INTERNATIONAL MONETARY FUND
AND
INTERNATIONAL DEVELOPMENT ASSOCIATION

GUINEA-BISSAU

Joint IMF/World Bank Debt Sustainability Analysis Low-Income Country Framework

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Following the Heavily Indebted Poor Countries (HIPC) completion point (including topping-up assistance) and the Multilateral Debt Relief Initiative (MDRI) reached in December 2010, the Paris Club agreed to provide extensive debt relief in May 2011. As a result, Guinea-Bissau's debt outlook has improved considerably. An update of the debt sustainability analysis for low-income countries (LIC DSA) confirms a moderate risk of external debt distress in Guinea-Bissau. Since the 2010 DSA[1] *the minimum concessionality requirement for foreign currency borrowing has been lowered from 50 to 35 percent, reflecting a moderate risk of debt distress. The macroeconomic assumptions underlying the baseline scenario envisage a gradual improvement of the external current account over the medium and long term, backed by sustained growth in the predominant export (cashew) sector. The projected debt indicators under the baseline scenario would remain well below the policy-dependent thresholds, even with a declining grant element. However under the scenario assuming a shock to exports and currency depreciation, all debt indicators deteriorate significantly and the present value (PV) of debt to export ratio breaches the corresponding threshold. The inclusion of domestic public debt confirms the conclusions of the external debt sustainability analysis. To contain debt vulnerability, the authorities should strengthen debt management capacity.*

[1] IMF Country report No. 10/380 and World Bank Report No. 57893-GW.

I. Key Assumptions Under the Baseline Scenario

1. **Guinea-Bissau reached the completion point under the Enhanced HIPC Initiative in December 2010**. All outstanding debt to the IMF at the time of the completion point was cancelled as part of HIPC assistance. Most, but not all, of the debt owed to the World Bank and the African Development Bank was canceled under the HIPC (including

Box 1. Guinea-Bissau: Key Baseline Macroeconomic Assumptions

Real GDP growth is expected to accelerate **significantly** from 3.5 percent in 2010 to about 5.3 percent in 2011, then to stabilize at 4.5 percent in the medium and long term. The stronger economic activity in 2011 has been driven by good cashew harvest and high cashew prices. Over the long term to 2030, growth is also expected to be supported by cashew production, along with a continued stabilization of the political environment and appropriate macroeconomic policies.

Inflation, as measured by the GDP deflator growing at a rate slightly below CPI inflation, is assumed to accelerate in 2011 and to decelerate in 2012 owing to changes in commodities prices. Over the long term, the GDP deflator (and CPI) is projected to return to its historical level of 2 percent.

The **current account deficit** (excluding official transfers) is expected to slightly improve from 10.2 percent in 2010 to around 9.9 percent of GDP in 2011. This evolution reflects an exceptional increase in cashew exports in 2011 driven by high production and cashew export prices, largely offset by higher imports, especially fuel and food. In 2012, cashew export prices are assumed to revert to their medium-term average. After a slight deterioration to 10.1 percent of GDP in 2012 the current account deficit is projected to gradually decline to 7.6 percent in 2030. Over the longer term to 2030, real export volumes are projected to grow at around 6¼ percent a year. Remittances are expected to stabilize at a long-term rate of 6.5 percent.

The **primary fiscal deficit** (defined as revenue and grants less primary non-interest expenditure) is projected to reach 2.6 percent in 2011. Over the medium term, the primary deficit would gradually improve to about 1 percent of GDP in 2015, thanks to increasing revenue collection and sustaining improved public expenditure management. Over the long term, the primary deficit would be widened in average to about 1.8 percent to promote long-term development and growth. **Domestic debt** is projected to gradually decrease in nominal terms in line with the authorities' domestic arrears clearance strategy and with the rescheduling of the debt owed to the BCEAO.

Net aid flows (grants and concessional loans) are expected to stabilize at a moderate level in the long term. Budget support grants are projected to stabilize at about 1.5 percent of GDP over the period of 2011-2020, and to gradually decline to 0.5 percent by 2030. Concessional loans are assumed to be on 0.8 percent interest rate with 40 (IDA) to 50 (AfDB) years maturity and ten-year grace period. Following the *Guidelines for Debt Limits in Fund-Supported Programs*, the post-HIPC improvement of debt outlook lowering risk of debt distress from high to moderate justifies a change in concessionality requirements from 50 to 35 percent. *Per se*, starting in 2012, some new borrowing is expected to be on less concessional terms, resulting in a progressive decrease in the average grant element of new disbursements from 52 to 35 percent. In all, non-concessional borrowing is assumed to remain moderate on the grounds that the country will not have continued access to commercial debt. **Fiscal financing gaps** will therefore have to be filled through grants or highly concessional loans.

topping-up assistance) and MDRI. This led to debt relief amounting US$ 1.2 billion in nominal terms. The Paris Club agreed to forgive nearly all of its claims in May 2011.The authorities are finalizing bilateral agreements with the Paris Club and seeking comparable treatment from remaining creditors.[2]

2. **The DSA assumptions under the baseline scenario are broadly in line with those used in the 2010 DSA** (Box 1). Economic growth is expected to reach 4.5 percent over the medium and long term. This reflects a continued stabilization of the political environment, the government's efforts to raise potential growth of the economy through investments in agriculture and infrastructure, and a continued growth in cashew production. Despite the recent increase, inflation is expected to remain stable at the historical level of 2 percent. New external borrowing is assumed to be on less concessional terms, i.e., a gradual reduction in the average grant element of new disbursements from 52 to around 35 percent during the projection period. This will create more room for external financing to address pressing development needs. The authorities, however, will continue to seek highly concessional terms when borrowing.

3. **Downside risks to the baseline projection arise** from an unfavorable global environment. Lower-than-expected cashew prices and growth in developed economies pose risks for economic growth. In addition, the authorities could face increasing domestic pressures for shifts in economic policies that could undermine fiscal prudence and economic reforms.

II. External Debt Sustainability

Baseline scenario

4. **Following the HIPC completion point, Guinea-Bissau's public and publicly guaranteed (PPG) external debt amounts to US$ 173.7 million (17.5 percent of GDP) at the end of 2011**.[3] Under the assumptions of the baseline scenario and with a three-year average Country Policy and Institutional Assessment (CPIA) rating of 2.67, all debt indicators are expected to remain below their relevant policy-dependent thresholds. The PV of PPG external debt will decline from 13.4 percent of GDP in 2011 to 9.7 percent in 2021, and will remain at around 7.7 percent of GDP up to 2030 (Table 1).

5. **The ratios of PV of debt and debt service to exports and revenue are also projected to remain well below their threshold values throughout the 20-year projection period** (Figure 1, Table 2, and Text Table 1). This suggests that external debt remains sustainable even with a declining grant element.

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[2] Algeria, China and Cuba provided full debt cancellation.

[3] Following debt relief at completion point, PPG external debt decreased from 121.9 percent of GDP in 2009 to 19.1 percent of GDP in 2010.

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

	Threshold[2/]	2011	2021	2030
PV of debt to GDP	30	13.4	9.7	7.7
PV of debt to exports	100	50.4	57.3	46.8
PV of debt to revenue	200	126.6	72.8	56.0
Debt service to exports	15	0.3	4.7	3.6
Debt service to revenue	25	0.8	6.0	4.3

Source: IMF staff estimates.
[1/] Debt indicators refer to Guinea-Bissau's public and publicly guaranteed external debt.
[2/] With an average CPIA rating of 2.67 over 2008–10, Guinea-Bissau is classified as having a weak policy and institutional framework.

Alternative scenarios and stress tests

Although stress tests to the baseline scenario confirm that Guinea-Bissau's external debt position presents low vulnerability to shocks, the most extreme shock scenario[4] shows that some vulnerability persists. Four of five debt indicators remain well below their respective thresholds under stress tests. The PV of debt-to-exports ratio increases (Text Table 2) from 50.4 percent in 2011 to 126.3 percent in 2021 and gradually decreases to 91.6 percent in 2030, thus breaching the corresponding threshold for most of the projection period. The remaining ratios are also sensitive to the above-mentioned shock, but remain well below their threshold values.[5] In all, this alternative scenario indicates that Guinea-Bissau would be still vulnerable to a shock from a sharp fall in exports or currency depreciation.

Text Table 2. Summary of External Debt Sustainability Indicators Under the Most Extreme Shock Scenario[1/]

	Threshold[4/]	2011	2021	2030
PV of debt to GDP	30	13.4	14.0	9.9
PV of debt to exports[2/]	100	50.4	126.3	91.6
PV of debt to revenue[3/]	200	126.6	103.3	79.3
Debt service to exports[2/]	15	0.3	8.4	7.1
Debt service to revenue[3/]	25	0.9	8.5	6.1

Source: IMF staff estimates.
[1/] Debt indicators refer to Guinea-Bissau's public and publicly guaranteed external debt.
[2/] Two standard deviations shock in 2012-2013 to historical average export growth.
[3/] One-time 30 percent nominal depreciation relative to the baseline in 2012.
[4/] 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 CPIA rating of 2.67 over 2008–10, Guinea-Bissau is classified as having a weak policy and institutional framework.

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[4] The most extreme shock is calibrated as export value growth at historical average minus two standard deviations in 2012-2013 or as a one-time 30 percent nominal currency depreciation relative to the baseline in 2012.
[5] The results under the historical scenario (where key variables are held constant at their 10-year historical level) show much more rapid decrease in debt indicators than in other scenarios. However, these results are subject to considerable uncertainty, because the underlying data come from the post-conflict period and are not reliable.

III. Public Debt Sustainability

Baseline scenario

6. **Following debt relief at completion point and the Paris Club agreement in May 2011, total public debt as a percent of GDP declined from 157.9 percent in 2009, to 49 percent in 2010, and is projected to fall further to 43.7 percent in 2011** (Table 3). Domestic debt is projected to gradually decrease in nominal terms in line with the authorities' domestic arrears clearance strategy and with the rescheduling of the debt owed to the BCEAO. Under the assumptions of the baseline scenario total public debt (domestic and external) would decline steadily thereafter to reach 16.7 percent of GDP in 2030. The PV of total public debt to GDP follows a similar pattern, falling from 39.5 percent in 2011 to 20.2 percent in 2021 and 12.5 percent at the end of the projection period.

Alternative scenarios and stress tests

7. **Alternative scenarios and stress tests show that public debt indicators continue to decline, however, this decline would be more gradual** (Figure 2 and Table 4). Under the historical scenario assuming that real GDP growth and the primary deficit are held constant at their historical averages, i.e. at 2.3 and 3 percent respectively, the PV of public sector debt to GDP would decline from 39.4 percent in 2011 to 29.2 percent in 2030. The PV of public sector debt to revenue would follow a similar trend, falling from 209.5 percent in 2011 percent to 124.4 percent at the end of the projection period. The PV of debt service-to-revenue ratio would hover around 10 percent until 2030.

8. **Under the scenario assuming the most extreme shock[6], public debt indicators would worsen considerably**. The PV of debt-to-GDP ratio increases to 43.2 percent in 2013 and starts to decline steadily to 23.1 percent in 2030. Similarly, the PV of debt-to-revenue ratio declines from 200.9 percent in 2013 to 112 percent at the end of the projection period. The PV of debt service-to-revenue follows more irregular pattern reaching 8.6 percent at the end of the projection period.

IV. Conclusion

9. **Following the debt relief at the HIPC completion point, Guinea-Bissau's debt outlook has considerably improved, and the LIC DSA suggests that the country faces a moderate risk of debt distress**. Although under the baseline scenario all debt indicators remain well below the relevant thresholds, alternative scenarios and stress tests indicate vulnerability to export shocks. The inclusion of domestic public debt confirms the conclusions of the external DSA. The authorities share the staffs' assessment on the DSA.

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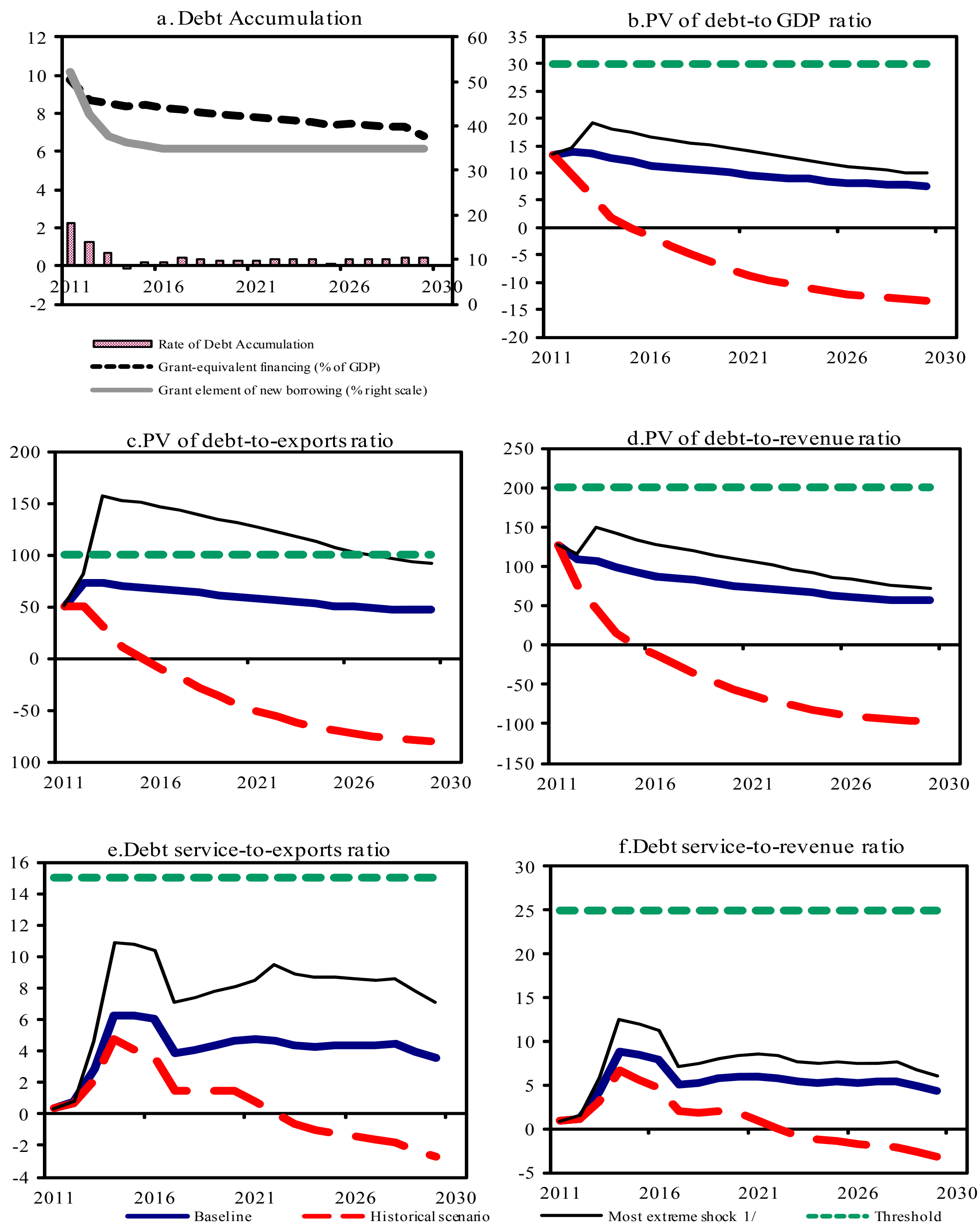
[6] Shock is calibrated as real GDP growth and the primary balance at their historical averages minus one half standard deviations.

10. **Guinea-Bissau needs to undertake further actions to reduce its external vulnerabilities**. The country should continue to rely on grants and concessional borrowing to meet its financing needs for the foreseeable future, despite the improved post-HIPC debt outlook. The authorities' commitments under the current Extended Credit Facility to boost their debt management capacity are crucial to containing debt vulnerabilities. It includes strengthening debt management capacity, making progress on structural reforms, diversifying the export base, and mobilizing domestic revenue to reduce reliance on external financing.

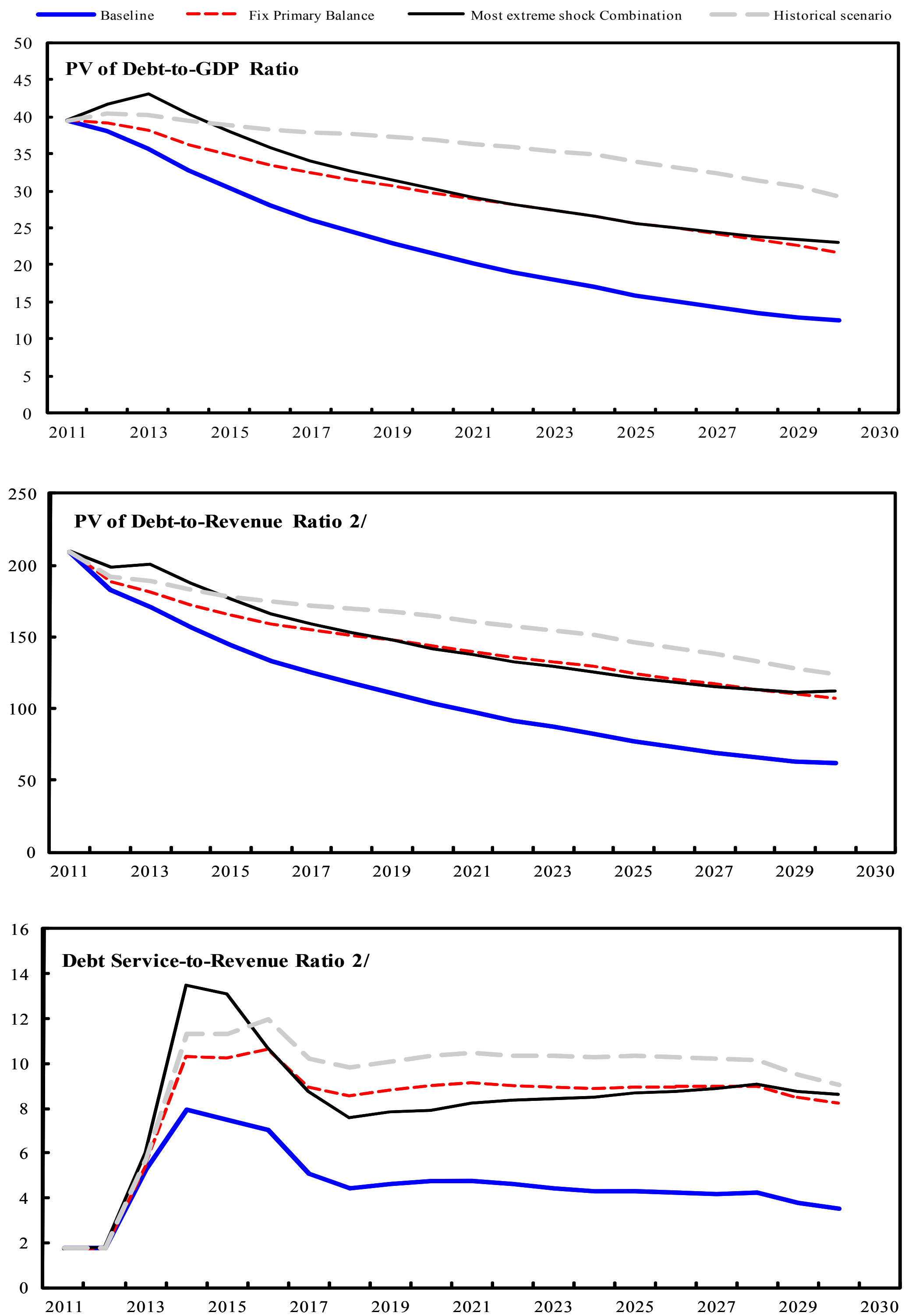
Figure 1. Guinea-Bissau: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios 1/, 2011-2030



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2021. In figure b. it corresponds to a Exports shock; in c. to a Exports shock; in d. to a Exports 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 Alternatives Scenarios 1/, 2011-2030



Sources: Country authorities; and staff estimates and projections.
1/ The most extreme stress test is the test that yields the highest ratio in 2021.
2/ Revenues are defined inclusive of grants.

Table 1: Guinea-Bissau: External Debt Sustainability Framework, Baseline Scenario, 2008-2030[1]/
(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average	Standard Deviation	Projections									
	2008	2009	2010			2011	2012	2013	2014	2015	2016	2011-2016 Average	2021	2030	2017-2030 Average
External debt (nominal) 1/	**132.7**	**121.9**	**19.1**			**17.5**	**17.8**	**17.7**	**16.6**	**16.0**	**15.3**		**13.5**	**11.9**	
o/w public and publicly guaranteed (PPG)	132.7	121.9	19.1			17.5	17.8	17.7	16.6	16.0	15.3		13.5	11.9	
Change in external debt	-7.5	-10.8	-102.8			-1.6	0.3	-0.1	-1.0	-0.7	-0.6		-0.3	0.0	
Identified net debt-creating flows	-21.6	6.2	4.2			3.2	4.2	3.8	3.2	1.4	1.1		1.4	1.3	
Non-interest current account deficit	**3.3**	**5.9**	**6.6**	**1.2**	**4.0**	**6.2**	**7.0**	**6.4**	**5.8**	**4.0**	**3.7**		**4.0**	**4.0**	4.0
Deficit in balance of goods and services	14.0	16.6	13.8			13.3	13.4	12.7	12.0	11.3	10.7		10.6	10.5	
Exports	15.9	15.5	15.8			26.5	19.1	18.7	18.1	17.5	17.2		16.9	16.5	
Imports	29.9	32.1	29.6			39.8	32.5	31.4	30.2	28.8	27.9		27.5	26.9	
Net current transfers (negative = inflow)	-10.8	-11.5	-7.3	-9.8	1.6	-7.1	-6.4	-6.3	-6.2	-7.3	-7.0		-6.6	-6.4	-6.5
o/w official	-6.4	-8.0	-3.5			-3.6	-3.0	-3.0	-3.0	-4.2	-4.0		-3.6	-3.3	
Other current account flows (negative = net inflow)	0.1	0.8	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Net FDI (negative = inflow)	**-0.7**	**-2.1**	**-2.2**	**-1.5**	**1.0**	**-2.2**	**-2.2**	**-2.2**	**-2.2**	**-2.2**	**-2.2**		**-2.3**	**-2.5**	-2.3
Endogenous debt dynamics 2/	**-24.3**	**2.4**	**-0.2**			**-0.8**	**-0.7**	**-0.5**	**-0.5**	**-0.4**	**-0.4**		**-0.3**	**-0.3**	
Contribution from nominal interest rate	1.4	0.5	0.1			0.0	0.0	0.3	0.3	0.3	0.3		0.3	0.2	
Contribution from real GDP growth	-3.7	-4.0	-4.2			-0.9	-0.7	-0.8	-0.8	-0.7	-0.7		-0.6	-0.5	
Contribution from price and exchange rate changes	-22.0	6.0	3.9			…	…	…	…	…	…		…	…	
Residual (3-4) 3/	**14.2**	**-17.0**	**-107.0**			**-4.8**	**-3.8**	**-3.9**	**-4.2**	**-2.1**	**-1.8**		**-1.7**	**-1.3**	
o/w exceptional financing	-4.3	-1.1	-109.7			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
PV of external debt 4/	...	...	13.6			13.4	13.7	13.6	12.7	12.1	11.4		9.7	7.7	
In percent of exports	...	...	86.1			50.4	72.1	72.8	70.1	68.8	66.6		57.3	46.8	
PV of PPG external debt	**...**	**...**	**13.6**			**13.4**	**13.7**	**13.6**	**12.7**	**12.1**	**11.4**		**9.7**	**7.7**	
In percent of exports			**86.1**			**50.4**	**72.1**	**72.8**	**70.1**	**68.8**	**66.6**		**57.3**	**46.8**	
In percent of government revenues	**...**	**...**	**126.0**			**126.6**	**108.7**	**105.9**	**98.3**	**92.8**	**87.7**		**72.8**	**56.0**	
PPG debt service-to-exports ratio (in percent)	**32.4**	**15.9**	**8.5**			**0.3**	**0.7**	**2.9**	**6.3**	**6.2**	**6.0**		**4.7**	**3.6**	
PPG debt service-to-revenue ratio (in percent)	**56.2**	**27.3**	**12.4**			**0.8**	**1.1**	**4.2**	**8.8**	**8.4**	**7.9**		**6.0**	**4.3**	
Total gross financing need (Millions of U.S. dollars)	65.8	52.5	48.0			40.4	52.4	53.2	56.3	37.0	34.5		46.9	71.9	
Non-interest current account deficit that stabilizes debt ratio	10.8	16.7	109.4			7.8	6.7	6.6	6.8	4.7	4.4		4.3	4.0	
Key macroeconomic assumptions															
Real GDP growth (in percent)	3.2	3.0	3.5	2.3	1.7	5.3	4.5	4.7	4.7	4.7	4.7	4.8	4.5	4.5	4.5
GDP deflator in US dollar terms (change in percent)	18.6	-4.3	-3.1	6.5	8.0	12.3	1.7	1.1	1.2	2.0	2.0	3.4	2.0	2.0	2.0
Effective interest rate (percent) 5/	1.2	0.3	0.1	1.0	0.6	0.3	0.3	2.0	1.9	1.9	1.9	1.4	2.1	1.8	2.0
Growth of exports of G&S (US dollar terms, in percent)	12.6	-3.8	1.9	5.6	18.0	98.9	-23.6	3.7	2.9	3.1	4.7	14.9	6.3	6.3	6.3
Growth of imports of G&S (US dollar terms, in percent)	18.2	5.8	-7.6	10.5	12.0	58.8	-13.2	2.4	1.8	2.1	3.3	9.2	6.3	6.3	6.3
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	52.3	42.6	37.9	36.2	35.5	34.8	39.9	35.0	35.0	35.0
Government revenues (excluding grants, in percent of GDP)	9.2	9.0	10.8			10.6	12.7	12.8	12.9	13.0	13.0		13.3	13.8	13.4
Aid flows (in Millions of US dollars) 7/	122.9	134.0	91.0			102.3	91.9	97.1	102.5	112.4	117.7		152.3	239.0	
o/w Grants	122.8	131.9	80.9			82.0	85.7	90.5	95.5	101.6	106.8		138.0	211.7	
o/w Concessional loans	0.1	2.1	10.0			20.3	6.2	6.6	7.0	10.8	10.9		14.3	27.3	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			9.8	8.7	8.5	8.4	8.5	8.3		7.8	6.8	7.6
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			87.9	92.0	93.0	94.2	91.8	91.9		91.8	90.2	91.7
Memorandum items:															
Nominal GDP (Millions of US dollars)	846.9	834.7	836.9			989.4	1050.9	1113.3	1179.9	1259.7	1345.7		1851.6	3288.4	
Nominal dollar GDP growth	22.4	-1.4	0.3			18.2	6.2	5.9	6.0	6.8	6.8	8.3	6.6	6.6	6.6
PV of PPG external debt (in Millions of US dollars)			113.7			132.2	144.5	151.4	150.0	151.9	153.9		179.2	253.3	
(PVt-PVt-1)/GDPt-1 (in percent)						2.2	1.2	0.7	-0.1	0.2	0.2	0.7	0.3	0.5	0.3
Gross workers' remittances (Millions of US dollars)	33.2	23.0	24.5			28.3	29.3	30.0	30.9	31.8	32.8		45.1	80.1	
PV of PPG external debt (in percent of GDP + remittances)	...	...	13.2			13.0	13.4	13.2	12.4	11.8	11.2		9.5	7.5	
PV of PPG external debt (in percent of exports + remittances)	...	...	72.6			45.5	62.9	63.6	61.3	60.2	58.4		50.1	40.8	
Debt service of PPG external debt (in percent of exports + remittances)	26.0	13.5	7.1			0.3	0.6	2.5	5.5	5.4	5.3		4.1	3.1	

Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt.
2/ Derived as $[r - g - \rho(1+g)]/(1+g+\rho+g\rho)$ times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, and ρ = growth rate of GDP deflator in U.S. dollar terms.
3/ Reflects exceptional financing (i.e., changes in arrears and debt relief); changes in gross foreign assets; capital grants; 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, 2011-2030 (In percent)

	Projections							
	2011	2012	2013	2014	2015	2016	2021	2030
PV of debt-to GDP ratio								
Baseline	13	14	14	13	12	11	10	8
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	13	9	6	2	0	-2	-9	-13
A2. New public sector loans on less favorable terms in 2011-2031 2	13	14	14	13	13	13	13	14
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	13	14	15	14	13	12	10	8
B2. Export value growth at historical average minus two standard deviation in 2012-2013	13	15	19	18	17	17	14	10
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	13	14	14	13	13	12	10	8
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	13	14	13	12	12	11	9	8
B5. Combination of B1-B4 using one-half standard deviation shocks	13	9	6	5	5	4	4	5
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	13	20	19	18	17	16	14	11
PV of debt-to-exports ratio								
Baseline	50	72	73	70	69	67	57	47
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	50	50	31	10	-1	-10	-51	-81
A2. New public sector loans on less favorable terms in 2011-2031 2	50	73	75	74	75	76	77	86
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	50	72	73	70	69	67	57	47
B2. Export value growth at historical average minus two standard deviation in 2012-2013	50	81	157	153	151	147	126	92
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	50	72	73	70	69	67	57	47
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	50	71	71	68	67	64	55	46
B5. Combination of B1-B4 using one-half standard deviation shocks	50	37	25	23	21	20	18	24
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	50	72	73	70	69	67	57	47
PV of debt-to-revenue ratio								
Baseline	127	109	106	98	93	88	73	56
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	127	75	44	14	-1	-13	-65	-96
A2. New public sector loans on less favorable terms in 2011-2031 2	127	111	110	104	102	100	98	103
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	127	113	114	106	100	95	79	60
B2. Export value growth at historical average minus two standard deviation in 2012-2013	127	115	150	141	134	127	106	72
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	127	112	112	104	98	93	77	59
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	127	107	103	95	90	85	70	55
B5. Combination of B1-B4 using one-half standard deviation shocks	127	72	44	39	35	32	27	34
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	127	154	150	139	132	124	103	79

Table 2: Guinea-Bissau: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2011-2030 (concluded)
(In percent)

	Debt service-to-exports ratio							
Baseline	0	1	3	6	6	6	5	4
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	0	1	2	5	4	4	1	-3
A2. New public sector loans on less favorable terms in 2011-2031 2	0	1	3	6	6	6	4	5
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	0	1	3	6	6	6	5	4
B2. Export value growth at historical average minus two standard deviation in 2012-2013	0	1	5	11	11	10	8	7
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	0	1	3	6	6	6	5	4
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	0	1	3	6	6	6	5	4
B5. Combination of B1-B4 using one-half standard deviation shocks	0	1	2	4	4	4	2	2
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	0	1	3	6	6	6	5	4
	Debt service-to-revenue ratio							
Baseline	1	1	4	9	8	8	6	4
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	1	1	3	7	6	5	1	-3
A2. New public sector loans on less favorable terms in 2011-2031 2	1	1	4	9	9	8	5	6
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	1	1	5	10	9	9	6	5
B2. Export value growth at historical average minus two standard deviation in 2012-2013	1	1	4	10	10	9	7	6
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	1	1	4	9	9	8	6	5
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	1	1	4	9	8	8	6	4
B5. Combination of B1-B4 using one-half standard deviation shocks	1	1	3	7	7	7	4	3
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	1	2	6	13	12	11	9	6
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	24	24	24	24	24	24	24	24

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: Guinea-Bissau: Public Debt Sustainability Framework, Baseline Scenario, 2011-2030
(In percent of GDP, unless otherwise indicated)

	Actual					Estimate	Projections								
	2008	2009	2010	Average	Standard Deviation	2011	2012	2013	2014	2015	2016	2011-16 Average	2021	2030	2017-30 Average
Public sector debt 1/	167.5	157.9	49.0			43.7	42.1	39.8	36.7	34.2	31.9		24.0	16.7	
o/w foreign-currency denominated	132.7	121.9	19.1			17.5	17.8	17.7	16.6	16.0	15.3		13.5	11.9	
Change in public sector debt	-11.0	-9.6	-108.8			-5.4	-1.5	-2.3	-3.0	-2.5	-2.4		-1.3	-0.4	
Identified debt-creating flows	-12.2	-19.1	-103.4			-3.2	-1.2	-1.0	-1.0	-1.0	-0.8		0.2	1.9	
Primary deficit	0.8	-2.9	1.8	3.0	2.9	2.6	1.1	1.0	1.0	1.0	1.0	1.3	1.5	2.7	1.8
Revenue and grants	23.7	24.8	20.4			18.8	20.8	21.0	21.0	21.1	21.0		20.7	20.2	
of which: grants	14.5	15.8	9.7			8.3	8.2	8.1	8.1	8.1	7.9		7.5	6.4	
Primary (noninterest) expenditure	24.5	21.9	22.3			21.5	21.9	22.0	22.0	22.0	22.0		22.3	22.9	
Automatic debt dynamics	-11.6	-14.7	4.5			-5.9	-2.3	-2.1	-2.0	-1.9	-1.8		-1.3	-0.8	
Contribution from interest rate/growth differential	-20.4	-6.2	-7.6			-4.7	-2.4	-2.2	-2.1	-1.9	-1.8		-1.3	-0.8	
of which: contribution from average real interest rate	-14.8	-1.3	-2.3			-2.2	-0.6	-0.3	-0.3	-0.3	-0.3		-0.2	0.0	
of which: contribution from real GDP growth	-5.6	-4.9	-5.3			-2.5	-1.9	-1.9	-1.8	-1.6	-1.5		-1.1	-0.7	
Contribution from real exchange rate depreciation	8.7	-8.6	12.1			-1.2	0.2	0.1	0.1	0.0	0.0		...	...	
Other identified debt-creating flows	-1.4	-1.5	-109.7			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)	-1.4	-1.5	-109.7			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	1.1	9.5	-5.4			-2.1	-0.4	-1.3	-2.1	-1.6	-1.6		-1.6	-2.4	
Other Sustainability Indicators															
PV of public sector debt	34.8	36.0	43.6			39.5	38.1	35.8	32.9	30.3	28.0		20.2	12.5	
o/w foreign-currency denominated	0.0	0.0	13.6			13.3	13.8	13.7	12.8	12.1	11.5		9.7	7.7	
o/w external	...	...	13.6			13.3	13.8	13.7	12.8	12.1	11.5		9.7	7.7	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	19.4	13.7	16.2			10.4	7.8	7.7	7.6	6.9	6.4		4.5	3.5	
PV of public sector debt-to-revenue and grants ratio (in percent)	147.1	145.0	213.0			209.5	183.2	170.6	156.2	144.1	133.5		97.5	61.9	
PV of public sector debt-to-revenue ratio (in percent)	379.8	399.6	404.1			374.1	301.2	278.6	253.9	233.6	214.8		152.2	90.9	
o/w external 3/	…	…	126.5			126.1	109.1	106.3	98.6	93.2	88.0		73.1	56.2	
Debt service-to-revenue and grants ratio (in percent) 4/	22.5	10.6	7.9			1.7	1.7	5.2	7.9	7.5	7.0		4.8	3.5	
Debt service-to-revenue ratio (in percent) 4/	58.0	29.2	15.0			3.1	2.9	8.6	12.9	12.1	11.3		7.4	5.1	
Primary deficit that stabilizes the debt-to-GDP ratio	11.8	6.7	110.7			8.0	2.7	3.4	4.0	3.5	3.4		2.8	3.1	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	3.2	3.0	3.5	2.3	1.7	5.3	4.5	4.7	4.7	4.7	4.7	4.8	4.5	4.5	4.5
Average nominal interest rate on forex debt (in percent)	1.2	0.3	0.1	1.0	0.6	0.3	0.3	2.0	1.9	1.9	1.9	1.4	2.1	1.8	2.0
Average real interest rate on domestic debt (in percent)	-9.3	-0.9	-1.2	-1.7	4.6	-4.9	-1.3	-1.3	-1.4	-1.4	-1.5	-2.0	-1.7	-1.8	-0.8
Real exchange rate depreciation (in percent, + indicates depreciation)	7.0	-6.7	10.4	-3.3	10.4	-7.1	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	10.5	1.1	1.7	2.6	4.6	5.7	1.8	1.9	2.0	2.0	2.0	2.6	2.0	2.0	2.0
Growth of real primary spending (deflated by GDP deflator, in percent)	0.2	-0.1	0.1	0.0	0.2	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grant element of new external borrowing (in percent)	...	...	...	…	…	52.3	42.6	37.8	36.2	35.5	34.8	39.9	35.0	35.0	...

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, 2011-2030

	Projections							
	2011	2012	2013	2014	2015	2016	2021	2030
PV of Debt-to-GDP Ratio								
Baseline	39	38	36	33	30	28	20	13
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	39	40	40	39	39	38	36	29
A2. Primary balance is unchanged from 2011	39	39	38	36	35	33	29	22
A3. Permanently lower GDP growth 1/	39	38	36	33	31	29	23	19
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	39	40	40	37	35	33	28	24
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	39	42	43	40	37	34	25	16
B3. Combination of B1-B2 using one half standard deviation shocks	39	42	43	40	38	36	29	23
B4. One-time 30 percent real depreciation in 2012	39	44	41	38	35	32	23	14
B5. 10 percent of GDP increase in other debt-creating flows in 2012	39	46	43	39	37	34	25	16
PV of Debt-to-Revenue Ratio 2/								
Baseline	210	183	171	156	144	134	97	62
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	210	192	189	183	178	174	161	124
A2. Primary balance is unchanged from 2011	210	189	182	173	165	159	139	125
A3. Permanently lower GDP growth 1/	210	184	172	158	147	137	108	91
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	210	189	184	172	163	155	131	114
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	210	201	205	189	174	162	121	78
B3. Combination of B1-B2 using one half standard deviation shocks	210	198	201	187	176	167	137	112
B4. One-time 30 percent real depreciation in 2012	210	210	195	179	165	153	111	68
B5. 10 percent of GDP increase in other debt-creating flows in 2012	210	220	206	188	174	162	121	78
Debt Service-to-Revenue Ratio 2/								
Baseline	2	2	5	8	7	7	5	3
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	2	2	6	11	11	12	10	9
A2. Primary balance is unchanged from 2011	2	2	5	10	10	11	9	8
A3. Permanently lower GDP growth 1/	2	2	5	8	8	7	6	6
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	2	2	6	9	9	9	8	9
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	2	2	6	16	15	10	6	5
B3. Combination of B1-B2 using one half standard deviation shocks	2	2	6	14	13	11	8	9
B4. One-time 30 percent real depreciation in 2012	2	2	6	10	10	10	7	6
B5. 10 percent of GDP increase in other debt-creating flows in 2012	2	2	7	22	9	12	7	5

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.