INTERNATIONAL MONETARY FUND
INTERNATIONAL DEVELOPMENT ASSOCIATION

CÔTE D'IVOIRE

Joint Debt Sustainability Analysis Under the Debt Sustainability Framework for Low-Income Countries[1]

Prepared by the Staffs of the World Bank and the International Monetary Fund

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Côte d'Ivoire is in debt distress as evidenced by the accumulation of external debt service arrears. Under the external debt sustainability analysis (DSA) baseline scenario, the present value (PV) of debt-to-GDP, PV of debt-to-exports, and PV of debt-to-revenue are projected to stay above their indicative thresholds over the next few years. Under alternative scenarios assuming full delivery of HIPC and MDRI debt relief at the Completion Point and beyond HIPC debt relief after the Completion Point, the debt burden would become sustainable and all indicators would improve significantly. The inclusion of domestic debt raises debt burden indicators somewhat, but does not alter the assessment. As the initial debt level is high, the debt position of the country remains vulnerable to macroeconomic shocks, indicating the need for prudent fiscal policies and debt management.

I. Background

1. **The last DSA for Côte d'Ivoire,[2] considered by the Board in July 2011 in the context of the RCF request, assessed Côte d'Ivoire as being in debt distress.**[3] That

[1] The DSA was prepared jointly by the staffs of the International Monetary Fund and the World Bank, in collaboration with the authorities of Côte d'Ivoire. The fiscal year in Côte d'Ivoire is January–December.

[2] The last DSA can be found here: http://www.imf.org/external/pubs/cat/longres.aspx?sk=25069.0.

[3] The DSAs presented in this document are based on the low-income countries (LIC) DSA framework. Under the Country Policy and Institutional Assessment (CPIA), Côte d'Ivoire is rated as a weak performer with an average rating of 2.72 in 2008–10, and the DSA uses the indicative threshold indicators for countries in this category. See "Debt Sustainability in Low-Income Countries: Proposal for an Operational Framework and Policy Implications" (http://www.imf.org/external/np/pdr/sustain/2004/020304.htm and IDA/SECM2004/0035, 2/3/04) and "Debt Sustainability in Low-Income Countries: Further Considerations on an Operational Framework, Policy Implications" http://www.imf.org/external/np/pdr/sustain/2004/091004.htm and IDA/SECM2004/0629, 9/10/04) and "A Review of Some Aspects of the Low-Income Country Debt Sustainability Framework" (http://www.imf.org/external/np/pp/eng/2009/080509a.pdf) and "Staff Guidance Note on the Application of the Joint Bank-Fund Debt Sustainability Framework for Low-Income Countries" (http://www.imf.org/external/np/pp/eng/2010/012210.pdf).

assessment is unchanged in this DSA, although the present analysis finds slightly improving debt dynamics over the next five years as Côte d'Ivoire is expected to negotiate a new Paris Club agreement, following the approval of the proposed new ECF arrangement with the Fund.[4] The Paris Club agreement would allow the clearance of external debt service arrears accumulated since December 2010, and provide debt relief on existing debt service falling due during the consolidation period (Box 1).

Box 1: **What Has Changed Compared to the LIC DSA of July 2011?**

The main differences between the assumptions made in the previous DSA undertaken at the time of the approval of the 2011 RCF disbursement and present DSA are:

- A new ECF arrangement is assumed in the baseline and alternative scenarios, with access of 120 percent of quota. Previously, a new ECF arrangement was included only in the alternative scenarios.
- A new Paris Club agreement in the baseline as well as other scenarios; previously, a new Paris Club agreement was included only in the alternative scenarios.
- This agreement would cover debt service falling due during 2012–14 and arrears at end-2011. It is assumed that terms of the agreement would be similar to those under the May 2009 Paris Club agreement. Comparable terms are assumed for other creditors. The third year (April 2011–March 2012) of the May 2009 agreement did not come into force because of the lapse of the program under the 2009 ECF arrangement.
- New external debt service arrears have been accumulated since December 2010 as a result of the political crisis (December 2010–April 2011) and its economic impact**.** The government cleared arrears to the World Bank and AfDB and other multilateral creditors during May–July 2011, and has contacted other creditors to reach agreement on a restructuring of arrears and resumption of debt service falling due.
- An adjusted baseline scenario was introduced with more realistic new financing assumptions than the baseline, i.e., it assumes nonconcessional borrowing in amounts similar to the alternative scenarios presented in section IV, and thus shows more clearly the effect of debt relief than a comparison to the baseline scenario.

2. **External public and publicly guaranteed (PPG) debt has fallen due to debt restructuring**. At end-2008, Côte d'Ivoire's external public debt stood at $13.4 billion (62 percent of GDP) of which $5 billion was in arrears, but by end-2010, this debt had fallen to $11.6 billion (51 percent of GDP or just over 80 percent of total public debt) and arrears had dropped to $0.3 billion. This reflected arrears clearance under the May 2009 Paris Club restructuring agreement and the successful Brady Bond exchange in April 2010.

[4] Côte d'Ivoire Staff Report for the 2011 Article IV Consultation and Requests for a Three-Year Arrangement Under the Extended Credit Facility and for Additional Interim Assistance Under the Enhanced Initiative for Heavily Indebted Poor Countries (www.imf.org).

Côte d'Ivoire: Structure of External Public Debt

	End-2010 Nominal	
	US $ million	**Percent of GDP**
Total	11,584	50.6
Multilateral	2,717	11.9
IMF	376	1.6
World Bank	1,750	7.6
AfDB Group	310	1.4
Other multilaterals	282	1.2
Official bilateral	6,235	27.3
Paris Club	6,101	26.7
Non-Paris Club	134	0.6
Commercial debt	2,632	11.5
Euro Bonds	2,351	10.3
Other commercials	281	1.2

Sources: Ivoirien Authorities, AfDB, World Bank and IMF staff estimates.

3. **Domestic public debt is owed to various creditors**. At June 2011, the stock of public domestic debt amounted to 14.5 percent of GDP, mostly consisting of government securities (8.9 percent of GDP) issued in the regional bond market or to settle past domestic arrears.

II. BASELINE ASSUMPTIONS

4. **The macroeconomic assumptions of the baseline scenario are similar to those of the last LIC DSA, except for the treatment of the debt to the Paris Club (Box 2)**. The baseline assumes further political stabilization, sound macroeconomic management, prudent borrowing policies, and advancement in structural reforms over the medium term. It also assumes a high level of new borrowing to finance the high level of investment needed to achieve the long-run growth potential of Côte d'Ivoire. The ability of the country to access the volume of external resources needed, however, would be greater with attainment of the HIPC Completion Point as discussed in the alternative scenarios.

Box 2. Macroeconomic Assumptions for 2011–31

Real GDP growth: The post-election crisis of 2010–11 reduced real GDP growth to 2.4 percent in 2010, and is expected to result in a real GDP decline of -5.8 percent in 2011. Investor confidence is assumed to rise with political normalization over the next few years. Growth is expected to reach 8.5 percent in 2012, and average 5.7 percent over 2013–16 and 5 percent over 2017–31 in line with the PRSP projections.

Inflation: Inflation, as measured by the GDP deflator (in U.S. dollars), is expected to stabilize around 3 percent. This is in line with the CPI inflation, which by WAEMU rules should not exceed 3 percent.

Fiscal policy: In the medium term, the government expects to achieve a primary basic surplus of 0.7 percent of GDP. Total revenues (excluding grants) are projected to increase to 20.3 percent of GDP in 2016 and 22.5 percent of GDP by 2031. Government expenditures are projected to increase to 23.9 percent of GDP in 2016 and 25.3 percent of GDP by 2031. Capital spending would rise gradually from 3.1 percent in 2010 to 6.4 percent of GDP in 2016 and 8.4 percent of GDP in 2031.

External financing: The current DSA assumes similar levels of new financing as in the June 2011 LIC DSA to support the higher investments need and the assumed growth rate. For the baseline scenario only concessional borrowing is assumed in the absence of a HIPC Completion Point. Grants are expected to stabilize at 1.0 percent of GDP.

External current account: The balance (excluding official transfers) is expected to decline from a surplus of 0.4 percent of GDP in 2010 to a deficit of 5.3 percent of GDP in 2016. The deficit would reach 6.5 percent in 2031, with an average of 4.4 percent of GDP over the period 2017–31. After declining in 2010, export volumes are expected to further decrease in 2011, and then increase on average by 5.7 percent per year thereafter. Import volumes are expected to grow annually by 6.2 percent, after a decline in 2010 and further expected decline in 2011. Import dynamics reflect essentially the higher levels of investment.

The debt service falling due and arrears to official bilateral creditors and commercial creditors are assumed to be restructured in 2012, as described in Box 1. **FDI is assumed to rise gradually over the projection period in the face of structural rigidities**. Net inflows of FDI are projected to rise from 1.5 percent of GDP in 2010 to 2.9 percent in 2016, and 4.2 percent in 2031.

- **Growth is expected to accelerate sharply**. Following the severe downturn in 2011 owing to the impact of the post-election crisis during late 2010-early 2011, economic activity is assumed to return to pre-crisis levels in 2012. This assumes investor confidence returns as the economy continues to recover following the post-election crisis, re-establishment of law and order, political normalization and successful parliamentary elections at end-2011. The economic stagnation of the last 10 years has created substantial investment needs in infrastructure and many other sectors. Meeting these needs would, amongst other factors, require access to sizeable external borrowing, as well as an increase in FDI. Public and private investment is thus projected to pick up and support growth. The growth rate is projected to increase to 8.5 percent in 2012, then ease gradually to 5.2 percent in 2016, before stabilizing around 5 percent in the long run.[5] The long-run assumption reflects the strategic economic role of Côte d'Ivoire in the West African region, the growth prospects of other countries in the region, and the potential of the country. The productivity of the new investments (essentially financed by new borrowing) will affect the capacity of the country to repay its debt and the sustainability of its debt position.

- **A new Paris Club agreement is assumed covering the period 2012–14**. This would provide additional debt relief not assumed in the baseline scenario in the June 2011 LIC DSA. In the June DSA a new Paris Club agreement was included only in the alternative scenarios.
- **Only concessional external financing is assumed**. In the absence of a HIPC Completion Point, Côte d'Ivoire would remain at high risk of debt distress and the country should not borrow on nonconcessional terms. Therefore, the sizeable external financing needs are assumed to be filled only with concessional resources. Access to such funding would be difficult, however, absent a HIPC Completion Point and the persistence of debt vulnerabilities.

III. External debt sustainability under the baseline scenario

5. **Under the baseline scenario, some of Côte d'Ivoire's external debt burden indicators remain above their indicative thresholds** in the medium term (Table 1a, Figure 1). The PV of public and publicly guaranteed (PPG) external debt, estimated at 46.6 percent of GDP in 2010, stays above the 30 percent indicative target until 2015. Compared to the last LIC DSA however, the levels of PPG external debt are much lower through 2014, reflecting the debt relief from the assumed new Paris Club agreement. As in the last DSA all new borrowing is assumed to be on concessional terms. The availability of concessional resources on the scale assumed in baseline is not necessarily assured underlining the importance of debt relief, including under the HIPC Initiative, to create space for new borrowing on nonconcessional terms so that Côte d'Ivoire could achieve its medium-term investment and growth objectives. The PV of PPG external debt-to-revenue ratio moves below the 200 percent indicative threshold in 2013, and the PV of external debt-to-exports moves below its indicative target from 2011 (as compared to 2012 under the June 2011 LIC DSA) reflecting lower levels of external debt in 2012.

6. **Debt service ratios remain below their indicative targets due to high export and revenue levels, as well as lower debt service, following the assumed new Paris Club agreement**. However, they would rise modestly from their current levels in the medium term, then decline before stabilizing at their long-term levels. The dynamics of the debt

[5] These medium-term growth assumptions are different from those in the LIC DSA at the HIPC Decision Point in March 2009 (http://www.imf.org/external/pubs/cat/longres.cfm?sk=23033.0).

service ratios reflect three factors: (i) the end of the consolidation period under the new Paris Club agreement and the subsequent rise in debt service after 2014; (ii) the profile of debt service on the Eurobonds, which begins to rise in 2012 for several years; and (iii) the start of debt service payments on the emergency 2011 loan from France.

7. **Stress tests[6] reveal considerable vulnerabilities of the external debt outlook in the baseline scenario** (Table 1b, Figure 1). The tests yield high levels of debt and debt service compared to the baseline scenario. The country is most vulnerable to a one-time 30 percent devaluation in 2012; this shock would raise the PV of debt-to-GDP, the PV of debt-to-revenue and the debt-service-to revenue ratio relative to their baseline by 10, 44, and 3 percentage points, respectively by the end of the projection period. If non-debt creating flows (transfers/grants) were one standard deviation lower in 2012–13, the PV of debt-to-exports would be higher than the baseline value by 7 percentage points at the end of the projection period.

IV. PUBLIC SECTOR DEBT SUSTAINABILITY

8. **When domestic public debt is included in the analysis, Côte d'Ivoire's debt indicators deteriorate modestly but follow similar patterns as those of external public debt** (Table 2a, Figure 2). Under the baseline scenario, the overall debt indicators would fall in the long run, reflecting the projected improvement of the macroeconomic situation. However, the increasing recourse to domestic financing could prove costly. The availability of liquidity on the regional debt market is limited, and this could push interest rates up from their current levels (6.5 percent on government debt).

9. **The public debt position is vulnerable to shocks** (Table 2b, Figure 2). In particular, lower GDP growth is the most damaging shock. This results from the combination of lower nominal GDP, a higher value of the debt stock and higher debt service.

V. EXTERNAL DEBT SUSTAINABILITY UNDER ALTERNATIVE SCENARIOS WITH FURTHER DEBT RELIEF

A. Assumptions of the Alternative Scenarios

10. **Staff has examined three alternative scenarios: first, a baseline with an alternative composition of new financing (adjusted baseline); second, HIPC and MDRI relief; and third, HIPC/MDRI, as well as additional bilateral relief beyond**

[6] The sensitivity analysis of Côte d'Ivoire's external debt vulnerability includes setting key macroeconomic variables at their historical levels. However, given the distortions in trend caused by the civil conflict, the analysis is based on regional averages and standard deviations for all relevant indicators. In addition to the historical scenario, the sensitivity analysis includes standard tests on new public borrowing on less favorable terms, a one-time 30 percent nominal depreciation of the CFAF in 2012, a reduction in official and private transfers, in GDP growth, in GDP deflator, and in exports.

HIPC/MDRI.[7] A comparison of the adjusted baseline and the latter two alternative scenarios demonstrates clearly the impact of debt relief, by eliminating the influence of a shift in the composition of financing (relative to the original baseline) on the debt ratios. Côte d'Ivoire is projected to reach the HIPC Completion Point by the third quarter of 2012, assuming the country maintains a good macroeconomic track record, has a new ECF arrangement in place in late 2011, and the structural reform program remains on track.

11. **The alternative scenarios assume the same level of new borrowing as the baseline, but assume that concessional resources are available only on a much smaller scale**. In the baseline, the level of access to concessional borrowing is assumed to be at a fairly high level because, in the absence of the debt relief expected when Côte d'Ivoire reaches the enhanced HIPC Initiative Completion Point, it would not have the debt servicing capacity to access nonconcessional resources. However, under the alternative scenarios, after completion point debt relief Côte d'Ivoire should have space for new borrowing, including on nonconcessional terms, in order to finance its sizeable investment needs. Therefore, the alternative scenarios assume a much lower level of borrowing from concessional resources and a rising recourse to nonconcessional borrowing starting 2013, with shorter maturity (6 years) and grace periods (1 year) and higher interest rates.[8] At the same time, the sustained growth projected in the next few years would push the country to middle-income status; as a result, IDA lending terms would harden (essentially 20 instead of 40 years maturity). In effect, the expected improvement in the debt position after completion point debt relief would strengthen the country's ability to access sufficient resources (including on nonconcessional terms) to finance its sizeable investment needs and hence provide greater certainty that the projected growth rate would be achieved.

B. Impact of the Alternative Scenarios on Debt Sustainability for Côte d'Ivoire

12. **Côte d'Ivoire's external debt position would improve significantly when HIPC and MDRI debt relief is obtained (Figure 3)**. Debt stock ratios would immediately fall and then remain below their critical levels, notwithstanding sizeable commercial borrowing.[9]

[7] Provided by official bilateral creditors; the bulk of claims are held by the French development assistance agency (AFD). The projected relief is based on treatments provided in other HIPC Completion Point cases. In the case of the AFD, it is assumed that debt relief on post-cutoff date ODA debt will come in the form of aid for development under the *C2D (contrat de désendettement et de développement*). Under this treatment Côte d'Ivoire would continue to pay debt service on an agreed schedule, which would then be returned as a grant to be used for development projects. It is assumed that the stock of eligible debt is repaid over 15 years in equal tranches.

[8] The grant element of new borrowing is negative under the alternative scenarios (Figure 3a.), as the interest rate on commercial borrowing (8 percent) is higher than the discount rate (4 percent).

[9] Although only concessional borrowing is assumed under the baseline, the debt stock ratios under the baseline scenario are above those of the alternative scenarios in the long run because with longer maturities and grace periods under the baseline, the repayment of new borrowing starts much later.

13. **Côte d'Ivoire's external debt position would improve further if additional bilateral debt relief beyond HIPC is obtained**. In the medium term, all debt stock and debt service ratios would be much lower as compared to the HIPC and MDRI debt relief only, and none of the ratios will breach their thresholds. In the long run the ratios will be similar in all alternative scenarios.

VI. Public debt management

14. **The authorities have requested Fund and Bank support in preparing a public debt management strategy**. The strategy will take into account the medium-term budgets prepared or under preparation in various sectors (education, health, agriculture, and transportation).

VII. Conclusions

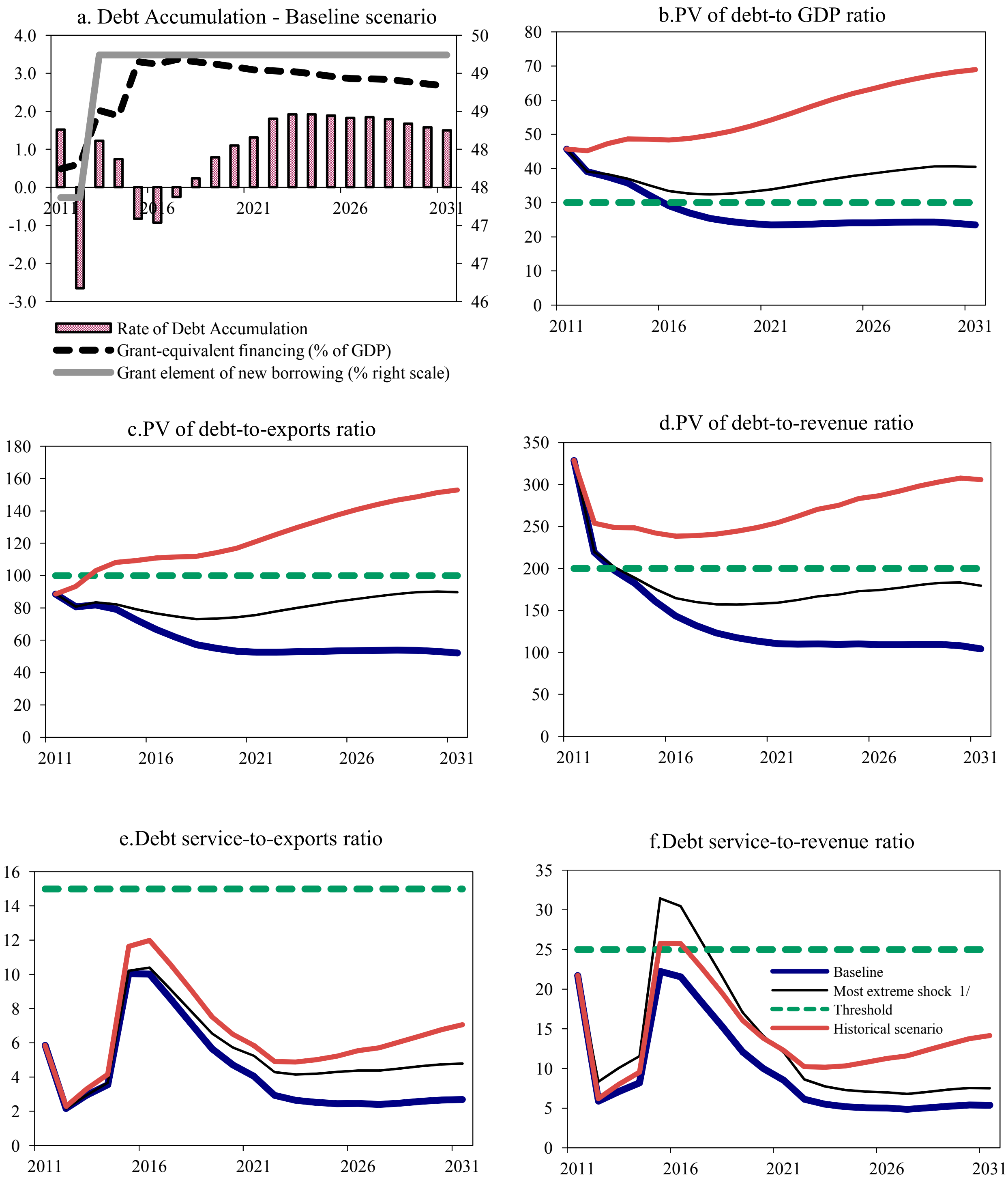
15. **Côte d'Ivoire is in debt distress as evidenced by the accumulation of external debt service arrears, despite improvements in the debt position of the country since the decision point**. Under the external debt sustainability analysis (DSA) baseline scenario, the PV of debt-to-GDP, the PV of debt-to-exports, and the PV of debt-to-revenue are projected to stay above their indicative thresholds over the next few years before falling below these thresholds over the projection period. Stress tests indicate vulnerabilities in the external debt position, involving persistent breaching of the thresholds for some indicators. However, debt service indicators are below their indicative thresholds under the baseline, though they are expected to rise in the medium term. The inclusion of domestic debt does not alter the assessment, even though it raises debt burden indicators moderately.

16. **A sustainable external debt position can be achieved through debt relief and sound macroeconomic policies**. Debt relief under the HIPC Initiative, MDRI and beyond HIPC bilateral assistance significantly improves Côte d'Ivoire's external debt burden in the short and medium term. It also provides space for Côte d'Ivoire to access some nonconcessional financing, increasing its ability to address its significant public investment needs and improving its growth prospects. However, the projected increase in debt service immediately after the Completion Point highlights the need for careful cash flow planning in budget execution and improved debt management, so as to avoid new payment arrears and preserve the steady financing of programs critical for growth and poverty reduction. Côte d'Ivoire remains vulnerable to various macroeconomic shocks. This highlights the need to pursue policies conducive to high growth, solid exports, good fiscal performance, and prudent debt management.

17. **The Ivoirien authorities welcomed the opportunity to contribute to the DSA**.[10] They raised concerns about the ability of the country to mobilize and absorb the foreign resources necessary to fulfill the large investments needed to support the country's growth objectives. They appreciated the DSA as a tool to highlight the post-completion point challenges that Côte d'Ivoire is likely to face: increased debt service and the large investments/financial flows needed to sustain the projected growth.

[10] Preliminary results were discussed with the authorities in Abidjan, in September 2011. Staffs of the International Monetary Fund, the World Bank, and the African Development Bank took part in the discussions.

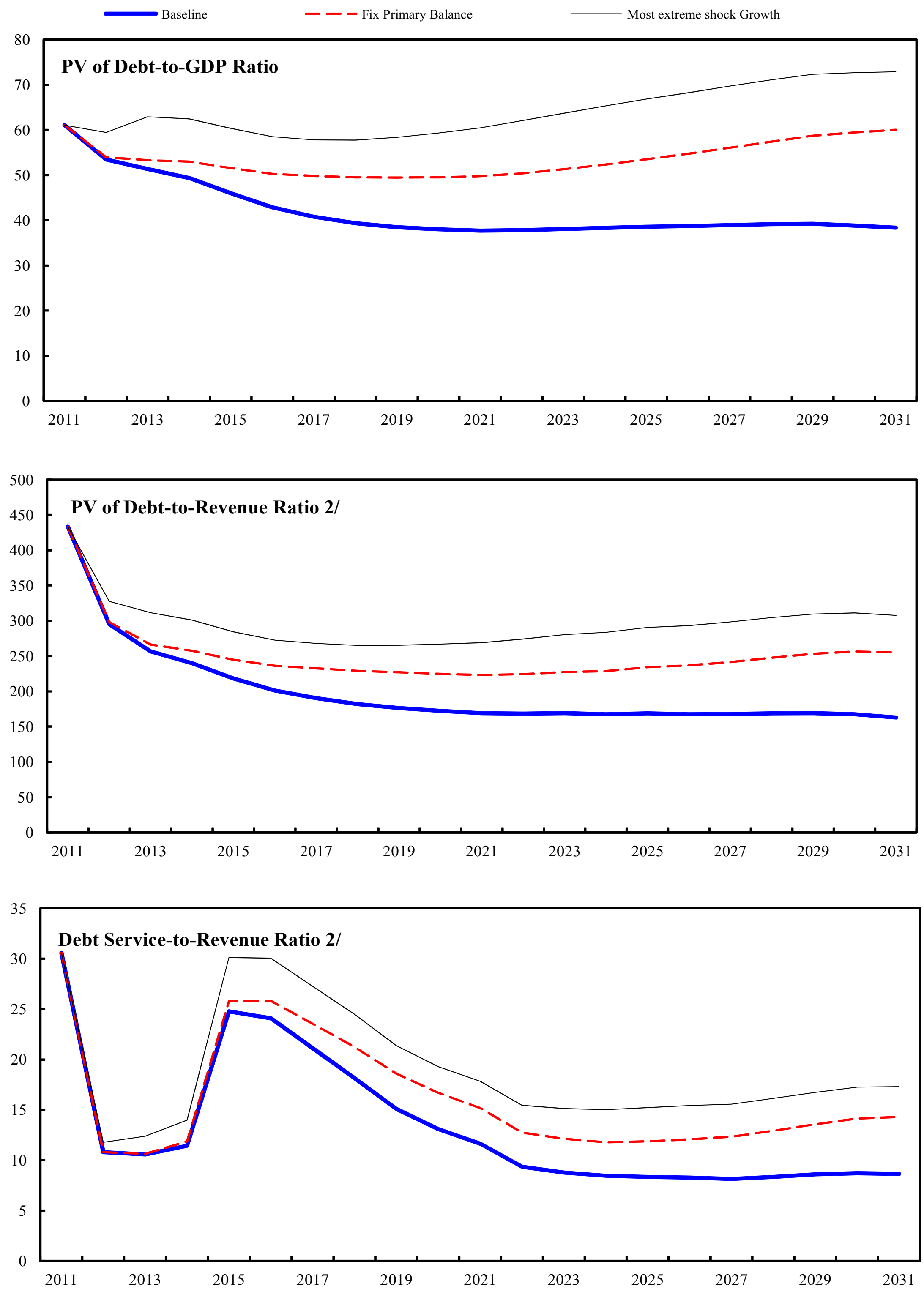
Figure 1. Cote d'Ivoire: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2011-2031 1/



Sources: Countries 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 an Exports shock, in d. to a One-time depreciation shock, in e. to an Exports shock and in f. to a One-time depreciation shock.

Figure 2.Cote d'Ivoire: Indicators of Public Debt Under Alternative Scenarios, 2011-2031 1/

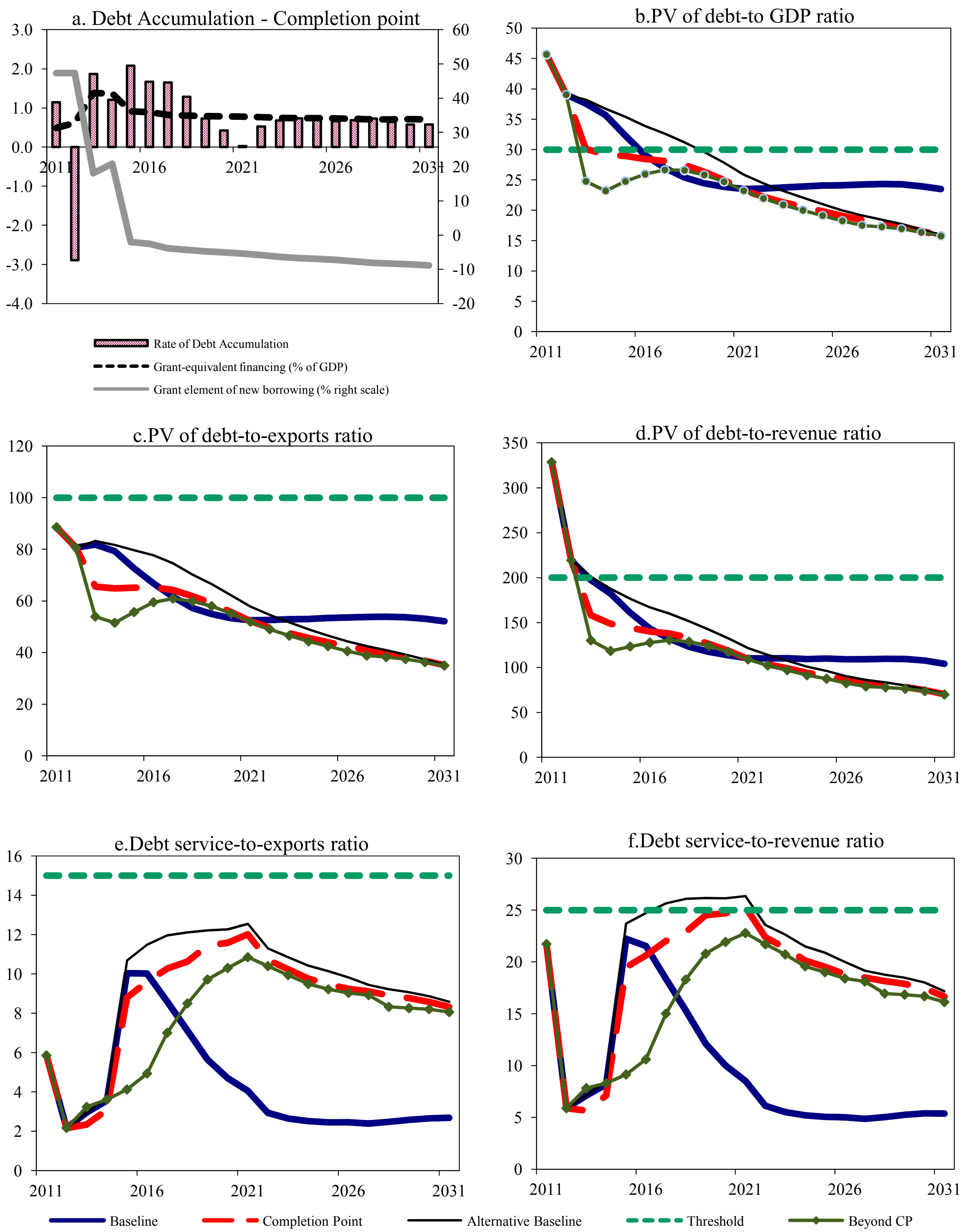


Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2021.

2/ Revenues are defined inclusive of grants.

Figure 3. Cote d'Ivoire: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2011-2031 1/



Sources: Country authorities; and staff estimates and projections.

Table 1a.: External Debt Sustainability Framework, Baseline Scenario, 2008-2031 1/
(In percent of GDP, unless otherwise indicated)

	Actual			Historical 0 Average 0	Standard Deviation	Projections									
	2008	2009	2010			2011	2012	2013	2014	2015	2016	2011-2016 Average	2021	2031	2017-2031 Average
External debt (nominal) 1/	**89.4**	**81.2**	**76.7**			**73.6**	**63.1**	**60.1**	**56.5**	**53.4**	**50.4**		**45.6**	**42.4**	
o/w public and publicly guaranteed (PPG)	61.9	53.9	50.6			49.0	41.3	40.0	38.1	36.6	35.1		36.0	39.6	
Change in external debt	-8.6	-8.2	-4.6			-3.1	-10.5	-3.1	-3.5	-3.1	-3.0		-0.4	-1.1	
Identified net debt-creating flows	-19.2	-4.5	-4.2			1.9	-5.7	-1.4	-0.9	-0.4	-0.2		0.2	0.1	
Non-interest current account deficit	**-4.5**	**-8.9**	**-2.8**	**-5.5**	**2.7**	**-3.3**	**-0.1**	**2.2**	**2.9**	**3.1**	**3.5**		**4.6**	**5.9**	5.0
Deficit in balance of goods and services	-7.5	-11.8	-7.3			-7.8	-5.1	-2.1	-1.3	-0.6	-0.3		-1.3	-6.5	
Exports	48.7	50.9	51.5			51.6	48.4	45.9	45.0	44.5	43.6		44.7	45.1	
Imports	41.2	39.0	44.1			43.8	43.3	43.8	43.7	43.8	43.3		43.4	38.5	
Net current transfers (negative = inflow)	1.4	0.4	1.9	2.5	1.1	2.6	2.5	2.3	2.2	2.1	2.1		4.0	10.9	6.1
o/w official	-1.1	-2.2	-0.8			0.0	-0.1	-0.1	-0.1	-0.1	-0.1		-0.1	-0.2	
Other current account flows (negative = net inflow)	1.6	2.5	2.6			1.9	2.5	1.9	2.0	1.6	1.7		1.9	1.5	
Net FDI (negative = inflow)	**-1.9**	**-1.7**	**-1.5**	**-1.8**	**0.4**	**-1.5**	**-1.5**	**-2.0**	**-2.2**	**-2.6**	**-2.9**		**-3.3**	**-4.2**	-3.6
Endogenous debt dynamics 2/	**-12.8**	**6.1**	**0.1**			**6.6**	**-4.0**	**-1.6**	**-1.6**	**-0.9**	**-0.8**		**-1.1**	**-1.5**	
Contribution from nominal interest rate	2.6	2.1	1.8			2.3	1.6	1.9	1.7	2.0	1.8		1.1	0.5	
Contribution from real GDP growth	-1.9	-3.5	-1.9			4.3	-5.6	-3.6	-3.3	-2.9	-2.6		-2.1	-2.0	
Contribution from price and exchange rate changes	-13.4	7.5	0.3			…	…	…	…	…	…		…	…	
Residual (3-4) 3/	**10.5**	**-3.7**	**-0.4**			**-5.0**	**-4.8**	**-1.6**	**-2.6**	**-2.7**	**-2.8**		**-0.6**	**-1.2**	
o/w exceptional financing	-1.1	-5.3	-2.6			-0.1	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
PV of external debt 4/	...	...	72.7			70.3	60.9	57.6	54.1	49.1	44.5		33.1	26.3	
In percent of exports	...	...	141.2			136.3	125.7	125.5	120.2	110.5	102.0		74.0	58.4	
PV of PPG external debt	**...**	**...**	**46.6**			**45.7**	**39.0**	**37.6**	**35.7**	**32.3**	**29.1**		**23.5**	**23.5**	
In percent of exports	**...**	**...**	**90.6**			**88.6**	**80.6**	**81.8**	**79.3**	**72.6**	**66.8**		**52.5**	**52.1**	
In percent of government revenues	**...**	**...**	**243.3**			**328.6**	**219.3**	**197.5**	**182.2**	**160.9**	**143.6**		**110.4**	**104.3**	
Debt service-to-exports ratio (in percent)	**7.2**	**-4.3**	**-0.2**			**6.0**	**1.6**	**2.3**	**3.2**	**9.4**	**8.7**		**2.4**	**0.9**	
PPG debt service-to-exports ratio (in percent)	**8.4**	**4.6**	**3.6**			**5.9**	**2.2**	**2.9**	**3.6**	**10.0**	**10.0**		**4.1**	**2.7**	
PPG debt service-to-revenue ratio (in percent)	**21.6**	**12.3**	**9.5**			**21.7**	**5.9**	**7.1**	**8.2**	**22.3**	**21.6**		**8.5**	**5.4**	
Total gross financing need (Billions of U.S. dollars)	0.4	-1.8	0.0			0.6	0.8	1.3	1.6	2.5	2.5		2.0	2.6	
Non-interest current account deficit that stabilizes debt ratio	4.2	-0.7	1.7			-0.2	10.4	5.2	6.4	6.2	6.5		5.0	6.9	
Key macroeconomic assumptions															
Real GDP growth (in percent)	2.3	3.8	2.4	1.1	1.7	-5.8	8.5	6.0	6.0	5.5	5.2	4.2	5.0	5.0	5.0
GDP deflator in US dollar terms (change in percent)	15.9	-7.8	-0.3	7.3	8.6	11.1	2.4	1.1	1.3	2.0	2.3	3.3	2.1	3.1	2.2
Effective interest rate (percent) 5/	3.1	2.2	2.3	3.6	1.3	3.2	2.4	3.3	3.0	3.8	3.6	3.2	2.5	1.2	2.1
Growth of exports of G&S (US dollar terms, in percent)	20.9	-0.1	3.2	11.2	9.6	4.8	4.3	1.6	5.2	6.3	5.6	4.6	7.0	8.2	7.5
Growth of imports of G&S (US dollar terms, in percent)	16.5	-9.4	15.4	11.8	11.1	3.7	10.1	8.3	7.1	7.9	6.4	7.3	5.4	6.7	6.5
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	47.4	47.4	49.2	49.2	49.2	49.2	48.6	49.2	49.2	49.2
Government revenues (excluding grants, in percent of GDP)	18.9	18.9	19.2			13.9	17.8	19.0	19.6	20.1	20.3		21.3	22.5	21.6
Aid flows (in Billions of US dollars) 7/	0.4	0.1	0.1			0.2	0.2	0.8	0.7	1.6	1.7		2.2	3.8	
o/w Grants	0.4	0.1	0.1			0.0	0.1	0.3	0.3	0.3	0.4		0.5	1.0	
o/w Concessional loans	0.0	0.0	0.0			0.1	0.1	0.5	0.4	1.2	1.3		1.7	2.8	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			0.5	0.6	2.0	1.9	3.3	3.2		3.1	2.7	3.0
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			60.4	64.9	65.9	67.7	58.3	58.5		59.0	60.9	59.5
Memorandum items:															
Nominal GDP (Billions of US dollars)	23.5	22.5	23.0			24.0	26.7	28.6	30.7	33.0	35.5		50.1	102.3	
Nominal dollar GDP growth	18.6	-4.3	2.1			4.6	11.1	7.2	7.3	7.6	7.6	7.6	7.2	8.3	7.3
PV of PPG external debt (in Billions of US dollars)			10.7			11.0	10.4	10.7	10.9	10.7	10.4		11.8	24.0	
(PVt-PVt-1)/GDPt-1 (in percent)						1.5	-2.7	1.2	0.7	-0.8	-0.9	-0.2	1.3	1.5	1.4

Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt.
2/ Derived as [r - g - ρ(1+g)]/(1+g+ρ+gρ) times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, and ρ = growth rate of GDP deflator in U.S. dollar terms.
3/ Includes exceptional financing (i.e., changes in arrears and debt relief); changes in gross foreign assets; and valuation adjustments. For projections also includes contribution from price and exchange rate 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 1b.Cote d'Ivoire: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2011-2031
(In percent)

	Projections							
	2011	2012	2013	2014	2015	2016	**2021**	2031
PV of debt-to GDP ratio								
Baseline	46	39	38	36	32	29	**23**	23
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	46	45	47	49	49	48	**54**	69
A2. New public sector loans on less favorable terms in 2011-2031 2	46	39	38	37	35	33	**34**	40
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	46	41	40	38	35	31	**25**	25
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	46	40	39	37	33	30	**24**	24
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	46	43	46	44	39	36	**28**	29
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	46	41	42	40	36	33	**27**	25
B5. Combination of B1-B4 using one-half standard deviation shocks	46	45	46	44	40	36	**29**	28
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	46	55	53	50	45	41	**33**	33
PV of debt-to-exports ratio								
Baseline	89	81	82	79	73	67	**53**	52
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	89	93	103	108	109	111	**121**	153
A2. New public sector loans on less favorable terms in 2011-2031 2	89	81	83	82	79	77	**76**	90
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	89	80	81	79	72	66	**52**	52
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	89	84	87	84	77	71	**56**	54
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	89	80	81	79	72	66	**52**	52
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	89	85	92	89	82	76	**60**	55
B5. Combination of B1-B4 using one-half standard deviation shocks	89	81	79	76	70	64	**50**	49
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	89	80	81	79	72	66	**52**	52
PV of debt-to-revenue ratio								
Baseline	329	219	198	182	161	144	**110**	104
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	329	254	249	248	242	238	**255**	306
A2. New public sector loans on less favorable terms in 2011-2031 2	329	220	201	189	175	165	**159**	180
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	329	230	213	196	174	154	**118**	112
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	329	222	203	187	166	148	**113**	105
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	329	244	241	222	197	175	**134**	127
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	329	231	221	204	182	163	**125**	110
B5. Combination of B1-B4 using one-half standard deviation shocks	329	250	242	223	198	177	**135**	125
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	329	309	278	256	226	201	**154**	146

Table 1b.Cote d'Ivoire: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2011-2031 (continued)
(In percent)

Debt service-to-exports ratio

Baseline	6	2	3	4	10	10	**4**	3
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	6	2	3	4	12	12	**6**	7
A2. New public sector loans on less favorable terms in 2011-2031 2	6	2	3	4	10	10	**5**	5
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	6	2	3	4	10	10	**4**	3
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	6	2	3	4	10	10	**4**	3
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	6	2	3	4	10	10	**4**	3
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	6	2	3	4	10	10	**4**	3
B5. Combination of B1-B4 using one-half standard deviation shocks	6	2	3	3	9	9	**4**	3
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	6	2	3	4	10	10	**4**	3

Debt service-to-revenue ratio

Baseline	22	6	7	8	22	22	**9**	5
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	22	6	8	10	26	26	**12**	14
A2. New public sector loans on less favorable terms in 2011-2031 2	22	6	7	8	23	22	**11**	10
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	22	6	8	9	24	23	**9**	6
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	22	6	7	8	22	22	**9**	5
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	22	7	9	10	27	26	**10**	7
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	22	6	7	9	23	22	**9**	6
B5. Combination of B1-B4 using one-half standard deviation shocks	22	7	9	10	27	26	**10**	7
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	22	8	10	12	31	30	**12**	8
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	46	46	46	46	46	46	**46**	46

Sources: Country authorities; and staff estimates and projections.

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

Table 2a.Cote d'Ivoire: Public Sector Debt Sustainability Framework, Baseline Scenario, 2008-2031
(In percent of GDP, unless otherwise indicated)

	Actual			Average	Standard Deviation	Estimate	Projections								
	2008	2009	2010			2011	2012	2013	2014	2015	2016	2011-16 Average	2021	2031	2017-31 Average
Public sector debt 1/	75.3	66.5	66.4			64.4	55.7	53.8	51.8	50.3	48.8		50.2	54.5	
o/w foreign-currency denominated	61.9	53.9	50.6			49.0	41.3	40.0	38.1	36.6	35.1		36.0	39.6	
Change in public sector debt	-0.4	-8.8	0.0			-2.0	-8.7	-1.9	-2.0	-1.5	-1.5		0.6	-0.6	
Identified debt-creating flows	-3.0	-7.6	-1.0			3.6	-1.6	-0.3	-0.9	-1.0	-1.0		0.4	-2.4	
Primary deficit	-1.2	0.7	1.3	-0.1	0.9	4.3	3.5	2.0	1.5	0.9	0.9	2.2	2.5	0.6	1.7
Revenue and grants	20.6	19.5	19.7			14.1	18.1	20.0	20.6	21.1	21.3		22.3	23.5	
of which: grants	1.7	0.6	0.5			0.2	0.3	1.0	1.0	1.0	1.0		1.0	1.0	
Primary (noninterest) expenditure	19.3	20.2	21.0			18.4	21.6	22.0	22.1	22.0	22.2		24.8	24.2	
Automatic debt dynamics	-0.6	-3.0	0.4			-0.5	-5.1	-2.3	-2.4	-2.0	-1.9		-2.0	-3.1	
Contribution from interest rate/growth differential	-2.4	-3.1	-1.3			4.8	-4.9	-2.4	-2.4	-1.7	-1.7		-1.3	-1.9	
of which: contribution from average real interest rate	-0.7	-0.4	0.3			0.7	0.1	0.8	0.6	1.0	0.8		1.1	0.7	
of which: contribution from real GDP growth	-1.7	-2.7	-1.6			4.1	-5.0	-3.2	-3.0	-2.7	-2.5		-2.4	-2.6	
Contribution from real exchange rate depreciation	1.9	0.1	1.6			-5.4	-0.2	0.1	0.0	-0.2	-0.2		...	...	
Other identified debt-creating flows	-1.2	-5.3	-2.6			-0.1	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)	-1.1	-5.3	-2.6			-0.1	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	2.6	-1.2	0.9			-5.7	-7.1	-1.6	-1.1	-0.5	-0.5		0.2	1.8	
Other Sustainability Indicators															
PV of public sector debt	13.4	12.6	62.4			61.1	53.5	51.4	49.4	46.0	42.9		37.7	38.4	
o/w foreign-currency denominated	0.0	0.0	46.6			45.7	39.0	37.6	35.7	32.3	29.1		23.5	23.5	
o/w external	...	...	46.6			45.7	39.0	37.6	35.7	32.3	29.1		23.5	23.5	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	3.5	3.6	4.2			8.6	5.4	4.1	3.8	6.1	6.0		5.1	2.7	
PV of public sector debt-to-revenue and grants ratio (in percent)	65.2	64.7	316.9			433.3	295.2	256.6	239.7	218.3	201.2		169.1	163.1	
PV of public sector debt-to-revenue ratio (in percent)	71.1	66.7	325.7			439.5	300.4	270.2	252.1	229.3	211.2		177.1	170.4	
o/w external 3/	…	…	243.3			328.6	219.3	197.5	182.2	160.9	143.6		110.4	104.3	
Debt service-to-revenue and grants ratio (in percent) 4/	22.9	14.9	14.6			30.6	10.8	10.6	11.4	24.8	24.1		11.7	8.6	
Debt service-to-revenue ratio (in percent) 4/	25.0	15.3	15.0			31.0	11.0	11.1	12.0	26.0	25.3		12.2	9.0	
Primary deficit that stabilizes the debt-to-GDP ratio	-0.9	9.5	1.4			6.3	12.1	3.9	3.5	2.4	2.4		1.8	1.3	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	2.3	3.8	2.4	1.1	1.7	-5.8	8.5	6.0	6.0	5.5	5.2	4.2	5.0	5.0	5.0
Average nominal interest rate on forex debt (in percent)	2.0	0.8	0.8	1.7	0.6	2.0	1.0	2.1	1.8	3.0	2.7	2.1	1.6	0.9	1.4
Average real interest rate on domestic debt (in percent)	-1.6	3.0	2.9	0.8	1.9	0.8	1.4	3.7	3.7	3.9	3.6	2.9	3.7	2.7	3.7
Real exchange rate depreciation (in percent, + indicates depreciation)	3.0	0.2	3.1	-3.2	9.5	-9.9	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	8.0	0.0	1.9	3.2	2.4	4.3	2.5	1.9	2.1	2.0	2.3	2.5	2.1	3.1	2.2
Growth of real primary spending (deflated by GDP deflator, in percent)	0.0	0.1	0.1	0.0	0.1	-0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Grant element of new external borrowing (in percent)	...	...	...	…	…	47.4	47.4	49.2	49.2	49.2	49.2	48.6	49.2	49.2	...

Sources: Country authorities; and staff estimates and projections.

1/ The public sector includes the central government and select public enterprises

2/ Gross financing need is defined as the primary deficit plus debt service plus the stock of short-term debt at the end of the last period.

3/ Revenues excluding grants.

4/ Debt service is defined as the sum of interest and amortization of medium and long-term debt.

5/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.

Table 2b.Cote d'Ivoire: Sensitivity Analysis for Key Indicators of Public Debt 2011-2031

	Projections							
	2011	2012	2013	2014	2015	2016	2021	2031
PV of Debt-to-GDP Ratio								
Baseline	61	53	51	49	46	43	38	38
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	61	55	54	53	51	49	43	57
A2. Primary balance is unchanged from 2011	61	54	53	53	52	50	50	60
A3. Permanently lower GDP growth 1/	61	54	52	50	47	44	41	49
A4. Alternative Scenario :[Costumize, enter title]	61	49	46	44	41	38	26	15
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	61	59	63	62	60	59	60	73
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	61	52	49	47	44	41	36	37
B3. Combination of B1-B2 using one half standard deviation shocks	61	56	55	55	53	52	54	66
B4. One-time 30 percent real depreciation in 2012	61	72	69	65	60	55	42	37
B5. 10 percent of GDP increase in other debt-creating flows in 2012	61	60	57	55	51	48	42	41
PV of Debt-to-Revenue Ratio 2/								
Baseline	433	295	257	240	218	201	169	163
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	433	303	268	256	239	225	188	231
A2. Primary balance is unchanged from 2011	433	298	266	257	245	236	223	255
A3. Permanently lower GDP growth 1/	433	296	259	243	223	208	185	209
A4. Alternative Scenario :[Costumize, enter title]	431	185	178	169	158	148	103	60
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	433	327	312	301	284	273	269	308
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	433	286	245	229	208	192	162	159
B3. Combination of B1-B2 using one half standard deviation shocks	433	307	275	266	251	240	239	280
B4. One-time 30 percent real depreciation in 2012	433	398	343	318	284	256	189	157
B5. 10 percent of GDP increase in other debt-creating flows in 2012	433	330	287	267	244	225	187	173
Debt Service-to-Revenue Ratio 2/								
Baseline	31	11	11	11	25	24	12	9
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	31	12	11	12	28	28	14	11
A2. Primary balance is unchanged from 2011	31	11	11	12	26	26	15	14
A3. Permanently lower GDP growth 1/	31	11	11	12	25	25	13	11
A4. Alternative Scenario :[Costumize, enter title]	31	8	9	9	18	17	7	4
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	31	12	12	14	30	30	18	17
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	31	11	10	11	24	23	11	8
B3. Combination of B1-B2 using one half standard deviation shocks	31	12	12	12	27	27	17	16
B4. One-time 30 percent real depreciation in 2012	31	12	14	15	34	34	17	12
B5. 10 percent of GDP increase in other debt-creating flows in 2012	31	11	12	14	27	26	12	9

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.