INTERNATIONAL DEVELOPMENT ASSOCIATION AND
INTERNATIONAL MONETARY FUND

GUINEA-BISSAU

Joint World Bank/IMF Debt Sustainability Analysis

Prepared by the staffs of the International Development Association and the International Monetary Fund

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This analysis assesses the sustainability of Guinea-Bissau's external public and domestic debt. The debt sustainability analysis (DSA) was conducted jointly by the staffs of the IMF and the World Bank using the joint Bank-Fund framework for debt sustainability analysis for low-income countries. The bilateral external debt data underlying this DSA were provided by the Bissau authorities. The multilateral debt data provided by the authorities were reconciled with information obtained from the creditors. On the basis of this DSA, the staffs conclude that Guinea-Bissau is in debt distress.

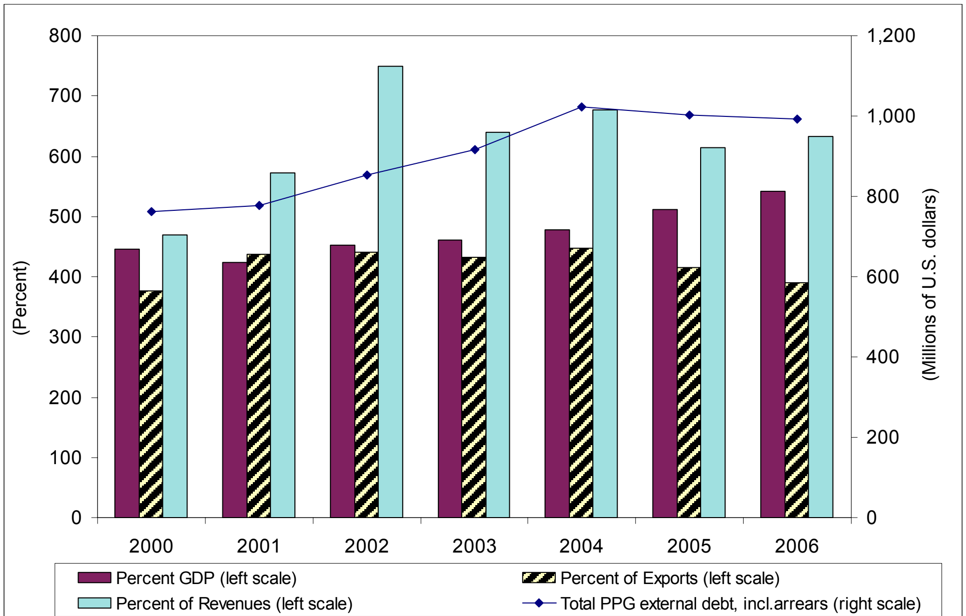
I. Background

1. **At end-2006, Guinea-Bissau's total public debt amounted to $1,242 million or 403 percent of GDP in nominal terms[1] (306 percent of GDP in NPV terms).** External debt is the largest component, with the stock of external public and publicly guaranteed (PPG) debt at $993 million, of which $350 million is in arrears (Tables 1 and 2). Multilateral debt amounts to 48 percent of total PPG debt (14 percent is owed to AfDB/AfDF, 29 percent is owed to IDA, 0.8 percent is owed to IMF) and bilateral and commercial debt amounts to 52 percent. The NPV of external debt amounts to $766 million or 249 percent of GDP and 1087 percent of exports. Despite the concessional nature of most of the external debt, the

[1] Table 2a shows a different number for the nominal debt to GDP ratio, as it includes liabilities associated to WAEMU rights in NPV terms instead of nominal terms.

debt burden indicators far exceed the relevant policy dependent debt thresholds (Text Table 1).[2]

Figure 1: Stock of External Debt, 2000-06



Source: IMF staff estimates and projections.

2. **Domestic debt has become an increasingly larger share of total public debt, reaching 20 percent of total debt in 2006 from 15 percent in 2000.** The main component of this debt corresponds to a required capital contribution to join WAEMU. Under the terms of its accession to the WAEMU in 1998, Guinea-Bissau agreed to contribute an equal share as the other members in the capital contribution of the central bank (BCEAO) and the regional development bank (BOAD). The contribution amounting to CFAF 70 billion (44 percent of 2006 GDP) is to be paid over 25 years starting in 2005, but only a small fraction of it has been paid using distributed dividends. There is also a sizable amount in domestic arrears, most of which accumulated during the period 2000–06. These arrears will be subject to an external audit to be completed in 2007 which will provide a more accurate determination of the actual amount[3]. Finally, the government has a debt with the BCEAO and took additional debt from commercial banks during the last two years.

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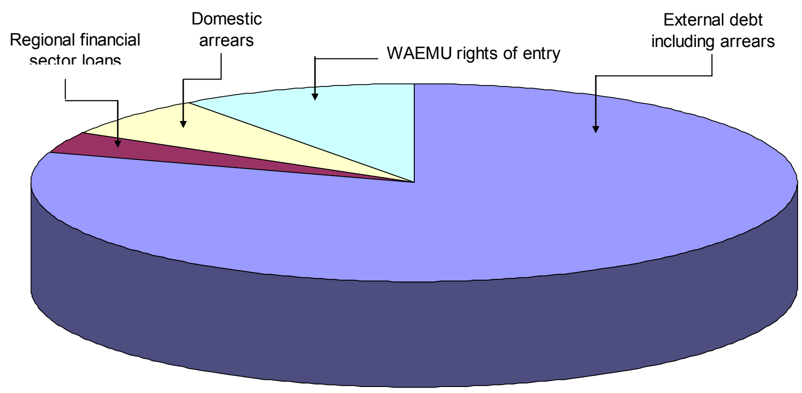
[2] According to the World Bank Country Policy and Institutions Assessment (CPIA), Guinea-Bissau is classified as a country with poor quality of policies and institutions. Its average CPIA rating for 2004-06 is 2.7, on a scale from 1 to 6, below the operational cutoff of 3.25 for poor performers.

[3] For this sustainability exercise, we estimate the stock of arrears at CFAF 42 billion, which includes already audited arrears accumulated before 2000 (CFAF 20 billion) and about 50 percent of nonaudited arrears accumulated during 2000–06.

Figure 2: Composition of Public Debt (Debt Stock at end 2006; millions of CFCA)



Source: IMF staff estimates and projections.

3. **Guinea-Bissau reached the HIPC decision point in 2000 but failed to maintain macroeconomic stability causing its PRGF-supported program to go off track at a very early stage.** Two Fund Staff-Monitored Programs followed, in 2005 and 2006. Progress under both SMPs was mixed.[4] A full PRSP was finalized in 2006 after many delays owing to political instability and capacity constraints.[5]

4. **In 2007, the government agreed to a new timeline to re-engage in programs supported by the IMF and the World Bank, aiming to reach the completion point under the HIPC Initiative by end-2010.** Discussions are ongoing for possible EPCA disbursements over a period up to three years, so as to build the necessary track record to move to a formal PRGF-supported program, followed soon thereafter by possible HIPC completion point.[6]

5. **Since the 2000 PRGF went off track, Guinea-Bissau has not benefited from most of the debt relief committed at decision point.** At the decision point in 2000, creditors representing 80 percent of Guinea-Bissau's external debt pledged to provide HIPC relief amounting to $416 million in NPV terms (estimated at about $790 million in nominal terms). Since 2001, Guinea-Bissau has had to service a large share of external debt in full. he IMF

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[4] See IMF Country Report No. 06/312.

[5] See Poverty Reduction Strategy Paper (www.imf.org).

[6] A number of conditions must be met before Guinea Bissau could reach the completion point under the HIPC Initiative, including satisfactory performance under a PRGF-supported program, which would require, among others, satisfying the Fund's nontoleration of arrears policy (i.e., agreement must be reached on a repayment schedule of post-cut-off-date arrears with Paris Club creditors).

suspended the provision of interim relief and the Paris Club declared null and void any debt rescheduling agreements beyond end-2001. Many agreements signed with other multilateral and bilateral creditors have not been implemented because the country failed to remain current on debt service obligations.[7] The African Development Bank (AfDB) provided interim relief up until 2006 and IDA continued to provide it in 2007.[8] However, the statutory ceiling for the delivery of interim relief, which was reached by AfDB in January 2007,[9] is expected to be reached by IDA at the end of this same year.[10] Only China and Cuba canceled all outstanding claims.

6. **After the decision point, Guinea-Bissau could not service its external debt and accumulated arrears to most of its external creditors.** Since 2001, the country has not repaid any creditor that did not provide interim relief, with the exception of the IMF. The stock of arrears has increased from $139 million before decision point to $350 million at end-2006.

II. Underlying DSA Assumptions

7. **The medium-term macroeconomic assumptions underlying the baseline projection scenario are described in detail in Box 1.**[11] GDP growth projections have been revised downward compared to the 2006 DSA, with medium-term growth now projected at 3.6 percent on average during 2007–12, compared to 4.8 percent in the 2006 DSA, while long run projections are also revised downwards to 4.5 percent average annual growth (2013–27) instead of 5 percent previously assumed. Underlying this downward revision are greater uncertainties about the recovery of the cashew sector and more conservative assumptions about the implementation of needed structural reforms, including civil service reforms.

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[7] See *Guinea-Bissau, Selected Issues and Statistical Appendix,* November 2004, (IMF Country Report No. 05/93) Box 10, for a comprehensive list of debt rescheduling agreements reached by Guinea-Bissau with the creditors as part of the provision of HIPC relief.

[8] Interim relief from IDA amounted to 100 percent of debt service falling due on debt disbursed before end-1999 until October 2003, the expected date of the completion point. Interim relief was decreased to 90 percent of debt service thereafter. The AfDB extended 100 percent debt service relief to end-2006.

[9] AfDB's interim debt relief through January 2007 covered only a fraction of the scheduled debt service payments, and stopped thereafter.

[10] IDA could at its discretion extend interim relief to 50 percent of total HIPC relief based on satisfactory progress toward the completion point triggers and maintenance of a sound macroeconomic program. The AfDB could raise the interim relief ceiling from 40 percent to 50 percent, but AfDB officials have indicated that this is unlikely.

[11] Also see Section III of main text.

Box 1. Macroeconomic Assumptions Under the Baseline Scenario

- **GDP growth** rate increases from 1.8 percent in 2006 to 4 percent by 2012, and reaches 4.5 percent by 2017 and over the long term.
- **GDP deflator** is assumed to grow at a rate slightly below CPI inflation, due to expected worsening in the terms of trade. After 2012, both GDP deflator and CPI are assumed to increase at a rate of 2 percent.
- The noninterest **current account deficit** is assumed to decrease over the medium term, converging to 2.3 percent of GDP by 2010, one percentage point below past average levels, reflecting significant export growth and fiscal consolidation. Exports are assumed to grow at around 7.5 percent per annum over the medium and long run.
- The **domestic primary fiscal deficit**[1] is assumed to decrease from 7.5 percent of GDP in 2006 to 1 percent by 2010, maintaining this level from then on. The wage bill is projected to remain constant in nominal terms over the next two years, while off-budget expenses are expected to decrease significantly. Revenue collection efforts are expected to be maintained as a ratio to GDP.
- **External assistance.** Budget support grants are projected at 2.6 percent of GDP per annum (similar to average level observed over the last six years excluding World Bank IDA grants). Project grants and loans are projected at nearly 8 percent and 6.3 percent of GDP, respectively, reflecting implementation of public investment programs at similar rates as in the past. Financial gaps remaining are assumed to be financed through highly concessional loans, with the grant element in new disbursements assumed to remain slightly above 50 percent.
- **Domestic borrowing**. The DSA assumes that current domestic debts to the banking sector are repaid before end-2008. For domestic arrears, it is assumed that they will be audited and fully repaid by 2010. It is assumed that the audit will reduce the stock of domestic arrears, accumulated in 2000–06, by 50 percent. The baseline scenario also assumes that the audited domestic arrears are repaid using external concessional loans. The framework also assumes that capital contributions to WAEMU will be paid over 25 years starting in 2010.
- **Foreign direct investment** as a ratio of GDP ratio is assumed to remain constant in the medium and long term at its average level during the last six years (2 percent of GDP).
- **Fiscal financing gaps are assumed to be filled through concessional loans,** on the grounds that the country will not have continued access to commercial debt. The alternative to concessional loans would be to finance the fiscal gaps by accumulation of domestic arrears, an unsustainable strategy over the medium to long term.

[1] The domestic primary balance is the revenue, excluding grants, minus non-interest expenditure, excluding foreign-financed investment projects.

III. EXTERNAL DEBT SUSTAINABILITY ANALYSIS

A. Baseline: No Debt Relief

8. **The baseline scenario (Table 1a and Figure 1a) assumes that the HIPC completion point is never attained, but real GDP growth is assumed to converge to the long-run average of about 4.5 percent per annum.** The assumed growth rates are significantly higher than the historical average (less than one percent) which reflected a period of great political instability and inappropriate macroeconomic policies which are assumed to improve in the period ahead. External debt, both in nominal and NPV terms remains at very high levels, and all debt indicators based on NPV of debt remain far above the indicative thresholds for poor performers (Text Table 1). The assumption that loans to finance the fiscal gap are highly concessional explains the downward trend in the NPV of debt ratio to GDP, exports and public revenues, despite continuous recourse to additional borrowing.

Table 1: Summary of Baseline External Debt Sustainability Indicators 1/

	Indicative Threshold 2/	2007	2017	2027	Average
NPV of debt-to-GDP	30	239	176	120	178
NPV of debt-to-exports	100	811	541	343	557
NPV of debt-to-revenue	200	1570	975	664	992
Debt service-to-exports	15	30	20	16	21
Debt service-to-revenue	25	58	36	31	37

Source: IMF staff estimates.
1/ Debt indicators refer to Guinea Bissau's public and publicly guaranteed external debt.
2/ Threshold over which countries considered as poor performers according to their CPIA would have at least a 25 percent chance of having a prolonged debt distress episode in the coming year. Guinea-Bissau lies within the bottom quintile of countries ranked by the CPIA.

B. Alternative Scenarios and Stress Tests

10. **An alternative scenario assumes that the HIPC completion point is reached in 2010 (Table 1b, Scenario A3), and total debt relief—including HIPC, MDRI and additional rescheduling of arrears, amounts to $591 million in end-2010 NPV terms.**[12] The provision of this debt relief would reduce debt service payments by about 5 percent of GDP per year. This scenario is comparable to the baseline presented in the 2006 DSA, except for the fact that Completion Point is now assumed to be reached one year later. In this scenario, the NPV of external debt to GDP falls significantly at completion point reflecting

[12] MDRI amounts to $75 million in end-2010 NPV terms.

both the assumed clearance of external arrears, and the lower debt service after HIPC and MDRI debt relief. However, even in the long run, the NPV of debt remains above the relevant indicative thresholds, independently of whether the debt is measured in proportion to GDP, exports, or government revenues. Despite the relatively high long run debt level, debt service is expected to decline to below-threshold levels, as a reflection of the highly concessional terms of existing debt and the terms assumed for the treatment of arrears and new borrowing.

11. **Assuming that Guinea-Bissau is able to obtain grants to pay off its stock of domestic arrears, the debt burden indicators would be reduced even further (Table 1b, Scenario A 4).** If grants are used to pay all domestic arrears during 2008–10, the NPV of debt/GDP would be 12 percentage points lower by 2010 than in Scenario A3. However, even under this scenario the ratio would remain above the indicative threshold.

12. **The standard stress tests have been applied to the baseline.** The first one shows the effect of a one-time 30 percent devaluation in the exchange rate (Table 1b, Scenario B6). The stress test scenario shows the enormous vulnerability that the country faces to a shock in the nominal exchange rate, given current debt levels. Given a one-time 30 percent devaluation, the NPV of debt increases by almost 100 percentage points of GDP in that year. It is the most extreme shock in terms of NPV/GDP, debt/revenue, and debt service/revenue (Figure 1a).

13. **A further stress test showing the impact of a one-standard deviation negative export shock (Table 1b, B2) also illustrates the vulnerable external position of the country.** Given the high volatility of exports during the recent period, and the high NPV of debt, shocks on exports can have a large impact on both the NPV debt/exports and debt service/export ratios.

IV. Public Debt Sustainability Analysis

A. Baseline: No Debt Relief

14. **The assumptions under the baseline scenario for total public debt (Table 2a and Figure 2a) are the same as those described under the External DSA baseline.** In these circumstances, total public debt (domestic and external) as a percent of GDP decreases over the long run, similar to the behavior of external debt described in the previous section.

15. **Despite a long run downward trend in the NPV of total public debt to GDP ratio, this remains very high, which points to a highly vulnerable debt position, particularly given the likelihood that the assumed strong fiscal stance and access to concessional loans may turn out to be overly optimistic.** Shocks to the economy are also likely to increase the debt burden significantly.

B. Alternative Scenarios and Stress Tests

16. The first alternative scenario (Table 2b, Scenario A1) assumes that GDP growth and the domestic primary balance remain at their historic averages. In this case, there is zero growth in GDP and the non-interest primary deficit remains at its six-year average (6 percent of GDP) in contrast to a gradual fiscal tightening assumed in the baseline. Guinea-Bissau's debt would be unsustainable, as the NPV of debt to GDP ratio would remain well above 250 percent over the estimation period, while the NPV of debt to revenues ratio declines slightly in the outer years. Debt service remains high at over 30 percent of revenues despite the assumption of highly concessional loans to finance the fiscal gaps.

17. **The second alternative scenario (Table 2b, Scenario A4) assumes that Guinea-Bissau reaches the completion point in 2010 and the corresponding debt relief is fully delivered.** Achieving completion point under the HIPC initiative by 2010 would significantly lower Guinea-Bissau's risk of debt distress, as the NPV of debt would decrease to 75 percent of GDP by 2011, which amounts to a debt reduction of over 160 percent of GDP in NPV terms with respect to the baseline scenario. Despite this reduction, the NPV of public debt to GDP would still remain at uncomfortably high levels.

18. **The stress tests to the baseline scenario show that Guinea-Bissau's public debt position is highly vulnerable to economic shocks.** In the case of NPV of debt-to-GDP and debt service-to-revenue ratios, they are most vulnerable to a negative GDP shock (Table 2b, Scenario B1); while the NPV of debt-to-fiscal revenues ratio is most severely affected by a one-time 30 percent depreciation in the exchange rate (Table 2b, Scenario B4)[13]. Both scenarios impose fairly severe conditions. The shock to GDP amounts to assuming negative growth of -3.8 percent for two years, which translates into a 45 percentage point difference in NPV of debt-to-GDP with respect to the baseline in only two years. Likewise, a one time 30 percent devaluation translates into a 100 percentage point increase in the NPV of debt-to-revenues ratio within three years.

V. Debt Distress Classifications and Conclusions

19. **In staffs' view, Guinea-Bissau is in debt distress.** Guinea-Bissau's external debt ratios are well above the country-specific indicative thresholds during the complete projection period, even after assuming full delivery of HIPC Initiative and MDRI debt relief. The public DSA suggests that Guinea Bissau's overall public sector debt dynamics are unsustainable in light of the current size and the evolution of the domestic debt stock. The risk rating remains unchanged with respect to the previous DSA.

[13] Based on NPV of debt and debt service ratios projected ten years ahead.

20. **Prudent macro policies to rein in debt ratios will be crucial if the debt to GDP ratio is to be kept from growing over time.** Securing foreign aid on highly concessional terms is also crucial for Guinea-Bissau. The country's financial strategy should focus on strengthening its fiscal stance, avoiding nonconcessional debt, increasing the grant content of aid received, and providing a stable political and business environment that will favor additional investment as well as a more stable inflow of external aid than in the past. Containing the wage bill and avoiding off-budget expenditures will be key to reduce the current fiscal imbalance in a sustainable fashion.

Table 1. Guinea-Bissau: External Debt Outstanding, 2000–06 [1]

(In millions of U.S. dollars)

	2000	2001	2002	2003	2004	2005	2006
Total external debt outstanding (end of year, including arrears)	762.3	776.9	853.9	915.2	1024.0	1002.1	993.3
Multilateral	436.3	441.3	450.3	491.5	517.2	493.7	480.8
African Development Bank Group	118.0	118.9	122.5	136.9	141.4	135.8	132.7
o/w Nigeria Special Fund	0.9	0.8	0.5	0.4	0.2	0.0	132.7
Arab Bank for Economic Development in Africa	8.7	8.8	9.7	12.8	9.2	9.2	9.3
Economic Community of West African States	3.1	3.1	3.8	5.1	3.9	3.9	3.9
European Investment Bank	7.6	7.6	11.2	12.7	8.7	8.5	8.5
International Fund for Agricultural Development	9.2	9.3	11.4	12.5	11.1	10.9	11.0
International Development Association	238.0	243.2	231.7	258.1	301.3	289.8	283.7
Islamic Development Bank	13.7	13.5	15.3	17.6	15.6	15.3	15.3
OPEC Fund	8.0	8.0	14.8	8.2	8.1	8.1	8.1
Banque Ouest Africaine de Developement	... ...		1.4	1.7	1.7	...	...
International Monetary Fund	25.0	23.5	22.3	19.3	15.5	12.2	8.3
Bilateral creditors	352.0	359.9	493.0	523.9	506.0	507.1	511.2
Paris Club (cutoff date: December 1986)	240.0	246.5	345.4	375.6	366.5	362.0	364.9
Belgium	7.8	8.1	9.1	11.2	15.5	16.9	17.3
Brazil	23.1	24.0	26.3	28.7	17.4	18.1	18.6
France	8.9	9.3	14.4	15.4	14.4	13.5	13.8
Germany	4.3	4.4	1.1	1.3	1.3	1.3	1.4
Italy	117.8	120.5	190.9	199.7	198.8	194.6	193.1
Portugal	70.7	72.7	18.8	20.0	107.0	106.1	108.9
Russia	...	...	71.6	85.2	0.7	0.7	0.7
Spain	7.5	7.6	13.2	14.0	11.3	10.8	10.9
Other bilateral creditors	112.0	113.4	147.6	148.4	139.5	145.1	146.4
Commercial	0.6	0.6	0.6	0.7	0.8	1.3	1.3
Banque Franco-Portugaise	0.6	0.6	0.6	0.7	0.8	1.3	1.3

Source: Guinea-Bissau authorities, IMF; and staff estimates and projections.

[1] Estimates are based on incomplete and unreconciled data provided by the Guinea-Bissau authorities and on IMF and World Bank staff estimates and projections

Table 2. Guinea-Bissau: External Arrears Outstanding, 2000–06 [1]
(Millions of U.S. dollars)

	2000	2001	2002	2003	2004	2005	2006
Total stock of arrears outstanding (end of year)	141.7	137.5	169.1	206.4	293.8	327.0	349.8
Multilateral	29.3	17.5	22.2	28.5	31.8	33.8	35.8
African Development Bank (AfDB) 3/	0.0	0.0	0.0	0.0	0.0	0.0	
African Development Bank Group	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arab Bank for Economic Development in Africa	5.5	5.6	4.6	8.3	8.1	8.5	8.9
Economic Community of West African States	1.9	2.0	2.0	3.1	3.3	3.4	3.5
European Investment Bank	0.9	1.0	4.6	4.8	6.5	6.6	6.6
International Fund for Agricultural Development	0.9	1.0	2.0	2.2	3.1	3.4	3.7
International Development Association	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Islamic Development Bank	12.5	0.3	0.8	1.7	2.6	3.7	4.8
OPEC Fund	7.6	7.6	8.2	8.2	8.1	8.1	8.1
Banque Ouest Africaine de Developement	...	...	0.1	0.1	0.2	0.2	0.2
International Monetary Fund	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bilateral	112.0	119.6	146.3	177.2	261.5	291.7	312.4
Paris Club (cutoff date: December 1986)	58.8	65.2	90.3	113.7	193.3	213.4	224.8
Belgium	1.8	2.1	0.6	1.0	3.6	5.0	6.4
Brazil	8.9	9.8	11.1	13.6	7.7	10.3	13.1
France	2.5	2.9	6.4	6.9	8.8	10.1	11.4
Germany	2.6	2.6	0.2	0.3	0.5	0.5	0.6
Italy	7.1	7.1	39.0	37.5	152.6	162.1	163.2
Portugal	9.1	11.1	13.1	15.1	16.2	19.8	23.4
Russia	...	...	2.1	3.4	0.1	0.2	0.3
Spain	3.0	3.1	1.5	2.3	3.9	5.4	6.5
Non-Paris Club	53.2	54.4	56.0	63.5	68.2	78.2	87.5
Abu Dhabi Fund for Arab Economic Development	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Algeria	1.5	1.5	5.9	6.5	5.9	6.5	7.1
Angola	18.8	18.8	18.8	18.8	17.0	17.0	17.0
Kuwait	17.9	17.9	1.6	3.4	7.3	11.0	14.6
Libya	0.7	0.7	4.1	4.1	4.1	4.1	4.1
Pakistan	1.3	1.3	1.6	1.8	2.0	2.6	2.6
Saudi Arabia	4.7	4.8	9.9	10.7	9.7	10.5	11.3
Taiwan, Province of China	8.1	9.2	13.9	18.0	22.0	26.4	30.6
Commercial							
Banque Franco-Portugaise	0.4	0.4	0.6	0.7	0.8	1.3	1.3

Sources: Guinea-Bissau authorities; and IMF staff estimates and projections.

[1] Estimates based on incomplete and unreconciled data provided by the Guinea-Bissau authorities and on IMF and World Bank staff estimates and projections.

Table 1a. Guinea-Bissau: External Debt Sustainability Framework, Baseline Scenario, 2004-2027 1/
(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average 6/	Standard Deviation 6/	Projections									
	2004	2005	2006			2007	2008	2009	2010	2011	2012	2007-12 Average	2017	2027	2013-27 Average
External debt (nominal) 1/	**378.9**	**332.2**	**322.5**			**316.6**	**314.7**	**313.1**	**310.0**	**301.2**	**292.1**		**248.2**	**183.0**	
o/w public and publicly guaranteed (PPG)	378.9	332.2	322.5			316.6	314.7	313.1	310.0	301.2	292.1		248.2	183.0	
Change in external debt	-8.2	-46.7	-9.7			-5.9	-1.9	-1.6	-3.1	-8.8	-9.0		-8.4	-5.4	
Identified net debt-creating flows	-55.1	-34.8	2.2			-0.9	-6.6	-5.6	-8.3	-9.1	-9.2		-8.9	-6.2	
Non-interest current account deficit	**-7.3**	**3.4**	**9.0**	**3.3**	**7.3**	**10.1**	**2.6**	**4.1**	**2.3**	**2.3**	**2.3**		**2.3**	**2.3**	2.3
Deficit in balance of goods and services	16.2	17.6	30.8			20.5	19.3	18.0	16.0	15.9	15.7		15.0	14.1	
Exports	30.9	32.3	22.9			29.5	30.1	30.2	30.4	30.7	31.0		32.5	34.9	
Imports	47.1	49.9	53.7			49.9	49.4	48.2	46.4	46.5	46.7		47.5	48.9	
Net current transfers (negative = inflow)	-23.5	-14.3	-21.8	-18.7	3.5	-10.3	-16.6	-13.8	-13.7	-13.5	-13.4		-12.7	-11.8	-12.4
o/w official	-14.7	-9.4	-14.9			-3.4	-9.8	-7.0	-6.9	-6.7	-6.6		-5.9	-5.0	
Other current account flows (negative = net inflow)	0.0	0.0	0.0			-0.1	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Net FDI (negative = inflow)	**-3.5**	**-2.6**	**-3.1**	**-1.9**	**1.2**	**-2.3**	**-2.0**	**-2.0**	**-2.0**	**-2.0**	**-2.0**		**-2.0**	**-2.0**	-2.0
Endogenous debt dynamics 2/	**-44.3**	**-35.5**	**-3.7**			**-8.7**	**-7.2**	**-7.7**	**-8.7**	**-9.4**	**-9.5**		**-9.2**	**-6.5**	
Contribution from nominal interest rate	4.2	4.0	3.1			1.9	2.1	2.0	1.9	1.8	1.8		1.6	1.4	
Contribution from real GDP growth	-7.5	-11.8	-6.0			-10.6	-9.3	-9.7	-10.5	-11.2	-11.2		-10.8	-8.0	
Contribution from price and exchange rate changes	-41.0	-27.7	-0.9			…	…	…	…	…	…		…	…	
Residual (3-4) 3/	**46.8**	**-11.9**	**-11.9**			**-5.0**	**4.7**	**4.0**	**5.2**	**0.2**	**0.2**		**0.6**	**0.8**	
o/w exceptional financing	-16.8	-14.2	-10.7			-6.0	-5.6	-4.5	-0.3	0.0	0.0		0.0	0.0	
NPV of external debt 4/	...	...	248.7			238.8	235.5	232.2	226.7	219.1	211.7		175.7	119.7	
In percent of exports	...	...	1087.1			810.5	782.5	768.2	746.8	714.1	683.4		540.5	343.4	
NPV of PPG external debt	**...**	**...**	**248.7**			**238.8**	**235.5**	**232.2**	**226.7**	**219.1**	**211.7**		**175.7**	**119.7**	
In percent of exports	**...**	**...**	**1087.1**			**810.5**	**782.5**	**768.2**	**746.8**	**714.1**	**683.4**		**540.5**	**343.4**	
In percent of government revenues	**...**	**...**	**1272.0**			**1570.2**	**1126.6**	**1288.6**	**1258.0**	**1215.8**	**1175.1**		**974.8**	**664.3**	
Debt service-to-exports ratio (in percent)	**56.6**	**47.5**	**50.1**			**30.1**	**32.1**	**28.2**	**25.1**	**22.4**	**20.6**		**19.9**	**15.9**	
PPG debt service-to-exports ratio (in percent)	**56.6**	**47.5**	**50.1**			**30.1**	**32.1**	**28.2**	**25.1**	**22.4**	**20.6**		**19.9**	**15.9**	
PPG debt service-to-revenue ratio (in percent)	**101.8**	**87.1**	**58.6**			**58.2**	**46.3**	**47.3**	**42.3**	**38.2**	**35.4**		**36.0**	**30.7**	
Total gross financing need (billions of U.S. dollars)	18.2	48.4	53.6			57.1	37.6	41.3	32.8	31.6	31.2		43.0	69.9	
Non-interest current account deficit that stabilizes debt ratio	1.0	50.1	18.7			16.0	4.6	5.7	5.4	11.2	11.3		10.6	7.7	
Key macroeconomic assumptions															
Real GDP growth (in percent)	2.2	3.5	1.8	0.0	3.8	3.7	3.1	3.3	3.6	3.8	4.0	3.6	4.5	4.5	4.4
GDP deflator in US dollar terms (change in percent)	11.8	7.9	0.3	6.5	8.9	7.6	3.0	2.9	3.0	2.3	2.3	3.5	2.0	2.0	2.0
Effective interest rate (percent) 5/	1.3	1.2	1.0	1.3	0.4	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.7	0.8	0.7
Growth of exports of G&S (US dollar terms, in percent)	18.1	16.5	-27.7	2.2	19.5	43.6	8.5	6.7	7.2	7.3	7.4	13.4	7.5	6.6	7.4
Growth of imports of G&S (US dollar terms, in percent)	22.2	18.2	9.8	7.7	14.2	3.7	5.0	3.8	2.6	6.6	6.7	4.7	6.9	6.6	6.9
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	56.5	54.4	55.2	51.7	54.6	54.6	54.5	56.9	56.9	56.9
Aid flows (in billions of US dollars) 7/	81.3	60.3	63.7			130.3	106.6	115.4	135.9	108.8	111.9		145.3	250.5	
o/w Official grants	46.5	38.4	36.7			27.2	38.5	40.6	43.4	46.1	49.0		66.8	126.4	
o/w Concessional loans	26.2	11.8	16.8			96.7	66.7	73.4	92.5	62.7	62.9		78.5	124.1	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			23.8	20.5	21.0	22.1	18.3	17.9		17.5	16.4	17.1
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			66.1	71.1	71.2	67.1	73.8	74.5		76.7	78.7	77.4
Memorandum items:															
Nominal GDP (billions of US dollars)	270.2	301.6	308.0			343.4	364.6	387.4	413.4	439.0	466.7		636.7	1205.2	
(NPVt-NPVt-1)/GDPt-1 (in percent)						**17.7**	**11.2**	**11.2**	**9.7**	**6.0**	**6.0**	**10.3**	4.5	3.2	4.2
Aid flows (in percent of GDP) 7/	30.1	20.0	20.7			37.9	29.2	29.8	32.9	24.8	24.0		22.8	20.8	
o/w Official grants	17.2	12.7	11.9			7.9	10.6	10.5	10.5	10.5	10.5		10.5	10.5	
o/w Concessional loans	9.7	3.9	5.4			28.1	18.3	19.0	22.4	14.3	13.5		12.3	10.3	

Source: Staff simulations.

1/ Includes both public and private sector external debt.

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

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

4/ Assumes that NPV 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 official 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 NPV of new debt).

Table 1b. Guinea-Bissau: Sensitivity Analyses for Key Indicators of Public and Publicly Guaranteed External Debt, 2007-27
(In percent)

		Projections						
	2007	2008	2009	2010	2011	2012	**2017**	2027
NPV of debt-to-GDP ratio								
Baseline	239	236	232	227	219	212	**176**	120
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2008-27 1/	239	235	231	227	219	212	**178**	127
A2. New public sector loans on less favorable terms in 2008-27 2/	239	240	242	241	237	232	**209**	170
A3. HIPC completion point attained in 2010, domestic arrears paid with concessional loans	239	236	232	84	57	58	**58**	50
A4. HIPC completion point attained in 2010, domestic arears paid with additional grants	239	236	232	72	45	46	**44**	40
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2008-09	239	252	267	261	252	244	**202**	138
B2. Export value growth at historical average minus one standard deviation in 2008-09 3/	239	239	241	235	227	220	**183**	123
B3. US dollar GDP deflator at historical average minus one standard deviation in 2008-09	239	248	258	252	244	235	**195**	133
B4. Net non-debt creating flows at historical average minus one standard deviation in 2008-09 4/	239	237	233	228	220	213	**177**	120
B5. Combination of B1-B4 using one-half standard deviation shocks	239	252	267	261	252	244	**203**	137
B6. One-time 30 percent nominal depreciation relative to the baseline in 2008 5/	239	332	328	320	309	299	**248**	169
NPV of debt-to-exports ratio								
Baseline	811	782	768	747	714	683	**541**	343
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2007-26 1/	811	782	765	747	714	684	**548**	365
A2. New public sector loans on less favorable terms in 2007-26 2/	811	798	799	794	771	750	**645**	487
A3. HIPC completion point attained in 2010, domestic arrears paid with concessional loans	811	782	768	273	183	186	**177**	143
A4. HIPC completion point attained in 2010, domestic arears paid with additional grants	811	782	768	238	146	148	**136**	114
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2008-09	811	782	768	747	714	683	**541**	343
B2. Export value growth at historical average minus one standard deviation in 2008-09 3/	811	1040	1348	1311	1254	1200	**952**	596
B3. US dollar GDP deflator at historical average minus one standard deviation in 2008-09	811	782	768	747	714	683	**541**	343
B4. Net non-debt creating flows at historical average minus one standard deviation in 2008-09 4/	811	787	772	751	718	687	**543**	345
B5. Combination of B1-B4 using one-half standard deviation shocks	811	927	1063	1034	989	946	**750**	472
B6. One-time 30 percent nominal depreciation relative to the baseline in 2008 5/	811	782	768	747	714	683	**541**	343
NPV of debt-to-revenue ratio								
Baseline	1570	1127	1289	1258	1216	1175	**975**	664
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2007-26 1/	1570	1125	1283	1258	1216	1176	**988**	706
A2. New public sector loans on less favorable terms in 2007-26 2/	1570	1149	1341	1338	1314	1289	**1162**	943
A3. HIPC completion point attained in 2010, domestic arrears paid with concessional loans	1570	1127	1289	465	314	323	**320**	277
A4. HIPC completion point attained in 2010, domestic arears paid with additional grants	1570	1127	1289	401	248	254	**246**	220
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2008-09	1570	1208	1483	1448	1399	1352	**1122**	764
B2. Export value growth at historical average minus one standard deviation in 2008-09 3/	1570	1142	1336	1304	1261	1220	**1014**	682
B3. US dollar GDP deflator at historical average minus one standard deviation in 2008-09	1570	1188	1433	1399	1352	1306	**1084**	739
B4. Net non-debt creating flows at historical average minus one standard deviation in 2008-09 4/	1570	1132	1295	1264	1222	1181	**980**	667
B5. Combination of B1-B4 using one-half standard deviation shocks	1570	1206	1483	1447	1399	1353	**1124**	760
B6. One-time 30 percent nominal depreciation relative to the baseline in 2008 5/	1570	1590	1819	1775	1716	1658	**1376**	937

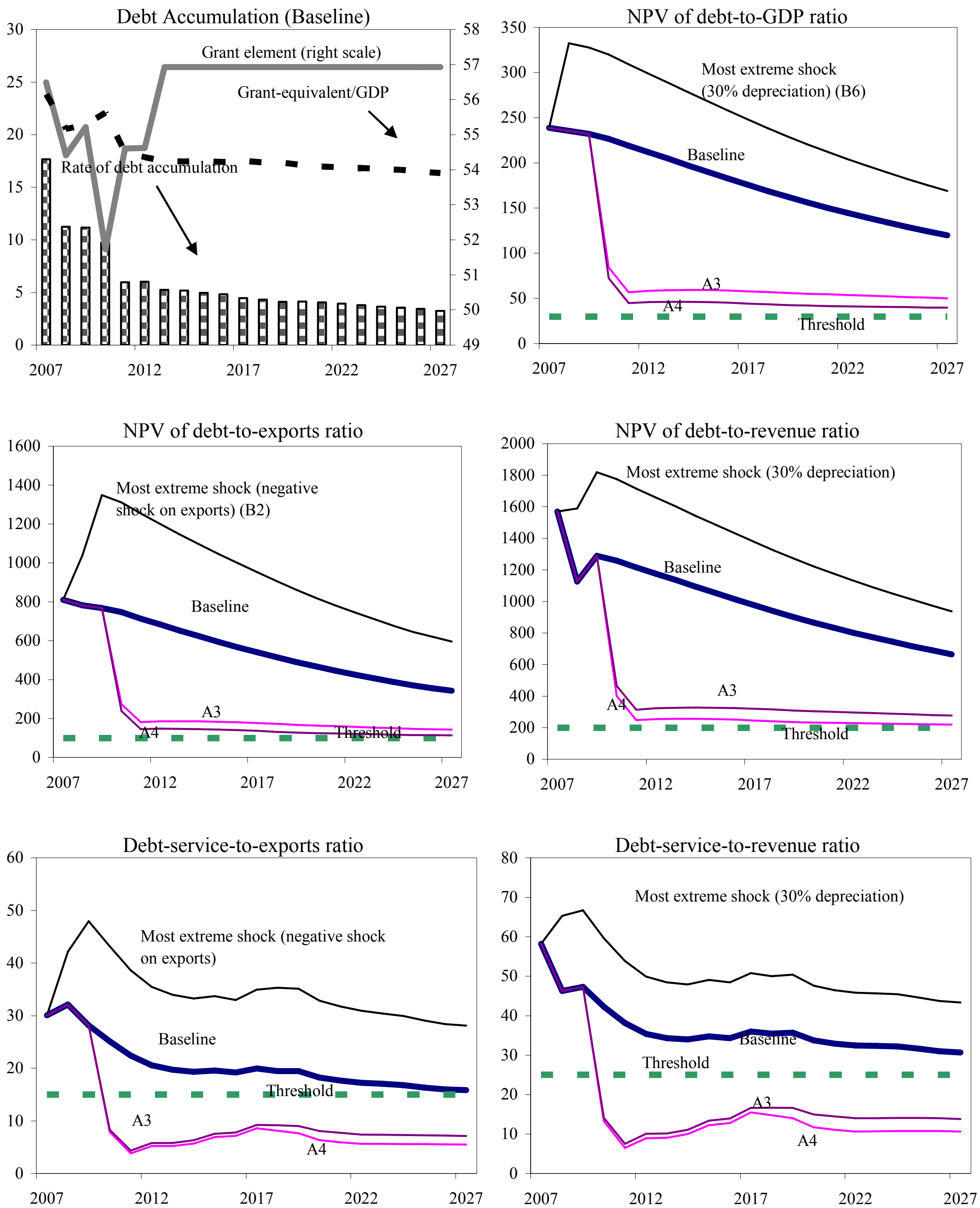
Table 1b. Guinea-Bissau: Sensitivity Analyses for Key Indicators of Public and Publicly Guaranteed External Debt, 2007-27 (continued)
(In percent)

	Projections							
	2007	2008	2009	2010	2011	2012	**2017**	2027
Debt service-to-exports ratio								
Baseline	30	32	28	25	22	21	**20**	16
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2008-27 1/	30	32	28	25	22	20	**20**	17
A2. New public sector loans on less favorable terms in 2008-27 2/	30	32	29	27	25	24	**22**	24
A3. HIPC completion point attained in 2010, domestic arrears paid with concessional loans	30	32	28	8	4	6	**9**	7
A4. HIPC completion point attained in 2010, domestic arears paid with additional grants	30	32	28	8	4	5	**9**	5
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2008-09	30	32	28	25	22	21	**20**	16
B2. Export value growth at historical average minus one standard deviation in 2008-09 3/	30	42	48	43	39	35	**35**	28
B3. US dollar GDP deflator at historical average minus one standard deviation in 2008-09	30	32	28	25	22	21	**20**	16
B4. Net non-debt creating flows at historical average minus one standard deviation in 2008-09 4/	30	32	28	25	22	21	**20**	16
B5. Combination of B1-B4 using one-half standard deviation shocks	30	38	38	34	31	28	**28**	22
B6. One-time 30 percent nominal depreciation relative to the baseline in 2008 5/	30	32	28	25	22	21	**20**	16
Debt service-to-revenue ratio								
Baseline	58	46	47	42	38	35	**36**	31
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2008-27 1/	58	46	47	42	38	35	**36**	32
A2. New public sector loans on less favorable terms in 2008-27 2/	58	46	48	45	43	41	**40**	47
A3. HIPC completion point attained in 2010, domestic arrears paid with concessional loans	58	46	47	14	7	10	**17**	14
A4. HIPC completion point attained in 2010, domestic arears paid with additional grants	58	46	47	13	6	9	**15**	11
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2008-09	58	50	54	49	44	41	**41**	35
B2. Export value growth at historical average minus one standard deviation in 2008-09 3/	58	46	48	43	39	36	**37**	32
B3. US dollar GDP deflator at historical average minus one standard deviation in 2008-09	58	49	53	47	42	39	**40**	34
B4. Net non-debt creating flows at historical average minus one standard deviation in 2008-09 4/	58	46	47	42	38	35	**36**	31
B5. Combination of B1-B4 using one-half standard deviation shocks	58	49	53	48	43	40	**41**	36
B6. One-time 30 percent nominal depreciation relative to the baseline in 2008 5/	58	65	67	60	54	50	**51**	43
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	56	56	56	56	56	56	**56**	56

Source: Staff projections and simulations.

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.

Figure 1a. Guinea-Bissau: Indicators of Public and Publicly Guaranteed External Debt Under Alternative Scenarios, 2007-2027



Source: Staff projections and simulations.

Table 2a.GNB: Total Public Sector Debt Sustainability Framework, Baseline Scenario, 2004-2027
(In percent of GDP, unless otherwise indicated)

	Actual					Estimate					Projections				
	2004	2005	2006	Historical Average 5/	Standard Deviation 5/	2007	2008	2009	2010	2011	2012	2007-12 Average	2017	2027	2013-27 Average
Public sector debt 1/	429.6	386.0	379.7			362.9	352.2	342.8	332.5	321.5	310.4		258.6	184.0	
o/w foreign-currency denominated	378.9	332.2	322.5			316.6	314.7	313.1	310.0	301.2	292.1		248.2	183.0	
Change in public sector debt	-7.4	-43.6	-6.3			-16.8	-10.7	-9.5	-10.3	-11.0	-11.1		-9.8	-6.1	
Identified debt-creating flows	-36.3	9.5	-31.5			-8.1	-14.5	-12.6	-15.5	-12.9	-12.6		-10.3	-5.6	
Primary deficit	10.7	7.9	6.7	6.0	3.4	14.4	5.0	6.5	4.7	4.7	4.7	6.7	4.7	4.7	4.6
Revenue and grants	34.4	30.4	31.5			23.1	31.5	28.5	28.5	28.5	28.5		28.5	28.5	
of which : grants	17.2	12.7	11.9			7.9	10.6	10.5	10.5	10.5	10.5		10.5	10.5	
Primary (noninterest) expenditure	45.2	38.3	38.1			37.6	36.4	35.1	33.2	33.2	33.2		33.2	33.2	
Automatic debt dynamics	-43.8	5.1	-35.7			-20.2	-19.0	-18.8	-19.9	-17.6	-17.3		-14.9	-10.3	
Contribution from interest rate/growth differential	-16.6	-24.5	-13.1			-19.1	-16.0	-16.0	-16.5	-16.7	-16.5		-14.9	-10.3	
of which : contribution from average real interest rate	-7.1	-10.1	-6.1			-5.7	-5.0	-4.9	-4.6	-4.4	-4.2		-3.4	-2.1	
of which : contribution from real GDP growth	-9.5	-14.4	-6.9			-13.4	-11.0	-11.1	-11.9	-12.3	-12.3		-11.6	-8.2	
Contribution from real exchange rate depreciation	-27.3	29.5	-22.6			-1.1	-3.0	-2.8	-3.4	-0.9	-0.8		...	...	
Other identified debt-creating flows	-3.2	-3.4	-2.5			-2.3	-0.4	-0.4	-0.3	0.0	0.0		0.0	0.0	
Privatization receipts (negative)	0.0	-0.1	0.8			-0.1	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)	-3.2	-3.3	-3.3			-2.2	-0.4	-0.4	-0.3	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 6/	28.9	-53.1	25.2			-8.7	3.8	3.2	5.3	1.8	1.6		0.5	-0.5	
NPV of public sector debt	50.6	313.6	305.8			285.1	273.0	261.8	249.2	239.4	230.0		186.1	120.7	
o/w foreign-currency denominated	0.0	259.8	248.7			238.8	235.5	232.2	226.7	219.1	211.7		175.7	119.7	
o/w external	...	259.8	248.7			238.8	235.5	232.2	226.7	219.1	211.7		175.7	119.7	
NPV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	28.3	23.2	18.2			23.3	14.6	15.1	12.3	11.6	11.1		11.1	10.2	
NPV of public sector debt-to-revenue and grants ratio (in percent)	142.1	144.6	972.3			1231.9	867.7	918.4	873.9	839.7	806.8		652.6	423.3	
NPV of public sector debt-to-revenue ratio (in percent)	284.2	249.1	1564.3			1874.5	1306.2	1453.1	1382.7	1328.6	1276.5		1032.5	669.7	
o/w external 3/	...	1474.9	1272.0			1570.2	1126.6	1288.6	1258.0	1215.8	1175.1		974.8	664.3	
Debt service-to-revenue and grants ratio (in percent) 4/	50.9	50.5	36.4			38.3	30.7	29.9	26.7	24.1	22.4		22.7	19.4	
Debt service-to-revenue ratio (in percent) 4/	101.8	87.1	58.6			58.2	46.3	47.3	42.3	38.2	35.4		36.0	30.7	
Primary deficit that stabilizes the debt-to-GDP ratio	18.1	51.5	13.0			31.2	15.6	16.0	15.0	15.7	15.8		14.4	10.8	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	2.2	3.5	1.8	0.0	3.8	3.7	3.1	3.3	3.6	3.8	4.0	3.6	4.5	4.5	4.4
Average nominal interest rate on forex debt (in percent)	1.1	1.2	0.9	1.3	0.4	0.6	0.7	0.7	0.6	0.6	0.6	0.6	0.7	0.8	0.7
Average real interest rate on domestic currency debt (in percent)	-1.7	-7.1	0.5	...	...	-2.4	-2.5	-2.4	-2.4	-2.2	-2.2	-2.3	-1.9	1.7	-1.3
Real exchange rate depreciation (in percent, + indicates depreciation)	-7.3	8.2	-7.1	-4.3	10.2	-0.4	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	1.7	7.7	-0.5	1.0	4.7	2.6	2.6	2.5	2.4	2.3	2.3	2.4	2.0	2.0	2.0
Growth of real primary spending (deflated by GDP deflator, in percent)	38.9	-12.3	1.5	1.7	22.8	2.1	0.0	-0.6	-1.8	3.8	4.0	1.2	4.5	4.6	4.4
Grant element of new external borrowing (in percent)	0.0	0.0	50.0	8.3	20.4	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	...

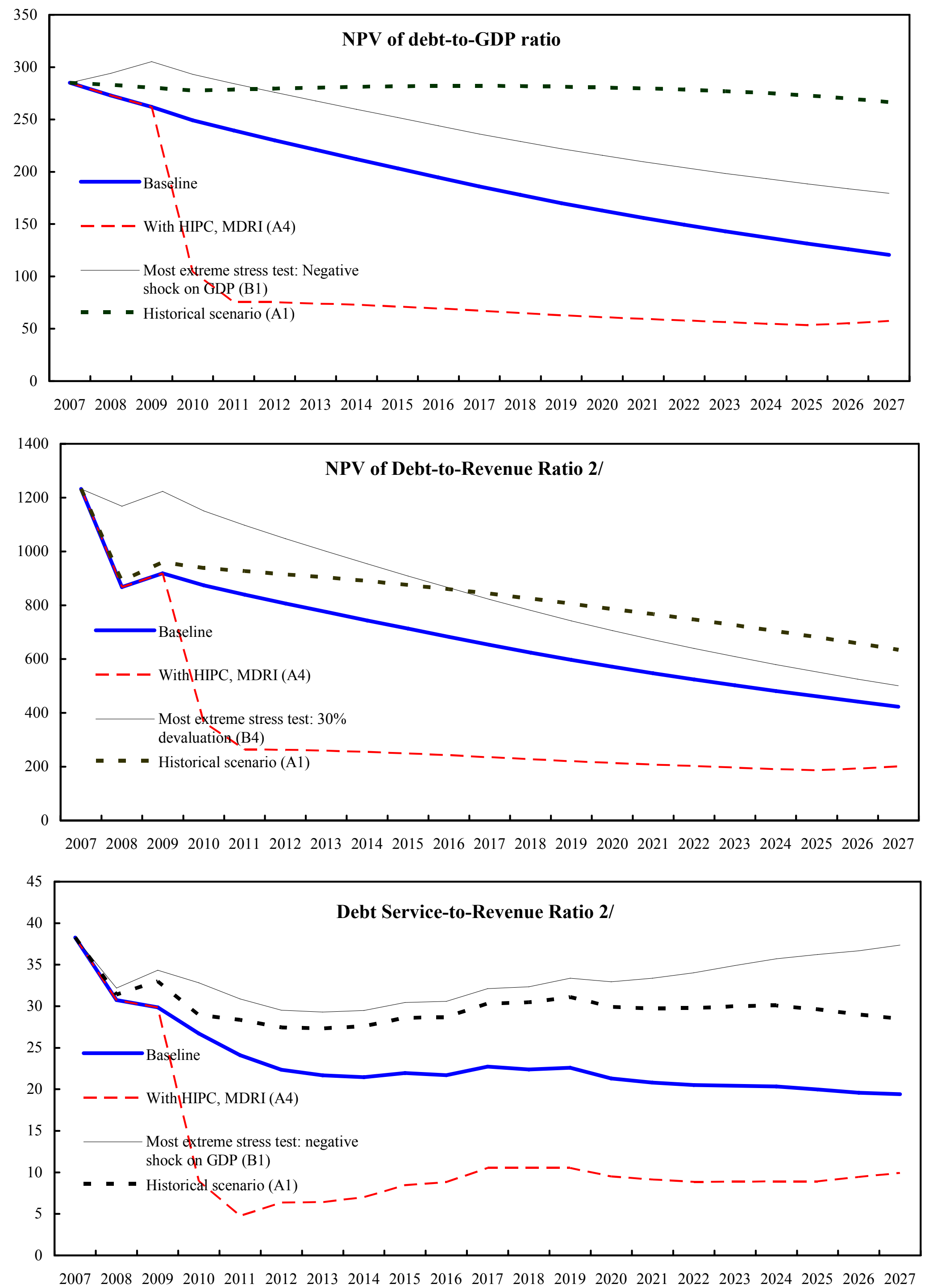
Sources: Country authorities; and Fund staff estimates and projections.
1/ Covers debt at the general government level. Liabilities to WAEMU associated with entry rights are expressed in NPV terms.
2/ Gross financing need is defined as the primary deficit plus debt service plus the stock of short-term 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.
6/ Large residuals during 2004-08 are mostly explained by large differences between average and end-of-period exchange rates. While average exchange rate is used to express external debt in local currency, the end-of-period exchange rate is used to obtain the contribution of real exchange rate depreciation to the variation in total debt-to-GDP ratio.

Table 2b.GNB: Sensitivity Analysis for Key Indicators of Total Public Debt 2007-2027

		Projections						
	2007	2008	2009	2010	2011	2012	**2017**	2027
NPV of Debt-to-GDP Ratio								
Baseline	285	273	262	249	239	230	**186**	121
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	285	283	280	278	278	279	**282**	267
A2. Primary balance is unchanged from 2007	285	276	266	256	249	242	**212**	169
A3. Permanently lower GDP growth 1/	285	275	267	256	249	242	**209**	170
A4. With HIPC, MDRI, and paying domestic arrears with concessional loans	285	273	262	105	75	75	**67**	58
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2008-2009	285	294	305	293	284	276	**236**	179
B2. Primary balance is at historical average minus one standard deviations in 2008-2009	285	277	269	256	246	237	**192**	126
B3. Combination of B1-B2 using one half standard deviation shocks	285	290	294	278	266	254	**198**	114
B4. One-time 30 percent real depreciation in 2008	285	368	349	328	313	299	**234**	143
B5. 10 percent of GDP increase in other debt-creating flows in 2008	285	282	271	258	248	239	**194**	127
NPV of Debt-to-Revenue Ratio 2/								
Baseline	1232	868	918	874	840	807	**653**	423
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	1232	890	960	939	927	915	**843**	634
A2. Primary balance is unchanged from 2007	1232	876	932	898	873	850	**742**	591
A3. Permanently lower GDP growth 1/	1232	873	930	891	862	835	**712**	560
A4. With HIPC, MDRI, and paying domestic arrears with concessional loans	1232	868	918	365	264	263	**235**	201
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2008-2009	1232	913	1015	974	945	916	**785**	596
B2. Primary balance is at historical average minus one standard deviations in 2008-2009	1232	882	944	899	864	831	**674**	440
B3. Combination of B1-B2 using one half standard deviation shocks	1232	906	991	938	896	856	**668**	383
B4. One-time 30 percent real depreciation in 2008	1232	1169	1224	1151	1098	1048	**822**	500
B5. 10 percent of GDP increase in other debt-creating flows in 2008	1232	897	950	905	870	837	**680**	445
Debt Service-to-Revenue Ratio 2/								
Baseline	38	31	30	27	24	22	**23**	19
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	38	31	33	29	28	27	**30**	28
A2. Primary balance is unchanged from 2007	38	31	33	30	29	28	**32**	40
A3. Permanently lower GDP growth 1/	38	31	30	28	25	24	**27**	32
A4. With HIPC, MDRI, and paying domestic arrears with concessional loans	38	31	30	9	5	6	**11**	10
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2008-2009	38	32	34	33	31	30	**32**	37
B2. Primary balance is at historical average minus one standard deviations in 2008-2009	38	31	35	33	27	24	**24**	22
B3. Combination of B1-B2 using one half standard deviation shocks	38	32	35	31	25	22	**21**	13
B4. One-time 30 percent real depreciation in 2008	38	32	33	31	28	27	**27**	26
B5. 10 percent of GDP increase in other debt-creating flows in 2008	38	31	41	31	27	24	**24**	23

Sources: Country authorities; and Fund staff estimates and projections.
1/ Assumes that real GDP growth is at baseline minus one standard deviation divided by the square root of 20 (i.e., the length of the projection period).
2/ Revenues are defined inclusive of grants.

Figure 2a.GNB: Indicators of Total Public Debt Under Alternative Scenarios, 2007-2027 1/



Source: Staff projections and simulations.
1/ Most extreme stress test is test that yields highest ratio in 2017.
2/ Revenue including grants.