INTERNATIONAL DEVELOPMENT ASSOCIATION

INTERNATIONAL MONETARY FUND

TONGA

Joint World Bank-IMF Debt Sustainability Analysis

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Prepared jointly by the staffs of the International Development Association (IDA)

and the International Monetary Fund (IMF)

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Tonga: Joint Bank-Fund Debt Sustainability Analysis	
Risk of external debt distress	High
Overall risk of debt distress	High
Granularity in the risk rating	Sustainable
Application of judgment	No

The risk of debt distress rating for Tonga has been maintained at high.[1] Tonga's indebtedness has gradually declined since end-FY2015[2] as a much-needed fiscal consolidation started in FY2016 and continued through FY2020 notwithstanding the Covid-19 pandemic. The present value (PV) of the external debt-to-exports ratio is expected to temporarily breach the indicative threshold under the baseline scenario in FY2021 mainly due to the decline of exports triggered by the pandemic. Moreover, without new grant commitments, both external solvency indicators (i.e., the PV of the external debt-to-GDP ratio and of the external debt-to-exports ratio) are expected to breach their respective thresholds under the baseline scenario starting in FY2029, reflecting the deteriorating fiscal position due to the pandemic, large spending needs, lower grant inflows as existing commitments are fully disbursed, and rising debt repayments to multilateral development banks and China Eximbank over the medium- and long-term. The PV of the public debt-to-GDP ratio is expected to breach the benchmark starting from FY2029 under the baseline scenario. A tailored one-time natural disaster shock would imply a significant deterioration in debt sustainability. Long-term debt sustainability hinges on fiscal adjustment and continued donor grant inflows and debt relief to finance the substantial fiscal and external gaps. Under such policies, continued grant financing consistent with historical levels would help stabilize external debt dynamics. To rebuild fiscal buffers and enhance resilience against shocks, stronger revenue mobilization measures, expenditure rationalization, and effective debt management strategies are needed.

[1] The Tonga Composite Indicator (CI) index, calculated on the basis of the October 2020 World Economic Outlook (WEO) and the 2019 Country Policy and Institutional Assessment (CPIA) released in July 2020, is at 3.12, indicating that Tonga's debt-carrying capacity is strong. The classification of debt-carrying capacity has shifted from moderate to strong compared to the 2017 debt sustainability analysis (DSA) after confirmation of the change based on both the October 2018 and April 2019 WEO vintages (two consecutive signals are required for a shift in capacity classification ("Guidance Note on the Bank-Fund Debt Sustainability Framework for Low-income Countries"(http://www.imf.org/en/Publications/Policy-Papers/Issues/2018/02/14/pp122617guidance-note-on-lic-dsf)).

[2] All the figures are computed using fiscal year beginning in July, e.g., FY2020 runs from July 1, 2019 to June 30, 2020.

PUBLIC DEBT COVERAGE

1. **Tonga's public debt includes obligations of the central government and central bank.** The central bank's debt is borrowed on behalf of the government. Local governments do not incur debt, nor do other entities in the general government. As of end-June 2020, government-guaranteed debt was small, about 1 percent of GDP. Since the DSA coverage does not include debt of guaranteed and non-guaranteed state-owned enterprises, an additional 2 percent of GDP is added to the contingent liability test. Contingent liabilities also include a standard 5 percent of GDP cost to the government of a financial crisis, which is above the existing stock of financial sector NPLs.[3]

Tonga. Public Debt Coverage

	Subsectors of the public sector	Sub-sectors covered
1	Central government	X
2	State and local government	X
3	Other elements in the general government	X
4	o/w: Social security fund	X
5	o/w: Extra budgetary funds (EBFs)	X
6	Guarantees (to other entities in the public and private sector, including to SOEs)	
7	Central bank (borrowed on behalf of the government)	X
8	Non-guaranteed SOE debt	

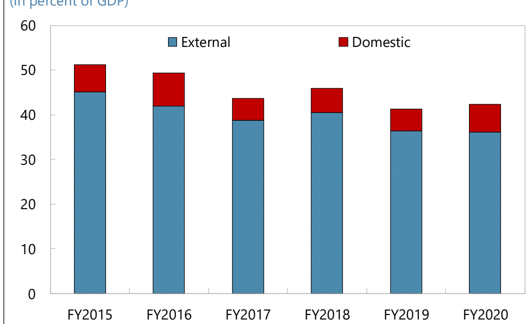
1	The country's coverage of public debt	The general government, central bank		
		Default	Used for the analysis	Reasons for deviations from the default settings
2	Other elements of the general government not captured in 1.	0 percent of GDP	0.0	
3	SoE's debt (guaranteed and not guaranteed by the government) 1/	2 percent of GDP	2.0	
4	PPP	35 percent of PPP stock	0.0	
5	Financial market (the default value of 5 percent of GDP is the minimum value)	5 percent of GDP	5.0	
	Total (2+3+4+5) (in percent of GDP)		7.0	

1/ The default shock of 2% of GDP will be triggered for countries whose government-guaranteed debt is not fully captured under the country's public debt definition (1.). If it is already included in the government debt (1.) and risks associated with SoE's debt not guaranteed by the government is assessed to be negligible, a country team may reduce this to 0%.

BACKGROUND ON DEBT

2. **Public debt remained elevated at 42 percent of GDP at end-June 2020 despite several years of fiscal consolidation.** The risk of external debt distress was downgraded from moderate to high in the 2017 DSA, underscoring the need to rely only on grants for budget financing to contain debt vulnerabilities. To contain unfavorable debt dynamics, the government's fiscal anchors (introduced in FY2018) limit total public external debt-to-GDP to a maximum of 50 percent. Tonga has not contracted any new external loans since 2018, although it is still receiving disbursements from prior loan commitments.[4] The government plans to finance all new projects with domestic revenues and multilateral and bilateral donor grants until all debt indicators fall to more sustainable levels. As a result

Total Public and Publically Guaranteed Debt
(in percent of GDP)



Sources: Ministry of Finance; and IMF staff estimates.

[3] Tonga does not have arrears to external creditors.

[4] The remaining loan commitment is about 0.4 percent of GDP.

of the fiscal consolidation since FY2016, public debt declined from 51 percent at end-June 2015 to 42 percent at end-June 2020 (chart).

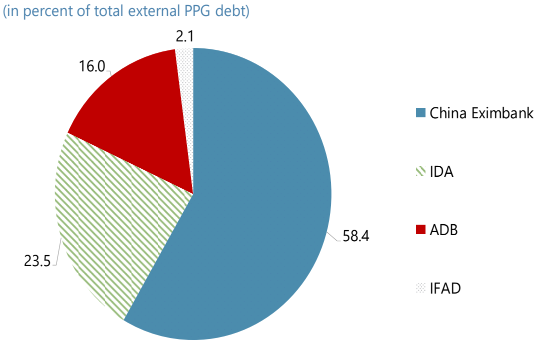
3. Tonga's debt obligations are largely external, and half of its total public debt is to China, with a sharp spike in debt repayments due from FY2024 onwards. Total public and publicly guaranteed (PPG) external debt stood at USD184 million (about 36 percent of GDP) as of end-June 2020, accounting for 85 percent of total public debt. Outstanding debt to all multilateral creditors stood at USD75 million (about 15 percent of GDP), some 41 percent of the total external debt stock. The single largest creditor remains the Export-Import Bank of China (China Eximbank) accounting for 58 percent of total external debt stock (chart).[5] Tonga started repayments to China Eximbank in FY2019 with larger repayments coming due starting in FY2024. Tonga's request for a temporary suspension of its calendar year 2020 debt service to the China Eximbank under the G20 Debt Service Suspension Initiative (DSSI) has been accepted and the rescheduled debt repayments are included in the baseline scenario (table). Reflecting the extension of the DSSI to the first half of the calendar year 2021, the baseline scenario also incorporates rescheduled debt service repayments to China Eximbank coming due during that period.

Tonga. Repayment Schedule for Existing External Debt, FY2020–30

	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
	(In percent of GDP)										
Total external debt	1.0	0.6	1.4	1.7	3.6	3.5	3.3	3.1	2.9	2.0	1.0
Multilateral	0.6	0.6	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.4
ADB	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.3	0.3	0.2	0.2
IDA/WB	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
IFAD 1/	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bilateral	0.4	0.0	0.9	1.1	3.1	2.9	2.7	2.6	2.4	1.6	0.6
EXIM Bank of China (post DSSI)	0.4	0.0	0.9	1.1	3.1	2.9	2.7	2.6	2.4	1.6	0.6
Memorandum item:											
EXIM Bank of China (pre-DSSI)	0.4	0.9	0.9	0.8	2.8	2.7	2.6	2.5	2.4	1.6	0.6

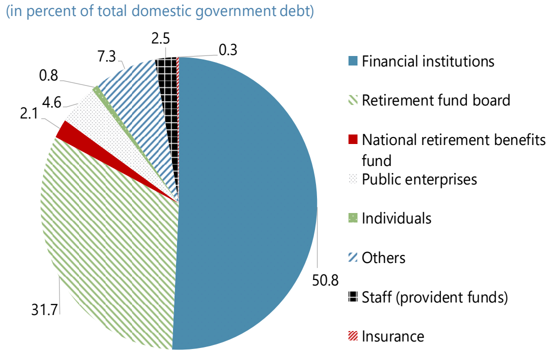
1/ Repayments are around 0.03 percent of GDP per year.
Sources: Ministry of Finance; and IMF staff estimates.

Outstanding External PPG Debt by Creditor, June 2020
(in percent of total external PPG debt)



Source: Ministry of Finance.

Outstanding Domestic Debt by Creditor, June 2020
(in percent of total domestic government debt)



Source: Ministry of Finance.

4. Tonga's domestic debt obligations are relatively small. Public domestic debt stood at USD31 million (about 6 percent of GDP) at end-June 2020, accounting for 15 percent of total public

[5] The loans from China Eximbank are denominated in Chinese renminbi.

debt. Domestic financial institutions hold about half of the total domestic debt with the rest held mainly by domestic pension funds (chart). The authorities plan to issue domestic debt in FY2021 and beyond, if necessary.

BACKGROUND ON MACROECONOMIC FORECASTS

5. The assumptions in the baseline scenario are consistent with the macroeconomic framework presented in the Staff Report for the 2020 Article IV consultation and request for disbursement under the Rapid Credit Facility:

- **Real GDP growth** is projected at 1.3 percent on average during FY2020–30 (Table). The FY2019 recovery from the devastation of Cyclone Gita in 2018 is expected to be interrupted by the impact of the Covid-19 pandemic in FY2020 and, to a lesser extent, Cyclone Harold. Economic activity is expected to contract by 2.5 percent and 3.5 percent respectively in FY2020 and FY2021. In line with the current assumptions of a weak and protracted global recovery, GDP growth is expected to pick up pace in FY2022–23, but trend down thereafter to a potential growth rate of 1.8 percent over the medium- to longer-term. The risks to the projections are mainly on the downside. They stem from a weaker global recovery due to a second wave of the Covid-19 pandemic and rising forces of deglobalization, that could have an adverse impact on Tonga via reduced remittances and donor funds from development partners, and delays in the resumption of tourism. Tonga is also highly vulnerable to natural disasters and the threat of rising sea levels. Moreover, policy weaknesses and capacity constraints could worsen difficult debt dynamics, while crowding out critical productivity-boosting spending. Given the importance of remittance inflows and aid to Tonga's economy, disruptions in correspondent banking relationships especially if the shortcomings identified in the upcoming Asia Pacific Group assessment are not addressed, would have knock on effects on the economy, the financial sector, and debt sustainability. On the upside, an earlier-than-anticipated resumption in tourism or seasonal worker programs can help support consumption, a stronger and faster global recovery can help boost remittances, and higher capital spending on climate-resilient infrastructure projects could increase resilience to natural disasters at a faster pace.

Tonga. Baseline Macroeconomic Assumption

(In percent of GDP, unless otherwise stated)

	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2009-19 Historical average	FY2020-30 average
Real GDP growth (in percent)	-2.5	-3.5	4.0	3.0	2.5	1.8	1.8	1.8	1.8	1.8	1.8	2.3	1.3
GDP deflator in US dollars (change in percent)	0.0	0.9	3.1	1.9	1.9	1.9	2.0	2.1	2.1	2.1	2.1	3.1	1.8
Non-interest current account deficit	3.3	18.3	9.1	8.1	11.5	11.3	13.6	13.2	13.2	13.0	13.1	9.8	11.6
Net FDI (negative = inflow)	-0.7	-0.9	-0.9	-0.8	-0.7	-0.7	0.0	-0.7	-0.7	-1.0	-1.0	-1.3	-0.8
Primary deficit	-5.2	4.0	-0.4	-1.5	7.4	9.3	16.0	16.4	16.7	16.7	16.7	-1.3	8.7
Grants	21.0	22.9	18.1	20.1	10.5	8.1	0.8	0.8	0.7	0.7	0.7	13.7	9.5

Sources: Country authorities; and staff estimates and projections.

- **Inflation** (measured by GDP deflator in USD terms) is projected to average 1.8 percent during FY2020–30 given current projections of low global food and fuel prices (Table).

- The **non-interest current account deficit** is projected to widen to 11.6 percent of GDP on average over FY2020–30 reflecting persistent weakness in export competitiveness, continued heavy import-reliance to support domestic demand, and lower official transfer inflows after current commitments are met (Table).

- **Net FDI inflows** are expected to stand at 0.8 percent of GDP over FY2020–30.

- With the exception of IMF RCF-supported financing and rescheduled China Eximbank repayments under the DSSI, **new external borrowing** is expected to commence in FY2024 after existing grant commitments are disbursed, and to increase gradually over the medium-term to refinance debt repayments coming due and the primary deficit which is expected to reach double digits over FY2026–2030. Even if the authorities were to rely only on grants for their budget spending needs because of the high risk of debt distress, under the baseline scenario, they would still need to borrow in order to meet their existing loan repayments.[6,7] The level of international reserves is expected to be sufficient to cover external debt repayments coming due until FY2023. However, when the large repayments to China Eximbank start coming due beginning in FY2024 (annual payments of about 2.5 percent of GDP in FY2024–29 on average), the authorities would not have enough cash buffers for debt repayments unless they borrow, or risk compromising the central bank's minimum reserve adequacy benchmark of at least 3–4 months of imports of goods and services.

- **Fiscal outlook:** The average primary balance is expected to be at -8.7 percent of GDP per year during FY2020–30 (Table). It is expected to decline from a surplus in FY2019–20 to a deficit of 16.7 percent of GDP by FY2030 due to lower grant inflows after existing commitments are met, and large spending needs to cover infrastructure gaps and meet climate resilience and Sustainability Development Goals. The deterioration in the fiscal position in FY2021 reflects a sharp economic contraction due to the Covid-19 pandemic and increased health and social spending needs.

- **Natural disaster:** The baseline scenario incorporates the effect of natural disasters and climate change over the longer-term. The years FY2021–24 are assumed to be disaster-free to simplify the policy discussion of the near-term outlook. From FY2025 onwards, the baseline incorporates the average long-term effects of natural disasters and climate change by lowering annual GDP growth by 0.16 percentage points. These estimates are

[6] For the World Bank (IDA) and other multilateral development banks, regular credit terms on all lending are assumed for all years in the projection period for which grant finance has not already been committed, consistent with "Guidance Note on the Bank-Fund Debt Sustainability Framework for Low-income Countries" (http://www.imf.org/en/Publications/Policy-Papers/Issues/2018/02/14/pp122617guidance-note-on-lic-dsf).

[7] From 2024 onwards, new commitments from multilateral donors are assumed to be on full credit terms. The credit terms are 40-year maturity, 10-year grace period, 0.75% service charge. The discount rate used to calculate the net PV of external debt is the default value set at 5 percent.

based on the findings of IMF staff analysis on the impact of natural disasters in Pacific Island countries.[8]

6. The realism tools indicate that the primary balance projections are reasonable (Figure 4). The fiscal forecasts between FY2020 and FY2023 are based on reasonable assumptions as the projected three-year adjustment lies in the left section of the distribution of past adjustments of the primary fiscal deficit (Figure 4). Real growth forecasts for FY2020–21 is lower than the projected growth path calculated by the model due to the sharp contraction as a result of the pandemic and a weak recovery in economic activity due to various capacity and structural constraints. As a result, Tonga's output levels are likely to remain below pre-pandemic trends. The realism of projections for public and private investment rates and their contribution to real GDP could not be calculated due to the unavailability of data.

COUNTRY CLASSIFICATION AND DETERMINATION OF SCENARIO STRESS TESTS

7. Tonga's debt-carrying capacity applied in the 2020 DSA is strong. Tonga's Composite Indicator (CI) index, which has been calculated based on the October 2020 WEO and the 2019 CPIA released in July 2020, is 3.12, indicating that the county's debt-carrying capacity is strong according to the revised low-income country (LIC)-DSA framework. The debt carrying capacity classification was upgraded from moderate to strong after two consecutive signals calculated on the basis of the October 2018 and April 2019 WEO vintages.

Tonga. Composite Indicator and Threshold Tables

Calculation of the CI Index

Components	Coefficients (A)	10-year average values (B)	CI Score components (A*B) = (C)	Contribution of components
CPIA	0.385	3.478	1.34	43%
Real growth rate (in percent)	2.719	1.549	0.04	1%
Import coverage of reserves (in percent)	4.052	53.467	2.17	70%
Import coverage of reserves^2 (in percent)	-3.990	28.588	-1.14	-37%
Remittances (in percent)	2.022	15.494	0.31	10%
World economic growth (in percent)	13.520	2.928	0.40	13%
CI Score			3.12	100%
CI rating			Strong	

Applicable thresholds

APPLICABLE	
EXTERNAL debt burden thresholds	
PV of debt in % of	
Exports	240
GDP	55
Debt service in % of	
Exports	21
Revenue	23

APPLICABLE	
TOTAL public debt benchmark	
PV of total public debt in percent of GDP	70

[8] Lee, D., H. Zhang and C. Nguyen, 2018, "The Economic Impact of Natural Disaster in Pacific Island Countries: Adaptation and Preparedness", the IMF Working Paper No. 18/108.

8. Given the severity and frequency of natural disasters in Tonga, a tailored one-time stress test for natural disaster shocks was conducted. [9] Tonga, a small developing natural disaster-prone state (Lee et al., 2018), is automatically subject to the standard natural disaster shock in the DSA.[10] The Emergency Events Database (EM-DAT) shows that the country's largest damage from natural disasters during 1980–2016 was 28.2 percent of GDP. Thus, the DSA assumes a one-off shock of 14 percentage points (ppts) to the debt to-GDP ratio in FY2021, which is lower than the historical average as infrastructure resilience is continuously improving in Tonga and the average effect on natural disaster is already reflected in the growth forecast after FY2025 under the baseline forecasts. Real GDP growth and exports are lowered by 3 and 7 ppts, respectively, in the year of the shock (Lee et al., 2018).

EXTERNAL DEBT SUSTAINABILITY ANALYSIS

9. Under the baseline scenario, both external solvency indicators are likely to breach their respective thresholds from FY2029 (Figure 1 and Table 3). The external debt-to-GDP ratio is expected to increase from 36 percent in FY2020 to 38 percent in FY2021 (mainly as a result of lower GDP, new external borrowing in the form of disbursements from the IMF RCF, and rescheduled debt service payments under the DSSI). External debt-to-GDP ratios are projected to slowly decline to 32 percent in FY2023, as the authorities save part of the projected fiscal surplus in FY2022–23 for future amortization payments. From FY2024 onwards, under the current baseline forecasts, in the absence of new grant commitments, most of the external debt service payments coming due will need to be refinanced with new borrowings. In addition, given a limited appetite for domestic debt, Tonga will need to incur new external debt to help finance its large spending needs to cover infrastructure gaps and meet its climate resilience and Sustainability Development Goals. As a result, external debt will breach the authorities' fiscal anchor of 50 percent in FY2026. The PV of the external debt-to-GDP ratio is expected to breach the threshold of 55 percent starting from FY2029. Along with the increase of the PV of the external debt-to-GDP ratio, the PV of the external debt-to-exports ratio is expected to increase and breach the threshold starting from FY2029. Debt service indicators are also expected to sharply increase in FY2024 to reach 18 percent of exports and 16 percent of revenue as the larger debt payments to China Eximbank start coming due in FY2024. As Figure 3 shows, the main driver of external debt dynamics is a deterioration of fiscal and current account balances driven by the large import content of public infrastructure projects, which will need to be financed with external borrowing unless there are new commitments for official transfers.[11]

[9] All the standardized stress tests (i.e., growth shock, export shock, combination shock, historical scenario) are described in Table 8 of the new "Guidance Note on the Bank-Fund Debt Sustainability Framework for Low-income Countries" (http://www.imf.org/en/Publications/Policy-Papers/Issues/2018/02/14/pp122617guidance-note-on-lic-dsf).

[10] The estimated cost of FY2018 Tropical Cyclone Gita is 38 percent of GDP.

[11] The residual is mainly explained by the capital account inflows that are large in Tonga and not included in the model (about 10 percent of GDP on average over FY2016–2020).

10. The stress tests show that a combination of diverse shocks and an export shock have the largest negative impact on the external debt trajectory (Figure 1 and Table 3).[12] While an export shock alone has the largest impact on the PV of the external debt-to-GDP ratio, a combination of diverse shocks has the largest impact on the PV of external debt-to-exports, external debt service-to-exports, and external debt service-to-revenue ratios over the long term.

11. The tailored natural disaster shock causes the PV of external debt- and exports-to-GDP ratios to rise after the shock. The DSA includes a one-off shock that takes place in FY2021, but there is a strong possibility that multiple severe natural disasters could occur within a ten-year timeframe. Multiple natural disasters could have a larger cumulative negative effect on external debt sustainability due to larger reconstruction needs (which may require additional debt financing) and also by lowering long-term growth.

PUBLIC DEBT SUSTAINABILITY ANALYSIS

12. Under the baseline scenario, the PV of the public debt-to-GDP ratio would cross the 70 percent benchmark from FY2029 onwards (Figure 2). The total public debt-to-GDP ratio would rise from 42 percent of GDP in FY2020 and reach 72 percent of GDP in FY2026, at the time the fiscal anchor of external debt is breached (Table 2). As Figure 3 indicates, the public debt dynamic is mainly driven by the primary deficit.

13. The standardized sensitivity analysis indicates an earlier breach in FY2027 (Figure 2, Table 4).[13] The PV of the public debt-to-GDP ratio would be above 70 percent of GDP by FY2027 under a multi-year shock to real GDP growth, a shock to exports, and a natural disaster shock.

14. The tailored one-time natural disaster shock results in a sharper deterioration in public debt sustainability. The PV of public debt relative to both GDP and exports is expected to sharply increase compared to the baseline during the years after the shock.

15. A tailored stress test for the combined contingent liability shock also causes a deterioration in public debt sustainability. The trajectory of the PV of the public debt-to-GDP ratio shifts upwards by 4 ppts from the baseline.

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[12] Nominal export growth (in USD) is set to its historical average minus one standard deviation or the baseline projection minus one standard deviation, whichever is lower in the second and third years of the projection period. For the combination of diverse shocks, each individual shock (on real GPD growth, primary balance, exports, current transfers, FDI, and depreciation) is set at half of their magnitude in the second and third years of the projection periods.

[13] Real GDP growth (in USD) is set to its historical average minus one standard deviation or the baseline projection minus one standard deviation, whichever is lower in the second and third years of the projection period.

RISK RATING AND VULNERABILITIES

16. The 2020 debt sustainability analysis under the new LIC debt sustainability framework suggests that Tonga's risk of external debt distress remains high. Under the baseline scenario, the indicative thresholds for the PV of the external debt-to-GDP and external debt-to-exports ratios are expected to be breached starting from FY2029, in addition to the temporary breach of the external debt-to-exports ratio in FY2021. The external debt service-to-export ratio is expected to breach the threshold under the adverse scenario.

17. The DSA suggests that overall risk of debt distress is also high. The PV of the public debt-to-GDP ratio remains above the indicative benchmark from FY2029 onwards, reflecting a deteriorating fiscal position due to large spending needs, in the absence of new grant commitments over the medium- to- long term.[14] Tonga is highly vulnerable to natural disaster, growth, and exports shocks. These results indicate the urgent need for fiscal adjustments and measures to boost potential growth in the long run. Post-pandemic, the authorities need to embark on fiscal consolidation measures to rebuild fiscal buffers and prioritize investment projects that improve resilience to natural disasters and raise potential growth. New donor grant commitments and debt relief would be helpful.

AUTHORITIES' VIEWS

18. The authorities agreed with the debt sustainability assessment, in particular the implications of large debt repayments and potential negative shocks to growth, including from natural disasters. They recognized the need to build adequate fiscal buffers once the pandemic is over. In this regard, they reiterated their commitment to improve the targeting of economic support, further improve revenue administration, implement spending controls, and broaden the tax base in line with recommendations made by the previous and ongoing IMF and World Bank technical assistance. The authorities will continue to seek new grant financing commitments from bilateral donors and international financial institutions, and additional debt relief from China Eximbank, to maintain public and external debt at prudent levels, and to refrain from non-concessional borrowing. To improve debt coverage, the authorities plan to report contingent debt. A medium-term debt strategy is under preparation and will reflect these priorities.

[14] Cash and in-kind grants averaged 16.7 percent of GDP annually over FY2015–2019.

Table 1. Tonga. External Debt Sustainability Framework, Baseline Scenario, FY2017–2040
(In percent of GDP, unless otherwise indicated)

	Actual			Projections												Average 8/	
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2040	Historical	Projections
External debt (nominal) 1/	38.7	40.5	36.4	36.2	38.5	35.1	31.6	37.8	45.7	59.6	73.6	87.3	100.5	113.5	143.1	41.7	59.9
of which: public and publicly guaranteed (PPG)	38.7	40.5	36.4	36.2	38.5	35.1	31.6	37.8	45.7	59.6	73.6	87.3	100.5	113.5	143.1	41.7	59.9
Change in external debt	-3.2	1.8	-4.2	-0.2	2.3	-3.4	-3.4	6.2	7.9	13.9	14.0	13.7	13.2	13.0	-0.3		
Identified net debt-creating flows	4.1	-0.6	-1.6	4.1	17.9	7.3	6.7	10.3	10.4	12.6	12.2	11.9	11.5	11.6	4.3	7.5	10.6
Non-interest current account deficit	5.7	5.7	0.0	3.3	18.3	9.1	8.1	11.5	11.3	13.6	13.2	13.2	13.0	13.1	6.4	9.8	11.6
Deficit in balance of goods and services	43.7	44.5	41.9	42.9	57.4	46.9	47.8	44.4	44.2	45.1	45.1	45.1	45.4	45.4	41.6	43.3	46.3
Exports	22.2	21.4	22.0	18.8	3.9	18.4	18.8	21.4	22.3	22.9	23.1	23.4	23.4	23.8	27.0		
Imports	65.8	65.9	63.9	61.7	61.3	65.3	66.6	65.9	66.5	68.0	68.2	68.5	68.8	69.2	68.5		
Net current transfers (negative = inflow)	-33.3	-32.7	-33.4	-30.6	-36.9	-32.1	-33.1	-26.3	-26.4	-22.9	-23.3	-23.5	-24.1	-24.1	-28.4	-29.8	-27.6
of which: official	-8.1	-5.9	-8.8	-4.0	-17.2	-12.2	-13.3	-4.7	-4.8	-0.8	-0.8	-0.7	-0.7	-0.7	-0.5		
Other current account flows (negative = net inflow)	-4.6	-6.0	-8.6	-8.9	-2.2	-5.7	-6.7	-6.6	-6.5	-8.6	-8.5	-8.4	-8.3	-8.2	-6.7		
Net FDI (negative = inflow)	1.3	-4.9	-0.1	-0.7	-0.9	-0.9	-0.8	-0.7	-0.7	-0.7	-0.7	-1.0	-1.0	-1.0	-1.3	-1.3	-0.8
Endogenous debt dynamics 2/	-3.0	-1.5	-1.5	1.5	0.5	-1.0	-0.6	-0.4	-0.3	-0.3	-0.4	-0.4	-0.5	-0.5	-0.8		
Contribution from nominal interest rate	0.6	0.6	0.9	0.6	-0.8	0.5	0.4	0.3	0.4	0.5	0.7	0.9	1.0	1.2	1.7		
Contribution from real GDP growth	-1.3	-0.1	-0.3	0.9	1.3	-1.4	-1.0	-0.8	-0.7	-0.8	-1.0	-1.3	-1.5	-1.8	-2.5		
Contribution from price and exchange rate changes	-2.4	-1.9	-2.1	...	...	...	...	...	...	...	...	...	...	...	...		
Residual 3/	-7.3	2.4	-2.5	-4.2	-15.6	-10.7	-10.1	-4.1	-2.5	1.3	1.8	1.8	1.7	1.5	-4.7	-7.1	-3.6
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	0.0	0.0	0.0	0.0		
Sustainability indicators																	
PV of PPG external debt-to-GDP ratio	...	...	25.4	26.0	29.5	27.1	25.0	27.7	31.7	38.6	45.8	53.2	61.0	69.1	88.8		
PV of PPG external debt-to-exports ratio	...	...	115.5	138.3	764.1	146.9	133.3	129.2	142.2	168.6	197.7	227.8	261.1	290.7	329.5		
PPG debt service-to-exports ratio	6.0	5.8	9.1	8.1	17.9	10.1	11.0	18.5	17.5	16.7	18.0	17.6	14.7	12.8	28.3		
PPG debt service-to-revenue ratio	5.6	5.0	8.6	6.2	3.0	7.7	8.5	16.4	16.1	15.8	17.2	16.9	14.1	12.5	21.1		
Gross external financing need (Million of U.S. dollars)	38.7	10.0	10.0	20.7	88.6	53.3	51.6	84.7	86.8	103.7	107.9	110.1	107.8	109.8	138.0		
Key macroeconomic assumptions																	
Real GDP growth (in percent)	3.3	0.3	0.7	-2.5	-3.5	4.0	3.0	2.5	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.3	1.3
GDP deflator in US dollar terms (change in percent)	5.9	5.2	5.6	0.0	0.9	3.1	1.9	1.9	1.9	2.0	2.1	2.1	2.1	2.1	2.3	3.1	1.8
Effective interest rate (percent) 4/	1.7	1.6	2.3	1.5	-2.1	1.3	1.2	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1.2	1.7	0.9
Growth of exports of G&S (US dollar terms, in percent)	-1.1	1.9	9.1	-16.6	-80.0	411.2	6.9	19.4	7.7	6.9	5.0	4.9	4.0	5.7	5.8	12.1	34.1
Growth of imports of G&S (US dollar terms, in percent)	13.8	5.6	3.2	-5.9	-3.2	14.1	7.0	3.3	4.8	6.2	4.3	4.3	4.4	4.5	3.7	6.0	4.0
Grant element of new public sector borrowing (in percent)	...	...	...	59.6	20.7	...	...	41.0	41.0	44.6	44.3	44.1	44.1	44.1	44.4	...	42.6
Government revenues (excluding grants, in percent of GDP)	23.9	24.8	23.4	24.7	22.9	23.9	24.3	24.2	24.2	24.3	24.3	24.3	24.3	24.3	36.2	21.6	24.1
Aid flows (in Million of US dollars) 5/	483.2	473.7	517.5	108.5	112.4	95.3	110.7	92.1	86.5	74.1	78.8	82.2	82.2	83.3	76.4	...	
Grant-equivalent financing (in percent of GDP) 6/	...	...	...	21.3	23.7	...	...	15.0	13.3	9.2	9.5	9.5	9.1	8.9	5.5	...	13.3
Grant-equivalent financing (in percent of external financing) 6/	...	...	...	99.1	87.9	...	...	69.6	63.9	46.8	46.4	46.1	46.1	46.1	46.6	...	61.3
Nominal GDP (Million of US dollars)	460	486	517	504	491	526	552	576	598	621	646	671	698	725	1,082		
Nominal dollar GDP growth	9.5	5.5	6.4	-2.5	-2.6	7.2	4.9	4.5	3.8	3.9	4.0	3.9	3.9	3.9	4.1	5.4	3.2
Memorandum items:																	
PV of external debt 7/	...	...	25.4	26.0	29.5	27.1	25.0	27.7	31.7	38.6	45.8	53.2	61.0	69.1	88.8		
In percent of exports	...	...	115.5	138.3	764.1	146.9	133.3	129.2	142.2	168.6	197.7	227.8	261.1	290.7	329.5		
Total external debt service-to-exports ratio	6.0	5.8	9.1	8.1	17.9	10.1	11.0	18.5	17.5	16.7	18.0	17.6	14.7	12.8	28.3		
PV of PPG external debt (in Million of US dollars)			131.1	130.9	144.8	142.3	138.1	159.8	189.4	240.1	295.7	357.3	425.7	500.9	960.7		
(PVt-PVt-1)/GDPt-1 (in percent)				0.0	2.8	-0.5	-0.8	3.9	5.1	8.5	8.9	9.5	10.2	10.8	3.0		
Non-interest current account deficit that stabilizes debt ratio	8.9	4.0	4.1	3.5	16.0	12.6	11.5	5.3	3.5	-0.3	-0.8	-0.5	-0.2	0.0	6.8		

Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt.

2/ Derived as [r - g - ρ(1+g) + Ɛα (1+r)]/(1+g+ρ+gρ) times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, ρ = growth rate of GDP deflator in U.S. dollar terms, Ɛ=nominal appreciation of the local currency, and α= share of local currency-denominated external

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

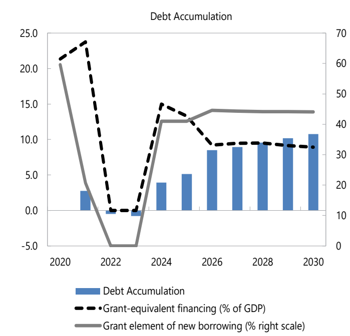
5/ Defined as grants, concessional loans, and debt relief.

6/ 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).

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

8/ Historical averages are generally derived over the past 10 years, subject to data availability, whereas projections averages are over the first year of projection and the next 10 years.

Definition of external/domestic debt	Residency-based
Is there a material difference between the two criteria?	Yes



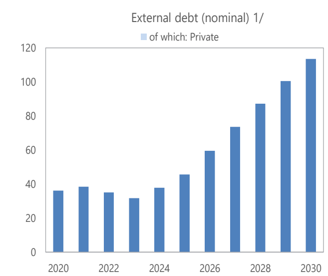


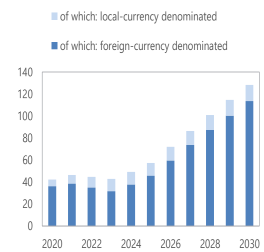
Table 2. Tonga. Public Sector Debt Sustainability Framework, Baseline Scenario, FY2017–2040

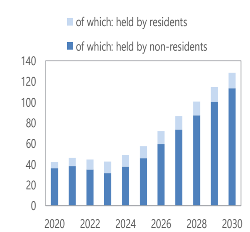
(In percent of GDP, unless otherwise indicated)

	Actual			Projections												Average 6/	
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2040	Historical	Projections
Public sector debt 1/	**43.6**	**45.9**	**41.3**	**42.3**	**46.3**	**44.6**	**42.7**	**49.1**	**57.3**	**72.0**	**86.5**	**100.8**	**114.7**	**128.4**	**156.0**	**47.9**	**71.3**
of which: external debt	**38.7**	**40.5**	**36.4**	**36.2**	**38.5**	**35.1**	**31.6**	**37.8**	**45.7**	**59.6**	**73.6**	**87.3**	**100.5**	**113.5**	**143.1**	**41.7**	**59.9**
Change in public sector debt	-5.8	2.2	-4.6	1.0	3.9	-1.7	-1.9	6.4	8.2	14.7	14.5	14.3	13.9	13.7	-1.4		
Identified debt-creating flows	**-8.0**	**-4.5**	**-5.6**	**-4.0**	**4.5**	**-2.2**	**-2.8**	**6.3**	**8.3**	**15.0**	**15.0**	**15.1**	**14.8**	**14.5**	**-0.4**	**-2.4**	**7.7**
Primary deficit	**-4.4**	**-3.7**	**-3.9**	**-5.2**	**4.0**	**-0.4**	**-1.5**	**7.4**	**9.3**	**16.0**	**16.4**	**16.7**	**16.7**	**16.7**	**2.7**	**-1.3**	**8.7**
Revenue and grants	43.2	42.6	41.7	45.7	45.7	42.0	44.4	34.6	32.3	25.1	25.1	25.0	25.0	25.0	36.7	**35.3**	**33.6**
of which: grants	19.3	17.8	18.3	21.0	22.9	18.1	20.1	10.5	8.1	0.8	0.8	0.7	0.7	0.7	0.5		
Primary (noninterest) expenditure	38.8	38.9	37.8	40.6	49.8	41.7	42.8	42.0	41.5	41.1	41.5	41.8	41.7	41.6	39.4	**34.0**	**42.4**
Automatic debt dynamics	**-3.6**	**-0.8**	**-1.8**	**1.2**	**0.4**	**-1.8**	**-1.3**	**-1.0**	**-0.9**	**-1.1**	**-1.4**	**-1.7**	**-1.9**	**-2.1**	**-3.1**		
Contribution from interest rate/growth differential	-1.8	-0.2	-0.3	1.2	0.4	-1.8	-1.3	-1.0	-0.9	-1.1	-1.4	-1.7	-1.9	-2.1	-3.1		
of which: contribution from average real interest rate	-0.2	-0.1	0.1	0.1	-1.1	-0.1	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.3		
of which: contribution from real GDP growth	-1.6	-0.1	-0.3	1.0	1.5	-1.8	-1.3	-1.1	-0.9	-1.0	-1.3	-1.5	-1.8	-2.0	-2.8		
Contribution from real exchange rate depreciation	-1.7	-0.6	-1.5	...	...	...	...	...	...	...	...	...	...	...	...		
Other identified debt-creating flows	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Privatization receipts (negative)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Recognition of contingent liabilities (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	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	0.0	0.0	0.0	0.0		
Other debt creating or reducing flow (please specify)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Residual	**2.2**	**6.7**	**1.0**	**5.0**	**-0.5**	**0.5**	**1.0**	**0.0**	**-0.1**	**-0.2**	**-0.5**	**-0.8**	**-0.9**	**-0.8**	**-1.0**	**2.5**	**0.2**
Sustainability indicators																	
PV of public debt-to-GDP ratio 2/	**...**	**...**	**30.6**	**32.0**	**36.9**	**36.6**	**36.1**	**39.0**	**43.3**	**51.2**	**58.9**	**66.8**	**75.2**	**83.9**	**101.8**		
PV of public debt-to-revenue and grants ratio	**...**	**...**	**73.3**	**69.9**	**80.7**	**87.1**	**81.3**	**112.8**	**134.3**	**204.1**	**235.0**	**266.9**	**300.6**	**335.8**	**277.2**		
Debt service-to-revenue and grants ratio 3/	**6.3**	**6.0**	**8.7**	**7.4**	**5.9**	**8.2**	**13.3**	**21.5**	**23.6**	**35.8**	**33.1**	**33.4**	**36.6**	**32.1**	**35.3**		
Gross financing need 4/	-1.7	-1.1	-0.2	-1.8	6.7	3.1	4.4	14.8	16.9	25.0	24.7	25.1	25.8	24.7	15.6		
Key macroeconomic and fiscal assumptions																	
Real GDP growth (in percent)	3.3	0.3	0.7	-2.5	-3.5	4.0	3.0	2.5	1.8	1.8	1.8	1.8	1.8	1.8	1.8	**2.3**	**1.3**
Average nominal interest rate on external debt (in percent)	1.7	1.6	2.3	1.5	-2.1	1.3	1.2	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1.2	**1.7**	**0.9**
Average real interest rate on domestic debt (in percent)	-2.9	-1.5	-4.3	3.0	4.1	0.6	1.1	1.4	1.1	1.1	0.8	0.9	1.3	1.5	1.1	**-1.8**	**1.5**
Real exchange rate depreciation (in percent, + indicates depreciation)	-4.3	-1.6	-3.7	...	...	...	...	...	...	...	...	...	...	...	...	**-0.7**	**...**
Inflation rate (GDP deflator, in percent)	5.6	5.1	7.7	0.4	-0.9	2.1	2.0	1.9	2.3	2.4	2.7	2.6	2.2	1.9	2.3	**3.7**	**1.8**
Growth of real primary spending (deflated by GDP deflator, in percent)	10.4	0.5	-2.1	4.6	18.5	-12.9	5.8	0.5	0.7	0.7	2.7	2.6	1.6	1.7	1.7	**8.1**	**2.4**
Primary deficit that stabilizes the debt-to-GDP ratio 5/	1.4	-5.9	0.7	-6.2	0.1	1.4	0.4	1.0	1.0	1.3	1.9	2.5	2.8	2.9	4.1	**-1.3**	**0.8**
PV of contingent liabilities (not included in public sector debt)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

Definition of external/domestic debt	**Residency-based**
Is there a material difference between the two criteria?	**Yes**

Public sector debt 1/





Sources: Country authorities; and staff estimates and projections.

1/ Coverage of debt: The general government, central bank . Definition of external debt is Residency-based.

2/ The underlying PV of external debt-to-GDP ratio under the public DSA differs from the external DSA with the size of differences depending on exchange rates projections.

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

4/ 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 and other debt creating/reducing flows.

5/ Defined as a primary deficit minus a change in the public debt-to-GDP ratio ((-): a primary surplus), which would stabilizes the debt ratio only in the year in question.

6/ Historical averages are generally derived over the past 10 years, subject to data availability, whereas projections averages are over the first year of projection and the next 10 years.

"Other debt creating or reducing flow" is the net acquisition of financial assets.

Table 3. Tonga. Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, FY2020–2030 (In percent)

	Projections 1/										
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
PV of debt-to GDP ratio											
Baseline	26	30	27	25	28	32	39	46	53	**61**	**69**
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2020-2030 2/	26	23	21	19	21	23	28	33	38	43	49
B. Bound Tests											
B1. Real GDP growth	26	31	29	27	30	34	42	50	**58**	**66**	**75**
B2. Primary balance	26	31	29	28	31	35	42	49	**57**	**65**	**73**
B3. Exports	26	38	48	45	48	53	**61**	**70**	**79**	**88**	**97**
B4. Other flows 3/	26	36	38	36	38	42	49	**57**	**64**	**72**	**80**
B5. Depreciation	26	37	26	23	27	32	40	49	**59**	**69**	**79**
B6. Combination of B1-B5	26	47	44	42	45	50	**59**	**67**	**77**	**86**	**96**
C. Tailored Tests											
C1. Combined contingent liabilities	26	32	29	28	31	35	42	49	**57**	**65**	**73**
C2. Natural disaster	26	34.9	32.5	32.4	36	41	48	**56**	**65**	**73**	**82**
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	55	55	55	55	55	55	55	55	55	55	55
PV of debt-to-exports ratio											
Baseline	138	**764**	147	133	129	142	169	198	228	**261**	**291**
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2020-2030 2/	138	**584**	113	104	98	105	122	141	161	185	205
B. Bound Tests											
B1. Real GDP growth	138	**764**	147	133	129	142	169	198	228	**261**	**291**
B2. Primary balance	138	**793**	159	147	144	157	184	213	**244**	**277**	**307**
B3. Exports	138	-9421	-2605	-2420	-2264	-2393	-2690	-3032	-3386	-3785	-4129
B4. Other flows 3/	138	**943**	206	191	179	191	216	**244**	**274**	**308**	**336**
B5. Depreciation	138	**764**	110	98	98	112	139	169	199	232	**263**
B6. Combination of B1-B5	138	**2202**	193	**399**	**377**	**403**	**460**	**524**	**591**	**666**	**731**
C. Tailored Tests											
C1. Combined contingent liabilities	138	**819**	158	149	143	157	183	213	**243**	**276**	**306**
C2. Natural disaster	138	**1346**	**263**	**257**	**247**	**272**	**314**	**363**	**412**	**466**	**513**
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	240	240	240	240	240	240	240	240	240	240	240
Debt service-to-exports ratio											
Baseline	8	18	10	11	18	17	17	18	18	15	13
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2020-2030 2/	8	17	9	10	17	15	14	15	15	12	10
B. Bound Tests											
B1. Real GDP growth	8	18	10	11	18	17	17	18	18	15	13
B2. Primary balance	8	18	10	11	19	18	17	18	18	15	13
B3. Exports	8	-205	-124	-150	-237	-224	-214	-229	-224	-188	-165
B4. Other flows 3/	8	18	11	12	20	19	18	19	19	16	14
B5. Depreciation	8	18	10	10	18	17	16	17	17	14	12
B6. Combination of B1-B5	8	**39**	**25**	**27**	**43**	**41**	**39**	**42**	**41**	**34**	**30**
C. Tailored Tests											
C1. Combined contingent liabilities	8	18	10	11	19	18	17	18	18	15	13
C2. Natural disaster	8	**28**	16.3	17.7	**29.5**	**28**	**27**	**29**	**28**	**24**	21
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	21	21	21	21	21	21	21	21	21	21	21
Debt service-to-revenue ratio											
Baseline	6	3	8	8	16	16	16	17	17	14	13
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2020-2030 2/	6	3	7	7	15	14	14	15	14	11	10
B. Bound Tests											
B1. Real GDP growth	6	3	8	9	18	17	17	19	18	15	14
B2. Primary balance	6	3	8	9	17	16	16	17	17	14	13
B3. Exports	6	4	9	12	21	21	20	22	21	18	16
B4. Other flows 3/	6	3	8	9	17	17	17	18	18	15	13
B5. Depreciation	6	4	10	10	20	20	19	21	21	17	15
B6. Combination of B1-B5	6	4	11	12	21	21	21	22	22	18	16
C. Tailored Tests											
C1. Combined contingent liabilities	6	3	8	9	17	16	16	17	17	14	13
C2. Natural disaster	6	3	8	9	17	17	16	18	18	15	13
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	23	23	23	23	23	23	23	23	23	23	23
Grant element assumed on residual financing (i.e., financing required above baseline) 6/	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	**45.5**

Sources: Country authorities; and staff estimates and projections.
1/ A bold value indicates a breach of the threshold.
2/ Variables include real GDP growth, GDP deflator (in U.S. dollar terms), non-interest current account in percent of GDP, and non-debt creating flows.
3/ Includes official and private transfers and FDI.

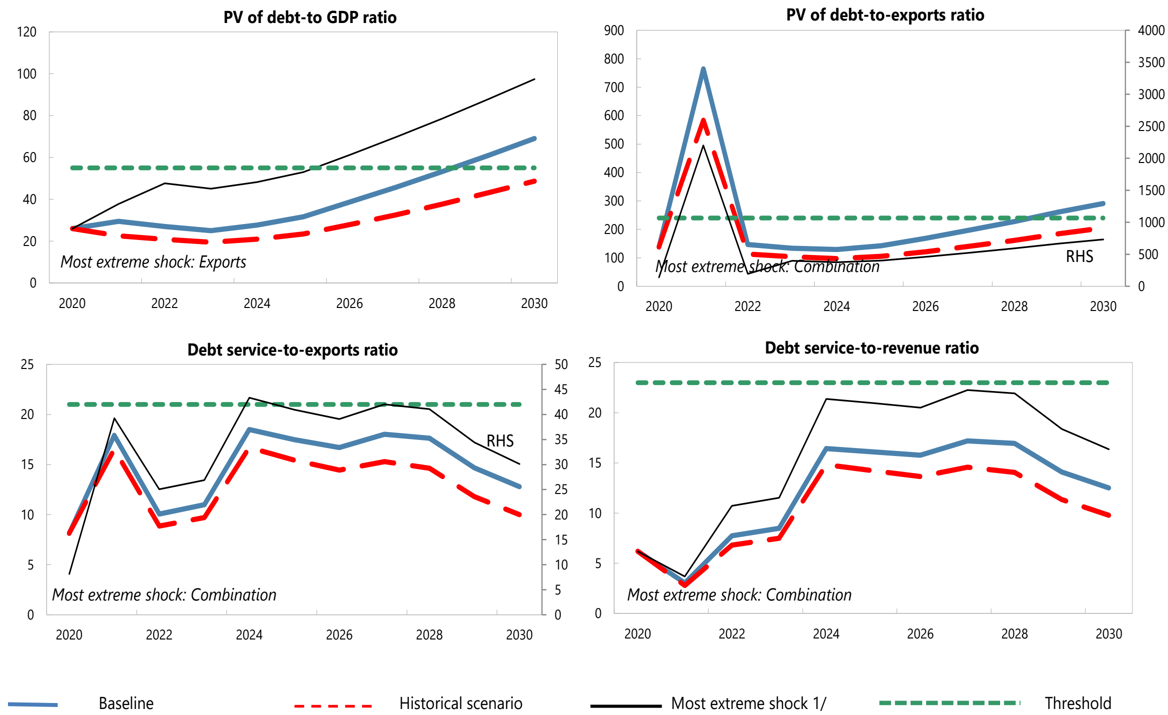
Table 4. Tonga. Sensitivity Analysis for Key Indicators of Public Debt, FY2020–2030

(In percent)

	Projections 1/										
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
PV of Debt-to-GDP Ratio											
Baseline	32	37	37	36	39	43	51	59	67	**75**	**84**
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2020-2030 2/	32	30	29	29	27	25	23	21	19	18	16
B. Bound Tests											
B1. Real GDP growth	32	39	42	43	47	53	63	**72**	**82**	**92**	**103**
B2. Primary balance	32	40	42	41	44	48	55	63	**71**	**79**	**88**
B3. Exports	32	39	50	49	52	56	64	**72**	**80**	**88**	**97**
B4. Other flows 3/	32	44	48	47	50	54	62	70	**78**	**86**	**95**
B5. Depreciation	32	44	42	41	40	40	43	45	48	52	57
B6. Combination of B1-B5	32	38	38	36	39	42	50	57	65	**73**	**82**
C. Tailored Tests											
C1. Combined contingent liabilities	32	42	42	40	43	47	55	63	**71**	**79**	**88**
C2. Natural disaster	32	49	49	48	51	55	64	**72**	**81**	**89**	**99**
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
TOTAL public debt benchmark	70	70	70	70	70	70	70	70	70	70	70
PV of Debt-to-Revenue Ratio											
Baseline	70	81	87	81	113	134	204	235	267	301	336
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2020-2030 2/	70	68	72	69	81	81	94	85	78	71	66
B. Bound Tests											
B1. Real GDP growth	70	84	96	93	133	161	250	288	327	368	411
B2. Primary balance	70	87	100	93	126	148	221	252	283	317	352
B3. Exports	70	86	118	110	150	174	256	287	319	352	388
B4. Other flows 3/	70	96	113	106	144	168	247	278	310	344	379
B5. Depreciation	70	101	105	95	119	128	171	181	193	208	227
B6. Combination of B1-B5	70	84	91	81	112	131	199	229	260	293	328
C. Tailored Tests											
C1. Combined contingent liabilities	70	92	99	91	125	147	220	250	282	316	351
C2. Natural disaster	70	106	115	106	146	170	254	287	322	358	396
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Debt Service-to-Revenue Ratio											
Baseline	7	6	8	13	22	24	36	33	33	37	32
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2020-2030 2/	7	6	7	8	19	21	30	26	25	27	22
B. Bound Tests											
B1. Real GDP growth	7	6	9	15	25	29	44	42	43	46	42
B2. Primary balance	7	6	8	17	26	26	39	35	35	38	33
B3. Exports	7	6	8	14	22	25	37	34	34	38	33
B4. Other flows 3/	7	6	9	14	22	24	37	34	34	37	33
B5. Depreciation	7	6	10	15	24	27	39	37	37	39	34
B6. Combination of B1-B5	7	6	8	13	24	23	36	33	33	36	32
C. Tailored Tests											
C1. Combined contingent liabilities	7	6	9	20	22	28	37	36	34	38	33
C2. Natural disaster	7	6	9	27	24	34	40	42	38	43	37
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Sources: Country authorities; and staff estimates and projections.
1/ A bold value indicates a breach of the benchmark.
2/ Variables include real GDP growth, GDP deflator and primary deficit in percent of GDP.
3/ Includes official and private transfers and FDI.

Figure 1. Tonga. Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, FY2020–2030



Customization of Default Settings	Size	Interactions
Tailored Stress		
Combined CL	No	
Natural disaster	Yes	Yes
Commodity price 2/	n.a.	n.a.
Market financing	n.a.	n.a.

Note: "Yes" indicates any change to the size or interactions of the default settings for the stress tests. "n.a." indicates that the stress test does not apply.

Borrowing assumptions on additional financing needs resulting from the stress tests*	Default	User defined
Shares of marginal debt		
External PPG MLT debt	100%	
Terms of marginal debt		
Avg. nominal interest rate on new borrowing in USD	1.3%	1.3%
USD Discount rate	5.0%	5.0%
Avg. maturity (incl. grace period)	30	30
Avg. grace period	10	10

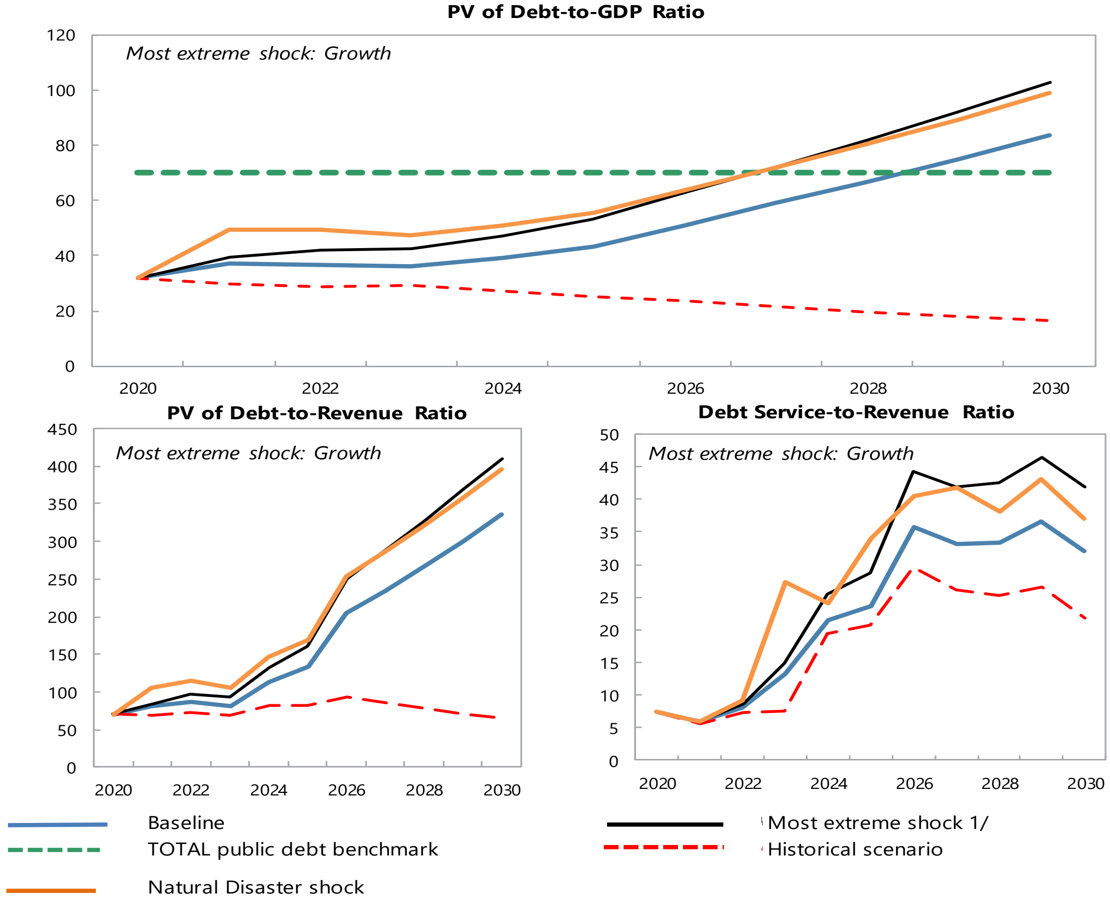
* Note: All the additional financing needs generated by the shocks under the stress tests are assumed to be covered by PPG external MLT debt in the external DSA. Default terms of marginal debt are based on baseline 10-year projections.

Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in or before 2030. The stress test with a one-off breach is also presented (if any), while the one-off breach is deemed away for mechanical signals. When a stress test with a one-off breach happens to be the most exterme shock even after disregarding the one-off breach, only that stress test (with a one-off breach) would be presented.

2/ The magnitude of shocks used for the commodity price shock stress test are based on the commodity prices outlook prepared by the IMF research department.

Figure 2. Tonga. Indicators of Public Debt Under Alternative Scenarios, FY2020–2030



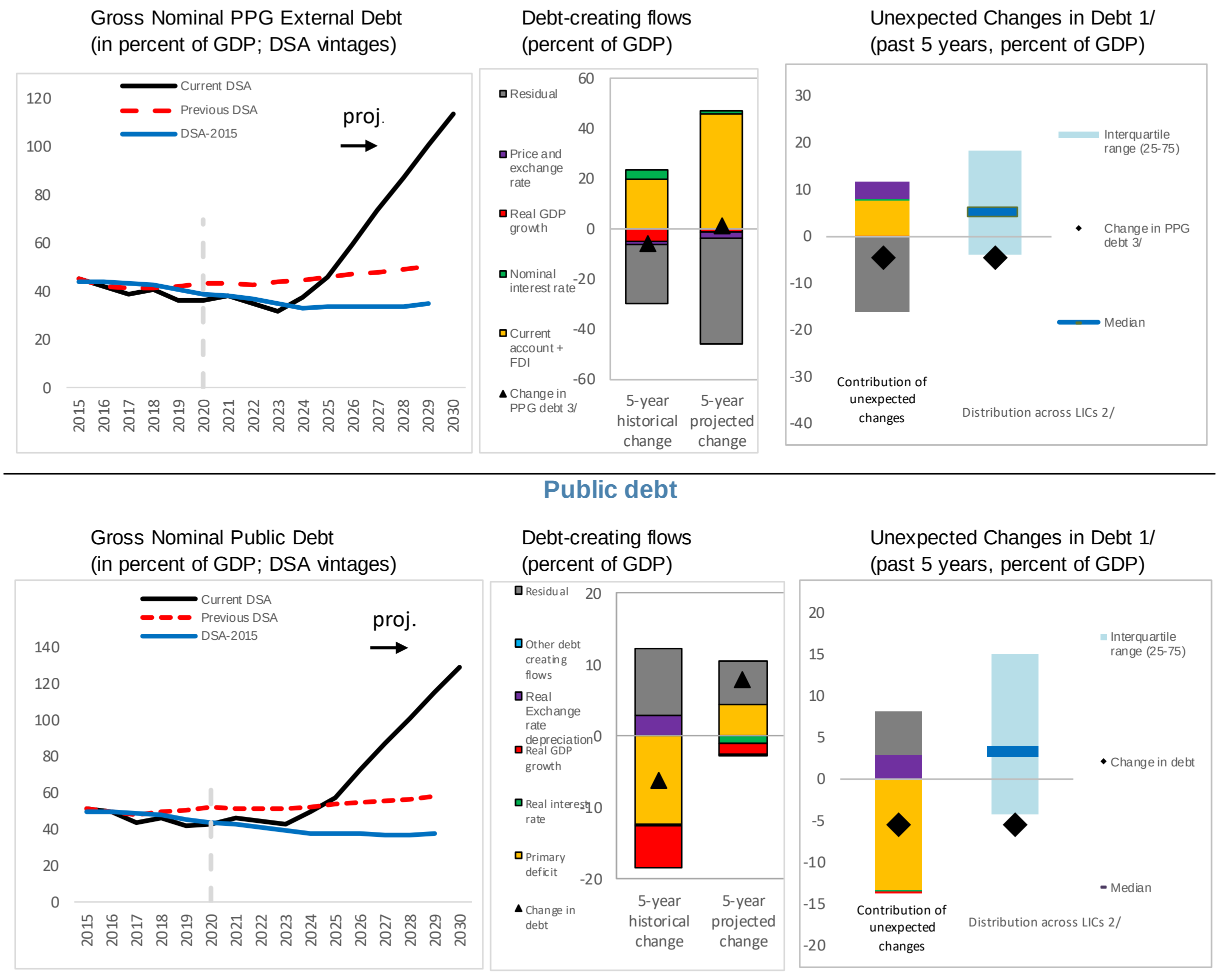
Borrowing assumptions on additional financing needs resulting from the stress tests*	Default	User defined
Shares of marginal debt		
External PPG medium and long-term	55%	55%
Domestic medium and long-term	45%	45%
Domestic short-term	0%	0%
Terms of marginal debt		
External MLT debt		
Avg. nominal interest rate on new borrowing in USD	1.3%	1.3%
Avg. maturity (incl. grace period)	30	30
Avg. grace period	10	10
Domestic MLT debt		
Avg. real interest rate on new borrowing	1.7%	1.7%
Avg. maturity (incl. grace period)	2	2
Avg. grace period	1	1
Domestic short-term debt		
Avg. real interest rate	0.0%	0.0%

* Note: The public DSA allows for domestic financing to cover the additional financing needs generated by the shocks under the stress tests in the public DSA. Default terms of marginal debt are based on baseline 10-year projections.

Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in or before 2030. The stress test with a one-off breach is also presented (if any), while the one-off breach is deemed away for mechanical signals. When a stress test with a one-off breach happens to be the most exterme shock even after disregarding the one-off breach, only that stress test (with a one-off breach) would be presented.

Figure 3. Tonga. Drivers of Debt Dynamics–Baseline Scenario External Debt



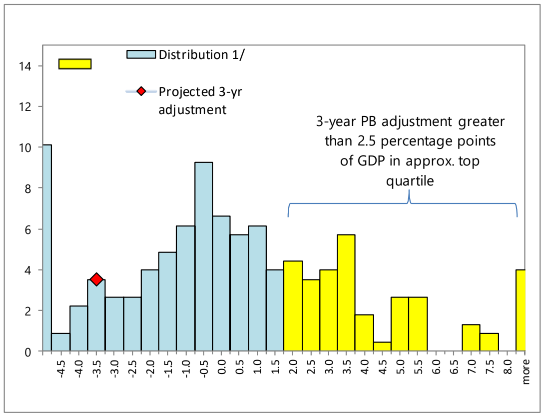
1/ Difference between anticipated and actual contributions on debt ratios.

2/ Distribution across LICs for which LIC DSAs were produced.

3/ Given the relatively low private external debt for average low-income countries, a ppt change in PPG external debt should be largely explained by the drivers of the external debt dynamics equation.

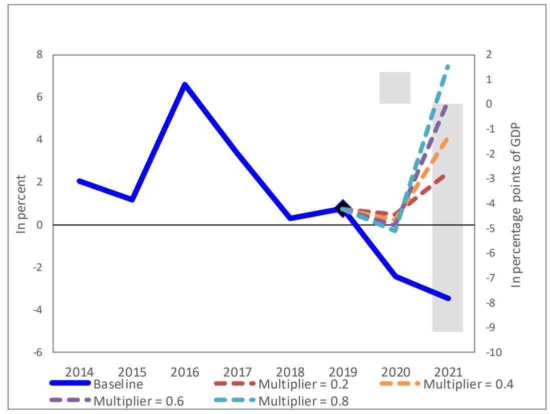
Figure 4. Tonga. Realism Tools

3-Year Adjustment in Primary Balance (Percentage points of GDP)



1/ Data cover Fund-supported programs for LICs (excluding emergency financing) approved since 1990. The size of 3-year adjustment from program inception is found on the horizontal axis; the percent of sample is found on the vertical axis.

Fiscal Adjustment and Possible Growth Paths 1/



1/ Bars refer to annual projected fiscal adjustment (right-hand side scale) and lines show possible real GDP growth paths under different fiscal multipliers (left-hand side scale).