Public Disclosure Authorized

Public Disclosure Authorized

WORLD BANK GROUP

October 2022

DEMOCRATIC REPUBLIC OF TIMOR LESTE

JOINT WORLD BANK-IMF DEBT SUSTAINABILITY ANALYSIS

Approved by:

Hassan Zaman and Marcello Estevão (IDA); and Ranil Salgado and Eugenio Cerutti (IMF)

Prepared by the staff of the International Development Association (IDA) and the International Monetary Fund (IMF).

DEMOCRATIC REPUBLIC OF TIMOR LESTE: JOINT BANK-FUND DEBT SUSTAINABILITY ANALYSIS	
Risk of external debt distress	Moderate
Overall risk of debt distress	Moderate
Granularity in the risk rating	Limited space to absorb shocks
Application of judgment	Yes. Petroleum sovereign wealth fund is a strong mitigating factor for the country's debt sustainability in the next 10 years.

Timor-Leste remains at moderate risk of overall and external debt distress, with application of judgement, unchanged from the 2021 Article IV debt sustainability analysis. The present value of external debt-to-exports ratio and the debt service-to-exports ratio under the baseline are projected to breach their respective indicative thresholds in the medium-term, triggering a high-risk mechanical rating for external and overall debt. In the medium-term, however, the Petroleum Fund is large relative to projected debt levels and debt service requirements, and its assets are liquid and accessible, thus acting as a mitigating factor, prompting the use of judgement to upgrade the risk assessment. Long-term risks to debt sustainability have increased compared to the 2021 Article IV debt sustainability analysis, reflecting higher projected fiscal deficits and a faster depletion of the Petroleum Fund. Staff projects that the Petroleum Fund, which is the main source of funding of fiscal deficits, will be depleted in 2038, triggering a breach of all debt indicators towards the end of the twenty-year projection horizon. However, there is time to adopt necessary policy adjustments—staff's alternative scenario illustrates how fiscal consolidation and structural reforms can ensure both fiscal and debt sustainability in the long term.

PUBLIC DEBT COVERAGE

1. The coverage of public sector debt used in this report is public and publicly guaranteed debt. Timor-Leste's public and publicly guaranteed external debt is held entirely by the central government. The coverage of public sector debt includes state-owned enterprise debt. Under the Public Debt Regime Law, state-owned enterprises are not allowed to borrow for themselves and can only obtain financing via on-lending from the Ministry of Finance.[1] The public sector only borrows externally, given a lack of domestic financing sources. The debt definition of the debt sustainability analysis is currency-based, and the legal tender is the U.S. dollar.

Text Table 1. Timor-Leste's Coverage of Public Debt

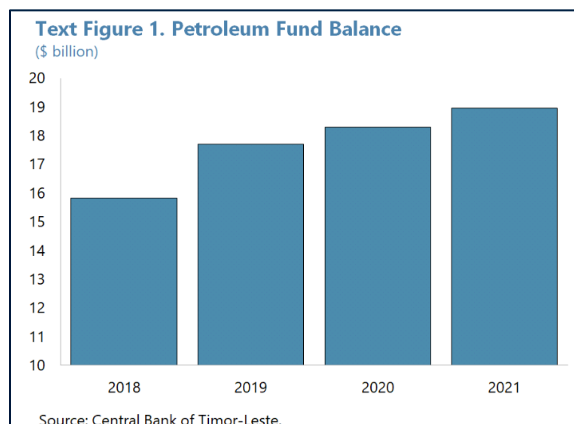
	Subsectors of the public sector	Check box
1	Central government	X
2	State and local government	
3	Other elements in the general government	
4	o/w: Social security fund	
5	o/w: Extra budgetary funds (EBFs)	
6	Guarantees (to other entities in the public and private sector, including to SOEs)	X
7	Central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

BACKGROUND ON DEBT

2. Timor-Leste's net public asset position is currently strong due to oil-related savings accumulated in Petroleum Fund assets and low levels of public debt.

- The Petroleum Fund balance at end-2021 stood at $18.9 billion (1,127 percent of non-oil GDP), covering 240 months of prospective goods and services imports. The Petroleum Fund balance increased by $0.7 billion in 2021 as investment income ($1.1 billion) and oil revenues ($0.7 billion) more than compensated for transfers to the budget ($1.2 billion).[2] The average nominal return on Petroleum Fund assets during 2017–21 was 7.4 percent.

Text Figure 1. Petroleum Fund Balance
($ billion)



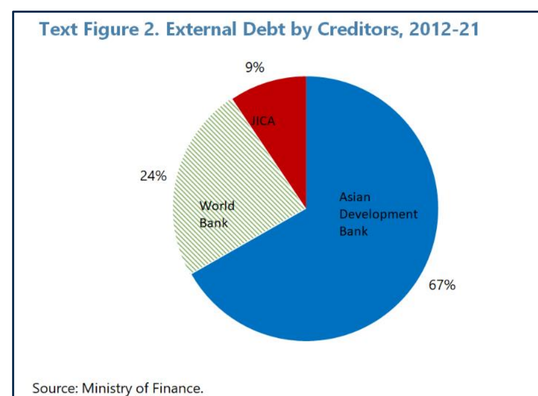
Source: Central Bank of Timor-Leste.

[1]According to the Public Debt Regime Law No. 13/2011, the Government of Timor-Leste, in particular the Ministry of Finance, is the only entity that may engage in borrowing, motivated by financing needs generated by the need to execute the State's priority tasks relating to the building of strategic infrastructure for the country's development.

[2] The Petroleum Fund constitutes the main financing source for the budget. The amount is guided by the estimated sustainable income, which is set at 3 percent of total petroleum wealth (sum of the Petroleum Fund balance and the net present value of expected future petroleum revenue). Withdrawals in excess of the estimated sustainable income can be made with the approval of Parliament. According to the Constitution, the President has the right to veto a budget that has been approved by the Parliament.

- The fiscal deficit increased from 26 percent of non-oil GDP in 2020 to 43 percent in 2021 due to significantly higher recurrent spending and lower revenues. Outstanding public external debt increased by $18 million and reached 14 percent of non-oil GDP ($237 million) in 2021. External loans signed since 2012 to 2021 totaled $708 million—all consisting of concessional loans from the Asian Development Bank, the World Bank Group, and Japan International Cooperation Agency to finance mainly road infrastructure projects, water supply and sanitation, and for development of the airport. The Asian Development Bank has the largest share of total external debt, comprising nearly 67 percent of total external debt agreements till date. The average maturity of the existing loans is 25.5 years, with grace periods ranging from 5 to 10 years. Debt service payments on existing debt averages $20 million (close to 1.2 percent of non-oil GDP) per annum in the medium term, and declines thereafter.

Text Figure 2. External Debt by Creditors, 2012-21



Source: Ministry of Finance.

BACKGROUND ON MACRO FORECASTS

3. Timor-Leste faces large and pressing development challenges. Despite notable socio-economic achievements since gaining independence in 2002, Timor-Leste remains a fragile post-conflict nation with weak human and institutional capacity, large infrastructure gaps, and high dependence on petroleum revenues. GNI per capita in current USD in 2020 was $1,990, much lower than the threshold of at least $4,096 to be an upper-middle income country. While poverty rate (at the national poverty line) declined from 50.4 percent in 2007 to 41.8 percent in 2014, it remains among the highest in the region.

4. This debt sustainability analysis is based on the macroeconomic projections underlying the 2022 Article IV consultation. To illustrate the impact of different policy options on debt sustainability, two scenarios—baseline and reform—are considered.

Text Table 2. Macroeconomic and Fiscal Assumptions: Current and 2021 Article IV

	Current (2022 Article IV)				Previous (2021 Article IV)			
	2021	2022	2023-27	2028-42	2020	2021	2022-26	2027-41
Real non-oil GDP growth (in percent)	1.5	3.3	2.9	3.0	-7.6	1.8	2.8	3.0
CPI inflation	5.3	7.0	2.5	2.0	1.2	2.0	2.3	2.0
Revenue (excl. grants, percent of non-oil GDP)	42.6	40.4	30.0	15.3	46.4	47.1	39.3	22.1
Government expenditure (percent of non-oil GDP)	85.8	95.3	82.9	50.8	72.5	93.1	81.6	53.2
Recurrent	77.5	79.0	59.0	43.7	62.3	74.6	57.4	42.5
Capital	8.3	16.3	23.9	7.1	10.2	18.6	24.2	10.8
Net lending/ borrowing (percent of non-oil GDP)	-43.2	-54.9	-52.9	-35.5	-26.1	-46.1	-42.3	-31.2
Net incurrence of liabilities (percent of non-oil GDP)	1.1	2.0	2.1	10.5	1.6	3.8	2.8	0.5
Petroleum Fund balance ($ million)	18,949	17,446	14,771	4,707	18,991	18,785	17,553	10,415
Current account balance (percent of non-oil GDP)	2.5	-15.3	-41.4	-39.9	-19.3	-31.6	-39.4	-32.2

Text Table 3. Main Macroeconomic Projections, 2018-27

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
			Est.	Proj.	Proj.	Proj.	Proj.	Proj.	Proj.	Proj.
Real sector										
Nominal Non-oil GDP (in millions of U.S. dollars)	1,584	1,704	1,595	1,681	1,858	2,043	2,190	2,332	2,484	2,661
Real Non-oil GDP growth (percent change)	-0.7	2.1	-8.6	1.5	3.3	4.2	2.6	2.4	2.4	3.0
CPI (percent change, period average)	2.3	0.9	0.5	3.8	7.0	4.0	2.5	2.0	2.0	2.0
Non-oil GDP deflator growth (percent change)	-1.3	5.4	2.4	3.8	7.0	5.5	4.5	4.0	4.0	4.0
Central government operations	(In percent of Non-oil GDP)									
Revenue	57.6	51.6	57.0	54.1	51.9	46.9	43.7	41.1	38.8	35.6
Domestic revenue	12.0	11.0	11.4	9.6	9.6	9.6	9.6	9.7	9.7	9.7
Estimated Sustainable Income (ESI)	34.8	31.0	34.1	33.0	30.8	25.8	22.6	20.0	17.7	15.7
Grants	10.8	9.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	10.2
Expenditure	84.0	81.9	82.6	97.2	106.8	114.4	105.9	94.3	79.7	76.1
Recurrent expenditure	51.8	54.0	61.1	77.5	79.0	62.4	60.5	58.9	57.5	55.7
Capital expenditure	21.4	18.4	10.0	8.3	16.3	40.6	33.9	24.0	10.7	10.2
Donor project	10.8	9.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	10.2
Net lending/borrowing	-26.4	-30.3	-25.6	-43.2	-54.9	-67.6	-62.2	-53.2	-40.9	-40.5
	(In millions of U.S. dollars, unless otherwise indicated)									
Balance of payments										
Current account balance	-191	133	-308	43	-284	-821	-942	-984	-996	-1,103
Trade balance	-589	-566	-510	-569	-647	-726	-758	-777	-789	-835
Exports	25	26	17	32	35	39	44	50	57	65
Imports	613	592	527	601	682	765	802	827	846	900
Services (net)	-349	-357	-275	-244	-279	-316	-327	-321	-294	-319
Primary Income 1/	843	1,126	620	925	718	305	234	211	190	173
Secondary Income	-96	-70	-143	-70	-77	-84	-91	-96	-103	-122
Balance of payments	(In percent of Non-oil GDP, unless otherwise indicated)									
Current account balance	-12.1	7.8	-19.3	2.5	-15.3	-40.2	-43.0	-42.2	-40.1	-41.5
Trade balance	-37.2	-33.2	-32.0	-33.9	-34.8	-35.6	-34.6	-33.3	-31.8	-31.4
Exports	1.6	1.5	1.1	1.9	1.9	1.9	2.0	2.1	2.3	2.4
Imports	38.7	34.8	33.1	35.8	36.7	37.4	36.6	35.5	34.0	33.8
Services (net)	-22.1	-20.9	-17.3	-14.5	-15.0	-15.5	-14.9	-13.8	-11.9	-12.0
Primary Income 1/	53.2	66.1	38.9	55.0	38.7	15.0	10.7	9.0	7.6	6.5
Secondary Income	-6.1	-4.1	-9.0	-4.1	-4.1	-4.1	-4.1	-4.1	-4.1	-4.6
Memorandum items										
Public external debt (In millions of U.S. dollars)	145	193	218	237	274	321	373	419	469	521
(In percent of Non-oil GDP)	9.1	11.3	13.7	14.1	14.7	15.7	17.0	18.0	18.9	19.6
Petroleum Fund balance (in millions of U.S. dollars) 2/	15,803	17,692	18,289	18,949	17,446	16,504	15,525	14,640	13,967	13,222
(In months of imports)	179	204	261	262	206	169	152	140	133	117
(In percent of Non-oil GDP)	998	1038	1146	1127	939	808	709	628	562	497
Crude oil prices (U.S. dollars per barrel, WEO) 3/	68	61	41	69	106	95	84	77	72	72

Sources: Timor-Leste authorities; and IMF staff estimates and projections.

1/ Oil sector activities are considered non-resident activities in balance of payments statistics.

2/ Closing balance.

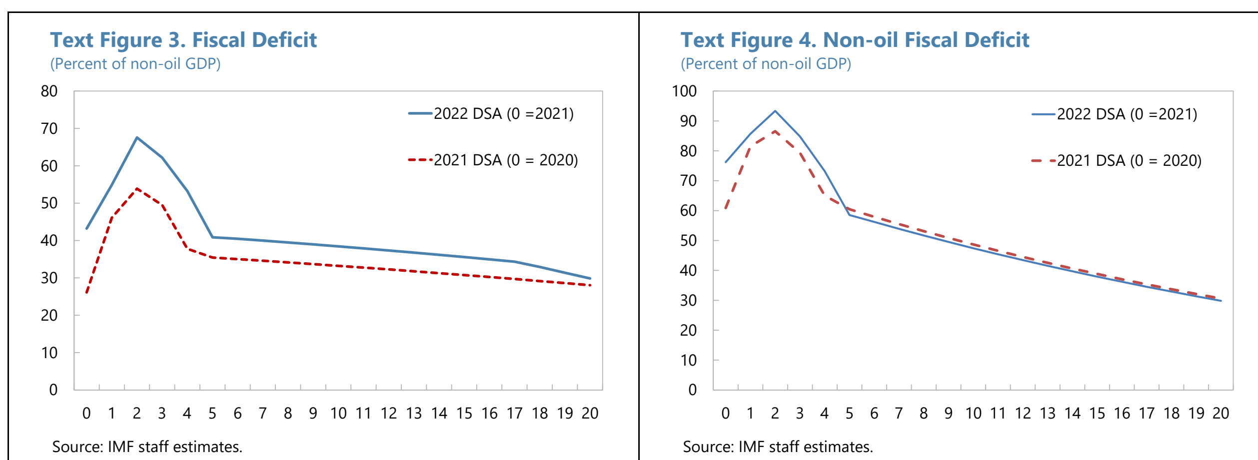
3/ Simple average of UK Brent, Dubai, and WTI crude oil prices; April 2021 WEO assumptions.

5. **The macro-fiscal outlook has worsened significantly compared to the 2021 Article IV debt sustainability analysis**. The following revisions were made to reflect recent developments and the latest data. First, the Petroleum Fund's outstanding balance at end-2020 was lowered by about USD$701 million (close to 4 percent of the Petroleum Fund balance) as the investment in the Greater Sunrise oil fields by

Timor-Gap (the national oil company) financed by the Petroleum Fund was written down to zero.[3] Second, the 2022 budget envisages much larger fiscal deficits in the medium term in comparison to the previous debt sustainability analysis, mainly financed by withdrawals from the Petroleum Fund. Moreover, in May 2022, the government approved the creation of the National Liberation Combatants Fund worth $1 billion with a transfer from the Petroleum Fund to finance support programs for war veterans.

MACROECONOMIC ASSUMPTIONS:

- **Real non-oil GDP** is projected to grow by 3.3 percent in 2022, underpinned by a significant increase in public spending, and rebounding private consumption at the back of steady progress with vaccination and reopening of the borders. Growth is projected to hover in the range of 2.4–4.2 percent in the medium term (2022–27) mainly driven by the changes in government spending. Over the long term (2028–2042), growth is projected to stabilize at around 3 percent, driven by the private sector and closer to the historical growth performance. Oil production from active fields is projected to decline sharply in 2022 and cease in 2023.[4]



- **Inflation** has increased to 5.3 percent y/y on by end-2021, mostly driven by imported food prices. It is expected to pick up further in 2022–23 with strong fiscal stimulus and higher global food and fuel prices, significantly higher compared to the previous debt sustainability analysis, and then converge to 2 percent over the medium and long term.
- **The fiscal balance** is projected to remain in deficit of about 53 percent over 2023–27, reflecting continued plans for high public spending according to the 2022 budget, at a level significantly higher than the previous debt sustainability analysis. The fiscal deficit is projected to significantly increase from 43 percent of non-oil GDP in 2021 to 55 percent in 2022, driven by an increase in both recurrent and capital spending. Over 40 percent of the total budget is for government transfers. The fiscal deficit is projected to narrow gradually to about 35 percent on average over 2028–42.

[3] The audited financial statements for Timor-Gap in 2020 wrote down the investment in Greater Sunrise triggered by uncertainty of the fiscal and regulatory regime of the Greater Sunrise field.
[4] The baseline does not include the development of the Greater Sunrise fields as they do not have approved development plans yet.

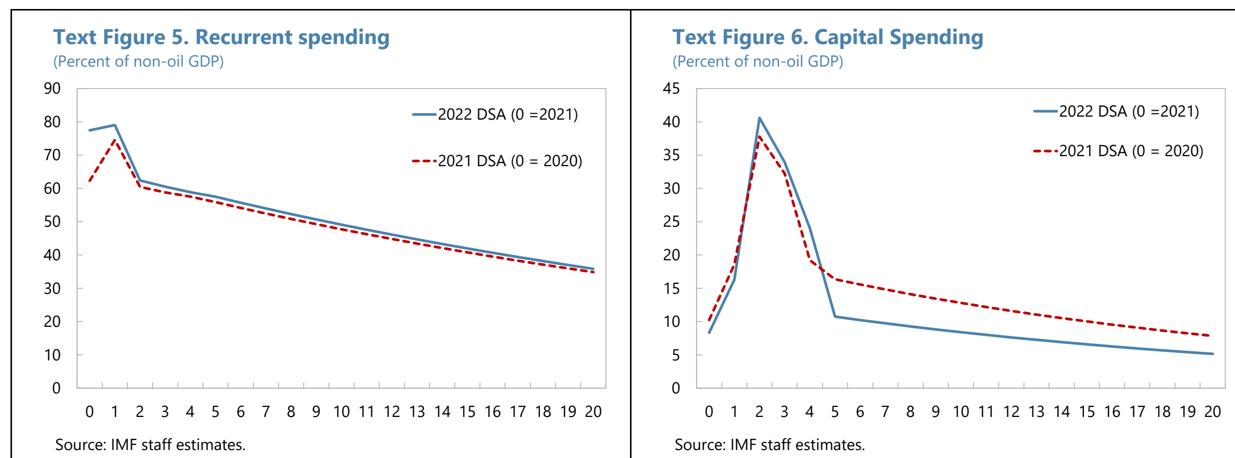
- **The current account balance** is expected to shift back to a deficit in 2022 and in the medium term, reflecting lower oil and gas receipts, higher imports of goods and services generated by higher public investment, and limited exports. In the long term, the current account deficit gradually declines as the domestic production of tradeable goods expands and public investment becomes less important. Remittances are assumed to grow in line with non-oil GDP.
- **External financing** consists of concessional loans from official creditors. Private external borrowing is assumed to remain negligible. Timor-Leste does not have exceptional financing such as accumulation of arrears. There is no domestic financing.
- **The grant element of loans** is assumed to decline moderately over the medium term as the economy develops. Other assumptions include that no off-budget debt is accumulated including by state-owned enterprises in line with existing legislation.

6. The baseline fiscal scenario assumes lower spending than planned under the 2022 budget, reflecting historical execution rates. Capital and recurrent spending in 2022–26 are assumed to be on average close to 70 percent and 85 percent of the planned amount in the 2022 budget, respectively, in line with historical execution rates. An annual nominal investment return on the Petroleum Fund of around 5 percent is assumed, in line with the average returns since its inception.

- Government revenues are projected to decline from 43 percent of non-oil GDP in 2021 to about 30 percent on average over 2023–27 term and to 15 percent on average over 2028–42. Under current policies, domestic revenues which are currently at 10 percent of non-oil GDP are assumed to grow broadly in line with nominal non-oil GDP. The decline in government revenues is driven by erosion of the Petroleum Fund which in turn reduces the estimated sustainable income. The government has signaled its intention to raise non-oil revenues to around 15 percent of non-oil GDP in the medium term.[5]
- Recurrent spending in the long-term is projected to increase by 3.8 percent each year, broadly in line with historical trends and in line with the previous debt sustainability analysis. Capital spending in the long term is projected to increase in line with inflation, similar to the previous debt sustainability analysis.
- As the government relies on Petroleum Fund withdrawals to meet its financing needs, the Petroleum Fund falls to $13.2 billion by 2027, a faster rate of depletion than the previous debt sustainability analysis. Moreover, it is completely depleted by 2038, after which it is assumed that the government relies on external debt to finance fiscal deficits (see bullet below). In the previous debt sustainability analysis, the Petroleum Fund was not depleted during the 20-year projection horizon.
- Net external borrowing is projected at about 2.1 percent of non-oil GDP during 2023–27 broadly in line with recent trends and with updated borrowing plans shared by the authorities. As a result,

[5] The authorities are working on further upgrading their tax collection system, including moving to electronic tax services, however the underlying law changes essential for the upgraded systems to be functional have not yet been undertaken. Draft laws for a value-added tax (VAT) and a new Tax Procedure Code were prepared some years ago, however, there is no firm timetable for their adoption.

outstanding external debt is projected to increase from 14 percent of non-oil GDP in 2020 to 20 percent in 2027. However, once the Petroleum Fund depletes in 2038, external borrowing is assumed to be the main source of financing of the fiscal deficit and increases to 140 percent of non-oil GDP by 2042 to finance fiscal plans under the baseline.



7. The realism tools suggest that macroeconomic and fiscal assumptions are reasonable. A smaller primary deficit in 2016–21 than projected under the previous vintage debt sustainability analysis largely explains the unexpected changes in debt (Figure 3).[6] The three-year primary balance adjustment (between 2021 and 2024) is projected to be 19 percent: this represents continuation of fiscal stimulus and lies near the bottom of the distribution of projections across regional peers. Sluggish execution of capital spending in 2021 led to a significant drop in public investment, which is projected to pick up in line with reopening of the economy and borders and the 2022 budget plans. The contribution to growth from public investment is expected to be lower than the previous DSA, due to lower projected investment spending, however, the overall growth outturn is similar due to higher contribution from higher government consumption.

Text Table 4. Macroeconomic Assumptions: Baseline and Reform Scenarios

	Reform Scenario				Baseline Scenario			
	2021	2022	2023-27	2028-42	2021	2022	2023-27	2028-42
Real non-oil GDP growth (in percent)	1.5	3.3	1.6	5.5	1.5	3.3	3.0	3.0
Revenue (excl. grants, percent of non-oil GDP)	42.6	40.4	33.6	25.7	42.6	40.4	31.8	15.3
Domestic revenue	9.6	9.6	10.7	14.8	9.6	9.6	9.7	10.5
Estimated Sustainable Income	33.0	30.8	22.9	10.9	33.0	30.8	22.1	4.8
Government expenditure (percent of non-oil GDP)	85.8	95.3	62.5	29.1	85.8	95.3	85.0	50.8
Recurrent	77.5	79.0	46.9	21.9	77.5	79.0	62.3	43.7
Capital	8.3	16.3	15.6	7.3	8.3	16.3	22.6	7.1
Net lending/ borrowing (percent of non-oil GDP)	-43.2	-54.9	-28.9	-3.5	-43.2	-54.9	-53.2	-35.5
Financing (percent of non-oil GDP)								
PF excess withdrawals	35.3	52.9	26.7	3.0	35.3	52.9	51.1	25.0
Net incurrence of liabilities	1.1	2.0	2.2	0.5	1.1	2.0	2.1	10.5
Petroleum Fund balance ($ million)	18,949	17,446	16,553	17,768	18,949	17,446	15,217	4,707
Current account balance (percent of non-oil GDP)	2.5	-15.3	-31.6	-9.8	2.5	-15.3	-37.0	-39.9

[6] The residual in debt-creating flows is financed through excess withdrawals from the Petroleum Fund.

8. As highlighted in the 2021 DSA, under staff's reform scenario, policy actions are adopted to safeguard long-term fiscal sustainability.

- **Domestic revenue mobilization**: A VAT is adopted by 2023 to generate additional revenue of about 3 percent of GDP over the medium term, reaching 13 percent of non-oil GDP by 2028. Strengthening tax compliance through tax administration reforms and further tax policy measures (e.g., revision of excise tax rates, increase in statutory income tax rate, adopting a property tax) are warranted in the long term to increase domestic revenue to about 17 percent of non-oil GDP.[7]
- **Expenditure moderation:** Government expenditure declines gradually to the 2019 level in the medium term and remains broadly at that level until 2033 when excess withdrawals from the Petroleum Fund are eliminated.. The quality of government spending is improved by curbing the growth in more rigid expenditures (salaries, pensions, etc.), allocating more spending towards human capital development, strengthening social safety nets, and improving the growth dividend from capital spending through rigorous cost-benefit analysis.[8]
- **A target to achieve a sustainable fiscal position by 2033:** More moderate levels of spending coupled with higher domestic revenue should help gradually unwind fiscal imbalances and the excessive reliance on Petroleum Fund withdrawals to secure fiscal sustainability and preserve Petroleum Fund assets.[9] The Petroleum Fund balance will gradually increase to close to $20 billion in the long run, and the estimated sustainable income will decline more slowly in percent of non-oil GDP.[10] Fiscal deficits over the medium-term (2023–27) would average 30 percent of non-oil GDP, instead of 53 percent of non-oil GDP under the baseline. Overall, in the reform scenario the Petroleum Fund is preserved from 2033 onwards and generates a permanent level of investment income to support government expenditures, thus putting fiscal and debt sustainability on a solid footing.

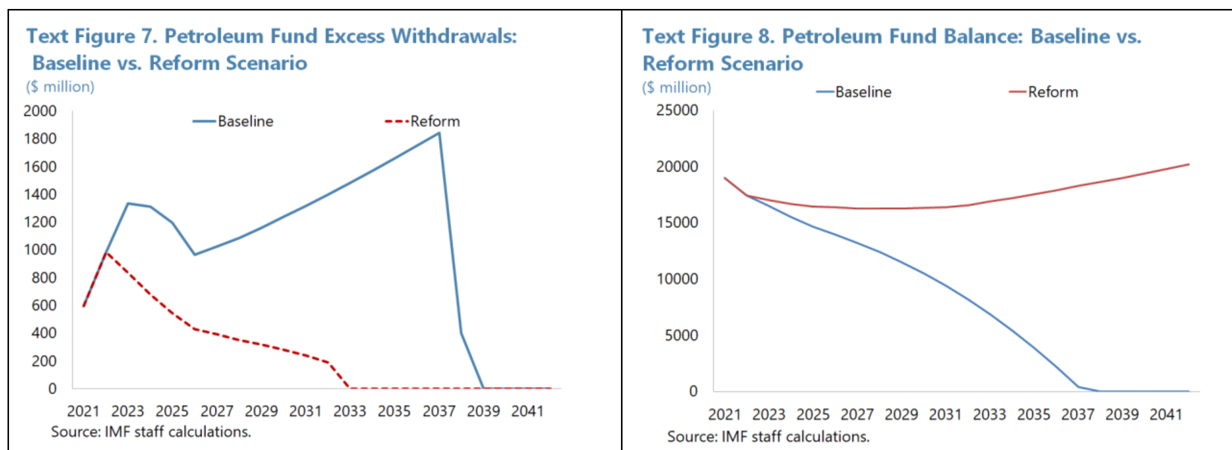
---

[7] In this regard, the authorities raised excise taxes on alcohol and tobacco since January 2022, which is a welcome step.

[8] The revised Budgetary Framework and Public Financial Management Law, passed in February 2022 will help enhance the efficiency and quality of government spending. However, for it to be effective, a concrete action plan of PFM reforms with technical support from the Fund should be laid out and implemented swiftly with help from other development partners.

[9] The Petroleum Fund is preserved only when a sustainable fiscal position is achieved. During the transition to fiscal balance the Petroleum Fund is eroded because the withdrawals to finance fiscal deficits are larger than what they should be to preserve the Petroleum Fund.

[10] The dynamic of the Petroleum Fund is such that a lower Petroleum Fund balance will reduce the level of estimated sustainable income, resulting in higher excess withdrawals to close a given financing gap, highlighting the need to curb the rapid loss in Petroleum Fund wealth.



- The government's strategy of increasing public external borrowing via concessional loans to finance public investment in infrastructure projects and to preserve the Petroleum Fund wealth continues to hold. Overall, external borrowing under the reform scenario is projected to be the same as the baseline scenario up until 2037, but is significantly lower in 2028–42 as the Petroleum Fund is preserved and public spending increases in line with higher sustainable sources of revenue.

9. At the same time, structural reforms are implemented to improve the business environment, raise productivity, and promote private sector development.[11] These include progress in facilitating the ease of doing business, shifting from subsistence to commercial agriculture, addressing digital infrastructure and connectivity bottlenecks, increasing financial access, building human capacity, closing labor skill gaps, and strengthening the justice sector to improve governance and reduce corruption vulnerabilities. The authorities laid out medium-term measures in the Economic Recovery Plan 2020–23, focusing on the abovementioned priorities, to address pre-existing structural weaknesses for long-term growth. However, no concrete actions have been taken yet.

10. The macro-fiscal and external sector outlook is significantly stronger under the reform scenario:

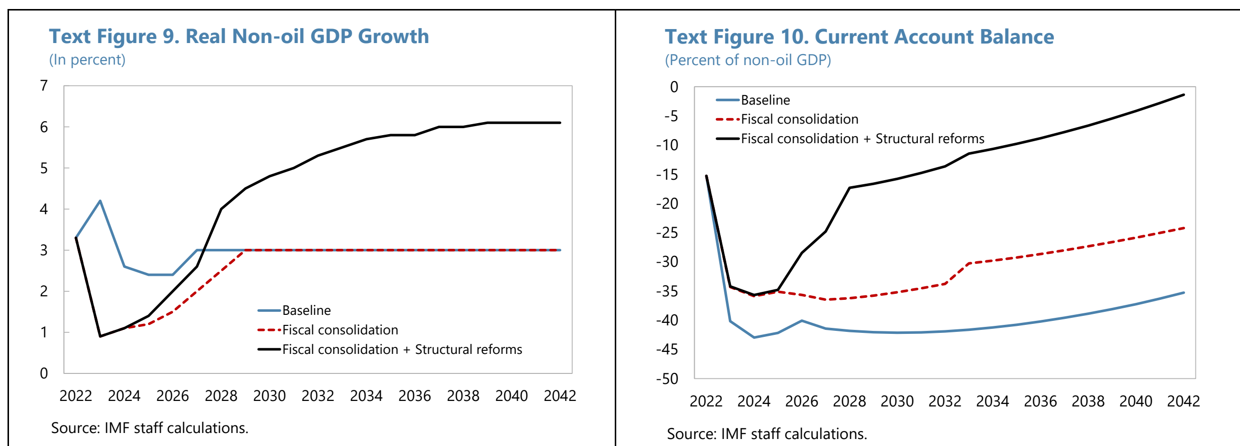
- **Real non-oil GDP** is lower than the baseline, averaging 1.6 percent over the medium term (2023–27), owing to the output costs of fiscal consolidation.[12] These are mitigated by the positive impact of reprioritization (towards growth-enhancing sectors such as health, education, agriculture, tourism, digitalization), by the improvement in the quality of public spending, and by structural reforms to promote the expansion of the private sector.[13] With sustained improvement in

[11] Staff estimates suggest the external sector position in 2020 was substantially weaker than implied by medium-term fundamentals and desirable policy settings.

[12] Timor-Leste's fiscal multiplier, measured by the change in real non-oil GDP growth rate induced by a unit change in the primary balance (% GDP), is estimated to be close to 0.1-0.15. This is in line with other estimates in the literature which estimate it to be in the range of 0.08-0.17. Low multipliers indicate that much of the spending leaks into imports and/or is low quality reflecting supply-side constraints. The long-run multiplier is assumed to be 0.

[13] The positive impact of structural reforms often take time to materialize and could even entail short-term costs (e.g., labor and product market reforms). This is consistent with the macroeconomic impact of structural reforms seen across various

productivity and competitiveness, the economic impact of structural reforms is higher over the long term (2028–2042), where growth is projected to hover around 5-6 percent, significantly higher than under the baseline, driven by higher private investment and the development of the non-oil private sector, reduced import dependence, and a larger export base (Text Figure 9).



- **The current account balance deficit** over the medium and long term is projected to be considerably smaller in comparison to the baseline scenario, reflecting both higher exports (economic diversification and exports of high value-added agricultural exports) and lower imports of goods and services (in line with lower fiscal spending and lower reliance on food imports) (Text Figure 10).

COUNTRY CLASSIFICATION AND DETERMINATION OF SCENARIO STRESS TESTS

11. The debt-carrying capacity is assessed to be weak (Text Table 5). Timor-Leste's debt carrying capacity is assessed to be weak according to the Composite Indicator index of 2.69, which is calculated based on the April 2022 World Economic Outlook and the 2020 Country Policy and Institutional Assessment. The Composite Indicator is based on a weighted average of the country's real GDP growth, remittances, international reserves, world growth, and the Country Policy and Institutional Assessment score.[14] Accordingly, debt sustainability analysis thresholds applicable for Timor-Leste are: 30 percent for the present value of external debt-to-GDP ratio, 140 percent for the present value of external debt-to-exports ratio, 10 percent for the external debt service to-exports ratio, 14 percent for the external debt service-to-revenue ratio, and 35 percent for the present value of public debt-to-GDP ratio.

IMF-supported programs (see Andritzky et al. (2021)). Structural reforms are estimated to have a positive impact on real GDP growth of around 0.3 percentage points in the medium-term, and 2.5 percentage points over the long run.

[14] The calculation is based on 10-year averages of the variables, across 5 years of historical data and 5 years of projections, and the corresponding Country Policy and Institutional Assessment.

Text Table 5. Timor-Leste Debt Carrying Capacity and Thresholds

Debt Carrying Capacity and Thresholds

Country	Timor-Leste
Country Code	537
Debt Carrying Capacity	Weak

Final	Classification based on current vintage	Classification based on the previous vintage	Classification based on the two previous vintage
Weak	Weak 2.69	Medium 2.71	Weak 2.67

APPLICABLE THRESHOLDS	
EXTERNAL debt burden thresholds	
PV of debt in % of	
Exports	140
GDP	30
Debt service in % of	
Exports	10
Revenue	14

APPLICABLE THRESHOLDS	
TOTAL public debt benchmark	
PV of total public debt in percent of GDP	35

12. **The size of the shock to non-debt creating flows (foreign direct investment)-to-GDP ratio, and net current transfers-to-GDP and -to-exports was customized to account for one-off and structural factors.** First, there is a large outflow in foreign direct investment equivalent to $575 million in 2019 due to Petroleum Fund's investment in Timor-Gap to purchase the 56 percent stake in the Greater Sunrise joint venture.[15] To prevent this one-off deviation in foreign direct investment flows from inflating the foreign direct investment-to-GDP ratio shock, the historical average and the standard deviation corresponds to 2011–21 (excluding 2019).[16] Second, to prevent the structural oil production cycle from inflating the export shock and to account for the fact that petroleum production will cease in 2023, the export stress test was customized in line with the 2021 Article IV consultation debt sustainability analysis. Third, the increase in Timorese workers' remittance outflows abroad has resulted in a shift from net current transfers inflows to net outflows in the last 5 years which is projected to continue until the end of the projection horizon. To take into account this shift, the historical average and the standard deviation of the current transfers-to-GDP shock corresponds to 2017–21.

[15] Timor Gap is an autonomous government agency with the mandate to conduct oil and gas business on behalf of the Timor-Leste Government.

[16] The customization implied that: (i) the historical average of the net non-debt creating flows (foreign direct investment)-to-GDP ratio is revised up from -1.5 to 2.8 and the standard deviation is reduced from 13.5 to 2.2; (ii) the initial standard deviation of 56.5 of the export shock was scaled down to 11.3; and (iii) the historical average of the current official transfers-to-GDP ratio is revised from 3.9 to -5.4 and the standard deviation is reduced from 13.7 to 2.2

13. The contingent liability stress test settings were also customized (Text Table 6). The default shock to contingent liabilities from state-owned enterprises debt and Public Private Partnerships is reduced to zero. This is because the former is already included in the baseline public debt, and the latter is negligible (see paragraph 1).

14. The commodity price shocks were introduced in a tailored stress test, with adjustments made to the default settings. Lack of export diversification has resulted in excessive reliance of Timor-Leste's external position on petroleum and gas receipts—the share of commodity exports in Timor-Leste's total exports is 92 percent on average over 2019–21. However, this is projected to decline to close to 70 percent on average over 2022–24, as the petroleum production from active fields comes to an end in 2023. Hence, the commodity price shock is tailored by adjusting the share of fuel in total exports of goods and services to match the latter.

15. A tailored stress test on natural disasters is added to the sensitivity analysis given that Timor-Leste is prone to natural disasters. The default setting (10 percent of GDP increase in debt stock, 1.5 percent decline in real GDP growth, and 3 percent decline in exports growth) was modified so that the stress test captures Timor-Leste's most recent experience with the cyclone and floods in April 2021.[17] The tailored stress test assumes that a natural disaster occurs in 2023 and that new debt is contracted to finance damages, increasing the public debt-to-GDP ratio by 14 percent in 2023, which is equivalent to the estimated damages from the April 2021 floods.[18] Real GDP and exports growth decline by 2 percent and 4 percent in FY2023, respectively, relative to the baseline.[19]

Text Table 6: Coverage of Public Debt and Design of Contingent Liabilities (tailored) Stress Tests

1	The country's coverage of public debt	The central government, government-guaranteed debt		
		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	
3	SoE's debt (guaranteed and not guaranteed by the government) 1/	2 percent of GDP	0	Included in the baseline public debt
4	PPP	35 percent of PPP stock	0.00	Negligible PPP stock
5	Financial market (the default value of 5 percent of GDP is the minimum value)	5 percent of GDP	5	
	Total (2+3+4+5) (in percent of GDP)		5.0	

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%.

ASSESSMENT

EXTERNAL DEBT SUSTAINABILITY ANALYSIS

16. Under the baseline scenario, two of Timor-Leste's external debt indicators breach their respective debt sustainability analysis thresholds in the medium-term (Figure 1). First, the present value of external debt in percent of exports breaches the indicative threshold of 140 percent between 2024 and 2032. Second, the debt service to exports ratio also breaches the indicative threshold of 10 percent

[17] See Selected Issues Paper.

[18] See World Bank (2021) report on "Learning from Tropical Cyclone Seroja: Building Disaster and Climate Resilience in Timor-Leste.

[19] The damages from Tropical Cyclone Seroja in April 2021 are estimated at US$245 million, which is historically the highest available estimates for economic damages. According to the International Disaster Database, the economic damages from previous natural disasters range from US$4 million to US$20 million.

between 2023–29 (Figure 1). All the other indicators remain well below their relevant thresholds for the next fifteen years. Debt dynamics reflect the following: (i) increase in debt service payments as grace periods on existing loans come to an end; and (ii) government's strategy of increasing public external borrowing via concessional loans to reduce the need of tapping the Petroleum Fund from the projected expansion of public investment in infrastructure projects. Over the medium term, the present value of external debt is projected to increase gradually from 10 percent of non-oil GDP in 2021 to 13 percent in 2032.

17. Debt dynamics show vulnerability to shocks to primary balance, natural disasters, exports, contingent liabilities and commodity prices. Standardized stress tests show that a shock to the primary balance and exports are the most extreme shocks to the debt trajectory, also causing a breach of the debt service-to-exports, and the present value of debt-to-exports thresholds. Timor-Leste's high vulnerability to shocks is a reflection of its very small exports and revenue bases, and, therefore, its exposure to high debt services payment risks if its positive Petroleum Fund assets position is not taken into account. While, historically, the government has typically not resorted to debt financing, but instead relied on excess withdrawals from the Petroleum Fund, further use of the Petroleum Fund to meet Timor-Leste's debt servicing needs would fasten the Petroleum Fund depletion even further.

PUBLIC DEBT SUSTAINABILITY ANALYSIS

18. Under the baseline scenario, the present value of total public and publicly guaranteed debt-to-GDP ratio remains below the threshold level for the next fifteen years (Figure 2). However, this indicator is vulnerable to the commodity price shocks and is expected to breach the threshold under the stress scenario starting in 2024. The Petroleum Fund is depleted towards the end of the twenty-year projection horizon, leading to all debt indicators breaching their respective debt sustainability analysis thresholds (Figure 1). This is projected to lead to a substantial jump in external borrowing resulting in a breach of all debt thresholds beyond 2038.

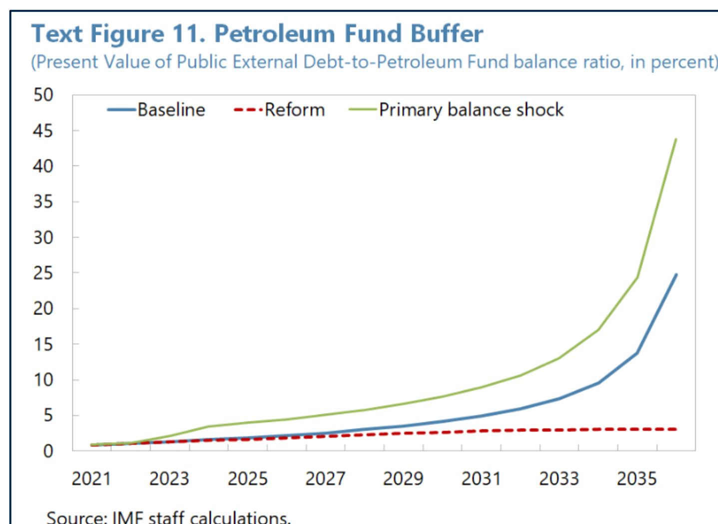
REFORM SCENARIO

19. Staff's reform scenario illustrates how fiscal consolidation coupled with structural reforms can ensure long-term fiscal and debt sustainability. External concessional loans under the reform scenario are projected to be broadly in line with the baseline. The introduction of reforms significantly improves debt dynamics—the paths of debt burden indicators are better—over the twenty years. The duration of the breach of the present value of external debt in percent of exports and the debt service-to-exports ratio in the medium-term is also smaller compared to the baseline. Importantly, the Petroleum Fund is eventually preserved.

RISK AND VULNERABILITIES

20. While the debt sustainability analysis assigns Timor-Leste a mechanical rating of "high" debt distress risk, judgement is applied to upgrade the rating to "moderate". Under the baseline scenario, the present value of debt-to-exports and debt service-to-exports breach the benchmark over the next 10 years (2023-33)—generating a mechanical debt distress rating of "high". The judgement reflects the country's large, liquid, and accessible net foreign assets in the form of the Petroleum Fund which

serves as a strong mitigating factor in Timor-Leste's ability to carry and service debt until 2036, even under the scenario of the most extreme shock case (i.e., the primary balance shock).[20] The present value of debt does not exceed more than 25 percent of the projected value of the Petroleum Fund until 2036 under the baseline (Text Figure 11). Under the scenario of the most extreme shock case (i.e., primary balance shock), the present value of debt-to-Petroleum Fund assets reaches close to 44 percent by 2036. Although the long-term risks to debt sustainability have increased compared to the 2021 Article IV debt sustainability analysis because the Petroleum Fund is projected to be depleted faster, there is still time for the authorities to undertake the necessary policy adjustment (see paragraph 21). Conditional on the implementation of these reforms (paragraph 22), the debt is sustainable. With this, the risk of debt distress is assessed as "moderate" with limited space to absorb shocks (see Figure 5), which is unchanged from the previous 2021 DSA rating.



21. The projected depletion of the Petroleum Fund within the 20-year horizon under current policies makes the case for fiscal consolidation more urgent than before. Although the Petroleum Fund is projected to be depleted by 2038 under the baseline, it could be depleted much faster—for instance, with a nominal investment return of 3 percent, it would be depleted by 2034. Fiscal consolidation aiming to achieve a sustainable fiscal position in a 10-year horizon, supported by expenditure rationalization and domestic revenue mobilization, would allow decreasing withdrawals from the Petroleum Fund until they reach a level consistent with preserving the Petroleum Fund. This process should go hand in hand with structural reforms to improve the business environment and governance, enhance competitiveness, and strengthen the external sector position. The analysis also highlights the importance of enhancing the resilience to natural disasters and climate change, including by prioritizing climate adaptation investment. Lack of political consensus is a risk that could impede the reforms that are warranted to put the fiscal position on a sustainable footing and strengthen medium-term growth prospects. Although that risk has a high probability of materializing, the implementation of the reforms has higher probability. The development of the Greater Sunrise fields is highly uncertain and the difficulties in finding a commercially viable option that is acceptable to the Timorese authorities.

22. The IMF and the World Bank stand ready to support the authorities in their efforts to ensure fiscal and debt sustainability. The authorities are aware of the challenge and requested extensive technical assistance from the IMF for ambitious fiscal reforms aiming to secure fiscal sustainability. Ongoing technical assistance on public financial management reforms by the IMF Fiscal Affairs Department, on revenue administration by the IMF Pacific Financial Technical Assistance Center, and on governance in anti-money laundering by the IMF Legal Department will support the authorities in ensuring

[20] The stock of outstanding public debt was 1 percent of the Petroleum Fund balance by end-2021.

fiscal and debt sustainability. The adoption of the Major Planning Options Law as specified in the new basic PFM law aims to bring more predictability to the budget process. The approval of a new procurement law, effective January 2023, is intended to increase transparency and simplify the procurement process. The authorities also welcomed Fund assistance on a Fiscal Responsibility Law to help improve fiscal discipline. Moreover, the World Bank and the International Finance Corporation (IFC) have plans to provide technical assistance to improve the prospects for private sector development including ease of doing business, agriculture, and tourism.

23. At the same time, public debt management needs to be strengthened.[21] External borrowing should be embedded in a suitable institutional framework, supported by best practice debt management policies and procedures. Strengthening the organization and capacity of the debt management unit, including preparing a medium-term debt management strategy (MTDS), and upgrading debt recording software are key areas for capacity building. However, in the near term, there is a need to produce comprehensive and realistic debt servicing projections for the existing debt. The monitoring and reporting of fiscal risks—such as contingent liabilities related to credit guarantees, pensions, public corporations, and public-private partnerships—should also be improved.

AUTHORITIES' VIEWS

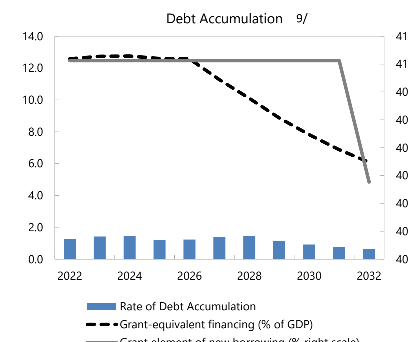
24. The authorities recognize the risk of depleting the Petroleum Fund and are committed to implementing reforms to ensure long-term fiscal sustainability. They acknowledged that the Petroleum Fund should be preserved to avoid the risk of a fiscal cliff and ensure intergenerational equity. While they are still evaluating options for developing the Greater Sunrise fields, they highlighted the uncertainty around it with potential revenues from the project at least a decade away. They agreed with staff's call for fiscal consolidation but noted difficulties in reaching political consensus to do that. They underscored ongoing efforts to improve public financial management aiming to make government spending more efficient. Domestic revenue reform plans in the pipeline—which include the introduction of the value-added tax (VAT) and a revised tax procedures code—are expected to gradually boost domestic revenue. They shared staff's view on the urgent need for diversification.

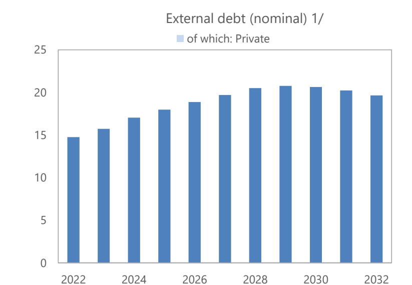
[21] There have not been any noteworthy improvements in data coverage and public debt management since the 2019 Article IV.

Table 1. Timor-Leste: External Debt Sustainability Framework, Baseline Scenario, 2019-2042
(In percent of GDP, unless otherwise indicated)

	Actual			Projections								Average 8/	
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2032	2042	Historical	Projections
External debt (nominal) 1/	**11.3**	**13.7**	**14.1**	**14.7**	**15.7**	**17.0**	**18.0**	**18.9**	**19.7**	**19.7**	**142.1**	**6.4**	**18.7**
of which: public and publicly guaranteed (PPG)	**11.3**	**13.7**	**14.1**	**14.7**	**15.7**	**17.0**	**18.0**	**18.9**	**19.7**	**19.7**	**142.1**	**6.4**	**18.7**
Change in external debt	2.1	2.4	0.4	0.7	1.0	1.3	0.9	0.9	0.8	-0.6	20.3		
Identified net debt-creating flows	**25.3**	**15.5**	**-7.2**	**11.1**	**36.1**	**39.2**	**38.5**	**36.5**	**37.9**	**38.9**	**30.2**	**0.1**	**35.7**
Non-interest current account deficit	**-8.0**	**19.1**	**-2.8**	**15.0**	**39.9**	**42.7**	**41.9**	**39.8**	**41.1**	**41.6**	**33.4**	**-42.0**	**39.0**
Deficit in balance of goods and services	9.8	28.9	5.6	15.6	48.7	49.5	47.1	43.6	43.3	38.4	28.4	**-18.7**	**40.9**
Exports	51.2	23.9	46.1	39.0	8.6	6.6	6.9	7.1	7.4	9.1	13.9		
Imports	61.0	52.8	51.7	54.6	57.3	56.1	53.9	50.7	50.8	47.5	42.3		
Net current transfers (negative = inflow)	4.1	9.0	4.1	4.1	4.1	4.1	4.1	4.1	4.6	5.4	3.5	**-3.9**	**4.7**
of which: official	-9.5	-11.5	-11.5	-11.5	-11.5	-11.5	-11.5	-11.5	-10.2	-5.6	-1.7		
Other current account flows (negative = net inflow)	-22.0	-18.8	-12.5	-4.8	-12.9	-10.9	-9.3	-7.9	-6.8	-2.2	1.6	**-19.4**	**-6.6**
Net FDI (negative = inflow)	**33.8**	**-4.5**	**-4.0**	**-3.7**	**-3.5**	**-3.4**	**-3.2**	**-3.1**	**-3.0**	**-2.5**	**-1.7**	**1.3**	**-3.0**
Endogenous debt dynamics 2/	**-0.4**	**1.0**	**-0.4**	**-0.2**	**-0.3**	**-0.1**	**-0.1**	**-0.1**	**-0.2**	**-0.3**	**-1.6**		
Contribution from nominal interest rate	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	1.8		
Contribution from real GDP growth	-0.2	1.0	-0.2	-0.4	-0.6	-0.4	-0.4	-0.4	-0.5	-0.6	-3.4		
Contribution from price and exchange rate changes	-0.5	-0.3	-0.5	...	...	...	...	...	...	...	...		
Residual 3/	**-23.2**	**-13.1**	**7.6**	**-10.4**	**-35.1**	**-37.9**	**-37.6**	**-35.6**	**-37.0**	**-39.4**	**-9.9**	**1.7**	**-35.2**
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		
Sustainability indicators													
PV of PPG external debt-to-GDP ratio	**...**	**...**	**10.2**	**10.3**	**10.7**	**11.3**	**11.8**	**12.2**	**12.7**	**12.9**	**89.9**		
PV of PPG external debt-to-exports ratio	**...**	**...**	**22.1**	**26.5**	**124.4**	**171.4**	**171.4**	**171.1**	**171.0**	**141.9**	**646.6**		
PPG debt service-to-exports ratio	**0.8**	**2.1**	**1.6**	**2.4**	**12.0**	**15.7**	**15.4**	**14.4**	**11.9**	**8.6**	**17.1**		
PPG debt service-to-revenue ratio	**1.0**	**1.1**	**1.7**	**2.3**	**2.9**	**3.2**	**3.6**	**3.8**	**3.5**	**4.4**	**21.1**		
Gross external financing need (Million of U.S. dollars)	445.7	239.6	-101.9	227.7	765.3	884.7	926.4	936.2	1037.6	1497.6	2548.6		
Key macroeconomic assumptions													
Real GDP growth (in percent)	2.1	-8.6	1.5	3.3	4.2	2.6	2.4	2.4	3.0	3.0	3.0	**1.0**	**3.0**
GDP deflator in US dollar terms (change in percent)	5.4	2.4	3.8	7.0	5.5	4.5	4.0	4.0	4.0	4.0	4.0	**3.9**	**4.5**
Effective interest rate (percent) 4/	2.7	2.0	2.0	1.8	1.8	1.7	1.7	1.6	1.6	1.5	1.6	**2.2**	**1.6**
Growth of exports of G&S (US dollar terms, in percent)	38.2	-56.4	103.7	-6.6	-75.7	-17.7	10.6	10.6	11.4	11.6	12.0	**1.2**	**-0.9**
Growth of imports of G&S (US dollar terms, in percent)	-1.9	-19.0	3.2	16.8	15.4	4.9	2.4	0.1	7.2	5.7	6.0	**-6.7**	**6.8**
Grant element of new public sector borrowing (in percent)	...	...	...	40.5	40.5	40.5	40.5	40.5	40.5	40.1	39.8	**...**	**40.5**
Government revenues (excluding grants, in percent of GDP)	42.0	45.5	42.6	40.4	35.4	32.3	29.6	27.4	25.4	17.7	11.3	**50.2**	**26.7**
Aid flows (in Million of US dollars) 5/	161.8	183.1	192.9	231.0	256.6	275.5	290.3	308.8	295.8	224.6	772.8		
Grant-equivalent financing (in percent of GDP) 6/	...	...	...	12.6	12.7	12.8	12.6	12.6	11.3	6.1	13.2	**...**	**10.4**
Grant-equivalent financing (in percent of external financing) 6/	...	...	...	88.6	87.3	87.2	88.4	88.6	87.6	89.0	43.1	**...**	**88.0**
Nominal GDP (Million of US dollars)	1,704	1,595	1,681	1,858	2,043	2,190	2,332	2,484	2,661	3,753	7,465		
Nominal dollar GDP growth	7.6	-6.4	5.4	10.5	9.9	7.2	6.5	6.5	7.1	7.1	7.1	**5.0**	**7.6**
Memorandum items:													
PV of external debt 7/	...	...	10.2	10.3	10.7	11.3	11.8	12.2	12.7	12.9	89.9		
In percent of exports	...	...	22.1	26.5	124.4	171.4	171.4	171.1	171.0	141.9	646.6		
Total external debt service-to-exports ratio	0.8	2.1	1.6	2.4	12.0	15.7	15.4	14.4	11.9	8.6	17.1		
PV of PPG external debt (in Million of US dollars)			171.1	192.3	218.6	247.9	274.1	302.7	337.0	483.0	6714.3		
(PVt-PVt-1)/GDPt-1 (in percent)				1.3	1.4	1.4	1.2	1.2	1.4	0.6	19.9		
Non-interest current account deficit that stabilizes debt ratio	-10.1	16.6	-3.2	14.4	39.0	41.4	41.0	38.9	40.3	42.2	13.2		

Definition of external/domestic debt	Currency-based
Is there a material difference between the two criteria?	No





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)]/(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/ The residual in debt-creating flows is financed through excess withdrawals from the Petroleum Fund. 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.

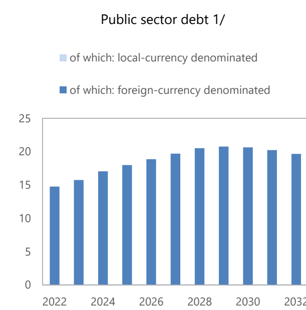
9/ The grant element may be overestimated due to debt projections.

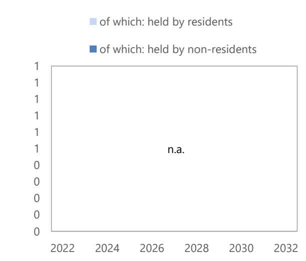
Table 2. Timor-Leste: Public Sector Debt Sustainability Framework, Baseline Scenario, 2019-2042
(In percent of GDP, unless otherwise indicated)

	Actual			Projections								Average 7/	
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2032	2042	Historical	Projections
Public sector debt 1/	11.3	13.7	14.1	14.7	15.7	17.0	18.0	18.9	19.7	19.7	142.1	6.4	18.7
of which: external debt	11.3	13.7	14.1	14.7	15.7	17.0	18.0	18.9	19.7	19.7	142.1	6.4	18.7
Change in public sector debt	2.1	2.4	0.4	0.7	1.0	1.3	0.9	0.9	0.8	-0.6	20.3		
Identified debt-creating flows	29.7	26.4	42.5	53.5	66.2	61.1	52.1	39.7	39.1	36.5	19.8	35.4	45.4
Primary deficit	30.2	25.4	42.9	54.6	67.3	61.9	52.9	40.5	40.1	37.5	26.1	33.6	46.4
Revenue and grants	51.5	57.0	54.1	51.9	46.9	43.7	41.1	38.8	35.6	23.3	12.9	64.0	36.1
of which: grants	9.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	10.2	5.6	1.7		
Primary (noninterest) expenditure	81.7	82.4	97.0	106.5	114.2	105.6	94.0	79.4	75.7	60.8	39.0	97.6	82.5
Automatic debt dynamics	-0.4	1.0	-0.4	-1.1	-1.1	-0.8	-0.8	-0.8	-1.0	-1.1	-6.3		
Contribution from interest rate/growth differential	-0.1	1.2	-0.5	-1.0	-0.8	-0.5	-0.5	-0.5	-0.6	-0.7	-4.0		
of which: contribution from average real interest rate	0.1	0.1	-0.3	-0.6	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.4		
of which: contribution from real GDP growth	-0.2	1.1	-0.2	-0.4	-0.6	-0.4	-0.4	-0.4	-0.5	-0.6	-3.5		
Contribution from real exchange rate depreciation	-0.3	-0.1	0.0	...	...	...	...	...	...	...	...		
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
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 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		
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 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		
Residual 2/	-27.7	-24.0	-42.1	-52.9	-65.6	-60.1	-51.5	-39.2	-38.7	-37.4	-1.9	-33.7	-45.2
Sustainability indicators													
PV of public debt-to-GDP ratio 3/	...	...	10.2	10.3	10.7	11.3	11.8	12.2	12.7	12.9	89.9		
PV of public debt-to-revenue and grants ratio	...	...	18.8	19.9	22.8	25.9	28.6	31.4	35.6	55.3	695.0		
Debt service-to-revenue and grants ratio 4/	0.8	0.9	1.4	1.8	2.2	2.4	2.6	2.6	2.5	3.3	18.3		
Gross financing need 5/	30.3	25.6	43.7	55.6	68.3	62.9	54.0	41.5	41.0	38.3	28.5		
Key macroeconomic and fiscal assumptions													
Real GDP growth (in percent)	2.1	-8.6	1.5	3.3	4.2	2.6	2.4	2.4	3.0	3.0	3.0	1.0	3.0
Average nominal interest rate on external debt (in percent)	2.7	2.0	2.0	1.8	1.8	1.7	1.7	1.6	1.6	1.5	1.6	2.2	1.6
Average real interest rate on domestic debt (in percent)	-2.6	-0.4	-1.7	-4.9	-3.6	-2.7	-2.3	-2.3	-2.3	-2.4	-2.3	0.1	-2.7
Real exchange rate depreciation (in percent, + indicates depreciation)	-3.4	-1.2	0.4	...	...	...	...	...	...	...	...	-1.7	...
Inflation rate (GDP deflator, in percent)	5.4	2.4	3.8	7.0	5.5	4.5	4.0	4.0	4.0	4.0	4.0	3.9	4.5
Growth of real primary spending (deflated by GDP deflator, in percent)	-0.5	-7.8	19.6	13.5	11.7	-5.1	-8.8	-13.6	-1.7	-1.3	-2.0	-0.7	-1.0
Primary deficit that stabilizes the debt-to-GDP ratio 6/	28.1	23.0	42.5	54.0	66.3	60.6	52.0	39.6	39.3	38.1	5.8	31.2	45.9
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		

Definition of external/domestic debt	**Currency-based**
Is there a material difference between the two criteria?	**No**

Public sector debt 1/





Sources: Country authorities; and staff estimates and projections.

1/ Coverage of debt: The central government, government-guaranteed debt. Definition of external debt is Currency-based.

2/ The residual in debt-creating flows is financed through excess withdrawals from the Petroleum Fund.

3/ 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.

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

5/ 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.

6/ 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.

7/ 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.

Table 3. Timor-Leste: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2022-2042
(In percent)

	Projections 1/																				
	2022	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**
PV of debt-to GDP ratio																					
Baseline	10	11	11	12	12	13	13	13	13	13	13	12	12	12	11	10	26	**45**	**61**	**76**	**90**
A. Alternative Scenarios																					
A1. Key variables at their historical averages in 2022-2042 2/	10	-39	-89	-139	-187	-235	-283	-332	-378	-421	-461	-499	-534	-567	-596	-624	-632	-635	-637	-637	-636
B. Bound Tests																					
B1. Real GDP growth	10	12	14	14	15	16	16	16	16	16	16	15	15	14	14	13	**32**	**55**	**76**	**94**	**111**
B2. Primary balance	10	18	25	25	25	25	25	25	25	24	23	22	21	20	19	18	**34**	**52**	**68**	**83**	**96**
B3. Exports	10	18	22	22	23	23	24	24	23	23	22	21	20	19	18	17	**38**	**64**	**86**	**107**	**125**
B4. Other flows 3/	10	15	19	19	19	20	20	20	20	19	18	17	16	16	15	14	29	**47**	**64**	**79**	**92**
B5. Depreciation	10	13	5	6	7	7	8	9	9	9	10	10	10	9	9	9	29	**52**	**74**	**93**	**110**
B6. Combination of B1-B5	10	19	8	9	10	11	12	12	12	12	12	12	12	12	11	11	**34**	**60**	**84**	**105**	**124**
C. Tailored Tests																					
C1. Combined contingent liabilities	10	14	14	15	15	15	16	16	16	16	15	15	14	14	13	12	28	**47**	**63**	**78**	**92**
C2. Natural disaster	10	20	21	22	23	23	24	24	24	24	24	24	23	23	22	21	**37**	**56**	**73**	**89**	**103**
C3. Commodity price	10	12	14	13	10	7	5	1	-2	-5	-8	-11	-14	-16	-18	-20	-3	17	**35**	**52**	**67**
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.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
PV of debt-to-exports ratio																					
Baseline	27	124	**171**	**171**	**171**	**171**	**171**	**166**	**159**	**151**	**142**	132	122	112	102	93	**224**	**366**	**482**	**574**	**647**
A. Alternative Scenarios																					
A1. Key variables at their historical averages in 2022-2042 2/	27	-450	-1348	-2023	-2623	-3174	-3676	-4134	-4518	-4833	-5084	-5278	-5419	-5513	-5564	-5577	-5416	-5210	-4999	-4785	-4569
B. Bound Tests																					
B1. Real GDP growth	27	124	**171**	**171**	**171**	**171**	**171**	**166**	**159**	**151**	**142**	132	122	112	102	93	**224**	**366**	**482**	**574**	**647**
B2. Primary balance	27	**204**	**375**	**363**	**351**	**339**	**328**	**313**	**295**	**275**	**255**	**236**	**217**	**198**	**181**	**165**	**290**	**426**	**536**	**624**	**691**
B3. Exports	27	**286**	**522**	**513**	**504**	**495**	**486**	**469**	**444**	**414**	**384**	**354**	**324**	**294**	**267**	**241**	**520**	**824**	**1070**	**1267**	**1420**
B4. Other flows 3/	27	**169**	**286**	**279**	**272**	**266**	**259**	**249**	**234**	**217**	**200**	**183**	**167**	**151**	137	123	**250**	**389**	**501**	**591**	**661**
B5. Depreciation	27	124	61	68	73	80	86	87	85	86	84	81	77	73	68	63	**198**	**344**	**463**	**558**	**632**
B6. Combination of B1-B5	27	**207**	89	131	137	**144**	**150**	**150**	**143**	**141**	136	130	123	115	106	98	**286**	**488**	**653**	**786**	**889**
C. Tailored Tests																					
C1. Combined contingent liabilities	27	**160**	**216**	**214**	**211**	**208**	**206**	**199**	**190**	**179**	**168**	**157**	**145**	134	122	112	**242**	**383**	**497**	**588**	**660**
C2. Natural disaster	27	**274**	**373**	**372**	**370**	**366**	**362**	**352**	**339**	**324**	**307**	**290**	**272**	**255**	**238**	**221**	**373**	**538**	**671**	**777**	**859**
C3. Commodity price	27	**180**	**282**	**222**	**164**	109	62	19	-21	-59	-92	-120	-144	-163	-178	-189	-30	**144**	**288**	**406**	**502**
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.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140
Debt service-to-exports ratio																					
Baseline	2	**12**	**16**	**15**	**14**	**12**	**11**	**10**	10	9	9	8	8	8	8	7	7	10	**13**	**15**	**17**
A. Alternative Scenarios																					
A1. Key variables at their historical averages in 2022-2042 2/	2	**13**	-1	-19	-34	-50	-63	-73	-112	-149	-179	-204	-225	-244	-259	-272	-282	-286	-288	-288	-287
B. Bound Tests																					
B1. Real GDP growth	2	**12**	**16**	**15**	**14**	**12**	**11**	**10**	10	9	9	8	8	8	8	7	7	10	**13**	**15**	**17**
B2. Primary balance	2	**12**	**18**	**20**	**19**	**16**	**14**	**13**	**16**	**18**	**17**	**16**	**15**	**14**	**14**	**13**	**12**	**14**	**17**	**19**	**21**
B3. Exports	2	**22**	**36**	**37**	**34**	**29**	**26**	**24**	**26**	**26**	**25**	**24**	**23**	**22**	**21**	**19**	**18**	**24**	**30**	**35**	**39**
B4. Other flows 3/	2	**12**	**17**	**18**	**17**	**14**	**13**	**12**	**14**	**14**	**13**	**13**	**12**	**11**	**11**	**10**	9	**12**	**15**	**17**	**19**
B5. Depreciation	2	**12**	**16**	**13**	**12**	10	9	8	8	4	4	4	5	5	5	5	4	8	**11**	**13**	**15**
B6. Combination of B1-B5	2	**16**	**24**	**19**	**18**	**14**	**13**	**12**	**14**	7	7	7	8	8	8	7	7	**11**	**16**	**19**	**22**
C. Tailored Tests																					
C1. Combined contingent liabilities	2	**12**	**17**	**16**	**15**	**13**	**11**	**11**	**10**	9	9	9	9	8	8	8	7	**10**	**13**	**15**	**17**
C2. Natural disaster	2	**14**	**23**	**22**	**21**	**18**	**16**	**15**	**15**	**13**	**13**	**13**	**12**	**12**	**11**	**11**	**10**	**13**	**17**	**20**	**22**
C3. Commodity price	2	**16**	**22**	**21**	**18**	**13**	**10**	9	8	7	5	3	1	-1	-3	-4	-5	-2	1	4	6
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.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Debt service-to-revenue ratio																					
Baseline	2	3	3	4	4	3	3	4	4	4	4	5	5	6	6	7	7	11	**15**	**18**	**21**
A. Alternative Scenarios																					
A1. Key variables at their historical averages in 2022-2042 2/	2	3	0	-4	-9	-15	-20	-27	-46	-68	-92	-118	-146	-179	-215	-255	-299	-320	-332	-344	-355
B. Bound Tests																					
B1. Real GDP growth	2	3	4	4	5	4	4	5	5	5	5	6	7	7	8	8	9	13	**18**	**22**	**26**
B2. Primary balance	2	3	4	5	5	5	5	5	7	8	9	9	10	11	11	12	13	**16**	**20**	**23**	**26**
B3. Exports	2	4	5	5	6	5	5	6	7	7	8	9	9	10	11	11	12	**17**	**22**	**27**	**31**
B4. Other flows 3/	2	3	4	4	4	4	4	4	6	6	7	7	8	8	9	9	10	13	**17**	**20**	**23**
B5. Depreciation	2	4	4	4	4	4	4	4	4	2	2	3	4	4	5	5	6	11	**16**	**20**	**24**
B6. Combination of B1-B5	2	4	5	4	5	4	4	4	6	3	4	4	5	6	6	7	7	13	**18**	**23**	**28**
C. Tailored Tests																					
C1. Combined contingent liabilities	2	3	3	4	4	4	4	4	4	4	5	5	6	6	7	7	8	11	**15**	**18**	**21**
C2. Natural disaster	2	3	4	4	5	4	4	5	5	5	6	6	7	7	8	8	9	13	**16**	**20**	**23**
C3. Commodity price	2	3	4	5	5	4	3	3	3	3	2	1	0	-1	-2	-4	-5	-3	1	4	7
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.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

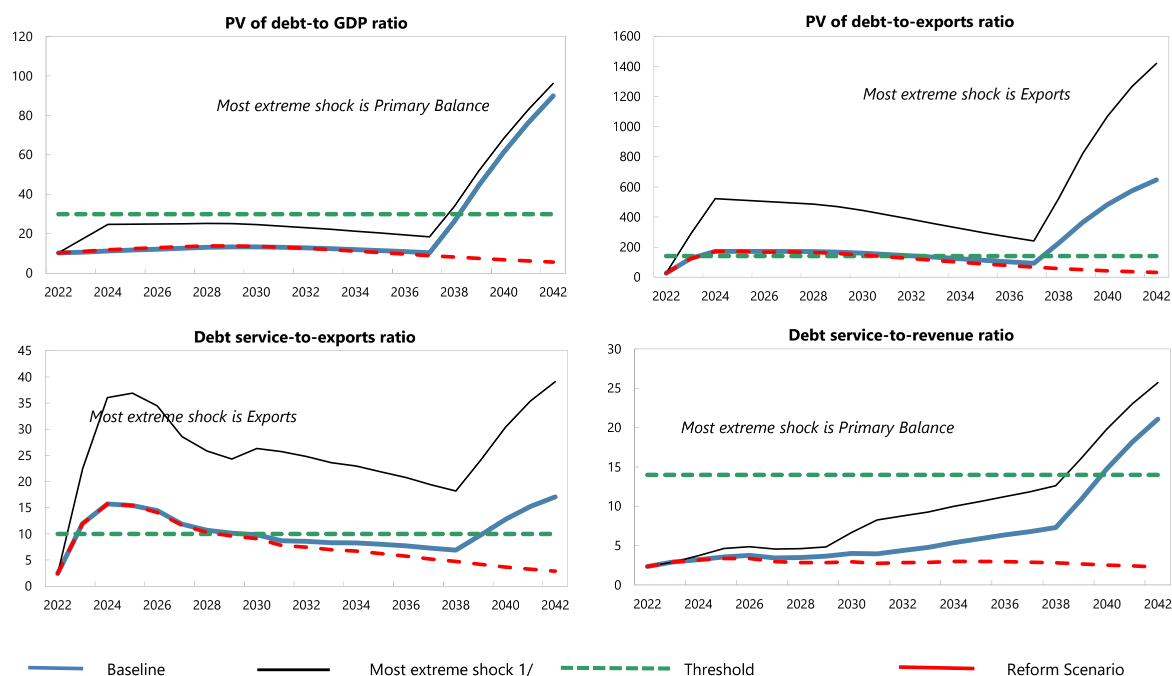
Sources: Country authorities; and staff estimates and projections.
1/ A bold value indicates a breach of the threshold.
2/ Variables include real GDP growth, GDP deflator (in U.S. dollar terms), non-interest current account in percent of GDP, and non-debt creating flows.
3/ Includes official and private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

Table 4. Timor-Leste: Sensitivity Analysis for Key Indicators of Public Debt, 2022-2032
(In percent)

	Projections 1/										
	2022	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PV of Debt-to-GDP Ratio											
Baseline	10	11	11	12	12	13	13	13	13	13	13
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2022-2042 2/	10	-11	-30	-44	-49	-55	-61	-67	-73	-79	-85
B. Bound Tests											
B1. Real GDP growth	10	15	21	26	30	34	**37**	**40**	**42**	**44**	**45**
B2. Primary balance	10	18	25	25	25	25	25	25	25	24	23
B3. Exports	10	13	16	16	17	17	17	17	17	17	16
B4. Other flows 3/	10	15	19	19	19	20	20	20	20	19	18
B5. Depreciation	10	12	11	9	8	7	7	6	5	4	3
B6. Combination of B1-B5	10	16	14	14	14	15	15	15	15	15	14
C. Tailored Tests											
C1. Combined contingent liabilities	10	14	14	15	15	15	16	16	16	16	15
C2. Natural disaster	10	20	21	22	23	23	24	24	24	24	24
C3. Commodity price	10	20	**36**	**49**	**60**	**68**	**75**	**80**	**84**	**88**	**90**
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.
Public debt benchmark	35	35	35	35	35	35	35	35	35	35	35
PV of Debt-to-Revenue Ratio											
Baseline	20	23	26	29	31	36	40	44	48	52	55
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2022-2042 2/	20	-24	-68	-104	-123	-149	-178	-213	-252	-296	-346
B. Bound Tests											
B1. Real GDP growth	20	30	46	59	73	89	107	126	145	164	184
B2. Primary balance	20	37	57	61	64	71	77	83	89	94	99
B3. Exports	20	28	36	39	43	47	53	58	62	66	69
B4. Other flows 3/	20	31	43	47	50	55	61	66	71	75	78
B5. Depreciation	20	26	25	23	22	21	21	20	18	17	15
B6. Combination of B1-B5	20	33	33	33	36	40	45	49	53	57	61
C. Tailored Tests											
C1. Combined contingent liabilities	20	29	33	36	39	43	48	53	57	62	66
C2. Natural disaster	20	43	48	53	58	65	73	80	87	95	102
C3. Commodity price	20	47	89	129	161	195	228	258	296	335	377
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	1.8	2.2	2.4	2.6	2.6	2.5	2.5	2.7	3.0	3.0	3.3
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2022-2042 2/	1.8	2.3	1.3	0.3	-0.5	-1.3	-1.8	-2.4	-6.8	-11.7	-15.8
B. Bound Tests											
B1. Real GDP growth	1.8	2.4	2.9	3.4	3.7	3.8	4.1	4.6	5.7	6.8	8.4
B2. Primary balance	1.8	2.2	2.7	3.3	3.4	3.3	3.4	3.6	5.0	6.2	6.7
B3. Exports	1.8	2.2	2.5	2.8	2.9	2.7	2.8	3.0	3.7	4.1	4.5
B4. Other flows 3/	1.8	2.2	2.6	3.0	3.1	2.9	3.0	3.2	4.1	4.8	5.2
B5. Depreciation	1.8	2.5	3.1	3.2	3.2	2.9	2.8	2.9	2.8	2.3	2.3
B6. Combination of B1-B5	1.8	2.2	2.5	2.7	2.7	2.6	2.6	2.8	3.1	3.1	3.5
C. Tailored Tests											
C1. Combined contingent liabilities	1.8	2.2	2.5	2.7	2.8	2.6	2.7	2.9	3.2	3.2	3.5
C2. Natural disaster	1.8	2.2	2.9	3.2	3.3	3.1	3.3	3.5	3.8	3.9	4.3
C3. Commodity price	1.8	2.4	3.3	4.5	5.4	5.9	6.5	7.3	9.8	13.3	17.0
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. Timor-Leste: Indicators of Public and Publicly Guaranteed External Debt under Alternative Scenarios, 2022-2042



Customization of Default Settings		
	Size	Interactions
Tailored Tests		
Combined CLs	Yes	
Natural Disasters	Yes	Yes
Commodity Prices 2/	No	No
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 for 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	1.6%	1.6%
USD Discount rate	5.0%	5.0%
Avg. maturity (incl. grace period)	29	29
Avg. grace period	6	6

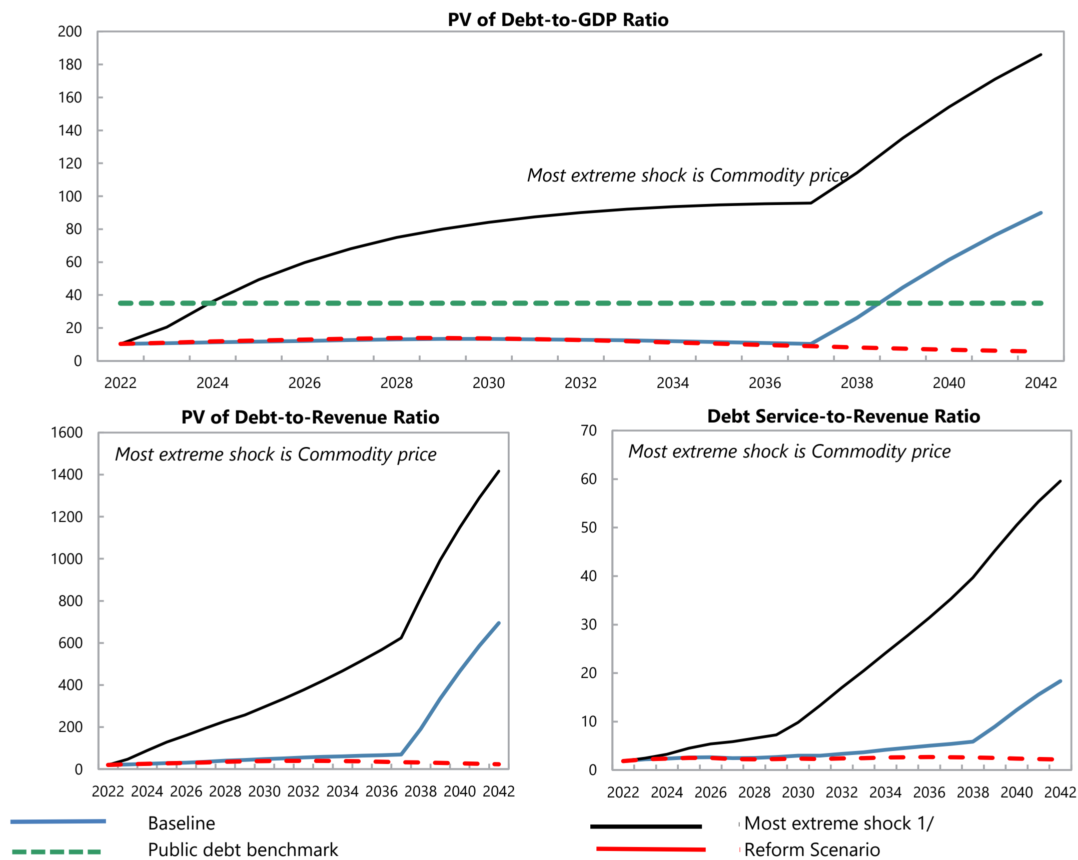
* Note: All the additional financing needs generated by the shocks under the stress tests are assumed to be covered by PPG external MLT debt in the external DSA. Default terms of marginal debt are based on baseline 10-year projections.

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 2032. Stress tests with one-off breaches are also presented (if any), while these one-off breaches are 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. Timor-Leste: Indicators of Public Debt under Alternative Scenarios, 2022-2042



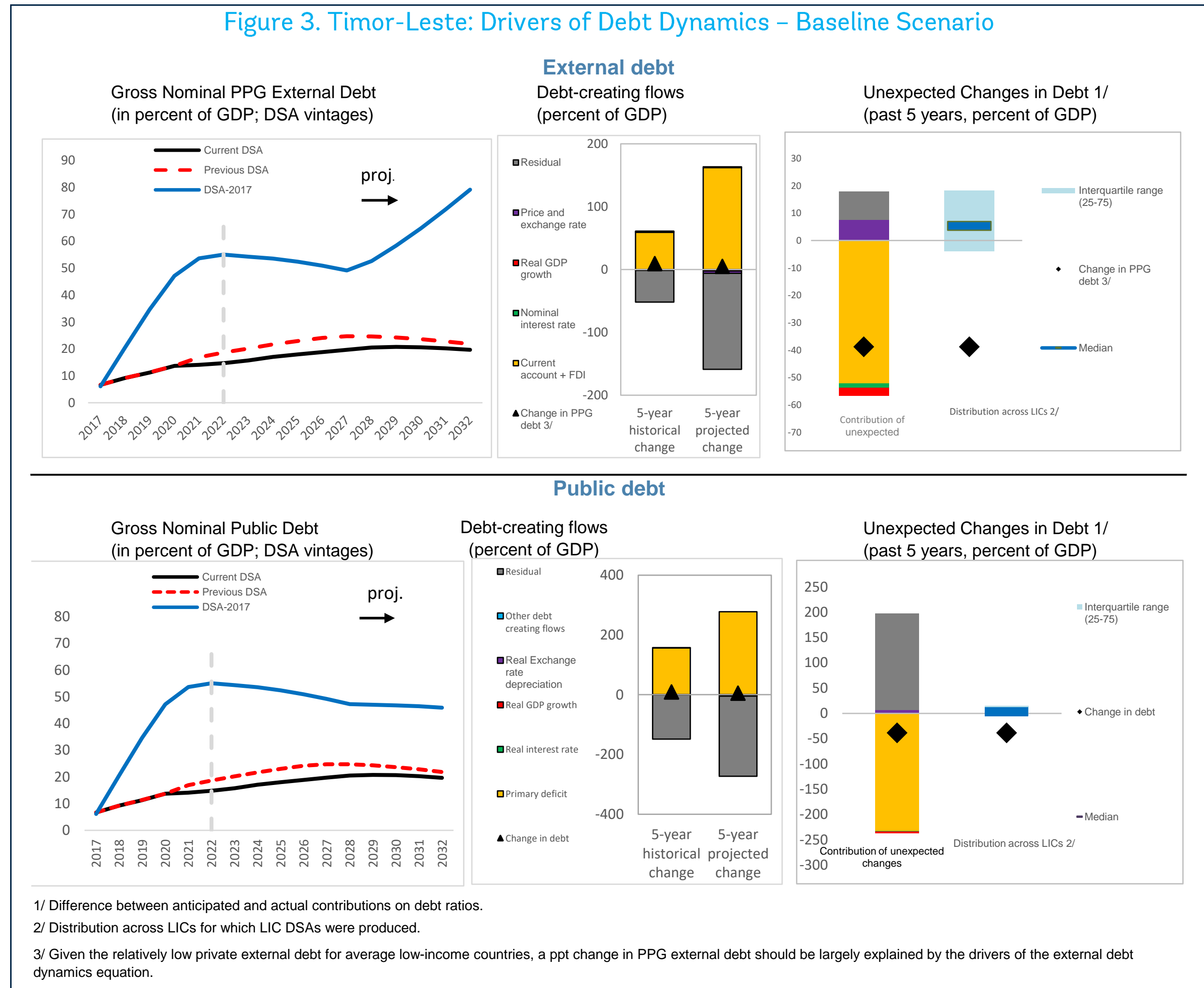
Borrowing Assumptions for Stress Tests*	Default	User defined
Shares of marginal debt		
External PPG medium and long-term	100%	100%
Domestic medium and long-term	0%	0%
Domestic short-term	0%	0%
Terms of marginal debt		
External MLT debt		
Avg. nominal interest rate on new borrowing in USD	1.6%	1.6%
Avg. maturity (incl. grace period)	29	29
Avg. grace period	6	6
Domestic MLT debt		
Avg. real interest rate on new borrowing	0.0%	0.0%
Avg. maturity (incl. grace period)	1	1
Avg. grace period	0	0
Domestic short-term debt		
Avg. real interest rate	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 2032. 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. Timor-Leste: Drivers of Debt Dynamics – Baseline Scenario



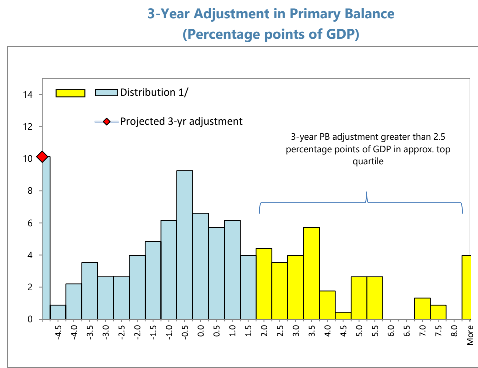
1/ Difference between anticipated and actual contributions on debt ratios.

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.

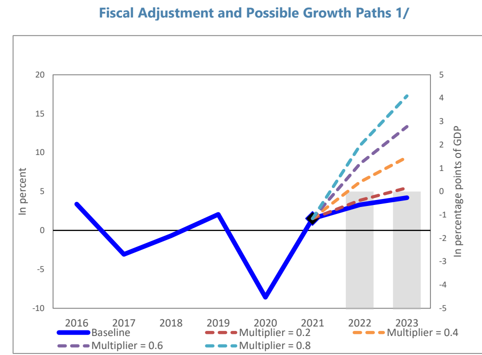
Figure 4. Timor-Leste: Realism Tools

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



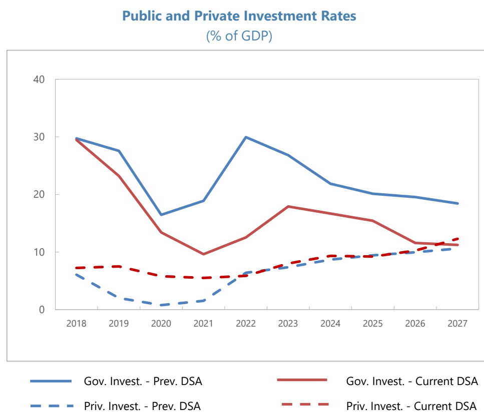
1/ Data cover Fund-supported programs for LICs (excluding emergency financing) approved since 1990. The size of 3-year adjustment from program inception is found on the horizontal axis; the percent of sample is found on the vertical axis.

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).

Public and Private Investment Rates
(% of GDP)



Contribution to Real GDP Growth
(percent, 5 year average)

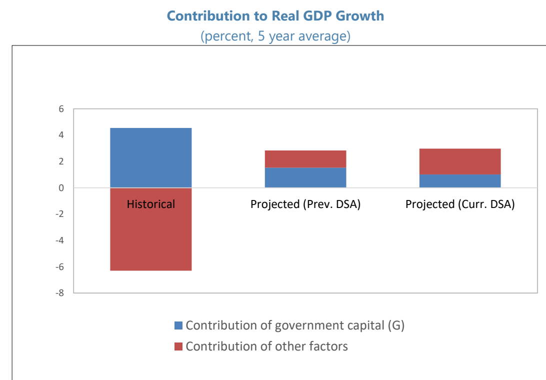
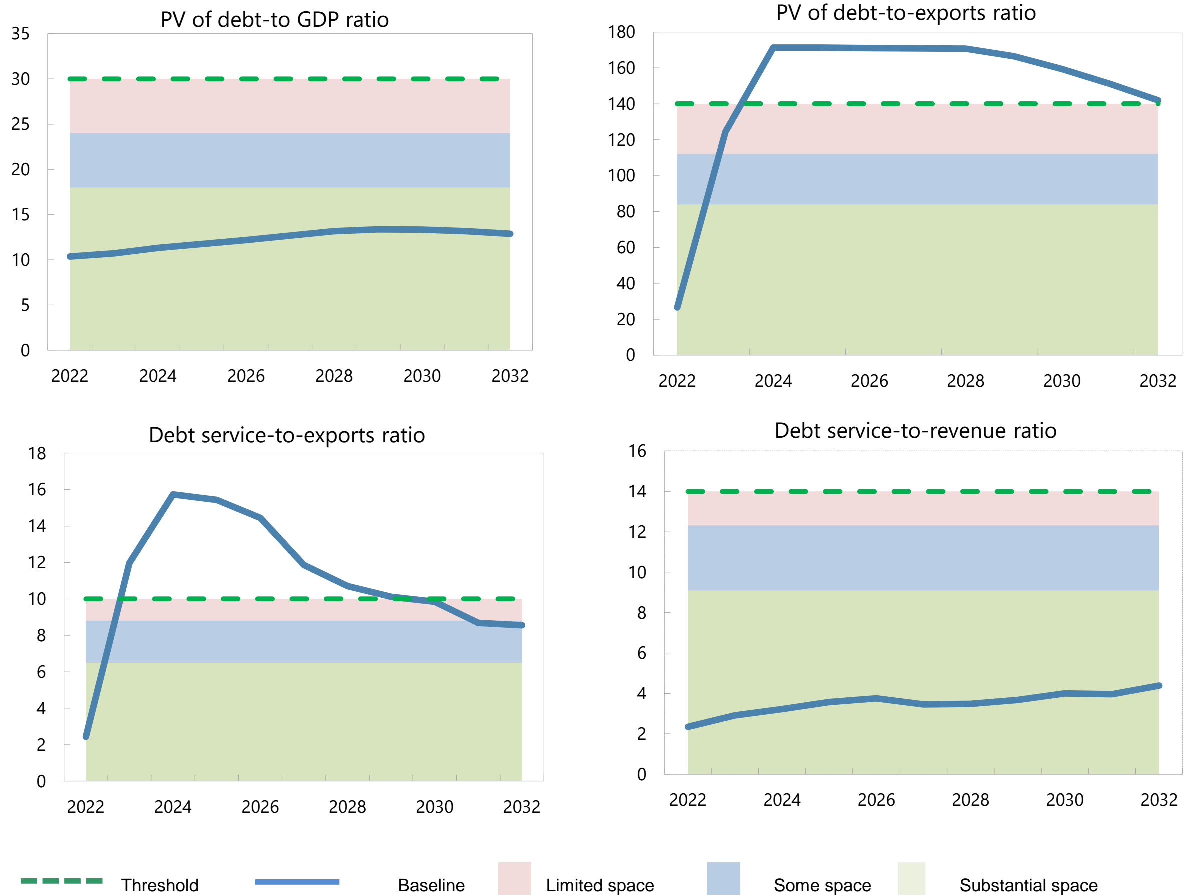


Figure 5. Timor-Leste: Qualifications of the Moderate Category, 2022-2032 1/



Threshold | Baseline | Limited space | Some space | Substantial space

Sources: Country authorities; and staff estimates and projections.
1/ For the PV debt/GDP and PV debt/exports thresholds, x is 20 percent and y is 40 percent. For debt service/Exports and debt service/revenue thresholds, x is 12 percent and y is 35 percent.