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FROM: Vice President and Corporate Secretary

Nigeria

Joint Bank-Fund Debt Sustainability Analysis

1. Attached for information is a paper entitled "Nigeria - Joint Bank/IMF Debt Sustainability Analysis".

2. This paper will be publicly disclosed by the Bank and the Fund after obtaining government consent.

3. Questions on this document may be referred to Mr. Stucka (ext. 38866).

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INTERNATIONAL DEVELOPMENT ASSOCIATION
INTERNATIONAL MONETARY FUND

NIGERIA

Joint World Bank/World Bank Debt Sustainability Analysis Under the Debt Sustainability Framework for Low Income Countries

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

Approved by Carlos Primo Braga and Kathie Krumm (IDA)
and Saul Lizondo and Dhaneshwar Ghura (IMF)

Nigeria is at low risk of debt distress based on the joint Bank-IMF low-income country debt sustainability analysis (DSA)—as it was in the DSA published in February 2008. The debt outlook is robust both in the baseline scenario and in the case of standardized stress tests.[1] For the two customized stress tests, all indicators deteriorate when compared to the baseline results, but remain within nearly all country-specific thresholds.[2] Debt would become unsustainable if the primary balance remained unchanged from its anticipated 2009 level. The primary balance is expected to strengthen from this level, however, as oil prices recover. Debt would also become unsustainable in the event of a permanent shock to GDP growth. Given Nigeria's strong financial starting position, there would be time for fiscal policy to adjust to avoid an unsustainable build up of debt.

A. Background

1. Nigeria's external public debt is projected to total $4.5 billion, or 2.2 percent of GDP, at end-2009. Approximately $4 billion of the external debt stock is multilateral debt, with the remaining $1 billion owed to bilateral creditors. Domestic public debt is projected to reach 12 percent of GDP at end-2009. The government also has substantial financial assets: deposits in the Excess Crude Account (ECA) at the central bank exceeded $18 billion at end-2008 (almost 10 percent of GDP). A limitation of this DSA is that it applies only to debt contracted at the federal level. Data on sub-national borrowing are not available. While sub-national borrowing is limited, there are indications that State Governments are expanding their exposure to domestic creditors, underscoring the need for improved monitoring of subnational debt.

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[1] This DSA utilizes the updated Bank-Fund debt template for low-income countries. The previous DSA for Nigeria was undertaken as part of the 2007 Article IV consultation and published in February 2008.

[2] The one exception concerns the threshold for the PV of debt-to-exports in certain years between 2019 and 2027. This threshold is temporarily breached in a scenario that assigns the errors and omissions.

B. Assumptions

2. The assumptions contained in the baseline for 2009–29 are:

- Average growth of 5.6 percent over the period 2009–29 (somewhat below the average of 6 percent for 2006–2008) reflecting non-oil GDP growth of about 6.1 percent and growth in the oil and gas sector of 1.4 percent[3]. The latter assumes a pick up relative to 2008 as security-related disruptions ease and there is a gradual increase in the utilization of Nigeria's extensive gas reserves.

- Oil prices are assumed to be $60.5 per barrel in 2009, increasing to $80 per barrel by 2012, and then remaining constant in real terms thereafter.[4]

- The consolidated government non-oil primary deficit (NOPD) averages around 25 percent of non-oil GDP over the medium term and declines gradually thereafter. This is consistent with the government's medium-term fiscal strategy and gives rise to an overall surplus and accumulation of deposits from 2012. It is assumed that the oil-price-based fiscal rule is applied, with a budget oil price assumed to be on average $5 a barrel below the projected oil price.[5]

- Exports decline by 40 percent in 2009 because of lower oil prices. Export growth resumes in 2010; annual growth of 2 percent is achieved by 2016. The acceleration in export growth is driven largely by developments in the oil and gas sector. Imports decline by nearly 12 percent in 2009 before returning to an annual growth rate of 6 percent starting in 2010. After recording a deficit in 2009, the balance of payments moves into surplus over the medium term but goes back into deficit after 2026 as import growth, primarily non-oil imports, outstrips that of exports. It is important to note that there is a break in the balance of payments data series between 2005 and 2006, owing to the adoption of the central bank balance of payments data commencing at that time. This results in a significant increase in errors and omissions and a much higher figure for net remittances. The increase in errors and omissions is taken into account in a country-specific stress test. The break in the data affects the calculations of historical averages.

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[3] This is less than the average growth rate assumption of 7.1 percent used in the previous DSA. The projections used in that DSA proved accurate for 2007 but over-optimistic for 2008 (9 percent vs. an outturn of 6 percent).

[4] Based on WEO oil price projections as of June 12, 2009

[5] The government is assumed to establish a long-term sustainable fiscal position. This is calculated on the basis of a constant consumption of oil wealth in real terms and implies a decline in the consumption of oil wealth (the non-oil deficit) as a percent of non-oil GDP over time. Oil reserves are sufficient to sustain oil production at or above current levels throughout the projection period.

- Future official financing flows are small. The only significant disbursements after 2013 are from IDA, which explains the observed increase in the grant element of new borrowing in figure 1a.

C. External Sustainability[6]

3. In the baseline scenario (Table 1a and Figure 1), the nominal external debt burden is projected to be broadly unchanged throughout the projection period. The debt-service-to-export ratio falls from 1 percent in 2009 to an average of 0.5 percent thereafter. The present value (PV) of debt-to-GDP ratio and the nominal external-debt-to-GDP ratio average less than 2 percent over the period.

Alternative Scenarios and Stress Tests

4. Standardized stress tests (Table 1b and Figure 1) show that the NPV of the debt-to-GDP ratio is not likely to exceed 16 percent of GDP over the projection period. In the most extreme standardized stress test for the PV of debt-to-exports ratio, holding export value growth at the historical average minus one standard deviation in 2010–2011 causes the PV of debt to increase to over 40 percent of exports for 2011–2013; this is still below the indicative debt burden threshold.

5. Two country-specific scenarios were examined.

- The first recognizes the large value for errors and omissions in the balance of payments and that this may reflect an underestimation of current account debit transactions. The trade balance was recalculated assuming that three-quarters of the projected errors and omissions for 2010–2029 are attributed to the trade balance. In this scenario, all indicators are weaker than in the baseline results. A temporary breach of the threshold for the PV of debt-to-export ratio occurs in some years between 2019 and 2027. The scenario assumes no policy response from the authorities and involves an artificial adjustment of the denominator in the calculation of the debt-to-exports ratio. This does not change the overall assessment for Nigeria of a robust outlook.

- The second scenario illustrates the impact on the external accounts and debt dynamics of a prolonged oil price shock. The impact of the oil price shock on the external accounts is calibrated as one standard deviation of Brent crude prices over the period 1970–2009. This reduces future oil prices by $19 per barrel. All indicators worsen in

[6] The low-income country debt sustainability framework (DSF) provides a methodology for assessing external debt sustainability guided by indicative, country-specific, debt burden thresholds based on the relative strength of a country's policies and institutions. Given Nigeria's rating of 3.26 (medium performer), which is the three-year average of the World Bank's Country Policy and Institutional Assessment (CPIA), the country-specific thresholds are an NPV of debt to GDP of 40 percent, an NPV of debt-to-exports of 150 percent, and a debt-service-to-exports ratio of 20 percent.

this scenario but remain within country-specific thresholds. The PV of the debt-to-export ratio reaches close to 50 percent in 2019--still some way from the debt burden threshold of 150 percent.

D. Fiscal Sustainability

6. In the baseline scenario (Table 2a and Figure 2), consolidated government deposits continue to accumulate at the central bank, reaching almost $70 billion by 2030. The accumulation of deposits will begin to slow beyond 2030 in line with the eventual decline in oil production. Recognizing the accumulation of such significant levels of government deposits, and the low level of gross debt, the fiscal debt sustainability exercise for Nigeria utilizes a concept of *net debt*, defined as gross consolidated government debt (external and domestic) less gross consolidated government assets (specifically, the balance in the ECA).[7] With these government assets included, net debt is projected in the baseline scenario to be negative from 2017.

Alternative Scenarios and Stress Tests

7. The standardized stress tests underscore the need for fiscal policy to adjust to the economic environment. In particular, debt soon becomes unsustainable if the primary balance is unchanged from the 2009 level—an unusual year, given the sharp drop in oil prices from 2008 and the need to use fiscal policy to cushion the impact on Nigeria of the global recession. Once oil prices stabilize and economic growth recovers as assumed in the baseline, fiscal policy will need to adjust accordingly. Similarly, a permanent shock to GDP growth would necessitate an eventual fiscal policy adjustment, or the debt ratios would escalate beyond 2020 (Table 2b and Figure 2).

E. Conclusion

8. Nigeria is at low risk of external debt distress. While large negative errors and omissions in the balance of payments warrant a degree of caution in interpreting the result of the DSA, in the baseline scenario and in the standardized stress tests, Nigeria's debt outlook remains robust throughout the projection period. Fiscal policy would need to adjust in order to maintain debt sustainability in the event of a sustained reduction in oil prices or a permanent shock to GDP growth. However, Nigeria's strong financial starting position would provide ample time for policy to adjust. As anticipated in the baseline, the primary balance will also need to strengthen from its 2009 level as oil prices economic growth recover. There also appears to be a low risk of public debt distress although data at the subnational level is needed to provide a more thorough assessment.

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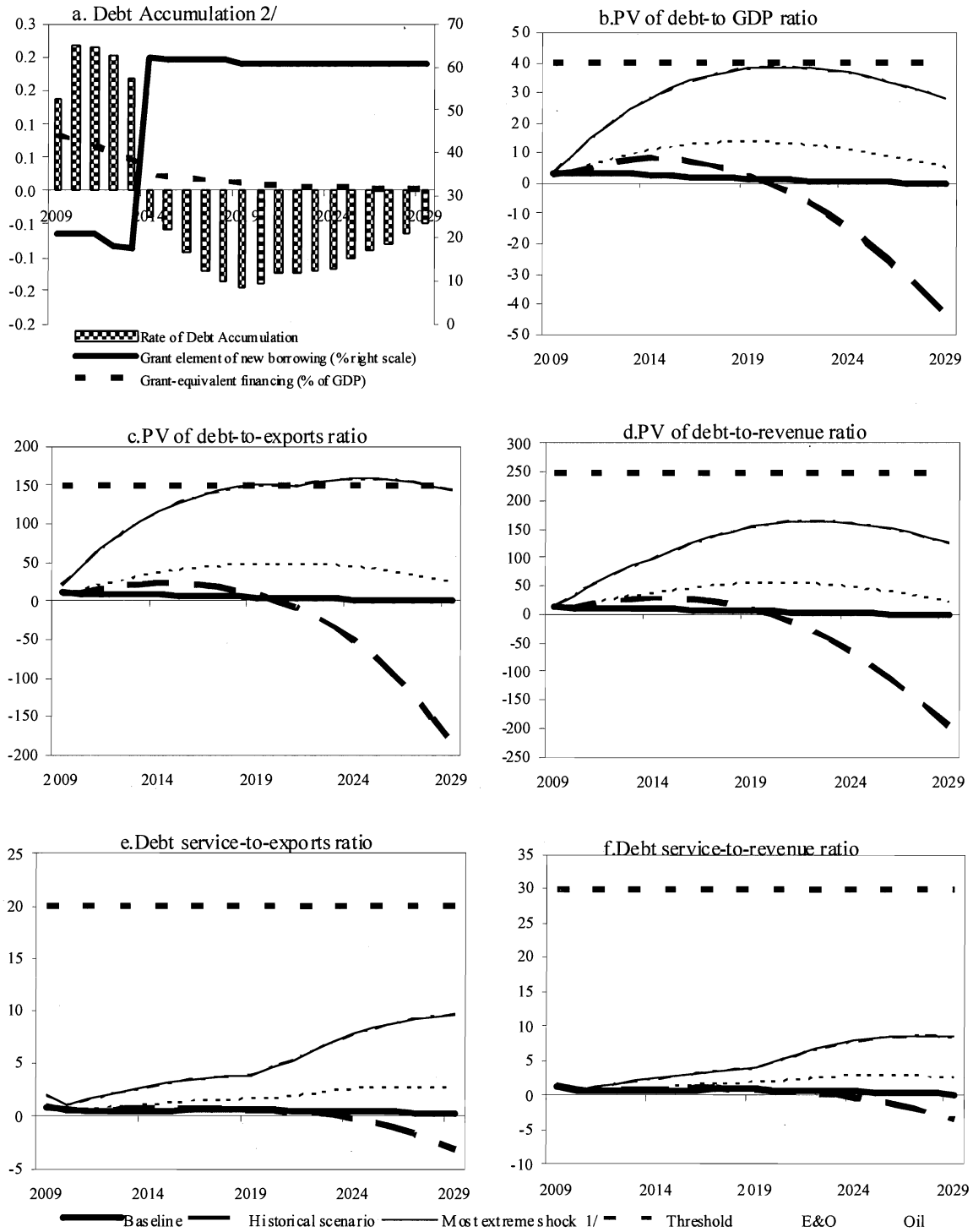
[7] For illustrative purposes, Figure 1 also traces the evolution of gross debt in the baseline scenario.

Figure 1. Nigeria: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2009-2029 1/



Source: Staff projections and simulations.

1/ The most extreme stress test is the test that yields the highest ratio in 2019. In all figures it corresponds to the shock to Errors and Omissions.

2/ The large jump in the % of grant borrowing results from having just IDA disbursements projected from 2014

Table 1a: External Debt Sustainability Framework, Baseline Scenario, 2006-2029 1/
(In percent of GDP, unless otherwise indicated)

	Actual			Historical Average	Standard Deviation	Projections								
	2006	2007	2008			2009	2010	2011	2012	2013	2014	2009-2014 Average	2019	2029
External debt (nominal) 1/	**2.4**	**2.3**	**2.3**			**3.0**	**2.9**	**2.9**	**2.9**	**2.9**	**2.6**		**1.4**	**0.0**
o/w public and publicly guaranteed (PPG)	2.4	2.3	2.3			3.0	2.9	2.9	2.9	2.9	2.6		1.4	0.0
Change in external debt	-15.5	-0.1	0.0			0.6	-0.1	0.0	0.0	0.0	-0.2		-0.3	0.0
Identified net debt-creating flows	-36.6	-26.2	-21.9			-10.1	-14.5	-16.5	-16.9	-16.2	-15.5		-10.4	3.5
Non-interest current account deficit	**-26.7**	**-18.9**	**-20.0**	**-10.3**	**11.6**	-7.7	**-12.4**	**-12.7**	**-13.1**	**-12.6**	**-12.0**		**-8.2**	**4.7**
Deficit in balance of goods and services	-19.3	-15.1	-16.5			-5.0	-10.3	-11.0	-11.9	-12.1	-12.0		-10.2	0.0
Exports	41.0	41.0	40.5			31.5	34.6	35.3	35.9	35.8	35.5		33.2	23.7
Imports	21.7	25.9	24.1			26.4	24.3	24.3	24.0	23.7	23.5		23.0	23.7
Net current transfers (negative = inflow)	-11.8	-10.9	-9.1	-5.3	3.7	-10.6	-9.5	-8.9	-8.3	-7.8	-7.2		-5.1	-2.8
o/w official	-0.1	-0.1	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Other current account flows (negative = net inflow)	4.4	7.0	5.6			7.9	7.4	7.2	7.2	7.3	7.2		7.2	7.5
Net FDI (negative = inflow)	**-6.0**	**-7.1**	**-1.5**	**-4.4**	**1.6**	**-2.4**	**-2.0**	**-3.7**	**-3.7**	**-3.6**	**-3.4**		**-2.2**	**-1.3**
Endogenous debt dynamics 2/	**-3.9**	**-0.2**	**-0.4**			**0.0**	**0.0**	**0.0**	**-0.1**	**-0.1**	**-0.1**		**0.0**	**0.0**
Contribution from nominal interest rate	0.1	0.1	0.1			0.1	0.1	0.1	0.1	0.1	0.1		0.1	0.0
Contribution from real GDP growth	-0.9	-0.1	-0.1			-0.1	-0.1	-0.1	-0.2	-0.2	-0.2		-0.1	0.0
Contribution from price and exchange rate changes	-3.2	-0.2	-0.4			...	...	...	...	...	...		...	...
Residual (3-4) 3/	**21.1**	**26.0**	**21.9**			**10.7**	**14.4**	**16.5**	**16.8**	**16.2**	**15.2**		**10.1**	**-3.5**
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/	...	...	2.4			3.2	3.1	3.1	3.1	3.0	2.8		1.5	0.1
In percent of exports	...	...	6.0			10.1	9.0	8.8	8.6	8.5	7.9		4.5	0.5
PV of PPG external debt	**...**	**...**	**2.4**			**3.2**	**3.1**	**3.1**	**3.1**	**3.0**	**2.8**		**1.5**	**0.1**
In percent of exports	**...**	**...**	**6.0**			**10.1**	**9.0**	**8.8**	**8.6**	**8.5**	**7.9**		**4.5**	**0.5**
In percent of government revenues	**...**	**...**	**7.5**			**14.5**	**11.6**	**11.5**	**11.0**	**10.7**	**9.9**		**6.1**	**0.5**
Debt service-to-exports ratio (in percent)	**29.1**	**0.9**	**0.5**			**1.0**	**0.7**	**0.6**	**0.5**	**0.6**	**0.5**		**0.7**	**0.2**
PPG debt service-to-exports ratio (in percent)	**29.1**	**0.9**	**0.5**			**1.0**	**0.7**	**0.6**	**0.5**	**0.6**	**0.5**		**0.7**	**0.2**
PPG debt service-to-revenue ratio (in percent)	**35.3**	**1.3**	**0.7**			**1.4**	**0.9**	**0.8**	**0.7**	**0.7**	**0.7**		**0.9**	**0.2**
Total gross financing need (Billions of U.S. dollars)	-30.1	-42.5	-45.1			-16.6	-26.5	-32.2	-35.4	-36.6	-37.4		-35.4	23.1
Non-interest current account deficit that stabilizes debt ratio	-11.2	-18.8	-20.0			-8.3	-12.4	-12.7	-13.1	-12.6	-11.8		-7.9	4.8
Key macroeconomic assumptions														
Real GDP growth (in percent)	6.2	6.4	5.3	7.9	5.5	2.9	3.6	4.9	5.8	6.3	6.3	5.0	6.2	5.9
GDP deflator in US dollar terms (change in percent)	22.0	7.2	21.6	4.2	29.0	-22.3	5.5	1.8	1.6	1.2	1.1	-1.9	1.0	0.6
Effective interest rate (percent) 5/	1.0	4.9	3.1	7.6	6.8	3.1	3.1	3.5	3.9	4.2	4.4	3.7	4.6	26.5
Growth of exports of G&S (US dollar terms, in percent)	16.1	14.1	26.5	25.6	27.5	-38.0	20.4	9.0	9.1	7.3	6.3	2.4	5.9	2.8
Growth of imports of G&S (US dollar terms, in percent)	-7.6	36.6	18.7	16.1	16.3	-12.2	0.8	6.8	5.7	6.5	6.4	2.3	7.0	5.4
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	20.9	21.3	20.9	18.5	17.7	62.6	27.0	61.1	61.0
Government revenues (excluding grants, in percent of GDP)	33.9	28.4	32.0			22.1	26.8	27.3	28.1	28.3	28.3		24.7	22.1
Aid flows (in Billions of US dollars) 7/	0.0	0.0	0.0			0.2	0.2	0.2	0.1	0.1	0.1		0.1	0.0
o/w Grants	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
o/w Concessional loans	0.0	0.0	0.0			0.2	0.2	0.2	0.1	0.1	0.1		0.1	0.0
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			0.1	0.1	0.1	0.1	0.0	0.0		0.0	0.0
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			20.9	21.3	20.9	18.5	17.7	62.6		61.1	61.0
Memorandum items:														
Nominal GDP (Billions of US dollars)	145.4	165.9	212.4			169.7	185.6	198.2	213.0	229.0	246.1		349.8	655.8
Nominal dollar GDP growth	29.6	14.1	28.0			-20.1	9.4	6.8	7.5	7.5	7.5	3.1	7.3	6.5
PV of PPG external debt (in Billions of US dollars)			5.1			5.4	5.8	6.2	6.6	7.0	6.9		5.2	0.7
(PVt-PVt-1)/GDPt-1 (in percent)						0.1	0.2	0.2	0.2	0.2	0.0	0.2	-0.1	0.0

Source: Staff simulations.

1/ Includes both public and private sector external debt.

2/ Derived as [r - g - r(1+g)]/(1+g+r+gr) times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, and r = 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.Nigeria: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2009-2029
(In percent)

	Projections							
	2009	2010	2011	2012	2013	2014	**2019**	2029
PV of debt-to GDP ratio								
Baseline	3	3	3	3	3	3	**1**	0
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2009-2029 1/	3	4	5	7	8	8	**2**	-43
A2. New public sector loans on less favorable terms in 2009-2029 2	3	3	3	3	3	3	**2**	0
A3. Alternative Scenario :Errors and Omissions	3	9	15	20	24	28	38	28
A4. Alternative Scenario :Oil Shock	3	4	6	8	10	11	**14**	5
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2010-2011	3	3	3	3	3	3	**2**	0
B2. Export value growth at historical average minus one standard deviation in 2010-2011 3/	3	7	11	11	11	10	**8**	3
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010-2011	3	4	6	6	6	5	**3**	0
B4. Net non-debt creating flows at historical average minus one standard deviation in 2010-2011 4/	3	7	11	11	11	10	**8**	3
B5. Combination of B1-B4 using one-half standard deviation shocks	3	9	16	15	15	14	**11**	4
B6. One-time 30 percent nominal depreciation relative to the baseline in 2010 5/	3	4	4	4	4	4	**2**	0
PV of debt-to-exports ratio								
Baseline	10	9	9	9	8	8	**5**	0
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2009-2029 1/	10	11	15	19	22	23	**7**	-182
A2. New public sector loans on less favorable terms in 2009-2029 2	10	9	9	9	9	9	**5**	2
A3. Alternative Scenario :Errors and Omissions	21	44	68	86	102	116	150	143
A4. Alternative Scenario :Oil Shock	10	15	21	26	32	37	**48**	24
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2010-2011	10	9	9	9	8	8	**4**	0
B2. Export value growth at historical average minus one standard deviation in 2010-2011 3/	10	23	44	42	41	40	**32**	18
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010-2011	10	9	9	9	8	8	**4**	0
B4. Net non-debt creating flows at historical average minus one standard deviation in 2010-2011 4/	10	20	32	31	30	29	**23**	13
B5. Combination of B1-B4 using one-half standard deviation shocks	10	23	36	34	33	32	**26**	14
B6. One-time 30 percent nominal depreciation relative to the baseline in 2010 5/	10	9	9	9	8	8	**4**	0
PV of debt-to-revenue ratio								
Baseline	14	12	11	11	11	10	**6**	0
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2009-2029 1/	14	14	19	24	28	29	**9**	-195
A2. New public sector loans on less favorable terms in 2009-2029 2	14	12	12	12	12	11	**7**	2
A3. Alternative Scenario :Errors and Omissions	14	33	54	71	86	100	155	127
A4. Alternative Scenario :Oil Shock	14	16	23	29	34	39	**56**	24
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2010-2011	14	12	12	11	11	10	**6**	0
B2. Export value growth at historical average minus one standard deviation in 2010-2011 3/	14	24	42	40	38	36	**32**	14
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010-2011	14	16	22	21	20	19	**11**	1
B4. Net non-debt creating flows at historical average minus one standard deviation in 2010-2011 4/	14	26	41	39	38	36	**32**	14
B5. Combination of B1-B4 using one-half standard deviation shocks	14	32	58	55	52	50	**44**	19
B6. One-time 30 percent nominal depreciation relative to the baseline in 2010 5/	14	16	16	15	15	14	**8**	1

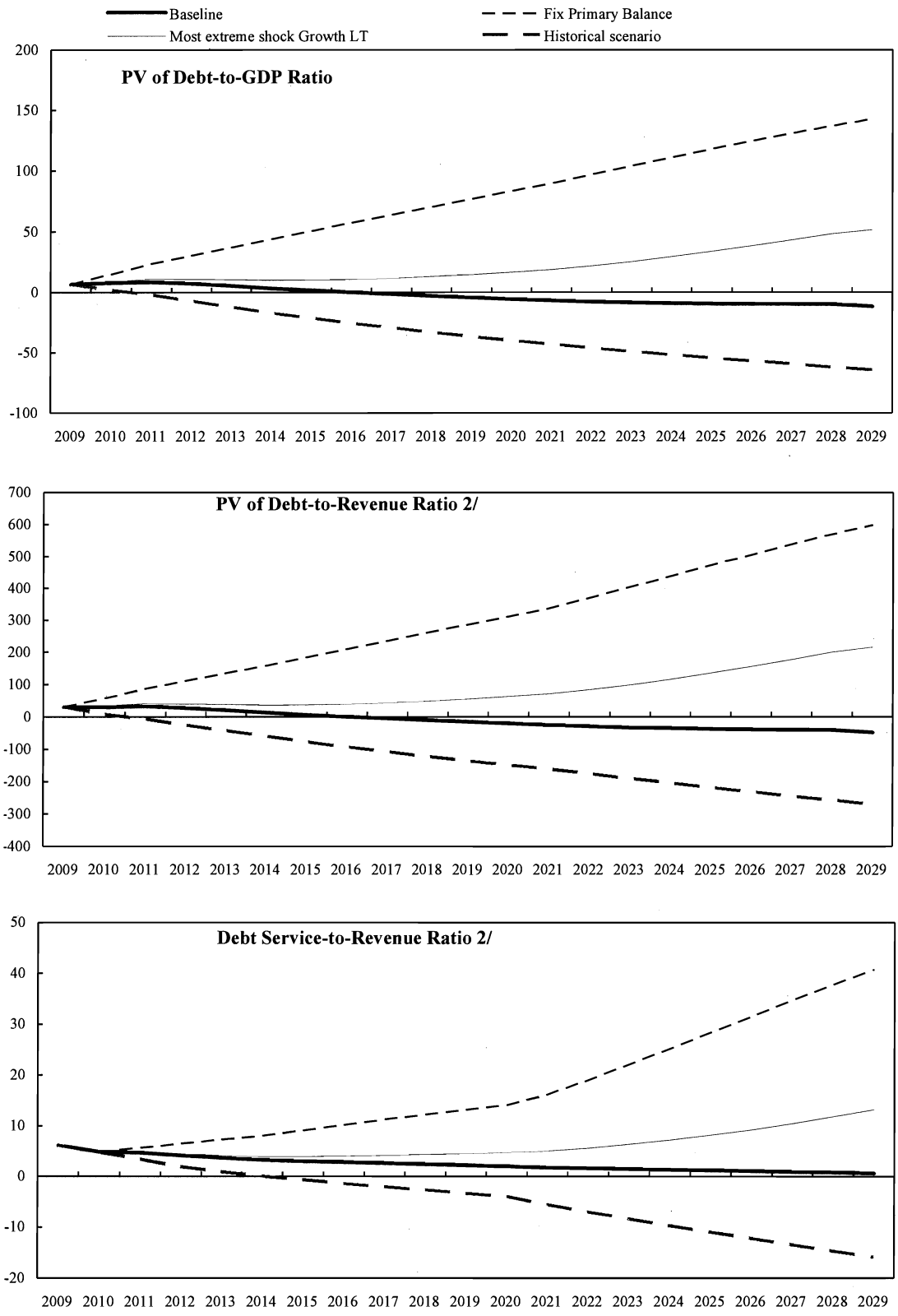
Table 1b.Nigeria: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2009-2029 (continued)
(In percent)

Debt service-to-exports ratio								
Baseline	1	1	1	1	1	1	**1**	0
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2009-2029 1/	1	1	1	1	1	1	**1**	-3
A2. New public sector loans on less favorable terms in 2009-2029 2	1	1	1	1	1	1	**1**	0
A3. Alternative Scenario :Errors and Omissions	2	1	2	2	2	3	**4**	10
A4. Alternative Scenario :Oil Shock	1	1	1	1	1	1	**2**	3
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2010-2011	1	1	1	1	1	1	**1**	0
B2. Export value growth at historical average minus one standard deviation in 2010-2011 3/	1	1	1	1	1	1	**1**	2
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010-2011	1	1	1	1	1	1	**1**	0
B4. Net non-debt creating flows at historical average minus one standard deviation in 2010-2011 4/	1	1	1	1	1	1	**1**	1
B5. Combination of B1-B4 using one-half standard deviation shocks	1	1	1	1	1	1	**1**	1
B6. One-time 30 percent nominal depreciation relative to the baseline in 2010 5/	1	1	1	1	1	1	**1**	0
Debt service-to-revenue ratio								
Baseline	1	1	1	1	1	1	**1**	0
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2009-2029 1/	1	1	1	1	1	1	**1**	-3
A2. New public sector loans on less favorable terms in 2009-2029 2	1	1	1	1	1	1	**1**	0
A3. Alternative Scenario :Errors and Omissions	1	1	1	2	2	2	**4**	8
A4. Alternative Scenario :Oil Shock	1	1	1	1	1	1	**2**	3
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2010-2011	1	1	1	1	1	1	**1**	0
B2. Export value growth at historical average minus one standard deviation in 2010-2011 3/	1	1	1	1	1	1	**1**	1
B3. US dollar GDP deflator at historical average minus one standard deviation in 2010-2011	1	1	1	1	1	1	**2**	0
B4. Net non-debt creating flows at historical average minus one standard deviation in 2010-2011 4/	1	1	1	1	1	1	**1**	1
B5. Combination of B1-B4 using one-half standard deviation shocks	1	1	1	2	2	2	**2**	2
B6. One-time 30 percent nominal depreciation relative to the baseline in 2010 5/	1	1	1	1	1	1	**1**	0
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	47	47	47	47	47	47	**47**	47

Source: Staff projections and simulations.

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

Figure 2.Nigeria: Indicators of Public Debt Under Alternative Scenarios, 2009-2029 1/



Sources: Country authorities; and Fund staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2019.

2/ Revenues are defined inclusive of grants.

Table 2a.Nigeria: Public Sector Debt Sustainability Framework, Baseline Scenario, 2006-2029
(In percent of GDP, unless otherwise indicated)

	Actual			Average	Standard Deviation	Estimate				Projections				
	2006	2007	2008			2009	2010	2011	2012	2013	2014	2009-14 Average	2019	2029
Public sector debt 1/	-6.2	-1.9	-0.5			6.8	8.1	8.8	7.4	5.8	3.7		-4.1	-11.6
o/w foreign-currency denominated	2.4	2.3	2.3			3.0	2.9	2.9	2.9	2.9	2.6		1.4	0.0
Change in public sector debt	-26.3	4.4	1.3			7.3	1.3	0.7	-1.4	-1.6	-2.2		-1.4	-1.7
Identified debt-creating flows	-19.5	-0.1	-4.3			8.3	0.4	-0.7	-1.9	-2.0	-2.6		-2.0	-2.8
Primary deficit	-8.0	0.1	-4.6	-6.2	4.6	8.0	0.9	-0.4	-1.5	-1.7	-2.4	0.5	-2.2	-3.0
Revenue and grants	33.9	28.4	32.0			21.3	26.6	27.0	27.5	27.7	27.9		26.8	23.8
of which: grants	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Primary (noninterest) expenditure	25.9	28.5	27.4			29.3	27.4	26.6	26.0	26.0	25.5		24.6	20.8
Automatic debt dynamics	-4.0	-0.2	0.3			0.3	-0.5	-0.3	-0.4	-0.3	-0.2		0.1	0.3
Contribution from interest rate/growth differential	-3.9	0.0	0.0			-0.2	-0.7	-0.5	-0.6	-0.5	-0.4		0.0	0.3
of which: contribution from average real interest rate	-2.7	-0.4	-0.1			-0.2	-0.4	-0.1	-0.1	0.0	0.0		-0.1	-0.3
of which: contribution from real GDP growth	-1.2	0.4	0.1			0.0	-0.2	-0.4	-0.5	-0.4	-0.3		0.2	0.6
Contribution from real exchange rate depreciation	-0.1	-0.2	0.2			0.5	0.2	0.2	0.2	0.2	0.2		...	...
Other identified debt-creating flows	-7.5	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Privatization receipts (negative)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Recognition of implicit or contingent liabilities	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Debt relief (HIPC and other)	-7.5	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	-6.8	4.5	5.6			-1.0	0.9	1.4	0.5	0.4	0.4		0.7	1.1
Other Sustainability Indicators														
PV of public sector debt	-8.7	-4.2	-0.2			7.2	8.5	9.1	7.7	6.1	3.9		-3.9	-11.5
o/w foreign-currency denominated	0.0	0.0	2.7			3.4	3.2	3.2	3.2	3.1	2.9		1.6	0.1
o/w external	...	...	2.7			3.4	3.2	3.2	3.2	3.1	2.9		1.6	0.1
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...
Gross financing need 2/	7.5	4.1	-0.6			12.2	5.4	4.2	2.7	2.0	0.8		-0.4	-2.6
PV of public sector debt-to-revenue and grants ratio (in percent)	-25.6	-14.7	-0.6			33.6	31.8	33.8	28.1	21.9	14.0		-14.6	-48.3
PV of public sector debt-to-revenue ratio (in percent)	-25.6	-14.7	-0.6			33.6	31.8	33.8	28.1	21.9	14.0		-14.6	-48.3
o/w external 3/	...	...	8.3			15.8	12.2	12.0	11.7	11.3	10.3		5.8	0.5
Debt service-to-revenue and grants ratio (in percent) 4/	37.9	4.5	3.6			6.2	5.1	4.8	4.3	3.8	3.4		2.2	0.7
Debt service-to-revenue ratio (in percent) 4/	37.9	4.5	3.6			6.2	5.1	4.8	4.3	3.8	3.4		2.2	0.7
Primary deficit that stabilizes the debt-to-GDP ratio	18.3	-4.3	-5.9			0.7	-0.4	-1.1	-0.1	-0.1	-0.2		-0.8	-1.3
Key macroeconomic and fiscal assumptions														
Real GDP growth (in percent)	6.2	6.4	5.3	7.9	5.5	2.9	3.6	4.9	5.8	6.3	6.3	5.0	6.2	5.9
Average nominal interest rate on forex debt (in percent)	1.2	6.0	4.0	7.9	6.7	4.1	4.0	4.3	4.5	4.8	4.9	4.4	5.0	30.4
Average real interest rate on domestic debt (in percent)	-7.4	5.2	-3.6	-0.7	10.0	11.7	-3.9	0.4	0.7	1.5	1.8	2.0	2.1	3.2
Real exchange rate depreciation (in percent, + indicates depreciation)	-0.6	-8.0	11.3	2.5	7.3	21.9	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	19.5	4.8	14.7	15.9	10.4	-0.6	15.7	10.2	9.6	8.8	8.5	8.7	8.4	7.9
Growth of real primary spending (deflated by GDP deflator, in percent)	0.1	0.2	0.0	0.1	0.3	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0
Grant element of new external borrowing (in percent)	...	...	...	...	...	20.9	21.3	20.9	18.5	17.7	62.6	27.0	61.1	61.0

Sources: Country authorities; and Fund staff estimates and projections.

1/ Federal government net debt.

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.Nigeria: Sensitivity Analysis for Key Indicators of Public Debt 2009-2029

	Projections							
	2009	2010	2011	2012	2013	2014	2019	2029
PV of Debt-to-GDP Ratio								
Baseline	7	8	9	8	6	4	-4	-11
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	7	3	-2	-7	-12	-16	-36	-64
A2. Primary balance is unchanged from 2009	7	16	24	31	38	44	77	143
A3. Permanently lower GDP growth 1/	7	10	11	11	11	10	15	51
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2010-2011	7	10	12	12	11	10	7	9
B2. Primary balance is at historical average minus one standard deviations in 2010-2011	7	7	7	6	5	3	-3	-6
B3. Combination of B1-B2 using one half standard deviation shocks	7	5	3	1	0	-2	-10	-15
B4. One-time 30 percent real depreciation in 2010	7	11	12	11	9	7	1	-3
B5. 10 percent of GDP increase in other debt-creating flows in 2010	7	18	19	18	16	14	7	1
PV of Debt-to-Revenue Ratio 2/								
Baseline	34	32	34	28	22	14	-15	-48
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	34	9	-6	-24	-42	-59	-136	-270
A2. Primary balance is unchanged from 2009	34	58	89	113	136	159	288	599
A3. Permanently lower GDP growth 1/	34	36	42	41	40	37	56	216
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2010-2011	34	36	44	42	39	35	26	38
B2. Primary balance is at historical average minus one standard deviations in 2010-2011	34	26	26	22	17	10	-11	-27
B3. Combination of B1-B2 using one half standard deviation shocks	34	18	11	5	-1	-8	-36	-65
B4. One-time 30 percent real depreciation in 2010	34	40	44	39	33	26	4	-13
B5. 10 percent of GDP increase in other debt-creating flows in 2010	34	68	71	65	58	50	26	6
Debt Service-to-Revenue Ratio 2/								
Baseline	6	5	5	4	4	3	2	1
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	6	5	4	2	1	0	-3	-16
A2. Primary balance is unchanged from 2009	6	5	6	7	7	8	13	41
A3. Permanently lower GDP growth 1/	6	5	5	5	4	4	5	13
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2010-2011	6	5	5	5	4	4	3	4
B2. Primary balance is at historical average minus one standard deviations in 2010-2011	6	5	4	4	3	3	2	0
B3. Combination of B1-B2 using one half standard deviation shocks	6	5	4	3	3	2	1	-3
B4. One-time 30 percent real depreciation in 2010	6	5	5	5	4	4	3	1
B5. 10 percent of GDP increase in other debt-creating flows in 2010	6	5	6	6	5	5	3	3

Sources: Country authorities; and Fund staff estimates and projections.

1/ Assumes that real GDP growth is at baseline minus one standard deviation divided by the square root of the length of the projection period.

2/ Revenues are defined inclusive of grants.