INTERNATIONAL MONETARY FUND

GHANA

THIRD REVIEW UNDER THE EXTENDED CREDIT FACILITY ARRANGEMENT AND REQUEST FOR WAIVER FOR NONOBSERVANCE OF PERFORMANCE CRITERIA, AND MODIFICATIONS OF PERFORMANCE CRITERIA—DEBT SUSTAINABILITY ANALYSIS

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

This DSA updates the previous one conducted in January, 2016. Ghana continues to face a high risk of external debt distress based on updated borrowing assumptions and macroeconomic projections. The assessment of high risk is reinforced by vulnerabilities arising from refinancing risk of domestic debt. Fiscal consolidation remains on track under the Extended Credit Facility (ECF), and debt trajectory and relevant indicators broadly remain the same, with two indicators breaching thresholds under the baseline scenario.[2] *The authorities reduced the Eurobond issuance by USD 500 million in 2015 from the originally-planned USD 1.5 billion amid increasing uncertainties in the global economy and subsequently raised USD 750 million in September 2016 reflecting gradual recovery of investors' demand for frontier market assets. While nonresidents' demand for Ghanaian debt has been robust, the potential unwinding of capital inflows to emerging / frontier markets, not necessarily for Ghana-specific reasons, may further complicate Ghana's debt sustainability. Achieving the ambitious fiscal targets envisaged under the Fund-supported program in this election year and an appropriate financing mix will remain key to maintaining debt sustainability.*

[1] Prepared in collaboration with Ghanaian authorities. The previous DSA was prepared in January 2016 (IMF Country Report No. 16/16).

[2] The World Bank's Country Policy and Institutions Assessment (CPIA) ranks Ghana as a medium performer in terms of the quality of policy and institutions (the average CPIA in 2012–14 is 3.61). Thus, the external debt burden thresholds for Ghana are (i) PV of debt-to-GDP ratio: 40 percent; (ii) PV of debt-to-exports ratio: 150 percent; (iii) PV of debt-to-revenue ratio: 250 percent; (iv) debt service-to-exports ratio: 20 percent: and (v) debt service-to-revenue ratio: 20 percent. The 2014 CPIA has been released in July 2015 by the World Bank, and Ghana's score has deteriorated to 3.37, which contributed to the downgrading of Ghana to a medium performer from a high performer.

A. Background and Macroeconomic Assumptions

1. **Ghana met the fiscal performance criterion for the third time under the third review of the Fund-supported program, while budget financing is on track to be fully financed for 2016.** Ghana has over-performed under the Fund-supported program on the fiscal front and generated a small primary surplus in 2015, while the performance criterion on the wage bill was missed. The 2016 budget, prepared in the run-up to the presidential and parliament elections scheduled for December 2016, included additional fiscal measures to achieve an overall deficit of 5.0 percent of GDP. The authorities plan to further cut expenditures in response to lower-than-budgeted oil revenues. Aggressive domestic financing towards the end of 2015 enabled the authorities to fill out the shortfall in the 2015 Eurobond and even save around US$ 500 million out of its proceeds. Building on the cash buffer, budget financing through medium-term securities has exceeded target and are on track to be fully financed in 2016.

2. **Nonresidents' demand for Ghana's debt remain strong.** Despite global headwinds which started in mid-2015, the share of nonresidents' holdings[3] of domestic marketable debt has increased. In September, 2016, a Eurobond of USD 750 million with a coupon of 9.25 percent and final maturity of 6 years was issued. As part of its medium-term debt management strategy, in August 2016, the authorities executed a tender offer to buy back up to US$100 million of the Eurobond maturing October 2017. The buyback was financed through the use of cash buffer accumulated in the Sinking Fund. In addition, US$30.4 million was bought back in the secondary market, using the proceeds from the 2015 Eurobond. A part of the proceeds from the latest Eurobond issued will be used to further buy-back the remaining balance of the 2017 Eurobond.

3. **Gross financing needs (GFN) peaked in 2015 at 23.6 percent of GDP and are projected to come down gradually.** In 2015, about half of the GFN (including domestic short-term debt coming due) was financed through short-term domestic debt, and the remaining half roughly equally through medium-term securities and external financing. A key objective of the medium-term debt management strategy (MTDS)[4] is to reduce the pressures on the domestic debt market and to lengthen the average maturity of domestic debt by reducing the issuance of short-term domestic debt. In the first half of 2016, the aggressive implementation of this strategy appears to have produced results, as T-Bills rates began

Key Macroeconomic Assumptions

	2015	2016	2017	2015-20	2021-35
Real GDP Growth	**(annual percentage change)**				
Previous DSA	3.0	5.4	8.6	5.8	5.8
Current DSA	3.9	3.3	7.4	5.9	5.2
Inflation (GDP deflator)	**(annual percentage change)**				
Previous DSA	14.2	12.7	8.6	9.6	7.1
Current DSA	18.8	15.3	10.1	10.3	6.3
Real interest rate (foreign deb	**(percent)**				
Previous DSA	4.5	3.5	2.8	2.7	2.7
Current DSA	5.3	5.2	4.1	3.8	3.0
Current account balance	**(in percent of GDP)**				
Previous DSA	-8.2	-7.4	-6.0	-6.4	-4.5
Current DSA	-7.5	-6.4	-6.1	-5.7	-4.1
Primary fiscal balance	**(in percent of GDP)**				
Previous DSA	-0.2	1.3	1.9	1.8	0.8
Current DSA	0.2	1.1	2.3	1.6	0.5

[3] As in the previous DSA, this DSA uses the residency criterion for defining external debt to reflect properly the vulnerabilities associated with nonresidents' holdings of domestic debt. Nonresidents can purchase domestic bonds with a maturity of 2 years and longer.

[4] In April /May 2015, the IMF and World Bank provided technical assistance to develop the Medium-term Debt Management Strategy.

to decline and non-resident participation has increased substantially, contributing to the reduction of near-term GFN. However, given the continued volatility in the external financing environment, sustained efforts to implement, with support from the World Bank, the MTDS objectives will be key to help reduce debt vulnerabilities, while deepening the domestic debt market will help to secure a more stable source of funding at lower cost and risk.

4. **The long-term macroeconomic projections remain broadly unchanged with some revisions in near-term projections (see Table below).** Economic growth in 2015 turned out to be 0.9 percentage points higher than previously projected. The exchange rate has stabilized since the fall of 2015. Despite the slump in commodity prices and non-oil commodities, the current account deficit was lower than envisaged at 7.5 percent of GDP. Fiscal projections in 2016 reflect additional measures of 1 percent points of GDP. The medium- and long-term projections reflect the latest estimates and changes in fiscal policy but key macro variables remain broadly unchanged (see Box below).

5. **The new contracting of nonconcessional external debt has been lower than envisaged under the program.** The total amount of contracting and guaranteeing of nonconcessional external debt in 2015 was US$ 1,510 million against the limits of US$ 2,500 million, due to the smaller Eurobond issuance by US$ 500 million and some delays in loan negotiations for project financing (including a US$350 million loan for GNPC). The debt limits for debt management purpose[5] was set at US$1,150 million for 2016 at the second review (and would be raised by USD 25 million to accommodate a possible increase in a World Bank's program loan). The debt limit for projects was set at US$ 1,000 million, and a separate limit of US$350 million will be created to accommodate the delayed GNPC's loan. The forthcoming external nonconcesional borrowing for a debt management purpose should be anchored in a DSA, the revised MTDS, and a comprehensive analysis of cost-risk tradeoffs of alternative debt management strategies, taking account of the risks associated with exchange rate fluctuations and an expected reduction of risk premia.

Box 1. Baseline Macroeconomic Assumptions

Real GDP-growth: Real growth turned out to be 3.9 percent in 2015, which is better than previously envisaged despite fiscal consolidation under the program, power shortages owing to shortfalls in power generation, and the decline in non-oil commodity production. Non-oil growth is expected to remain subdued in 2016 (3.7 percent) due to tight monetary and fiscal policy, but pick up from 2017 onwards with a long-run steady-state growth rate of 6 percent. On the other hand, the recent disorder of an offshore oil-pumping facility at Jubilee would deviate oil production significantly downwards from the original program, resulting in overall GDP growth of only 3.3 percent in 2016. Real total GDP growth in the long run will depend on oil production (currently expected to peak in 2020), with the possibility of new oil discoveries and gas production implying significant upside potential.

Inflation: Inflation (CPI) was about 18 percent in 2015, slightly higher than in 2014. Volatile exchange rate, though significantly stabilized, power shortages, and the recent substantial hikes in utility rates have weighed on BoG's efforts to reduce inflation. However, as fiscal dominance of monetary policy subsides under the fiscal

[5] From the second review onwards, non-concessional debt limits have been set separately for a debt management purpose where the non-concessional borrowing, including a Eurobond, is used to improve the overall public debt profile, and for projects integral to national development. The latter is set on a cumulative basis from the beginning of 2015.

Box 1. Baseline Macroeconomic Assumptions (concluded)

consolidation program, including the elimination of central bank financing to the government from 2016 onwards, and BoG restores the effectiveness of its inflation targeting monetary policy framework, inflation should move back close to BOG's medium-term target of 8^{2} 2 percent. Inflation rates are projected to converge to around 7 percent over the projection period.

Government balances: The overall cash fiscal deficit was significantly reduced to 6.3 percent of GDP in 2015 from 10.1 percent in 2014, with slightly higher interest bills amounting to some 6.5 percent of GDP in 2015. The program envisages further fiscal consolidation in 2016, to bring the overall cash deficit to around 5.0 percent of GDP. The expected longer-term increase in hydrocarbon revenues will contribute to maintaining the overall deficits at a sustainable level. The primary surplus is projected to stay in the positive territory in the long-run.

Current account balance: Over the past years the current account deficit has been unsustainably high at around 10 percent of GDP. The net impact on the current account of recent declines in oil prices would be relatively small in the near-term given that Ghana still imports significant amount of refined oil. The price of oil is assumed to recover to around US$60 per barrel by 2020 from around US$ 52 in 2015, and subsequently stabilize in real terms afterwards. With the tightening of fiscal and monetary policies, the current account deficit would improve to below 5 percent of GDP in 2018 from around 7.5 percent in 2015. In the long-run, with increased oil/gas production accompanied by an improvement in oil prices, the deficit is projected to decline gradually to below 4 percent of GDP. Gross international reserves would steadily increase and maintain above 3-month of imports with a further gradual build-up towards the end of the projection period (the recent broadening of the coverage of services account (BoP) has worsened its months-of-imports reserves coverage).

Financing flows: Ghana has enjoyed high FDI inflows over the past years, even under increasing uncertainties surrounding the Ghanaian economy, reaching about 8 percent of GDP in 2015, mainly driven by the hydrocarbon sector. Thanks to ongoing development of the existing fields, FDI is projected to remain at around 7 percent of GDP over the medium term, and then gradually decline to around 3 percent of GDP in the long run. Consistent with Ghana's improving income status and wealth, inflows from grants are projected to decline to less than 1 percent of GDP in the medium to long term. Borrowing is projected to become increasingly non-concessional and these loans are expected to be used for key infrastructure projects to raise the potential growth rate. A series of issuances of Eurobonds are envisaged to rollover maturing Eurobonds, which are assumed to be repaid in amortization payments rather than a bullet payment.

B. External Debt Sustainability Analysis[6]

6. **The debt trajectories remain the same as in the previous DSA with two indicators breaching the thresholds under the baseline.** [7] The PV of debt-to-GDP ratio would breach the threshold in 2016 though the ratio is trending down with a peak in 2015. On the other hand, debt service-to-revenue ratio is projected to hover above the threshold over the projection period with some spikes associated with Eurobond redemptions. Recently-issued Eurobonds have an amortization nature, with a somewhat smooth

[6] Hereafter, public external debt covers those contracted or guaranteed by the central government, and major state-owned enterprises (SOEs), and short-term liabilities contracted by the central bank for a reserve management purpose. These BoG liabilities do not include swaps contracted with resident banks and fully collateralized credit lines with foreign institutions.

[7] The relatively larger breaches in the near-term are due in part to the BoG's short-term liabilities. Debt services include nonresidents' holdings of local currency-denominated domestic debt based on the residency criterion.

redemption schedule. Revenue enhancement measures supported by proactive debt management to further smooth and lengthen the maturity profile would improve this indicator.

7. **The debt outlook remains sensitive to standard shocks to key macro variables.** Under the standard stress tests, the relevant debt indicators are worst and the most extreme over the first 10-year projection period to the exchange rate and exports shocks, leading to breaches of other indicators against the thresholds in addition to the debt service-to-revenue ratio.

C. Public Debt Sustainability Analysis

8. **Strong fiscal adjustments and an adequate financing package should lower Ghana's total public debt (Table 4, Figure 3).** Though PV of debt-to-GDP ratio would breach the public debt benchmark in the first few years, it is expected to decline to around 40 percent of GDP by the end of the projection period with fiscal reforms on track. The other debt indicators are also expected to improve and stabilize. Though all indicators show sustainable paths under the baseline scenario, they could be on an explosive path under the historical and the most extreme shock scenario (with abrupt real exchange rate depreciation).

9. **Contingent liabilities emanating from state-owned enterprises (SOEs) and NPLs of the banking sector associated with these entities are concerns.** There had been legacy issues in SOEs, including inefficient management, limited revenue generating capacity partly due to low levels of administered tariff setting, and cross arrears with the government and other SoEs. The authorities have recently raised tariffs and levies on petroleum products to address SOEs imbalances and plan on comprehensively clearing their arrears and restructuring their unsustainable debt. They also plan to improve the SOE governance and the government oversight with support of the World Bank. Although in aggregate, the banking system is profitable and has adequate levels of capital and liquidity, a recently-conducted Asset Quality Review revealed weaknesses in loan classification and provisioning practices among some banks. The BoG has designed with IMF staff, a roadmap for enhancing the resilience of the banking sector and will require banks to re-classify loans to SOEs and book additional provisions if necessary. The comprehensive reform program for SOEs should also help to enhance the soundness of the banking sector. The staff will continue to monitor these vulnerabilities and contingent liabilities to avoid them jeopardizing debt sustainability.

D. Conclusion

10. **Sustained fiscal adjustment and an appropriate choice of financing options are crucially important.** The staff has been having dialogue with the authorities on how best the budget can be financed in this difficult election year to avoid excessive reliance on short-term debt. Robust nonresidents' demand for domestic debt and the issuance of a Eurobond has dissipated the rollover risk associated with the 2017 Eurobond and enabled the build-up of cash buffers to avoid taking on debt at excessively high costs. Ghana should continue to engage with development partners to seek as much concessional loans as possible to strengthen debt sustainability. Against these backdrops, the possible waning of appetite for Ghanaian debt from nonresident investors continues to be one of the most significant risks. Restoring

confidence on the external front with an appropriate macroeconomic policy package under the Fund program is also warranted.

11. **The authorities broadly concurred with the staff's views on debt sustainability** and reaffirmed their commitments to fiscal consolidation even during the election year, to strengthen debt sustainability. They still see a lots of merits in seeking non-concessional borrowing from the global capital markets, taking account of best financing mix depending on market conditions.

Table 1. Ghana: External Debt Sustainability Framework, Baseline Scenario, 2013–36 1/

(In percent of GDP, unless otherwise indicated)

	Actual			Historical 6/ Average	Standard 6/ Deviation	Projections									
	2013	2014	2015			2016	2017	2018	2019	2020	2021	2016-2021 Average	2026	2036	2022-2036 Average
External debt (nominal) 1/	**36.4**	**47.8**	**52.7**			**52.7**	**52.0**	**49.3**	**47.2**	**44.1**	**43.5**		**38.7**	**32.0**	
of which: public and publicly guaranteed (PPG)	31.9	42.8	48.7			48.7	48.0	45.3	43.2	40.1	39.5		34.7	28.0	
Change in external debt	4.4	11.4	4.9			0.0	-0.7	-2.7	-2.2	-3.0	-0.6		-1.1	-0.5	
Identified net debt-creating flows	1.3	9.5	0.8			-1.8	-3.9	-5.4	-4.3	-3.4	-2.7		-2.4	-1.4	
Non-interest current account deficit	**9.8**	**6.8**	**4.5**	**7.7**	**2.2**	**3.5**	**3.2**	**2.5**	**2.4**	**2.3**	**2.4**		**2.2**	**2.1**	2.2
Deficit in balance of goods and services	13.2	10.3	11.3			9.6	8.2	6.6	5.7	5.5	5.6		5.6	4.5	
Exports	33.9	39.5	43.8			39.8	41.5	41.6	41.2	40.2	39.0		33.4	26.9	
Imports	47.1	49.8	55.1			49.4	49.7	48.1	46.9	45.8	44.6		39.0	31.4	
Net current transfers (negative = inflow)	-4.1	-5.2	-6.8	-6.8	1.5	-5.9	-5.6	-5.2	-4.9	-4.6	-4.4		-3.3	-1.8	-2.8
of which: official	-0.2	0.0	-0.5			-0.1	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Other current account flows (negative = net inflow)	0.7	1.7	0.0			-0.2	0.6	1.2	1.5	1.4	1.2		-0.2	-0.6	
Net FDI (negative = inflow)	**-6.7**	**-8.7**	**-7.9**	**-7.1**	**2.4**	**-6.7**	**-6.5**	**-6.5**	**-5.8**	**-5.5**	**-5.3**		**-4.5**	**-3.5**	-4.2
Endogenous debt dynamics 2/	**-1.8**	**11.4**	**4.2**			**1.4**	**-0.6**	**-1.4**	**-0.9**	**-0.2**	**0.1**		**-0.1**	**0.1**	
Contribution from nominal interest rate	2.1	2.7	3.0			3.0	2.9	2.5	2.2	2.1	1.9		1.9	1.6	
Contribution from real GDP growth	-2.0	-1.8	-1.9			-1.5	-3.6	-4.0	-3.1	-2.3	-1.8		-1.9	-1.6	
Contribution from price and exchange rate changes	-1.9	10.4	3.1			...	...	...	...	...	...		...	...	
Residual (3-4) 3/	**3.2**	**1.9**	**4.1**			**1.9**	**3.2**	**2.8**	**2.1**	**0.4**	**2.1**		**1.3**	**0.9**	
of which: 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/	...	...	47.8			47.5	46.3	43.7	41.4	38.3	37.9		34.3	28.8	
In percent of exports	...	...	109.1			119.3	111.7	105.2	100.6	95.2	97.2		102.9	107.1	
PV of PPG external debt	**...**	**...**	**43.8**			**43.5**	**42.3**	**39.7**	**37.4**	**34.3**	**33.9**		**30.3**	**24.8**	
In percent of exports	**...**	**...**	**100.0**			**109.3**	**102.0**	**95.6**	**90.8**	**85.3**	**86.9**		**90.9**	**92.3**	
In percent of government revenues	**...**	**...**	**253.8**			**235.9**	**227.1**	**217.9**	**196.2**	**183.1**	**177.7**		**163.6**	**138.9**	
Debt service-to-exports ratio (in percent)	**9.9**	**12.8**	**16.6**			**19.3**	**18.3**	**17.0**	**14.8**	**15.7**	**17.4**		**18.3**	**19.9**	
PPG debt service-to-exports ratio (in percent)	**7.7**	**9.4**	**13.7**			**17.1**	**16.1**	**14.8**	**12.6**	**13.4**	**15.0**		**15.5**	**16.5**	
PPG debt service-to-revenue ratio (in percent)	**16.0**	**20.9**	**34.8**			**36.8**	**35.9**	**33.7**	**27.1**	**28.9**	**30.7**		**27.9**	**24.8**	
Total gross financing need (Millions of U.S. dollars)	3074.6	1780.1	2080.4			2111.5	2161.4	1667.1	1513.4	1910.2	2576.1		3462.1	7771.1	
Non-interest current account deficit that stabilizes debt ratio	5.4	-4.6	-0.4			3.5	3.9	5.2	4.5	5.4	3.1		3.3	2.6	
Key macroeconomic assumptions															
Real GDP growth (in percent)	7.3	4.0	3.9	7.1	3.2	3.3	7.4	8.4	6.9	5.3	4.5	6.0	5.2	5.3	5.3
GDP deflator in US dollar terms (change in percent)	6.2	-22.3	-6.1	1.7	12.9	9.8	1.5	1.5	1.8	2.4	2.7	3.3	2.4	2.4	2.4
Effective interest rate (percent) 5/	7.5	6.1	6.1	5.3	1.3	6.4	6.1	5.4	4.9	4.8	4.7	5.4	5.0	5.5	5.2
Growth of exports of G&S (US dollar terms, in percent)	-3.6	-5.9	8.1	16.6	17.3	3.2	13.5	10.3	7.8	5.4	3.9	7.3	5.2	5.7	5.2
Growth of imports of G&S (US dollar terms, in percent)	2.3	-14.5	7.9	13.4	17.7	1.7	9.6	6.6	6.0	5.2	4.5	5.6	5.7	5.3	5.3
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	2.9	2.4	-0.7	8.2	7.7	1.2	3.6	-2.8	-1.2	-2.1
Government revenues (excluding grants, in percent of GDP)	16.3	17.7	17.2			18.5	18.6	18.2	19.1	18.8	19.1		18.5	17.9	18.3
Aid flows (in Millions of US dollars) 7/	224.0	277.4	724.1			407.3	288.3	221.6	174.9	140.0	112.0		36.7	3.9	
of which: Grants	224.0	277.4	724.1			407.3	288.3	221.6	174.9	140.0	112.0		36.7	3.9	
of which: Concessional loans	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			1.2	0.8	0.4	0.7	0.5	0.2		-0.1	-0.1	-0.1
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			11.9	10.3	6.6	14.0	13.2	3.9		-1.9	-1.2	-1.4
Memorandum items:															
Nominal GDP (Millions of US dollars)	47806.3	38616.1	37687.1			42761.1	46610.3	51293.2	55806.7	60170.7	64533.6		92051.5	198382.3	
Nominal dollar GDP growth	14.0	-19.2	-2.4			13.5	9.0	10.0	8.8	7.8	7.3	9.4	7.7	7.8	7.8
PV of PPG external debt (in Millions of US dollars)			16138.5			18208.9	19290.2	19942.9	20424.3	20208.8	21381.2		27310.0	48176.0	
(PVt-PVt-1)/GDPt-1 (in percent)						**5.5**	2.5	1.4	0.9	-0.4	1.9	2.0	1.4	1.4	1.6
Gross workers' remittances (Millions of US dollars)	1523.9	1638.4	1966.1			2064.4	2167.6	2211.0	2255.2	2300.3	2346.3		2590.5	3142.4	
PV of PPG external debt (in percent of GDP + remittances)	...	...	41.6			41.5	40.4	38.1	36.0	33.1	32.7		29.5	24.4	
PV of PPG external debt (in percent of exports + remittances)	...	...	89.3			97.5	91.7	86.6	82.7	77.9	79.5		83.9	87.1	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	12.2			15.2	14.5	13.4	11.4	12.3	13.8		14.3	15.6	

Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt. PPG external debt is based on the residency criterion, thus including local debt held by nonresidents. Also included are SoE's debt and the central bank's liabilities for a reserve management purpose.

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 2. Ghana: Public Sector Debt Sustainability Framework, Baseline Scenario, 2013–36

(In percent of GDP, unless otherwise indicated)

	Actual			Average 5/	Standard Deviation 5/	Estimate	Projections								
	2013	2014	2015			2016	2017	2018	2019	2020	2021	2016-21 Average	2026	2036	2022-36 Average
Public sector debt 1/	58.1	70.7	73.8			70.4	67.0	62.7	59.7	56.2	54.9		46.8	38.1	
of which: foreign-currency denominated	31.9	42.8	48.7			48.7	48.0	45.3	43.2	40.1	39.5		34.7	28.0	
Change in public sector debt	8.4	12.6	3.1			-3.4	-3.4	-4.3	-3.0	-3.5	-1.4		-1.8	-2.0	
Identified debt-creating flows	5.4	12.3	-0.2			-3.9	-3.3	-3.6	-3.1	-2.9	-1.3		-1.8	-0.4	
Primary deficit	5.6	3.8	-0.2	3.8	2.2	-1.1	-2.2	-2.3	-1.8	-2.0	-0.6	-1.7	-0.8	0.0	-0.4
Revenue and grants	16.7	18.4	19.2			19.4	19.2	18.7	19.4	19.0	19.2		18.6	17.9	
of which: grants	0.5	0.7	1.9			1.0	0.6	0.4	0.3	0.2	0.2		0.0	0.0	
Primary (noninterest) expenditure	22.3	22.2	18.9			18.3	17.0	16.4	17.5	17.0	18.7		17.8	17.9	
Automatic debt dynamics	-0.2	8.5	0.1			-2.7	-1.1	-1.4	-1.2	-0.9	-0.7		-1.0	-0.4	
Contribution from interest rate/growth differential	-1.0	-0.1	-0.4			1.1	-1.4	-1.7	-1.4	-0.8	-0.5		-0.9	-0.3	
of which: contribution from average real interest rate	2.4	2.1	2.3			3.5	3.5	3.4	2.6	2.2	1.9		1.5	1.7	
of which: contribution from real GDP growth	-3.4	-2.2	-2.6			-2.4	-4.8	-5.2	-4.0	-3.0	-2.4		-2.4	-2.0	
Contribution from real exchange rate depreciation	0.8	8.6	0.4			-3.8	0.3	0.4	0.2	-0.1	-0.2		...	...	
Other identified debt-creating flows	0.0	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)	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	3.0	0.3	3.2			0.5	0.0	-0.7	0.0	-0.6	-0.1		0.0	-1.6	
Other Sustainability Indicators															
PV of public sector debt	...	...	68.9			65.2	61.3	57.2	53.9	50.5	49.3		42.5	34.9	
of which: foreign-currency denominated	...	...	43.8			43.5	42.3	39.7	37.4	34.3	33.9		30.3	24.8	
of which: external	...	...	43.8			43.5	42.3	39.7	37.4	34.3	33.9		30.3	24.8	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	19.6	23.4	23.6			21.4	18.4	16.6	14.7	13.4	15.4		11.7	10.1	
PV of public sector debt-to-revenue and grants ratio (in percent)	...	...	359.3			336.1	318.7	306.1	278.3	265.8	256.0		228.7	195.1	
PV of public sector debt-to-revenue ratio (in percent)	...	...	399.3			353.4	329.3	313.4	282.9	269.1	258.4		229.2	195.1	
of which: external 3/	...	...	253.8			235.9	227.1	217.9	196.2	183.1	177.7		163.6	138.9	
Debt service-to-revenue and grants ratio (in percent) 4/	58.6	69.6	73.0			63.0	64.2	56.2	45.2	43.2	48.5		44.2	46.5	
Debt service-to-revenue ratio (in percent) 4/	60.3	72.5	81.1			66.3	66.4	57.6	46.0	43.8	48.9		44.3	46.5	
Primary deficit that stabilizes the debt-to-GDP ratio	-2.8	-8.8	-3.3			2.2	1.1	2.0	1.2	1.5	0.8		1.0	2.0	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	7.3	4.0	3.9	7.1	3.2	3.3	7.4	8.4	6.9	5.3	4.5	6.0	5.2	5.3	5.3
Average nominal interest rate on forex debt (in percent)	7.8	6.5	6.5	5.4	1.6	6.6	6.2	5.4	4.9	4.7	4.7	5.4	5.0	5.5	5.2
Average real interest rate on domestic debt (in percent)	3.8	2.8	0.3	6.9	6.3	4.2	8.2	12.1	9.2	7.6	6.0	7.9	4.3	7.3	6.4
Real exchange rate depreciation (in percent, + indicates depreciation)	2.9	26.7	1.0	1.6	10.8	-7.7	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	15.6	16.7	18.8	16.2	2.5	15.3	10.1	5.7	5.5	6.3	6.6	8.2	6.3	6.2	6.2
Growth of real primary spending (deflated by GDP deflator, in percent)	5.2	4.8	-12.1	-0.1	4.7	-0.6	0.7	7.1	16.2	2.4	14.5	6.7	4.4	4.6	4.9
Grant element of new external borrowing (in percent)	...	...	...	...	...	2.9	2.4	-0.7	8.2	7.7	1.2	3.6	-2.8	-1.2	...

Sources: Country authorities; and staff estimates and projections.

1/ The domestic debt covers the debt stock of the central government. The external debt covers the central government, SoEs, and the central bank's liabiliteis contracted for a reserve management purpose. In this table, "foreign-currency denominated" should be read as "external".

2/ Gross financing need is defined as the primary deficit plus debt service plus the stock of short-term debt (including BoG's liabilities for a reserve management purpose) 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 3. Ghana: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2016–36

(In percent)

		Projections						
	2016	2017	2018	2019	2020	2021	**2026**	2036
PV of debt-to GDP ratio								
Baseline	44	42	40	37	34	34	**30**	25
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2016-2036 1/	44	46	49	51	51	52	**51**	37
A2. New public sector loans on less favorable terms in 2016-2036 2	44	43	41	39	37	37	**36**	36
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2017-2018	44	43	42	39	36	35	**32**	26
B2. Export value growth at historical average minus one standard deviation in 2017-2018 3/	44	47	53	51	47	46	**33**	24
B3. US dollar GDP deflator at historical average minus one standard deviation in 2017-2018	44	47	51	48	44	43	**38**	31
B4. Net non-debt creating flows at historical average minus one standard deviation in 2017-2018 4/	44	44	43	40	37	36	**30**	24
B5. Combination of B1-B4 using one-half standard deviation shocks	44	48	55	52	49	47	**37**	29
B6. One-time 30 percent nominal depreciation relative to the baseline in 2017 5/	44	59	55	52	47	47	**42**	34
PV of debt-to-exports ratio								
Baseline	109	102	96	91	85	87	**91**	92
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2016-2036 1/	109	112	118	123	126	134	**152**	139
A2. New public sector loans on less favorable terms in 2016-2036 2	109	103	98	95	91	94	**108**	132
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2017-2018	109	100	93	88	83	84	**88**	89
B2. Export value growth at historical average minus one standard deviation in 2017-2018 3/	109	129	163	156	149	150	**126**	114
B3. US dollar GDP deflator at historical average minus one standard deviation in 2017-2018	109	100	93	88	83	84	**88**	89
B4. Net non-debt creating flows at historical average minus one standard deviation in 2017-2018 4/	109	105	102	97	92	93	**91**	89
B5. Combination of B1-B4 using one-half standard deviation shocks	109	113	121	115	109	110	**101**	96
B6. One-time 30 percent nominal depreciation relative to the baseline in 2017 5/	109	100	93	88	83	84	**88**	89
PV of debt-to-revenue ratio								
Baseline	236	227	218	196	183	178	**164**	139
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2016-2036 1/	236	249	269	265	270	274	**273**	209
A2. New public sector loans on less favorable terms in 2016-2036 2	236	229	224	206	195	193	**194**	199
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2017-2018	236	229	229	206	192	186	**171**	145
B2. Export value growth at historical average minus one standard deviation in 2017-2018 3/	236	251	293	266	252	241	**179**	136
B3. US dollar GDP deflator at historical average minus one standard deviation in 2017-2018	236	254	278	250	233	226	**207**	176
B4. Net non-debt creating flows at historical average minus one standard deviation in 2017-2018 4/	236	234	234	211	197	190	**163**	135
B5. Combination of B1-B4 using one-half standard deviation shocks	236	260	304	275	259	248	**201**	161
B6. One-time 30 percent nominal depreciation relative to the baseline in 2017 5/	236	315	302	271	253	245	**225**	191

Table 3. Ghana: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2016–36 (concluded)

(In percent)

Debt service-to-exports ratio

Baseline	17	16	15	13	13	15	**16**	16
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2016-2036 1/	17	16	15	14	15	18	**25**	25
A2. New public sector loans on less favorable terms in 2016-2036 2	17	16	12	8	8	9	**14**	23
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2017-2018	17	16	15	13	13	15	**15**	16
B2. Export value growth at historical average minus one standard deviation in 2017-2018 3/	17	18	20	18	19	24	**27**	21
B3. US dollar GDP deflator at historical average minus one standard deviation in 2017-2018	17	16	15	13	13	15	**15**	16
B4. Net non-debt creating flows at historical average minus one standard deviation in 2017-2018 4/	17	16	15	13	14	16	**17**	16
B5. Combination of B1-B4 using one-half standard deviation shocks	17	17	16	15	16	18	**20**	18
B6. One-time 30 percent nominal depreciation relative to the baseline in 2017 5/	17	16	15	13	13	15	**15**	16

Debt service-to-revenue ratio

Baseline	37	36	34	27	29	31	**28**	25
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2016-2036 1/	37	36	35	30	32	37	**46**	37
A2. New public sector loans on less favorable terms in 2016-2036 2	37	36	28	17	17	19	**26**	35
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2017-2018	37	37	36	29	31	33	**30**	26
B2. Export value growth at historical average minus one standard deviation in 2017-2018 3/	37	36	35	31	33	38	**38**	25
B3. US dollar GDP deflator at historical average minus one standard deviation in 2017-2018	37	41	44	35	38	40	**36**	32
B4. Net non-debt creating flows at historical average minus one standard deviation in 2017-2018 4/	37	36	34	28	30	33	**30**	25
B5. Combination of B1-B4 using one-half standard deviation shocks	37	39	41	35	37	41	**40**	29
B6. One-time 30 percent nominal depreciation relative to the baseline in 2017 5/	37	51	48	38	41	44	**39**	35
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	-6	-6	-6	-6	-6	-6	**-6**	-6

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 4. Ghana: Sensitivity Analysis for Key Indicators of Public Debt, 2016–36

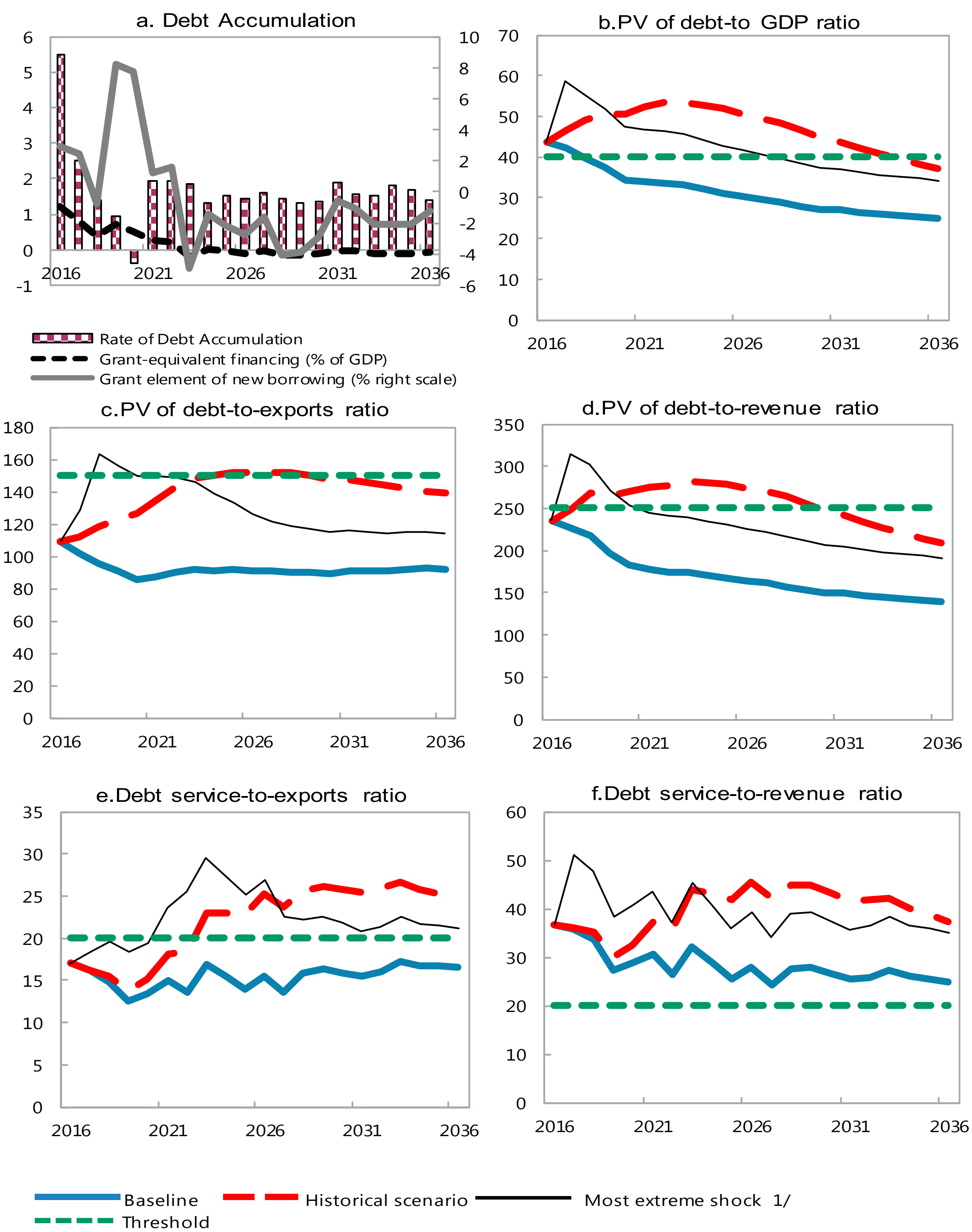
	Projections							
	2016	2017	2018	2019	2020	2021	2026	2036
PV of Debt-to-GDP Ratio								
Baseline	65	61	57	54	50	49	42	35
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	65	68	71	73	74	76	83	96
A2. Primary balance is unchanged from 2016	65	63	60	57	54	53	44	26
A3. Permanently lower GDP growth 1/	65	62	58	56	53	53	52	65
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2017-20	65	64	64	62	60	60	60	62
B2. Primary balance is at historical average minus one standard deviations in 2017-201	65	70	74	71	67	66	58	47
B3. Combination of B1-B2 using one half standard deviation shocks	65	70	75	72	69	69	65	61
B4. One-time 30 percent real depreciation in 2017	65	83	78	74	71	70	67	70
B5. 10 percent of GDP increase in other debt-creating flows in 2017	65	72	67	64	60	59	52	42
PV of Debt-to-Revenue Ratio 2/								
Baseline	336	319	306	278	266	256	229	195
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	336	353	378	376	391	393	444	535
A2. Primary balance is unchanged from 2016	336	325	319	294	287	274	236	145
A3. Permanently lower GDP growth 1/	336	322	313	289	281	276	283	362
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2017-20	336	333	342	319	314	311	320	347
B2. Primary balance is at historical average minus one standard deviations in 2017-201	336	364	397	365	353	342	311	263
B3. Combination of B1-B2 using one half standard deviation shocks	336	363	401	372	365	358	350	341
B4. One-time 30 percent real depreciation in 2017	336	429	416	383	372	363	362	394
B5. 10 percent of GDP increase in other debt-creating flows in 2017	336	373	361	330	318	307	278	233
Debt Service-to-Revenue Ratio 2/								
Baseline	63	64	56	45	43	48	44	46
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	63	65	60	58	60	67	78	105
A2. Primary balance is unchanged from 2016	63	64	58	48	47	52	46	38
A3. Permanently lower GDP growth 1/	63	65	58	47	46	51	52	75
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2017-20	63	67	62	51	51	57	59	73
B2. Primary balance is at historical average minus one standard deviations in 2017-201	63	64	60	62	63	60	62	59
B3. Combination of B1-B2 using one half standard deviation shocks	63	66	63	62	63	63	67	74
B4. One-time 30 percent real depreciation in 2017	63	72	74	63	65	72	80	102
B5. 10 percent of GDP increase in other debt-creating flows in 2017	63	64	61	62	50	56	55	53

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.

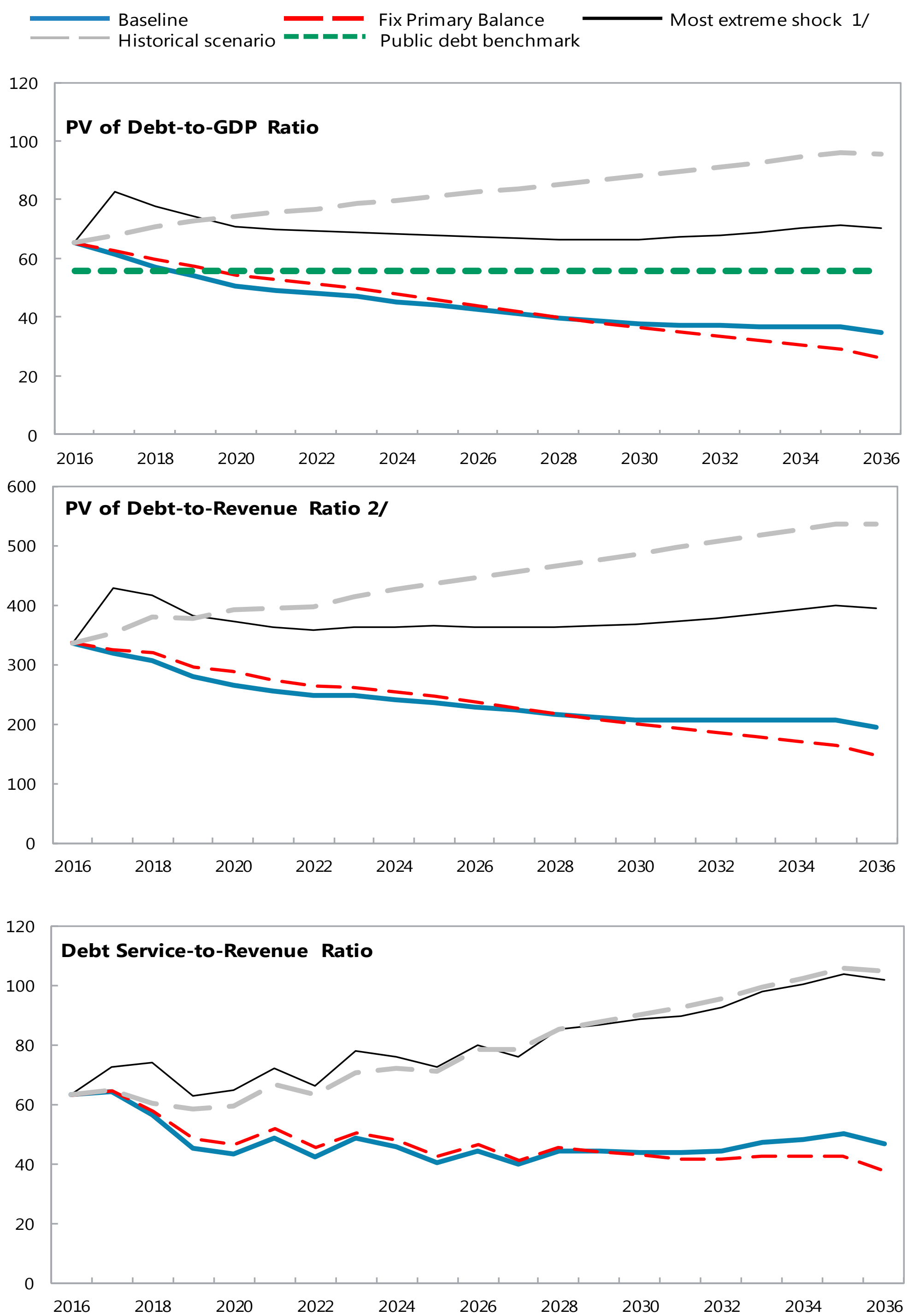
Figure 1. Ghana: Indicators of Public and Publicly Guaranteed External Debt Under Alternative Scenarios, 2016–36 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio on or before 2026. 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 Exports shock and in figure f. to a One-time depreciation shock

Figure 2. Ghana: Indicators of Public Debt Under Alternative Scenarios, 2016–36 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio on or before 2026.

2/ Revenues are defined inclusive of grants.