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GHANA

STAFF REPORT FOR THE 2017 ARTICLE IV CONSULTATION, FOURTH REVIEW UNDER THE EXTENDED CREDIT FACILITY ARRANGEMENT, REQUEST FOR WAIVER FOR NONOBSERVANCE OF PERFORMANCE CRITERIA, AND REQUEST FOR EXTENSION AND REPHASING OF THE ARRANGEMENT—DEBT SUSTAINABILITY ANALYSIS

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Ghana continues to face high risk of external debt distress. While Ghana managed to go through the December 2016 presidential election without market disruptions, the public debt-to-GDP ratio remains elevated. Significant fiscal slippages in 2016 have contributed to more elevated medium-term debt trajectories compared to the Third Review—with two external debt indicators still breaching thresholds under the baseline scenario and minor breaches by an additional indicator.[2] *The assessment of high risk of debt distress is reinforced by more protracted breaches of the public debt benchmark compared to earlier DSAs. Though Ghana is well-prepared for the Eurobond coming due in October 2017, it is still facing high levels of gross fiscal financing needs, which require nonresidents' continued demand for domestic debt. Restoring and maintaining debt sustainability will hinge on credible and sustained fiscal consolidation to anchor investors' confidence, supported by appropriate debt and cash management, and broad structural reform to ensure higher and inclusive growth. The authorities reaffirmed their commitments to fiscal consolidation to strengthen debt sustainability; they confirmed their plans to seek an appropriate financing mix to strike a balance between mitigating rollover risk and reducing debt service costs.*

[1] Prepared in collaboration with Ghanaian authorities. The previous DSA was prepared in October 2016 (IMF Country Report No. 16/321).

[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 2013–15 is 3.54). 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. Ghana was downgraded to a medium performer from a high performer at the time of the second ECF review reflecting the deterioration in its CPIA scores.

A. Background and Macroeconomic Assumptions

1. **Large fiscal slippages in 2016 set back consolidation efforts.** The cash-based fiscal deficit turned out at 9.3 percent of GDP in 2016 relative to the program target of 5.2 percent of GDP, reflecting broad-based revenue underperformance and significant expenditure overruns. In addition, the new government disclosed unpaid claims equivalent of 3 percent of GDP, out of which 2 percent of GDP had bypassed proper PFM procedures, now being audited. While central government's public and publicly-guaranteed external debt has stabilized somewhat as a share of GDP, total public debt has increased by 1 percentage point to 73.9 percent of GDP in 2016, around 3.5 percentage points higher than projected in the previous DSA. Also, it is worthwhile to mention that the share of external debt has increased by around 7 percentage points since 2011, to 66 percent, taking account of increased nonresidents' holdings of cedi-denominated domestic debt.

2. **Despite the authorities' commitment to renewed fiscal consolidation, meeting gross financing needs remains challenging.** The 2017 budget targets a deficit of 6.5 percent of GDP (authorities' definition). The original 2017 fiscal target would be broadly met by 2018, with a one year delay. Even with ambitious fiscal consolidation, gross financing needs (GFN, including redemption of T-bills) would remain elevated above 20 percent of GDP in 2017, significantly higher than the GFN benchmark for emerging economies under the DSA for market access countries (15 percent). Given the increasing share of nonresidents' investors[3] in the domestic debt market, restoring debt sustainability will be critical to anchor confidence. Staff are proposing additional fiscal measures in 2017 to achieve a primary balance sufficient to deliver a sustained reduction in the public debt ratio.

3. **The authorities have actively engaged in debt management operations.** The Medium-Term Debt Management Strategy (MTDS)[4] targets lengthening the average maturity of domestic debt. Robust non-residents demand continued to enable the authorities to issue longer-term debt, including a large issuance of domestic bonds equivalent to around US$ 2 billion issued in April 2017.[5] On the external front, proceeds from the US$750 million Eurobond issued in September 2016 were partly used to buy-back part of the 2017 Eurobond, with around US$200 million set aside for the remaining 2017 Eurobond redemption.[6]

4. **The authorities remain committed to cautiously contracting external loans under the debt limits.** Under the Fund program, the debt limits for 2017 will be adjusted vis-a-vis the indicative targets set under the Third Review.[7] The limits for debt management purposes will be set to zero given no planned

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[3] As in the previous DSAs, this DSA uses the residency criterion for defining external debt to reflect properly the vulnerabilities associated with nonresidents' holdings of domestic debt.

[4] In April /May 2015, the IMF and World Bank provided technical assistance to develop the MTDS.

[5] Nonresidents' investors are allowed to invest in domestic bonds with maturity of 2 years and longer.

[6] The authorities have also pre-repaid a part of the expensive Eurobond issued in 2015, by issuing domestically US dollar-denominated debt in the amount of US$94 million.

[7] Starting with the second review, non-concessional debt limits have been set separately for debt management purposes where non-concessional borrowing, including Eurobonds, 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.

issuance of a Eurobond (earlier included), while those for key projects will be increased to US$ 2,250 million to accommodate new projects to revamp economic growth and promote poverty reduction.

5. **The long-term macroeconomic projections remain broadly unchanged (Box 1).**

Box 1. Baseline Macroeconomic Assumptions

Real GDP-growth: At 3.5 percent, real growth in 2016 was stronger than previously projected. While oil production was interrupted by problems at the Jubilee oil field, the non-oil sector performed well, possibly reflecting the fiscal expansion towards the end of the year. In 2017, oil production is expected to increase significantly due to a new oil field coming on stream, while non-oil growth is expected to slow down due to tight fiscal and monetary policies. Starting in 2020, as oil production tapers off (oil production is expected to peak in 2019 under current assumptions), non-oil growth will reach its long-run steady-state rate of around 5 percent. Tackling structural impediments, including still-unstable power supply, scaling-up of infrastructure, and diversifying the non-commodity economy will be key to increasing potential GDP.

Table. Key Macroeconomic Assumptions

	2016	2017	2018	Medium term (first 6 years)	Long-term (last 15 years)
Real GDP Growth			(annual percentage change)		
Previous DSA	3.3	7.4	8.4	6.0	5.3
Current DSA	3.5	5.9	8.9	6.1	4.7
Inflation (GDP deflator)			(annual percentage change)		
Previous DSA	15.3	10.1	5.7	8.2	6.2
Current DSA	18.1	14.2	9.6	8.8	6.2
Real interest rate (foreign debt)			(percent)		
Previous DSA	5.2	4.0	3.0	3.3	3.0
Current DSA	6.6	5.5	5.0	4.8	4.4
Current account balance			(in percent of GDP)		
Previous DSA	-6.4	-6.1	-5.0	-5.1	-4.0
Current DSA	-6.7	-5.8	-5.4	-5.0	-4.0
Primary fiscal balance			(in percent of GDP)		
Previous DSA	1.1	2.2	2.3	1.7	0.4
Current DSA	-1.4	0.2	2.2	1.6	0.4

Inflation: With a tight monetary policy and stabilized exchange rates, inflation (CPI) trended down in 2016 to 15.4 percent (yoy) at end-2016. Inflation is expected to decline further to within the BOG's medium-term target of 8±2 percent by end-2018. Inflation rates are projected to converge to around 6 percent over the projection period. However, fresh pressures on the cedi and the possibility of further fiscal slippages pose short-term upside risks to the inflation outlook.

Government balances: Following the 2016 fiscal slippages (see para. 1), the authorities have committed to sustained fiscal consolidation. The expected longer-term increase in hydrocarbon revenues will contribute to maintain the overall deficit at sustainable levels. Following a significant correction in 2017-18, the primary balance is projected to remain at around 1½-2½ percent of GDP over the medium term.

Current account balance: The current account deficit improved in 2016 to 6.7 percent of GDP, reflecting an increase in gold production and smaller non-oil imports. The cumulative current account adjustments since 2014 were in line with the original projections under the Fund-supported program. WEO oil prices are assumed to recover to around US$54 per barrel by 2020 from around US$45 in 2016, and subsequently stabilize in real terms afterwards. A gradual recovery in oil prices would help Ghana further bringing the current account to a sustainable level as oil / gas production exceeds refined oil imports. With tight fiscal and monetary policies, the current account deficit would continue improving to below 5 percent of GDP in the medium term, with the long-run current account deficit around 4 percent of GDP. Gross international reserves would steadily increase and maintain reserve coverage of above 3-month imports in the long run.

Financing flows: Mainly driven by the hydrocarbon sector, Ghana has enjoyed strong FDI inflows over the past years, standing near 8 percent of GDP in 2016. Going forward, FDI is projected to decline gradually as oil production reaches its peak, and eventually stabilize around 3 percent of GDP over the long run. Consistent with Ghana's improving income status and sustained market access, 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, to be used for key infrastructure projects. A series of Eurobond issues is envisaged to roll over maturing Eurobonds, assumed to be repaid in amortization payments rather than bullet payments.

6. In line with standard DSA procedures,[8] the analysis below is based on the concept of gross debt. At the same time, the authorities have intensified efforts to build cash buffers, in both domestic and foreign exchange in the sinking fund, to reduce rollover risk.

B. External Debt Sustainability Analysis[9]

7. The medium-term debt trajectories have shifted upwards compared to the previous DSA (Table 3 and Figure 1). While the thresholds for the PV of external PPG debt-to-GDP and PV-to-revenue ratios would be breached for five and two years, respectively, the debt service-to-revenue ratio is projected to stay well above the threshold over the entire projection period, with an upward shift compared to the previous projections. In order to improve the debt service-to-revenue ratio, the authorities should continue to seek stronger domestic revenue mobilization along with a proper financing mix.

8. The debt outlook remains sensitive to standard shocks. The standard stress tests suggest Ghana is particularly vulnerable to one-time exchange rate depreciation and a decline in exports, confirming the need to diversify the economy and increase its resiliency to external shocks.

C. Public Debt Sustainability Analysis

9. Lack of fiscal adjustment would further worsen the public debt outlook, with more protracted breaches of the public debt benchmark (Table 4 and Figure 2). Under the baseline including fiscal adjustment, all debt indicators are expected to improve and stabilize (note however that reflecting the fiscal slippage in 2016, the PV of debt-to-GDP ratio for 2017 is projected to be 10 percentage points larger than at the time of the Third Review). Even with front-loaded fiscal adjustments under the IMF program, the public debt would decline below the benchmark of 56 percent only by 2022. Public debt sustainability is also significantly vulnerable to exchange rate shocks. Further, the historical scenario points to unsustainable debt trajectories.

10. Contingent liabilities, especially from state-owned enterprises (SOEs) and the banking system, also represent a material risk to debt sustainability. High levels of systemic loss and poor fee collection capacity have complicated the financial viability of the state-owned power distributor (ECG), which led to accumulation of cross arrears among ECG, the government (and agencies), and other SOEs. Further, the recently-conducted Asset Quality Review also highlighted substantial under-provisioning and capital shortfalls for some banks, which the authorities are addressing.

D. Conclusions

11. While fiscal adjustment would bring public debt back to a sustainable path, meeting larger gross financing needs in the near term hinges on continued investor confidence. Ghana's medium-

[8] See SM/13/292.

[9] Public external debts cover debts contracted or guaranteed by the central government, and those contracted by major state-owned enterprises (SOEs) without government guarantee.

term debt trajectories have worsened compared to the previous DSA, and gross financing needs are expected to remain elevated in the near term. Given the increasing share of nonresidents in the domestic debt market, macroeconomic stability underpinned by credible fiscal consolidation will be key to anchoring investors' sentiment. Additional significant fiscal slippages could seriously jeopardize debt sustainability. Ghana should continue engaging with development partners to maximize concessional loans and make every effort to expedite disbursements under existing commitments from multilateral agencies.[10]

12. The authorities broadly concurred with the staff's views on Ghana's debt sustainability. They reaffirmed their commitments to fiscal consolidation to strengthen debt sustainability. They have also echoed the need to seek an appropriate financing mix along with proactive debt management and proper cash management in a close consultation with the Fund and the Bank.[11] Given the increased use of cash buffers as well as external assets in the sinking fund, the authorities were of the view that using net debt measures would more accurately represent Ghana's debt outlook, and requested to pay attention to both gross and net debt concepts going forward.

[10] Disbursements under budget support loans from the World Bank and the African Development Bank did not materialize in 2016 due to a delay in meeting conditions under loan agreements.

[11] A recently initiated World Bank project "Ghana Economic Management Strengthening" (GEMS) contains a dedicated debt management component, which will help to build capacity to pursue active operations in this area.

Table 1. Ghana: External Debt Sustainability Framework, Baseline Scenario, 2014–37 1/

(In percent of GDP, unless otherwise indicated)

	Actual			Historical 6/ Average	Standard 6/ Deviation	Projections									
	2014	2015	2016			2017	2018	2019	2020	2021	2022	2017-2022 Average	2027	2037	2023-203 Average
External debt (nominal) 1/	**45.4**	**53.2**	**52.9**			**55.5**	**52.8**	**50.7**	**49.7**	**48.4**	**45.7**		**39.7**	**33.4**	
of which: public and publicly guaranteed (PPG)	41.1	49.2	48.9			51.5	48.8	46.7	45.7	44.4	41.7		35.7	29.4	
Change in external debt	10.1	7.7	-0.2			2.5	-2.7	-2.0	-1.0	-1.3	-2.7		-1.6	-0.7	
Identified net debt-creating flows	9.1	1.9	-8.7			-3.4	-4.9	-2.8	-2.1	-2.1	-2.0		0.0	0.2	
Non-interest current account deficit	**6.8**	**4.5**	**3.2**	**7.3**	**2.6**	**2.4**	**2.1**	**1.9**	**1.6**	**1.5**	**1.6**		**1.9**	**1.3**	1.7
Deficit in balance of goods and services	10.3	11.6	7.2			7.3	6.0	5.3	5.0	4.7	5.0		5.6	4.1	
Exports	39.4	44.7	40.8			41.2	41.7	41.4	40.8	40.5	40.2		37.3	35.1	
Imports	49.6	56.3	48.0			48.4	47.7	46.7	45.8	45.2	45.2		42.9	39.2	
Net current transfers (negative = inflow)	-5.2	-7.0	-3.4	-6.3	1.7	-4.7	-4.7	-4.5	-4.4	-4.2	-4.3		-3.4	-2.1	-3.0
of which: official	0.0	-0.5	-0.1			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Other current account flows (negative = net inflow)	1.7	-0.2	-0.5			-0.2	0.9	1.1	1.0	1.0	0.9		-0.3	-0.7	
Net FDI (negative = inflow)	**-8.7**	**-8.1**	**-8.1**	**-7.7**	**2.0**	**-6.5**	**-6.0**	**-5.0**	**-4.5**	**-4.3**	**-4.0**		**-2.7**	**-1.8**	-2.6
Endogenous debt dynamics 2/	**11.0**	**5.5**	**-3.8**			**0.7**	**-1.1**	**0.3**	**0.7**	**0.7**	**0.4**		**0.7**	**0.7**	
Contribution from nominal interest rate	2.7	3.2	3.6			3.6	3.5	3.2	3.2	3.1	2.8		2.4	2.1	
Contribution from real GDP growth	-1.7	-1.8	-1.6			-2.9	-4.5	-2.9	-2.4	-2.4	-2.4		-1.7	-1.5	
Contribution from price and exchange rate changes	10.0	4.1	-5.7			...	...	...	...	...	...		...	...	
Residual (3-4) 3/	**1.0**	**5.8**	**8.4**			**5.9**	**2.2**	**0.7**	**1.1**	**0.7**	**-0.7**		**-1.6**	**-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/	...	...	49.7			53.5	50.4	48.1	47.0	45.5	42.7		37.1	30.7	
In percent of exports	...	...	121.6			130.0	120.9	116.2	115.0	112.2	106.2		99.5	87.5	
PV of PPG external debt	**...**	**...**	**45.7**			**49.5**	**46.4**	**44.1**	**43.0**	**41.5**	**38.7**		**33.1**	**26.7**	
In percent of exports	**...**	**...**	**111.8**			**120.2**	**111.3**	**106.6**	**105.2**	**102.4**	**96.3**		**88.8**	**76.1**	
In percent of government revenues	**...**	**...**	**275.6**			**273.2**	**255.3**	**236.8**	**228.5**	**221.8**	**208.2**		**186.6**	**155.0**	
Debt service-to-exports ratio (in percent)	**15.7**	**17.2**	**19.7**			**21.0**	**18.5**	**16.0**	**16.8**	**18.8**	**20.6**		**19.2**	**16.2**	
PPG debt service-to-exports ratio (in percent)	**12.2**	**14.6**	**17.6**			**18.7**	**16.3**	**13.7**	**14.5**	**16.5**	**18.3**		**16.7**	**13.5**	
PPG debt service-to-revenue ratio (in percent)	**27.2**	**37.1**	**43.5**			**42.4**	**37.4**	**30.5**	**31.5**	**35.8**	**39.6**		**35.0**	**27.6**	
Total gross financing need (Millions of U.S. dollars)	1682.7	1504.1	1355.2			2075.8	1907.0	1876.7	2266.1	2953.5	3831.3		5927.2	9334.6	
Non-interest current account deficit that stabilizes debt ratio	-3.3	-3.3	3.4			-0.1	4.8	4.0	2.7	2.8	4.3		3.6	2.0	
Key macroeconomic assumptions															
Real GDP growth (in percent)	4.0	3.8	3.5	6.8	3.4	5.9	8.9	5.9	5.1	5.2	5.4	6.1	4.5	4.6	4.7
GDP deflator in US dollar terms (change in percent)	-22.0	-8.4	12.1	1.7	13.2	0.4	-0.5	1.4	1.5	1.8	2.3	1.1	2.3	2.2	2.2
Effective interest rate (percent) 5/	6.3	6.8	7.8	5.9	1.1	7.2	6.8	6.5	6.7	6.6	6.3	6.7	6.3	6.7	6.4
Growth of exports of G&S (US dollar terms, in percent)	-5.9	8.1	5.9	14.5	17.2	7.1	9.7	6.6	5.2	6.3	7.0	7.0	6.0	6.3	6.0
Growth of imports of G&S (US dollar terms, in percent)	-14.5	7.9	-1.1	10.8	17.7	7.2	6.6	5.3	4.6	5.8	7.7	6.2	6.0	6.0	6.0
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	5.6	11.1	10.9	6.0	3.4	1.3	6.4	3.8	-0.5	0.6
Government revenues (excluding grants, in percent of GDP)	17.7	17.6	16.6			18.1	18.2	18.6	18.8	18.7	18.6		17.8	17.2	17.6
Aid flows (in Millions of US dollars) 7/	278.5	724.3	291.7			335.5	222.3	174.9	140.0	112.0	89.6		29.4	3.2	
of which: Grants	278.5	724.3	291.7			335.5	222.3	174.9	140.0	112.0	89.6		29.4	3.2	
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/	...	...	...			1.3	1.1	0.9	0.6	0.4	0.2		0.2	0.0	0.1
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			11.8	17.4	16.6	10.0	6.3	3.7		4.4	-0.5	1.1
Memorandum items:															
Nominal GDP (Millions of US dollars)	38774.1	36892.6	42777.9			45464.1	49226.3	52863.3	56415.2	60448.8	65126.7		92098.0	179965.5	
Nominal dollar GDP growth	-18.9	-4.9	16.0			6.3	8.3	7.4	6.7	7.1	7.7	7.3	6.9	6.9	7.0
PV of PPG external debt (in Millions of US dollars)			18192.3			21293.8	21938.1	22589.1	23673.4	24590.2	24758.0		29949.3	47211.6	
(PVt-PVt-1)/GDPt-1 (in percent)						**7.3**	1.4	1.3	2.1	1.6	0.3	2.3	0.6	0.5	1.4
Gross workers' remittances (Millions of US dollars)	1638.4	1966.1	1572.9			2320.0	2552.0	2628.6	2707.4	2788.6	2872.3		3171.3	3843.1	
PV of PPG external debt (in percent of GDP + remittances)	...	...	44.0			47.1	44.1	42.0	41.0	39.6	37.1		32.0	26.2	
PV of PPG external debt (in percent of exports + remittances)	...	...	102.6			107.0	99.0	95.2	94.2	91.9	86.8		81.3	71.8	
Debt service of PPG external debt (in percent of exports + remittance	...	...	16.2			16.6	14.5	12.2	13.0	14.9	16.5		15.3	12.8	

Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt. PPG external debt is based on a residency criterion, thus including local debt held by nonresidents. SoE's debt not guaranteed by the government is also included.

2/ Derived as $[r - g - \rho(1+g)]/(1+g+\rho+g\rho)$ 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, 2014–37

(In percent of GDP, unless otherwise indicated)

	Actual					Estimate	Projections								
	2014	2015	2016	Average 5/	Standard Deviation 5/	2017	2018	2019	2020	2021	2022	2017-22 Average	2027	2037	2023-37 Average
Public sector debt 1/	66.6	72.9	73.9			73.0	68.2	64.6	61.7	59.2	55.6		46.3	38.8	
of which: foreign-currency denominated	41.1	49.2	48.9			51.5	48.8	46.7	45.7	44.4	41.7		35.7	29.4	
	0.6	0.7	0.7												
Change in public sector debt	12.4	6.3	0.9			-0.9	-4.8	-3.6	-2.9	-2.5	-3.6		-2.6	-0.8	
Identified debt-creating flows	12.0	1.1	-0.4			-2.6	-4.2	-3.0	-2.2	-2.0	-1.9		-0.6	-0.3	
Primary deficit	3.8	-1.0	0.9	3.2	2.4	-0.9	-2.5	-2.4	-2.2	-1.9	-1.6	-1.9	-0.4	-0.2	-0.4
Revenue and grants	18.4	19.6	17.3			18.9	18.6	19.0	19.1	18.9	18.7		17.8	17.2	
of which: grants	0.7	2.0	0.7			0.7	0.5	0.3	0.2	0.2	0.1		0.0	0.0	
Primary (noninterest) expenditure	22.2	18.6	18.1			17.9	16.2	16.6	16.8	17.0	17.2		17.4	17.0	
Automatic debt dynamics	8.2	2.1	-1.3			-0.5	-1.7	-0.6	0.0	0.0	-0.4		-0.2	-0.1	
Contribution from interest rate/growth differential	-0.1	0.8	1.3			-0.4	-2.2	-0.6	0.2	0.1	-0.3		-0.1	0.0	
of which: contribution from average real interest rate	2.0	3.2	3.7			3.7	3.8	3.3	3.3	3.2	2.8		2.0	1.7	
of which: contribution from real GDP growth	-2.1	-2.5	-2.4			-4.1	-5.9	-3.8	-3.1	-3.1	-3.0		-2.1	-1.7	
Contribution from real exchange rate depreciation	8.3	1.3	-2.5			-0.1	0.5	-0.1	-0.2	-0.1	-0.1		...	...	
Other identified debt-creating flows	0.0	0.0	0.0			-1.2	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Privatization receipts (negative)	0.0	0.0	0.0			-1.2	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	0.4	5.2	1.3			1.7	-0.6	-0.5	-0.7	-0.5	-1.6		-2.0	-0.5	
Other Sustainability Indicators															
PV of public sector debt	...	...	70.6			71.0	65.8	62.0	58.9	56.3	52.7		43.7	36.2	
of which: foreign-currency denominated	...	...	45.7			49.5	46.4	44.1	43.0	41.5	38.7		33.1	26.7	
of which: external	...	...	45.7			49.5	46.4	44.1	43.0	41.5	38.7		33.1	26.7	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 2/	22.6	22.5	24.0			22.5	14.8	12.0	12.1	12.5	12.2		10.3	7.0	
PV of public sector debt-to-revenue and grants ratio (in percent)	...	...	409.2			376.5	353.3	326.8	309.2	298.0	281.3		245.7	210.0	
PV of public sector debt-to-revenue ratio (in percent)	...	...	426.0			391.8	362.0	332.6	313.2	301.0	283.3		246.1	210.0	
of which: external 3/	...	...	275.6			273.2	255.3	236.8	228.5	221.8	208.2		186.6	155.0	
Debt service-to-revenue and grants ratio (in percent) 4/	70.2	73.7	73.4			78.0	66.3	55.0	56.7	60.1	58.4		50.7	38.6	
Debt service-to-revenue ratio (in percent) 4/	73.1	81.9	76.5			81.2	67.9	56.0	57.5	60.7	58.8		50.8	38.6	
Primary deficit that stabilizes the debt-to-GDP ratio	-8.7	-7.3	-0.1			-0.1	2.3	1.2	0.7	0.5	2.0		2.3	0.5	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	4.0	3.8	3.5	6.8	3.4	5.9	8.9	5.9	5.1	5.2	5.4	6.1	4.5	4.6	4.7
Average nominal interest rate on forex debt (in percent)	6.4	7.0	8.0	6.1	1.2	7.4	6.9	6.7	6.8	6.8	6.4	6.8	6.4	6.9	6.5
Average real interest rate on domestic debt (in percent)	2.8	3.7	2.6	3.1	1.4	4.9	7.2	6.5	7.2	7.5	6.9	6.7	4.1	3.9	4.3
Real exchange rate depreciation (in percent, + indicates depreciation	26.7	3.2	-5.0	1.9	10.7	-0.1	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	16.7	16.4	18.1	16.6	1.7	14.2	9.6	9.1	7.4	6.3	6.3	8.8	6.3	6.2	6.2
Growth of real primary spending (deflated by GDP deflator, in percer	4.9	-12.9	0.8	-0.6	4.6	4.7	-1.9	8.7	6.8	5.9	6.9	5.2	4.9	4.4	4.6
Grant element of new external borrowing (in percent)	...	...	...	...	...	5.6	11.1	10.9	6.0	3.4	1.3	6.4	3.8	-0.5	...

Sources: Country authorities; and staff estimates and projections.

1/ The domestic debt covers the debt stock of the central government. The external debt covers those contracted and guaranteed by the central government. SoEs' debt not guaranteed by the government is also included. 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 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, 2017–37

(In percent)

	Projections							
	2017	2018	2019	2020	2021	2022	**2027**	2037
PV of debt-to GDP ratio								
Baseline	49	46	44	43	41	39	**33**	27
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2017-2037 1/	49	50	49	50	50	48	**39**	22
A2. New public sector loans on less favorable terms in 2017-2037 2	49	45	43	43	42	39	**35**	32
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2018-2019	49	47	46	45	43	40	**35**	28
B2. Export value growth at historical average minus one standard deviation in 2018-2019 3/	49	49	55	54	52	49	**36**	26
B3. US dollar GDP deflator at historical average minus one standard deviation in 2018-2019	49	50	55	54	52	48	**41**	33
B4. Net non-debt creating flows at historical average minus one standard deviation in 2018-2019 4/	49	45	42	41	40	37	**32**	26
B5. Combination of B1-B4 using one-half standard deviation shocks	49	49	51	50	49	46	**38**	30
B6. One-time 30 percent nominal depreciation relative to the baseline in 2018 5/	49	64	61	60	58	54	**46**	37
PV of debt-to-exports ratio								
Baseline	120	111	107	105	102	96	**89**	76
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2017-2037 1/	120	119	119	122	123	120	**103**	63
A2. New public sector loans on less favorable terms in 2017-2037 2	120	108	105	105	103	97	**93**	91
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2018-2019	120	106	102	102	99	93	**86**	74
B2. Export value growth at historical average minus one standard deviation in 2018-2019 3/	120	133	164	163	160	152	**118**	92
B3. US dollar GDP deflator at historical average minus one standard deviation in 2018-2019	120	106	102	102	99	93	**86**	74
B4. Net non-debt creating flows at historical average minus one standard deviation in 2018-2019 4/	120	107	102	101	98	92	**86**	74
B5. Combination of B1-B4 using one-half standard deviation shocks	120	113	111	111	108	102	**91**	77
B6. One-time 30 percent nominal depreciation relative to the baseline in 2018 5/	120	106	102	102	99	93	**86**	74
PV of debt-to-revenue ratio								
Baseline	273	255	237	229	222	208	**187**	155
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2017-2037 1/	273	274	265	265	266	260	**217**	127
A2. New public sector loans on less favorable terms in 2017-2037 2	273	247	233	228	223	210	**195**	185
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2018-2019	273	257	245	238	232	217	**195**	162
B2. Export value growth at historical average minus one standard deviation in 2018-2019 3/	273	270	296	287	281	266	**200**	152
B3. US dollar GDP deflator at historical average minus one standard deviation in 2018-2019	273	274	293	285	277	260	**233**	194
B4. Net non-debt creating flows at historical average minus one standard deviation in 2018-2019 4/	273	246	226	219	213	200	**180**	150
B5. Combination of B1-B4 using one-half standard deviation shocks	273	270	276	268	261	245	**213**	175
B6. One-time 30 percent nominal depreciation relative to the baseline in 2018 5/	273	350	326	317	308	289	**259**	215

Table 3. Ghana: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2017–37 (concluded)

(In percent)

Debt service-to-exports ratio

Baseline	19	16	14	15	17	18	**17**	14
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2017-2037 1/	19	16	14	15	17	19	**20**	12
A2. New public sector loans on less favorable terms in 2017-2037 2	19	16	10	10	10	10	**13**	12
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2018-2019	19	16	14	14	16	18	**16**	13
B2. Export value growth at historical average minus one standard deviation in 2018-2019 3/	19	18	18	20	22	24	**27**	17
B3. US dollar GDP deflator at historical average minus one standard deviation in 2018-2019	19	16	14	14	16	18	**16**	13
B4. Net non-debt creating flows at historical average minus one standard deviation in 2018-2019 4/	19	16	14	14	16	18	**16**	13
B5. Combination of B1-B4 using one-half standard deviation shocks	19	17	14	15	17	19	**18**	14
B6. One-time 30 percent nominal depreciation relative to the baseline in 2018 5/	19	16	14	14	16	18	**16**	13

Debt service-to-revenue ratio

Baseline	42	37	30	32	36	40	**35**	28
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2017-2037 1/	42	37	31	32	36	40	**42**	24
A2. New public sector loans on less favorable terms in 2017-2037 2	42	37	23	22	23	21	**27**	24
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2018-2019	42	39	33	34	39	43	**37**	29
B2. Export value growth at historical average minus one standard deviation in 2018-2019 3/	42	37	32	35	39	43	**45**	28
B3. US dollar GDP deflator at historical average minus one standard deviation in 2018-2019	42	42	39	41	46	51	**44**	35
B4. Net non-debt creating flows at historical average minus one standard deviation in 2018-2019 4/	42	37	31	31	36	39	**34**	27
B5. Combination of B1-B4 using one-half standard deviation shocks	42	41	36	37	42	46	**42**	32
B6. One-time 30 percent nominal depreciation relative to the baseline in 2018 5/	42	54	44	45	51	57	**49**	39
Memorandum item:								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	-1	-1	-1	-1	-1	-1	**-1**	-1

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, 2017–37

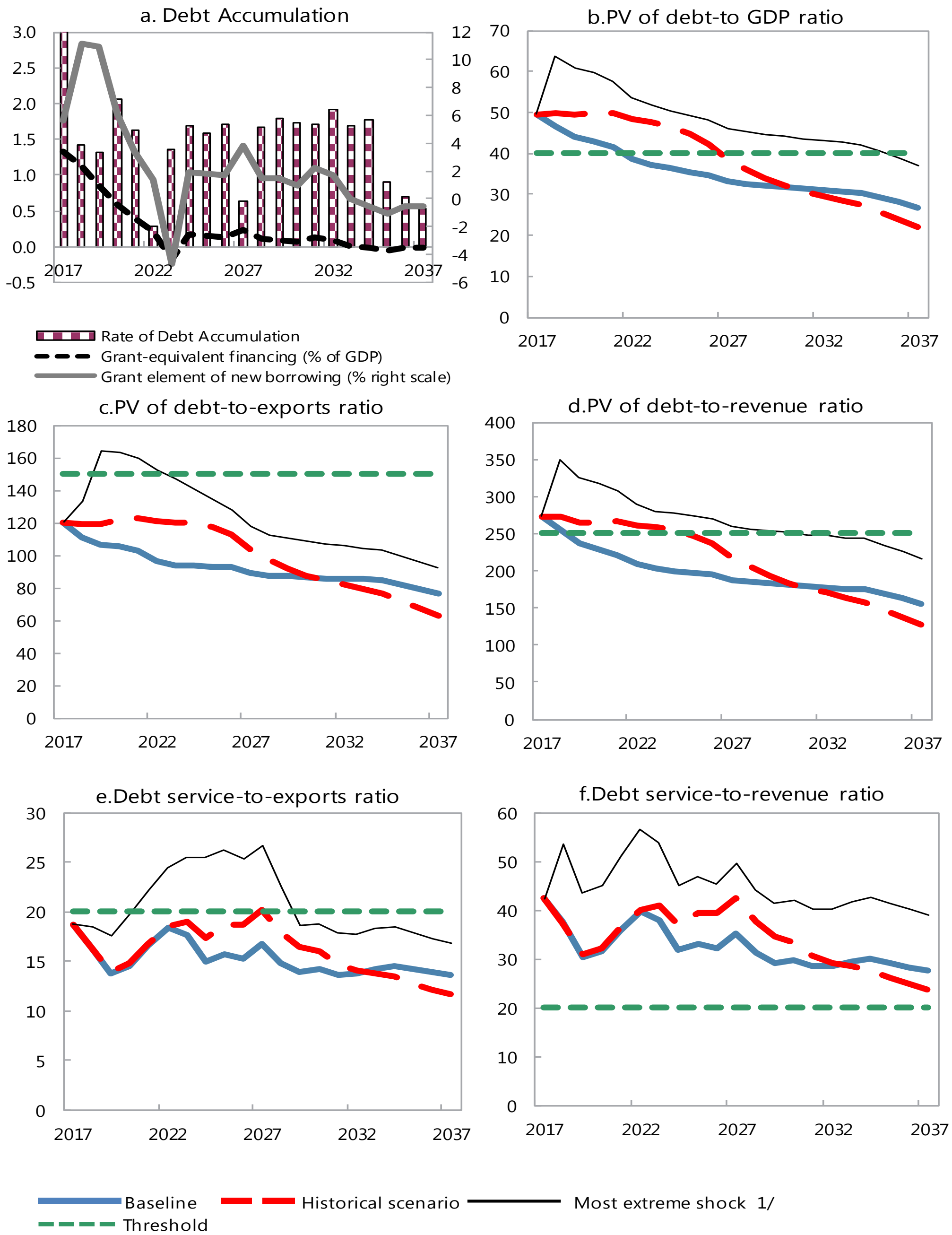
	Projections							
	2017	2018	2019	2020	2021	2022	2027	2037
PV of Debt-to-GDP Ratio								
Baseline	71	66	62	59	56	53	44	36
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	71	73	74	75	76	76	78	83
A2. Primary balance is unchanged from 2017	71	67	65	63	61	58	48	33
A3. Permanently lower GDP growth 1/	71	66	63	61	59	57	54	68
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2018-20	71	70	69	67	66	63	60	64
B2. Primary balance is at historical average minus one standard deviations in 2018-201	71	74	78	75	72	68	58	49
B3. Combination of B1-B2 using one half standard deviation shocks	71	75	78	76	74	71	64	61
B4. One-time 30 percent real depreciation in 2018	71	90	86	83	80	77	72	78
B5. 10 percent of GDP increase in other debt-creating flows in 2018	71	76	72	69	66	62	52	44
PV of Debt-to-Revenue Ratio 2/								
Baseline	376	353	327	309	298	281	246	210
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	376	390	389	393	402	404	436	481
A2. Primary balance is unchanged from 2017	376	362	342	331	325	312	272	192
A3. Permanently lower GDP growth 1/	376	356	333	320	313	302	304	397
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2018-20	376	376	365	353	349	338	339	369
B2. Primary balance is at historical average minus one standard deviations in 2018-201	376	397	411	392	380	362	325	282
B3. Combination of B1-B2 using one half standard deviation shocks	376	403	413	398	390	376	360	355
B4. One-time 30 percent real depreciation in 2018	376	484	452	434	424	410	406	450
B5. 10 percent of GDP increase in other debt-creating flows in 2018	376	407	379	360	349	331	295	255
Debt Service-to-Revenue Ratio 2/								
Baseline	78	66	55	57	60	58	51	39
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	78	68	58	68	75	77	83	91
A2. Primary balance is unchanged from 2017	78	66	56	60	64	64	57	36
A3. Permanently lower GDP growth 1/	78	67	56	58	62	62	60	72
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2018-20	78	70	60	63	69	68	67	69
B2. Primary balance is at historical average minus one standard deviations in 2018-201	78	66	59	73	81	73	68	54
B3. Combination of B1-B2 using one half standard deviation shocks	78	69	61	74	81	75	73	68
B4. One-time 30 percent real depreciation in 2018	78	75	70	76	85	88	94	106
B5. 10 percent of GDP increase in other debt-creating flows in 2018	78	66	60	73	69	68	62	48

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.

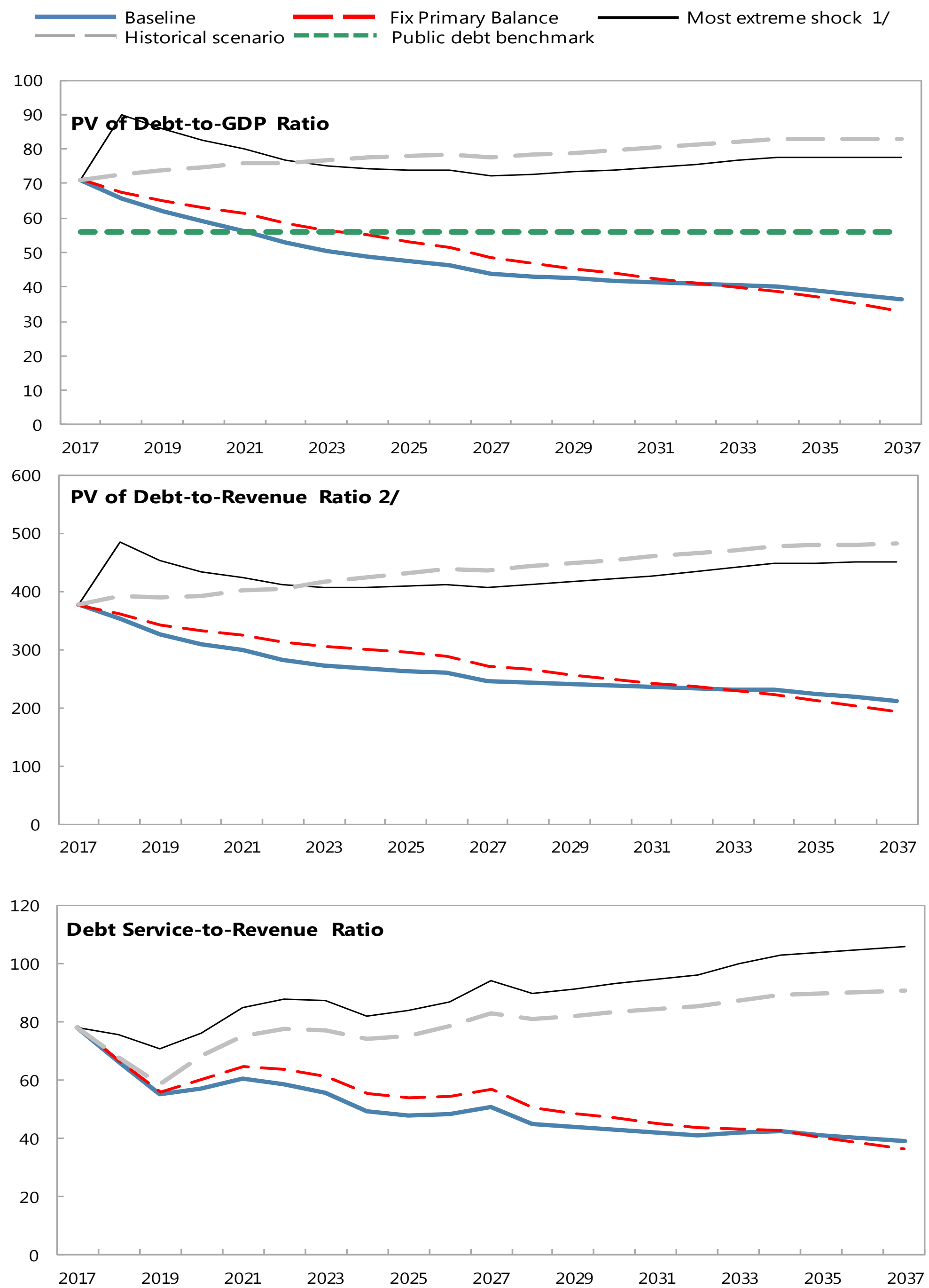
Figure 1. Ghana: Indicators of Public and Publicly Guaranteed External Debt Under Alternative Scenarios, 2017–37 1/



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 2027. 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, 2017–37 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 2027.

2/ Revenues are defined inclusive of grants.