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BHUTAN

JOINT WORLD BANK-IMF DEBT SUSTAINABILITY ANALYSIS

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BHUTAN : 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. The risk of debt distress is assessed as moderate due to the FDI nature of hydro-related loans and the projected improvement of medium-term dynamics due to hydro exports and revenues.

Bhutan's risk of overall and external debt distress is assessed as moderate, unchanged from the 2018 DSA.[1] While the mechanical results point to a high risk of overall and external debt distress, with breaches in the indicators under the baseline scenario, judgement was applied given the unique mitigating factors. First, the majority of the outstanding public and publicly guaranteed debt is linked to hydropower project loans from the government of India (GoI). These projects are implemented under an intergovernmental agreement in which the GoI covers both financial and construction risks of the projects and commits to buy all surplus electricity at a price reflecting cost plus margin. Second, the debt dynamics are set to improve further over the medium term, driven by a significant increase in electricity exports and a decline in imports associated with hydropower construction. Overall, the analysis shows that external debt sustainability could be vulnerable to export and depreciation shocks, while the overall debt sustainability could be susceptible to contingent liabilities shocks. Within the moderate rating, Bhutan is assessed to have limited space to absorb additional shocks. Going forward, a gradual fiscal consolidation and revenue mobilization, a stable peg with the Indian rupee, and reforms to improve productivity and competitiveness of the non-hydropower sector, could help support debt sustainability.

[1] The current debt carrying capacity is consistent with a medium classification. The composite index (CI), estimated at 3.08 based on the October 2021 World Economic Outlook (WEO) and the 2020 World Bank Country Policy and Institutional Assessment (CPIA) data, indicates a strong debt-carrying capacity for Bhutan. The debt-carrying capacity is maintained at medium until two consecutive strong readings are obtained.

PUBLIC DEBT COVERAGE

1. **The coverage of public debt in this debt sustainability analysis (DSA) includes public and publicly guaranteed (PPG) debt**. PPG debt in Bhutan includes central government debt, central government borrowing on-lent to state-owned enterprises (SOEs) (including for hydropower-related projects), external guaranteed debt contracted by SOEs,[2] and central bank debt (standby credit facilities). Bhutan's local governments, social security fund and extra budgetary funds do not have any outstanding debt.[3] The coverage of public debt in the 2022 DSA is broadly the same as that in the 2018 DSA. The external debt definition is based on residency. The calibration of the contingent liability shock is based on the default values, which account for domestic non-guaranteed SOE debt (2 percent of GDP), financial market component (5 percent of GDP), and public private partnerships (PPPs) (2 percent of GDP).

Table 1. Bhutan: Debt Coverage

	Subsectors of the public sector	Sub-sectors covered
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)	X
8	Non-guaranteed SOE debt	

1	**The country's coverage of public debt**	The central government, central bank, 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	0.0	
3	SoE's debt (guaranteed and not guaranteed by the government) 1/	2	percent of GDP	2.0	
4	PPP	35	percent of PPP stock	2.0	
5	Financial market (the default value of 5 percent of GDP is the minimum value)	5	percent of GDP	5.0	
	Total (2+3+4+5) (in percent of GDP)			9.0	

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%.

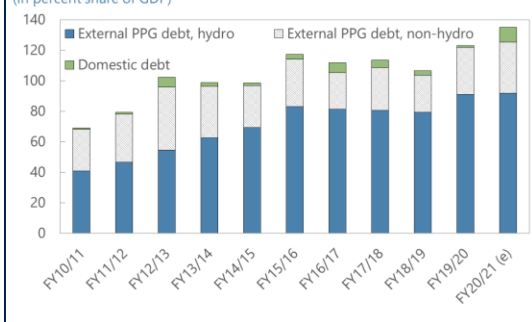
[2] All external debt contracted directly by the SOEs is guaranteed by the government. According to the 2016 Public Debt Policy, SOEs are required to seek approval from the Minister of Finance and Cabinet to contract external debt.

[3] Non-guaranteed domestic SOE debt is limited, and the government is working to standardize the reporting of SOE debt. As part of the Sustainable Development Policy Financing (SDFP) of the IDA, Bhutan is implementing Performance and Policy Actions (PPAs) to improve debt management and transparency, as well as to manage fiscal risks. For instance, the authorities published quarterly public debt reports, the Medium-Term Debt Management Strategy (FY2020/21 to FY2022/23) and mandated the annual publication of the national DSA to strengthen the institutional capacity for risk assessment and monitoring of public debt. In addition, authorities have improved the reporting of SOEs to strengthen the fiscal oversight of SOEs and related fiscal risks.

BACKGROUND ON DEBT

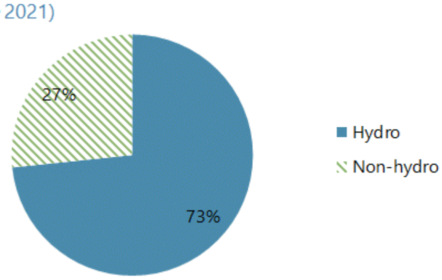
2. **The stock of PPG debt has increased significantly over the past decade, driven by investments in hydropower projects, and more recently the COVID-19 pandemic**. Bhutan has experienced rapid economic growth in the last decade, supported by public sector-led hydropower development. While large investments in hydropower resulted in substantial external debt accumulation, risks of debt distress were mitigated by a bilateral agreement with India, the main creditor of the country's external debt. Hydropower loans are mostly supplied by the Government of India (GoI) and on-lent to SOEs, which carry out the financing and the management of hydropower infrastructure on behalf of the government. Non-hydropower external PPG debt has helped finance infrastructure projects focusing on urban development, rural electrification, and the agriculture sector, with most owed to external creditors in concessional terms. On domestic debt, there has recently been successful issuances of government bonds, but domestic debt is mostly in shorter-term T-Bills for cash management purposes. Compared with FY2016/17, PPG debt increased by about 23 percent of GDP. Hydropower debt increased from about 81 percent to 92 percent of the GDP, reflecting loan disbursements for ongoing hydropower projects from the GoI. Non-hydropower external PPG debt rose from about 24 percent to 33 percent, remaining within the threshold under the government's public debt policy of 35 percent of GDP. In addition, domestic debt rose slightly from 6.6 percent to 9.7 percent in the same period. The increase in non-hydropower external PPG debt and domestic debt in FY2019/20 and FY2020/21 reflects higher gross financing needs, driven by the impact of and responses to the COVID-19 pandemic.

Public and Publicly Guaranteed Debt
(In percent share of GDP)



Source: Royal Monetary Authority.

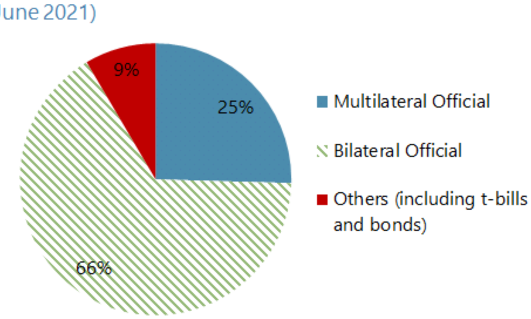
Outstanding PPG External Debt by Purpose
(June 2021)



Source: Royal Monetary Authority.

3. **Total PPG debt stood at 135 percent of GDP in FY2020/21.** External debt accounted for 93 percent of total PPG debt, with the remaining being domestic debt. Hydropower debt was the largest part of external debt, comprising 73 percent of the PPG external debt stock in FY2020/21. Most of the hydropower projects were financed by India, with 70 percent of PPG external debt denominated in India rupees. Non-hydropower debt comprised 27 percent of the total external PPG debt stock in FY2020/21, which is predominantly owed to multilateral (87 percent) and bilateral creditors (12 percent), with some guaranteed SOE debt (2 percent). About 93 percent of the total external PPG debt was from official creditors, with the GoI lending the largest share at 65 percent, followed by the Asian Development Bank

Outstanding PPG Debt by Creditor
(June 2021)



Source: Royal Monetary Authority.

(ADB, 12.5 percent) and the International Development Association (IDA, 11.4 percent).[4] The domestic PPG debt was mostly in the form of treasury bills (5.5 percent of total PPG debt) and 3-year and 10-year government bonds (1.6 percent). About 96 percent of the total PPG debt was based on a fixed interest rate, with the remaining four percent pegged to a floating rate.

4. The hydropower-related debt from the GoI is akin to foreign direct investment (FDI). As emphasized in the last three DSAs[5], India provides financing for hydropower projects under an intergovernmental agreement, which guarantees returns from electricity exports and mitigates exchange rate risks. The GoI bears the construction and financial risks and commits to buy all surplus electricity at a purchase price at cost (including costs of the project, financing costs, and operation and maintenance charges) plus a margin. The price of electricity is set at the time of project commissioning, when actual costs are known, and are set to allow revenue to service debt and a financial return, with the rate revisited every three years to incorporate changes in costs. Hydropower projects are insured (and re-insured) for natural disaster. In addition, debt service begins only after the hydropower projects are commissioned. The financing arrangements mitigate exchange rate risks because both the electricity export receipts and the hydropower debt services are denominated in Indian Rupees, to which the Ngultrum is pegged. In other words, risks associated with hydropower-related project and debt is largely mitigated by the guarantees provided by the GoI.

ASSUMPTIONS ON MACRO PROJECTIONS

5. The near-term growth outlook is weighed down by pandemic- and geopolitical-uncertainties, but hydropower exports should help support medium-term growth and current account.[6] Growth had been strong prior to the COVID-19 pandemic, due to solid performances in the hydropower and service sectors. Compared with the 2018 DSA, recent growth outcomes are weaker, with GDP contracting by 2.4 percent in FY2019/20 and 3.7 percent in FY2020/21, resulting from the immediate impact of the pandemic and lockdown measures. While the hydropower sector supported industrial growth, construction and manufacturing sectors were adversely affected by labor shortages, high input prices, and weaker demand. On the demand side, private investment and consumption contracted sharply due to domestic COVID-19 containment measures and lower income. Expansionary fiscal policy in the past two years supported the pandemic response and recovery efforts. The 12th Five Year Plan (FYP) was re-prioritized and front-loaded, with higher expenditures on health, essential food and fuel, and income support. The National Resilience Fund (NRF) provided income support to individuals directly affected by the pandemic and interest payment support to individuals and businesses. Reflecting pandemic-related current and capital expenditure, the fiscal deficits in the near term are higher than envisaged in the 2018 DSA,

[4] The completed and ongoing hydropower development projects with the GoI are mostly financed through commercially priced loans (with a repayment period of 10-15 years, a grace period of 8-9 years, and an interest rate of 9-10.75 percent) and capital grants from India. The share of capital grants in the total capital cost is about 30 to 60 percent depending on the project (with the remainder being financed by commercially prices loans).

[5] For more details, please see Box 1 of the 2014 Bhutan Article IV DSA.

[6] The hydropower sector accounted for about 27 percent of GDP in 2020 (including the electricity and construction sector, which is mainly related to hydropower construction), and 49 percent of total goods exports in FY20/21. Hydropower-related revenues accounted for about 37 percent of total domestic revenues in FY20/21 (including corporate income tax from the Druk Green Power Corporation (DGPC), royalties from hydropower, dividends from Druk Holdings and Investment (DHI), and profit transfers from new hydropower projects).

contributing to a higher starting debt stock of 135 percent of GDP in FY2020/21. Over the medium term, GDP growth, current account and fiscal positions are expected to improve, with hydropower-related imports declining and electricity exports picking up, broadly in line with the assumptions in the 2018 DSA. The planned fiscal adjustment is supported by revenue mobilization, including the planned introduction of the Goods and Services Tax (GST), a significant increase in hydropower revenue over the medium term, and a projected economic recovery.

6. The main baseline macroeconomic assumptions underpinning the 2022 DSA are as follows:

- **Real GDP growth and inflation:** After two consecutive years of contraction, growth is expected to expand by 4.4 percent in FY2021/22, supported by Bhutan's rapid vaccination campaign[7] and ongoing fiscal support, but weighed down somewhat by pandemic lockdowns, higher commodity prices, and weaker external demand stemming from geopolitical tensions. Over the medium term, growth will be driven by new hydropower plants coming on stream, a recovery and reorientation of the tourism sector towards higher value visitors, and a recovery in services and manufacturing sectors. The capacity of hydropower generation is expected to approximately double with the onboarding of four hydropower projects, which will support GDP growth, and result in an increase in electricity exports and hydropower revenues.[8] Long-term growth is projected to be around 5.8 percent, supported by reforms that boost economic diversification, digitalization, and private-sector-led growth. This is broadly along the lines of the last DSA but below the pre-COVID ten-year historical average (6.2 percent). The inflation rate rose from 3 percent in FY2019/20 to 8.2 percent in FY2020/21 owing to a surge in food prices. In the near term, average inflation in FY2021/22 is expected to remain elevated at 7.9 percent (6.5 percent end-of-period), owing to continued supply disruptions and high non-food inflation. Over the medium- and long-term, inflation is projected to be in line with that in India, given the ngultrum's peg to the rupee. The GDP deflator is assumed to move in tandem with inflation. Amid the pandemic and geopolitical tensions, uncertainty around the economic outlook is elevated, with the balance of risks tilted to the downside. External risks include a sharper-than-expected global slowdown and/or a slowdown in India, including from future pandemic waves, an intensification of geopolitical tensions, and a prolonged decline in tourism, which could result in lower external demand for non-hydropower-related goods and services. Domestic risks stem from pandemic-related uncertainties. Other domestic risks include prolonged financial sector strains amid limited fiscal space, including from any contingent liabilities in the financial sector masked by the broad-based pandemic support measures. Furthermore, delays in hydropower projects and lower-than-expected hydropower production could have significant impact on growth, fiscal revenues, and exports. In addition, Bhutan could be vulnerable to climate-related shocks. For

[7] Vaccination efforts are well advanced, and the country started giving COVID-19 booster shots to the general population in February 2022.

[8] Four hydropower projects—Nikachhu (118 MW, expected in 2023), Punatsangchhu 2 (1,020 MW, expected in 2023), Kholongchhu (600 MW, expected in 2025), and Punatshangchhu 1 (1,200 MW, expected in 2025)—will significantly expand the installed generation capacity between 2023 and 2026, from 2,334 MW to 5,273 MW. In the past, hydropower-related activities have played an important role in supporting GDP growth, through a sharp increase in investment during the construction phase of new hydropower plants and a spike in electricity exports to India when new plants are commissioned. On the supply side, the output in the electricity sector typically rose markedly when plants are commissioned.

instance, climate-induced changes to glacial-fed rivers and adverse weather patterns could reduce hydropower generation and exports.

- **Fiscal balance:** The fiscal (primary) deficit is projected to peak at 10.2 (8.8) percent of GDP in FY2021/22 due to the planned increase in COVID-19-related current and capital expenditure and subdued revenue performance. In contrast, the 2018 DSA had projected a primary surplus in the near term, in absence of any COVID-related measures. The fiscal deficit is expected to moderate from FY2022/23 as pandemic-related fiscal measures are phased out amid an improvement in economic conditions. Nevertheless, the phasing out of support measures is expected to gradual, given pandemic and geopolitical uncertainties. Domestic revenues (excluding grants) are expected to increase over the medium term, supported by hydropower revenues and policies aimed at mobilizing non-hydropower revenues, including the planned introduction of the GST in FY2022/23. External grants are projected to decline as Bhutan's GDP per capita rises. In the long term, the primary fiscal balance is expected to stabilize at around 1.7 percent of GDP, broadly in line with the assumptions in the 2018 DSA.

- **External balance:** The current account deficit (CAD) is expected to narrow slightly to 10.6 percent in FY2021/22.[9] Starting from FY2022/23, the CAD is projected to moderate further, due to a sharp increase in electricity exports associated with the doubling of hydropower capacity and a gradual decline in hydropower-related imports after the completion of several hydropower construction projects. High oil prices and weaker external demand resulting from the war in Ukraine are expected to weigh on the balance of payments, however, Bhutan's sizeable exports of ferro-alloy could provide some offset. The overall balance of payments, which has been supported by grant financing, is expected to remain positive over the medium term. In the long term, the current account is projected to stay in surplus, supporting the overall balance and reserve accumulation. Compared with the 2018 DSA, the increase in exports is driven by the onboarding of several hydro projects in the short and medium term, which is expected to double the generation capacity by FY2026/27. External risks could include higher commodity prices, including of fuel and food, weaker external demand from geopolitical tensions, and lower exports from delays in the onboarding or construction of hydropower projects.

- **Financing mix:** The gross financing needs in the projection period are expected to be financed by both external and domestic debt. The financing mix envisages that external loans (including from IDA) would finance around 80 percent of gross financing needs in the medium term, with the remaining 20 percent financed by domestic borrowing. In the long term, the share of domestic financing is expected to increase gradually to around 40 percent of total financing needs by 2042, with a gradual shift from short-term treasury bills to medium- and longer-term bonds, due to further developments of the domestic bond market, consistent with authorities' debt market development plan.[10] The share of concessional external debt is expected to decline over the long term as Bhutan

[9] Non-interest CAD is projected at 8.9 percent in FY2021/22.

[10] The financing mix is consistent with the strategy outlined in the authorities' Medium-Term Debt Management Strategy (FY2020/21 to FY2022/23). The strategy outlines planned activities to support the development of a domestic debt market, including the development of a government securities issuance system, consultation meetings with investors, the publication of a bond issuance calendar, and the preparation of education materials on government bonds.

graduates from the LDC status and as its income level rises. The cost of domestic debt is assumed to be around 6.5 percent for longer-dated bonds.

Text Table. Bhutan: Key Macroeconomic Assumptions

	2022 DSA				2018 DSA			
	2020	2021	MT (2022-2027)	LT (2028-2042)	2020	2021	MT (2022-2027)	LT (2028-2038)
Real GDP Growth (%)	-2.4	-3.7	5.6	5.8	6.3	6.0	6.6	6.2
GDP deflator in US dollar terms (in percent)	0.9	3.1	5.1	4.0	0.7	1.6	4.3	4.3
Non-interest current account balance (in percent of GDP)	-11.6	-10.4	-4.7	4.0	-7.8	-4.5	8.6	6.0
Growth of exports of G&S (US dollar terms, in percent)	0.8	-5.3	14.1	5.4	12.3	5.6	10.9	2.0
Growth of imports of G&S (US dollar terms, in percent)	-10.9	-6.2	7.4	4.9	2.0	1.1	3.7	1.7
Primary Fiscal Balance (% of GDP)	-1.5	-5.3	-2.9	1.7	2.5	2.9	4.7	1.6

Sources: Bhutanese authorities and IMF staff estimates.
Note: 2020 refers to FY2019/20.

7. **The realism tools suggest that macroeconomic and fiscal assumptions are broadly reasonable (Figures 3 and 4).** The 3-year adjustment in the primary balance is near the median of the sample of the 3-year fiscal adjustments for low-income countries (LICs) that were under an IMF supported program since 1990. Under various assumptions on fiscal multipliers, growth would be lower than in the baseline scenario. The deviation of the growth projection from what is implied by the fiscal multipliers can be explained by the fact that growth in FY2021/22 largely reflects the gradual normalization of economic activities from COVID-19, a sizable base effect from the sharp contraction in FY2019/20 and FY2020/21, and the on-streaming of hydropower projects that support exports and economic growth.[11] Moreover, the contribution of government capital to GDP growth is broadly consistent with historical average. Over the projection horizon, other factors including reforms that boost economic diversification, digitalization, and private-sector-led growth are expected to support long-term GDP growth. Finally, historically, the PPG external debt has been driven by a large CAD, reflecting large hydro-related imports. Going forward, the CAD is projected to moderate, reflecting the increase in electricity exports and a gradual decline in hydropower-related imports.[12]

COUNTRY CLASSIFICATION AND DETERMINATION OF SCENARIO STRESS TESTS

8. **Bhutan's debt carrying capacity (DCC) is assessed as medium, based on the October 2021 WEO and the 2020 World Bank CPIA.** The Composite Indicator (CI) is based on a weighted average of several factors such as the country's real GDP growth, remittances, international reserves, world growth, and the World Bank CPIA score. The CI is calculated based on the last two WEO vintages (October 2021 and April 2021 WEO), using 10-year averages of these variables (5 years of historical data and projections, respectively). While the latest CI based on the October 2021 WEO and the 2020 WB CPIA suggests a strong debt carrying capacity for the current vintage (3.08), the country classification would only be revised up from medium to strong if two consecutive signals suggest a strong rating. Given that the classification

[11] The 2018 DSA did not provide a breakdown between public and private investment rates. Therefore, it is not possible to draw comparison in Figure 4 on the realism tool.
[12] The relatively sizable residuals and residual financing in the historical data could be attributed to a discrepancy between national statistics and debt data. The discrepancy could be due to a difference in the treatment of hydropower debt and the BOP and fiscal statistics, or a difference in the treatment of the transfers between central government and SOEs.

based on the previous vintage was medium, the DCC is considered medium for the purpose of the 2022 DSA, the same as the 2018 DSA.

9. The DSA thresholds applicable for Bhutan are correspondingly medium. For external debt, the thresholds are 180 percent for the present value (PV) of external debt to exports ratio and 40 percent for the PV of the external debt to GDP ratio. For external debt servicing, the thresholds are 15 percent of debt service to exports ratio and 18 percent debt services to revenue ratio. Finally, the application benchmark for public debt is 55 percent for the PV of total public debt in percent of GDP.

Debt Carrying Capacity and Thresholds

Country	Bhutan
Country Code	514
Debt Carrying Capacity	Medium

Final	Classification based on current vintage	Classification based on the previous vintage	Classification based on the two previous vintage
Medium	Strong 3.08	Medium 3.02	Medium 3.01

Note: Until the April 2019 WEO vintage is released, the two previous vintages ago classification and corresponding score are based solely on the CPIA per the previous framework.

Applicable thresholds

APPLICABLE	
EXTERNAL debt burden thresholds	
PV of debt in % of	
Exports	180
GDP	40
Debt service in % of	
Exports	15
Revenue	18

APPLICABLE	
TOTAL public debt benchmark	
PV of total public debt in percent of GDP	55

DEBT SUSTAINABILITY

EXTERNAL DEBT SUSTAINABILITY ANALYSIS

10. Under the baseline scenario, Bhutan's PPG external debt indicators exceed the thresholds for several years, before falling below the thresholds in later years. From a stock perspective, the present value (PV) of debt to GDP ratio would exceed the threshold until 2039, with the PV of debt to exports falling below the threshold in 2034, reflecting a projected pick-up in hydro-related exports. From a flow perspective, the debt service to exports ratio and the debt-service to revenue ratio would fall below their respective thresholds from 2039, as hydropower projects are expected to generate exports and revenue to cover external debt service (Figure 1). Specifically, the total PPG debt to GDP ratio is expected to moderate from around 135 percent in 2021 to about 105 in the medium term (by 2027) and reduce further to about 37 percent in the long term (by 2042, Table 2). Similarly, the external debt to GDP ratio will fall from around 125 percent in 2021 to 102 percent in the medium term, and to 35 percent in the long term (Table 1).

11. Stress tests suggest that Bhutan's external debt trajectory could be vulnerable to the exchange rate and export shocks, similar to the 2018 DSA. A depreciation in the ngultrum could increase the value of Bhutan's external liabilities, which are largely denominated in foreign currency (particularly in rupees).[13] An exchange rate shock could then imply a higher debt stock and higher debt service, with the PV of debt to GDP ratio and debt service to revenue ratio falling below the thresholds later in 2040. Similarly, a shock to exports would imply a deterioration in Bhutan's repayment capacity, with the PV of debt to exports ratio and debt service to exports ratio above the thresholds even towards the end of the horizon. Export shocks could stem from delays in the onboarding or construction of hydropower projects. In addition, as noted earlier, Bhutan is vulnerable to climate shocks.[14]

PUBLIC DEBT SUSTAINABILITY ANALYSIS

12. Similar to the 2018 DSA, Bhutan's public debt follows closely the dynamics of external debt and does not pose an additional risk to the debt profile. Domestic debt only accounted for about 7 percent of total outstanding debt in FY2020/21. While the 2022 DSA assumes a gradual increase in domestic financing to about 40 percent of new debt, external debt remains the most important source of financing. Under both baseline and stress scenarios, the PV of the debt to GDP ratio would exceed the threshold until around 2035. Similarly, the PV of debt to revenue ratio and debt service to revenue ratio would also be on a downward trajectory. Going forward, the authorities plan to further develop the domestic debt market, including through the issuance of longer-term domestic bonds (Figure 2).

RISK RATING AND VULNERABILITIES

13. The 2022 DSA assesses Bhutan at moderate risk of external and overall debt distress, similarly to the 2018 DSA. While the mechanical results point to a high risk of overall and external debt distress, with breaches in the indicators under the baseline scenario, judgment was applied given unique mitigating factors supporting the sustainability of Bhutan's debt stock. Almost three quarters of Bhutan's PPG external debt is linked to hydropower project loans from GoI, which covers both financial and construction risks of the projects and commits to buy all surplus electricity at a price reflecting cost plus profits. In addition, debt dynamics are set to improve further over the medium term driven by a significant increase in electricity exports and a decline of imports associated with hydropower construction. Overall, the analysis shows that external debt sustainability could be vulnerable to export and depreciation shocks,

[13] The ngultrum is pegged to the rupee at par and has been depreciating in real effective terms in recent years. Movements in the real effective exchange rate (REER) are heavily influenced by the rupee. The peg has been an adequate nominal anchor and remains appropriate as India is Bhutan's largest trade and development partner. A stable peg could help mitigate the impact of exchange rate shocks on the economy. Furthermore, Bhutan's reserve coverage is assessed to be adequate based on the External Sector Assessment of the 2022 Article IV.

[14] The historical scenario is based on the 10-year historical average of key macroeconomic variables, instead of the baseline projection. The historical scenario differs from the baseline scenario due to several factors, including a contraction in growth due to the COVID shock, higher government spending and weaker current account position in recent years. These factors resulted in an increase in higher future gross financing needs and total PPG debt levels under the historical scenario. In contrast, the baseline scenario envisages a recovery in GDP growth following the pandemic shock, a gradual consolidation of fiscal deficit and more favorable current account dynamics, reflecting the increase in electricity exports and a gradual decline in hydropower-related imports.

while the overall debt sustainability could be susceptible to contingent liabilities shocks. Within the moderate rating, Bhutan is assessed to have limited space to absorb additional shocks without being downgraded to a high risk of debt distress - (Figure 5). As noted earlier, the baseline is subject to important risks, including uncertainties related to the pandemic and geopolitical tensions, further delays in the completion of hydropower plants, and the materialization of financial sector contingent liabilities. Going forward, a gradual fiscal consolidation and revenue mobilization, a stable peg with the Indian rupee, and reforms to improve productivity and competitiveness of the non-hydropower sector, could help support debt sustainability.

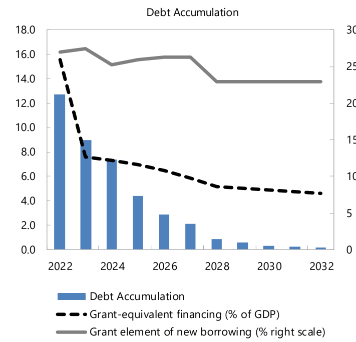
AUTHORITIES' VIEW

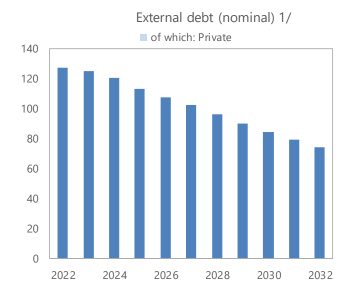
14. The authorities broadly agreed with staff's assessment of debt sustainability and the need for revenue mobilization, and fiscal consolidation over the medium term. The authorities noted that although public debt ratio has increased to relatively high levels, the risk of debt distress remained moderate due to the unique mitigating factors supporting the sustainability of Bhutan's debt stock. Furthermore, the authorities expect a gradual fiscal consolidation and a moderation in the debt-to-GDP ratio over the medium-term, driven by a significant increase in electricity exports and the completion of hydropower construction. On revenue mobilization, in addition to the introduction of the GST in July 2022, the authorities are planning on direct tax and property tax reforms to further broaden the tax base and increase revenue. The authorities concurred that pandemic support measures would need to be more targeted going forward given sustainability and financial stability considerations. Finally, the authorities reiterated the importance of further developing the domestic bond market as an alternative source of funding and to strengthen fiscal-monetary coordination.

Table 1. Bhutan: External Debt Sustainability Framework, Baseline Scenario, 2019-42 (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/	105.7	123.6	125.3	127.0	125.0	120.2	113.1	107.5	102.3	74.2	35.1	**106.0**	**101.7**
of which: public and publicly guaranteed (PPG)	103.6	121.9	125.3	127.0	125.0	120.2	113.1	107.5	102.3	74.2	35.1	**104.5**	**101.7**
Change in external debt	-4.9	17.9	1.7	1.7	-2.0	-4.9	-7.0	-5.6	-5.2	-4.9	-3.8		
Identified net debt-creating flows	23.1	13.9	12.8	5.6	4.4	-1.9	-5.4	-5.2	-5.9	-8.7	-6.5	**18.7**	**-4.6**
Non-interest current account deficit	19.1	11.6	10.4	8.9	8.0	3.2	-1.7	-2.6	-4.0	-7.4	-5.2	**20.1**	**-2.0**
Deficit in balance of goods and services	18.4	12.9	11.9	14.5	10.7	4.8	1.1	-0.1	-1.3	-4.7	-2.9	**21.4**	**0.8**
Exports	31.7	32.4	31.0	30.2	32.0	36.0	38.5	39.4	39.7	34.3	27.1		
Imports	50.2	45.4	42.9	44.6	42.7	40.8	39.6	39.3	38.4	29.6	24.2		
Net current transfers (negative = inflow)	-7.0	-7.1	-5.9	-10.3	-6.1	-5.2	-5.3	-4.8	-4.3	-3.4	-2.5	**-7.1**	**-5.0**
of which: official	-4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Other current account flows (negative = net inflow)	7.7	5.7	4.3	4.8	3.3	3.6	2.5	2.2	1.6	0.7	0.2	**5.8**	**2.1**
Net FDI (negative = inflow)	0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	**0.0**
Endogenous debt dynamics 2/	3.9	2.4	2.4	-3.3	-3.5	-5.1	-3.7	-2.6	-1.8	-1.3	-1.3		
Contribution from nominal interest rate	1.4	0.8	1.4	1.6	1.7	2.5	3.1	3.5	3.9	2.9	0.8		
Contribution from real GDP growth	-5.0	2.6	4.6	-5.0	-5.3	-7.5	-6.8	-6.1	-5.7	-4.2	-2.1		
Contribution from price and exchange rate changes	7.6	-1.0	-3.7	...	...	...	...	...	...	...	...		
Residual 3/	-28.0	4.0	-11.1	-3.9	-6.4	-2.9	-1.7	-0.4	0.7	3.8	2.7	**-13.0**	**-0.1**
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	**...**	**...**	**112.4**	**113.0**	**112.3**	**108.5**	**103.3**	**97.7**	**92.1**	**63.9**	**27.0**		
PV of PPG external debt-to-exports ratio	**...**	**...**	**363.1**	**374.6**	**351.3**	**301.1**	**268.2**	**248.2**	**232.0**	**186.3**	**99.5**		
PPG debt service-to-exports ratio	**9.4**	**5.5**	**11.5**	**21.7**	**18.0**	**17.8**	**17.0**	**19.4**	**19.1**	**20.6**	**12.0**		
PPG debt service-to-revenue ratio	**16.3**	**8.1**	**14.0**	**36.6**	**29.1**	**29.7**	**28.4**	**32.2**	**31.6**	**28.7**	**12.2**		
Gross external financing need (Million of U.S. dollars)	550.7	331.7	334.0	410.6	395.2	304.3	168.9	189.4	145.5	-20.2	-259.8		
Key macroeconomic assumptions													
Real GDP growth (in percent)	4.4	-2.4	-3.7	4.4	4.5	6.7	6.2	5.9	5.8	5.8	5.8	**3.6**	**5.7**
GDP deflator in US dollar terms (change in percent)	-6.4	0.9	3.1	6.0	3.9	3.4	2.9	2.6	2.4	2.2	2.2	**0.0**	**3.0**
Effective interest rate (percent) 4/	1.2	0.8	1.1	1.4	1.5	2.2	2.8	3.4	3.9	3.9	2.2	**2.0**	**3.2**
Growth of exports of G&S (US dollar terms, in percent)	-1.9	0.8	-5.3	7.9	15.1	24.4	16.8	11.0	9.3	4.1	6.1	**0.2**	**10.0**
Growth of imports of G&S (US dollar terms, in percent)	-1.2	-10.9	-6.2	15.2	3.9	5.6	6.0	7.7	6.0	5.2	6.4	**-2.2**	**5.2**
Grant element of new public sector borrowing (in percent)	...	...	...	26.9	27.5	25.2	25.9	26.3	26.3	22.9	22.9	**...**	**24.8**
Government revenues (excluding grants, in percent of GDP)	18.2	21.8	25.4	17.9	19.8	21.5	23.0	23.7	24.1	24.6	26.6	**21.7**	**22.9**
Aid flows (in Million of US dollars) 5/	633.7	845.4	201.9	336.2	173.2	172.3	198.3	195.4	192.5	207.8	373.7		
Grant-equivalent financing (in percent of GDP) 6/	...	...	...	15.6	7.6	7.3	7.0	6.5	5.9	4.6	3.2	**...**	**6.8**
Grant-equivalent financing (in percent of external financing) 6/	...	...	...	54.6	46.4	47.8	55.4	54.0	54.0	53.5	72.4	**...**	**52.9**
Nominal GDP (Million of US dollars)	2,452	2,416	2,397	2,653	2,881	3,179	3,474	3,775	4,089	6,052	13,208		
Nominal dollar GDP growth	-2.3	-1.5	-0.8	10.7	8.6	10.3	9.3	8.7	8.3	8.1	8.1	**3.6**	**8.8**
Memorandum items:													
PV of external debt 7/	...	...	112.4	113.0	112.3	108.5	103.3	97.7	92.1	63.9	27.0		
In percent of exports	...	...	363.1	374.6	351.3	301.1	268.2	248.2	232.0	186.3	99.5		
Total external debt service-to-exports ratio	10.2	6.9	11.5	21.7	18.0	17.8	17.0	19.4	19.1	20.6	12.0		
PV of PPG external debt (in Million of US dollars)			2693.8	2998.2	3235.5	3448.8	3588.6	3687.7	3766.5	3866.1	3562.8		
(PVt-PVt-1)/GDPt-1 (in percent)				12.7	8.9	7.4	4.4	2.9	2.1	0.2	-0.7		
Non-interest current account deficit that stabilizes debt ratio	24.0	-6.3	8.7	7.3	9.9	8.0	5.4	3.0	1.1	-2.5	-1.4		

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





Sources: Country authorities; and staff estimates and projections.

1/ Includes both public and private sector external debt.

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

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

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

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

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

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

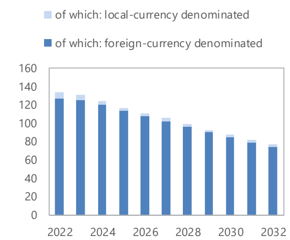
8/ Historical averages are generally derived over the past 10 years, subject to data availability, whereas projections averages are over the first year of projection and the next 10 years.

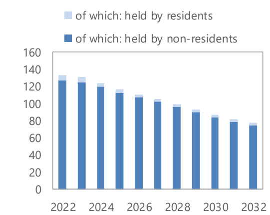
Table 2. Bhutan: Public Sector Debt Sustainability Framework, Baseline Scenario, 2019–42 (In percent of GDP, unless otherwise indicated)

	Actual			Projections								Average 6/	
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2032	2042	Historical	Projections
Public sector debt 1/	106.5	131.2	134.9	133.5	130.9	124.2	116.4	110.7	105.4	77.2	36.9	109.4	105.4
of which: external debt	103.6	121.9	125.3	127.0	125.0	120.2	113.1	107.5	102.3	74.2	35.1	104.5	101.7
Change in public sector debt	-6.9	24.7	3.8	-1.5	-2.6	-6.7	-7.8	-5.7	-5.2	-4.8	-4.3		
Identified debt-creating flows	-3.6	11.1	3.3	1.8	-0.6	-5.2	-5.8	-4.9	-3.8	-3.9	-3.8	-0.7	-3.8
Primary deficit	0.7	1.5	5.3	8.8	6.0	2.8	0.4	-0.1	-0.7	-1.6	-2.1	0.9	0.6
Revenue and grants	24.3	31.2	33.8	28.7	24.1	26.2	28.0	28.2	28.1	28.0	29.4	31.2	27.6
of which: grants	6.1	9.4	8.4	10.8	4.3	4.6	5.0	4.5	4.1	3.4	2.8		
Primary (noninterest) expenditure	25.0	32.6	39.0	37.5	30.1	29.0	28.4	28.1	27.4	26.4	27.3	32.1	28.3
Automatic debt dynamics	-4.3	9.6	-2.0	-7.1	-6.6	-8.0	-6.2	-4.8	-3.1	-2.2	-1.7		
Contribution from interest rate/growth differential	-5.3	2.2	4.4	-7.1	-6.6	-8.0	-6.2	-4.8	-3.1	-2.2	-1.7		
of which: contribution from average real interest rate	-0.5	-0.4	-0.7	-1.4	-0.9	0.2	1.1	1.7	3.0	2.2	0.5		
of which: contribution from real GDP growth	-4.8	2.6	5.1	-5.7	-5.7	-8.2	-7.2	-6.5	-6.0	-4.5	-2.2		
Contribution from real exchange rate depreciation	1.0	7.4	-6.4	...	...	...	...	...	...	...	...		
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	-3.3	13.6	0.5	-3.2	-2.0	-1.5	-2.1	-0.8	-1.4	-0.9	-0.4	7.3	-1.5
Sustainability indicators													
PV of public debt-to-GDP ratio 2/	...	...	122.2	120.6	119.2	113.5	106.6	100.9	95.3	66.9	28.8		
PV of public debt-to-revenue and grants ratio	...	...	361.8	420.8	495.2	433.5	380.8	357.9	338.4	238.7	97.9		
Debt service-to-revenue and grants ratio 3/	13.0	6.5	12.1	46.5	38.8	42.0	33.8	35.3	34.9	32.5	16.0		
Gross financing need 4/	3.8	3.5	9.3	22.1	15.4	13.8	9.8	9.8	9.1	7.5	2.6		
Key macroeconomic and fiscal assumptions													
Real GDP growth (in percent)	4.4	-2.4	-3.7	4.4	4.5	6.7	6.2	5.9	5.8	5.8	5.8	3.6	5.7
Average nominal interest rate on external debt (in percent)	1.2	0.7	1.2	1.4	1.5	2.2	2.8	3.4	3.9	3.9	2.2	2.1	3.2
Average real interest rate on domestic debt (in percent)	2.3	4.3	1.0	-4.6	0.3	2.1	2.4	2.7	2.2	2.5	3.5	0.8	1.5
Real exchange rate depreciation (in percent, + indicates depreciation)	1.0	7.0	-5.0	...	...	...	...	...	...	...	...	2.0	...
Inflation rate (GDP deflator, in percent)	1.3	3.7	4.8	6.4	5.9	5.2	4.7	4.4	4.2	4.0	4.0	5.0	4.6
Growth of real primary spending (deflated by GDP deflator, in percent)	-19.0	27.7	15.1	0.2	-16.1	2.7	4.0	4.8	3.3	6.3	6.6	4.7	2.2
Primary deficit that stabilizes the debt-to-GDP ratio 5/	7.5	-23.2	1.5	10.3	8.6	9.4	8.2	5.6	4.5	3.1	2.2	-4.7	5.9
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	**Residency-based**
Is there a material difference between the two criteria?	**Yes**

Public sector debt 1/





Sources: Country authorities; and staff estimates and projections.

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

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

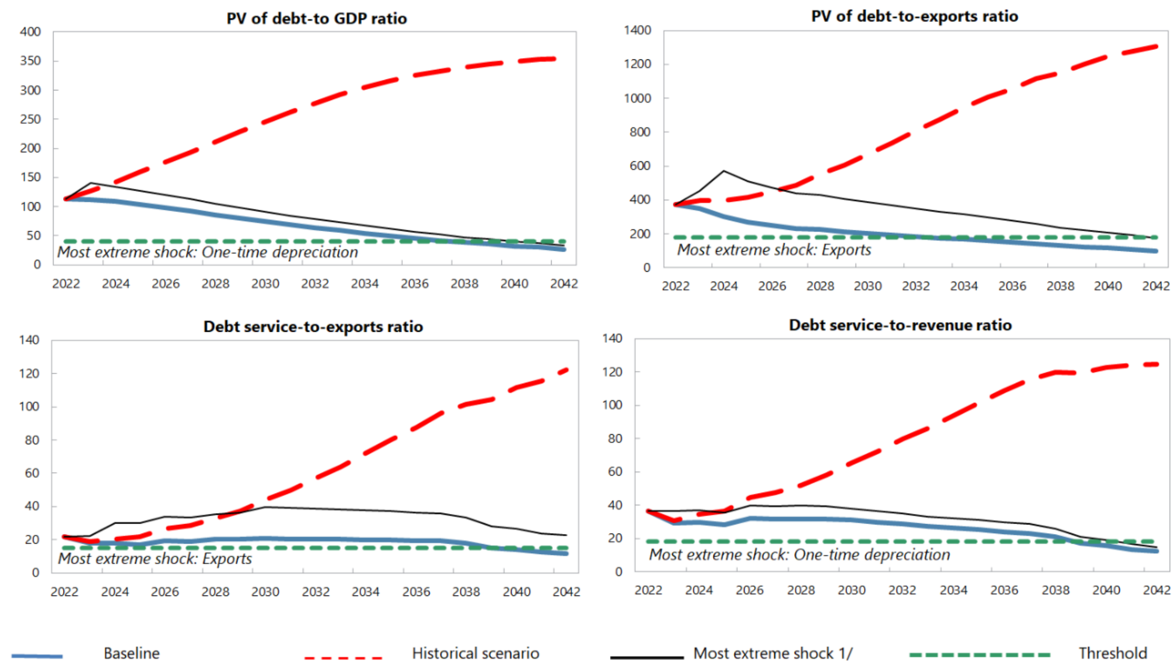
3/ Debt service is defined as the sum of interest and amortization of medium and long-term, and short-term debt.

4/ Gross financing need is defined as the primary deficit plus debt service plus the stock of short-term debt at the end of the last period and other debt creating/reducing flows.

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

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

Figure 1. Bhutan: Indicators of Public and Publicly Guaranteed External Debt Under Alternatives Scenarios, 2022–2042 1/ 2/



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

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

Borrowing assumptions on additional financing needs resulting from the stress tests*		
	Default	User defined
Shares of marginal debt		
External PPG MLT debt	100%	
Terms of marginal debt		
Avg. nominal interest rate on new borrowing in USD	2.4%	2.4%
USD Discount rate	5.0%	5.0%
Avg. maturity (incl. grace period)	20	20
Avg. grace period	5	5

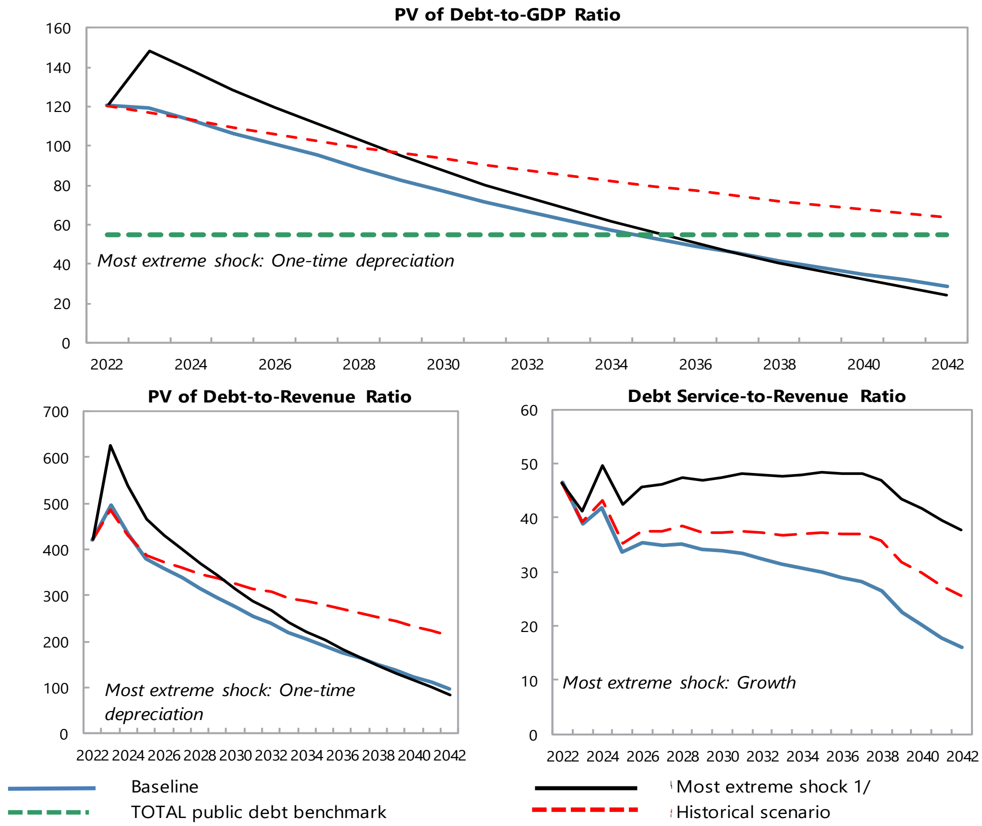
* Note: All the additional financing needs generated by the shocks under the stress tests are assumed to be covered by PPG external MLT debt in the external DSA. Default terms of marginal debt are based on baseline 10-year projections.

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. The stress test with a one-off breach is also presented (if any), while the one-off breach is deemed away for mechanical signals. When a stress test with a one-off breach happens to be the most exterme shock even after disregarding the one-off breach, only that stress test (with a one-off breach) would be presented.

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

Figure 2. Bhutan: Indicators of Public Debt Under Alternative Scenarios, 2022–2042 1/



Borrowing assumptions on additional financing needs resulting from the stress tests*	Default	User defined
Shares of marginal debt		
External PPG medium and long-term	75%	75%
Domestic medium and long-term	8%	8%
Domestic short-term	17%	17%
Terms of marginal debt		
External MLT debt		
Avg. nominal interest rate on new borrowing in USD	2.4%	2.4%
Avg. maturity (incl. grace period)	20	20
Avg. grace period	5	5
Domestic MLT debt		
Avg. real interest rate on new borrowing	6.0%	6.0%
Avg. maturity (incl. grace period)	2	2
Avg. grace period	1	1
Domestic short-term debt		
Avg. real interest rate	-0.6%	-0.6%

* 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.

Table 3. Bhutan: Sensitivity Analysis for Key Indicators of Public and Publicly Guaranteed External Debt, 2022–32 (In percent)

	Projections 1/										
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
PV of debt-to GDP ratio											
Baseline	**113**	**112**	**108**	**103**	**98**	**92**	**86**	**80**	**74**	**69**	**64**
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2022-2032 2/	**113**	**127**	**143**	**160**	**176**	**194**	**211**	**228**	**246**	**262**	**278**
B. Bound Tests											
B1. Real GDP growth	**113**	**121**	**130**	**124**	**117**	**110**	**103**	**96**	**89**	**82**	**76**
B2. Primary balance	**113**	**114**	**112**	**107**	**101**	**96**	**89**	**83**	**77**	**72**	**67**
B3. Exports	**113**	**119**	**128**	**122**	**115**	**109**	**102**	**95**	**88**	**81**	**75**
B4. Other flows 3/	**113**	**114**	**112**	**107**	**101**	**95**	**89**	**83**	**77**	**71**	**66**
B5. Depreciation	**113**	**141**	**133**	**127**	**120**	**113**	**105**	**98**	**91**	**85**	**78**
B6. Combination of B1-B5	**113**	**128**	**133**	**127**	**120**	**113**	**106**	**98**	**91**	**84**	**78**
C. Tailored Tests											
C1. Combined contingent liabilities	**113**	**117**	**114**	**109**	**104**	**98**	**91**	**85**	**79**	**74**	**69**
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	40	40	40	40	40	40	40	40	40	40	40
PV of debt-to-exports ratio											
Baseline	**375**	**351**	**301**	**268**	**248**	**232**	**225**	**211**	**203**	**193**	**186**
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2022-2032 2/	**375**	**396**	**396**	**415**	**448**	**488**	**551**	**604**	**672**	**737**	**810**
B. Bound Tests											
B1. Real GDP growth	**375**	**351**	**301**	**268**	**248**	**232**	**225**	**211**	**203**	**193**	**186**
B2. Primary balance	**375**	**356**	**310**	**277**	**257**	**241**	**233**	**220**	**212**	**201**	**194**
B3. Exports	**375**	**454**	**571**	**508**	**471**	**442**	**430**	**405**	**388**	**367**	**352**
B4. Other flows 3/	**375**	**357**	**311**	**277**	**257**	**240**	**233**	**219**	**211**	**200**	**192**
B5. Depreciation	**375**	**351**	**295**	**263**	**243**	**227**	**220**	**207**	**199**	**189**	**183**
B6. Combination of B1-B5	**375**	**438**	**315**	**431**	**399**	**374**	**362**	**340**	**327**	**310**	**298**
C. Tailored Tests											
C1. Combined contingent liabilities	**375**	**367**	**317**	**284**	**263**	**246**	**239**	**225**	**217**	**207**	**200**
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	180	180	180	180	180	180	180	180	180	180	180
Debt service-to-exports ratio											
Baseline	**22**	**18**	**18**	**17**	**19**	**19**	**20**	**20**	**21**	**21**	**21**
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2022-2032 2/	**22**	**19**	**21**	**22**	**27**	**29**	**33**	**37**	**44**	**50**	**57**
B. Bound Tests											
B1. Real GDP growth	**22**	**18**	**18**	**17**	**19**	**19**	**20**	**20**	**21**	**21**	**21**
B2. Primary balance	**22**	**18**	**18**	**17**	**20**	**19**	**20**	**21**	**22**	**21**	**21**
B3. Exports	**22**	**22**	**30**	**30**	**34**	**33**	**35**	**36**	**40**	**39**	**39**
B4. Other flows 3/	**22**	**18**	**18**	**17**	**20**	**19**	**20**	**21**	**22**	**21**	**21**
B5. Depreciation	**22**	**18**	**18**	**17**	**19**	**19**	**20**	**20**	**20**	**20**	**20**
B6. Combination of B1-B5	**22**	**21**	**28**	**27**	**30**	**30**	**32**	**33**	**34**	**33**	**33**
C. Tailored Tests											
C1. Combined contingent liabilities	**22**	**18**	**18**	**17**	**20**	**20**	**21**	**21**	**21**	**21**	**21**
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	15	15	15	15	15	15	15	15	15	15	15
Debt service-to-revenue ratio											
Baseline	**37**	**29**	**30**	**28**	**32**	**32**	**32**	**32**	**31**	**30**	**29**
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2022-2032 2/	**37**	**31**	**34**	**36**	**45**	**48**	**52**	**58**	**66**	**72**	**80**
B. Bound Tests											
B1. Real GDP growth	**37**	**31**	**36**	**34**	**39**	**38**	**38**	**38**	**37**	**36**	**34**
B2. Primary balance	**37**	**29**	**30**	**29**	**33**	**32**	**32**	**32**	**32**	**31**	**30**
B3. Exports	**37**	**30**	**31**	**31**	**35**	**34**	**34**	**35**	**37**	**35**	**34**
B4. Other flows 3/	**37**	**29**	**30**	**29**	**33**	**32**	**32**	**32**	**32**	**31**	**30**
B5. Depreciation	**37**	**36**	**37**	**35**	**40**	**39**	**40**	**39**	**38**	**36**	**35**
B6. Combination of B1-B5	**37**	**32**	**36**	**34**	**38**	**38**	**38**	**39**	**38**	**36**	**35**
C. Tailored Tests											
C1. Combined contingent liabilities	**37**	**29**	**30**	**29**	**33**	**32**	**32**	**32**	**32**	**30**	**29**
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	18	18	18	18	18	18	18	18	18	18	18

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. Bhutan: Sensitivity Analysis for Key Indicators of Public Debt 2022–32

	Projections 1/										
	2022	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PV of Debt-to-GDP Ratio											
Baseline	**121**	**119**	**114**	**107**	**101**	**95**	**89**	**83**	**77**	**72**	**67**
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2022-2032 2/	**121**	**117**	**114**	**110**	**106**	**103**	**100**	**96**	**94**	**91**	**88**
B. Bound Tests											
B1. Real GDP growth	**121**	**129**	**140**	**135**	**132**	**128**	**124**	**119**	**116**	**112**	**109**
B2. Primary balance	**121**	**121**	**118**	**110**	**105**	**99**	**92**	**86**	**80**	**75**	**70**
B3. Exports	**121**	**124**	**129**	**121**	**115**	**109**	**102**	**95**	**88**	**82**	**76**
B4. Other flows 3/	**121**	**121**	**117**	**110**	**104**	**99**	**92**	**86**	**80**	**74**	**69**
B5. Depreciation	**121**	**149**	**139**	**128**	**120**	**112**	**103**	**95**	**88**	**80**	**74**
B6. Combination of B1-B5	**121**	**119**	**118**	**111**	**105**	**99**	**93**	**87**	**81**	**75**	**70**
C. Tailored Tests											
C1. Combined contingent liabilities	**121**	**127**	**120**	**113**	**107**	**101**	**94**	**88**	**82**	**77**	**72**
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
TOTAL public debt benchmark	55	55	55	55	55	55	55	55	55	55	55
PV of Debt-to-Revenue Ratio											
Baseline	421	495	434	381	358	338	315	295	275	255	239
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2022-2032 2/	421	486	431	386	371	359	347	338	327	316	307
B. Bound Tests											
B1. Real GDP growth	421	530	518	467	453	443	427	415	402	388	379
B2. Primary balance	421	504	449	395	371	351	327	307	286	265	249
B3. Exports	421	515	493	433	408	387	361	339	314	290	270
B4. Other flows 3/	421	503	448	393	370	350	326	306	284	263	246
B5. Depreciation	421	626	538	465	430	401	369	343	315	289	266
B6. Combination of B1-B5	421	495	450	395	372	352	328	308	287	266	250
C. Tailored Tests											
C1. Combined contingent liabilities	421	526	459	403	379	359	334	314	293	273	256
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Debt Service-to-Revenue Ratio											
Baseline	46	39	42	34	35	35	35	34	34	34	32
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2022-2032 2/	46	39	43	35	37	38	38	37	37	38	37
B. Bound Tests											
B1. Real GDP growth	46	41	50	42	46	46	47	47	47	48	48
B2. Primary balance	46	39	44	37	37	36	36	35	35	35	34
B3. Exports	46	39	42	35	37	36	36	36	38	37	36
B4. Other flows 3/	46	39	42	34	36	35	35	35	35	34	33
B5. Depreciation	46	41	48	41	44	43	44	43	43	42	41
B6. Combination of B1-B5	46	38	43	35	37	37	37	36	36	35	34
C. Tailored Tests											
C1. Combined contingent liabilities	46	39	48	38	37	36	36	35	35	34	33
C2. Natural disaster	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C3. Commodity price	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

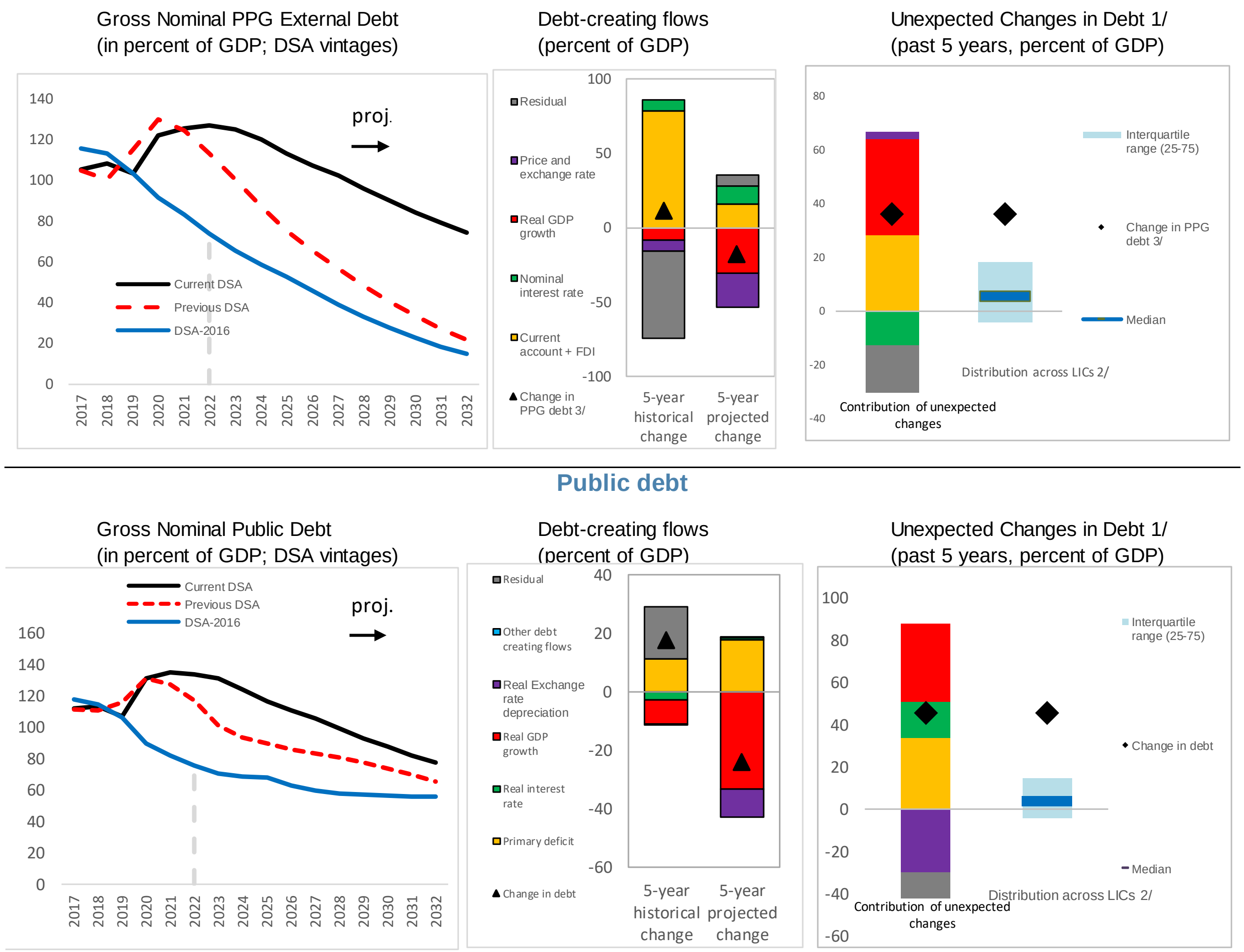
Sources: Country authorities; and staff estimates and projections.

1/ A bold value indicates a breach of the benchmark.

2/ Variables include real GDP growth, GDP deflator and primary deficit in percent of GDP.

3/ Includes official and private transfers and FDI.

Figure 3. Bhutan: Drivers of Debt Dynamics—Baseline Scenario



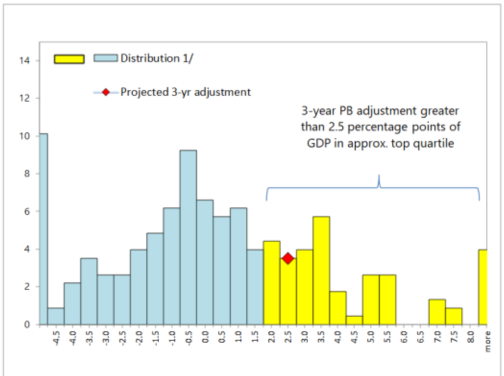
1/ Difference between anticipated and actual contributions on debt ratios.

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.

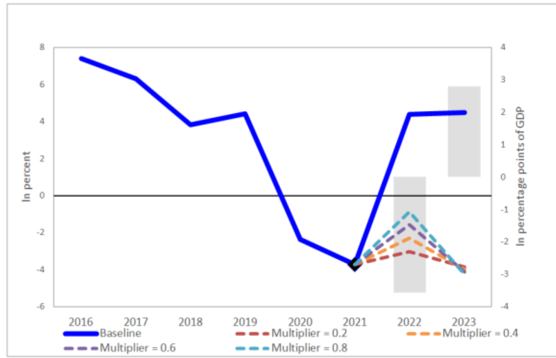
Figure 4. Bhutan: Realism Tools

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



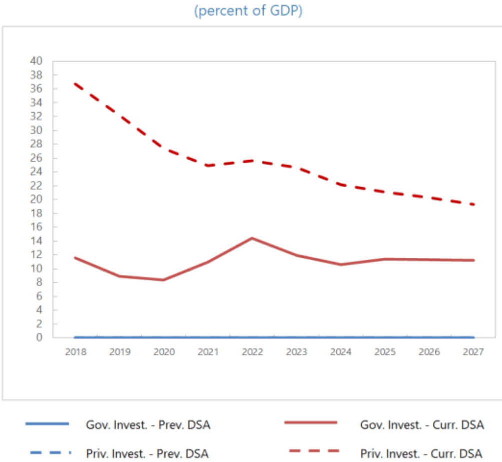
1/ Data cover Fund-supported programs for LICs (excluding emergency financing) approved since 1990. The size of 3-year adjustment from program inception is found on the horizontal axis; the percent of sample is found on the vertical axis.

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
(percent of GDP)



Contribution to Real GDP growth
(percent, 5-year average)

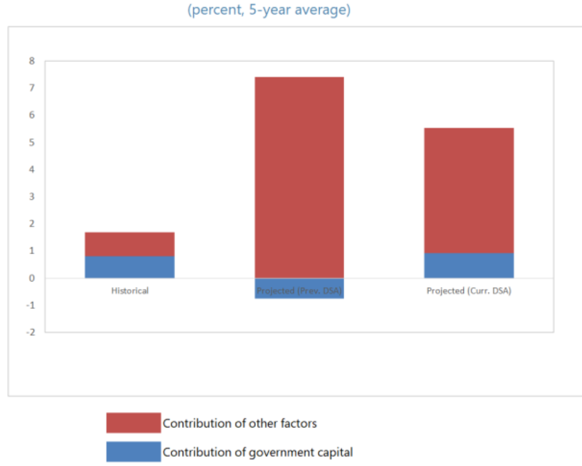
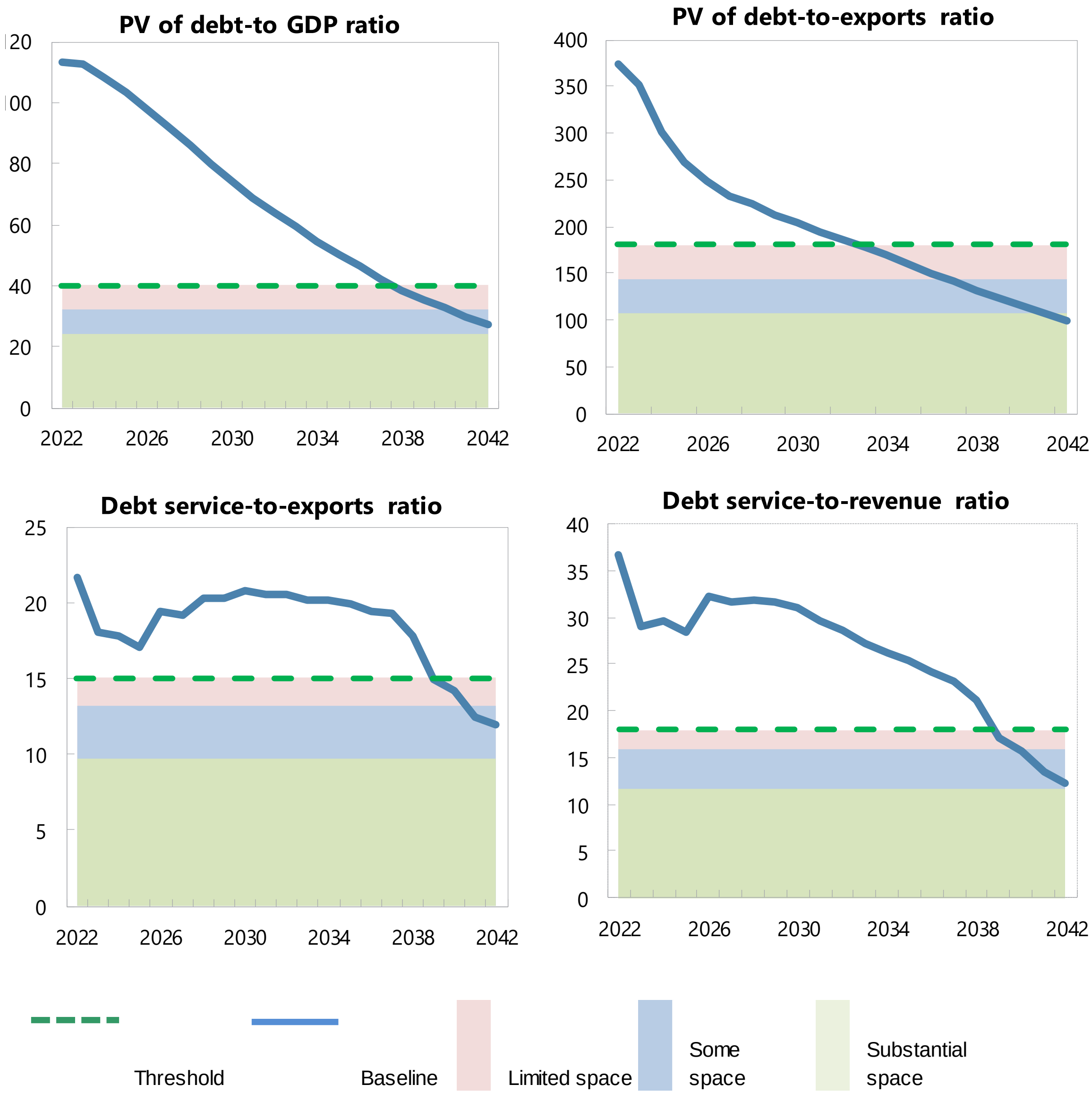


Figure 5. Bhutan: Qualification of the Moderate Category 2022-2042 1/



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.