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THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

STAFF REPORT FOR THE 2017 ARTICLE IV CONSULTATION—DEBT SUSTAINABILITY ANALYSIS

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Stagnant exports in 2016/17, due to a weak external environment and delays in completing key export-oriented projects, and the maturing of non-concessional borrowing contracted in the last 5 years has resulted in a deterioration of the 2017 Debt Sustainability Analysis (DSA) indicators relative to 2016. As in the 2016 DSA, the net present value of external debt-to-exports (PVDE) breaches the threshold in the baseline. In addition, there is now a breach of the debt service-to-exports (DSE) indicator. That said, there is no breach of the debt service-to-exports-plus-remittances indicator. In 2016/17 there was also a decline in external reserves, and widespread foreign exchange shortages. As a result, the risk of external debt distress is now assessed as “high”.

After the 2016 DSA discussions, and as exports underperformed, the authorities took decisive remedial actions consistent with staff advice. They curtailed import-intensive public projects to reduce external public borrowing and keep non-concessional borrowing (NCB) within the 2016 DSA envelope. They introduced strict control mechanisms on NCB by government and state-owned enterprises which resulted in the stabilization of the PV of external debt. The 2017/18 budget speech reaffirmed this restrictive fiscal stance. These policies were crucial in narrowing the external current account deficit by one percentage point of GDP to 8.2 percent in 2016/17 despite weak exports. In October 2017, following the 2017 Article IV Consultation and DSA discussions, the authorities devalued the birr by 15 percent and adopted a restrictive monetary stance to further reduce external imbalances and gain competitiveness.

With steadfast implementation of the announced policies, and the expected export take-off, risks are projected to diminish. However, policy slippages or further delays in export supply would keep risks elevated for an extended period. On the upside, faster-than-projected ramp up of exports—driven by recently completed projects—would strengthen debt sustainability. The projected baseline path of total public sector debt (external plus domestic) does not result in additional risks beyond those discussed for the external debt.

BACKGROUND AND RECENT DEVELOPMENTS

1. Ethiopia's debt-financed public investments in infrastructure over recent years have boosted growth. Ethiopia reached the completion point under the Heavily Indebted Poor Countries (HIPC) Initiative in 2004 and benefited from debt relief under the Multilateral Debt Relief Initiative (MDRI) in 2006.¹ Public and publicly guaranteed (PPG) external debt² fell in the years that followed, reaching a low of 18 percent of GDP in mid-2012. By end-2016/17,³ it stood at 30.7 percent of GDP⁴ and total (including domestic) public debt was at 57 percent. Since FY13,⁵ IDA set non-concessional borrowing (NCB) ceilings for Ethiopia in cooperation with the authorities. The ceilings were initially set at US\$1 billion in FY13, FY14, and FY15. While constant in absolute terms, in percent of GDP the ceilings imposed shrinking borrowing space for non-concessional financing over time (from 2.1 percent of GDP in FY13 to 1.6 percent of GDP in FY15). In response to a shift in the risk of debt distress rating from low to moderate, the NCB ceilings for FY16 and FY17 were further adjusted downward to 1.1 and 0.5 percent of GDP, respectively. Over the past three years, the authorities adhered to the agreed ceilings. The NCB ceiling for FY18 was set at \$400 million or 0.5 percent of GDP.

2. Ethiopia's risk of debt distress was assessed as "moderate" in the 2016 DSA, but risks have increased. In the 2016 DSA, one indicator—the present value of debt to exports (PDVE)—breached the threshold under the baseline. Nevertheless, staffs of the Fund and IDA exercised judgment, as allowed by the guidelines, in reaffirming the moderate risk rating. This judgement was based on the mainly concessional composition of the debt and the official nature of most creditors, the virtual absence of tradeable debt, and strong restrictions on capital account transactions—all making unlikely a debt distress episode prompted by a disorderly market reaction. It was also considered that the debt had been devoted to investments with high expected growth return—thus increasing the capacity to repay—rather than to financing current spending. All these risk-mitigating factors remain in place. The 2016 DSA however also indicated that a continuation of export underperformance would materially deteriorate the debt sustainability prospects. In 2016/17, stagnant export revenue due to delays in coming on-stream of some export-oriented infrastructure projects, coupled

¹ Debt relief negotiations with a number of bilateral creditors (Bulgaria, Libya, Russia and FR Yugoslavia) and commercial creditors from Italy, the former Czechoslovakia, India, and FR Yugoslavia are ongoing. The total principal in arrears to these creditors amounted to US\$355 million. Standard HIPC terms were assumed for this amount in the DSA.

² PPG debt includes the foreign debt of the National Bank of Ethiopia, the debt of the federal government, regional governments, all state-owned enterprises that borrow externally, except Ethiopian Airlines (EAL). EAL meets the criteria for exclusion set out in the 2013 Staff Guidance Note on the Debt Sustainability Framework for low-income countries (Annex 3) because it is run on commercial terms, has a sizeable profit margin (as reflected in audited accounts published annually), enjoys managerial independence, and borrows without government guarantee. The debt of Ethiopian Telecom (ETC), which also borrows without a government guarantee, does not meet these criteria and is therefore included in the DSA. In the past, the authorities have requested the exclusion of ETC, which would have a material impact on the results of the DSA. An important requirement in this context is the availability of independent annual financial audits and publicly available comprehensive annual reports.

³The DSA is based on the Ethiopian fiscal year, which runs from July–June.

⁴ Including debt outstanding to the Fund.

⁵ Financial years mentioned in this paragraph (prefixed by FY) refer to IDA NCB ceilings and correspond to financial years of the World Bank.

with a ratcheting up of debt service coming due as past obligations are starting to mature have resulted in a higher ratio of debt service to exports than envisaged in 2016.

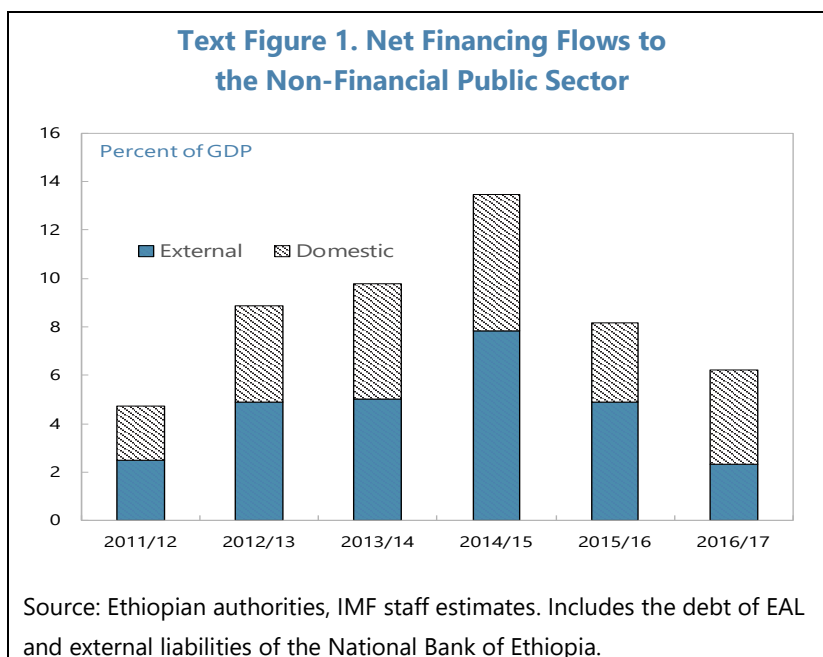
3. After the 2016 DSA discussions, the authorities appropriately took determined policy actions to address external risks.

In October 2016, the Ministry of Finance and Economic Cooperation (MOFEC) issued a directive establishing strict controls on contracting of new NCB by state-owned enterprises (SOEs) and oversaw a prudent implementation of the 2016/17 budget in order to cut NCB and import-intensive investment projects. As a result, public external borrowing has fallen drastically from the already reduced levels of 2015/16 (Text Figure 1), the stock of commercial borrowing outstanding has declined, and the PV of debt has been stabilized. The recently approved 2017/18 budget envisages a continued decline in external NCB as a percent of GDP,⁶ commits to maintain NCB within the strict limits envisaged in the 2016 DSA during 2016/17, and appropriately sequence infrastructure projects.

4. Subsequently, the authorities have taken additional steps in 2017/18 to reduce risks and elicit private sector participation in public projects.

In October 2017, the National Bank of Ethiopia (NBE) devalued the birr by 15 percent, aiming to improve competitiveness and address external imbalances. The NBE also tightened monetary policy by raising the floor on time and savings deposit rates from 5 to 7 percent, and reduced the 2017/18 target growth of base money (the NBE's operational target) from 22 percent to about 16 percent to contain the pass-through from the exchange rate into domestic prices. This restrictive monetary policy stance appropriately aims at dampening domestic absorption and preserving the achieved competitiveness gains. The NBE also loosened foreign exchange restrictions on exporters, allowing them to retain a larger proportion of their export earnings and access foreign borrowing, and restrictions on private sector external borrowing. The authorities have also indicated that options to encourage private sector participation in public projects such as Public-Private Partnerships (PPPs), the use of concessions, and privatization are being actively explored. A new PPP law has been approved by the Council of Ministers and is expected to be passed by Parliament early in the current session. To manage potential fiscal risks, the PPP framework will need to strike the appropriate balance between eliciting private participation and minimizing fiscal risks.

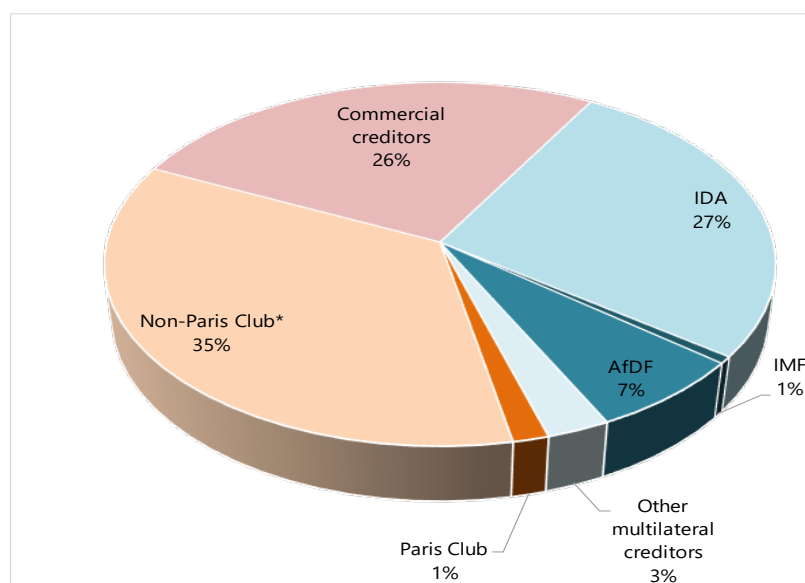
⁶ The government has announced that the government budget for 2017/18 contains no external NCB. Public enterprises, however, may incur limited external NCB for their capital expenditures on ongoing projects, if authorized by the Ministry of Finance.



5. Growth in 2016/17 is estimated to have been strong, at 9 percent, sustained by a recovery in agriculture and expansion in industry. The re-emergence of drought in the pastoral regions in the south and east did not halt the recovery: their GDP contribution is small, government interventions were effective, and substantial past investments have enhanced the productivity and resilience of agriculture. Exports of goods and services rose by 2.9 percent in 2016/17, underperforming expectations, as merchandise exports were nearly flat during the year. On the other hand, imports fell by 4.8 percent in 2016/17 due to lower imports of food and capital goods imported by the public sector. Thus, the current account deficit narrowed significantly to 8.2 percent of GDP (from 9.1 percent in 2015/16).

6. The main sources of external financing in 2016/17 were foreign direct investment (FDI), and public sector borrowing, mainly in the form of project loans, largely concessional. Net FDI increased significantly from US\$4.2 billion in 2015/16 to US\$4.9 billion in 2016/17, driven by the newly-opened industrial parks. In addition, a stake in the National Tobacco Company, the state-owned tobacco monopoly, was sold to foreign investors during the year. New public external loans signed in 2016/17 (including loans not guaranteed by the government) amounted to US\$2.8 billion. About half of the new commitments were concessional loans from multilateral development agencies and institutions. Of the remainder, close to half were at below-market rates with a roughly 30 percent grant element from EXIM Bank of China. Some of these loans were used together with IDA resources for the financing of the water and sanitation infrastructure as well as for the rehabilitation of the power infrastructure. New loan commitments from private creditors on commercial creditors were small, amounting to US\$97.3 million, and used for power rehabilitation projects in the power and transmission sector.

Text Figure 2. Ethiopia: Composition of Public and Publicly-Guaranteed External Debt
(As at June 30, 2017)



Source: Ethiopian authorities, IMF staff calculations.
*Includes external liabilities of the National Bank of Ethiopia.

7. Ethiopia has adhered to the US\$400 million ceiling on contracting new NCB in 2016/17 set by IDA. Based on end-2016/17 debt stock data, the stock of external loans from commercial lenders declined by US\$261 million, suggesting the bulk of NCB disbursements were from official lenders at below-market rates. This reflects a deliberate policy by the government to avoid further deterioration in debt sustainability.

OUTLOOK AND KEY ASSUMPTIONS

8. The revised macroeconomic assumptions incorporate the lower-than-expected export performance in 2016/17 (Box 1 and Text Table 1). The main fiscal assumptions assume a sustained fiscal consolidation effort, based on announced policies and the government's record of prudent budget implementation. However, export performance in the immediate term were revised downward to reflect the more gradual improvement in exports in light of recent data. The export performance projections incorporate the positive impact from the new industrial parks, especially the Hawassa Industrial Park where activities have started; the new railway line to Djibouti which has already been completed and is pending the finalization of operational and safety test runs; and hydropower facilities and electricity transmission lines gradually coming online in 2017 and over subsequent years (Box 2). The projections also build in gains in competitiveness due to the devaluation of the birr in October 2017. However, this medium-term outlook faces downside risks emanating from potential further delays in export-supporting infrastructure, slower-than-expected progress in implementing structural reforms to elicit investment, and shocks to the external market environment faced by Ethiopia's exports. Upside risks include a faster-than-projected recovery in exports—driven by faster ramp up of production in industrial parks or early completion of the power transmission lines to facilitate electricity exports to Kenya.

Box 1. Ethiopia: Macroeconomic Assumptions for the Baseline Scenario

Real GDP growth is projected to remain stable at around 8½ percent over the next two years before gradually stabilizing at 8 percent by 2021/22. Continuing investment in infrastructure, including by the private sector, and improving productivity, as FDI and export-oriented industries expand, should ensure the growth momentum is maintained going forward. Over the long term, growth is expected to converge to 5-6 percent as Ethiopia becomes a middle-income country. CPI inflation, which is expected to be elevated in the near term, is projected to converge to 8 percent in 2018/19 and remain at that level in the long run. The government primary deficit is projected to decline to about 1½ percent of GDP, with gradual progress in tax collection offsetting increased investment and social spending.

The external current account deficit (including official transfers) was 8.2 percent of GDP in 2016/17. Improved export performance, a moderate pick-up in capital goods imports, and steady inflows of remittances (although slowly declining as a ratio to GDP) will lead to a gradual improvement of the deficit over the longer term. Economic transformation is expected to ameliorate external imbalances, with more dynamic and diversified exports and a phase-down in imports of capital goods.

Exports of goods and services are estimated to have grown by 2.9 percent in 2016/17. A recovery in traditional exports and development of new exports will sustain growth at an average of 13.7 percent between 2017/18–2021/22. The commencement of the Addis-Djibouti railway line will improve trade logistics and reduce the transportation cost of moving goods in and out of the country. It will take only 10 hours for the new railway to take goods between Ethiopia and Djibouti, a significant improvement over the 3-4 days by truck currently. Further, the Hawassa Industrial Park and second phase of the Bole-Lemi Industrial Park have started operations and are set to increase manufacturing exports and contribute to the diversification of exports. Investments in hydro-power, industrial parks, export processing zones, and public policies to encourage FDI and private investment in light manufacturing industries are expected to support export growth and diversification. Imports of goods and services declined by 4.8 percent in 2016/17 as public sector investment was reprofiled to reduce imports. In addition, food imports, which doubled in 2015/16 in response to the drought, are also declined. Import growth is expected to gradually increase in the longer term due to demand for imported capital goods will remain strong during the remaining years of the GTP II implementation period. In the long run, imports are expected to grow in line with domestic output.

Private transfers declined by 14.7 percent in 2016/17, as inflows from non-governmental organizations declined sharply following the improvement in drought conditions. Remittances, however, remained stable after the sharp increase through 2014/15. Projections assume remittances will amount to about 3 percent of GDP by 2037/38.

FDI is projected to increase from US\$4.9 billion in 2016/17 (5.2 percent of GDP) to US\$7.1 billion by 2021/22, and is expected to average 6.2 percent of GDP over this period. This reflects improved competitiveness and ongoing policies to attract foreign investment.

9. The DSA assumes the amount of NCB disbursed over the medium term will decline significantly between 2017/18 and 2021/22. Actual NCB disbursed in 2016/17 (including disbursements to EAL) was around US\$1.3 billion, consistent with what was assumed in the 2016 DSA. Going forward, the DSA assumes the level of non-concessional financing, mainly from official bilateral lenders at below-market rates, will decline substantially and amount to between US\$300-650 million annually until 2021/22. The DSA also incorporates US\$1.8 billion in concessional lending from donors in 2017/18, the bulk of which (US\$1.3 billion) is from IDA. Going forward, concessional lending will remain stable at US\$1.5-1.8 billion annually until 2021/22 on the back of new IDA commitments before declining gradually as Ethiopia gets closer to graduating to middle-income status and relying more on IBRD and other sources of financing. As a result, new disbursements of medium- and long-term external borrowing is assumed to remain largely concessional, with an average interest rate of 1.3 percent, maturity of 30.3 years and grace period of 5.7 years. In considering the stress tests, the DSA assumes that the marginal debt required to cover any financing gaps that may occur under the stress scenario would be evenly split between domestic and external borrowing, maintaining the current split for debt outstanding.

10. Ethiopia's capacity to carry debt is assessed as "medium". The 3-year average of the Country Policy and Institutional Assessment Ratings (CPIA) scores for 2014-16, which is used to classify countries based on their debt-carrying capacity, stood at 3.48, within the 3.25–3.75 range for medium capacity countries. The score for 2016 was 3.47.

Text Table 1. Ethiopia: Underlying Macroeconomic and Debt Assumptions

Fiscal year ending June	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2025/26	2035/36	2036/37	2037/38
							Projections			
<i>Selected indicators from the macro-frame and debt data</i>										
				Grant Element of New External Borrowing						
2017DSA	29.8	29.8	46.3	48.6	50.3	50.2	58.9	31.8	31.6	31.4
2016DSA	31.9	36.9	45.0	41.6	38.1	41.3	42.3	43.9	n.a.	n.a.
				New Commercial Loan Disbursements (billions of U.S. dollars)						
2017DSA	2.612	1.213	0.654	0.452	0.388	0.292	0.000	1.250	1.250	1.250
2016DSA	2.612	1.745	1.303	0.828	0.772	0.947	0.856	0.750	n.a.	n.a.
				Real GDP Growth (annual percent change)						
2017DSA	9.0	9.0	8.5	8.3	8.1	8.0	6.5	5.5	5.0	5.0
2016DSA	7.5	7.5	7.5	7.4	7.3	7.3	6.3	6.0	n.a.	n.a.
				Current Account Balance (percent of GDP)						
2017DSA	-8.2	-7.7	-7.5	-6.8	-6.1	-5.5	-5.1	-3.7	-3.3	-3.0
2016DSA	-10.7	-9.3	-8.9	-8.2	-8.1	-7.8	-6.0	-3.7	n.a.	n.a.
				Exports of goods and services (percent of GDP)						
2017DSA	8.3	8.3	9.1	9.5	9.9	10.3	11.4	12.9	13.3	13.5
2016DSA	8.9	9.2	9.4	9.7	10.0	10.0	10.9	14.7	n.a.	n.a.
				Exports of goods and services (annual percent change)						
2017DSA	2.9	12.9	13.4	13.9	14.2	14.2	10.4	8.8	8.9	8.7
2016DSA	15.5	12.0	12.0	12.0	12.0	9.4	10.1	12.0	n.a.	n.a.
				Fiscal balance (percent of GDP)						
2017DSA	-3.0	-2.5	-2.5	-2.3	-2.2	-2.1	-2.4	-1.9	-1.9	-1.9
2016DSA	-2.5	-3.0	-3.2	-3.0	-3.1	-3.1	-2.6	-2.0	n.a.	n.a.
				International reserves (Billions of U.S. dollars)						
2017DSA	3.2	3.7	4.4	5.0	5.7	6.3	9.1	19.6	22.0	23.4
2016DSA	3.4	3.7	4.1	4.9	5.7	6.0	8.4	37.7	n.a.	n.a.
Sources: Ethiopian authorities; IMF and World Bank staff estimates and projections.										

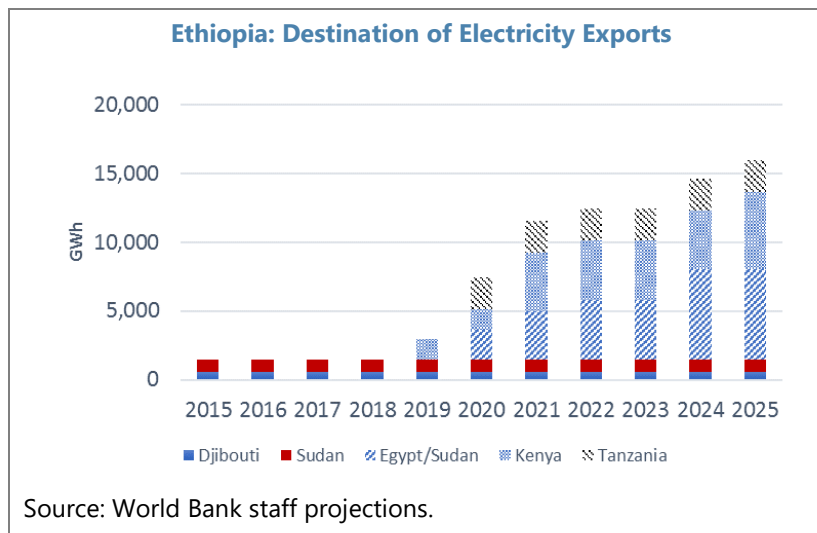
Box 2. The Take-off in Electricity Exports

Ethiopia's cost of supplying electricity is among the lowest in Sub-Saharan Africa, presenting unique export opportunities. According to World Bank estimates, Ethiopia will have over 9,000 MW of installed capacity by 2020 (estimated to be the second highest installed capacity available in the region). This would provide over 25,000 GWh of renewable energy that would be able to meet domestic and export demand for electricity. Over the next few years, therefore, Ethiopia is set to become a regional energy superpower and develop into the cornerstone of the regional power market and of the East African Power Pool (EAPP).

Electricity exports are set to double in 2019 to US\$250 million and reach US\$1 billion

by 2023. Currently, Ethiopia's power exports are limited to Sudan and Djibouti. However, power transmission interconnection to Kenya (financed by the World Bank and other partners) is scheduled to be commissioned in the first half of calendar year 2019 (tower and stringing work is substantially advanced and the converter station is under construction). With this interconnection to Kenya, capable of over 2,000 MW of transfer capacity established, exports will be expanded to Tanzania and possible to other countries in the EAPP. Over the medium term, additional connections to Sudan and Egypt are also planned. In addition, envisaged EAPP interconnection to the Southern African Power Pool could further open the market for Ethiopian exports to Southern African countries. By 2023, Ethiopia could achieve roughly one-sixth of the export revenue from power as it does from coffee and oilseeds, which currently accounts for 42 percent of merchandise exports.

The acceleration in export revenues is a combination of the significant growth in export volumes and a relatively high export tariff. Based on signed Power Purchase Agreements (PPAs) between Ethiopia and Kenya, and Ethiopia and Tanzania (others are being planned and negotiated), the growth in exports is expected to rise ten-fold from 1,443 GWh in 2016 to 14,657 GWh in 2023. Thus far, the negotiated average price under the PPAs has been US\$0.07/kWh, based on this, the value of exports is expected to increase from US\$250 million in 2019 to US\$1 billion in 2023 and US\$1.2 billion in 2025.



Ethiopia: Projections of Electricity Exports, 2016–2025

Electricity exports	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Value of exports (US\$ millions)	101	101	101	250	523	811	872	1,026	1,118	1,210
Price (U.S. dollar/kWh) ¹	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Volume (GWh)	1,443	1,443	1,443	3,571	7,471	11,586	12,457	14,657	15,971	17,286

Source: Ethiopian authorities and World Bank staff estimates.

¹ As per the Framework Agreement.

Projections are on a calendar year basis.

EXTERNAL DEBT SUSTAINABILITY ANALYSIS

A. Baseline Scenario

11. The baseline shows debt stock declining gradually from 2017/18 (Figure 1). Two of the indicators, the PV of debt-to-GDP (PVDG), and PV of debt-to-revenue (PVDR) reach 22.6 percent and 141.7 percent respectively, well below the thresholds (respectively 40 percent and 250 percent). However, as was the case in the 2016 DSA, the PVDE ratio starts significantly above the threshold at 271.9 percent in 2017/18 (121.9 percentage points above the threshold) before declining gradually. Based on current projections, the PVDE ratio will only fall below the 150-percent threshold in 2021/22, giving rise to a 5-year breach under the baseline. The magnitude and duration of the observed breaches are consistent with a “high” risk of debt distress rating in a cross-country context.

12. The profile of the debt service indicators reflects the maturity profile of NCB, with the debt service-to-exports ratio breaching its threshold in 2017/18–20/21. The start of principal repayments on non-concessional loans related to transportation and communications projects, and the start of principal repayments of a deposit from a bilateral creditor with the NBE⁷ results in the debt service-to-exports (DSE) and debt service-to-revenue ratios peaking in 2019/20. In particular, the DSE ratio breaches the 20 percent threshold in 2017/18, and peaks at 22.7 percent in 2019/20 before declining back to below the threshold in 2021/22. The DSR ratio remains well below its threshold throughout the projection window.

B. Stress Tests and Additional Analysis

13. The ratios based on exports are the only indicators to exceed their thresholds under the stress test scenarios examined (Table 2). The PVDE ratio, already above the threshold in the baseline, exceeds the threshold under all alternative scenarios for 9 years, with the shock to exports having the largest impact. Similarly, the export shock results in the threshold for the DSE ratio being breached in 2017/18–2022/23 and again in 2024/25, with the largest breach coming in 2019/20.

14. Debt sustainability is substantially bolstered by consideration of remittances, yet the augmented PV of debt-to-exports ratio continues to breach its threshold (Figure 3). Remittances in Ethiopia are highly significant: 5.5 percent of GDP in 2016/17, well exceeding exports of goods (3.6 percent of GDP). The pattern of remittances, which come from a large diaspora with strong ties to Ethiopia, are reliable external receipts and exhibit a counter-cyclical pattern (such as during the recent drought). A recent joint study by the Ethiopian authorities and the World Bank to improve estimates of remittances confirms the significant size and stability of the flows.⁸ Thus, an alternative scenario using remittance-augmented

⁷ The assumption on the deposit’s financing terms have changed from the 2016 to the 2017 DSA. The initial assumption of an 8-year maturity were changed into a 6-year maturity as the re-negotiation process with the depositor was not completed by the time the 2017 DSA was conducted. This change has important implications on the duration of the DSE breach and the magnitude of its peak in 2019/20.

⁸ A recent IMF TA mission on BOP statistics confirmed these findings.

thresholds provides a useful picture of the debt sustainability situation in Ethiopia.⁹ Under this approach, a significant breach was still observed in the PV of debt-to-exports-plus-remittances indicator, but it was smaller (41.6 percentage points of total exports plus remittances) and shorter (3 years) than using the standard approach. Further, there were no additional breaches of the thresholds for the other indicators. In particular, the debt service-to-exports-plus-remittances indicator, which presents a breach under the standard approach, does not breach the threshold when remittances are considered. All debt burden indicators under the probability approach also confirm that the solvency indicators as well as the debt service-to-exports ratio do not appear to raise concerns implied under the standard approach, remaining well below the relevant threshold throughout the projection period.

C. Assessment

15. The external DSA confirms that Ethiopia’s vulnerabilities are associated with its narrow export base. Consistent with the results of recent DSAs, export concentration (agricultural commodities, air passenger transportation) and low export revenue from goods and services (about 7 percent of GDP) renders Ethiopia especially vulnerable to export shocks, as shown by the experience of weak commodity prices in 2015/16–2016/17. While external debt is not comparatively high as a percent of GDP (about 30 percent), it represents a high proportion of exports. Policies to reduce external vulnerabilities, including risks to external debt sustainability should remain focused on competitiveness (including through a more flexible exchange rate), and export diversification. In addition, there is a need to continue efforts at mobilizing domestic savings, curbing import-intensive projects, and seeking alternative funding sources for public goods such as concessions to private investors, PPPs (with adequate fiscal safeguards), and privatization proceeds. The authorities have implemented policies consistent with these conclusions and with the associated staffs’ advice. The trajectories of debt stock ratios have not changed materially from last year, but debt service indicators have deteriorated. At its maximum, the PVDE ratio is about 17 percentage points higher than in the 2016 DSA, though the length of the breach declined from 7 to 5 years. However, the deterioration in the DSE ratio suggests liquidity risks have increased. As a result, staffs assess the risk of debt distress in Ethiopia is now “high” compared to the “moderate risk” rating assigned in the 2016 DSA. Furthermore, the authorities recognize the risks posed by export underperformance and, as advised in the 2016 DSA and continuously under IDA’s NCBP, have put in place strong policies to restrain NCB and reduce external imbalances. These policies, if implemented steadfastly, could mitigate the risk of an external debt distress episode occurring. In addition, the structure of the debt is such that it is largely made up of concessional credit; there are few marketable instruments; existing exchange controls on birr convertibility and capital account minimize the occurrence of debt distress episode. As of now, even the Eurobond that constitutes the significant portfolio inflow has eight years to maturity.

⁹ The staff guidance note on the application of the DSF allows in the use of the remittance-augmented scenario to inform the risk rating (paragraph 55) in cases where this is relevant, such as Ethiopia. The thresholds for the PV of debt-to-exports + remittances and debt service-to-exports + remittances are 120 percent and 16 percent respectively.

Text Table 2. Ethiopia: Composition of External Public Debt

	As at end-June 2016			As at end-June 2017		
	USD, million	Percent of Total	Percent of GDP	USD, million	Percent of Total	Percent of GDP
Total¹	22,643	100.0	31.2	24,492	100.0	30.6
Official Creditors¹	15,950	70.4	22.0	18,061	73.7	22.6
Multilaterals	7,720	34.1	10.6	9,067	37.0	11.3
IDA	5,560	24.6	7.7	6,564	26.8	8.2
IMF	195	0.9	0.3	152	0.6	0.2
AfDF	1,495	6.6	2.1	1,684	6.9	2.1
Other multilateral creditors	470	2.1	0.6	667	2.7	0.8
Bilaterals¹	8,231	36.3	11.3	8,994	36.7	11.2
Paris Club	390	1.7	0.5	380	1.6	0.5
Non-Paris Club ¹	7,840	34.6	10.8	8,614	35.2	10.8
Private Creditors	6,692	29.6	9.2	6,431	26.3	8.0
<i>Of which:</i> Bond and Notes Holders	1,000	4.4	1.4	1,000	4.1	1.2

Sources: Ethiopian authorities and IMF staff calculations.

¹ Includes external liabilities of the National Bank of Ethiopia.

16. A continuation of the poor export performance or policy slippages would lead to a worsening of debt sustainability prospects. The projected export growth, while based on well-identified projects with positive spillovers and the completion schedule of key infrastructure, could be affected by other vulnerabilities and risks materializing. And whereas world trade has recently rebounded, with prospects in place for a sustained export expansion, Ethiopia remains subject to international price volatility in a few agricultural commodities. Furthermore, the success in developing an export-based manufacturing industry will depend on the government's commitment to reforms that support private sector-led growth. Any significant increase in the contracting of new NCB while the export base is still narrow would weaken external debt sustainability.

Authorities' view

17. The authorities did not concur with staffs' assessment that the risk of debt distress is "high". The authorities noted that the concerns raised arise from the small export base, which is a temporary feature and biases the results. They drew attention to the fact that none of the other indicators in the DSA breached their respective thresholds, either in the baseline or in the stress tests. In their view, the appropriate action is to redouble efforts to expand the export base, which they are doing through a broad scope of policy initiatives, including provision of export-supporting infrastructure. The private sector has responded positively to these efforts, and exports from the new industrial zones are commencing. In the interim, policies have responded strongly to curb external borrowing going forward and reduce external imbalances. The authorities are confident these actions will safeguard debt sustainability until the export take-off becomes entrenched.

D. Public Debt Sustainability Analysis

18. External debt accounts for about 55 percent of total public and publicly guaranteed (PPG) debt (Text Table 3). As at end-June 2017, total PPG debt amounted to 57 percent of GDP (up from 56 percent in 2015/16). Domestic debt of the central government accounts for 23 percent of total debt, and the remainder (22.6 percent) is the domestic debt of SOEs. The bulk of the domestic debt of the central government is owed to banks, primarily the NBE, largely reflecting advances to finance the budget. The remainder mainly comprises Treasury bills. Domestic borrowing by the SOEs, whether through loans or bond issuance, was entirely from domestic banks.

Text Table 3. Ethiopia: Composition of Public and Publicly-Guaranteed Debt

	As at end-June 2016			As at end-June 2017		
	Billions of birr	Percent of Total	Percent of GDP	Billions of birr	Percent of total	Percent of GDP
Total ¹	871.9	100.0	56.0	1038.9	100.0	57.0
External ¹	493.6	56.6	31.2	566.0	54.5	30.6
Domestic	378.2	43.4	24.8	472.9	45.5	26.4
Central government	167.2	19.2	10.9	238.5	23.0	13.3
<i>Banks</i>	123.2	14.1	8.1	178.4	17.2	10.0
<i>NBE</i>	109.1	12.5	7.1	135.6	13.1	7.6
<i>Other banks</i>	14.1	1.6	0.9	42.8	4.1	2.4
<i>Non-banks</i>	44.0	5.1	2.9	60.1	5.8	3.4
SOEs	211.0	24.2	13.8	234.4	22.6	13.1

Source: Ethiopian authorities, IMF staff calculations.

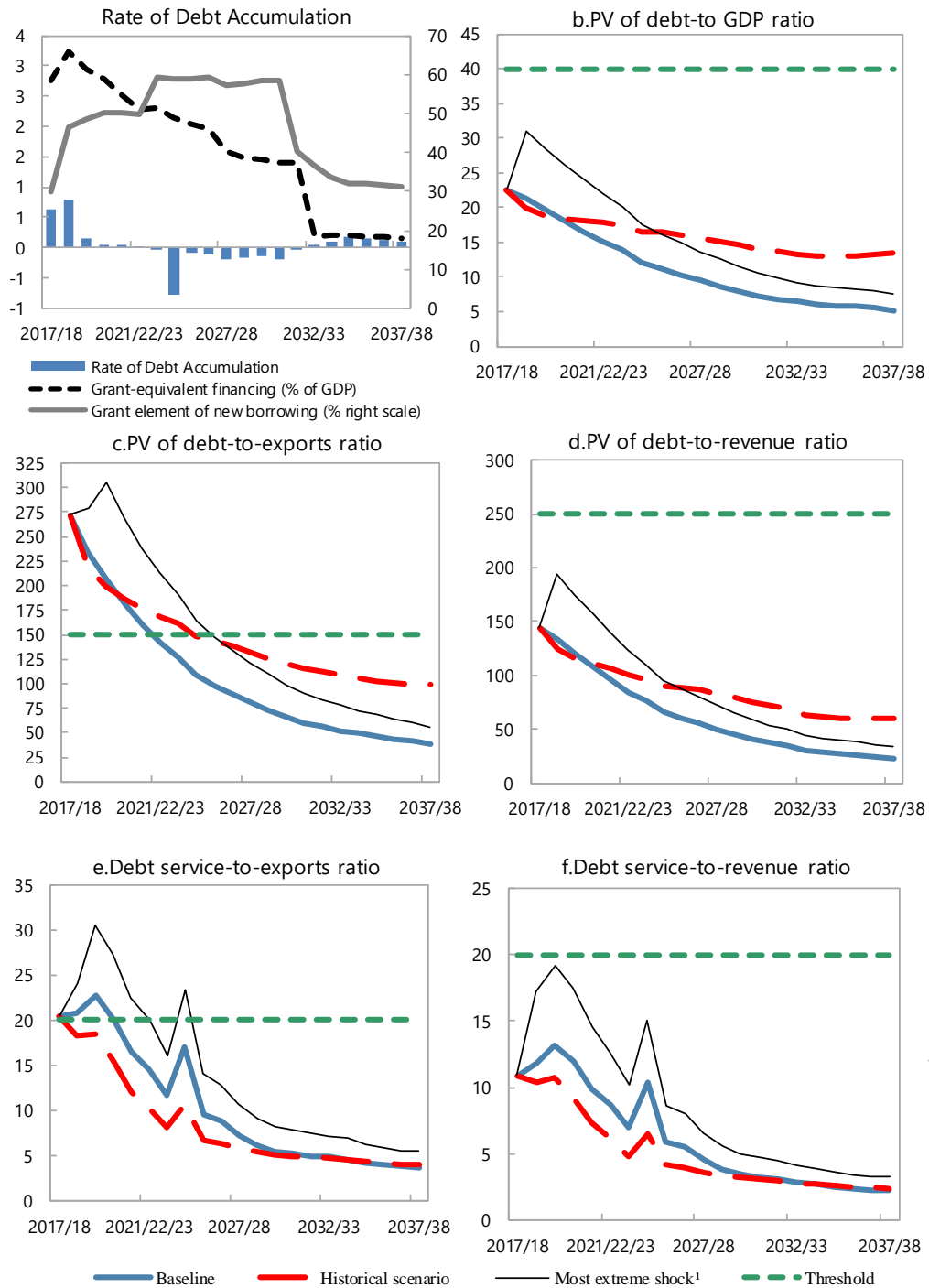
¹ Includes external liabilities of the National Bank of Ethiopia.

19. Overall public debt does not flag additional risks (Figure 2). The present value of total public debt stays well below the indicative threshold of 56 percent of GDP in the baseline and under most scenarios considered throughout the projection period. The only alternative scenario where a breach occurs is under the assumption of a primary fiscal balance throughout the simulation horizon fixed at its 2017/18 level. However, the baseline assumes a gradual increase in domestic interest rates to achieve positive real interest rates by the end of the DSA projection window. As a result, the primary balance in the baseline increases gradually over time, as fiscal policy accommodates the increased financing costs. In contrast, the fixed primary balance scenario implies a gradual widening of the fiscal deficit, contrary to the authorities' policy intentions and past record of prudent budgetary policy. All indicators also show a declining trend after 2025/26 as public investment tapers off with the completion of the large projects planned under the GTP II, and with it, the need for new borrowing slows as well.

E. Conclusion

20. The deterioration in debt sustainability indicators results in Ethiopia’s risk of external debt distress being raised to “high”. Notwithstanding this, the authorities have taken strong measures to limit the further build-up of risks and reduce them over time. With the completion of key trade-enhancing infrastructure such as the railway line to Djibouti, industrial parks and power generation and transmission facilities, preconditions for the export take-off are largely in place. The private sector is also responding positively to these efforts and FDI has increased substantially. Further, the structure of external debt (mainly official credit, often concessional), limited marketable debt instruments, existing controls on birr convertibility and capital account reduce the risk of an external debt distress episode. The key is to maintain and build on the current implementation of prudent policies. The authorities have also indicated their intention to encourage private sector participation in the provision of public projects including PPPs, privatizations and concessions, to further reduce the public borrowing requirement. This would simultaneously ensure the necessary investment in critical projects while preserving public debt sustainability. The passage of the new PPP law will support the authorities’ agenda in this regard. The authorities are encouraged to work with development partners on the implementation of the PPP framework to ensure that it strikes the appropriate balance between eliciting private participation and minimizing fiscal risks.

Figure 1. Ethiopia: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, 2017/18—37/38 ^{1/}



Sources: Ethiopian authorities and staff estimates and projections.

¹ The most extreme stress test is the test that yields the highest ratio on or before 2025. In figure b. it corresponds to a One-time depreciation shock; in c. to an Exports shock; in d. to a One-time depreciation shock; in e. to an Exports shock and in figure f. to a One-time depreciation shock.

**Table 1. Ethiopia: External Debt Sustainability Framework,
Baseline Scenario, 2014/15-37/38 ^{1/}**

	Actual			Historical ^{6/} Standard ^{6/}		Projections							2017/18-2022/23		2023/24-2037/38	
	2014/15	2015/16	2016/17	Average	Deviation	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Average	2027/28	2037/38	Average	
External debt (nominal) 1/	35.1	35.6	31.6			32.9	31.9	29.9	27.8	25.8	23.7		17.1	10.5		
<i>of which: public and publicly guaranteed (PPG)</i>	31.4	32.5	29.4			31.3	30.2	28.6	27.0	25.3	23.5		16.8	8.9		
Change in external debt	5.1	0.4	-4.0			1.3	-1.1	-2.0	-2.1	-2.1	-2.0		-1.3	-0.6		
Identified net debt-creating flows	3.6	0.1	-3.8			0.1	0.2	-2.4	-2.9	-3.0	-2.6		-1.3	-1.0		
Non-interest current account deficit	11.4	9.6	7.7	6.8	3.1	7.1	6.9	6.2	5.6	5.1	5.2		4.7	2.8	4.3	
Deficit in balance of goods and services	24.0	21.8	16.2			16.0	16.2	15.4	14.8	14.2	13.6		11.0	6.7		
Exports	11.3	9.4	7.8			8.3	9.1	9.5	9.9	10.3	10.6		11.8	13.5		
Imports	35.3	31.2	24.0			24.3	25.3	24.9	24.7	24.5	24.1		22.7	20.2		
Net current transfers (negative = inflow)	-12.6	-12.1	-8.6	-13.7	2.9	-9.0	-9.3	-9.3	-9.3	-9.0	-8.4		-6.3	-3.9	-5.6	
<i>of which: official</i>	-2.7	-2.2	-1.8			-1.8	-1.8	-1.7	-1.6	-1.5	-1.5		-1.3	0.0		
Other current account flows (negative = net inflow)	0.0	-0.1	0.1			0.0	0.1	0.1	0.2	0.0	0.0		0.0	0.1		
Net FDI (negative = inflow)	-4.0	-5.1	-5.2	-3.8	0.8	-5.8	-6.2	-6.4	-6.5	-6.2	-5.9		-4.9	-3.3	-4.4	
Endogenous debt dynamics 2/	-3.8	-4.4	-6.3			-1.1	-0.5	-2.2	-2.0	-1.9	-1.9		-1.0	-0.6		
Contribution from nominal interest rate	0.5	0.6	0.5			0.6	0.7	0.6	0.5	0.4	0.4		0.2	0.2		
Contribution from real GDP growth	-2.7	-3.1	-2.3			-2.7	-2.7	-2.4	-2.2	-2.0	-1.9		-1.0	-0.5		
Contribution from price and exchange rate changes	-1.6	-1.8	-4.5			...	...	...	...	...	...		...	...
Residual (3-4) 3/	1.5	0.3	-0.2			1.2	-1.3	0.4	0.8	1.0	0.6		0.0	0.4		
<i>of which: exceptional financing</i>	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/	...	...	24.1			24.3	23.0	20.9	18.8	17.0	15.2		9.8	6.8	
In percent of exports	...	...	308.9			291.9	252.5	220.8	190.4	164.2	144.5		83.3	50.3	
PV of PPG external debt	...	...	21.9			22.6	21.3	19.6	18.0	16.5	15.1		9.5	5.2	
In percent of exports	...	...	280.9			271.9	234.4	207.2	182.0	159.8	142.7		80.3	38.7	
In percent of government revenues	...	...	143.9			144.4	133.1	120.0	108.3	96.4	84.7		50.3	23.5	
Debt service-to-exports ratio (in percent)	15.5	19.5	22.2			27.9	27.2	28.1	24.8	20.5	17.5		7.8	4.2		
PPG debt service-to-exports ratio (in percent)	9.8	14.6	17.8			20.5	20.9	22.7	20.1	16.5	14.6		7.3	3.8		
PPG debt service-to-revenue ratio (in percent)	6.0	7.2	9.1			10.9	11.9	13.2	12.0	10.0	8.7		4.6	2.3		
Total gross financing need (Billions of U.S. dollars)	5.1	4.1	3.4			3.0	2.8	2.4	1.7	1.2	1.4		1.2	0.4		
Non-interest current account deficit that stabilizes debt ratio	6.3	9.2	11.7			5.7	8.0	8.2	7.7	7.2	7.2		6.0	3.4		
Key macroeconomic assumptions																
Real GDP growth (in percent)	10.3	10.4	8.0	10.2	1.2	9.0	8.5	8.3	8.1	8.0	8.0	8.3	6.0	5.0	6.0	
GDP deflator in US dollar terms (change in percent)	5.6	5.5	14.5	7.7	12.4	-2.9	-4.5	1.1	1.1	1.3	1.6	-0.4	1.1	2.0	1.0	
Effective interest rate (percent) 5/	1.8	1.8	1.8	1.4	0.3	2.1	2.1	1.9	1.8	1.7	1.6	1.9	1.2	1.7	1.4	
Growth of exports of G&S (US dollar terms, in percent)	-2.6	-3.5	2.9	10.2	11.7	12.9	13.4	13.9	14.2	14.2	12.1	13.4	9.0	8.7	8.8	
Growth of imports of G&S (US dollar terms, in percent)	25.1	2.9	-4.8	12.6	13.9	7.4	7.6	7.9	8.2	8.6	8.0	8.0	6.0	5.6	5.8	
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	29.8	46.3	48.6	50.3	50.2	49.7	45.8	57.3	31.4	47.0
Government revenues (excluding grants, in percent of GDP)	18.5	19.0	15.2			15.7	16.0	16.3	16.6	17.1	17.8		18.8	22.1	19.9	
Aid flows (in Billions of US dollars) 7/	2.7	2.5	2.5			3.3	3.4	3.4	3.5	3.5	3.4		3.3	0.5		
<i>of which: Grants</i>	1.5	1.4	1.4			1.5	1.6	1.6	1.7	1.8	1.9		2.4	0.0		
<i>of which: Concessional loans</i>	1.2	1.2	1.0			1.8	1.8	1.8	1.8	1.7	1.5		0.9	0.5		
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			2.8	3.2	3.0	2.8	2.5	2.3		1.6	0.2	1.1
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			55.1	66.0	68.8	70.8	72.4	73.6		88.1	31.4	64.4
Memorandum items:																
Nominal GDP (Billions of US dollars)	55.5	64.7	80.0			84.7	87.8	96.2	105.1	114.9	126.0		182.3	351.5		
Nominal dollar GDP growth	16.5	16.5	23.6			5.9	3.7	9.5	9.2	9.4	9.7	7.9	7.1	7.1	7.1	
PV of PPG external debt (in Billions of US dollars)	...	...	17.0			17.5	18.1	18.2	18.3	18.3	18.3		16.7	17.7	
(Pvt-Pvt-1)/GDPT-1 (in percent)	...	...	...			0.6	0.8	0.1	0.1	0.0	0.0	0.3	-0.2	0.1	-0.1
Gross workers' remittances (Billions of US dollars)	4.4	4.4	4.4			4.8	5.2	5.6	6.1	6.6	5.7		6.2	7.3		
PV of PPG external debt (in percent of GDP + remittances)	...	...	20.8			21.4	20.1	18.5	17.0	15.6	14.4		9.1	5.1	
PV of PPG external debt (in percent of exports + remittances)	...	...	164.3			161.6	142.1	128.0	114.8	102.7	99.7		62.3	33.5	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	10.4			12.2	12.7	14.0	12.7	10.6	10.2		5.7	3.3	

Sources: Ethiopian authorities; and IMF staff estimates and projections.

1/ Includes both public and private sector external debt.

2/ Derived as $[r - g - p(1+g)] / (1+g+p+gp)$ times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, and p = 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. Ethiopia: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2017/18–37/38 ^{1/}

(In percent)

	Projections							2037/38
	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2027/28	
PV of debt-to-GDP ratio								
Baseline	23	21	20	18	17	15	9	5
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2018-2038 ^{1/}	23	20	19	18	18	18	16	13
A2. New public sector loans on less favorable terms in 2018-2038 ²	23	22	21	20	19	18	14	10
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2019-2020	23	21	19	18	16	15	9	5
B2. Export value growth at historical average minus one standard deviation in 2019-2020 ^{3/}	23	22	22	20	18	17	11	6
B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020	23	21	21	19	17	16	10	5
B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 ^{4/}	23	22	22	20	18	17	11	6
B5. Combination of B1-B4 using one-half standard deviation shocks	23	20	18	16	15	14	8	5
B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 ^{5/}	23	31	29	26	24	22	14	8
PV of debt-to-exports ratio								
Baseline	272	234	207	182	160	143	80	39
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2018-2038 ^{1/}	272	219	199	186	176	168	133	99
A2. New public sector loans on less favorable terms in 2018-2038 ²	272	244	225	206	187	173	119	73
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2019-2020	272	234	207	181	159	142	80	38
B2. Export value growth at historical average minus one standard deviation in 2019-2020 ^{3/}	272	279	306	269	237	213	121	56
B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020	272	234	207	181	159	142	80	38
B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 ^{4/}	272	245	229	202	178	160	91	42
B5. Combination of B1-B4 using one-half standard deviation shocks	272	250	242	212	186	166	93	45
B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 ^{5/}	272	234	207	181	159	142	80	38
PV of debt-to-revenue ratio								
Baseline	144	133	120	108	96	85	50	24
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2018-2038 ^{1/}	144	124	116	111	106	100	83	60
A2. New public sector loans on less favorable terms in 2018-2038 ²	144	139	131	122	113	103	74	45
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2019-2020	144	132	118	107	95	83	49	23
B2. Export value growth at historical average minus one standard deviation in 2019-2020 ^{3/}	144	137	133	120	107	95	57	25
B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020	144	133	127	115	102	90	53	25
B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 ^{4/}	144	139	133	120	107	95	57	25
B5. Combination of B1-B4 using one-half standard deviation shocks	144	122	108	98	87	76	45	21
B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 ^{5/}	144	194	175	157	140	123	73	34

Table 2. Ethiopia: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2017/18–37/38 (continued)

(In percent)

Debt service-to-exports ratio

Baseline	21	21	23	20	17	15	7	4
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2018-2038 1/	21	18	19	15	12	10	6	4
A2. New public sector loans on less favorable terms in 2018-2038 2	21	21	23	21	17	15	9	5
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2019-2020	21	21	23	20	17	15	7	4
B2. Export value growth at historical average minus one standard deviation in 2019-2020 3/	21	24	30	27	23	20	11	5
B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020	21	21	23	20	17	15	7	4
B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/	21	21	23	21	17	15	8	4
B5. Combination of B1-B4 using one-half standard deviation shocks	21	23	27	24	20	17	9	4
B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/	21	21	23	20	17	15	7	4

Debt service-to-revenue ratio

Baseline	11	12	13	12	10	9	5	2
A. Alternative Scenarios								
A1. Key variables at their historical averages in 2018-2038 1/	11	10	11	9	7	6	4	2
A2. New public sector loans on less favorable terms in 2018-2038 2	11	12	13	12	10	9	6	3
B. Bound Tests								
B1. Real GDP growth at historical average minus one standard deviation in 2019-2020	11	12	13	12	10	9	4	2
B2. Export value growth at historical average minus one standard deviation in 2019-2020 3/	11	12	13	12	10	9	5	3
B3. US dollar GDP deflator at historical average minus one standard deviation in 2019-2020	11	12	14	13	11	9	5	2
B4. Net non-debt creating flows at historical average minus one standard deviation in 2019-2020 4/	11	12	13	12	10	9	5	3
B5. Combination of B1-B4 using one-half standard deviation shocks	11	11	12	11	9	8	4	2
B6. One-time 30 percent nominal depreciation relative to the baseline in 2019 5/	11	17	19	17	15	13	7	3
<i>Memorandum item:</i>								
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	41	41	41	41	41	41	41	41

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.

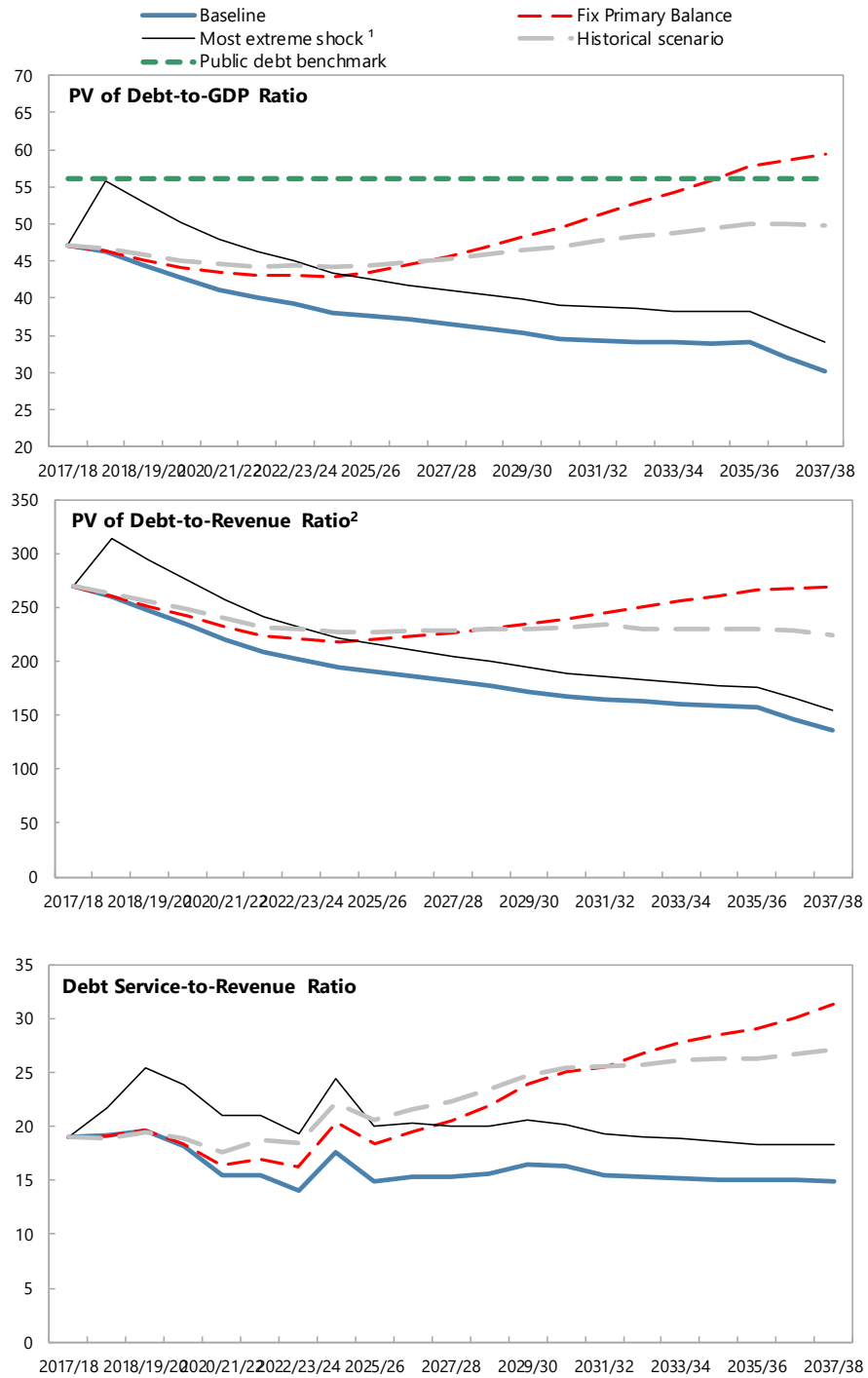
3/ Exports values are assumed to remain permanently at the lower level, but the current account as a share of GDP is assumed to return to its baseline level after the shock (implicitly assuming an offsetting adjustment in import levels).

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.

Figure 2. Ethiopia: Indicators of Public Debt Under Alternative Scenarios, 2017/18–37/38 ^{1/}



Sources: Ethiopian authorities; and staff estimates and projections.

¹ The most extreme stress test is the test that yields the highest ratio on or before 2025. It corresponds to a one-time depreciation shock.

² Revenues are defined inclusive of grants.

**Table 3. Ethiopia: Ethiopia: Public Sector Debt Sustainability Framework,
Baseline Scenario, 2014/15–37/38**

(In percent of GDP, unless otherwise indicated)

	Actual			Average	Standard Deviation	Estimate					Projections			
	2014/15	2015/16	2016/17			2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2017/18-2022/23		2023/24-2037/38
												Average	2027/28		2037/38	Average
Public sector debt 1/	61.2	59.6	53.8			55.7	55.2	53.4	51.7	50.0	48.6	43.8	33.9	
<i>of which: foreign-currency denominated</i>	31.4	32.5	29.4			31.3	30.2	28.6	27.0	25.3	23.5	16.8	8.9	
Change in public sector debt	10.0	-1.6	-5.8			1.8	-0.5	-1.8	-1.7	-1.8	-1.4	-1.1	-2.2	
Identified debt-creating flows	2.5	-2.7	-7.6			1.4	-1.0	-1.6	-1.5	-1.7	-1.2	-0.7	-2.1	
Primary deficit	9.5	5.9	5.2	5.8	2.9	4.4	4.4	3.6	3.5	3.2	3.3	3.7	1.7	
Revenue and grants	21.2	21.2	17.0			17.5	17.8	18.0	18.2	18.7	19.2	20.1	22.1	
<i>of which: grants</i>	2.7	2.2	1.8			1.8	1.8	1.7	1.6	1.5	1.5	1.3	0.0	
Primary (noninterest) expenditure	30.7	27.0	22.2			21.9	22.2	21.6	21.7	21.9	22.6	21.8	21.2	
Automatic debt dynamics	-7.0	-8.6	-12.2			-3.0	-5.4	-5.2	-5.0	-4.9	-4.5	-2.4	-1.2	
Contribution from interest rate/growth differential	-6.3	-7.5	-9.2			-6.0	-5.5	-5.4	-5.2	-5.1	-4.6	-2.6	-1.2	
<i>of which: contribution from average real interest rate</i>	-1.5	-1.7	-4.8			-1.6	-1.1	-1.2	-1.2	-1.2	-0.9	0.0	0.6	
<i>of which: contribution from real GDP growth</i>	-4.8	-5.8	-4.4			-4.5	-4.4	-4.2	-4.0	-3.8	-3.7	-2.5	-1.7	
Contribution from real exchange rate depreciation	-0.7	-1.1	-3.1			3.1	0.1	0.2	0.2	0.2	0.1	...	...
Other identified debt-creating flows	0.0	0.0	-0.6			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Privatization receipts (negative)	0.0	0.0	-0.6			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	7.5	1.1	1.8			0.4	0.5	-0.2	-0.2	-0.1	-0.2	-0.4	-0.1	
Other Sustainability Indicators														
PV of public sector debt	...	...	46.3			47.0	46.3	44.4	42.7	41.2	40.1	36.5	30.1
<i>of which: foreign-currency denominated</i>	...	...	21.9			22.6	21.3	19.6	18.0	16.5	15.1	9.5	5.2
<i>of which: external</i>	...	...	21.9			22.6	21.3	19.6	18.0	16.5	15.1	9.5	5.2
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...	...	...
Gross financing need 2/	12.3	9.4	8.4			7.7	7.8	7.1	6.8	6.1	6.3	4.8	2.4	
PV of public sector debt-to-revenue and grants ratio (in percent)	...	...	272.4			269.4	259.9	246.5	234.3	220.5	208.5	181.8	136.1
PV of public sector debt-to-revenue ratio (in percent)	...	...	304.3			300.4	289.0	272.0	257.2	240.4	225.9	194.4	136.1
<i>of which: external 3/</i>	...	...	143.9			144.4	133.1	120.0	108.3	96.4	84.7	50.3	23.5
Debt service-to-revenue and grants ratio (in percent) 4/	13.4	16.5	18.5			19.0	19.1	19.7	18.2	15.5	15.4	15.3	14.9	
Debt service-to-revenue ratio (in percent) 4/	15.3	18.4	20.7			21.2	21.3	21.7	19.9	16.9	16.7	16.4	14.9	
Primary deficit that stabilizes the debt-to-GDP ratio	-0.5	7.5	11.0			2.6	4.8	5.4	5.2	5.0	4.7	2.9	1.3	
Key macroeconomic and fiscal assumptions														
Real GDP growth (in percent)	10.3	10.4	8.0	10.2	1.2	9.0	8.5	8.3	8.1	8.0	8.0	8.3	6.0	
Average nominal interest rate on forex debt (in percent)	1.6	1.8	1.8	1.2	0.4	2.1	2.1	1.9	1.8	1.7	1.7	1.9	1.1	
Average real interest rate on domestic debt (in percent)	-5.7	-6.6	-18.8	-11.3	7.9	-7.3	-5.3	-5.2	-5.2	-5.3	-3.6	-5.3	0.4	
Real exchange rate depreciation (in percent, + indicates depreciation)	-2.9	-3.7	-10.2	-3.5	11.0	11.3	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	10.9	10.8	27.5	18.1	10.4	11.3	8.5	8.2	8.1	8.3	8.7	8.9	8.2	
Growth of real primary spending (deflated by GDP deflator, in percent)	16.3	-2.9	-11.2	0.3	6.7	7.3	9.9	5.6	8.6	8.9	11.4	8.6	5.0	
Grant element of new external borrowing (in percent)	...	...	...	...	...	29.8	46.3	48.6	50.3	50.2	49.7	45.8	57.3

Sources: Ethiopian authorities and staff estimates and projections.

1/ Refers to nonfinancial public sector gross 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 4. Ethiopia: Sensitivity Analysis for Key Indicators of Public Debt, 2017/18–37/38

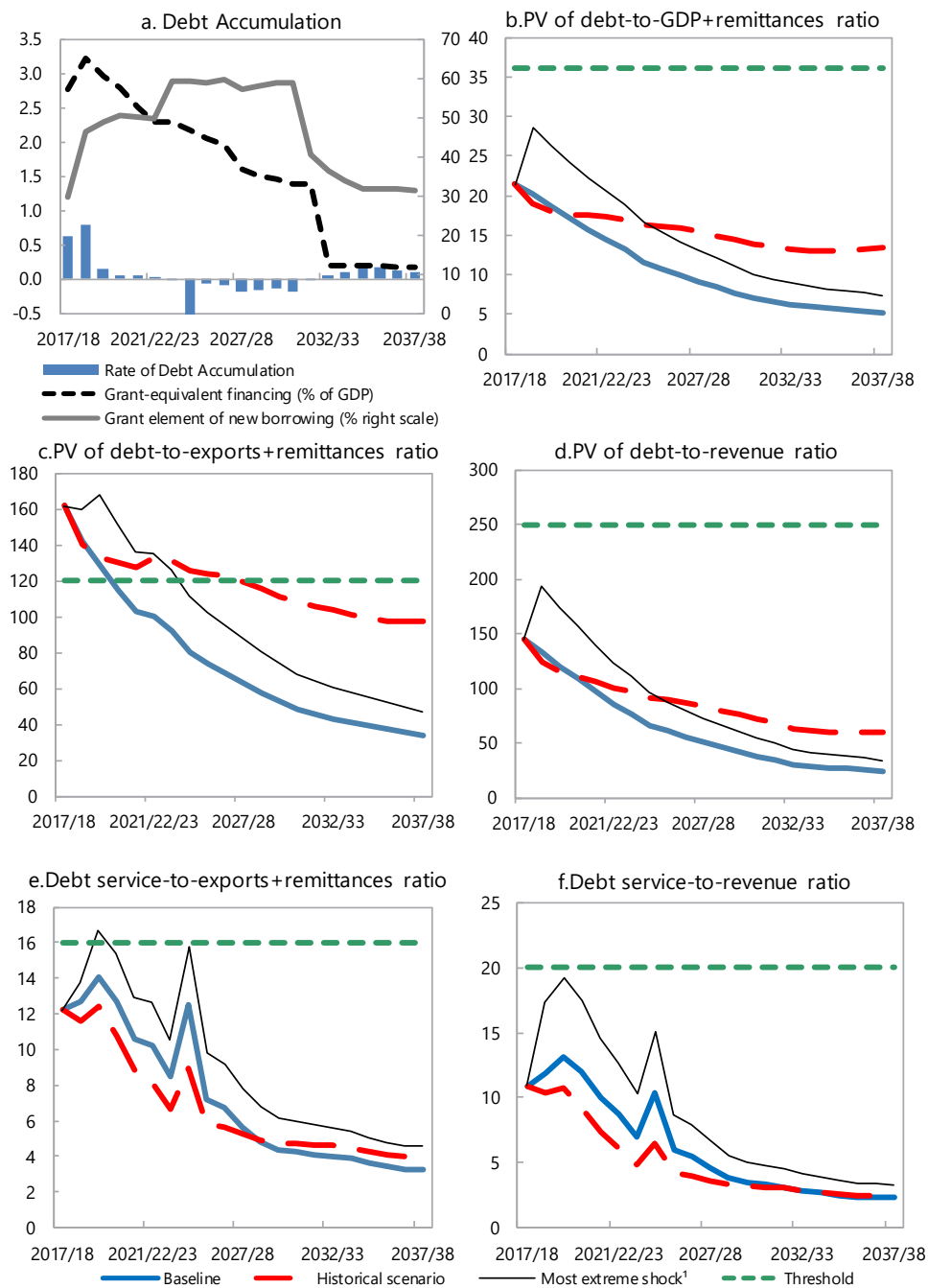
	Projections							
	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2027/28	2037/38
PV of Debt-to-GDP Ratio								
Baseline	47	46	44	43	41	40	37	30
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	47	47	46	45	45	44	45	50
A2. Primary balance is unchanged from 2018	47	46	45	44	43	43	46	59
A3. Permanently lower GDP growth 1/	47	46	45	43	42	41	39	38
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2019-20	47	46	44	42	40	39	35	28
B2. Primary balance is at historical average minus one standard deviations in 2019-202	47	50	52	49	47	46	40	33
B3. Combination of B1-B2 using one half standard deviation shocks	47	48	48	46	44	42	37	27
B4. One-time 30 percent real depreciation in 2019	47	56	53	50	48	46	41	34
B5. 10 percent of GDP increase in other debt-creating flows in 2019	47	54	52	49	47	46	41	33
PV of Debt-to-Revenue Ratio 2/								
Baseline	269	260	247	234	220	209	182	136
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	269	263	255	248	240	232	229	225
A2. Primary balance is unchanged from 2018	269	260	250	242	232	224	227	268
A3. Permanently lower GDP growth 1/	269	261	248	237	224	213	194	170
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2019-20	269	258	243	230	216	203	174	125
B2. Primary balance is at historical average minus one standard deviations in 2019-202	269	279	286	270	252	237	201	147
B3. Combination of B1-B2 using one half standard deviation shocks	269	270	269	253	235	220	182	123
B4. One-time 30 percent real depreciation in 2019	269	314	293	276	257	241	205	154
B5. 10 percent of GDP increase in other debt-creating flows in 2019	269	304	287	270	253	237	202	148
Debt Service-to-Revenue Ratio 2/								
Baseline	19	19	20	18	16	15	15	15
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	19	19	19	19	18	19	22	27
A2. Primary balance is unchanged from 2018	19	19	20	18	16	17	20	31
A3. Permanently lower GDP growth 1/	19	19	20	18	16	16	17	19
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2019-20	19	19	19	18	15	15	14	13
B2. Primary balance is at historical average minus one standard deviations in 2019-202	19	19	21	23	22	21	18	16
B3. Combination of B1-B2 using one half standard deviation shocks	19	19	20	21	20	19	15	13
B4. One-time 30 percent real depreciation in 2019	19	22	25	24	21	21	20	18
B5. 10 percent of GDP increase in other debt-creating flows in 2019	19	19	22	25	22	21	18	16

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 3. Ethiopia: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios and Remittances, 2017/18—37/38 ^{1/}



Sources: Ethiopian authorities and staff estimates and projections.

¹ The most extreme stress test is the test that yields the highest ratio on or before 2025. In figure b, it corresponds to a one-time depreciation shock; in c, to an exports shock; in d, to a one-time depreciation shock; in e, to an exports shock and in figure f, to a one-time depreciation shock.