INTERNATIONAL MONETARY FUND

TONGA

STAFF REPORT FOR THE 2012 ARTICLE IV CONSULTATION—DEBT SUSTAINABILITY ANALYSIS

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Approved By
Thomas Rumbaugh and Thomas Dorsey (IMF)
Sudhir Shetty and Jeffrey D. Lewis (IDA)

Prepared By
The International Monetary Fund and
The International Development Association

Tonga remains at a high risk of debt distress based on the joint IMF-WB low-income country debt sustainability assessment (LIC DSA). Scheduled repayments on the two loans (reconstruction and roads) from the China EXIM Bank may pose a fiscal challenge unless sufficient cash reserves are built up by improving tax collections and reining in current expenses. Government's balance sheet also faces a currency risk as about 61 percent of the outstanding external debt is denominated in Chinese renminbi. Nonetheless, Tonga's remittance inflows (projected to average around 20 percent of GDP in the medium term)–the largest source of foreign exchange earnings–may help mitigate liquidity risks. Taking into account the cushion provided to the economy by remittances, the projected debt profile is consistent with manageable–if high risk– debt dynamics. A declining path of external public debt is critically dependent on the steadfast implementation of the ambitious medium-term fiscal consolidation strategy envisaged by the authorities. Additional new debt in the short term will further worsen the already high risk of external debt distress, as well as risks to external sustainability, and significantly constrain the space available for social and developmental priorities, as outlined in the Tonga Strategic Development Framework (TSDF). These vulnerabilities underscore the importance of sound macroeconomic policies to improve Tonga's growth potential on a sustained basis, export diversification, and continued efforts on fiscal consolidation.

BACKGROUND

1. **As a small open economy, Tonga is facing the dual challenge of large fluctuations on the external side and a limited production base on the domestic side.** On the one hand, it heavily relies on remittances, tourism, and foreign aid. On the other hand, the production and export bases are narrow and include mainly a few agricultural products and fisheries.

2. **The economy is gradually recovering from the effects of the global slowdown and the domestic credit crunch.** The recovery has been led by strengthening gross fixed investment and rebounding tourism. At the same time, the fiscal overall balance excluding the spending funded by the China EXIM Bank loans has improved thanks to a rise in grants and restraint in current expenditure.

3. **Tonga's total public sector debt stock (including publicly guaranteed debt) has risen since FY2008/09, and is expected to reach 45½ percent of GDP by the end of current fiscal year.** External debt accounts for majority of the stock, amounting to about 41 percent of GDP. This rise in debt stock was primarily on account of two external loans (one for reconstruction of the capital city and one for roads) from the China EXIM Bank.[1] These loans account for 61 percent of the outstanding external debt, while long-term loans by international financial institutions (IFIs) account for about 36 percent of external debt. In the current fiscal year, disbursements by the China EXIM Bank are projected to be completed for the reconstruction loan and nearly completed for the road loan. The loan for reconstruction also financed two additional projects: an extension of the Royal Palace and the construction of a new wharf to attract cruise ships. By the end of this fiscal year, about 60 percent of the reconstruction loan will have been used to finance direct government capital spending while the remainder will have been on-lent to the private sector for office, residential, and retail construction. The terms of the on-lending include an interest rate of 5 percent on the outstanding Tongan pa'anga amount and the government is expected to start receiving repayments from the private borrowers after the completion of the projects.[2] The entire road loan will be used to finance direct government capital spending on road improvements, including in outer islands.

4. **Despite the rise in overall debt, the government has continued to reduce its domestic debt level.** Domestic debt-to-GDP ratio had nearly halved by the end of the last fiscal year from an average of 13 percent of GDP seen during the last decade. The majority of the domestic debt (about 70 percent) is in the form of long-term government bonds while the remainder is government guaranteed debt.

5. **Tonga's DSA builds on the baseline scenario assumptions presented in Box 1.** It assumes that the near-term GDP growth will recover to around 1.8 percent and stay at a similar level over the medium to long term as in the last DSA.

[1] These loan commitments were signed in November 2007 (RMB 440 million for reconstruction), and in February 2010 (RMB 291 million for roads), and bear a 2 percent interest rate on the outstanding renminbi amount, 5-year grace, and a 20-year maturity. The arrangement with the contractor performing the work funded by these loans required an initial disbursement of 30 percent to cover the down payment, while outstanding disbursements are paid quarterly as work is completed and claims are filed.

[2] As of March 2012, one private borrower has started repaying to the government.

Box 1. Key Macroeconomic Assumptions

- **Real GDP growth** is projected to be around 1½ percent in 2011/12 and marginally higher in the medium and longer term. The recovery in the near and medium term is led by the fiscal impulse provided by the China EXIM Bank loans, and recovery in tourism and remittances. Longer term growth reflects a return on the ongoing capital projects, but will remain around 1.8 percent constrained by structural impediments.

- The Government is assumed to undertake a revenue-based fiscal consolidation aimed at achieving an overall **fiscal surplus** (excluding the China EXIM Bank loans) of around 1¼ percent of GDP **over the medium term.** Reforms in tax policy and administration is expected to improve the tax-to-GDP ratio to 17½ percent of GDP from 16¼ percent of GDP over the medium term, while cash grants will peak at around 11½ percent of GDP in 2012/13 before declining to 5¼ percent of GDP in 2016/17. Current expenditure (excluding project grants) is expected to slow down, led by a reduction in wage bill by about ¾ percentage point of GDP over the medium term. Domestically-funded capital expenditure is expected to increase from about ½ percent of GDP to 2 percent of GDP.

- **Over the longer term,** the primary fiscal surplus is expected to be about 1 percent of GDP as in the last DSA reflecting a reduction in cash grants. Lower project grants primarily explain the reduction in expenditure (excluding the China EXIM Bank loans) from 25¼ percent of GDP in the medium term to about 22 percent of GDP in the longer term, while wage bill averages about 45 percent of domestically-funded expenditure as targeted by the government Domestically financed capital expenditure is assumed to remain at 2 percent of GDP.

- **Financing.** Majority of the grants, together with projected disbursements from concessional loans, are assumed to be spent on development projects and associated maintenance. Following the final disbursement of the China EXIM Bank road loan next year, there will be no external borrowing until the debt ratio falls below the DSA threshold and all future external borrowings are assumed comparable to concessional IFI (AsDB and World Bank) facilities that will raise the grant element of future borrowing. On the domestic front, no new (net) domestic borrowing is assumed as fiscal consolidation advances and the public debt is brought down (as percent of GDP).

- The external **current account** is projected to reach a deficit of 6 percent of GDP in 2011/12, from a deficit of 1½ percent of GDP in 2010/11, as increase in imports (along with the economic recovery) more than offset the increase in grants and remittances. The deficit should average around 3¾ percent of GDP over the medium term, while it is expected to improve to around 3¼ percent of GDP over the longer term, reflecting slightly better prospects for remittances, tourism receipts, and exports of goods (see below).

- The decline in **remittances** is estimated by staff to have bottomed out in FY2009/10 in US$ terms. Remittances are expected to continue picking up along with the economic recovery in Australia, New Zealand and the US, and as Australia implements the Pacific Seasonal Worker Program on July 1, 2012, building on the lessons learned from the pilot program. Remittances are projected to recover to around 22 percent of GDP over the longer term, 10 percentage points of GDP lower than the average observed during the past decade.

- **Tourism** receipts are projected to average around 9 percent of GDP over the medium term and gradually increase to an average of 12 percent of GDP over the longer term, reflecting the return on the ongoing efforts to boost tourism.

- The **export** base is projected to remain narrow and relatively undiversified with a focus on agricultural products. Proper operation of the fumigation facility should help gradually increase exports as the products will meet New Zealand's bio-security requirements. Exports are projected to gradually increase to 3 percent of GDP in medium term (from 2½ percent in 2010/11) and further to 4½ percent by 2030.

- The **capital and financial account** is projected to be around 7 percent of GDP in FY2011/12 and gradually decline to around 2 percent over the medium term as official foreign borrowing is phased out. Over the longer term, it is projected to average 4 percent of GDP, reflecting higher FDI inflows.

On the fiscal front, the government is expected to implement an ambitious medium-term fiscal consolidation plan supported by tax reforms, budget support grants, and restraint on non-priority and payroll expenditure while increasing priority spending. Under these assumptions, the government will be able to rebuild cash balances and maintain a declining debt path while covering rising debt service costs. Revenues are expected to get a boost from the proposed reforms to tax policy and administration, while cash grants are higher in 2011/12 and 2012/13 than envisaged in the last DSA based on firm commitments by donors. Cash grants are projected to peak in 2012/13 and remain constant in nominal terms at the level of 2013/14 thereafter. The higher level of grants largely explains the more favorable external current account and primary fiscal balance projections over the medium term. The medium-term overall fiscal balance (excluding the China EXIM Bank loans) is projected to average a surplus of about 1¼ percent of GDP, thereby limiting the need for additional borrowing. Remittances—the largest source of foreign exchange earnings (one-half of Tongans live abroad, mostly in Australia, New Zealand, and the United States)—are assumed to recover in the medium to long term, in line with economic recovery in remittance-originating countries, and remain an important external cushion. The recovery in remittances is, however, more sluggish than assumed in the previous DSA. Remittances are projected to recover from 19 percent of GDP in 2011/12 to 21 percent by 2016/17 and 22 percent over the longer term. This level is consistent with the average level during 1994–2000, but much lower than the 32 percent of GDP average observed during 2001–10.

6. The current DSA suggests a similar path for debt dynamics as in last year's DSA, albeit staying at a lower level in the medium term reflecting the more frontloaded drawdown of the China EXIM Bank loans in the past. Tonga continues to be at high risk of external debt distress, with the debt burden peaking early in the projection period and then gradually declining in the absence of any new external borrowing in the short term. However, the slightly lower debt indicators relative to the previous DSA mainly reflect a more front-loaded drawdown of the China EXIM Bank loans and the appreciation of the exchange rate over the last year. The key changes to the macroeconomic assumptions in the DSA are (Box 1): first, it assumes a better non-interest external current account position thanks to better export and tourism prospects, and higher official cash grants.[3] Second, it assumes that going forward the Government will undertake planned revenue reforms that will lead to a greater fiscal consolidation–including a tightening of existing tax concessions and exemptions, and introduction of a presumptive tax regime for SMEs–contributing to a buildup in adequate cash reserves. However, the larger primary surplus in the medium term largely reflects the front-loaded utilization of the China EXIM Bank loans. In the longer term, the fiscal consolidation path is assumed to result in same level of primary surplus (1 percent of GDP on average) as in the previous DSA.

[3] See Box 1 for more detail on the non-interest current account assumptions.

EXTERNAL DSA

Baseline

7. **Under the baseline, the external debt trajectory breaches several policy-dependent thresholds in the short term before receding to lower levels over the medium term (Figure 1a).** The present value (PV) of public and publicly guaranteed (PPG) external debt is above 30 percent of GDP, the indicative threshold level. The PV of PPG external debt is projected to peak at about 33 percent of GDP in the current fiscal year, 3 percentage points above the threshold, and drop below the threshold in FY2014/15, (a few years earlier than suggested in the last DSA) further declining to around 25 percent of GDP by 2016/17.

8. **External debt remains well above the PV of debt-to-export distress threshold over the medium term**. Reflecting Tonga's low exports, the PV of PPG external debt-to-exports ratio would peak at 183 percent in the current fiscal year and remain above the threshold until 2018/19. The PV of debt-to-revenue ratio, however, would stay below the threshold throughout the projection period, thanks to the impact of expected revenue reforms and significant grant inflows in the medium term.

9. **However, Tonga's remittances would help reduce liquidity risks (Figure 1b).** Tonga's remittances have averaged about eight times the export receipts over the past decade, and have provided a stable source of foreign exchange inflows. Relative to remittances and exports, the PV of PPG external debt is projected to stay above the (lower) modified threshold of 80 percent for the next two years, starting to fall below the threshold five years sooner than when remittances are ignored.[4] Therefore, scenario analysis that takes into account remittances has been added, though the risk assessment is still based on the regular thresholds.

10. **Debt service is expected to rise in the medium term on account of expiration of the five-year grace period on the China EXIM Bank loans.** In terms of exports, debt service will stay close to the threshold of 15 percent in the medium term (Figure 1a). Given its narrow export base, Tonga will be unable to expand its exports in the short term, aggravating the possibility of solvency and liquidity risks. However, when remittances are considered with export earnings, external debt service remains well under the (lower) modified threshold of 12 percent throughout the projection period (Figure 1b). Remittances are expected to have bottomed out in US$ terms and will likely stabilize at around 22 percent of GDP over the longer term. As mentioned earlier, this represents a modest recovery from the recent weakness, although remittances (in percent of GDP) would be lower than in the years before the global financial crisis. With regard to revenue, the ratio of debt service-to-revenue remains well below the threshold of 18 percent throughout the projection period albeit with a deterioration in the short to medium term (Figure 1a).

[4] In a recent review (SM/12/10), the IMF Executive Board approved modifications in some of the thresholds, while keeping other thresholds unchanged. The revised thresholds for countries with weak CPIA ratings, such as Tonga, are: (i) 80 percent for PV of PPG external debt-to-exports and remittances (revised from 90 percent), (ii) 12 percent for debt service-to-exports and remittances (revised from 15 percent); and (iii) 18 percent for debt service-to-revenue (previously 25 percent).

Sensitivity Analysis

11. Stress tests show that the external debt position is vulnerable to a significant depreciation or a slowdown in exports. A large one-time depreciation (assumed 30 percent in FY2012/13) would cause the PV of external debt to rise to nearly 45 percent of GDP and remain persistently above the 30 percent threshold in the medium term (Figure 1a). The same depreciation shock also causes the PV of debt-to-revenue ratio to breach its threshold in the short term, and debt service-to-revenue ratio to breach the threshold later in the medium term. The export shock stress test causes the PV of external debt to approach nearly 250 percent of exports and remain above the 100 percent threshold well into the next decade. The debt service-to-exports ratio also rises above the threshold in the medium term. Similar stresses emerge when remittances are considered though debt service does not breach the threshold. (Figure 1b).

12. However, a shock to remittances is found not to be the most extreme one to the external debt position (Table 1b, Bound Test B4). Remittance inflows have been relatively stable; therefore, a shock of the size of one standard deviation is not severe enough to cause a large deterioration in the debt position, compared to the baseline scenario.

13. An alternative scenario based on historical averages provides a more sanguine picture than the baseline.[5] It is mainly because the recent China EXIM Bank loans and donor financed construction projects have caused a larger current account deficit than in the past. If the current account deficit were at historical levels, debt could be reduced faster.

PUBLIC SECTOR DSA

Baseline

14. The public sector DSA reinforces the conclusions of the external DSA.[6] The high level of public sector borrowing for road building and reconstruction of the capital city over the past few years makes the PV of debt rise to about 37 percent of GDP in the current fiscal year before starting to decline under the baseline assumption of fiscal consolidation (Figure 2a).

Alternative Scenario and Stress Tests

15. Stress tests indicate that vulnerabilities remain throughout the projection period, especially to a slowdown in real GDP growth (Figure 2a). The PV of public debt would virtually remain unchanged over most of the medium term and would be around 29 percent of GDP in 2032. Considering remittances yields a similar conclusion (Figure 2b).

16. Two alternative scenarios suggest a very different picture of the debt dynamics over the longer term relative to the baseline. On the one hand, maintaining the primary balance at its 2011 level worsens the debt situation given higher deficit in 2011 related to the utilization of the China EXIM Bank loans. On the other hand, in a historical scenario where the long-term real GDP growth and primary balance are fixed at the average of the past decade (both of which are worse than in the baseline), the debt

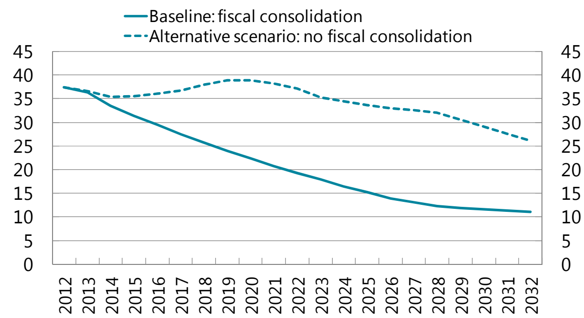
[5] In this alternative scenario, the following four variables are set at their historical levels; (i) real GDP growth; (ii) growth of GDP deflator (in U.S. dollar terms); (iii) non-interest account in percent of GDP; and (iv) non-debt creating flows.

[6] The public sector DSA covers all Government and Government-guaranteed debt. Public enterprises are not included but all external borrowing by them is accounted for as public enterprises do not have access to international capital markets.

position would deteriorate over the medium to long term and remain close to its 2011/12 level over the medium term. The results of these alternative scenarios highlight the importance of achieving primary surpluses of around 1 percent of GDP in the medium to long term, and raising the potential rate of growth in order to ensure a more manageable debt dynamics.

17. A no-reform scenario also highlights the importance of implementing the ambitious fiscal consolidation strategy articulated by the Government. In a scenario of no tax reforms coupled with the status quo in current government expenditure, the authorities will have to borrow domestically to bridge the financing gap. In such a scenario, additional external funding may not be forthcoming due to lack of commitment to reforms. This will cause further stress on the already high public debt level, and will keep the NPV of the debt-to-GDP ratio close to the current level for more than a decade due to the greater debt accumulation as well as lower growth related to a crowding-out of private investment. Debt dynamics would deteriorate in a no-tax-reform scenario even if the authorities attempt to cut capital spending and avoid excessive domestic borrowing, due to the multiplier effects of the lower public investment on economic growth (see figure).

NPV of Public Sector Debt under Different Scenarios
(In percent of GDP)



Source: Fund staff calculations.

STAFF ASSESSMENT

18. Tonga remains at a high risk of external debt distress. While Tonga benefits from high remittance inflows, which clearly reduces its liquidity risks, remittances are insufficient to limit risks from projected debt service payments. Fiscal authorities need to build enough cash balances to ensure servicing of the increased external debt obligations from FY2013/14 without sacrificing essential public services. In the absence of further fiscal consolidation through an increased tax-to-GDP ratio and expenditure prioritization, Tonga risks repayment difficulties. Additionally, the authorities have exposed themselves to a currency mismatch on the government's balance sheet (about 61 percent of the external debt are denominated in Chinese renminbi) which, if left unhedged, could pose an additional risk to Tonga's debt dynamics.

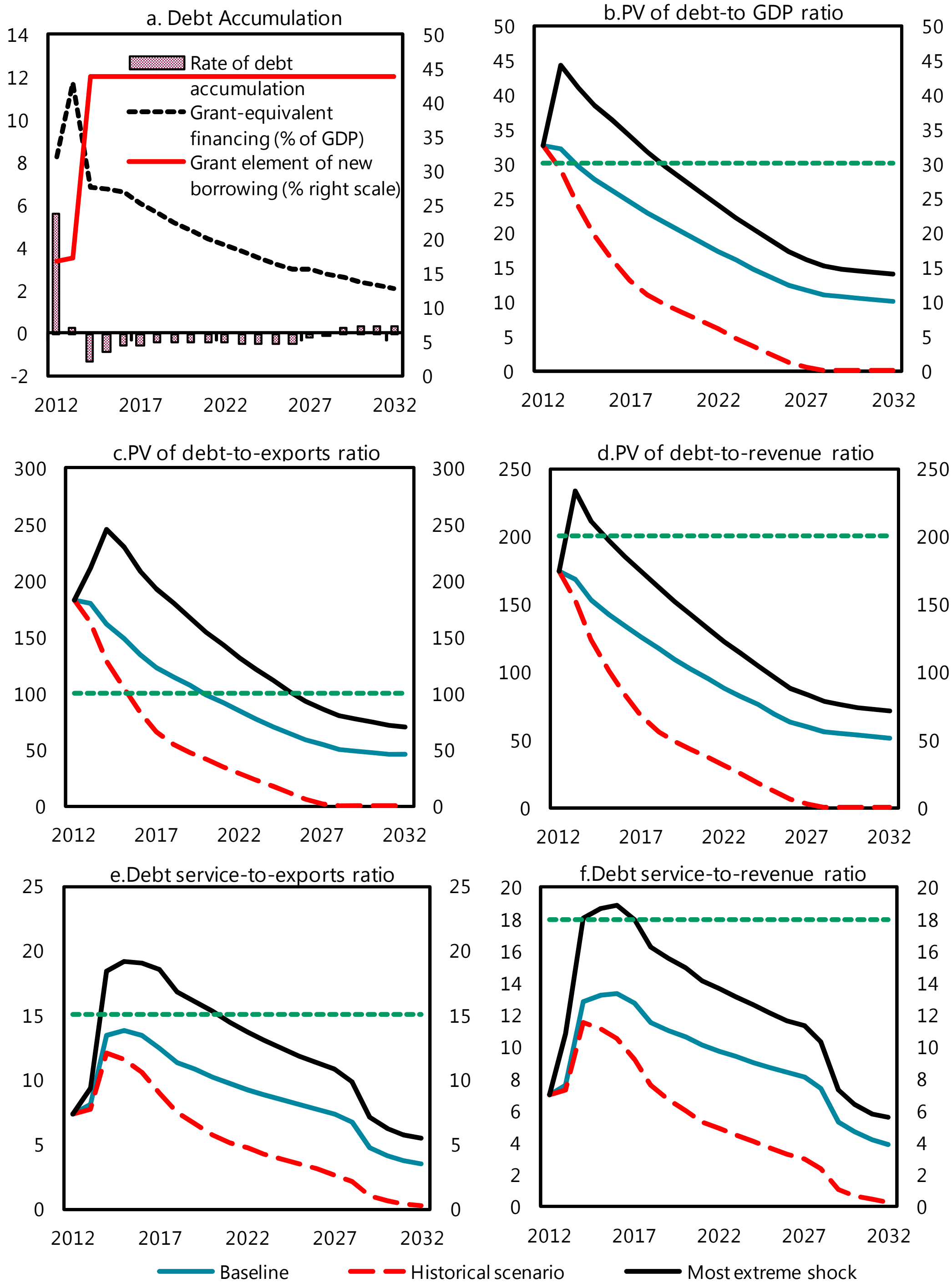
19. Despite being at high risk, Tonga's debt dynamics are manageable. Tonga is able to service its current obligations, and the overall public sector debt situation, while elevated over the short term, shows a downward trend over the longer run assuming that the authorities avoid taking on significant additional new debt in the short to medium term, and undertake reforms aimed at raising potential growth and achieving fiscal consolidation.

20. Key medium-term vulnerabilities include lower GDP growth, major external shocks, currency mismatches and credit risks on government's balance sheet, and new borrowings on less concessional terms. These vulnerabilities underscore the importance of sound macroeconomic policies to improve Tonga's growth potential on a sustained basis, export diversification, and continued efforts in fiscal consolidation. Moreover, utilization of donor grants and avoidance of new borrowing in the next two–three years is necessary to reduce the risk of external debt distress. Sound public debt management, anchored in a medium-term debt management strategy and in line with the medium-term fiscal framework, is also essential to guide future development financing in Tonga. Priority should be given to projects which would help generate higher growth and employment, especially in the context of the Tonga Strategic Development Framework (TSDF), to help build debt service capacity in the future. Consideration should also be given to hedging exchange risks on its foreign liabilities using financial instruments and developing a comprehensive debt management strategy with technical assistance.

Authorities' views

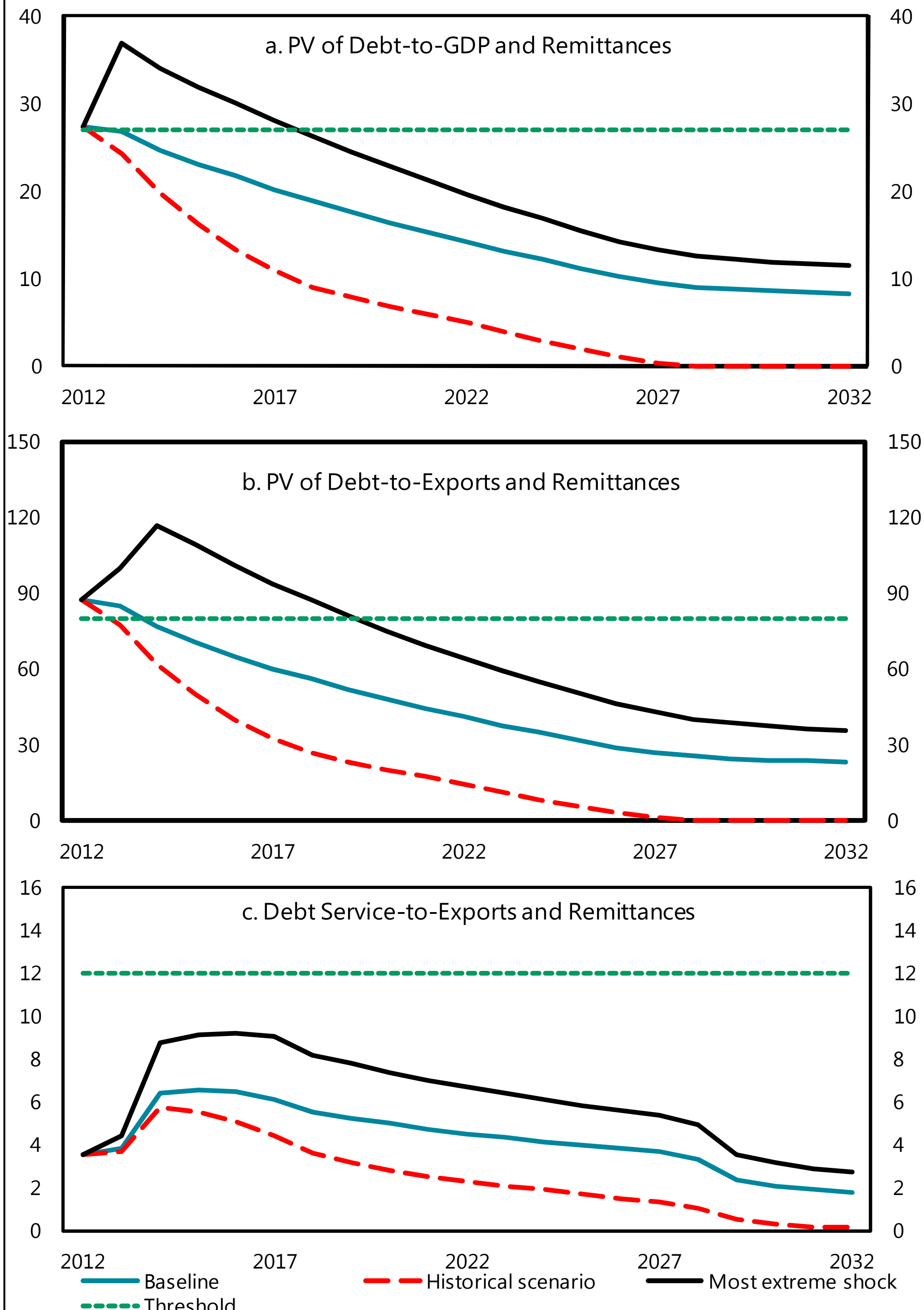
21. The authorities recognize the risks posed by the high debt burden and wanted to bring down the public debt below 40 percent of GDP. The authorities agreed that further fiscal consolidation and no new borrowing will be crucial in reducing the debt burden and creating fiscal space for priority spending. In discussions with staff, the authorities noted that they might seek to reschedule some of its debt obligations to China EXIM bank, and were also concerned about the currency risk posed by the current external debt structure and wanted to learn about possible ways to mitigate it.

Figure 1a. Tonga: Indicators of Public and Publicly Guaranteed External Debt under Alternative Scenarios, 2012–32 1/



Sources: Country authorities; and staff estimates and projections.
1/ The most extreme stress test is the test that yields the highest ratio in 2022. In figure b. it corresponds to a one-time depreciation shock; in c. to a exports shock; in d. to a one-time depreciation shock; in e. to a exports shock; and in figure f. to a one-time depreciation shock. Data refer to last date in fiscal year (e.g., 2012, refers to FY ending June 30, 2012). Revenues are defined inclusive of grants.

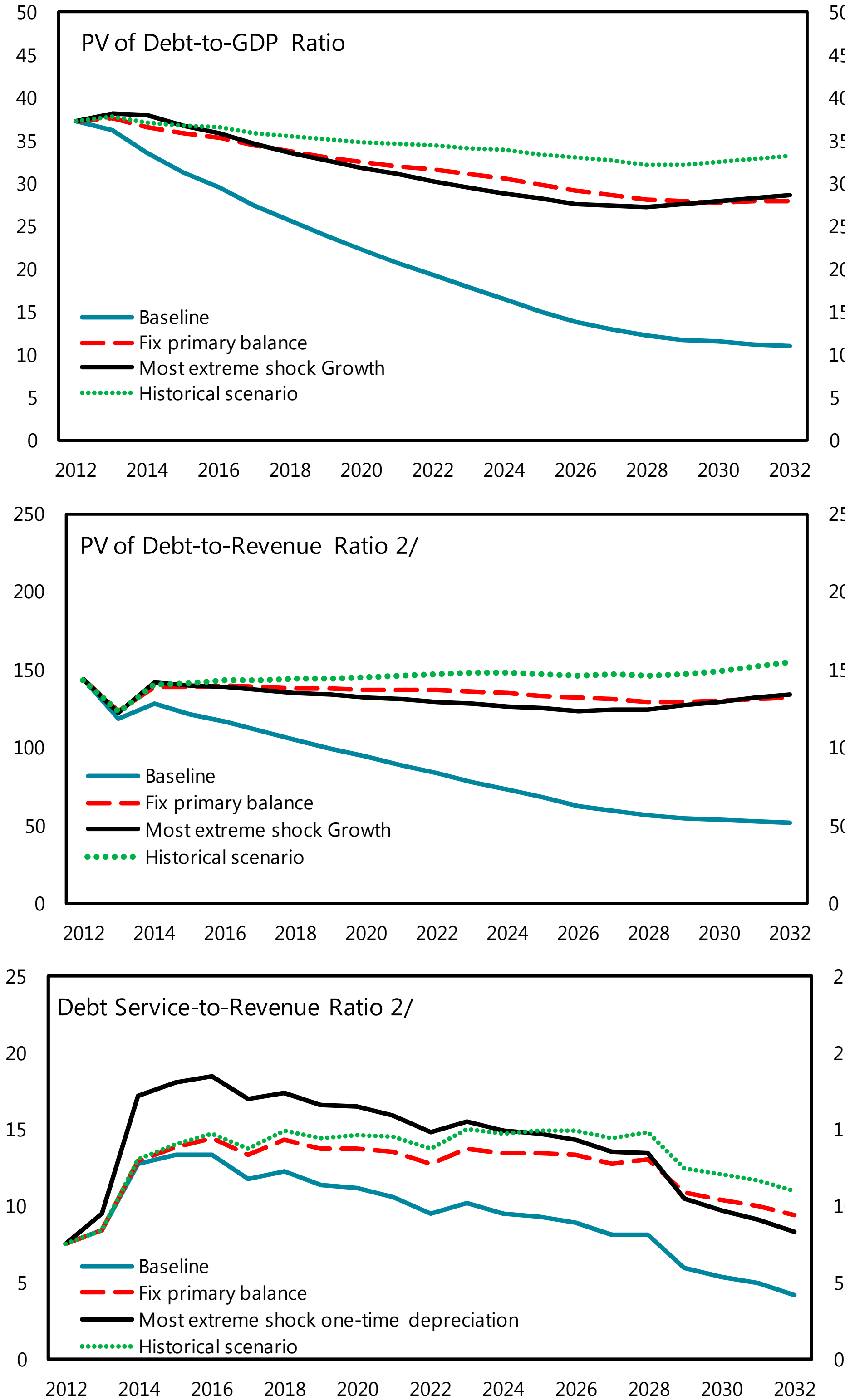
Figure 1b. Tonga: Indicators of Public and Publicly Guaranteed External Debt under Alternatives Scenarios, with Remittances, 2012–32 1/



Sources: Country authorities; and staff estimates and projections.

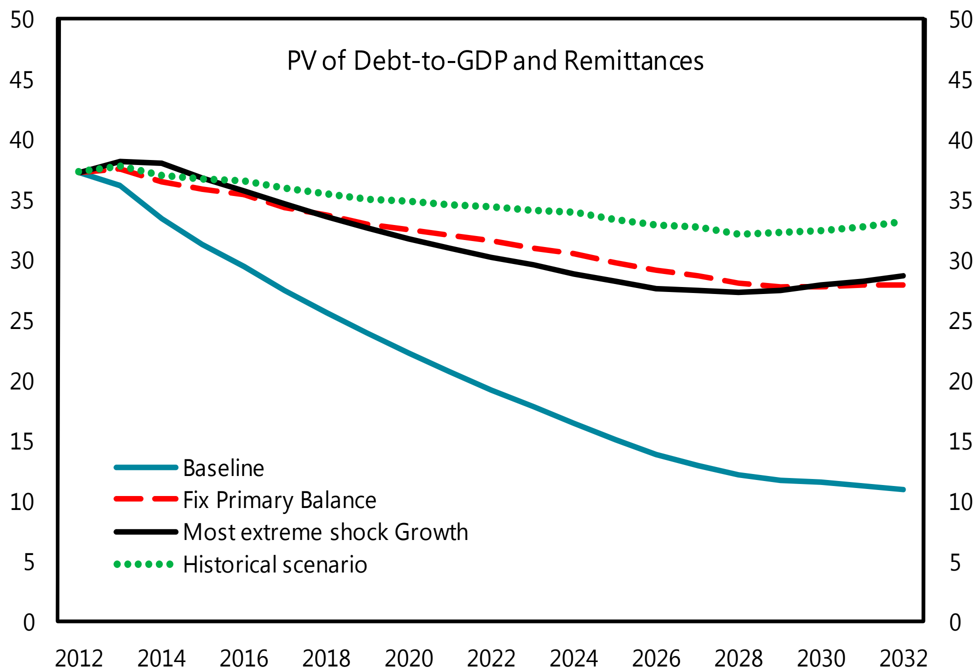
1/ The most extreme stress test is the test that yields the highest ratio in 2022. In figure a, it corresponds to a one-time depreciation shock; in b, to a exports shock; and in c, to a exports shock. Data refer to last date in fiscal year (e.g., 2012, refers to FY ending June 30, 2012).

Figure 2a.Tonga: Indicators of Public Debt Under Alternative Scenarios, 2012–32 1/



Sources: Country authorities; and staff estimates and projections.
1/ The most extreme stress test is the test that yields the highest ratio in 2022. Data refer to last date in fiscal year (e.g., 2012, refers to FY ending June 30, 2012).
2/ Revenues are defined inclusive of grants.

Figure 2b.Tonga: Indicators of Public Debt Under Alternative Scenarios, with Remittances, 2012–32 1/



Sources: Country authorities; and staff estimates and projections.

1/ The most extreme stress test is the test that yields the highest ratio in 2022. Data refer to last date in fiscal year (e.g., 2012, refers to FY ending June 30, 2012).

Table 1a.Tonga: External Debt Sustainability Framework, Baseline Scenario, 2009–32 1/

(In percent of GDP, unless otherwise indicated)

	Actual					Projections									
	2009	2010	2011	Historical Average	Standard Deviation	2012	2013	2014	2015	2016	2017	2012–17 Average	2022	2032	2018–32 Average
External debt (nominal) 1/	31.7	32.8	36.3			40.8	39.4	36.2	34.0	32.4	30.6		23.2	16.5	
Of which public and publicly guranteed (PPG)	31.7	32.8	36.3			40.8	39.4	36.2	34.0	32.4	30.6		23.2	16.5	
Change in external debt	8.8	1.1	3.6			4.4	-1.3	-3.3	-2.2	-1.6	-1.8		-1.4	-0.1	
Identified net debt-creating flows	5.3	-2.6	-4.4			3.8	0.1	1.4	1.0	0.8	0.6		-0.8	-0.4	
Non-interest current account deficit	8.3	6.1	0.9	2.9	4.4	5.6	1.7	3.2	2.8	2.6	2.7		2.9	3.1	3.0
Deficit in balance of goods and services	44.0	36.4	32.8			36.1	34.6	34.4	34.7	34.2	33.8		33.1	31.3	
Exports	13.4	13.1	18.0			17.8	17.9	18.5	18.7	19.5	19.9		20.6	22.3	
Imports	57.4	49.4	50.8			54.0	52.6	52.9	53.4	53.7	53.7		53.7	53.5	
Net current transfers (negative = inflow)	-33.0	-28.5	-28.8	-31.2	2.5	-27.5	-29.9	-28.3	-28.9	-28.7	-28.3		-27.5	-25.7	-26.9
Of which official	-5.3	-3.1	-5.3			-5.7	-7.9	-5.7	-6.0	-5.5	-5.1		-3.3	-1.4	
Other current account flows (negative = net inflow)	-2.7	-1.7	-3.1			-3.0	-3.0	-3.0	-2.9	-2.9	-2.8		-2.7	-2.5	
Net FDI (negative = inflow)	-6.1	-5.3	-1.8	-4.0	2.8	-1.7	-1.7	-1.7	-1.8	-1.8	-2.1		-3.7	-3	-3.5
Endogenous debt dynamics 2/	3.2	-3.4	-3.5			0.0	0.2	-0.1	-0.1	-0.1	-0.1		-0.1	-0.1	
Contribution from nominal interest rate	0.6	0.6	0.6			0.5	0.6	0.6	0.6	0.5	0.5		0.3	0.2	
Contribution from real GDP growth	0.0	-0.5	-0.4			-0.5	-0.5	-0.7	-0.6	-0.6	-0.6		-0.4	-0.3	
Contribution from price and exchange rate changes	2.5	-3.4	-3.7			...	...	...	...	...	...		...	...	
Residual (3-4) 3/	3.6	3.7	8.0			0.6	-1.5	-4.7	-3.2	-2.3	-2.4		-0.5	0.3	
Of which exceptional financing	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
PV of external debt 4/	...	...	28.6			32.7	32.1	29.7	27.9	26.3	24.5		17.3	10.2	
In percent of exports	...	...	158.8			183.4	179.4	161.1	148.8	134.5	123.2		84.2	45.8	
PV of PPG external debt	...	...	28.6			32.7	32.1	29.7	27.9	26.3	24.5		17.3	10.2	
In percent of exports	...	...	159			183	179	161	149	135	123		84	46	
In percent of government revenues	...	...	142			174	169	153	143	134	126		88	52	
Debt service-to-exports ratio (in percent)	5.6	9.8	6.9			7.4	8.1	13.5	13.8	13.4	12.5		9.3	3.5	
PPG debt service-to-exports ratio (in percent)	5.6	9.8	6.9			7.4	8.1	13.5	13.8	13.4	12.5		9.3	3.5	
PPG debt service-to-revenue ratio (in percent)	2.7	6.2	6.1			7.0	7.6	12.8	13.2	13.4	12.8		9.7	3.9	
Total gross financing need (Millions of U.S. dollars)	9.0	7.4	1.6			24.1	6.9	19.8	19.0	18.6	17.6		8.4	5.4	
Non-interest current account deficit that stabilizes debt ratio	-0.6	5.0	-2.7			1.2	3.0	6.4	5.0	4.2	4.5		4.3	3.2	
Key macroeconomic assumptions															
Real GDP growth (in percent)	0.0	1.9	1.4	0.8	3.4	1.6	1.2	1.8	1.8	1.8	1.8	1.7	1.8	1.8	1.8
GDP deflator in US dollar terms (change in percent)	-10.0	12.1	12.8	8.1	8.3	11.8	2.5	1.8	1.7	2.0	2.7	3.8	3.2	3.2	3.2
Effective interest rate (percent) 5/	2.5	2.2	2.0	1.4	0.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.4	1.0	1.3
Growth of exports of G&S (US dollar terms, in percent)	-0.4	11.3	57.4	14.2	23.6	12.6	4.2	6.8	5.0	8.3	6.5	7.2	5.9	5.6	5.8
Growth of imports of G&S (US dollar terms, in percent)	-4.7	-1.6	17.4	10.5	12.9	20.6	1.1	4.2	4.6	4.4	4.5	6.6	5.0	4.9	5.0
Grant element of new public sector borrowing (in percent)	...	...	...	...	...	16.8	17.2	43.9	43.9	43.9	43.9	34.9	43.9	43.9	43.9
Government revenues (excluding grants, in percent of GDP)	27.7	20.7	20.2			18.8	19.0	19.4	19.5	19.6	19.5		19.6	19.7	19.6
Aid flows (in Millions of US dollars) 7/	21.8	22.8	28.5			33.7	56.2	34.2	38.6	41.2	40.0		35.3	32.9	
Of which grants	21.8	22.8	28.5			33.7	56.2	34.2	32.6	31.2	30.0		25.3	17.9	
Of which concessional loans	0.0	0.0	0.0			0.0	0.1	0.1	6.0	10.0	10.0		10.0	15.0	
Grant-equivalent financing (in percent of GDP) 8/	...	...	...			8.3	11.7	6.8	6.8	6.6	6.1		4.1	2.1	3.5
Grant-equivalent financing (in percent of external financing) 8/	...	...	...			61.5	96.0	99.9	91.3	86.4	86.0		84.1	74.5	80.7
Memorandum items:															
Nominal GDP (Millions of US dollars)	314.9	359.8	411.3			466.9	484.5	502.1	520.0	540.1	564.6		721.6	1178.6	
Nominal dollar GDP growth	-10.0	14.3	14.3			13.5	3.8	3.6	3.6	3.9	4.5	5.5	5.0	5.0	5.0
PV of PPG external debt (in Millions of US dollars)			127.6			150.8	152.1	145.8	141.6	138.8	135.9		122.9	118.2	
(PVt-PVt-1)/GDPt-1 (in percent)						5.6	0.3	-1.3	-0.8	-0.5	-0.5	0.5	-0.4	0.3	-0.2
Gross remittances (Millions of US dollars)	84.0	82.0	87.5			91.9	96.5	102.3	107.6	112.8	118.1		157.0	257.2	
PV of PPG external debt (in percent of GDP + remittances)	...	...	23.6			27.3	26.8	24.7	23.1	21.7	20.3		14.2	8.4	
PV of PPG external debt (in percent of exports + remittances)	...	...	72.8			87.2	84.9	76.6	70.7	65.0	60.0		40.9	23.1	
Debt service of PPG external debt (in percent of exports + remittances)	...	...	3.1			3.5	3.8	6.4	6.5	6.5	6.1		4.5	1.8	

Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt. Data refer to last date in fiscal year (e.g., 2012 refers to FY ending June 30, 2012).

2/ Derived as [r - g - ρ(1+g)]/(1+g+ρ+gρ) times previous period debt ratio, with r = nominal interest rate; g = real GDP growth rate, and ρ = growth rate of GDP deflator in U.S. dollar terms.

3/ Includes exceptional financing (i.e., changes in arrears and debt relief); changes in gross foreign assets; and valuation adjustments. For projections also includes contribution from price and exchange rate changes.

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

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

6/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.

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

8/ Grant-equivalent financing includes grants provided directly to the government and through new borrowing (difference between the face value and the PV of new debt).

Table 1b.Tonga: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2012–32 1/

(In percent)

					Projections							
	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2032**
PV of debt-to GDP ratio												
Baseline	33	32	30	28	26	24	23	21	20	19	**17**	10
A. Alternative Scenarios												
A1. Key variables at their historical averages in 2012-2032 2/	33	29	24	20	16	13	11	10	8	7	**6**	0
A2. New public sector loans on less favorable terms in 2012-2032 3/	33	32	29	28	27	26	25	24	23	22	**21**	18
B. Bound Tests												
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	33	33	32	30	28	26	24	23	21	20	**18**	11
B2. Export value growth at historical average minus one standard deviation in 2013-2014 4/	33	33	34	32	30	28	26	25	23	22	**20**	12
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	33	32	30	29	27	25	24	22	21	19	**18**	10
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014	33	33	30	28	27	25	24	22	21	19	**18**	10
B5. Combination of B1-B4 using one-half standard deviation shocks	33	31	29	27	25	24	22	21	19	18	**17**	10
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 6/	33	44	41	38	36	34	32	30	28	26	**24**	14
PV of debt-to-exports ratio												
Baseline	183	179	161	149	135	123	115	107	99	91	**84**	46
A. Alternative Scenarios												
A1. Key variables at their historical averages in 2012-2032 2/	183	163	129	105	83	66	55	48	41	35	**29**	0
A2. New public sector loans on less favorable terms in 2012-2032 3/	183	176	158	148	137	130	124	119	113	108	**103**	80
B. Bound Tests												
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	183	175	157	145	131	121	113	105	97	90	**83**	45
B2. Export value growth at historical average minus one standard deviation in 2013-2014 4/	183	211	246	229	209	192	179	167	155	143	**132**	70
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	183	175	157	145	131	121	113	105	97	90	**83**	45
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014	183	181	164	152	137	126	118	110	101	94	**86**	47
B5. Combination of B1-B4 using one-half standard deviation shocks	183	177	162	149	135	124	116	108	99	92	**85**	46
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 6/	183	175	157	145	131	121	113	105	97	90	**83**	45
PV of debt-to-revenue ratio												
Baseline	174	169	153	143	134	126	118	110	102	95	**88**	52
A. Alternative Scenarios												
A1. Key variables at their historical averages in 2012-2032 2/	174	154	123	101	83	68	56	49	43	37	**31**	0
A2. New public sector loans on less favorable terms in 2012-2032 3/	174	166	150	142	137	132	127	122	117	113	**108**	90
B. Bound Tests												
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	174	171	162	151	142	134	125	117	109	102	**94**	55
B2. Export value growth at historical average minus one standard deviation in 2013-2014 4/	174	173	173	162	154	145	136	127	118	110	**103**	59
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	174	170	157	146	138	129	121	113	105	98	**91**	53
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014	174	171	156	145	137	129	121	113	105	98	**91**	53
B5. Combination of B1-B4 using one-half standard deviation shocks	174	165	147	137	129	121	113	106	98	92	**85**	50
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 6/	174	233	211	197	185	174	163	152	142	132	**123**	72

Table 1b.Tonga: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2012–32 (continued)

(In percent)

						Projections						
	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2032**
Debt service-to-exports ratio												
Baseline	7	8	13	14	13	13	11	11	10	10	**9**	3
A. Alternative Scenarios												
A1. Key variables at their historical averages in 2012-2032 2/	7	8	12	12	11	9	7	7	6	5	**5**	0
A2. New public sector loans on less favorable terms in 2012-2032 3/	7	8	11	11	11	11	10	10	9	9	**8**	4
B. Bound Tests												
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	7	8	13	14	13	12	11	11	10	10	**9**	3
B2. Export value growth at historical average minus one standard deviation in 2013-2014 4/	7	9	18	19	19	19	17	16	15	14	**14**	5
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	7	8	13	14	13	12	11	11	10	10	**9**	3
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 5/	7	8	14	14	14	13	12	11	10	10	**9**	4
B5. Combination of B1-B4 using one-half standard deviation shocks	7	8	14	15	14	13	12	11	11	10	**10**	4
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 6/	7	8	13	14	13	12	11	11	10	10	**9**	3
Debt service-to-revenue ratio												
Baseline	7	8	13	13	13	13	12	11	11	10	**10**	4
A. Alternative Scenarios												
A1. Key variables at their historical averages in 2012-2032 2/	7	7	12	11	11	9	8	7	6	5	**5**	0
A2. New public sector loans on less favorable terms in 2012-2032 3/	7	8	11	11	11	11	10	10	10	9	**9**	4
B. Bound Tests												
B1. Real GDP growth at historical average minus one standard deviation in 2013-2014	7	8	14	14	14	14	13	12	11	11	**10**	4
B2. Export value growth at historical average minus one standard deviation in 2013-2014 4/	7	8	13	14	14	14	13	12	12	11	**11**	5
B3. US dollar GDP deflator at historical average minus one standard deviation in 2013-2014	7	8	13	14	14	13	12	12	11	11	**10**	4
B4. Net non-debt creating flows at historical average minus one standard deviation in 2013-2014 5/	7	8	13	13	14	13	12	11	11	10	**10**	4
B5. Combination of B1-B4 using one-half standard deviation shocks	7	8	13	13	13	13	11	11	10	10	**10**	4
B6. One-time 30 percent nominal depreciation relative to the baseline in 2013 6/	7	11	18	19	19	18	16	16	15	14	**14**	6
Memorandum item:												
Grant element assumed on residual financing (i.e., financing required above baseline) 7/	37	37	37	37	37	37	37	37	37	37	**37**	37

Sources: Country authorities; and staff estimates and projections.

1/ Data refer to last date in fiscal year (e.g., 2012 refers to FY ending June 30, 2012).

2/ 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.

3/ 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.

4/ 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).

5/ Includes official and private transfers and FDI.

6/ Depreciation is defined as percentage decline in dollar/local currency rate, such that it never exceeds 100 percent.

7/ Applies to all stress scenarios except for A2 (less favorable financing) in which the terms on all new financing are as specified in footnote 3.

Table 2a.Tonga: Public Sector Debt Sustainability Framework, Baseline Scenario, 2009–32 1/

(In percent of GDP, unless otherwise indicated)

	Actual					Projections									
	2009	2010	2011	Historical Average	Standard Deviation	2012	2013	2014	2015	2016	2017	2012-17 Average	2022	2032	2018-32 Average
Public sector debt 2/	39.3	41.2	41.8			45.4	43.6	40.0	37.5	35.7	33.6		25.2	17.3	
Of which foreign-currency denominated	31.7	32.8	36.3			40.8	39.4	36.2	34.0	32.4	30.6		23.2	16.5	
Change in public sector debt	8.0	1.9	0.7			3.5	-1.8	-3.6	-2.5	-1.8	-2.1		-1.5	-0.2	
Identified debt-creating flows	2.6	3.0	-1.3			0.7	-2.2	-2.7	-2.6	-2.4	-2.4		-2.4	-1.3	
Primary deficit	-0.6	5.2	5.1	0.6	2.8	1.9	-1.5	-1.9	-1.8	-1.5	-1.3	-1.0	-1.5	-0.7	-1.0
Revenue and grants	34.6	27.0	27.1			26.0	30.6	26.2	25.8	25.4	24.8		23.1	21.2	
of which: grants	6.9	6.3	6.9			7.2	11.6	6.8	6.3	5.8	5.3		3.5	1.5	
Primary (noninterest) expenditure	34.0	32.2	32.2			27.9	29.1	24.4	24.0	23.8	23.5		21.6	20.5	
Automatic debt dynamics	3.2	-2.2	-6.5			-0.6	-0.5	-0.8	-0.8	-0.9	-1.1		-0.9	-0.7	
Contribution from interest rate/growth differential	0.4	-0.5	-0.7			-0.6	-0.2	-0.4	-0.5	-0.5	-0.5		-0.4	-0.3	
of which: contribution from average real interest rate	0.4	0.2	-0.1			0.1	0.3	0.3	0.2	0.2	0.1		0.1	0.0	
of which: contribution from real GDP growth	0.0	-0.7	-0.6			-0.6	-0.5	-0.8	-0.7	-0.7	-0.6		-0.5	-0.3	
Contribution from real exchange rate depreciation	2.8	-1.7	-5.8			0.0	-0.3	-0.4	-0.3	-0.4	-0.6		...	...	
Other identified debt-creating flows	0.0	0.0	0.1			-0.6	-0.2	0.0	0.0	0.0	0.0		0.0	0.0	
Privatization receipts (negative)	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recognition of implicit or contingent liabilities	0.0	0.0	0.1			-0.6	-0.2	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	5.4	-1.1	2.0			2.8	0.4	-0.9	0.1	0.6	0.4		0.8	1.1	
Other Sustainability Indicators															
PV of public sector debt	...	...	34.1			37.3	36.3	33.5	31.4	29.5	27.5		19.3	11.1	
Of which foreign-currency denominated	...	...	28.6			32.7	32.1	29.7	27.9	26.3	24.5		17.3	10.2	
Of which external	...	...	28.6			32.7	32.1	29.7	27.9	26.3	24.5		17.3	10.2	
PV of contingent liabilities (not included in public sector debt)	...	...	...			...	...	...	...	...	...		...	...	
Gross financing need 3/	0.3	6.7	8.0			3.8	1.1	1.5	1.7	1.9	1.6		0.7	0.2	
PV of public sector debt-to-revenue and grants ratio (in percent)	...	...	125.7			143.6	118.4	127.9	121.6	116.3	110.7		83.5	52.1	
PV of public sector debt-to-revenue ratio (in percent)	...	...	168.9			198.8	190.6	172.7	160.7	150.5	140.8		98.5	56.2	
Of which external 4/	...	...	141.6			174.2	168.9	153.1	142.8	134.1	125.6		88.5	51.9	
Debt service-to-revenue and grants ratio (in percent) 5/	2.6	5.4	10.7			7.5	8.4	12.8	13.3	13.4	11.8		9.5	4.2	
Debt service-to-revenue ratio (in percent) 5/	3.2	7.1	14.4			10.4	13.5	17.3	17.6	17.3	15.0		11.2	4.6	
Primary deficit that stabilizes the debt-to-GDP ratio	-8.6	3.3	4.4			-1.7	0.3	1.7	0.7	0.3	0.8		0.1	-0.5	
Key macroeconomic and fiscal assumptions															
Real GDP growth (in percent)	0.0	1.9	1.4	0.8	3.4	1.6	1.2	1.8	1.8	1.8	1.8	1.7	1.8	1.8	1.8
Average nominal interest rate on forex debt (in percent)	2.5	2.2	2.0	1.4	0.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.4	1.0	1.3
Average real interest rate on domestic debt (in percent)	2.8	-1.2	-3.2	-4.2	4.4	0.9	-0.5	-0.7	-0.6	-0.6	-0.6	-0.3	-0.6	-0.6	-0.6
Real exchange rate depreciation (in percent, + indicates depreciation)	12.0	-5.6	-17.8	-6.5	7.5	-0.1	...	...	...	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	-1.2	3.7	7.1	7.2	5.2	4.3	6.4	6.8	6.7	6.7	6.8	6.3	6.8	6.8	6.8
Growth of real primary spending (deflated by GDP deflator, in percent)	0.4	0.0	0.0	0.1	0.2	-0.1	0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grant element of new external borrowing (in percent)	...	...	...	...	...	16.8	17.2	43.9	43.9	43.9	43.9	34.9	43.9	43.9	...

Sources: Country authorities; and staff estimates and projections.

1/ Data refer to last date in fiscal year (e.g., 2012 refers to FY ending June 30, 2012).

2/ Data covers general government and nonfinancial public enterprises. Gross debt is used.

3/ 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.

4/ Revenues excluding grants.

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

6/ Historical averages and standard deviations are generally derived over the past 10 years, subject to data availability.

Table 2b.Tonga: Sensitivity Analysis for Key Indicators of Public Debt 2012–32 1/
(In percent)

				Projections				
	2012	2013	2014	2015	2016	2017	2022	2032
PV of Debt-to-GDP Ratio								
Baseline	37	36	34	31	29	27	**19**	11
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	37	38	37	37	37	36	**34**	33
A2. Primary balance is unchanged from 2011	37	38	37	36	35	34	**32**	28
A3. Permanently lower GDP growth 2/	37	37	34	33	31	30	**26**	31
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	37	38	38	37	36	35	**30**	29
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	37	39	40	38	36	34	**25**	15
B3. Combination of B1-B2 using one half standard deviation shocks	37	39	40	38	37	35	**29**	23
B4. One-time 30 percent real depreciation in 2013	37	51	48	46	43	40	**29**	17
B5. 10 percent of GDP increase in other debt-creating flows in 2013	37	43	40	38	36	34	**24**	15
PV of Debt-to-Revenue Ratio 3/								
Baseline	144	118	128	122	116	111	**84**	52
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	144	123	141	142	143	143	**147**	154
A2. Primary balance is unchanged from 2011	144	123	139	139	140	139	**137**	132
A3. Permanently lower GDP growth 2/	144	119	130	126	123	120	**111**	146
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	144	123	142	140	139	137	**130**	134
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	144	129	153	147	142	136	**107**	71
B3. Combination of B1-B2 using one half standard deviation shocks	144	128	151	148	144	141	**124**	110
B4. One-time 30 percent real depreciation in 2013	144	168	185	177	169	162	**125**	81
B5. 10 percent of GDP increase in other debt-creating flows in 2013	144	140	153	147	141	135	**106**	70

Table 2b.Tonga: Sensitivity Analysis for Key Indicators of Public Debt 2012-2032 1/ (continued)

(In percent)

	Projections							
	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2022**	**2032**
Debt Service-to-Revenue Ratio 3/								
Baseline	8	8	13	13	13	12	**10**	4
A. Alternative scenarios								
A1. Real GDP growth and primary balance are at historical averages	8	8	13	14	15	14	**14**	11
A2. Primary balance is unchanged from 2011	8	8	13	14	14	13	**13**	9
A3. Permanently lower GDP growth 2/	8	8	13	14	14	12	**11**	10
B. Bound tests								
B1. Real GDP growth is at historical average minus one standard deviations in 2012-2013	8	9	14	14	15	13	**13**	10
B2. Primary balance is at historical average minus one standard deviations in 2012-2013	8	8	13	14	15	14	**11**	6
B3. Combination of B1-B2 using one half standard deviation shocks	8	9	14	15	15	14	**12**	8
B4. One-time 30 percent real depreciation in 2013	8	10	17	18	18	17	**15**	8
B5. 10 percent of GDP increase in other debt-creating flows in 2013	8	8	13	15	16	14	**11**	6

Sources: Country authorities; and staff estimates and projections.

1/ Data refer to last date in fiscal year (e.g., 2012 refers to FY ending June 30, 2012).

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

3/ Revenues are defined inclusive of grants.