

## GUINEA-BISSAU

## JOINT IMF/IDA DEBT SUSTAINABILITY ANALYSIS

## (LOW-INCOME COUNTRY FRAMEWORK)

December 2010

*The results of the low-income country debt sustainability analysis (LIC DSA) indicate that, despite a significant improvement in its external debt outlook as a result of HIPC, beyond-HIPC, and MDRI assistance, Guinea-Bissau would nevertheless face a high risk of debt distress. The PV of debt to exports and the PV of debt to revenue are projected to remain above their relevant policy-dependent thresholds for the first several years of the projection period. All debt indicators breach their thresholds under stress tests, indicating that Guinea-Bissau would be particularly vulnerable to shocks. The inclusion of domestic public debt reinforces these conclusions. If, on the other hand, topping-up assistance is provided, Guinea-Bissau would face a moderate risk of debt distress. All debt indicators would fall below their relevant thresholds in the baseline scenario and remain below the thresholds throughout the projection period, but two indicators would breach their thresholds under stress tests. The DSA has been discussed with the authorities, and they concur with the analysis.*

**A. Background**

- 1. The last DSA for Guinea-Bissau, prepared in March 2010, concluded that Guinea-Bissau was in debt distress.**<sup>1</sup> Consistent with guidelines in the Debt Sustainability Framework, the baseline scenario did not reflect the full delivery of HIPC and MDRI assistance following completion point in 2010, but rather assumed interim HIPC assistance throughout the period of the ECF arrangement.
- 2. This updated DSA incorporates two new elements.** First, the baseline scenario assumes HIPC assistance, additional bilateral assistance beyond HIPC, and MDRI assistance following completion point. Second, the DSA uses a reconciled debt database that was prepared for the completion point HIPC DSA.<sup>2</sup> The quality of the data is thus much improved since the last DSA.

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<sup>1</sup> See “Joint IMF/IDA Debt Sustainability Analysis,” March 2010.

<sup>2</sup> External debt reconciliation missions from the World Bank and the Fund took place in Bissau in July 2010.

3. **Guinea-Bissau's public and publicly guaranteed (PPG) external debt as of end-2009 amounted to US\$1,066.7 million (122 percent of GDP), of which US\$427.5 million was in arrears** (Table 1 and Text Table 1). The US\$1,066.7 million figure represents a US\$26.4 million upward revision from the estimate of PPG external debt used in the previous DSA. About half the debt was owed to multilateral creditors and the other half to bilateral creditors. A small fraction was owed to a single commercial creditor. The International Development Association and the African Development Bank Group were the largest multilateral creditors. Portugal and Italy were the largest bilateral creditors.

Table 1. Nominal debt stock as of end-2009		
	USD million	Percent of total debt
Total	1,066.7	100.0
Multilateral creditors	529.9	49.7
<i>of which</i>		
IMF	9.9	0.9
IDA	303.8	28.5
AfDB	153.5	14.4
Bilateral creditors	536.5	50.3
Paris Club	241.5	22.6
<i>of which</i>		
Italy	149.5	14.0
Russia	26.4	2.5
Non-Paris Club	295.1	27.7
<i>of which</i>		
Portugal	154.8	14.5
Taiwan	48.2	4.5
Commercial	0.3	0.0

Source: Country authorities and staff estimates

4. **Public domestic debt stood at CFAF 137.2 billion at end-2009, or 35 percent of GDP.** About 41 percent of the domestic debt stock stems from a required capital contribution of CFAF 70 billion to join WAEMU in 1998,<sup>3</sup> which was agreed to be paid over 25 years starting in 2005. As of end-2009, this debt amounted to CFAF 56.5 billion. The second largest component of domestic debt is domestic arrears to the non-bank sector, which amounted to about CFAF 50 billion at end-2009. The remainder of the domestic debt consists of other obligations to the BCEAO, including debt resulting from the BCEAO's repayment, on behalf of the government, of previous IMF credit to Guinea-Bissau.

<sup>3</sup> Under the terms of its accession to the WAEMU in 1998, Guinea-Bissau agreed to contribute an equal share as all other members in the capital contribution of the BCEAO and the West African Monetary Agency (AMAO).

## B. Assumptions

5. **The macroeconomic assumptions in the current DSA are similar to those used in the March 2010 DSA and are consistent with the ECF arrangement.** Key macroeconomic assumptions are summarized in Box 1. Growth is expected to reach 4.5 percent over the long term, reflecting a stabilization of the political environment, continued growth in cashew production, diversification of agriculture, and the rebuilding of infrastructure. Over the long term, inflation is projected to remain at historical levels, and the current account deficit (excluding official transfers) is assumed to gradually decline from 9.3 percent to 6.8 percent. The domestic primary fiscal deficit gradually decreases from 3 percent of GDP in 2009 to 2½ percent in 2030, owing to stronger revenues as a percent of GDP and improved public expenditure management. Government borrowing is on highly concessional terms through 2014. Starting in 2015, some borrowing on less concessional terms is assumed to take place, causing the average grant element of new disbursements to fall from 62 percent to 32 percent over the projection period.

### Box 1. Guinea-Bissau: Key Baseline Macroeconomic Assumptions 1/

The macroeconomic assumptions over the period 2010 to 2030 are as follows:

**Real GDP growth** is expected to first slightly accelerate from 3.0 percent in 2009 to about 3½ percent in 2010 and then to gradually recover until it reaches 4.5 percent over the long term. This exceeds the historical average by roughly one percentage point, reflecting a past marked by great political instability and inappropriate macroeconomic policies which are expected to improve in the period ahead. Growth is also expected to be supported by diversification of agriculture, the rebuilding of infrastructure—especially roads, ports, electricity, and water—and by average growth in cashew production of 4½ percent over the 2015-2030 period.

**Inflation**, as measured by the GDP deflator, is assumed to grow at a rate slightly below CPI inflation in 2010. Over the long term, both GDP deflator and CPI are projected to grow at their historical level of 2.5 percent.

The **current account deficit** (excluding official transfers) as a percent of GDP is expected to decline gradually from 9.3 percent in 2010 to 6.8 percent in 2030. Exports of goods and services, consisting mainly of the country's dominant cashew exports, are assumed to grow at a long-term rate of 6¼ percent (in dollar terms). An improving global environment is expected to boost growth in remittances to 7.3 percent (in dollar terms) by 2014. Over the long term, remittances are projected to grow at a rate of 6½ percent.

The **domestic primary fiscal deficit** (i.e. revenue, excluding grants, minus interest expenditure, excluding foreign-financed investment projects) is assumed to gradually decrease from 3 percent of GDP in 2009 to about 2½ percent in 2030 due to stronger revenues as a percentage of GDP and improved public expenditure management.

**Net aid flows** (grants and concessional loans) are expected to moderate from the high levels seen in 2009. Budget support grants are projected to gradually decline from the 7 percent of GDP received in 2009 to about 1.5 percent in 2030. External borrowing through 2014 remains on highly concessional terms, in line with terms offered by the International Development Association and the African Development Fund. Beginning in 2015, with debt indicators slowly improving, some borrowing on less concessional terms is assumed to finance investments with high returns. As a result, the average grant element of new disbursements falls gradually from 62 percent in 2014 to 32 percent in 2030.

1/ The macroeconomic assumptions are subject to more uncertainty than usual given the country's fragile political situation.

#### 6. The DSA assumes future disbursements under the current ECF arrangement.

Total assistance provided under the arrangement is expected to equal SDR 22.4 million (157.5 percent of quota), of which SDR 10.3 million is disbursed in 2010. Remaining disbursements are approximately equally phased over the remaining period of the arrangement.

### C. External Debt Sustainability

#### Baseline scenario

7. The baseline scenario assumes that HIPC completion point is reached in December 2010. Full delivery of HIPC, beyond-HIPC, and MDRI assistance would reduce

the PPG external debt stock by \$803.6 million to \$263.1 million. The PV of PPG external debt at end-2010 would be \$203.3 million, an amount equal to 24.5 percent of GDP, 136.4 percent of exports, and 236.1 percent of government revenue (excluding grants) (Text Table 2). The latter two figures breach their relevant policy-dependent thresholds. The debt-to-exports ratio is projected to remain above the threshold of 100 percent until 2017, while the debt-to-revenue ratio remains above the threshold of 200 percent until 2015. Debt service indicators, despite a projected increase through 2014 reflecting assumptions regarding the rescheduling of post-cutoff date bilateral debt, are expected to remain below policy-dependent thresholds throughout the 20-year projection period.

Text Table 2. Summary of Baseline External Debt Sustainability Indicators 1/

	Threshold 2/	2010	2020	2030
PV of debt to GDP	30	24.5	15.0	11.4
PV of debt to exports	100	136.4	85.9	67.2
PV of debt to revenue	200	236.1	132.8	98.3
Debt service to exports	15	2.9	5.9	5.0
Debt service to revenue	25	5.0	9.2	7.3

Source: IMF staff estimates.

1/ Debt indicators refer to Guinea-Bissau's public and publicly guaranteed external debt.

2/ Threshold over which countries with weak policy and institutional frameworks would have at least a 25 percent chance of having a prolonged debt distress episode in the coming year. With an average Country Policy and Institutional Assessment (CPIA) rating of 2.58 over 2006-2008, Guinea-Bissau is classified as having a weak policy and institutional framework.

## Alternative scenarios and stress tests

8. **Stress tests highlight that Guinea-Bissau's external debt outlook would be particularly vulnerable to shocks** (Table 2 and Figure 1). All five debt sustainability indicators breach their respective thresholds under stress tests. A stress test simulating a sharp drop in exports in 2011 and 2012 results in a continuous breach of the PV of debt-to-exports threshold and a temporary breach of the PV of debt service-to-revenue threshold.<sup>4</sup> A stress test simulating a one-time 30 percent nominal depreciation of the currency relative to the baseline scenario results in temporary breaches of the PV of debt-to-GDP, debt-to-revenue, and debt service-to-revenue thresholds. If GDP growth, the non-interest current account, and other key variables are held constant at their ten-year historical averages, debt indicators decline much more rapidly than in the baseline scenario. However, the results of this historical scenario are subject to considerable uncertainty, as the underlying data come from the post-conflict period and are not reliable.

<sup>4</sup> The export shock stress test assumes new PPG borrowing in years 2011 and 2012 to offset the shock to exports. This new borrowing contributes to the increase in the debt ratios.

9. **If topping-up assistance is provided, all debt indicators would remain below their respective thresholds throughout the projection period.** The PV of debt to exports and the PV of debt to revenue would peak in 2012 at 88.7 percent and 153.3 percent, respectively, and decline thereafter. Other debt indicators would remain well below their thresholds. However, a stress test simulating a shock to exports would result in a sustained breach of the PV of debt-to-exports threshold and a temporary breach of the PV of debt-to-revenue threshold, suggesting that Guinea-Bissau would face a moderate risk of debt distress in a topping-up scenario.

#### D. Public Debt Sustainability

##### Baseline scenario

10. **Public debt indicators are more elevated than corresponding PPG external debt indicators, but the trends are similar** (Table 3). Following debt relief at completion point, total public debt (domestic and external) as a percent of GDP falls from 156.8 percent to 62.1 percent and declines steadily thereafter, reaching 23.3 percent in 2030. The PV of total public debt to GDP follows a similar pattern, falling from 53.5 percent to 16.1 percent over the projection period. These results should be interpreted with caution, however, as data on domestic debt is of poor quality.

##### Alternative scenarios and stress tests

11. **Under alternative scenarios and stress tests, public debt indicators continue to show a declining trend, but the decline is more gradual** (Figure 2). If real GDP growth and the primary deficit are held constant at their historical averages, the PV of public sector debt to GDP falls from 53.5 percent in 2010 to 40.1 percent over the projection period, compared to a decline to 16.1 percent in the baseline scenario. The PV of public sector debt to revenue and grants falls from 267.9 percent to 172.5 percent over the projection period compared to a decline to 81.0 percent in the baseline scenario.

12. **If topping-up assistance is provided, public debt indicators would decline more rapidly than in the baseline scenario.** Total public debt as a percent of GDP would fall from 49.2 percent to 21.5 percent over the projection period. The PV of total public debt to GDP would fall from 43.8 percent to 14.9 percent

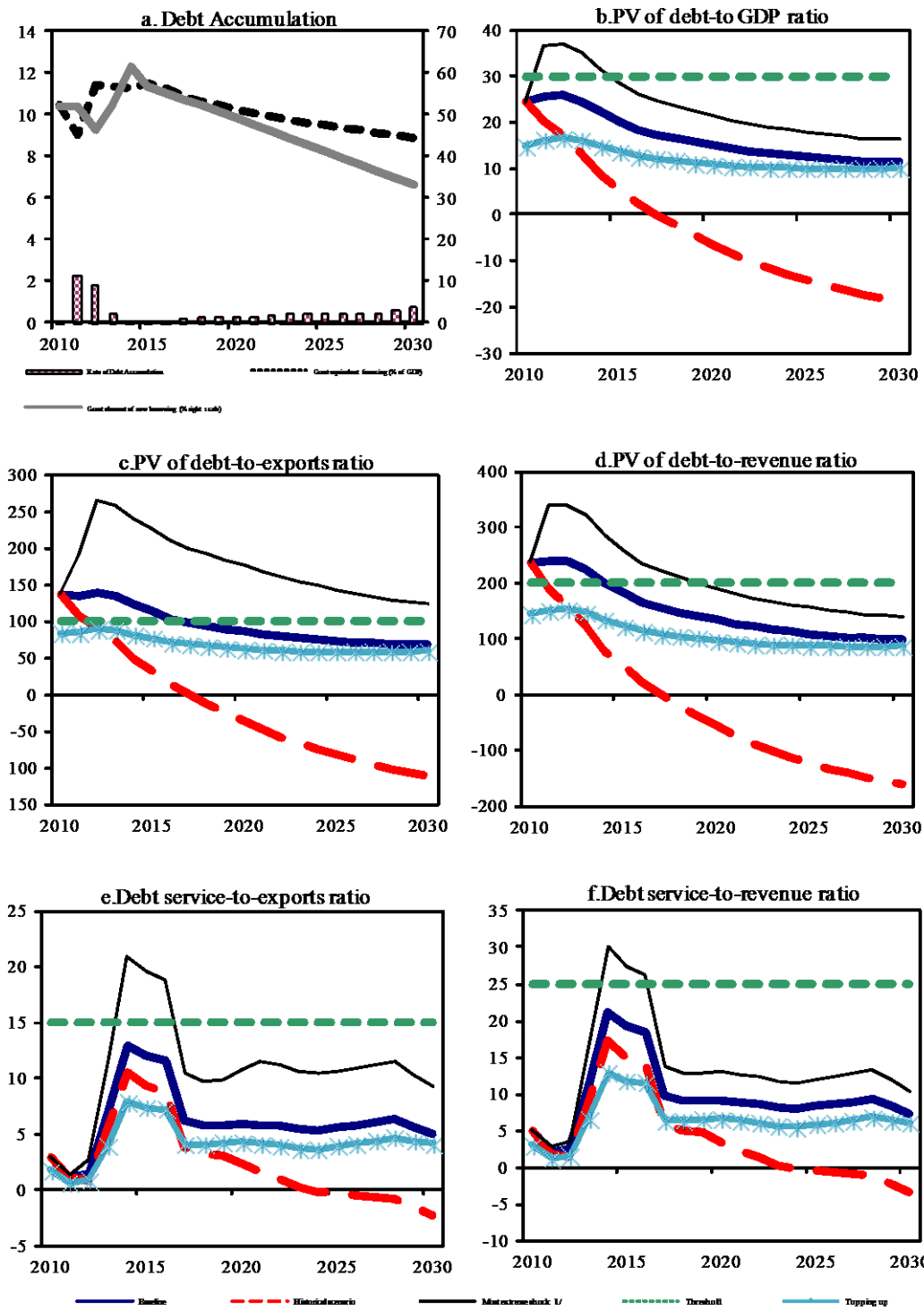
#### D. Conclusion

13. **The LIC DSA indicates that Guinea-Bissau would face a high risk of debt distress after reaching HIPC completion point and benefiting from HIPC, beyond-HIPC, and MDRI assistance.** Despite a significant improvement in the debt outlook, two debt sustainability indicators would breach their thresholds in the baseline scenario, and stress tests would result in further breaches. The inclusion of domestic debt reinforces these

conclusions. If topping-up assistance is provided, all debt sustainability indicators would remain below their relevant thresholds throughout the projection period, but two indicators would breach their thresholds under stress tests, suggesting that Guinea-Bissau would face a moderate risk of debt distress.

14. **Further steps are needed to secure debt sustainability following debt relief at completion point.** Guinea-Bissau should continue to rely on grants and nonconcessional borrowing to meet its financing needs for the foreseeable future. Lasting debt sustainability will also depend on strengthening debt management capacity, making progress on structural reforms, diversifying the export base, and mobilizing domestic revenue in order to reduce reliance on external financing.

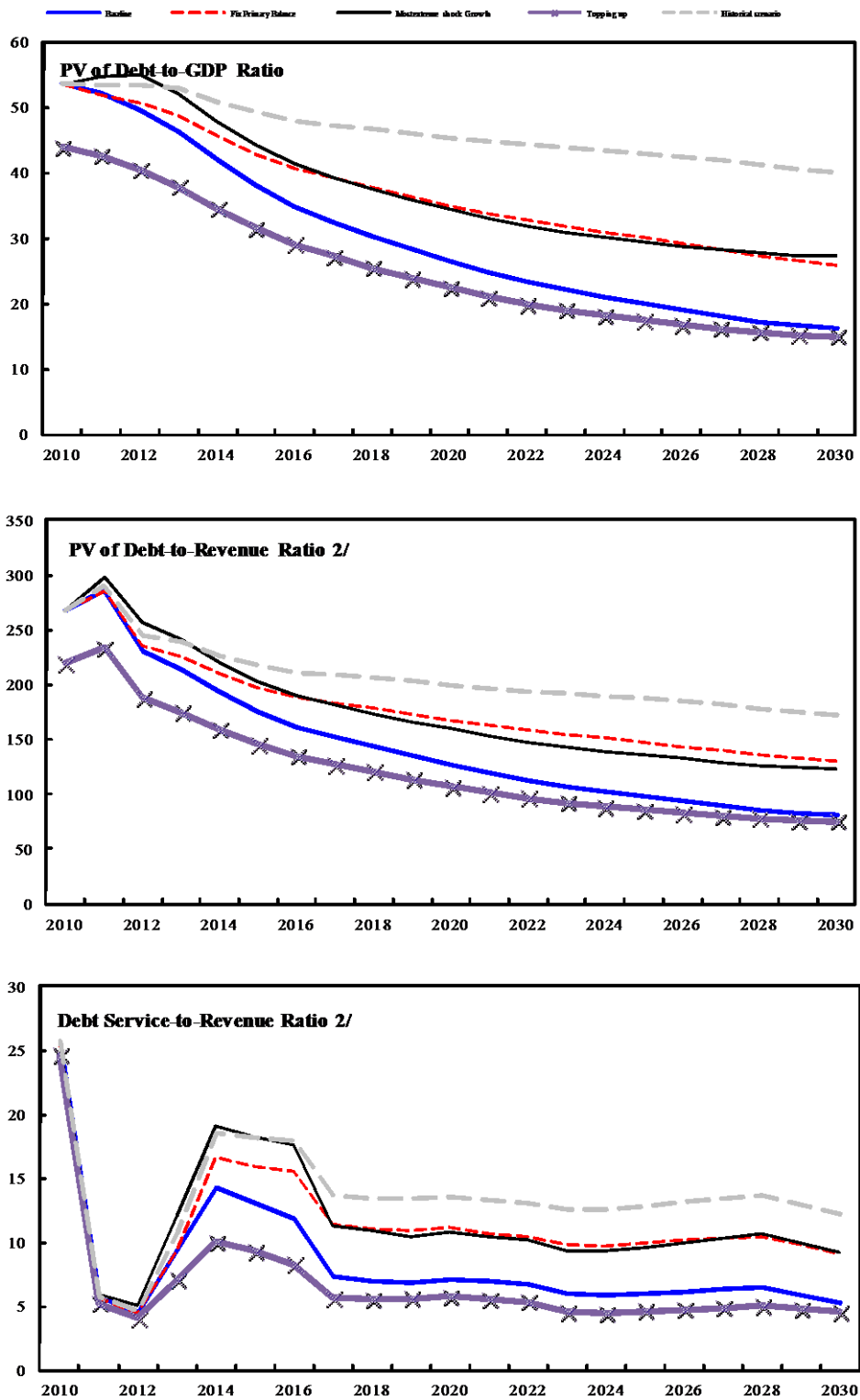
Figure 1. Guinea-Bissau: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2010-2030 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2020. In figure b. it corresponds to a One-time depreciation shock; in c. to a Exports shock; in d. to a One-time depreciation shock; in e. to a Exports shock and in figure f. to a One-time depreciation shock

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



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2020.

2/ Revenues are defined inclusive of grants.

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

	Actual			Historical 0 Standard		Projections							2010-2015			2016-2030	
	2007	2008	2009	Average	0 Deviation	2010	2011	2012	2013	2014	2015	Average	2020	2030	Average		
<b>External debt (nominal) 1/</b>	<b>140.2</b>	<b>132.7</b>	<b>121.9</b>			<b>33.4</b>	<b>34.3</b>	<b>34.0</b>	<b>32.8</b>	<b>30.1</b>	<b>28.1</b>		<b>22.7</b>	<b>18.6</b>			
o/w public and publicly guaranteed (PPG)	140.2	132.7	121.9			33.4	34.3	34.0	32.8	30.1	28.1		22.7	18.6			
Change in external debt	-28.0	-7.5	-10.8			-88.5	0.9	-0.3	-1.2	-2.7	-2.0		-0.8	-0.1			
Identified net debt-creating flows	-25.6	-22.4	5.4			0.7	3.7	1.2	1.2	0.6	-0.4		0.7	1.1			
<b>Non-interest current account deficit</b>	<b>3.1</b>	<b>2.5</b>	<b>2.9</b>	<b>-0.9</b>	<b>4.8</b>	<b>5.7</b>	<b>5.9</b>	<b>3.5</b>	<b>3.0</b>	<b>2.4</b>	<b>1.3</b>		<b>2.3</b>	<b>2.7</b>	<b>2.4</b>		
Deficit in balance of goods and services	13.9	13.3	14.4			13.1	12.4	11.9	11.3	10.8	10.3		10.2	10.0			
Exports	17.1	16.6	15.7			17.9	19.0	18.7	18.4	18.1	17.8		17.5	16.9			
Imports	31.0	29.9	30.1			31.0	31.4	30.6	29.8	28.9	28.0		27.7	26.9			
Net current transfers (negative = inflow)	-10.8	-10.8	-11.5	-10.5	1.9	-7.4	-6.5	-8.4	-8.4	-8.4	-8.9		-7.9	-7.3	-7.7		
o/w official	-5.1	-6.4	-8.0			-3.5	-2.8	-4.8	-4.8	-4.8	-5.3		-4.3	-3.7			
Other current account flows (negative = net inflow)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			
<b>Net FDI (negative = inflow)</b>	<b>-2.7</b>	<b>-0.7</b>	<b>-0.7</b>	<b>-1.2</b>	<b>1.0</b>	<b>-0.9</b>	<b>-0.9</b>	<b>-0.9</b>	<b>-0.9</b>	<b>-0.9</b>	<b>-0.9</b>		<b>-1.0</b>	<b>-1.0</b>	<b>-1.0</b>		
<b>Endogenous debt dynamics 2/</b>	<b>-26.0</b>	<b>-24.2</b>	<b>3.3</b>			<b>-4.1</b>	<b>-1.3</b>	<b>-1.4</b>	<b>-0.9</b>	<b>-0.9</b>	<b>-0.8</b>		<b>-0.7</b>	<b>-0.5</b>			
Contribution from nominal interest rate	1.4	1.5	1.3			0.1	0.1	0.1	0.6	0.6	0.5		0.3	0.3			
Contribution from real GDP growth	-4.5	-3.7	-4.0			-4.3	-1.4	-1.5	-1.5	-1.5	-1.3		-1.0	-0.8			
Contribution from price and exchange rate changes	-22.9	-22.0	6.0			...	...	...	...	...	...		...	...			
<b>Residual (3-4) 3/</b>	<b>-2.3</b>	<b>14.9</b>	<b>-16.2</b>			<b>-89.2</b>	<b>-2.7</b>	<b>-1.5</b>	<b>-2.4</b>	<b>-3.3</b>	<b>-1.6</b>		<b>-1.5</b>	<b>-1.2</b>			
o/w exceptional financing	-6.3	-4.3	-3.5			-109.6	0.0	0.0	0.0	0.0	0.0		0.0	0.0			
PV of external debt 4/	...	...	74.4			24.5	25.6	25.8	24.6	22.2	20.1		15.0	11.4			
In percent of exports	...	...	473.1			136.4	134.6	137.6	133.6	122.2	113.3		85.9	67.2			
<b>PV of PPG external debt</b>	<b>...</b>	<b>...</b>	<b>74.4</b>			<b>24.5</b>	<b>25.6</b>	<b>25.8</b>	<b>24.6</b>	<b>22.2</b>	<b>20.1</b>		<b>15.0</b>	<b>11.4</b>			
In percent of exports	...	...	473.1			136.4	134.6	137.6	133.6	122.2	113.3		85.9	67.2			
In percent of government revenues	...	...	826.8			236.1	237.9	237.8	223.8	200.7	181.6		132.8	98.3			
Debt service-to-exports ratio (in percent)	32.1	31.4	20.7			2.9	1.1	1.4	6.8	12.9	12.0		5.9	5.0			
PPG debt service-to-exports ratio (in percent)	32.1	31.4	20.7			2.9	1.1	1.4	6.8	12.9	12.0		5.9	5.0			
PPG debt service-to-revenue ratio (in percent)	68.5	57.1	36.2			5.0	1.9	2.4	11.4	21.1	19.2		9.2	7.3			
Total gross financing need (Millions of U.S. dollars)	40.7	59.4	45.4			44.5	45.3	26.2	32.5	40.0	28.4		36.3	72.6			
Non-interest current account deficit that stabilizes debt ratio	31.0	10.0	13.7			94.3	5.0	3.8	4.2	5.1	3.3		3.1	2.8			
<b>Key macroeconomic assumptions</b>																	
Real GDP growth (in percent)	3.2	3.2	3.0	2.8	2.7	3.5	4.3	4.5	4.7	4.7	4.7	4.4	4.5	4.5	4.5		
GDP deflator in US dollar terms (change in percent)	15.7	18.6	-4.3	5.5	9.7	-3.8	0.2	1.5	1.5	1.5	2.0	0.5	2.0	2.0	2.0		
Effective interest rate (percent) 5/	1.0	1.3	1.0	1.2	0.4	0.1	0.2	0.2	2.0	1.9	1.7	1.0	1.5	1.5	1.5		
Growth of exports of G&S (US dollar terms, in percent)	38.2	19.0	-6.9	11.3	24.4	13.5	10.7	4.6	4.6	4.5	4.6	7.1	6.3	6.3	6.3		
Growth of imports of G&S (US dollar terms, in percent)	22.8	18.2	-0.8	11.6	10.9	2.6	5.7	3.4	3.4	3.2	3.4	3.6	6.3	6.3	6.3		
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	52.0	51.8	46.4	52.3	61.8	57.0	53.5	49.0	33.1	44.2		
Government revenues (excluding grants, in percent of GDP)	8.0	9.2	9.0			10.4	10.7	10.8	11.0	11.0	11.1		11.3	11.6	11.4		
Aid flows (in Millions of US dollars) 7/	81.1	94.4	134.1			89.4	83.4	107.3	114.0	121.1	134.3		164.3	271.5			
o/w Grants	56.8	68.9	131.9			79.9	64.9	97.9	104.1	110.6	118.0		146.8	241.0			
o/w Concessional loans	24.3	25.5	2.2			9.4	18.4	9.3	9.9	10.5	16.3		17.5	30.5			
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			10.4	9.0	11.5	11.4	11.3	11.5		10.3	8.9	9.9		
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			93.2	86.3	92.2	94.5	96.7	94.5		93.7	88.9	92.1		
<b>Memorandum items:</b>																	
Nominal GDP (Millions of US dollars)	691.7	846.9	834.7			830.7	868.8	921.4	979.2	1040.3	1110.3		1527.7	2892.1			
Nominal dollar GDP growth	19.5	22.4	-1.4			-0.5	4.6	6.1	6.3	6.2	6.7	4.9	6.6	6.6	6.6		
PV of PPG external debt (in Millions of US dollars)	...	...	621.1			203.3	222.0	237.4	241.1	230.5	223.5		229.2	329.4			
(PVt-PVt-1)/GDPt-1 (in percent)	...	...	...			-50.1	2.3	1.8	0.4	-1.1	-0.7	-7.9	0.3	0.7	0.3		
Gross workers' remittances (Millions of US dollars)	33.1	33.2	23.0			25.0	25.2	26.0	27.4	29.4	31.5		43.3	82.0			
PV of PPG external debt (in percent of GDP + remittances)	...	...	72.4			23.8	24.8	25.1	23.9	21.5	19.6		14.6	11.1			
PV of PPG external debt (in percent of exports + remittances)	...	...	402.4			116.9	116.8	119.6	116.0	105.8	97.7		73.9	57.6			
Debt service of PPG external debt (in percent of exports + remittances)	...	...	17.6			2.5	1.0	1.2	5.9	11.1	10.3		5.1	4.3			

Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt.

2/ Derived as  $[r - g - \rho(1+g)] / (1+g+\rho+g)$  times previous period debt ratio, with  $r$  = nominal interest rate;  $g$  = real GDP growth rate, and  $\rho$  = 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 2. Guinea-Bissau: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2010-2030  
(In percent)

	Projections							
	2010	2011	2012	2013	2014	2015	2020	2030
<b>PV of debt-to GDP ratio</b>								
<b>Baseline</b>	24	26	26	25	22	20	<b>15</b>	11
<b>A. Alternative Scenarios</b>								
A1. Key variables at their historical averages in 2010-2030 1/	24	20	17	13	9	6	<b>-7</b>	-19
A2. New public sector loans on less favorable terms in 2010-2030 2	24	26	27	26	24	22	<b>20</b>	21
Topping up	15	16	17	16	15	14	<b>11</b>	10
<b>B. Bound Tests</b>								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	24	27	28	27	24	22	<b>16</b>	12
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	24	28	32	31	28	26	<b>20</b>	14
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	24	27	29	27	25	22	<b>17</b>	13
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	24	25	25	24	22	20	<b>15</b>	11
B5. Combination of B1-B4 using one-half standard deviation shocks	24	26	29	27	25	23	<b>17</b>	13
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	24	36	37	35	32	29	<b>21</b>	16
<b>PV of debt-to-exports ratio</b>								
<b>Baseline</b>	136	135	138	134	122	113	<b>86</b>	67
<b>A. Alternative Scenarios</b>								
A1. Key variables at their historical averages in 2010-2030 1/	136	106	92	72	48	31	<b>-37</b>	-111
A2. New public sector loans on less favorable terms in 2010-2030 2	136	139	144	142	133	127	<b>112</b>	122
Topping up	83	85	89	88	82	77	<b>62</b>	60
<b>B. Bound Tests</b>								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	136	135	138	134	122	113	<b>86</b>	67
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	136	189	265	258	240	226	<b>176</b>	124
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	136	135	138	134	122	113	<b>86</b>	67
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	136	130	135	131	119	111	<b>84</b>	66
B5. Combination of B1-B4 using one-half standard deviation shocks	136	148	170	165	152	141	<b>108</b>	82
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	136	135	138	134	122	113	<b>86</b>	67
<b>PV of debt-to-revenue ratio</b>								
<b>Baseline</b>	236	238	238	224	201	182	<b>133</b>	98
<b>A. Alternative Scenarios</b>								
A1. Key variables at their historical averages in 2010-2030 1/	236	188	159	121	79	50	<b>-58</b>	-162
A2. New public sector loans on less favorable terms in 2010-2030 2	236	246	249	239	218	203	<b>173</b>	178
Topping up	144	150	153	147	134	123	<b>96</b>	87
<b>B. Bound Tests</b>								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	236	248	259	244	218	198	<b>144</b>	107
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	236	262	299	282	257	236	<b>178</b>	118
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	236	249	264	248	222	201	<b>147</b>	109
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	236	230	233	219	196	177	<b>129</b>	97
B5. Combination of B1-B4 using one-half standard deviation shocks	236	240	265	250	224	204	<b>150</b>	109
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	236	339	339	319	286	259	<b>190</b>	140

Table 2. Guinea-Bissau: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2010-2030 (continued)  
(In percent)

<b>Debt service-to-exports ratio</b>								
<b>Baseline</b>	3	1	1	7	13	12	<b>6</b>	5
<b>A. Alternative Scenarios</b>								
A1. Key variables at their historical averages in 2010-2030 1/	3	1	1	5	11	9	<b>2</b>	-2
A2. New public sector loans on less favorable terms in 2010-2030 2	3	1	2	7	13	13	<b>6</b>	7
Topping up	2	1	1	4	8	7	<b>4</b>	4
<b>B. Bound Tests</b>								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	3	1	1	7	13	12	<b>6</b>	5
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	3	1	3	12	21	19	<b>11</b>	9
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	3	1	1	7	13	12	<b>6</b>	5
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	3	1	1	7	13	12	<b>6</b>	5
B5. Combination of B1-B4 using one-half standard deviation shocks	3	1	2	8	15	14	<b>7</b>	6
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	3	1	1	7	13	12	<b>6</b>	5
<b>Debt service-to-revenue ratio</b>								
<b>Baseline</b>	5	2	2	11	21	19	<b>9</b>	7
<b>A. Alternative Scenarios</b>								
A1. Key variables at their historical averages in 2010-2030 1/	5	2	1	9	17	15	<b>3</b>	-3
A2. New public sector loans on less favorable terms in 2010-2030 2	5	2	3	12	22	20	<b>9</b>	10
Topping up	3	1	2	7	13	12	<b>7</b>	6
<b>B. Bound Tests</b>								
B1. Real GDP growth at historical average minus one standard deviation in 2011-2012	5	2	3	12	23	21	<b>10</b>	8
B2. Export value growth at historical average minus one standard deviation in 2011-2012 3/	5	2	3	13	22	20	<b>11</b>	9
B3. US dollar GDP deflator at historical average minus one standard deviation in 2011-2012	5	2	3	13	23	21	<b>10</b>	8
B4. Net non-debt creating flows at historical average minus one standard deviation in 2011-2012 4/	5	2	2	11	21	19	<b>9</b>	7
B5. Combination of B1-B4 using one-half standard deviation shocks	5	2	3	12	23	21	<b>10</b>	8
B6. One-time 30 percent nominal depreciation relative to the baseline in 2011 5/	5	3	3	16	30	27	<b>13</b>	10
<i>Memorandum item:</i>								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	37	37	37	37	37	37	<b>37</b>	37

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 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. Guinea-Bissau: Public Sector Debt Sustainability Framework, Baseline Scenario, 2007-2030  
(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
<b>Public sector debt 1/</b>	176.8	166.1	156.8			62.1	60.8	57.7	54.4	49.7	46.0		34.2	23.3
o/w foreign-currency denominated	140.2	132.7	121.9			33.4	34.3	34.0	32.8	30.1	28.1		22.7	18.6
Change in public sector debt	-30.0	-10.7	-9.2			-94.8	-1.3	-3.0	-3.4	-4.6	-3.8		-1.9	-0.5
Identified debt-creating flows	-27.0	-8.9	-18.3			-91.7	-0.8	-2.7	-2.3	-2.1	-2.1		-0.6	0.9
Primary deficit	5.3	3.5	-2.8	3.2	2.8	2.3	2.6	0.7	0.5	0.4	0.4	1.1	1.2	2.0
Revenue and grants	16.2	17.3	24.8			20.0	18.2	21.5	21.6	21.7	21.7		20.9	19.9
of which: grants	8.2	8.1	15.8			9.6	7.5	10.6	10.6	10.6	10.6		9.6	8.3
Primary (noninterest) expenditure	21.6	20.8	22.0			22.3	20.8	22.1	22.1	22.1	22.1		22.1	21.9
Automatic debt dynamics	-30.7	-11.0	-14.0			6.8	-3.4	-3.4	-2.7	-2.6	-2.5		-1.8	-1.1
Contribution from interest rate/growth differential	-16.1	-19.8	-5.4			-8.6	-3.6	-3.5	-2.9	-2.7	-2.5		-1.8	-1.1
of which: contribution from average real interest rate	-9.7	-14.3	-0.5			-3.3	-1.0	-0.9	-0.3	-0.3	-0.3		-0.2	-0.1
of which: contribution from real GDP growth	-6.4	-5.5	-4.8			-5.3	-2.6	-2.6	-2.6	-2.4	-2.2		-1.6	-1.0
Contribution from real exchange rate depreciation	-14.5	8.7	-8.6			15.4	0.2	0.2	0.2	0.2	0.0		...	...
Other identified debt-creating flows	-1.7	-1.3	-1.4			-100.9	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Privatization receipts (negative)	-0.1	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)	-1.6	-1.3	-1.4			-100.9	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	-3.0	-1.8	9.0			-3.1	-0.5	-0.3	-1.1	-2.5	-1.7		-1.3	-1.4
<b>Other Sustainability Indicators</b>														
<b>PV of public sector debt</b>	36.6	33.4	105.9			53.5	52.0	49.6	46.3	41.8	38.0		26.5	16.1
o/w foreign-currency denominated	0.0	0.0	71.0			24.9	25.6	25.8	24.7	22.2	20.2		15.0	11.4
o/w external	...	...	71.0			24.9	25.6	25.8	24.7	22.2	20.2		15.0	11.4
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...
Gross financing need 2/	23.1	19.0	16.4			20.1	11.3	8.5	8.6	9.0	8.1		5.3	3.2
PV of public sector debt-to-revenue and grants ratio (in percent)	225.2	192.7	427.0			267.9	285.7	231.0	214.0	193.1	175.1		126.9	81.0
PV of public sector debt-to-revenue ratio (in percent)	455.2	364.0	1176.7			516.6	484.4	457.6	420.8	379.0	343.0		234.9	139.3
o/w external 3/	...	...	788.8			239.9	238.5	238.4	224.4	201.1	182.0		133.1	98.5
Debt service-to-revenue and grants ratio (in percent) 4/	23.5	12.7	21.1			25.7	5.7	4.5	9.4	14.2	13.1		7.1	5.3
Debt service-to-revenue ratio (in percent) 4/	47.4	24.0	58.1			49.5	9.7	8.9	18.6	27.9	25.6		13.2	9.0
Primary deficit that stabilizes the debt-to-GDP ratio	35.4	14.2	6.4			97.1	3.9	3.7	3.8	5.1	4.2		3.1	2.6
<b>Key macroeconomic and fiscal assumptions</b>														
Real GDP growth (in percent)	3.2	3.2	3.0	2.8	2.7	3.5	4.3	4.5	4.7	4.7	4.7	4.4	4.5	4.5
Average nominal interest rate on forex debt (in percent)	1.0	1.3	1.0	1.2	0.4	0.1	0.2	0.2	2.0	1.9	1.7	1.0	1.5	1.5
Average real interest rate on domestic debt (in percent)	-5.1	-8.5	-1.1	-0.1	6.0	-1.9	-1.4	-1.3	-1.2	-1.2	-1.2	-1.4	-1.0	-0.4
Real exchange rate depreciation (in percent, + indicates depreciation)	-9.4	7.0	-6.7	-3.1	10.8	13.4	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	6.0	10.5	1.1	2.4	4.9	2.4	2.1	2.0	2.0	2.0	2.0	2.1	2.0	2.0
Growth of real primary spending (deflated by GDP deflator, in percent)	0.1	0.0	0.1	0.1	0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Grant element of new external borrowing (in percent)	...	...	...	...	...	52.0	51.8	46.4	52.3	61.8	57.0	53.5	49.0	33.1

Sources: Country authorities; and staff estimates and projections.

1/ [Indicate coverage of public sector, e.g. general government or nonfinancial public sector. Also whether net or gross debt is used.]

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. Guinea-Bissau: Sensitivity Analysis for Key Indicators of Public Debt 2010-2030

	Projections							
	2010	2011	2012	2013	2014	2015	2020	2030
<b>PV of Debt-to-GDP Ratio</b>								
<b>Baseline</b>	54	52	50	46	42	38	27	16
<b>A. Alternative scenarios</b>								
A1. Real GDP growth and primary balance are at historical averages	54	53	53	53	51	49	45	40
A2. Primary balance is unchanged from 2010	54	52	51	49	45	43	35	26
A3. Permanently lower GDP growth 1/	54	52	50	47	43	40	30	26
Topping up	44	43	40	38	34	32	22	15
<b>B. Bound tests</b>								
B1. Real GDP growth is at historical average minus one standard deviations in 2011-2012	54	55	55	52	48	44	34	27
B2. Primary balance is at historical average minus one standard deviations in 2011-2012	54	55	56	52	47	43	31	19
B3. Combination of B1-B2 using one half standard deviation shocks	54	55	57	54	49	45	34	25
B4. One-time 30 percent real depreciation in 2011	54	62	59	55	50	45	31	18
B5. 10 percent of GDP increase in other debt-creating flows in 2011	54	59	57	53	48	44	31	19
<b>PV of Debt-to-Revenue Ratio 2/</b>								
<b>Baseline</b>	268	286	231	214	193	175	127	81.0
<b>A. Alternative scenarios</b>								
A1. Real GDP growth and primary balance are at historical averages	268	290	245	238	227	217	200	173
A2. Primary balance is unchanged from 2010	268	285	236	225	210	197	167	130
A3. Permanently lower GDP growth 1/	268	287	233	217	197	180	141	124
Topping up	219	234	188	175	159	145	107	75
<b>B. Bound tests</b>								
B1. Real GDP growth is at historical average minus one standard deviations in 2011-2012	268	294	245	231	212	195	158	132
B2. Primary balance is at historical average minus one standard deviations in 2011-2012	268	299	261	242	218	199	148	95
B3. Combination of B1-B2 using one half standard deviation shocks	268	298	257	241	220	202	160	123
B4. One-time 30 percent real depreciation in 2011	268	340	274	254	231	209	150	90
B5. 10 percent of GDP increase in other debt-creating flows in 2011	268	326	265	243	222	202	150	97
<b>Debt Service-to-Revenue Ratio 2/</b>								
<b>Baseline</b>	26	6	5	9	14	13	7	5
<b>A. Alternative scenarios</b>								
A1. Real GDP growth and primary balance are at historical averages	26	6	5	11	19	18	14	12
A2. Primary balance is unchanged from 2010	26	6	4	9	17	16	11	9
A3. Permanently lower GDP growth 1/	26	6	5	10	15	14	8	9
Topping up	25	5	4	7	10	9	6	5
<b>B. Bound tests</b>								
B1. Real GDP growth is at historical average minus one standard deviations in 2011-2012	26	6	5	11	16	15	10	10
B2. Primary balance is at historical average minus one standard deviations in 2011-2012	26	6	5	15	22	15	8	6
B3. Combination of B1-B2 using one half standard deviation shocks	26	6	5	13	20	16	9	9
B4. One-time 30 percent real depreciation in 2011	26	6	5	12	19	18	11	9
B5. 10 percent of GDP increase in other debt-creating flows in 2011	26	6	6	23	15	17	8	7

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.