3/	6	7	13	8	12	8	**9**	10
B3. US dollar GDP deflator at historical average minus one standard deviation in 2016-2017	6	7	12	8	12	7	**8**	9
B4. Net non-debt creating flows at historical average minus one standard deviation in 2016-2017 4/	6	7	13	9	13	8	**11**	10
B5. Combination of B1-B4 using one-half standard deviation shocks	6	7	12	8	12	8	**9**	9
B6. One-time 30 percent nominal depreciation relative to the baseline in 2016 5/	6	10	18	11	17	11	**12**	14
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	5	5	5	5	5	5	**5**	5

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 3. Kenya: Public Sector Debt Sustainability Framework, Baseline Scenario, 2012–35
(In percent of GDP, unless otherwise indicated)

	Actual			Average 5/	Standard Deviation 5/	Estimate	Projections					2015-20 Average			2021-35 Average
	2012	2013	2014			2015	2016	2017	2018	2019	2020		2025	2035	
Public sector debt 1/	41.7	44.1	49.2			52.7	55.1	55.0	54.6	53.6	52.4		45.0	35.4	
of which: foreign-currency denominated	19.3	19.4	24.0			28.5	31.6	31.3	30.9	30.1	30.1		27.9	20.9	
Change in public sector debt	1.5	2.4	5.1			3.5	2.4	-0.1	-0.4	-1.0	-1.2		-0.7	-1.0	
Identified debt-creating flows	-0.1	1.6	3.1			5.5	2.6	0.8	-0.9	-1.4	-1.7		-1.4	-0.9	
Primary deficit	2.3	3.0	4.6	1.7	1.6	5.4	4.1	2.6	1.3	0.7	0.4	2.4	0.5	0.9	0.6
Revenue and grants	19.1	19.8	19.9			20.2	20.7	21.3	21.7	21.7	21.9		22.1	22.2	
of which: grants	0.4	0.5	0.5			0.5	0.4	0.4	0.4	0.4	0.3		0.3	0.3	
Primary (noninterest) expenditure	21.4	22.8	24.5			25.6	24.9	23.9	23.0	22.4	22.3		22.6	23.1	
Automatic debt dynamics	-2.4	-1.4	-1.5			0.1	-1.6	-1.8	-2.2	-2.1	-2.1		-1.9	-1.8	
Contribution from interest rate/growth differential	-1.3	-0.9	-1.3			-1.4	-1.7	-1.9	-2.1	-2.2	-2.2		-1.6	-1.5	
of which: contribution from average real interest rate	0.4	1.4	0.9			1.2	1.3	1.3	1.2	1.1	1.1		1.2	0.7	
of which: contribution from real GDP growth	-1.8	-2.2	-2.2			-2.6	-3.0	-3.2	-3.3	-3.3	-3.3		-2.8	-2.2	
Contribution from real exchange rate depreciation	-1.0	-0.5	-0.2			1.6	0.1	0.0	-0.1	0.1	0.1		...	...	
Other identified debt-creating flows	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Privatization receipts (negative)	0.0	0.0	0.0			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)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Residual, including asset changes	1.6	0.8	2.0			-2.0	-0.1	-0.9	0.6	0.3	0.5		0.6	-0.1	
Other Sustainability Indicators															
PV of public sector debt	...	...	42.9			45.8	48.3	48.5	48.5	47.9	47.0		40.9	33.0	
of which: foreign-currency denominated	...	...	17.7			21.7	24.8	24.8	24.8	24.4	24.7		23.8	18.6	
of which: external	...	...	17.7			21.7	24.8	24.8	24.8	24.4	24.7		23.8	18.6	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	13.3	14.9	19.1			18.1	16.6	16.2	13.8	13.9	12.4		10.0	8.8	
PV of public sector debt-to-revenue and grants ratio (in percent)	...	...	215.4			226.6	233.0	227.6	224.0	220.6	214.6		185.0	148.5	
PV of public sector debt-to-revenue ratio (in percent)	...	...	221.1			231.8	237.8	232.0	228.1	224.5	218.0		187.6	150.6	
of which: external 3/	...	...	91.1			109.5	122.2	118.6	116.5	114.5	114.4		109.3	84.7	
Debt service-to-revenue and grants ratio (in percent) 4/	28.0	29.2	40.0			29.7	29.4	34.1	28.3	31.6	26.0		21.7	17.9	
Debt service-to-revenue ratio (in percent) 4/	28.7	30.0	41.0			30.4	30.0	34.7	28.8	32.2	26.4		22.0	18.1	
Primary deficit that stabilizes the debt-to-GDP ratio	0.7	0.7	-0.5			1.9	1.7	2.8	1.7	1.8	1.6		1.3	1.8	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	4.6	5.7	5.3	5.2	2.2	5.6	6.0	6.1	6.5	6.5	6.5	6.2	6.5	6.5	6.5
Average nominal interest rate on forex debt (in percent)	1.5	1.4	2.5	1.6	0.4	2.2	2.8	2.8	3.0	3.1	3.3	2.9	3.9	4.4	4.0
Average real interest rate on domestic debt (in percent)	2.3	6.6	3.3	1.5	4.0	3.7	4.0	4.7	4.4	3.7	3.5	4.0	3.3	0.8	2.3
Real exchange rate depreciation (in percent, + indicates depreciation)	-5.9	-2.9	-0.9	-4.2	7.7	6.8	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	9.4	5.0	7.5	8.6	3.8	6.9	6.7	5.8	5.4	5.5	5.3	5.9	5.1	5.1	5.1
Growth of real primary spending (deflated by GDP deflator, in percent)	5.9	12.6	13.3	3.2	5.4	10.1	2.9	2.2	2.3	3.8	6.0	4.6	6.8	6.8	6.7
Grant element of new external borrowing (in percent)	...	...	...	...	...	19.4	12.8	13.1	13.2	9.8	12.9	13.5	7.4	5.2	...

Sources: Country authorities; and staff estimates and projections.
1/ Refers to gross debt of the central government, including CBK obligations to the IMF, excluding government deposits.
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 4. Kenya: Sensitivity Analysis for Key Indicators of Public Debt, 2015–35

Table 4. Kenya: Sensitivity Analysis for Key Indicators of Public Debt, 2015-2035

	Projections							
	2015	2016	2017	2018	2019	2020	2025	2035
PV of Debt-to-GDP Ratio								
Baseline	46	48	48	49	48	47	41	33
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	46	46	46	47	48	49	51	53
A2. Primary balance is unchanged from 2015	46	49	52	56	60	63	77	96
A3. Permanently lower GDP growth 1/	46	49	49	50	50	49	48	53
A4. Fix primary balance ex-SGR	46	48	49	51	53	54	57	58
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2016-20	46	50	53	54	55	55	54	53
B2. Primary balance is at historical average minus one standard deviations in 2016-201	46	47	48	48	48	47	41	33
B3. Combination of B1-B2 using one half standard deviation shocks	46	47	48	49	49	49	47	44
B4. One-time 30 percent real depreciation in 2016	46	58	58	58	57	56	50	44
B5. 10 percent of GDP increase in other debt-creating flows in 2016	46	58	58	58	57	56	48	38
PV of Debt-to-Revenue Ratio 2/								
Baseline	227	233	228	224	221	215	185	148
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	227	223	215	216	220	222	230	236
A2. Primary balance is unchanged from 2015	227	239	245	259	275	289	350	434
A3. Permanently lower GDP growth 1/	227	234	231	230	229	226	216	240
A4. Fix primary balance ex-SGR	227	232	231	236	243	247	260	262
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2016-20	227	242	249	251	253	251	243	239
B2. Primary balance is at historical average minus one standard deviations in 2016-201	227	229	226	223	220	214	184	148
B3. Combination of B1-B2 using one half standard deviation shocks	227	229	227	227	227	225	211	198
B4. One-time 30 percent real depreciation in 2016	227	280	272	266	262	255	226	199
B5. 10 percent of GDP increase in other debt-creating flows in 2016	227	280	272	266	262	254	218	171
Debt Service-to-Revenue Ratio 2/								
Baseline	30	29	34	28	32	26	22	18
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	30	30	34	27	31	26	26	29
A2. Primary balance is unchanged from 2015	30	29	34	30	35	32	39	53
A3. Permanently lower GDP growth 1/	30	30	34	29	32	27	25	28
A4. Fix primary balance ex-SGR	30	29	34	28	33	28	29	27
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2016-20	30	30	36	31	35	30	28	29
B2. Primary balance is at historical average minus one standard deviations in 2016-201	30	29	34	28	31	26	22	18
B3. Combination of B1-B2 using one half standard deviation shocks	30	30	35	28	32	27	24	24
B4. One-time 30 percent real depreciation in 2016	30	31	40	32	38	31	29	30
B5. 10 percent of GDP increase in other debt-creating flows in 2016	30	29	37	34	37	31	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 square root of the length of the projection period.

2/ Revenues are defined inclusive of grants.