BHUTAN

STAFF REPORT FOR THE 2024 ARTICLE IV CONSULTATION —DEBT SUSTAINABILITY ANALYSIS

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Prepared by the staffs of the International Monetary Fund (IMF) and the International Development Association (IDA)[1]

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.*

Bhutan's risk of overall and external debt distress is assessed as moderate, unchanged from the 2022 DSA.[2] While the mechanical results point to a high risk of overall and external debt distress, with breaches in the thresholds for some indicators under the baseline scenario, judgement was applied given the unique mitigating factors. Most of the outstanding public and publicly-guaranteed debt is linked to hydropower project loans from the Government of India. These projects are implemented under an intergovernmental agreement under which the Government of India covers both financial and construction risks of the projects and commits to buy all surplus electricity at a price reflecting cost plus a margin. Overall, within the moderate rating, Bhutan is assessed to have limited space to absorb additional shocks, particularly export shocks. Going forward, a robust fiscal consolidation underpinned by revenue mobilization, a stable peg with the Indian rupee, reforms to improve productivity and competitiveness of the non-hydropower sector, and enhanced debt management would help to reduce the risk of debt distress.

[1] Prepared in accordance with the Guidance Note of the Joint Bank-Fund Debt Sustainability Framework for Low Income Countries, February 2018.

[2] Bhutan's debt carrying capacity is assessed as strong. The composite index (CI), estimated at 3 based on the April 2024 World Economic Outlook (WEO) and the 2022 World Bank Country Policy and Institutional Assessment (CPIA) data, indicates a medium debt-carrying capacity for Bhutan, but another medium signal in the upcoming WEO round would be necessary to downgrade Bhutan's debt carrying capacity from its current strong level determined by previous rounds. This represents an improvement compared to the medium debt-carrying capacity assessed in the 2022 DSA. If the CI were to remain below the lower bound of a strong debt carrying capacity (that is, 3.05) in the October 2024 WEO, the classification would revert back to medium debt carrying capacity.

PUBLIC DEBT COVERAGE

1. **The coverage of public debt in this debt sustainability analysis (DSA) includes public and publicly-guaranteed (PPG) debt**. PPG debt covers the non-financial public sector and the central bank. It includes debt contracted by the central government, central bank (that is, the Royal Monetary Authority or RMA) debt (such as the standby credit facilities extended by the Government of India), and non-financial state-owned enterprises (SOE) debt, both external and domestic.[3] Bhutan's local governments, social security fund, and extra budgetary funds do not have any outstanding debt. The external debt definition is based on residency. Central bank debt for the purposes of monetary policy or reserves management is excluded in line with the guidance note (e.g., bilateral currency swap with the Reserve Bank of India, deposit from the Central Bank of Kuwait). The addition of non-guaranteed domestic SOE debt represents an expansion of coverage with respect to the 2022 DSA in line with the authorities' commitment under the World Bank's First Green and Resilient Growth Development Policy Credit (DPC) operation.[4] Because of full coverage of SOE external and domestic debt, the default shock of 2 percent of GDP for incomplete coverage in the contingent liability stress tests is removed. The calibration of the contingent liability shock includes the outstanding amount of the National Credit Guarantee Scheme as of end-June 2023 (0.2 percent of GDP). The calibration of the contingent liability shock also preserves the default value for the financial market risk (5 percent of GDP) and includes an additional 2 percent of GDP for public private partnerships (PPPs), estimated as 35 percent of their capital stock from the World Bank's database.

Table 1. Bhutan: Debt Coverage

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

1	**The country's coverage of public debt**	The entire public sector, including SOEs			
		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	0.2	Outstanding amount of the National Credit Guarantee Scheme as of Jun 2023
3	SoE's debt (guaranteed and not guaranteed by the government) 1/	2	percent of GDP	0.0	
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)			7.3	

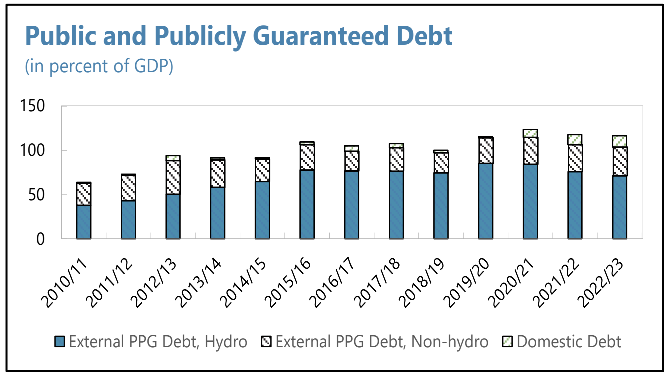
1/ The default shock of 2% of GDP will be triggered for countries whose government-guaranteed debt is not fully captured under the country's public debt definition (1.). If it is already included in the government debt (1.) and risks associated with SoE's debt not guaranteed by the government is assessed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

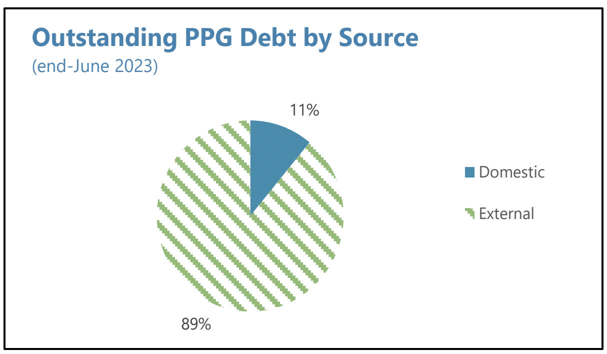
[3] According to the Public Finance Act of Bhutan 2007, SOEs are required to seek approval from the Minister of Finance and Cabinet to contract any debt, actual or contingent.

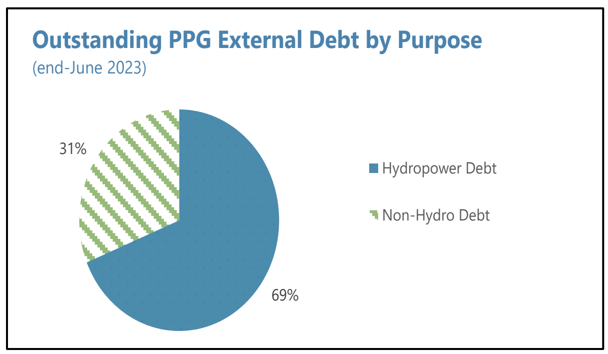
[4] As part of the Sustainable Development Policy Financing (SDFP) of the IDA, Bhutan has been implementing Performance and Policy Actions (PPAs) to improve debt management and transparency, as well as to manage fiscal risks. For instance, during FY2020/21 to 2022/23, the authorities published quarterly public debt reports, the Medium-Term Debt Management Strategy, mandated the annual publication of the national DSA to strengthen the institutional capacity for risk assessment and monitoring of public debt, and published a new public debt policy. In addition, the authorities have improved the reporting of SOEs to strengthen the fiscal oversight of SOEs and related fiscal risks. During FY2023/24, the PPAs focused on i) the establishment of the legal entity for the running of

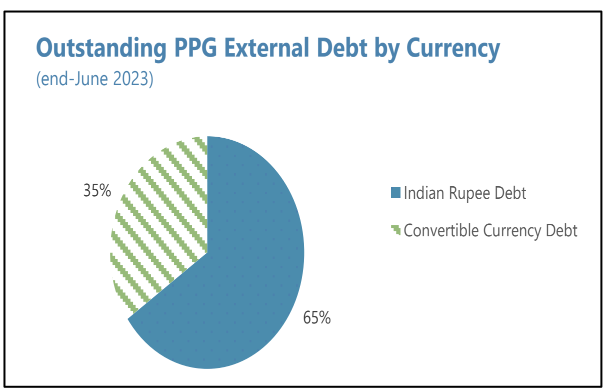
BACKGROUND

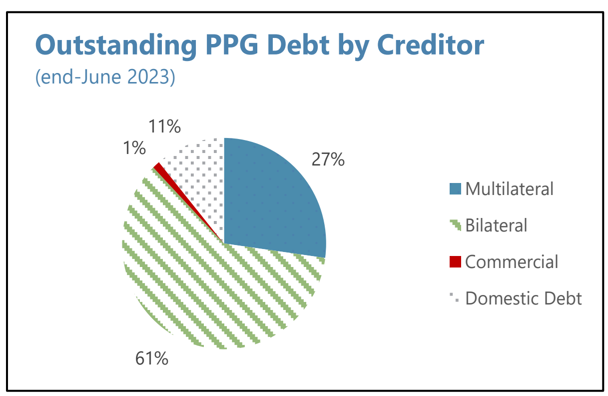
2. **Public debt has increased substantially in the last decade due to investments in hydropower projects and the COVID-19 pandemic**. Public debt in Bhutan increased from 72.8 percent of GDP in FY2011/12 to 116.1 percent of GDP at the end of FY2022/23.[5] Out of this 43 percentage points increase, 28 percentage points were due to hydropower projects, primarily in the context of bilateral agreements with India. External non-hydro debt increased by only 3 percentage points over the decade and has helped finance infrastructure projects focusing on urban development, rural electrification, and the agriculture sector. Domestic debt rose from only 1.1 percent of GDP in FY2011/12 to 12.8 percent of GDP in FY2022/23, reflecting the authorities' development of the domestic debt market and the need to finance larger deficits in the context of the COVID-19 pandemic when tax revenues declined sharply, and spending pressures mounted.











crypto assets mining operations and publication of financial statements as per the legal requirement of the legal entity, and ii) improvements of service delivery and compliance management of large taxpayers in the Thimphu and Phuntsholing Regional Revenue and Customs Offices.

[5] Bhutan's fiscal year runs from July 1 to June 30. For tables and charts in this DSA, we adopt the convention 2024 = FY2023/24.

3. Public debt stood at 116.1 percent of GDP at the end of FY2022/23. External debt accounted for 89 percent of total debt. Hydropower debt was the largest part of external debt, comprising 69 percent of the external debt stock at the end of FY2022/23. Most of the hydropower projects were financed by the Government of India, with 65 percent of PPG external debt denominated in Indian rupees.[6] Non-hydropower external debt is predominantly owed to multilateral and bilateral creditors, with a small amount of guaranteed SOE debt. Overall, 61 percent of total debt is owed to bilateral creditors and 27 percent is owed to multilaterals. Domestic debt was mostly in the form of treasury bills and bonds, held primarily by domestic banks, insurance companies, and the public pension fund. Public sector debt is consolidated to remove intra-public sector lending (Text Table 1). This includes pension fund (that is, NPPF)'s holdings of treasury bills and bonds (Nu. 2.8 billion) and loans to SOEs (Nu. 2 billion), RMA's holdings of bonds issued by DHI (that is, Druk Holdings and Investments, an SOE) for US$539 million, and a loan from the central government to Drukair (the public airline company) for Nu. 2.7 billion.[7]

Text Table 1. Bhutan: Public Sector Debt Compilation

(In Percent of GDP, End-June 2023)

(in percent of GDP)	Central Government	RMA	NPPF	Non-financial SOEs	Aggregated Public Sector	Consolidation	Consolidated Public Sector
Domestic	13.8			20.7	34.6	-21.8	12.8
External	100.0	2.9		0.3	103.3		103.3
Total	**113.8**	**2.9**		**21.1**	**137.9**	**-21.8**	**116.1**

Note: It excludes on-lent debt.

4. The hydropower-related debt from the Government of India is akin to foreign direct investment (FDI).[8] As emphasized in the last seven DSAs, India provides financing for hydropower projects under an intergovernmental agreement, which guarantees returns from electricity exports and mitigates risks.[9] The Government of India 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 is set to allow revenue to service debt and a financial return, with the rate revisited every three years to incorporate changes in costs. Project

[6] The recently-completed and ongoing hydropower development projects with the Government of India (Punatsangchhu I, Punatsangchhu II, and Mangdechhu) are financed through commercially-priced loans (with a repayment period of 15 years beginning after the hydropower plant has been commissioned and an interest rate of 10 percent in Indian rupees), and capital grants from India, with the share of capital grants in the total capital cost ranging from 30 to 40 percent depending on the project.

[7] The NPPF's annual report for 2022/23 is not available yet, so their holdings of treasury bills and bonds are assumed to have remained stable as a share of the total from the levels in 2021/22.

[8] At present, there are three recently-completed and ongoing hydropower projects in this category: Punatsangchhu I, Punatsangchhu II, and Mangdechhu. Debt from previously-completed hydropower projects has already been repaid in full.

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

delays are not a concern for risk assessment because debt service begins only after the project is commissioned and the price of electricity is set based on the actual project costs.[10] Hydropower projects are insured (and re-insured) against the risk of natural disasters. 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.[11] Debt default concerns are also mitigated given that the creditor is also the project's main client. In other words, risks associated with hydropower-related debt are largely mitigated.

Box 1. Bhutan: Public Debt Management Policy 2023

Cabinet approved a new debt management policy in June 2023. The Public Debt Management Policy 2023 replaces the Public Debt Policy 2016 and aims to provide a framework to ensure prudent financing decisions and to guide investment plans. The new policy revises thresholds for public debt and maintains rules on government guarantees and the existing framework for debt monitoring and reporting (Text Table 2).

Government guarantees can be issued by the Minister of Finance after receiving Cabinet approval. In accordance with the Public Finance Act of Bhutan 2007, public companies can borrow, both domestically and externally, only after having received written consent from the Ministry of Finance.

A robust debt monitoring and reporting framework includes an annual Debt Sustainability Analysis, an annual Medium-Term Debt Management Strategy, and quarterly Public Debt Situation Reports.[1]

Compared to the previous Debt Policy, thresholds are broadly loosened for non-hydro debt. The policy adequately preserves an escape clause in case of economic crises. Importantly, the new debt policy covers domestic debt, which has become more relevant following the pandemic. However, it could have been useful to establish thresholds at a broader public sector level, in line with the coverage of this Debt Sustainability Analysis.

[1] The authorities are working on updating their Medium-Term Debt Management Strategy. The most recent version was issued in March 2021 covering FY2020/21 to 2022/23.

[10] Interest during construction is capitalized upon the commissioning of the hydropower plants and does not accrue further interest afterwards.

[11] While domestic demand has been rising sharply due to crypto assets mining operations and new ferroalloy plants limiting the scope for exports, the output produced by those industries is still exported and generates foreign currency to pay back debt service.

Text Table 2. Bhutan: Comparison of Thresholds in Debt Management Policies

	Public Debt Management Policy 2023	Public Debt Policy 2016
Central/General government debt		
Total debt stock (excl. hydro)[1,3]	55 percent of GDP	
Non-hydro external debt stock[2]		35 percent of GDP
Annual debt service (routed through the budget)	35 percent of total revenues	
Annual debt service		22 percent of domestic revenue
Annual debt service of external debt		25 percent of exports of goods and services
Issuances of government guarantees[1]	10 percent of GDP	5 percent of GDP
Short-term external debt (by original maturity and including debt contracted by the RMA)[1]		30 percent of surplus reserves
Hydropower debt		
Debt service coverage ratio	1.2	1.2
Hydropower debt service[1]	50 percent of hydropower export revenue	40 percent of hydropower export revenue
Debt-to-equity ratio for hydropower projects		70:30

Notes:
1/ At any given year.
2/ During a 5-year plan period.
3/ Includes external and domestic debt.

ASSUMPTIONS ON MACRO PROJECTIONS

5. **The near-term growth outlook reflects a gradual recovery from the severe COVID-19 pandemic shock, with hydropower exports and tourism supporting medium-term growth and a gradual decline in the current account deficit**. Growth had been strong prior to the COVID-19 pandemic, due to solid performance in the hydropower and service sectors but deteriorated sharply in 2020 and 2021 as the country went into lockdown, delaying construction of hydropower plants, and bringing tourism to a halt. Mining, manufacturing, and construction also slowed down considerably. Over the medium term, GDP growth, current account, and fiscal positions are expected to improve, with hydropower-related imports declining, electricity exports picking up, and tourism recovering, broadly in line with the assumptions in the 2022 DSA, albeit reflecting delays from major hydro projects and a slower pace of recovery in tourism.[12]

Box 2. Bhutan: Status of Hydropower Projects

Hydropower projects will continue to play a major role in Bhutan's economy (Text Table 3). Two major hydropower projects, developed as part of the intergovernmental agreement with India, are expected to be commissioned before the end of this decade: Punatsangchhu II (1,020 MW, expected in CY2025, FY2025/26), and Punatshangchhu I (1,200 MW, expected in CY2029, FY2028/29). Within 5 years, the commissioning of these two projects will double the installed generation capacity as of end-2023 to 4,664MW.

[12] The slower-than-expected recovery in tourism partly reflects the changes in the Sustainable Development Fee (SDF) that was raised from US$65 per person per day to US$200 per person per day for international travelers in 2022. The fee was also extended to tourists from India, previously untaxed, with a cost of Rs. 1,200 per person per day. In August 2023, the SDF for international travelers was reduced to US$100 per person per day to stimulate tourism.

Box 2. Bhutan: Status of Hydropower Projects (concluded)

The timeline for commissioning the Kholongchhu plant (600 MW) is uncertain. Construction of the Kholongchhu project, a joint venture between DGPC (Druk Green Power Corporation, the Bhutanese SOE managing the hydropower projects) and an Indian SOE was halted in CY2022. DGPC has since acquired the Indian SOE's equity shares and is the sole shareholder of the project. New sources of financing are being explored, so that some delay in commissioning is expected. This DSA conservatively assumes Kholongchhu's commission early next decade.

The Dorjilung project is at an early stage. The Dorjilung hydro plant would have an installed capacity of 1,125 MW. The electricity would be produced in Bhutan and a significant share of it would be exported. Preliminary cost estimates amount to US$ 1.3 billion. Financing from the World Bank to Bhutan in the form of loans and grants would cover some U$S 300 million. The authorities are exploring additional concessional and commercial sources of financing, as well as reinvestment of profits from DGPC.

DGPC is also developing other smaller hydropower plants, which is financed with its own resources and debt. For example, a renewable energy loan worth EUR 150 million was recently signed with the EIB to finance construction of small to mid-size run-of-river hydropower plants and solar projects.

Text Table 3. Bhutan: Major Hydropower Projects

	Construction Started	Commissioning	Installed Capacity (MW)	Modality
Existing Projects				
Chukha	1974	1988	336	Intergovernmental
Tala	1997	2007	1,020	Intergovernmental
Kurichhu	1995	2002	60	Intergovernmental
Basochhu	1997	2005	64	Financed by the Government of Austria
Dagachhu	2009	2015	126	Financed by the Government of Austria and Asian Development Bank
Mangdechhu	2010	2019	720	Intergovernmental
Nikachhu	2014	2024	118	Financed by Asian Development Bank and State Bank of India
Total			**2,444**	
Projects under Construction				
Punatsangchhu I	2008	2029	1,200	Intergovernmental
Punatsangchhu II	2010	2025	1,020	Intergovernmental
Kholongchhu	2016	TBD	600	Non-intergovernmental (specific modality to be determined)
Total			**2,820**	
Projects under Consideration				
Dorjilung	-	TBD	1,125	Non-intergovernmental (specific modality to be determined)
Total			**1,125**	

Note: Years in this table correspond to Calendar Year (CY).

6. The main baseline macroeconomic assumptions underpinning the 2024 DSA are as follows (Text Table 4):

- **Real GDP growth and inflation**:[13] Growth in FY2023/24 is expected to accelerate to 5.2 percent, compared to 5 percent in 2022/23.[14] Over the medium term, growth will be driven by new hydropower plants coming on stream, implementation of the 13th Five Year Plan (FYP)[15], a recovery of the tourism sector, and a recovery in services and manufacturing.[16] Compared to the 2022 DSA, medium-term growth is higher due to the revised timeline of hydro plants' construction and the ambitious path for investment in the 13th FYP.[17] Long-term growth is projected to be around 5.2 percent, slightly lower from the 5.8 percent assumed in the 2022 DSA. Long-term growth remains underpinned by structural reforms that will support economic diversification, digitalization, and private sector-led growth. Inflation is expected to continue its steady decline towards 4 percent in the medium term, having already declined from 8.2 percent in FY2020/21. The GDP deflator is assumed to move in tandem with inflation, after adjusting for exchange rate depreciation.

[13] The authorities' Gelephu Mindfulness City (GMC) project seeks to create a high-end market for Bhutanese goods and services. The project involves building a new city spanning 2,600 square km at the border with India. Ring-fencing the project will be key to limit downside fiscal risks for Bhutan. The city is envisaged as a Special Administrative Region (SAR) with legal independence and work on the relevant legal framework is ongoing. The current DSA does not account for financing of GMC.

[14] The historical GDP data and projections are underestimated because they do not reflect the full impact of the crypto assets mining operations due to lack of available data.

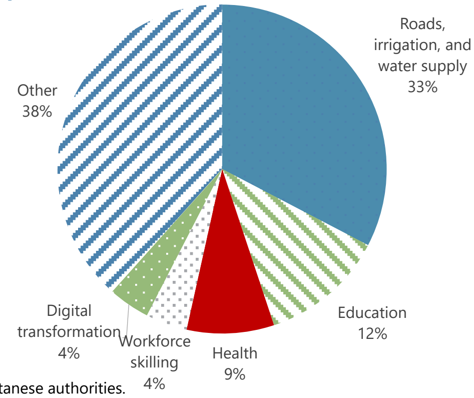
[15] The ambitious 13th FYP will run from 2024/25 to 2028/29 and will center on Prosperity, People, and Progress aiming to achieve the longer-term goal for Bhutan to become a high-income nation by 2035. It outlines key strategies for enhancing productivity, diversifying markets, and boosting contributions from strategic sectors to GDP.

[16] The volatility in the growth projections is due to: (i) the hydro/electricity sector and the commissioning of new hydropower projects. In the past, GDP growth has been driven by an expansion of investment during the construction phase of new hydropower plants and by generating discrete jumps in electricity exports to India when new plants are commissioned. On the supply side, this is reflected in discrete jumps in output in the electricity sector; (ii) the Five-Year Plan (FYP) planning cycle, which typically results in lower public investments in the first one to two years of the FYP.

[17] Past delays in hydropower projects have been caused by technical challenges. Good progress has been reported on the construction of Punatshangchhu II with filing of the reservoir having begun earlier this year. Other ongoing and future projects are not exempt from the risk of delays, which could add volatility to GDP projections. However, the impact of delays on debt sustainability are minimal because under the intergovernmental agreement with India, repayment of debt service only begins after commissioning of the hydropower plants.

- **Fiscal balance**: The general government fiscal deficit is projected to reach 4.6 percent of GDP in FY2023/24, a small improvement from the 4.8 percent of GDP achieved in FY2022/23.[18] A substantial increase in public sector wages (2 percent of GDP) was granted in June 2023. An average of two thirds of that increase is being financed by an extraordinary dividend from DHI's crypto assets operations in FY2023/24 and FY2024/25 (Box 3). Revenues net of grants would increase in the coming years because (i) hydropower revenues are expected to increase in FY2025/26 with the commissioning of Punatshangchhu II, (ii) a further pick-up in tourism would increase revenues from the SDF and (iii) implementation of the Goods and Service Tax (GST) is expected by July 2025. External grants are projected to increase in the coming years as the 13th FYP goes underway, driven by India's commitment for grants amounting Nu. 100 billion and access to IDA financing on small economy terms (50 percent grant and 50 percent credit), and investment projects are executed.[19] However, in the long run, they are expected to decline as Bhutan's GDP per capita rises. A primary balance of around 0.2 percent of GDP is expected for the long run, more do conservative than the assumptions in the 2022 DSA.

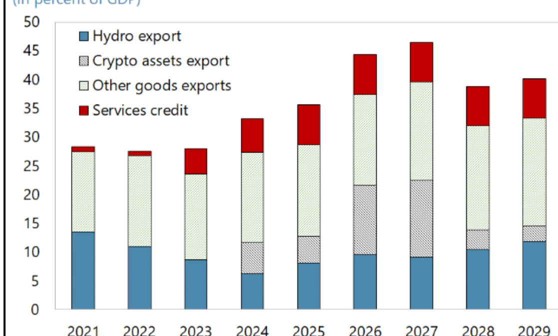
Capital Expenditure in the 13th FYP



Sources: Bhutanese authorities.

- **External balance**: The non-interest current account deficit (CAD) is expected to narrow to 16.3 percent of GDP in FY2023/24, after having reached 33.1 percent in FY2022/23. The spike in the CAD was mostly due to the lumpy imports of crypto assets mining equipment, higher imports for the construction of new hydropower plants, a slow post-COVID-19 recovery of tourism, and a jump in services imports due to high levels of emigration. The CAD is expected to worsen again to 30.6 percent of GDP in FY2024/25 due to another round of lumpy imports of crypto assets mining equipment, financed by FDI. Despite one-off factors subsiding and the start of crypto assets exports, imports are expected to remain elevated over the medium term as investment projects are executed and the CAD is expected to average 16.5 percent of GDP over the medium term. By

Total Exports
(In percent of GDP)



Sources: Bhutanese authorities; and IMF staff projections.

[18] There is a small difference between the fiscal balance at the general government level and that of the combined public sector as covered in this DSA due to off-budget debt service. The fiscal balance for the combined public sector is expected to have been 4.9 percent of GDP in 2023/24.

[19] External grants are low in 2023/24 because formulation of the 13th FYP was ongoing. With the 13th FYP adopted in [July 2024], external grants financing projects under the plan are expected to pick up.

2028/29, the CAD is expected to decline to 10.4 percent of GDP.[20] In the long term, the CAD is expected to average 4.4 percent of GDP thanks to the pickup in electricity exports, diversification of the export base and a decline in imports following the completion of the hydropower projects.

- **Financing mix**: The gross financing needs in the projection period are expected to be covered by both external and domestic debt. The financing mix envisages that external loans (including from IDA, ADB, EIB, and the Government of India for hydro projects) would finance around 82 percent of annual gross financing needs on average over the medium term, with the remainder financed by domestic borrowing. Recent domestic auctions for T-bills have yielded a rate of around 4 percent and the most recent T-bond auction resulted in a rate of 6 percent for a 2-year bond issued in November 2023. In the long term, the share of domestic financing is expected to increase and average 57 percent of annual gross financing needs, with a gradual shift from short-term treasury bills to medium- and long-term bonds. The share of concessional external debt is expected to decline over the long term as Bhutan develops. The cost of domestic debt is assumed to be 7.5 percent for longer-dated bonds.

Text Table 4. Bhutan: Key Macroeconomic Assumptions

	Current DSA				2022 DSA			
	2023	2024	MT (2025-2029)	LT (2030-2044)	2021	2022	MT (2023-2027)	LT (2028-2042)
Real GDP growth (in percent)	5.0	5.2	6.3	5.2	-3.7	4.4	5.6	5.8
GDP deflator in US dollar terms (in percent)	-3.5	3.0	3.9	3.4	3.1	6.0	5.1	4.0
Non-interest current account balance (in percent of GDP)	-33.1	-16.3	-16.5	-4.4	-10.4	-8.9	-4.7	4.0
Growth of exports of G&S (US dollar term, in percent)	3.0	28.5	15.7	8.0	-5.3	7.9	14.1	5.4
Growth of imports of G&S (US dollar term, in percent)	10.7	-10.5	12.5	7.5	-6.2	15.2	7.4	4.9
Primary fiscal balance (in percent of GDP)	-3.1	-3.0	-0.5	0.2	-5.3	-8.8	-2.9	1.7

Source: Bhutanese authorities and staff estimates.
Note: 2021 refers to FY 2020/21.

Box 3. Bhutan's Crypto Assets Mining Investment

State-owned Druk Holdings and Investment (DHI) has invested in crypto assets mining. Given its access to low-cost hydropower and cool-climate conditions, Bhutan has a comparative advantage in crypto assets mining. Mining, mainly of bitcoin, at DHI's 420 MW facility began in 2022. Crypto assets mining has continued to expand. In August 2023, Bitdeer Technologies Group, a Singapore-based company, began crypto assets mining in Bhutan (100 MW). A second Bitdeer mine (500 MW) is under construction and is expected to begin operations in mid-2025.

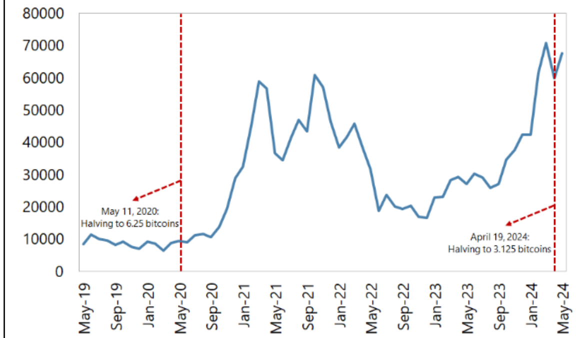
DHI's investment was funded using a loan from the Royal Monetary Authority (RMA). Between August 2020 and April 2022, the RMA acquired dollar-denominated securities issued by DHI totaling US$539 million. In contrast, DHI's exposure to Bitdeer's operations are limited to the sale of electricity to the facilities through a power purchase agreement. Bitdeer pays a premium relative to other high voltage domestic consumers, with the tariff broadly in line with the average tariff under the power purchase agreements with India.

[20] Crypto assets exports from the RMA-financed operation are assumed to be sufficient to fully repay the RMA, finance the DHI special dividend for the FY2023/24 and FY2024/25 budgets, and cover its electricity expenses.

Box 3. Bhutan's Crypto Assets Mining Investment (concluded)

The returns on this investment are uncertain, given the high volatility of bitcoin prices. If bitcoin prices remain at around $60,000 per coin, then DHI would be able to comfortably repay the RMA and earn a profit. Thus far, DHI made repayments in March 2024, as well as providing a special dividend of Ngu 2.7 billion (US$ 33 million) to the government. They have committed to provide another special dividend of Ngu 5.3 billion (US$ 64 million) in FY2024/25. The RMA agreed to extend the maturity of the outstanding DHI securities by two years, and these are now due to be repaid to the RMA between 2026 and 2027. The extension entails coupon payments at a 4 percent rate, compared to the original bullet bond at a 1.5 percent rate. The RMA has the right to request the sale of the crypto assets should it assess that reserves would decline below the constitutional minimum,

Bitcoin Prices
(In USD)



Source: Bloomberg.

The macroeconomic impact of this operation is significant. The RMA financing entailed a large drop in reserves. While the authorities stressed the need to take advantage of the investment opportunity—which could spur other technology investments—it resulted in the need to impose policies which restricted select imports to support the peg. Going forward, it can increase exports and fiscal revenues, but it also creates the challenges of dealing with volatile returns as well as to carefully assess the competing demands for electricity (electrification, diversification of domestic production and exports). The authorities are prioritizing domestic consumption for households and other industries, including through their pricing policies.

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 larger than 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, but it partly reflects a mechanical improvement of the fiscal position as Punatshangchhu II is commissioned and tourism recovers further. Growth would be higher than what would be implied by alternative assumptions on fiscal multipliers because the growth pick-up reflects hydro developments and implementation of the 13th FYP. The contribution of government capital to GDP growth is assumed to be low, in line with the previous DSA and the historical average.[21] Compared to the previous DSA, the debt dynamics feature two significant increases upon the commissioning of Punatshangchhu I and II when interest during construction will be recognized, yet those higher costs will be reflected in the electricity tariff to India, ensuring the resources needed for servicing this higher debt. Finally, historically, the PPG external debt has been driven by a large CAD, reflecting large hydro-related imports, similar to the medium-term projection.[22]

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[21] In addition, the relative contribution of government capital to GDP growth (11 percent) is significantly lower than in the historical period (49 percent).

[22] Significant residuals on external debt drivers partly reflect weaknesses in balance of payments and international investment position data.

COUNTRY CLASSIFICATION AND DETERMINATION OF SCENARIO STRESS TESTS

8. **Bhutan's debt carrying capacity (DCC) is assessed to be strong**. 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 for this DSA is calculated based on the April 2024 World Economic Outlook (WEO) and the 2022 World Bank Country Policy and Institutional Assessment (CPIA) data, and indicates a medium debt carrying capacity. However, Bhutan's debt carrying capacity was previously assessed to be strong and so, another medium signal would be needed in the October 2024 WEO round for Bhutan's debt carrying capacity to be assessed as medium.[23]

9. **The DSA thresholds applicable for Bhutan are correspondingly high**. For external debt, the thresholds are 240 percent for the present value (PV) of external debt to exports ratio and 55 percent for the PV of external debt to GDP ratio. For external debt servicing, the thresholds are 21 percent for the debt service to exports ratio and 23 percent for the debt services to revenue ratio. Finally, the public debt benchmark is 70 percent for the PV of total public debt in percent of GDP.

Text Table 5. Debt Carrying Capacity and Threshold

Country	Bhutan
Country Code	**514**
Debt Carrying Capacity	**Strong**

Final	Classification based on current vintage	Classification based on the previous vintage	Classification based on the two previous vintage
Strong	Medium 3.00	Strong 3.06	Strong 3.07

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.

Text Table 6. Calculation of the CI Index

Components	Coefficients (A)	10-year average values (B)	CI Score components (A*B) = (C)	Contribution of components
CPIA	0.385	3.857	1.48	49%
Real growth rate (in percent)	2.719	3.029	0.08	3%
Import coverage of reserves (in percent)	4.052	40.329	1.63	54%
Import coverage of reserves^2 (in percent)	-3.990	16.264	-0.65	-22%
Remittances (in percent)	2.022	2.715	0.05	2%
World economic growth (in percent)	13.520	2.909	0.39	13%
CI Score			3.00	100%
CI rating			**Medium**	

[23] As per the Guidance Note of the Joint Bank-Fund Debt Sustainability Framework for Low Income Countries, the country classification is revised only if two consecutive signals suggest the need for an upgrade or downgrade.

Text Table 7. Applicable Thresholds

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

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

DEBT SUSTAINABILITY

A. 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. The present value (PV) of debt to GDP ratio would exceed the threshold until FY2035/36, with the PV of debt to exports falling sustainably below the threshold in FY2030/31, reflecting a projected pick-up in hydro-related exports. Regarding liquidity indicators, the debt service to exports ratio would breach the threshold briefly in FY2027/28 and in FY2030/31-FY2031/32 and the debt service to revenue ratio would fall below its respective threshold only from FY2041/42, suggesting liquidity pressures despite significant increases in government revenues and grants (Figure 1).[24] The external debt-to-GDP ratio is expected to increase from 106.4 percent in FY2022/23 to about 120 percent in the medium term (by FY2028/29), and to decrease to 79.7 percent by 2033/34 and further to about 37 percent in the long term (by FY2043/44, Table 1). Similarly, the external PPG debt-to-GDP ratio will rise from 103.3 percent in FY2022/23 to 117.4 percent in the medium term, and to decline to 29.3 percent in the long term (Table 1).

11. Stress tests suggest that Bhutan's external debt trajectory could be vulnerable to export shocks. A depreciation in the ngultrum could increase the value of Bhutan's external liabilities, which are largely denominated in foreign currency. However, because most external debt is denominated in rupees, to which the ngultrum is pegged, this risk does not appear significant.[25] In any case, 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 only a couple of years after doing so in the baseline. 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 until FY2037/38 and FY2042/43, respectively. Export shocks could stem from

[24] External debt service indicators present a spike in 2027/28 reflecting the maturity date of the two Standby Credit Facilities granted by India to the Royal Government of Bhutan and deposited at the Royal Monetary Authority.

[25] 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.

delays in the commissioning or construction of hydropower projects. In addition, Bhutan is vulnerable to climate shocks. The historical scenario, while alarming, is not relevant because it does not reflect an adequate forecast for macroeconomic variables.[26]

12. Bhutan's non-FDI-like external debt is comfortably below the thresholds in the baseline and most stress scenarios.[27] Excluding Bhutan's hydro debt associated to intergovernmental projects with India (IG), which is closer to FDI than to debt in nature and risks, the PV of external debt to GDP remains broadly stable, fluctuating between 27 and 33 percentage points between FY2023/24 to FY2033/34, significantly below the threshold of 55 percent of GDP (Figure 6). No stress test breaches the threshold either, except for a one-off marginal breach in the case of an export shock and a marginal breach for the combined shock. Debt service-to-exports ratio and debt service-to-revenue ratio only experience one-off marginal breaches. The PV of debt-to-exports ratio only breaches the threshold due to an exports shock between FY2027/28 and FY2030/31.

B. Public Debt Sustainability Analysis

13. Bhutan's public debt follows closely the dynamics of external debt and does not pose an additional risk to the debt profile. Under the baseline scenario, the PV of debt to GDP would exceed the threshold until FY2036/37. Under different stress scenarios, the thresholds for the PV of debt to GDP would be exceeded until FY2036/37 (primary balance and combination of shocks), FY2037/38 (exports and other shocks), and FY2042/43 (depreciation). The PV of debt to GDP would exceed the threshold even by FY2043/44 in the case of a real GDP growth shock. The PV of debt to revenue ratio would increase over the medium term, before setting on a downward trajectory after hydropower projects are commissioned (Figure 2). Similarly, the debt service-to-revenue ratio shows an inverted-U dynamic because it is expected to increase over the medium term as new hydro power plants are commissioned and repayment of their debt begins. It is important to note that domestic debt is subject to risks as evidenced by the undersubscription of recent bond auctions, underscoring the need to enhance domestic debt management.

RISK RATING AND VULNERABILITIES

14. This DSA assesses Bhutan at moderate risk of external and overall debt distress, similarly to the 2022 DSA. While the mechanical results point to a high risk of overall and external debt distress, with breaches in the thresholds under the baseline scenario, judgment was applied given unique mitigating factors supporting the sustainability of Bhutan's debt stock. Sixty-one percent of Bhutan's PPG external debt is linked to hydropower project loans from the Government of India, which covers both financial and construction risks of the projects and commits to buy all

[26] 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 and more favorable current account dynamics, reflecting the increase in electricity exports and a gradual decline in hydropower-related imports. Thus, the historical scenario does not constitute an adequate forecast.

[27] This exercise excludes debt service from IG hydro projects and removes from hydro exports the amount needed to pay the debt service of those projects. So, that the exports factored in the stress tests are what is available for Bhutan to pay non-IG debt.

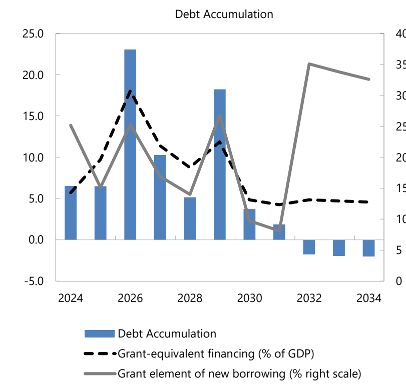
surplus electricity at a price reflecting cost plus profits. Overall, the analysis shows that external debt sustainability could be jeopardized by export shocks. Within the moderate rating, Bhutan is assessed to have limited space to absorb additional shocks (Figure 5). The baseline debt trajectory is subject to important risks, including uncertainties related to geopolitical tensions, further delays in the completion of hydropower plants, failure to address external imbalances, and the materialization of financial sector contingent liabilities. Going forward, robust fiscal consolidation and revenue mobilization efforts, including timely implementation of the GST, a stable peg with the Indian rupee, reforms to improve productivity and competitiveness of the non-hydropower sector, and enhanced debt management could help support debt sustainability.

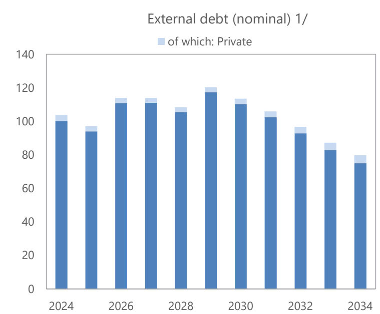
Table 1. Bhutan: External Debt Sustainability Framework, Baseline Scenario, 2021–2044

(In percent of GDP, unless otherwise indicated)

	Actual	Projections								Average 8/	
	2023	2024	2025	2026	2027	2028	2029	2034	2044	Historical	Projections
External debt (nominal) 1/	106.4	103.7	97.1	113.9	113.9	108.4	120.4	79.7	37.2	106.1	103.6
of which: public and publicly guaranteed (PPG)	103.3	100.2	93.9	110.9	111.0	105.5	117.4	74.9	29.3	102.1	100.2
Change in external debt	-2.7	-2.7	-6.6	16.8	0.0	-5.5	11.9	-7.5	-1.4		
Identified net debt-creating flows	32.5	7.3	11.5	14.5	6.6	10.6	6.5	-1.6	5.1	18.6	6.7
Non-interest current account deficit	33.1	16.3	30.6	18.3	9.5	13.8	10.4	-0.4	6.6	21.2	11.4
Deficit in balance of goods and services	32.3	16.6	29.7	18.5	9.8	13.8	11.8	0.1	7.8	21.7	11.8
Exports	28.0	33.2	35.6	44.3	46.4	38.8	40.1	44.7	35.8		
Imports	60.3	49.8	65.3	62.8	56.2	52.5	51.9	44.9	43.6		
Net current transfers (negative = inflow)	-2.9	-4.5	-2.1	-2.2	-2.0	-1.6	-2.5	-1.7	-1.2	-5.7	-2.2
of which: official	-4.1	-3.1	-8.2	-9.8	-8.6	-6.6	-2.9	-2.1	-1.7		
Other current account flows (negative = net inflow)	3.7	4.1	2.9	2.0	1.6	1.6	1.1	1.2	-0.1	5.2	1.8
Net FDI (negative = inflow)	-0.4	-5.3	-14.0	-0.4	-0.5	-0.6	-0.6	-0.6	-0.6	-0.2	-2.2
Endogenous debt dynamics 2/	-0.1	-3.6	-5.1	-3.4	-2.4	-2.6	-3.3	-0.6	-0.9		
Contribution from nominal interest rate	1.4	1.5	1.6	2.2	3.0	3.3	3.7	3.4	0.9		
Contribution from real GDP growth	-5.4	-5.1	-6.7	-5.6	-5.4	-5.9	-7.0	-4.0	-1.8		
Contribution from price and exchange rate changes	3.9	...	...	...	...	...	...	...	...		
Residual 3/	-35.3	-10.0	-18.1	2.2	-6.6	-16.1	5.5	-5.9	-6.6	-17.4	-9.1
of which: exceptional financing	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	93.1	92.0	88.3	100.5	101.3	97.2	104.1	66.3	22.2		
PV of PPG external debt-to-exports ratio	333.0	277.3	248.1	227.0	218.6	250.8	259.7	148.4	62.1		
PPG debt service-to-exports ratio	13.2	11.1	10.2	10.2	12.2	22.3	18.9	17.9	8.0		
PPG debt service-to-revenue ratio	20.2	18.1	18.8	21.7	27.3	41.6	33.7	38.3	16.6		
Gross external financing need (Million of U.S. dollars)	1068.9	466.7	717.3	879.0	631.2	1026.7	904.4	570.7	1630.2		
Key macroeconomic assumptions											
Real GDP growth (in percent)	5.0	5.2	7.2	6.4	5.2	5.6	7.2	5.0	5.0	3.5	5.8
GDP deflator in US dollar terms (change in percent)	-3.5	3.0	4.1	4.1	4.0	3.7	3.5	3.4	3.1	0.6	3.6
Effective interest rate (percent) 4/	1.3	1.5	1.7	2.5	2.9	3.2	3.8	4.2	2.5	1.6	3.3
Growth of exports of G&S (US dollar terms, in percent)	3.0	28.5	19.7	37.9	14.5	-8.4	14.7	6.8	1.1	2.2	15.0
Growth of imports of G&S (US dollar terms, in percent)	10.7	-10.5	46.3	6.6	-2.2	2.5	9.6	4.7	6.9	6.0	7.4
Grant element of new public sector borrowing (in percent)	...	25.2	15.2	25.3	16.9	14.0	26.8	32.6	18.8	...	22.1
Government revenues (excluding grants, in percent of GDP)	18.2	20.3	19.3	20.7	20.7	20.8	22.4	20.9	17.2	19.6	21.3
Aid flows (in Million of US dollars) 5/	175.3	239.1	388.7	563.6	561.1	439.1	345.4	465.4	771.5		
Grant-equivalent financing (in percent of GDP) 6/	...	5.7	9.7	18.1	11.4	8.8	11.9	4.6	3.6	...	8.1
Grant-equivalent financing (in percent of external financing) 6/	...	51.2	64.7	45.9	52.9	51.4	38.4	68.0	61.3	...	54.3
Nominal GDP (Million of US dollars)	2,908	3,151	3,516	3,894	4,259	4,668	5,177	7,993	18,126		
Nominal dollar GDP growth	1.4	8.4	11.6	10.8	9.4	9.6	10.9	8.6	8.3	4.1	9.6
Memorandum items:											
PV of external debt 7/	96.2	95.5	91.5	103.5	104.2	100.1	107.1	71.1	30.2		
In percent of exports	344.2	288.0	257.2	233.7	224.8	258.2	267.1	159.1	84.3		
Total external debt service-to-exports ratio	14.7	11.7	10.7	10.5	12.6	22.7	19.2	18.2	8.3		
PV of PPG external debt (in Million of US dollars)	2707.1	2897.7	3103.0	3915.0	4316.6	4537.1	5389.6	5302.8	4030.7		
(PVt-PVt-1)/GDPt-1 (in percent)		6.6	6.5	23.1	10.3	5.2	18.3	-2.0	0.5		
Non-interest current account deficit that stabilizes debt ratio	35.8	19.0	37.1	1.6	9.5	19.2	-1.6	7.1	8.0		

Definition of external/domestic debt	**Residency-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) + 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.

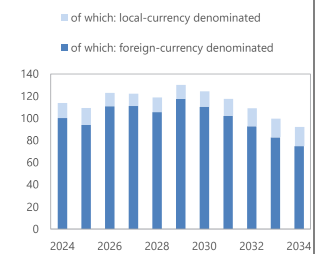
Table 2. Bhutan: Public Sector Debt Sustainability Framework, Baseline Scenario, 2021–2044

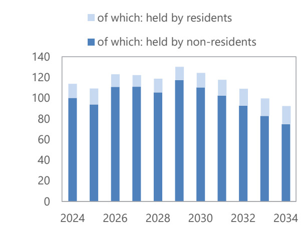
(In percent of GDP, unless otherwise indicated)

	Actual	Projections								Average 6/	
	2023	2024	2025	2026	2027	2028	2029	2034	2044	Historical	Projections
Public sector debt 1/	116.1	113.8	109.2	123.1	122.3	118.8	130.2	92.4	44.1	107.5	114.6
of which: external debt	103.3	100.2	93.9	110.9	111.0	105.5	117.4	74.9	29.3	102.1	100.2
Change in public sector debt	-1.3	-2.3	-4.5	13.8	-0.8	-3.5	11.4	-7.4	-3.1		
Identified debt-creating flows	-3.8	-2.6	-2.7	15.7	1.3	-1.7	12.9	-6.2	-2.7	-2.9	-0.7
Primary deficit	3.1	3.0	2.4	-0.1	-0.2	0.1	0.4	-0.2	-0.2	1.3	0.4
Revenue and grants	24.2	24.2	28.1	31.5	30.1	28.2	27.3	24.4	20.2	27.6	27.1
of which: grants	6.0	3.9	8.8	10.8	9.4	7.4	4.9	3.5	3.0		
Primary (noninterest) expenditure	27.3	27.2	30.5	31.4	29.9	28.3	27.7	24.2	20.0	29.0	27.5
Automatic debt dynamics	-3.9	-7.8	-7.8	-5.7	-4.8	-4.9	-5.8	-2.3	-1.5		
Contribution from interest rate/growth differential	-11.3	-7.8	-7.8	-5.7	-4.8	-4.9	-5.8	-2.3	-1.5		
of which: contribution from average real interest rate	-5.7	-2.0	-0.2	0.8	1.3	1.6	2.2	2.4	0.8		
of which: contribution from real GDP growth	-5.6	-5.7	-7.7	-6.6	-6.1	-6.5	-7.9	-4.7	-2.2		
Contribution from real exchange rate depreciation	7.4	...	...	...	...	...	...	...	...		
Other identified debt-creating flows	-2.9	2.2	2.7	21.6	6.3	3.2	18.3	-3.7	-1.0	-1.1	3.8
Privatization receipts (negative)	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		
Debt relief (HIPC and other)	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)	-2.9	2.2	2.7	21.6	6.3	3.2	18.3	-3.7	-1.0		
Residual	2.5	0.3	-1.8	-1.9	-2.1	-1.8	-1.5	-1.1	-0.3	5.1	-1.4
Sustainability indicators											
PV of public debt-to-GDP ratio 2/	106.4	105.8	103.8	112.9	112.9	110.7	117.2	84.0	37.1		
PV of public debt-to-revenue and grants ratio	438.7	437.2	369.3	358.0	375.1	392.4	428.6	344.0	183.6		
Debt service-to-revenue and grants ratio 3/	38.0	40.8	25.4	23.9	21.9	34.6	36.2	46.0	34.2		
Gross financing need 4/	9.4	15.1	12.2	29.0	12.7	13.0	28.5	7.4	5.7		
Key macroeconomic and fiscal assumptions											
Real GDP growth (in percent)	5.0	5.2	7.2	6.4	5.2	5.6	7.2	5.0	5.0	3.5	5.8
Average nominal interest rate on external debt (in percent)	1.3	1.5	1.7	2.6	2.9	3.2	3.9	4.4	2.8	1.6	3.3
Average real interest rate on domestic debt (in percent)	-1.8	-0.8	1.2	1.7	2.3	2.5	2.4	3.0	3.4	-1.1	2.1
Real exchange rate depreciation (in percent, + indicates depreciation)	7.7	...	...	...	...	...	...	...	...	1.5	...
Inflation rate (GDP deflator, in percent)	4.5	4.6	4.6	4.6	4.4	4.2	4.1	4.0	3.7	4.6	4.2
Growth of real primary spending (deflated by GDP deflator, in percent)	-6.3	4.9	20.1	9.6	0.0	0.0	5.1	2.4	3.5	3.2	4.8
Primary deficit that stabilizes the debt-to-GDP ratio 5/	4.3	5.3	6.9	-13.9	0.5	3.6	-11.0	7.2	2.9	4.1	2.6
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		

Definition of external/domestic debt	**Residency-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 entire public sector, including SOEs . 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.

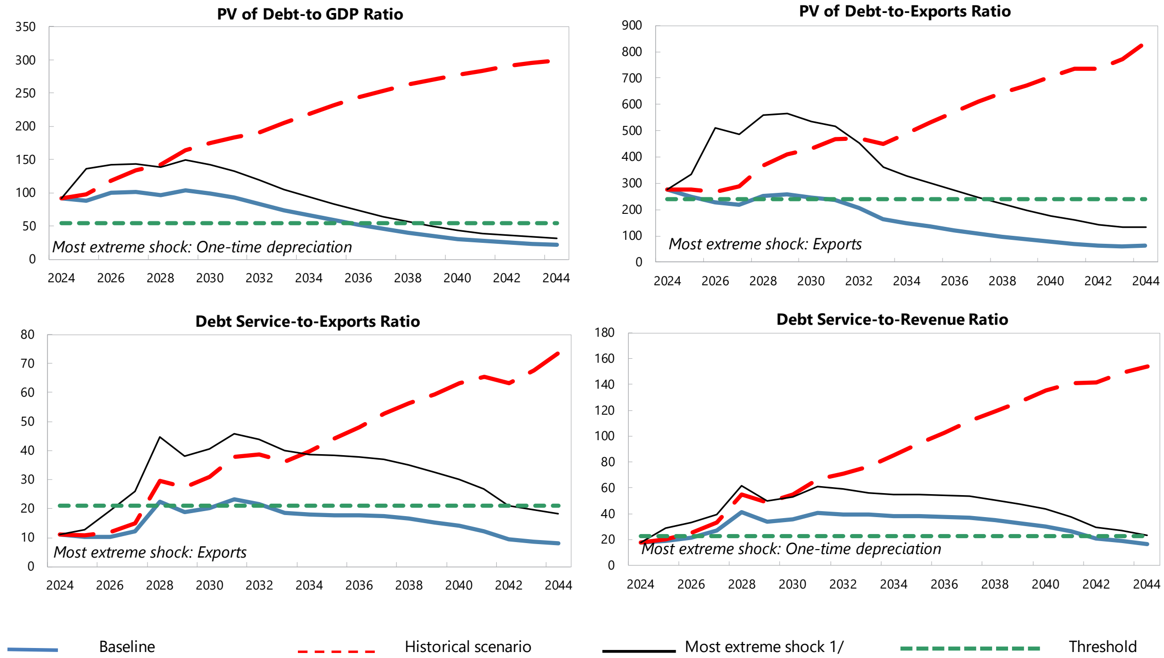
3/ Debt service is defined as the sum of interest and amortization of medium and long-term, and short-term debt.

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, 2024–2044 1/ 2/



Customization of Default Settings		
	Size	Interactions
Tailored Stress		
Combined CL	Yes	
Natural disaster	n.a.	n.a.
Commodity price	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 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	4.0%	4.0%
USD Discount rate	5.0%	5.0%
Avg. maturity (incl. grace period)	21	21
Avg. grace period	6	6

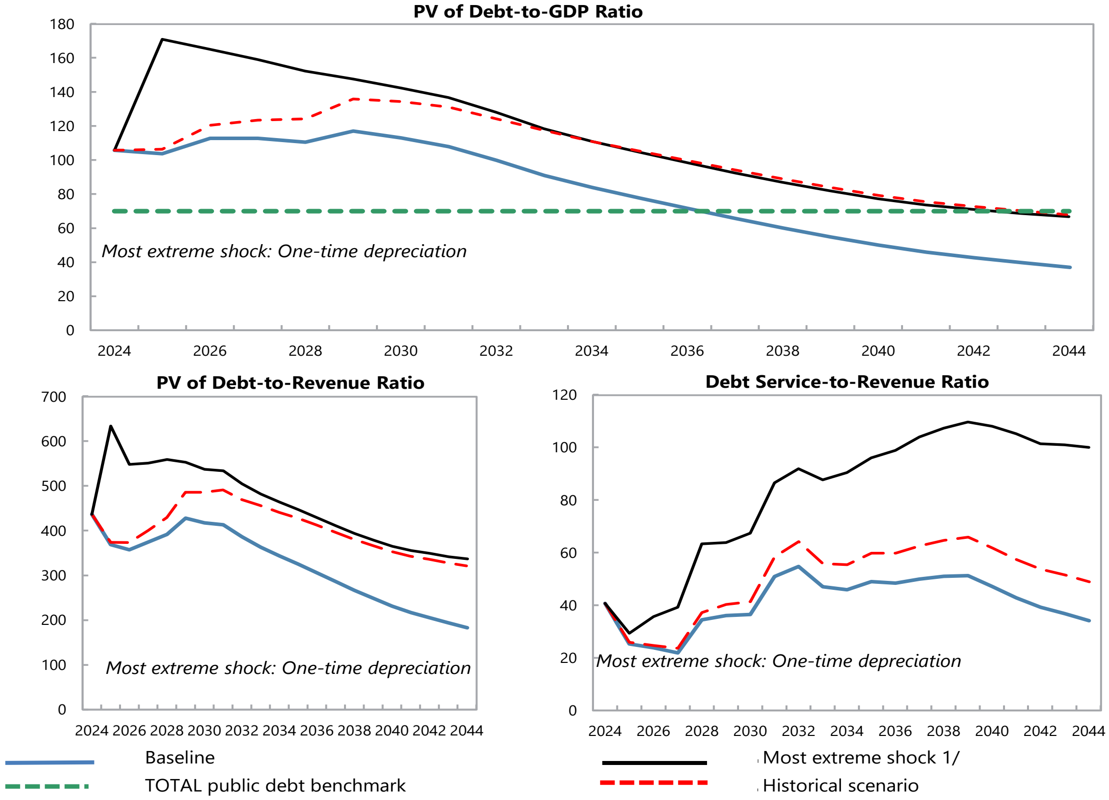
* Note: All the additional financing needs generated by the shocks under the stress tests are assumed to be covered by PPG external MLT debt in the external DSA. Default terms of marginal debt are based on baseline 10-year projections.

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 2034. 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, 2024–2044 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	63%	63%
Domestic medium and long-term	24%	24%
Domestic short-term	12%	12%
Terms of marginal debt		
External MLT debt		
Avg. nominal interest rate on new borrowing in USD	4.0%	4.0%
Avg. maturity (incl. grace period)	21	21
Avg. grace period	6	6
Domestic MLT debt		
Avg. real interest rate on new borrowing	3.2%	3.2%
Avg. maturity (incl. grace period)	6	6
Avg. grace period	5	5
Domestic short-term debt		
Avg. real interest rate	-0.2%	-0.2%

* 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 2034. 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, 2024–2034

(In percent)

	Projections 1/										
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
PV of debt-to GDP ratio											
Baseline	**92**	**88**	**101**	**101**	**97**	**104**	**99**	**93**	**83**	**74**	**66**
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2024-2034 2/	**92**	**98**	**118**	**135**	**142**	**164**	**175**	**183**	**191**	**205**	**219**
B. Bound Tests											
B1. Real GDP growth	**92**	**99**	**124**	**125**	**120**	**129**	**122**	**114**	**103**	**92**	**82**
B2. Primary balance	**92**	**90**	**104**	**105**	**101**	**107**	**102**	**96**	**87**	**77**	**70**
B3. Exports	**92**	**96**	**127**	**127**	**122**	**128**	**121**	**114**	**104**	**92**	**83**
B4. Other flows 3/	**92**	**103**	**117**	**117**	**112**	**118**	**112**	**105**	**95**	**85**	**76**
B5. Depreciation	**92**	**137**	**142**	**144**	**138**	**150**	**142**	**133**	**119**	**106**	**94**
B6. Combination of B1-B5	**92**	**127**	**145**	**145**	**139**	**147**	**140**	**131**	**118**	**105**	**94**
C. Tailored Tests											
C1. Combined contingent liabilities	**92**	**92**	**105**	**106**	**101**	**108**	**103**	**97**	**88**	**78**	**70**
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	**92**	**88**	**101**	**101**	**97**	**104**	**99**	**93**	**83**	**74**	**66**
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	55	55	55	55	55	55	55	55	55	55	55
PV of debt-to-exports ratio											
Baseline	**277**	**248**	227	219	**251**	**260**	**245**	236	205	163	148
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2024-2034 2/	**277**	**277**	**267**	**290**	**368**	**409**	**433**	**468**	**471**	**450**	**489**
B. Bound Tests											
B1. Real GDP growth	**277**	**248**	227	219	**251**	**260**	**245**	236	205	163	148
B2. Primary balance	**277**	**253**	235	226	**260**	**268**	**253**	**245**	214	170	156
B3. Exports	**277**	**334**	**511**	**487**	**558**	**565**	**535**	**517**	**454**	**361**	**329**
B4. Other flows 3/	**277**	**289**	**264**	**252**	**289**	**294**	**278**	**269**	234	186	170
B5. Depreciation	**277**	**248**	208	201	231	**242**	228	219	190	150	137
B6. Combination of B1-B5	**277**	**366**	**259**	**420**	**481**	**491**	**464**	**448**	**390**	**309**	**282**
C. Tailored Tests											
C1. Combined contingent liabilities	**277**	**260**	237	228	**262**	**270**	**255**	**247**	216	172	157
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	**277**	**248**	227	219	**251**	**260**	**245**	236	205	163	148
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	240	240	240	240	240	240	240	240	240	240	240
Debt service-to-exports ratio											
Baseline	11	10	10	12	**22**	19	20	**23**	**22**	19	18
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2024-2034 2/	11	11	12	15	**30**	**27**	**31**	**38**	**39**	**36**	**40**
B. Bound Tests											
B1. Real GDP growth	11	10	10	12	**22**	19	20	**23**	**22**	19	18
B2. Primary balance	11	10	10	13	**23**	19	21	**24**	**22**	19	18
B3. Exports	11	13	19	**26**	**45**	**38**	**41**	**46**	**44**	**40**	**39**
B4. Other flows 3/	11	10	11	14	**24**	20	**22**	**25**	**24**	21	20
B5. Depreciation	11	10	10	11	**21**	18	20	**23**	**21**	17	17
B6. Combination of B1-B5	11	12	20	**23**	**40**	**34**	**36**	**41**	**42**	**35**	**34**
C. Tailored Tests											
C1. Combined contingent liabilities	11	10	11	13	**23**	19	21	**24**	**22**	19	18
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	11	10	10	12	**22**	19	20	**23**	**22**	19	18
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	21	21	21	21	21	21	21	21	21	21	21
Debt service-to-revenue ratio											
Baseline	18	19	22	**27**	**42**	**34**	**36**	**41**	**40**	**39**	**38**
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2024-2034 2/	18	20	**26**	**33**	**55**	**49**	**55**	**67**	**71**	**77**	**85**
B. Bound Tests											
B1. Real GDP growth	18	21	**27**	**34**	**52**	**42**	**44**	**50**	**49**	**49**	**47**
B2. Primary balance	18	19	22	**28**	**42**	**34**	**36**	**41**	**41**	**41**	**40**
B3. Exports	18	19	**23**	**33**	**47**	**38**	**40**	**45**	**45**	**48**	**47**
B4. Other flows 3/	18	19	**25**	**30**	**45**	**36**	**38**	**43**	**45**	**44**	**43**
B5. Depreciation	18	**29**	**34**	**40**	**62**	**50**	**53**	**61**	**60**	**57**	**55**
B6. Combination of B1-B5	18	22	**32**	**38**	**56**	**45**	**48**	**54**	**57**	**55**	**54**
C. Tailored Tests											
C1. Combined contingent liabilities	18	19	23	**28**	**42**	**34**	**36**	**41**	**40**	**40**	**39**
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	18	19	22	**27**	**42**	**34**	**36**	**41**	**40**	**39**	**38**
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Threshold	23	23	23	23	23	23	23	23	23	23	23

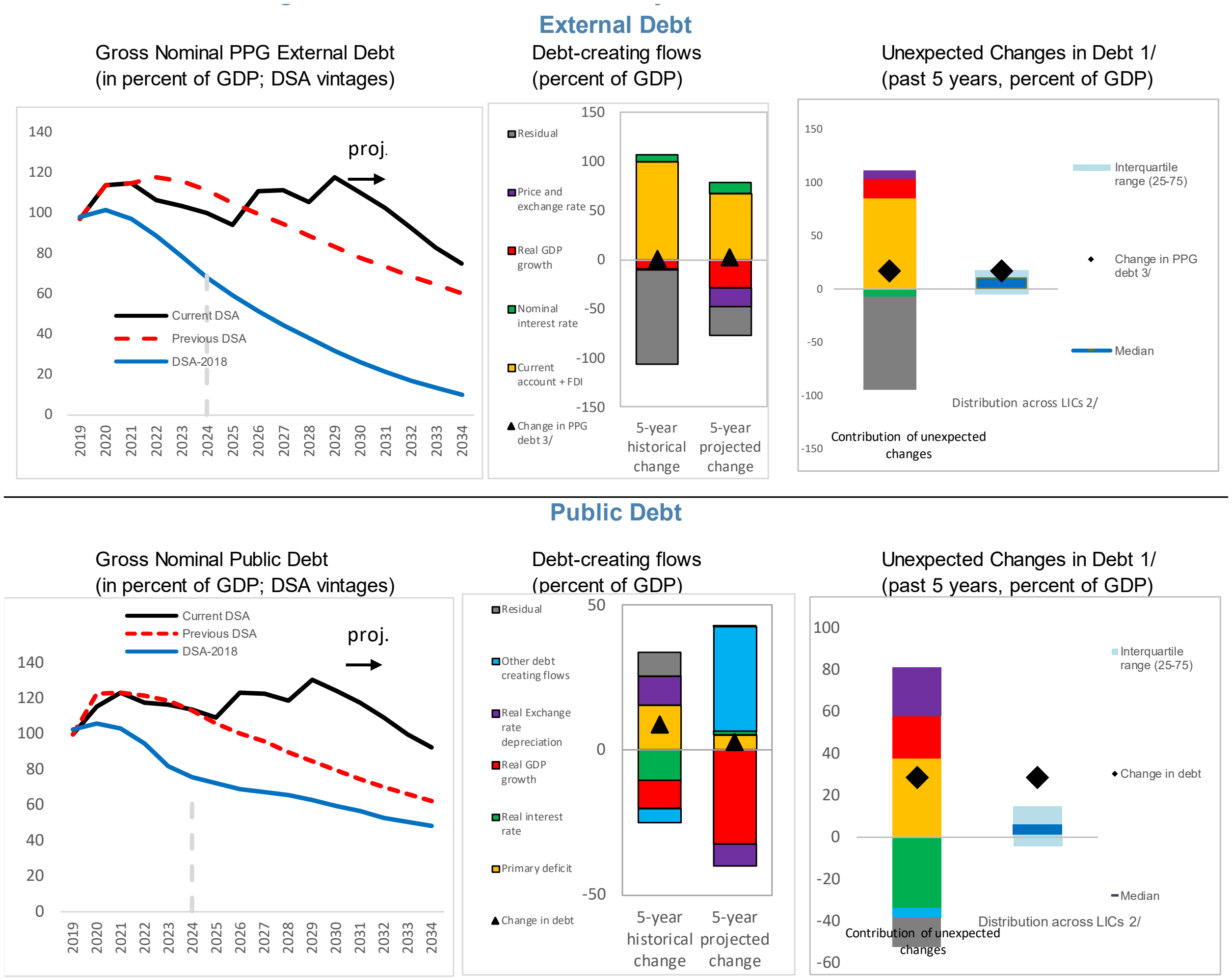
Sources: Country authorities; and staff estimates and projections.
1/ A bold value indicates a breach of the threshold.
2/ Variables include real GDP growth, GDP deflator (in U.S. dollar terms), non-interest current account in percent of GDP, and non-debt creating flows.
3/ Includes official and private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

Table 4. Bhutan: Sensitivity Analysis for Key Indicators of Public Debt, 2024–2034

	Projections 1/										
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	PV of Debt-to-GDP Ratio										
Baseline	**106**	**104**	**113**	**113**	**111**	**117**	**113**	**108**	**100**	**91**	**84**
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2024-2034 2/	**106**	**107**	**121**	**124**	**124**	**136**	**134**	**131**	**124**	**117**	**111**
B. Bound Tests											
B1. Real GDP growth	**106**	**118**	**146**	**151**	**152**	**164**	**164**	**161**	**155**	**147**	**142**
B2. Primary balance	**106**	**107**	**118**	**118**	**116**	**122**	**118**	**112**	**104**	**95**	**88**
B3. Exports	**106**	**110**	**137**	**136**	**133**	**138**	**133**	**127**	**118**	**107**	**99**
B4. Other flows 3/	**106**	**118**	**129**	**128**	**125**	**131**	**126**	**121**	**112**	**102**	**94**
B5. Depreciation	**106**	**171**	**165**	**159**	**152**	**148**	**143**	**137**	**128**	**119**	**111**
B6. Combination of B1-B5	**106**	**103**	**117**	**117**	**114**	**121**	**117**	**112**	**103**	**94**	**87**
C. Tailored Tests											
C1. Combined contingent liabilities	**106**	**111**	**119**	**119**	**117**	**123**	**118**	**113**	**105**	**96**	**89**
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	**106**	**107**	**123**	**129**	**132**	**144**	**145**	**144**	**140**	**135**	**132**
C4. Market Financing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
TOTAL public debt benchmark	70	70	70	70	70	70	70	70	70	70	70
	PV of Debt-to-Revenue Ratio										
Baseline	437	369	358	375	392	429	418	414	387	364	344
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2024-2034 2/	437	375	374	401	430	486	486	492	470	457	442
B. Bound Tests											
B1. Real GDP growth	437	406	429	466	508	576	583	598	581	569	562
B2. Primary balance	437	379	375	392	410	446	435	431	403	380	360
B3. Exports	437	393	434	452	470	504	492	487	457	429	404
B4. Other flows 3/	437	421	409	427	445	480	468	463	432	406	383
B5. Depreciation	437	635	549	552	560	554	538	535	506	483	464
B6. Combination of B1-B5	437	370	368	385	403	441	430	426	399	376	356
C. Tailored Tests											
C1. Combined contingent liabilities	437	393	378	395	413	449	438	434	406	383	363
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	437	381	390	429	470	526	535	552	543	539	539
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	41	25	24	22	35	36	37	51	55	47	46
A. Alternative Scenarios											
A1. Key variables at their historical averages in 2024-2034 2/	41	26	25	24	37	40	41	59	64	56	55
B. Bound Tests											
B1. Real GDP growth	41	27	28	28	44	48	49	69	77	69	70
B2. Primary balance	41	25	25	24	36	37	37	54	58	49	48
B3. Exports	41	25	25	25	38	39	40	54	59	54	52
B4. Other flows 3/	41	25	26	24	37	38	39	53	59	51	50
B5. Depreciation	41	29	36	39	63	64	68	87	92	88	91
B6. Combination of B1-B5	41	25	24	23	35	37	37	52	57	49	47
C. Tailored Tests											
C1. Combined contingent liabilities	41	25	27	23	36	37	38	56	57	48	47
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	41	25	26	27	41	43	45	62	70	64	65
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



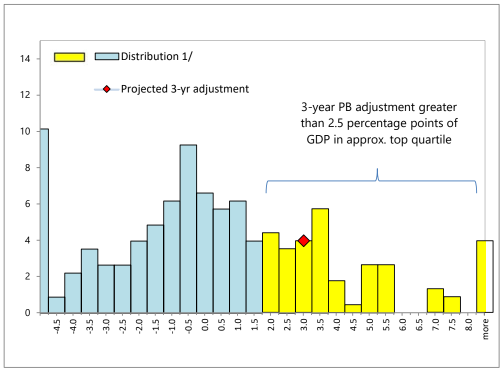
1/ Difference between anticipated and actual contributions on debt ratios.

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.

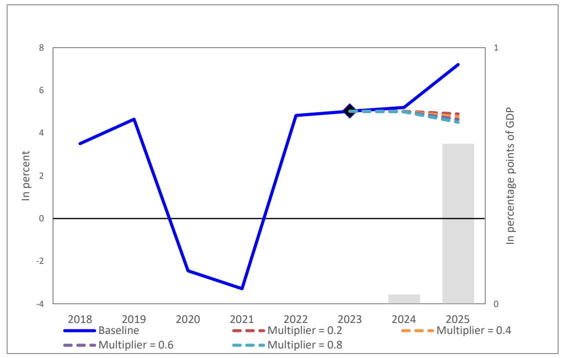
Figure 4. Bhutan: Realism Tools

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



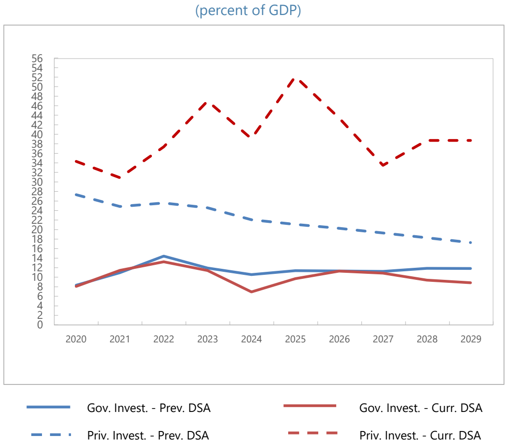
1/ Data cover Fund-supported programs for LICs (excluding emergency financing) approved since 1990. The size of 3-year adjustment from program inception is found on the horizontal axis; the percent of sample is found on the vertical axis.

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)

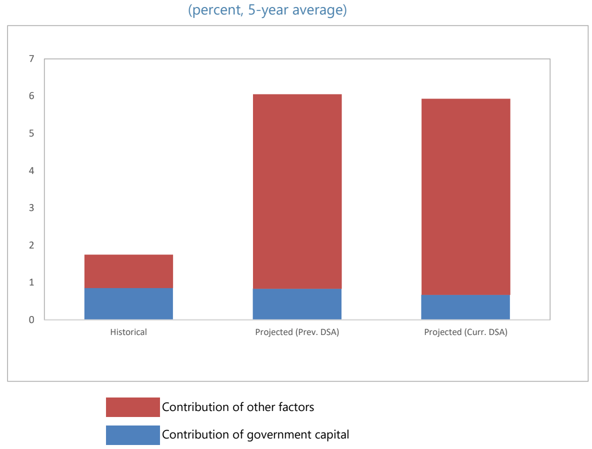
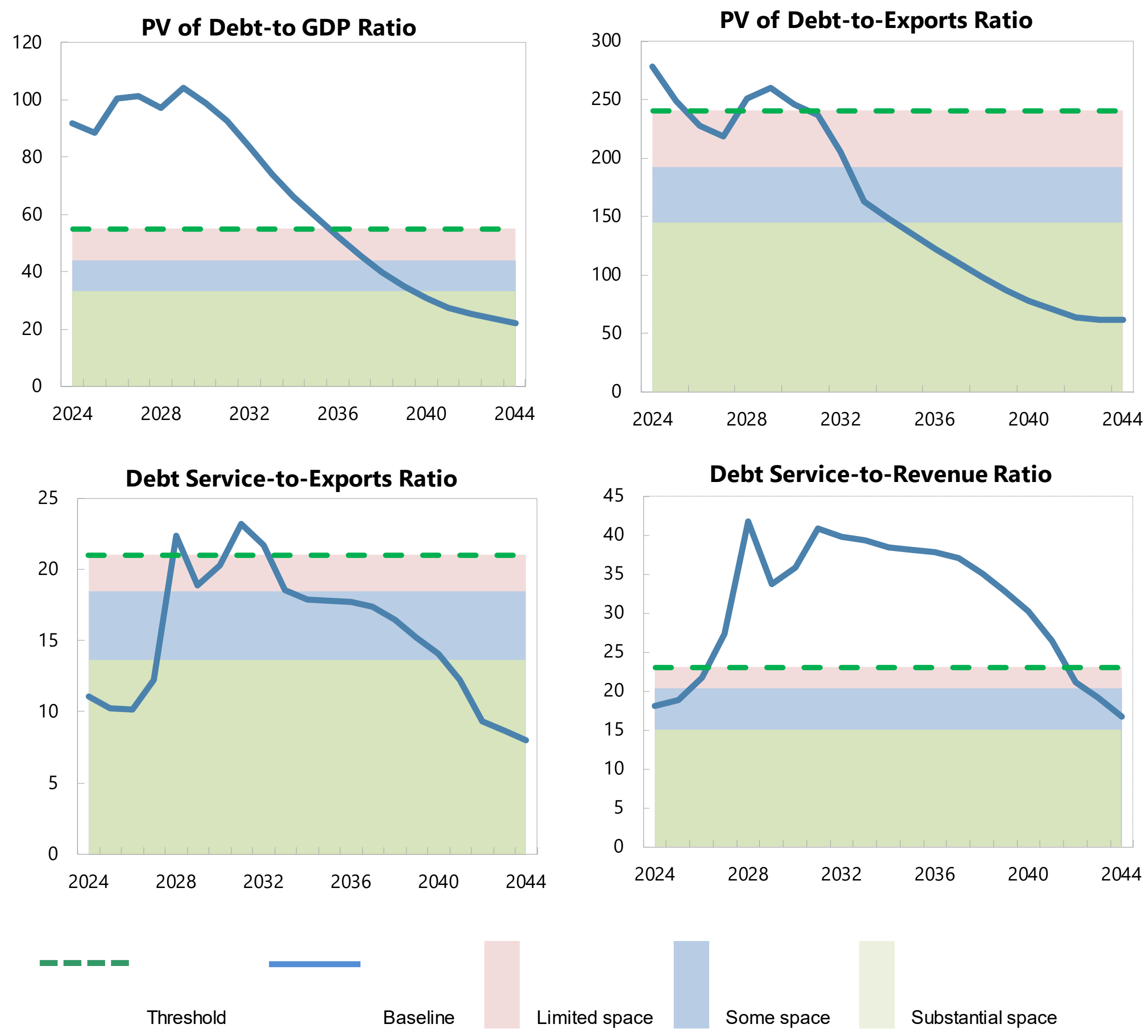


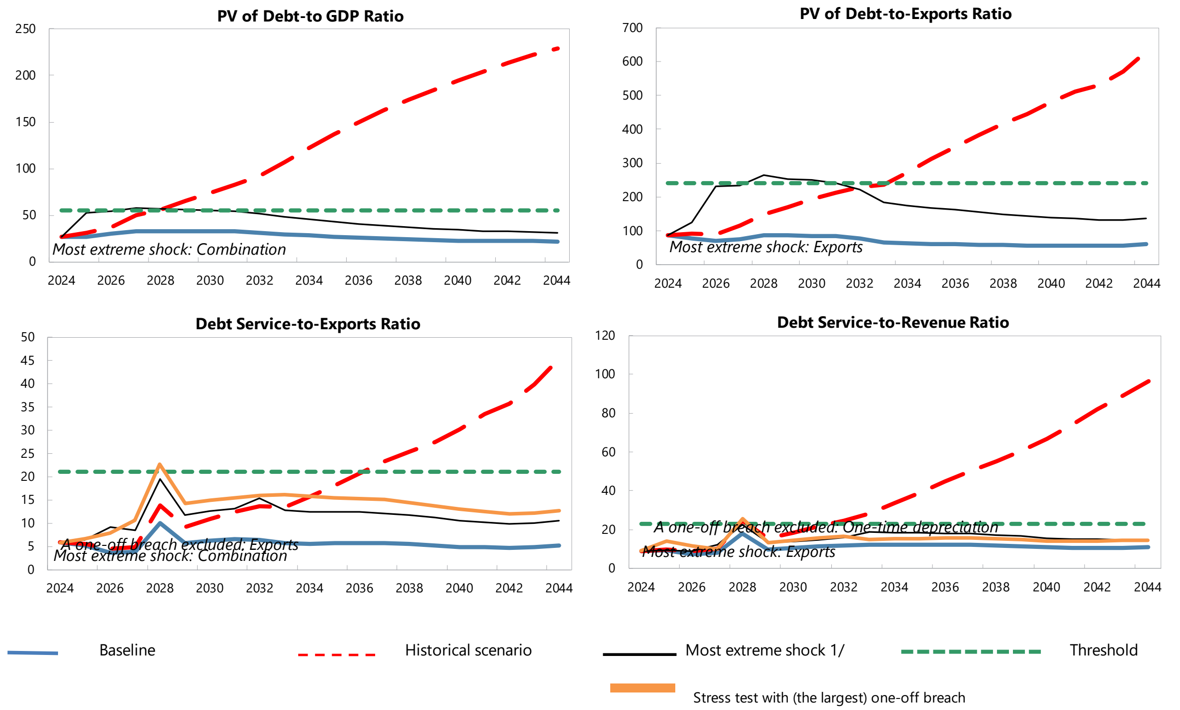
Figure 5. Bhutan: Qualification of the Moderate Category, 2024–2044 1/



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.

Figure 6. Bhutan: Indicators of Public and Publicly Guaranteed External Debt Under Alternatives Scenarios (excluding IG hydro debt), 2024–2044 1/ 2/



Customization of Default Settings	Size	Interactions
Tailored Stress		
Combined CL	Yes	
Natural disaster	n.a.	n.a.
Commodity price	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 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	3.5%	3.5%
USD Discount rate	5.0%	5.0%
Avg. maturity (incl. grace period)	25	25
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 2034. 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.