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, 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 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 March 2009 in the context of the ECF request and HIPC decision point, assessed Côte d'Ivoire as being in high risk of debt distress**.[3] Compared to the 2009 DSA results, the present analysis finds a

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[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.cfm?sk=23033.0

[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

(continued)

worsening of debt dynamics over the next five years owing to the non-activation of debt relief (in the absence of a Fund arrangement) that had been expected earlier from Paris Club creditors during April 2011-March 2012. In addition, as a result of the political crisis (December 2010-April 2011) and its economic impact, new external debt service arrears have been accumulated since December 2010. In the short term, these developments more than offsets the impact of higher than expected interim debt relief during 2009–first quarter of 2011 and favorable terms of the April 2010 Brady Bonds exchange (see Box 1).

Box 1: What Has Changed Compared to the 2009 DSA?

Main differences between the assumptions made in the previous DSA undertaken at the time of the HIPC decision point and actual developments include:

Higher debt accumulation in 2011 (3.5 percent of GDP)[4] to finance immediate needs of the recovery from the severe impact of the post-election crisis.

The discount rate has fallen from 5 percent to 4 percent. With the lower discount rate, everything else equal, the current DSA exercise will generate higher present value of debt than the previous exercise.

Greater cash flow relief by the Paris Club than previously assumed during the 2009–March 2011, but less during April 2011-March 2012. In May 2009, Paris Club creditors agreed with the Government of Côte d'Ivoire on debt restructuring on Cologne terms of maturities falling due during April 2009–March 2012, including, on an exceptional basis, a deferral of arrears and maturities on post-cutoff date (July 1, 1983) debt, short-term debt, and moratorium interest. This lowers debt service during the interim period and raises it in the subsequent years. For the third year (April 2011-March 2012), the agreement will not enter into force (in the absence of a Fund arrangement) and debt service due is thus not eligible for relief.

More favorable than expected terms of the Brady Bond exchange. In April 2010, an exchange of existing Brady Bonds was successfully completed with a participation rate of over 99 percent. Under the terms of the exchange, holders of existing bonds (amounting to $3 billion at end-2009) accepted an upfront discount of 20 percent, and new Eurobonds for the remainder with a maturity of 23 years, and six-year grace. The amortization profile provides for increasing payments over the repayment period, and the interest rate increases in two steps from 2.5 percent to 5.75 percent at end-2013. The restructuring of the Brady Bonds more than fully satisfies the amount of debt relief to be delivered at the enhanced HIPC Initiative completion point.

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 in May 2011, and has contacted other creditors to reach agreement on a restructuring of arrears and resumption of debt service falling due.

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

"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).

[4] This includes the €350 million loan from France.

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 with the May 2009 Paris Club restructuring agreement and the successful Brady Bond exchange in April 2010.

Côte d'Ivoire: Structure of External Public Debt

	End-2010 Nominal	
	USD million	**% 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, WB and IMF staff estimates.

3. **Domestic public debt is owed to various creditors**. At the end of 2010, the stock of public domestic debt amounted to 15.8 percent of GDP, mostly consisting of government securities (11.3 percent of GDP) issued in the regional bond market or to settle past domestic arrears.

II. Baseline assumptions

4. **The assumptions of the baseline scenario are different from those of the last LIC DSA. They take into account recent developments, in particular the post-election crisis in late 2010-early 2011 that had a severe economic impact during 2011**. 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 higher level of new borrowing to finance the higher 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.

- **Growth is expected to pick up in 2012, in line with the Ivorian PRSP**. Economic activity is expected to reach more normal levels in 2012, following a severe downturn in 2011 owing to the impact of the post-election crisis during late 2010-early 2011. This assumes investor confidence returns as the economy recovers following the end of open combat, reestablishment 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 9 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.

- **No further debt relief and only concessional external financing are assumed.** In the absence of a HIPC completion point, Côte d'Ivoire would remain in high risk of debt distress and the country should not borrow on non-concessional 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 assuming no further debt relief, 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 49.7 percent of GDP in 2010, stays above the 30 percent indicative target until 2015. Compared to the last LIC DSA, this reflects higher levels of assumed new borrowing and the absence of previously expected debt relief from Paris Club creditors during April 2011–March 2012. 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 Cote 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 2014, and the PV of external debt-to-exports moves below its indicative target from 2012 reflecting higher export levels.

[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).

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 -6.3 percent in 2011. Investor confidence is assumed to rise with political normalization over the next few years. Growth is expected to reach 9 percent in 2012, and average 5.6 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 0.2 percent of GDP. Total revenues (excluding grants) are projected to increase to 20.8 percent of GDP in 2016 and 23.2 percent of GDP by 2031. Government expenditures are projected to increase to 23.6 percent of GDP in 2016 and 25.7 percent of GDP by 2031. Capital spending would rise gradually from 3.1 percent in 2010 to 5.8 percent of GDP in 2016 and 7.7 percent of GDP in 2031.

External financing: Compared to the decision point DSA, the current DSA assumes higher levels of new financing 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 0.2 percent of GDP.

External current account: The balance (excluding official transfers) is expected to decline from a surplus of 4.6 percent of GDP in 2010 to a deficit of 3.4 percent of GDP in 2016. The deficit would reach 6.1 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, then increase on average by 5.8 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 commercial creditors and non-Paris Club official bilateral creditors are assumed to be restructured in 2012 and, for creditors other than holders of Côte d'Ivoire's Eurobonds, on terms comparable with the Paris Club rescheduling. The last LIC DSA assumed that this would be paid. Debt service due to non-Paris Club creditors has been paid during 2009-November 2010, but since then arrears have accrued, and arrears have accrued to the holders of Côte d'Ivoire's Eurobonds since December 2010. The government intends to begin discussions on arrears clearance and the related restructuring of the debt with these creditors. Debt service due to other commercial creditors during 2009-March 2011 (at which point all outstanding debt was in arrears) has not been paid while debt restructuring discussions have been ongoing. Also, debt relief from Paris Club creditors expected during April 201–March 2012 will not enter into effect.

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 1.6 percent of GDP in 2010 to 2.2 percent in 2015, and 3.1 percent in 2030.

6. **Debt service ratios remain below their indicative targets due to high export and revenue levels.** 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 service ratios reflect two factors: (i) Côte d'Ivoire received substantial interim debt relief during 2009-March 2011, so that current levels of debt service will necessarily rise with the expiration of the grace period for the restructured debt owed to the Paris Club; (ii) debt service on the new bonds issued in exchange for the Brady Bonds will increase for the next few years.

7. **Stress tests [6] reveal considerable vulnerabilities of the external debt outlook** (Table 1b, Figure 1). The tests yield high levels of debt and debt service compared to the baseline scenario. These results reflect at least in part the high level of initial debt, the higher level of new borrowing assumed in the present DSA exercise, and the lower GDP growth, exports and revenues implied by the sensitivity shocks. 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, 43, and 3 percentage points, respectively by the end of the projection period. If export growth were one standard deviation lower in 2012–13, the PV of debt-to-exports would be higher than the baseline value by 17 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.

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[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 2011, a reduction in official and private transfers, in net FDI, in GDP growth, in GDP deflator, and in exports.

V. External debt sustainability under alternative scenarios with further debt relief

A. Assumptions of the alternative scenarios

10. **Staff has examined two alternative scenarios: first, only HIPC and MDRI relief;[7] second, HIPC/MDRI as well as additional bilateral relief beyond HIPC/MDRI**.[8] Côte d'Ivoire is expected 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 by late 2011, and implements the reform of the coffee-cocoa sector in time.

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, 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. 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. Debt service ratios would rise more sharply than in the baseline scenario, and breach their indicative thresholds for a few years reflecting the terms of the assumed Paris Club debt restructuring, which entails a rising repayment of deferred arrears and maturities following the end of the consolidation period, and settle at higher levels over the medium to long term, though remaining below critical levels.

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[7] To reach the HIPC completion would require a new ECF arrangement to be in place, which would also provide the possibility of a new restructuring of debt service owed to Paris Club creditors. The scenarios assume a restructuring on January 1, 2012 on the same terms granted under the May 2009 Paris Club agreement.

[8] Provided by official bilateral creditors, with the bulk of claims held by the French development assistance agency (AFD). The projected relief is based on treatments provided in other HIPC completion point cases.

13. **Côte d'Ivoire's external debt position would improve further if additional bilateral debt relief beyond HIPC is obtained**. In the medium run, 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 both 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). The authorities also intend to integrate the LIC DSA into their macroeconomic framework.

VII. Conclusions

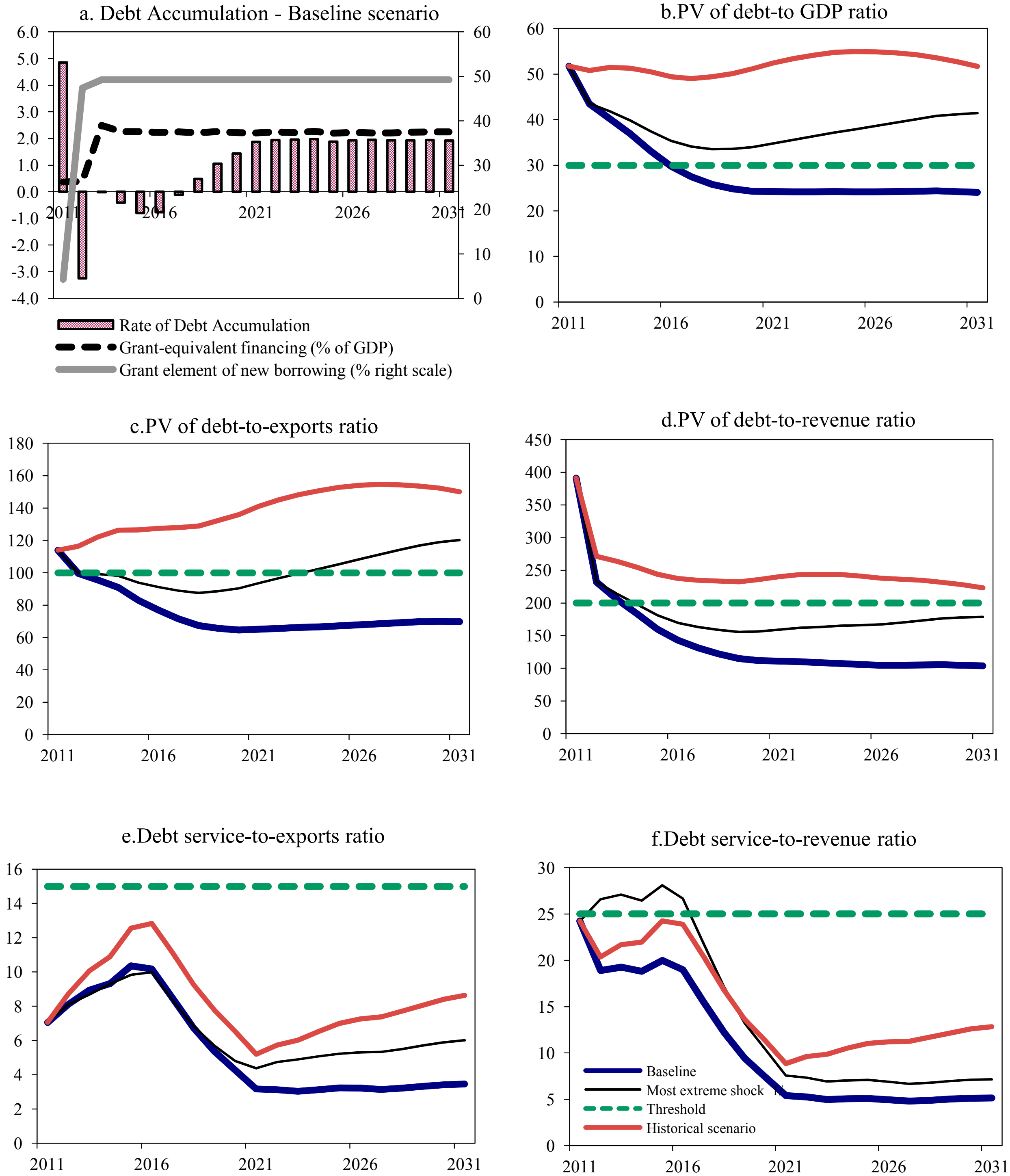
15. **Côte d'Ivoire is in debt distress as evidenced by the accumulation of external debt service arrears, despite improvements in the debt position of the country since the decision point**. Under the external debt sustainability analysis (DSA) baseline scenario, the PV of debt-to-GDP, the PV of debt-to-exports, 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. However, stress tests indicate vulnerabilities in the 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, and debt service-to-revenue ratio may breach its threshold temporarily. The inclusion of domestic debt does not alter the assessment of Côte d'Ivoire, even though it raises debt burden indicators.

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. The projected increase in the debt service immediately after the completion point highlights the need for careful cash flow planning of budget execution and prudent new borrowing 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**.[9] They raised concerns about the ability of the country to reach the PRSP growth targets, to fulfill the implied large investments needs, to mobilize the projected resources and to absorb large foreign capital inflows. 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.

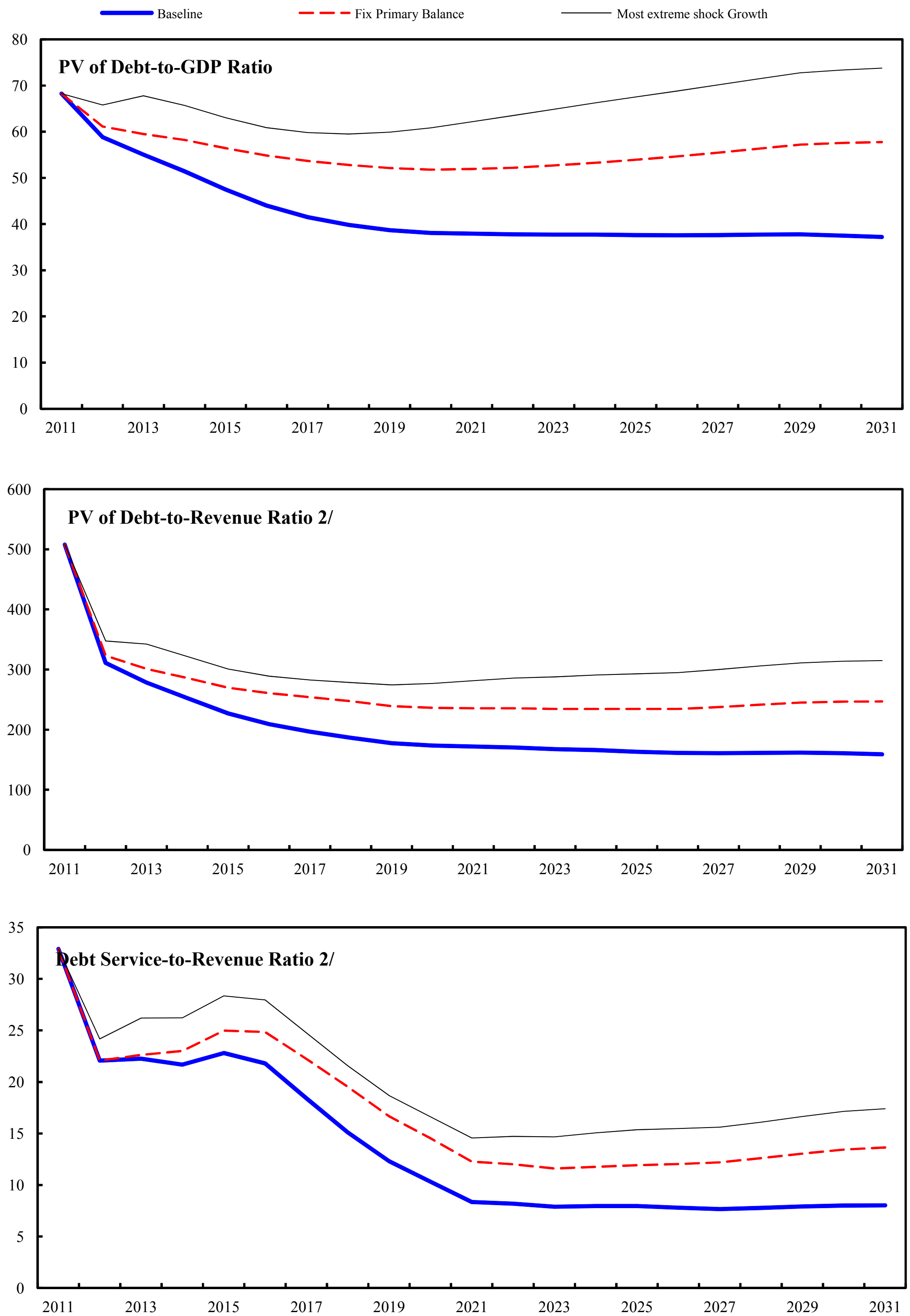
[9] Preliminary results were discussed with the authorities in Abidjan, in September 2010 and May 2011. Staffs of the International Monetary Fund, the World Bank and the African Development Bank took part in the discussions.

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



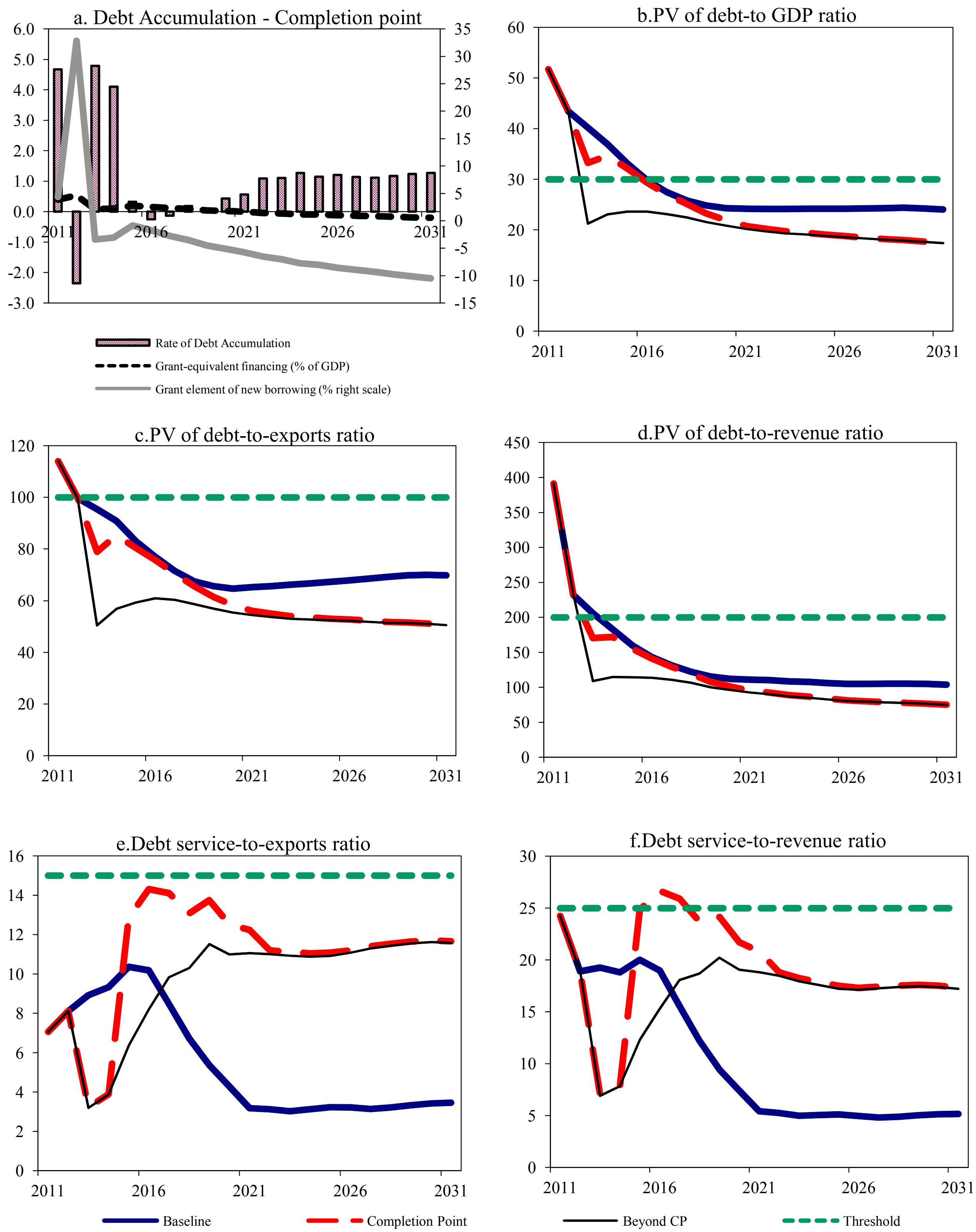
Sources: Countries authorities; and staff estimates and projections.
1/ The most extreme stress test is the test that yields the highest ratio in 2020. In figure b. it corresponds to a One-time depreciation shock, in c. to an Exports shock, in d. to a One-time depreciation shock, in e. to an Exports 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**			**76.6**	**65.0**	**62.1**	**58.9**	**55.0**	**51.5**		**45.2**	**43.3**	
o/w public and publicly guaranteed (PPG)	61.9	53.9	50.6			51.9	43.4	42.5	40.9	38.7	36.9		36.6	40.9	
Change in external debt	-8.6	-8.3	-4.5			-0.1	-11.7	-2.9	-3.2	-3.9	-3.5		-0.3	-0.5	
Identified net debt-creating flows	-19.3	-4.8	-7.7			2.8	-7.4	-3.0	-2.0	-1.4	-0.7		0.0	2.0	
Non-interest current account deficit	**-4.5**	**-9.2**	**-6.3**	**-5.9**	**2.6**	**-2.9**	**-2.3**	**-0.6**	**0.4**	**1.0**	**1.7**		**2.8**	**5.6**	3.6
Deficit in balance of goods and services	-7.5	-12.1	-11.0			-7.1	-6.3	-4.4	-3.5	-3.0	-2.4		-1.4	1.9	
Exports	48.7	50.9	48.4			45.4	43.6	42.1	40.6	39.9	38.8		37.1	34.4	
Imports	41.2	38.9	37.3			38.3	37.3	37.7	37.1	36.9	36.3		35.7	36.3	
Net current transfers (negative = inflow)	1.4	0.5	2.3	2.6	1.0	2.6	2.7	2.7	2.7	2.7	2.7		2.7	2.7	2.7
o/w official	-1.1	-2.1	-0.4			-0.1	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Other current account flows (negative = net inflow)	1.6	2.3	2.4			1.6	1.4	1.1	1.3	1.3	1.4		1.5	1.0	
Net FDI (negative = inflow)	**-2.1**	**-1.7**	**-1.6**	**-1.9**	**0.4**	**-1.5**	**-1.5**	**-1.5**	**-1.5**	**-1.6**	**-1.6**		**-1.7**	**-2.1**	-1.8
Endogenous debt dynamics 2/	**-12.8**	**6.1**	**0.2**			**7.2**	**-3.6**	**-0.9**	**-0.9**	**-0.8**	**-0.8**		**-1.1**	**-1.5**	
Contribution from nominal interest rate	2.6	2.1	1.8			2.5	2.5	2.7	2.4	2.1	1.9		1.0	0.5	
Contribution from real GDP growth	-1.9	-3.5	-1.9			4.6	-6.1	-3.6	-3.3	-3.0	-2.6		-2.1	-2.0	
Contribution from price and exchange rate changes	-13.4	7.5	0.3			…	…	…	…	…	…		…	…	
Residual (3-4) 3/	**10.7**	**-3.5**	**3.3**			**-2.9**	**-4.3**	**0.2**	**-1.2**	**-2.5**	**-2.8**		**-0.3**	**-2.4**	
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/	...	...	75.8			76.5	65.0	59.8	54.8	49.4	44.5		32.9	26.4	
In percent of exports	...	...	156.7			168.5	149.0	142.0	135.0	123.7	114.8		88.6	76.7	
PV of PPG external debt	**...**	**...**	**49.7**			**51.7**	**43.5**	**40.2**	**36.9**	**33.1**	**29.8**		**24.2**	**24.0**	
In percent of exports	**...**	**...**	**102.8**			**113.9**	**99.6**	**95.4**	**90.9**	**83.0**	**76.9**		**65.2**	**69.8**	
In percent of government revenues	**...**	**...**	**259.3**			**391.2**	**232.2**	**205.9**	**183.2**	**160.1**	**143.3**		**111.0**	**103.8**	
Debt service-to-exports ratio (in percent)	**7.4**	**-5.0**	**0.6**			**7.2**	**7.4**	**8.0**	**8.9**	**9.6**	**8.7**		**1.3**	**1.4**	
PPG debt service-to-exports ratio (in percent)	**8.4**	**4.6**	**3.8**			**7.1**	**8.1**	**8.9**	**9.3**	**10.4**	**10.2**		**3.2**	**3.5**	
PPG debt service-to-revenue ratio (in percent)	**21.6**	**12.3**	**9.5**			**24.3**	**18.9**	**19.3**	**18.8**	**20.0**	**19.0**		**5.4**	**5.2**	
Total gross financing need (Billions of U.S. dollars)	0.4	-1.9	-0.7			0.7	0.8	1.3	1.7	2.1	2.2		1.7	5.3	
Non-interest current account deficit that stabilizes debt ratio	4.1	-1.0	-1.8			-2.8	9.4	2.2	3.6	4.9	5.2		3.0	6.0	
Key macroeconomic assumptions															
Real GDP growth (in percent)	2.3	3.8	2.4	1.1	1.7	-6.3	9.0	6.0	5.7	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	3.7	1.9	2.0	3.0	3.1	4.2	2.9	3.6	2.9
Effective interest rate (percent) 5/	3.1	2.2	2.3	3.6	1.3	3.4	3.7	4.5	4.1	3.9	3.7	3.9	2.5	1.2	2.1
Growth of exports of G&S (US dollar terms, in percent)	20.9	0.0	-3.1	10.6	10.4	-2.2	8.7	4.4	3.9	6.8	5.3	4.5	6.7	8.2	7.2
Growth of imports of G&S (US dollar terms, in percent)	16.5	-9.7	-2.0	10.0	11.9	6.8	10.2	9.3	5.9	8.1	6.7	7.8	8.0	9.1	8.1
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	4.3	47.4	49.2	49.2	49.2	49.2	41.4	49.2	49.2	49.2
Government revenues (excluding grants, in percent of GDP)	18.9	18.9	19.2			13.2	18.7	19.5	20.1	20.7	20.8		21.8	23.2	22.4
Aid flows (in Billions of US dollars) 7/	0.4	0.1	0.1			0.2	0.1	1.2	1.1	1.2	1.3		1.9	4.2	
o/w Grants	0.4	0.1	0.1			0.1	0.1	0.1	0.1	0.1	0.1		0.1	0.3	
o/w Concessional loans	0.0	0.0	0.0			0.1	0.1	1.1	1.1	1.1	1.2		1.8	4.0	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			0.4	0.4	2.5	2.3	2.3	2.2		2.2	2.2	2.2
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			9.9	64.8	51.6	51.9	51.9	51.9		52.0	51.9	51.9
Memorandum items:															
Nominal GDP (Billions of US dollars)	23.5	22.5	23.0			23.9	27.1	29.2	31.5	34.2	37.1		54.9	119.2	
Nominal dollar GDP growth	18.6	-4.3	2.1			4.1	13.1	8.0	7.8	8.6	8.5	8.4	8.1	8.8	8.1
PV of PPG external debt (in Billions of US dollars)			11.4			12.5	11.7	11.7	11.6	11.3	11.1		13.3	28.6	
(PVt-PVt-1)/GDPt-1 (in percent)						4.9	-3.3	0.0	-0.4	-0.8	-0.8	-0.1	1.9	1.9	1.6

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	52	43	40	37	33	30	**24**	24
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	52	51	51	51	50	49	**52**	52
A2. New public sector loans on less favorable terms in 2011-2031 2	52	44	42	40	37	35	**35**	41
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	52	46	43	40	36	32	**26**	26
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	52	45	45	41	37	34	**27**	25
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	52	49	50	46	41	37	**30**	30
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	52	45	44	41	37	33	**27**	25
B5. Combination of B1-B4 using one-half standard deviation shocks	52	52	54	50	45	41	**33**	31
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	52	61	56	51	46	42	**34**	33
PV of debt-to-exports ratio								
Baseline	114	100	95	91	83	77	**65**	70
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	114	116	122	126	126	127	**141**	150
A2. New public sector loans on less favorable terms in 2011-2031 2	114	100	99	98	94	91	**94**	120
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	114	99	95	90	82	76	**64**	69
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	114	112	119	114	105	98	**82**	82
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	114	99	95	90	82	76	**64**	69
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	114	104	105	100	92	86	**72**	72
B5. Combination of B1-B4 using one-half standard deviation shocks	114	108	107	102	94	87	**73**	74
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	114	99	95	90	82	76	**64**	69
PV of debt-to-revenue ratio								
Baseline	391	232	206	183	160	143	**111**	104
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	391	271	264	255	244	237	**240**	223
A2. New public sector loans on less favorable terms in 2011-2031 2	391	233	214	198	181	170	**159**	179
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	391	244	223	198	173	155	**119**	112
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	391	241	228	203	179	161	**124**	108
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	391	261	257	228	199	178	**137**	129
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	391	243	227	202	178	160	**123**	108
B5. Combination of B1-B4 using one-half standard deviation shocks	391	276	277	247	217	195	**150**	132
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	391	325	287	255	223	199	**154**	144

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	7	8	9	9	10	10	**3**	3
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	7	9	10	11	13	13	**5**	9
A2. New public sector loans on less favorable terms in 2011-2031 2	7	8	9	9	10	10	**4**	6
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	7	8	9	9	10	10	**3**	3
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	7	9	10	11	12	12	**4**	4
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	7	8	9	9	10	10	**3**	3
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	7	8	9	10	11	10	**3**	4
B5. Combination of B1-B4 using one-half standard deviation shocks	7	8	9	10	11	11	**3**	4
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	7	8	9	9	10	10	**3**	3

Debt service-to-revenue ratio

Baseline	24	19	19	19	20	19	**5**	5
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2011-2031 1/	24	20	22	22	24	24	**9**	13
A2. New public sector loans on less favorable terms in 2011-2031 2	24	19	19	19	19	19	**7**	9
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2012-2013	24	20	21	20	22	21	**6**	6
B2. Export value growth at historical average minus one standard deviation in 2012-2013 3/	24	19	19	19	20	19	**6**	6
B3. US dollar GDP deflator at historical average minus one standard deviation in 2012-2013	24	21	24	24	25	24	**7**	6
B4. Net non-debt creating flows at historical average minus one standard deviation in 2012-2013 4/	24	19	19	19	20	19	**6**	5
B5. Combination of B1-B4 using one-half standard deviation shocks	24	21	24	24	25	24	**7**	7
B6. One-time 30 percent nominal depreciation relative to the baseline in 2012 5/	24	27	27	26	28	27	**8**	7
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	43	43	43	43	43	43	**43**	43

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			68.4	58.8	57.3	55.5	53.1	51.0		50.3	54.1	
o/w foreign-currency denominated	61.9	53.9	50.6			51.9	43.4	42.5	40.9	38.7	36.9		36.6	40.9	
Change in public sector debt	-0.4	-8.8	0.0			2.0	-9.6	-1.5	-1.8	-2.4	-2.0		0.7	-0.2	
Identified debt-creating flows	-3.0	-7.6	-1.0			4.1	-4.2	-1.3	-1.7	-2.1	-1.6		0.4	-1.4	
Primary deficit	-1.2	0.7	1.3	-0.1	0.9	4.5	1.0	1.0	0.6	0.6	0.9	1.4	2.9	1.9	2.2
Revenue and grants	20.6	19.5	19.7			13.4	18.9	19.8	20.4	20.9	21.0		22.1	23.4	
of which: grants	1.7	0.6	0.5			0.2	0.2	0.2	0.2	0.2	0.2		0.2	0.2	
Primary (noninterest) expenditure	19.3	20.2	21.0			18.0	20.0	20.8	21.0	21.5	21.9		25.0	25.3	
Automatic debt dynamics	-0.6	-3.0	0.4			-0.3	-5.3	-2.3	-2.3	-2.7	-2.5		-2.5	-3.3	
Contribution from interest rate/growth differential	-2.4	-3.1	-1.3			5.4	-4.8	-2.1	-2.1	-2.0	-2.0		-1.5	-2.0	
of which: contribution from average real interest rate	-0.7	-0.4	0.3			0.9	0.9	1.2	1.0	0.8	0.6		0.9	0.6	
of which: contribution from real GDP growth	-1.7	-2.7	-1.6			4.5	-5.7	-3.3	-3.1	-2.9	-2.6		-2.4	-2.6	
Contribution from real exchange rate depreciation	1.9	0.1	1.7			-5.7	-0.5	-0.2	-0.3	-0.7	-0.5		...	...	
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			-2.1	-5.3	-0.2	-0.1	-0.3	-0.4		0.2	1.3	
Other Sustainability Indicators															
PV of public sector debt	13.4	12.6	65.5			68.2	58.9	55.0	51.4	47.5	44.0		37.9	37.2	
o/w foreign-currency denominated	0.0	0.0	49.7			51.7	43.5	40.2	36.9	33.1	29.8		24.2	24.0	
o/w external	...	...	49.7			51.7	43.5	40.2	36.9	33.1	29.8		24.2	24.0	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	3.5	3.6	4.2			8.9	5.2	5.4	5.1	5.3	5.5		4.8	3.8	
PV of public sector debt-to-revenue and grants ratio (in percent)	65.2	64.7	332.5			507.6	311.1	278.5	252.4	226.9	209.2		171.9	159.1	
PV of public sector debt-to-revenue ratio (in percent)	71.1	66.7	341.7			516.1	314.4	281.7	255.3	229.4	211.5		173.7	160.7	
o/w external 3/	…	…	259.3			391.2	232.2	205.9	183.2	160.1	143.3		111.0	103.8	
Debt service-to-revenue and grants ratio (in percent) 4/	22.9	14.9	14.6			32.9	22.1	22.2	21.7	22.8	21.8		8.3	8.0	
Debt service-to-revenue ratio (in percent) 4/	25.0	15.3	15.0			33.5	22.3	22.5	21.9	23.1	22.0		8.4	8.1	
Primary deficit that stabilizes the debt-to-GDP ratio	-0.9	9.5	1.3			2.6	10.6	2.5	2.5	3.0	2.9		2.3	2.0	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	2.3	3.8	2.4	1.1	1.7	-6.3	9.0	6.0	5.7	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	2.3	2.9	3.9	3.4	3.1	2.9	3.1	1.7	1.0	1.5
Average real interest rate on domestic debt (in percent)	-1.6	3.0	2.9	0.8	1.9	1.1	0.8	1.6	1.6	1.7	1.7	1.4	2.2	1.9	2.3
Real exchange rate depreciation (in percent, + indicates depreciation)	3.0	0.2	3.1	-3.2	9.5	-10.4	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	8.0	0.0	1.9	3.2	2.4	3.4	3.5	2.9	3.0	3.0	3.1	3.1	2.9	3.6	2.9
Growth of real primary spending (deflated by GDP deflator, in percent)	0.0	0.1	0.1	0.0	0.1	-0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Grant element of new external borrowing (in percent)	...	...	...	…	…	4.3	47.4	49.2	49.2	49.2	49.2	41.4	49.2	49.2	...

Sources: Country authorities; and staff estimates and projections.
1/ Public sector include 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	68	59	55	51	47	44	38	37
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	68	63	61	59	56	53	44	47
A2. Primary balance is unchanged from 2011	68	61	60	58	56	55	52	58
A3. Permanently lower GDP growth 1/	68	59	56	52	49	45	42	49
A4. Alternative Scenario :[Costumize, enter title]	68	57	54	50	47	44	28	11
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	68	66	68	66	63	61	62	74
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	68	59	55	51	47	44	38	37
B3. Combination of B1-B2 using one half standard deviation shocks	68	64	62	60	58	55	57	68
B4. One-time 30 percent real depreciation in 2012	68	80	74	68	62	56	43	36
B5. 10 percent of GDP increase in other debt-creating flows in 2012	68	65	61	57	53	49	42	39
PV of Debt-to-Revenue Ratio 2/								
Baseline	508	311	278	252	227	209	172	159
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	508	331	306	287	267	252	198	200
A2. Primary balance is unchanged from 2011	508	323	301	286	270	261	235	247
A3. Permanently lower GDP growth 1/	508	312	281	256	232	216	189	208
A4. Alternative Scenario :[Costumize, enter title]	507	216	202	189	177	165	109	41
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	508	347	342	322	301	289	281	315
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	508	310	277	251	226	208	171	159
B3. Combination of B1-B2 using one half standard deviation shocks	508	335	314	295	275	263	257	290
B4. One-time 30 percent real depreciation in 2012	508	422	372	333	295	267	196	153
B5. 10 percent of GDP increase in other debt-creating flows in 2012	508	346	310	281	253	234	190	168
Debt Service-to-Revenue Ratio 2/								
Baseline	33	22	22	22	23	22	8	8
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	33	24	25	25	27	27	9	8
A2. Primary balance is unchanged from 2011	33	22	23	23	25	25	12	14
A3. Permanently lower GDP growth 1/	33	22	22	22	23	22	9	11
A4. Alternative Scenario :[Costumize, enter title]	33	17	18	17	17	16	4	3
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	33	24	26	26	28	28	15	17
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	33	22	22	22	23	22	8	8
B3. Combination of B1-B2 using one half standard deviation shocks	33	24	25	25	26	26	13	16
B4. One-time 30 percent real depreciation in 2012	33	26	31	30	32	31	12	12
B5. 10 percent of GDP increase in other debt-creating flows in 2012	33	22	23	24	25	24	9	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.