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2012 ARTICLE IV CONSULTATION AND FOURTH REVIEW UNDER THE EXTENDED CREDIT FACILITY ARRANGEMENT— UPDATE OF THE DEBT SUSTAINABILITY ANALYSIS

Approved By
Michael Atingi-Ego and Peter Allum (IMF) and Jeffrey Lewis and Marcelo Giugale (IDA)

Prepared by the International Monetary Fund and the International Development Association[1]

The update of debt sustainability analysis (DSA) confirms a low risk of debt distress. The projected external debt indicators, despite a moderate deterioration owing to less favorable medium-term growth and export prospects, remain below the policy-dependant thresholds under the baseline scenario and stress tests. The inclusion of domestic public debt shows a gradual decrease in all debt indicators confirming the conclusion of the external DSA. This assessment, however, critically depends on the assumption that the authorities will continue to pursue prudent fiscal and debt policies and will implement structural reforms to enhance competitiveness and growth.

[1] Prepared in collaboration with the Beninese authorities. The fiscal year for Benin is January 1–December 31. The previous DSA update was performed in August 2011 (IMF Country Report No. 11/243).

KEY ASSUMPTIONS UNDER THE BASELINE SCENARIO

1. **The medium-term macroeconomic outlook has been revised downward to reflect a more challenging environment, but the assumptions under the baseline scenario remain broadly in line with those used in the previous DSA**. Near-term growth and export perspectives have deteriorated moderately, because of the continuing global crisis (Text Table 1). Real GDP growth is still expected to increase to 5 percent over the long term, following the implementation of structural reforms aimed at strengthening competitiveness and improving public infrastructure. The primary fiscal deficit[2] and the non-interest external current account deficit are expected to stabilize at 1¼ percent of GDP and at about 4 ½ percent of GDP, respectively. Over the medium-term, it is assumed that the authorities will continue to benefit from sizeable concessional borrowing from multilateral donors. Domestic public debt is projected to start declining in 2013, owing to the clearance of domestic arrears and the authorities' prudent borrowing strategy.

2. **The large size of the informal sector complicates the DSA for Benin.** The large size of the informal economy, and above all the large amount of imports that subsequently become unregistered exports to Nigeria, lead to an overestimation of the external current account deficit and to large residuals in the external debt sustainability analysis.

3. **Risks to the baseline are skewed to the downside.** Externally, the deterioration of the global environment could result in lower-than-expected exports,[3] foreign direct investment, and remittances. Domestically, much will depend on maintaining prudent macroeconomic policies and implementing structural reforms that will boost the economy's supply response. The current assessment also critically depends on the authorities' debt management capacity and the availability of concessional external assistance to finance investment projects.

Text Table 1. Benin: Evolution of selected macroeconomic indicators

	2011	2012	2013
Real GDP growth (percent)			
Previous DSA	3.8	4.3	4.8
Current DSA	3.5	3.5	3.8
Growth of exports (percent)			
Previous DSA	15.3	4.9	4.8
Current DSA	-18.9	3.9	8.9
Non-interest current account deficit (percent of GDP)			
Previous DSA	7.4	7.2	6.6
Current DSA	9.7	9.2	9.2
Primary fiscal deficit (percent of GDP)			
Previous DSA	0.8	0.9	0.1
Current DSA	1.4	0.1	0.6

Sources: Beninese authorities; IMF staff estimates.

[2]The primary fiscal deficit is computed as revenue and grants minus primary (non-interest) expenditure.

[3] The Beninese economy is becoming less dependent on the cotton sector. For instance, the weight of cotton in exports has steadily declined over the last two decades, from 83 percent of exports in 1999 to just 17 percent in 2011. This evolution confirms that the risk related to cotton price volatility and financing of cotton activities is relatively moderate.

EXTERNAL AND PUBLIC DEBT SUSTAINABILITY

A. External Debt Sustainability Analysis

4. **With all debt indicators expected to remain below their relevant policy-dependent thresholds, the most extreme shock scenario[4] shows that some vulnerability persists** (Figure 1, Tables 1 and 2). Stress tests reveal Beninese external debt suitability is vulnerable to a one-time depreciation of the exchange rate and an export shock. In the most extreme shock scenario, the present value (PV) of the debt-to-exports ratio is expected to increase significantly without, however, breaching its threshold.[5] The other indicators are also sensitive to the most extreme shock, although to a lesser extent. The historical scenario shows another significant vulnerability to external debt sustainability.[6]

B. Public Debt Sustainability Analysis

5. **Total (external and domestic) debt is projected to decline gradually, owing to the authorities' strategy to repay securitized wage arrears and to continue relying on external concessional financing** (Figure 2, Table 3). Debt indicators are vulnerable to the most extreme shock, calibrated as a significant increase in other debt-creating flows (Table 4). All debt ratios are sensitive to lower GDP growth and primary fiscal balance assumptions.[7]

[4] The most extreme test shock is calibrated as an export shock equal to the historical average (2001–10) of export growth plus one standard deviation (in the same period), or a one-time, 30-percent nominal currency depreciation. The shock is assumed to take place in 2013-14. The average export growth is computed for 2001–10 to avoid the end-of-the-sample bias resulting from a substantial negative shock to exports that occurred in 2011. Temporary disruptions at the port of Cotonou contributed to a major decline in export activity, 34 percent below the 2001-10 average export growth. This temporary shock is not representative of past and future shocks.

[5] Debt sustainability thresholds are determined by the three-year average the Country Policy and Institutional Assessment (CPIA) rating (3.5), which classifies Benin as having medium-quality policies and institutional frameworks.

[6] Under this scenario, the key variables are held constant at their 10-year average. In particular, real GDP growth is assumed to be 3.6 percent; GDP deflator growth (in U.S. dollar terms) 7.6 percent; the non-interest external current account deficit

(continued)

7.5 percent of GDP; and net foreign direct investment flows 2.1 percent of GDP.

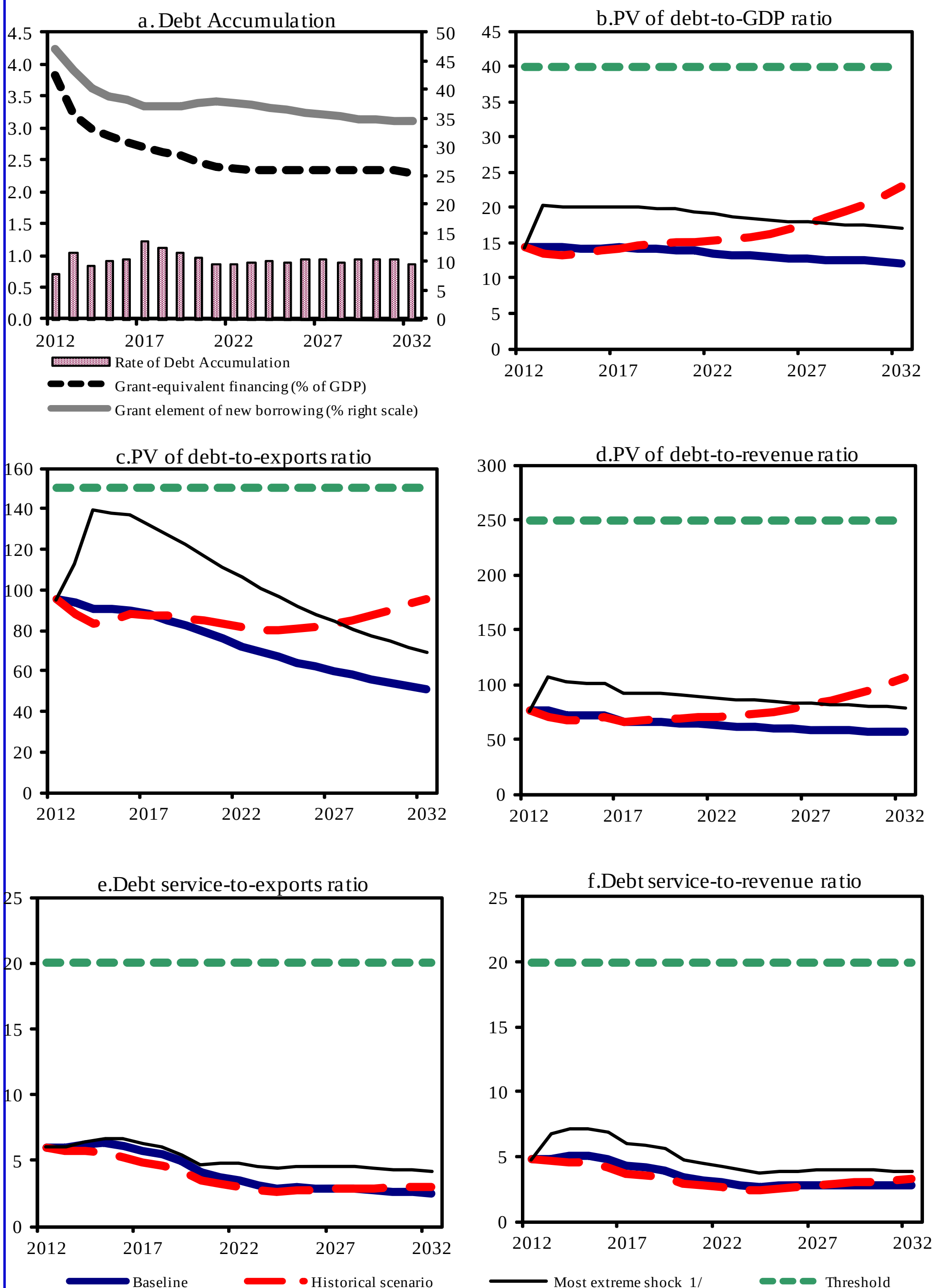
[7] Real GDP growth and primary fiscal balance (in percent of GDP) are projected to remain at their 10-year average, i.e., at 3.6 percent and -1.4 percent, respectively.

CONCLUSION

6. **The updated DSA confirms that Benin faces a low risk of debt distress under the assumptions of prudent macroeconomic policies and timely, efficiency-enhancing structural reforms.** It is noteworthy that the updated DSA presents a moderately worse debt outlook than the previous DSA. The baseline and alternative stress test scenarios continue to indicate that external debt positions present low vulnerabilities to shocks. The inclusion of domestic public debt in the analysis confirms the conclusions of the external DSA.

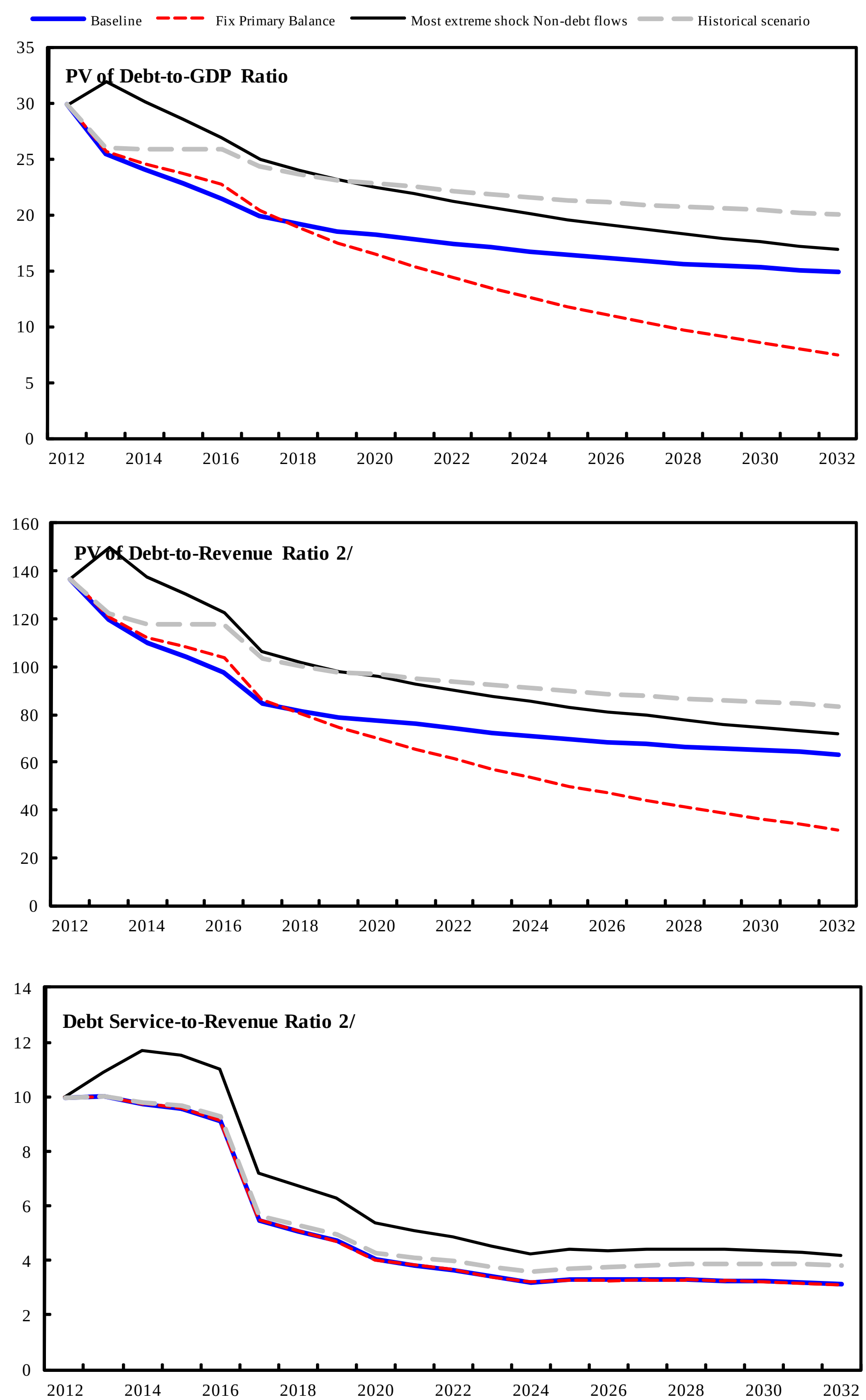
7. **The authorities agree with the staff's conclusions.** They concur that debt sustainability will depend crucially on improvements in economic diversification, sustained growth, fiscal consolidation, and a continuation of a prudent borrowing strategy relying mainly on grants and external concessional financing.

Figure 1. Benin: Indicators of Public and Publicly Guaranteed External Debt unc



Sources: Beninese authorities; IMF and World Bank staff estimates and projections.
1/ The most extreme stress test is the test that yields the highest ratio in 2022. In figure b. it corresponds to a One-time depreciation shock; in c. to a Exports shock; in d. to a One-time depreciation shock; in e. to a Terms shock and in figure f. to a One-time depreciation shock

Figure 2.Benin: Indicators of Public Debt Under Alternative Scenarios, 2012-2032 1/



Sources: Beninese authorities; IMF and World Bank staff estimates and projections.
1/ The most extreme stress test is the test that yields the highest ratio in 2022.
2/ Revenues are defined inclusive of grants.

Table 1.: Benin: External Debt Sustainability Framework, Baseline Scenario, 2009-2032 1/
(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average 6/	Standard Deviation 6/	Projections									
	2009	2010	2011			2012	2013	2014	2015	2016	2017	2012-2017 Average	2022	2032	2018-2032 Average
External debt (nominal) 1/	15.7	17.9	17.7			17.3	18.0	18.3	18.8	19.2	19.8		19.5	17.3	
o/w public and publicly guaranteed (PPG)	15.7	17.9	17.7			17.3	18.0	18.3	18.8	19.2	19.8		19.5	17.3	
Change in external debt	-0.8	2.3	-0.2			-0.4	0.7	0.4	0.4	0.4	0.6		-0.4	-0.2	
Identified net debt-creating flows	7.5	4.4	5.2			5.9	5.8	4.7	4.0	3.6	4.2		3.6	1.1	
Non-interest current account deficit	8.7	7.0	9.7	7.5	1.5	9.2	9.2	8.3	7.8	7.5	7.3		6.8	4.2	6.0
Deficit in balance of goods and services	13.4	10.6	12.7			12.7	12.6	11.8	11.3	11.1	11.0		10.3	7.9	
Exports	16.5	20.6	15.0			15.1	15.3	15.8	15.8	15.8	16.3		18.8	24.0	
Imports	29.8	31.1	27.6			27.7	27.9	27.6	27.0	26.8	27.2		29.1	31.8	
Net current transfers (negative = inflow)	-5.0	-4.1	-3.2	-5.0	1.0	-3.7	-3.6	-3.6	-3.5	-3.6	-3.6		-3.8	-3.9	-3.8
o/w official	-3.9	-3.0	-1.8			-2.3	-2.1	-2.0	-1.9	-1.9	-1.9		-1.9	-1.9	
Other current account flows (negative = net inflow)	0.2	0.6	0.3			0.2	0.2	0.1	0.1	0.0	0.0		0.2	0.2	
Net FDI (negative = inflow)	-1.6	-3.0	-2.9	-2.1	1.3	-3.0	-3.2	-3.3	-3.5	-3.6	-2.8		-2.5	-2.5	-2.6
Endogenous debt dynamics 2/	0.4	0.3	-1.6			-0.3	-0.3	-0.3	-0.3	-0.3	-0.4		-0.6	-0.6	
Contribution from nominal interest rate	0.3	0.2	0.2			0.3	0.3	0.4	0.4	0.5	0.5		0.3	0.3	
Contribution from real GDP growth	-0.4	-0.4	-0.6			-0.6	-0.6	-0.7	-0.7	-0.8	-0.9		-0.9	-0.8	
Contribution from price and exchange rate changes	0.6	0.5	-1.3			...	...	...	...	...	...		...	...	
Residual (3-4) 3/	-8.3	-2.1	-5.5			-6.3	-5.1	-4.4	-3.6	-3.1	-3.6		-4.0	-1.4	
o/w exceptional financing	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
PV of external debt 4/	...	...	15.2			14.3	14.4	14.3	14.2	14.2	14.3		13.6	12.2	
In percent of exports	...	...	101.3			95.3	94.0	90.5	90.2	89.9	87.9		72.2	50.8	
PV of PPG external debt	...	...	15.2			14.3	14.4	14.3	14.2	14.2	14.3		13.6	12.2	
In percent of exports	...	...	101.3			95.3	94.0	90.5	90.2	89.9	87.9		72.2	50.8	
In percent of government revenues	...	...	86.3			75.9	75.5	72.3	71.5	71.2	65.8		62.5	56.1	
Debt service-to-exports ratio (in percent)	3.4	3.6	5.0			6.0	6.0	6.3	6.4	6.1	5.7		3.5	2.5	
PPG debt service-to-exports ratio (in percent)	3.4	3.6	5.0			6.0	6.0	6.3	6.4	6.1	5.7		3.5	2.5	
PPG debt service-to-revenue ratio (in percent)	3.1	4.0	4.3			4.8	4.8	5.0	5.1	4.8	4.2		3.0	2.7	
Total gross financing need (Millions of U.S. dollars)	0.5	0.3	0.6			0.5	0.6	0.5	0.5	0.5	0.6		0.8	0.8	
Non-interest current account deficit that stabilizes debt ratio	9.5	4.8	10.0			9.6	8.5	8.0	7.4	7.1	6.8		7.1	4.4	
Key macroeconomic assumptions															
Real GDP growth (in percent)	2.7	2.6	3.5	3.6	0.9	3.5	3.8	4.1	4.3	4.5	4.8	4.2	5.1	5.1	5.0
GDP deflator in US dollar terms (change in percent)	-3.3	-2.9	7.5	7.6	7.7	-0.2	3.2	2.6	2.5	2.3	3.0	2.2	3.0	3.0	3.0
Effective interest rate (percent) 5/	1.7	1.5	1.4	2.9	4.7	2.0	2.1	2.4	2.5	2.6	2.8	2.4	1.6	1.7	1.7
Growth of exports of G&S (US dollar terms, in percent)	-8.1	24.4	-18.9	13.0	20.2	3.9	8.9	10.1	6.8	7.0	11.2	8.0	11.2	10.9	11.0
Growth of imports of G&S (US dollar terms, in percent)	-4.8	3.8	-1.2	13.2	17.9	3.7	7.9	5.4	4.9	6.0	9.5	6.2	9.5	9.2	9.3
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	47.2	43.5	40.4	38.8	38.4	37.2	40.9	37.6	34.5	36.3
Government revenues (excluding grants, in percent of GDP)	18.5	18.6	17.6			18.9	19.1	19.7	19.9	19.9	21.7		21.7	21.7	21.7
Aid flows (in Millions of US dollars) 7/	0.2	0.1	0.2			0.3	0.3	0.3	0.3	0.3	0.3		0.4	0.7	
o/w Grants	0.2	0.1	0.2			0.2	0.2	0.2	0.2	0.2	0.2		0.3	0.6	
o/w Concessional loans	0.0	0.0	0.0			0.1	0.1	0.1	0.1	0.1	0.1		78.5	78.5	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			3.8	3.2	3.0	2.9	2.8	2.7		2.4	2.3	2.4
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			78.7	70.6	70.7	68.3	67.8	63.9		71.4	71.2	70.0
Memorandum items:															
Nominal GDP (Millions of US dollars)	6.6	6.6	7.3			7.5	8.1	8.6	9.2	9.9	10.6		15.7	34.6	
Nominal dollar GDP growth	-0.7	-0.4	11.3			3.3	7.1	6.8	6.9	6.9	7.9	6.5	8.3	8.3	8.2
PV of PPG external debt (in Millions of US dollars)			1.0			1.1	1.2	1.2	1.3	1.4	1.5		2.1	4.2	
(PVt-PVt-1)/GDPt-1 (in percent)						0.7	1.0	0.8	0.9	0.9	1.2	0.9	0.9	0.8	0.9
Gross workers' remittances (Millions of US dollars)	0.1	0.1	0.1			0.1	0.1	0.2	0.2	0.2	0.2		0.3	0.8	
PV of PPG external debt (in percent of GDP + remittances)	...	...	14.9			14.1	14.2	14.0	14.0	13.9	14.0		13.3	11.9	
PV of PPG external debt (in percent of exports + remittances)	...	...	89.7			85.8	84.6	81.5	81.0	80.6	78.8		65.2	46.6	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	4.4			5.4	5.4	5.6	5.8	5.5	5.1		3.2	2.3	

Sources: Beninese authorities; IMF and World Bank staff estimates and projections.

1/ Includes both public and private sector external debt. Some debt series may not be directly comparable to those presented in Table 1 of the staff report owing to different exchange rate and interest rate forecasts at the time of the preparation of this document.

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; capital grants; and valuation adjustments. For projections also includes contribution from price and exchange rate changes.

4/ Assumes that PV of private sector debt is equivalent to its face value.

5/ Current-year interest payments divided by previous period debt stock.

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

7/ Defined as grants, concessional loans, and debt relief.

8/ Grant-equivalent financing includes grants provided directly to the government and through new borrowing (difference between the face value and the PV of new debt).

Table 2.Benin: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2012-2032
(In percent)

				Projections				
	2012	2013	2014	2015	2016	2017	2022	2032
PV of debt-to-GDP ratio								
Baseline	14	14	14	14	14	14	14	12
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2012-2032 1/	14	13	13	13	14	14	15	23
A2. New public sector loans on less favorable terms in 2012-2032 2	14	15	15	16	17	17	19	19
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	14	15	15	15	14	15	14	12
B2. Export value growth at historical average minus one standard deviation in 2013-2014 3/	14	15	17	17	17	17	16	13
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	14	15	15	15	15	15	14	13
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 4/	14	16	17	17	16	16	15	13
B5. Combination of B1-B4 using one-half standard deviation shocks	14	15	17	17	17	17	15	13
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 5/	14	20	20	20	20	20	19	17
PV of debt-to-exports ratio								
Baseline	95	94	90	90	90	88	72	51
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2012-2032 1/	95	88	84	85	88	88	81	95
A2. New public sector loans on less favorable terms in 2012-2032 2	95	98	98	101	105	106	100	81
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	95	94	90	90	90	88	72	51
B2. Export value growth at historical average minus one standard deviation in 2013-2014 3/	95	113	139	138	137	132	106	69
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	95	94	90	90	90	88	72	51
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 4/	95	102	106	105	105	101	81	54
B5. Combination of B1-B4 using one-half standard deviation shocks	95	107	122	121	120	117	94	61
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 5/	95	94	90	90	90	88	72	51
PV of debt-to-revenue ratio								
Baseline	76	76	72	72	71	66	62	56
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2012-2032 1/	76	71	67	67	70	66	70	105
A2. New public sector loans on less favorable terms in 2012-2032 2	76	79	78	80	83	80	86	90
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	76	76	74	73	73	67	64	57
B2. Export value growth at historical average minus one standard deviation in 2013-2014 3/	76	81	88	87	86	78	72	60
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	76	78	77	76	75	70	66	59
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 4/	76	82	85	84	83	76	70	59
B5. Combination of B1-B4 using one-half standard deviation shocks	76	81	86	85	84	77	71	59
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 5/	76	106	102	101	100	93	88	79

Table 2.Benin: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2012-2032 (continued)

(In percent)

				Projections				
	2012	2013	2014	2015	2016	2017	2022	2032
Debt service-to-exports ratio								
Baseline	6	6	6	6	6	6	4	2
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2012-2032 1/	6	6	6	6	5	5	3	3
A2. New public sector loans on less favorable terms in 2012-2032 2	6	6	6	7	7	6	5	4
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	6	6	6	6	6	6	4	2
B2. Export value growth at historical average minus one standard deviation in 2013-2014 3/	6	7	8	9	8	8	5	3
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	6	6	6	6	6	6	4	2
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 4/	6	6	6	7	6	6	4	3
B5. Combination of B1-B4 using one-half standard deviation shocks	6	6	7	8	7	7	4	3
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 5/	6	6	6	6	6	6	4	2
Debt service-to-revenue ratio								
Baseline	5	5	5	5	5	4	3	3
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2012-2032 1/	5	5	5	4	4	4	3	3
A2. New public sector loans on less favorable terms in 2012-2032 2	5	5	5	5	5	5	4	5
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	5	5	5	5	5	4	3	3
B2. Export value growth at historical average minus one standard deviation in 2013-2014 3/	5	5	5	5	5	5	3	3
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	5	5	5	5	5	4	3	3
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 4/	5	5	5	5	5	4	3	3
B5. Combination of B1-B4 using one-half standard deviation shocks	5	5	5	5	5	4	3	3
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 5/	5	7	7	7	7	6	4	4
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	36	36	36	36	36	36	36	36

Sources: Beninese authorities; IMF and World Bank 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 a
an offsetting adjustment in import levels).
4/ Includes official and private transfers and FDI.
5/ Depreciation is defined as percentage decline in dollar/local currency rate, such that it never exceeds 100 percent.
6/ Applies to all stress scenarios except for A2 (less favorable financing) in which the terms on all new financing are as specified in footnote 2.

Table 3.Benin: Public Sector Debt Sustainability Framework, Baseline Scenario, 2009-2032

(In percent of GDP, unless otherwise indicated)

	Actual 2009	2010	2011	Average 5/	Standard Deviation 5/	Projections 2012	2013	2014	2015	2016	2017	2012-17 Average	2022	2032	2018-32 Average
Public sector debt 1/	27.5	30.0	31.5			32.8	29.1	28.1	27.3	26.4	25.4		23.3	19.9	
o/w foreign-currency denominated	15.7	17.9	17.7			17.3	18.0	18.3	18.8	19.2	19.8		19.5	17.3	
Change in public sector debt	1.0	2.5	1.5			1.2	-3.7	-0.9	-0.8	-0.9	-1.1		-0.5	-0.3	
Identified debt-creating flows	2.0	1.0	0.7			-2.2	-0.9	-1.6	-1.8	-1.7	0.1		-0.1	0.1	
Primary deficit	3.8	1.0	1.4	1.4	1.7	0.1	0.6	-0.4	-0.6	-0.7	1.3	0.0	1.3	1.3	1.3
Revenue and grants	21.7	20.0	20.1			21.8	21.3	21.9	21.9	21.9	23.5		23.5	23.5	
of which: grants	3.2	1.5	2.5			2.9	2.2	2.1	2.0	2.0	1.8		1.8	1.8	
Primary (noninterest) expenditure	25.5	21.1	21.5			21.8	21.9	21.5	21.3	21.2	24.8		24.8	24.8	
Automatic debt dynamics	-1.2	0.5	-0.7			-2.3	-1.5	-1.2	-1.1	-1.0	-1.1		-1.3	-1.1	
Contribution from interest rate/growth differential	0.2	0.1	-2.1			-1.1	-1.5	-1.2	-1.1	-1.0	-1.1		-1.3	-1.1	
of which: contribution from average real interest rate	0.9	0.8	-1.1			0.0	-0.3	0.0	0.0	0.1	0.1		-0.2	-0.2	
of which: contribution from real GDP growth	-0.7	-0.7	-1.0			-1.1	-1.2	-1.1	-1.2	-1.2	-1.2		-1.2	-1.0	
Contribution from real exchange rate depreciation	-1.4	0.4	1.4			-1.2	0.0	0.0	0.0	0.0	0.0		...	...	
Other identified debt-creating flows	-0.6	-0.5	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Privatization receipts (negative)	-0.6	-0.5	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)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Other (specify, e.g. bank recapitalization)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Residual, including asset changes	-1.0	1.5	0.8			3.5	-2.8	0.7	0.9	0.8	-1.2		-0.4	-0.4	
Other Sustainability Indicators															
PV of public sector debt	...	12.1	29.0			29.8	25.5	24.1	22.8	21.4	19.8		17.4	14.8	
o/w foreign-currency denominated	...	0.0	15.2			14.3	14.4	14.3	14.2	14.2	14.3		13.6	12.2	
o/w external	...	...	15.2			14.3	14.4	14.3	14.2	14.2	14.3		13.6	12.2	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
PV of public sector debt-to-revenue and grants ratio (in perce	...	60.3	144.1			136.8	119.8	110.0	104.0	97.8	84.4		74.1	63.1	
PV of public sector debt-to-revenue ratio (in percent)	...	65.1	164.9			157.8	133.6	122.0	114.6	107.4	91.4		80.2	68.3	
o/w external 3/	...	...	86.3			75.9	75.5	72.3	71.5	71.2	65.8		62.5	56.1	
Debt service-to-revenue and grants ratio (in percent) 4/	6.0	7.2	8.9			10.0	10.0	9.7	9.6	9.1	5.5	3.7	3.4	3.1	
Debt service-to-revenue ratio (in percent) 4/	7.1	7.8	10.2			11.5	11.1	10.8	10.5	10.0	5.9		4.0	3.4	
Primary deficit that stabilizes the debt-to-GDP ratio	2.8	-1.5	-0.1			-1.2	4.3	0.5	0.2	0.2	2.3		1.8	1.6	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	2.7	2.6	3.5	3.6	0.9	3.5	3.8	4.1	4.3	0.0	4.8	3.4	5.1	5.1	5.0
Average nominal interest rate on forex debt (in percent)	1.7	1.5	1.4	2.9	4.7	2.0	2.1	2.4	2.5	2.6	2.8	2.4	1.6	1.7	1.7
Average real interest rate on domestic debt (in percent)	0.5	0.7	-0.6	-1.0	2.5	-2.7	-1.0	-0.1	0.4	1.0	1.9	-0.1	1.9	1.9	1.9
Real exchange rate depreciation (in percent, + indicates depre	-8.4	2.8	8.4	1.0	9.4	-7.0	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	2.0	1.9	2.4	2.8	1.9	5.5	3.1	3.0	2.9	2.8	3.5	3.5	3.5	3.5	3.5
Growth of real primary spending (deflated by GDP deflator, ir	0.2	-0.2	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.1
Grant element of new external borrowing (in percent)	...	...	...	...	...	47.2	43.5	40.4	38.8	38.4	37.2	40.9	37.6	34.5	...

Sources: Beninese authorities; IMF and World Bank staff estimates and projections.

1/ Some debt series may not be directly comparable to those presented in Table 1 of the staff report owing to different exchange rate and interest rate forecasts at the time of the preparation of this document.

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

3/ Revenues excluding grants.

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

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

Table 4.Benin: Sensitivity Analysis for Key Indicators of Public Debt 2012-2032

	Projections							
	2012	2013	2014	2015	2016	2017	2022	2032
PV of Debt-to-GDP Ratio								
Baseline	30	25	24	23	21	20	17	15
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	30	26	26	26	26	24	22	20
A2. Primary balance is unchanged from 2012	30	26	25	24	23	20	14	7
A3. Permanently lower GDP growth 1/	30	26	24	23	22	20	18	15
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2013-2014	30	26	25	23	22	20	18	15
B2. Primary balance is at historical average minus one standard deviations in 2013-2014	30	27	28	26	25	23	20	16
B3. Combination of B1-B2 using one half standard deviation shocks	30	27	27	26	24	22	19	16
B4. One-time 30 percent real depreciation in 2013	30	57	29	27	25	23	19	15
B5. 10 percent of GDP increase in other debt-creating flows in 2013	30	32	30	28	27	25	21	17
PV of Debt-to-Revenue Ratio 2/								
Baseline	137	120	110	104	98	84	74	63
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	137	122	118	118	118	103	94	83
A2. Primary balance is unchanged from 2012	137	121	112	108	104	86	61	32
A3. Permanently lower GDP growth 1/	137	120	110	105	99	85	75	65
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2013-2014	137	121	113	107	100	87	76	64
B2. Primary balance is at historical average minus one standard deviations in 2013-2014	137	127	127	120	113	98	84	68
B3. Combination of B1-B2 using one half standard deviation shocks	137	126	124	117	110	96	82	67
B4. One-time 30 percent real depreciation in 2013	137	267	132	123	115	98	81	64
B5. 10 percent of GDP increase in other debt-creating flows in 2013	137	150	137	130	123	106	90	72
Debt Service-to-Revenue Ratio 2/								
Baseline	10	10	10	10	9	5	4	3
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	10	10	10	10	9	6	4	4
A2. Primary balance is unchanged from 2012	10	10	10	10	9	5	4	3
A3. Permanently lower GDP growth 1/	10	10	10	10	9	5	4	3
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2013-2014	10	10	10	10	9	5	4	3
B2. Primary balance is at historical average minus one standard deviations in 2013-2014	10	10	10	10	9	5	4	3
B3. Combination of B1-B2 using one half standard deviation shocks	10	10	10	10	9	5	4	3
B4. One-time 30 percent real depreciation in 2013	10	11	12	12	11	7	5	4
B5. 10 percent of GDP increase in other debt-creating flows in 2013	10	10	10	10	9	5	4	3

Sources: Beninese authorities; IMF and World Bank 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.