INTERNATIONAL MONETARY FUND

SELECTED ISSUES PAPER

Assessing Thailand's Debt Ceiling—Room for Recalibration?

Seunghwan Kim

SIP/2025/054

IMF Selected Issues Papers are prepared by IMF staff as background documentation for periodic consultations with member countries. It is based on the information available at the time it was completed on January 27, 2025. This paper is also published separately as IMF Country Report No 25/46.

2025
MAY

 SIP/2025/054

IMF Selected Issues Paper

Asia and Pacific Department

Assessing Thailand's Debt Ceiling—Room for Recalibration?

Prepared by Seunghwan Kim

Authorized for distribution by Corinne Deléchat
April 2025

***IMF Selected Issues Papers* are prepared by IMF staff as background documentation for periodic consultations with member countries.** It is based on the information available at the time it was completed on January 27, 2025. This paper is also published separately as IMF Country Report No 25/46.

ABSTRACT: The pandemic responses and subsequent fiscal stimulus measures have eroded Thailand's fiscal space, pushing its public debt close to the ceiling of 70 percent of GDP. While this situation generally calls for fiscal prudence to reduce debt levels, it also raises questions about the adequacy of the current debt ceiling. This paper uses various approaches to assess Thailand's public debt threshold, beyond which debt could become unsustainable or negatively impact growth. Stochastic simulations are used to account for potential impact of macroeconomic and fiscal shocks in calibrating an appropriate debt ceiling for Thailand.

RECOMMENDED CITATION: Kim, S. (2025). Assessing Thailand's Debt Ceiling—Room for Recalibration? IMF Selected Issues Paper, Asia and Pacific Department, SIP/2025/054. Washington, D.C.: InternationalMonetary Fund.

JEL Classification Numbers:	H63
Keywords:	Debt ceiling, fiscal rules
Author's E-Mail Address:	Skim4@imf.org

SELECTED ISSUES PAPERS

Assessing Thailand's Debt Ceiling—Room for Recalibration?

Thailand

Prepared by Seunghwan Kim[1]

[1] The author would like to thank Corinne Deléchat and Rupa Duttagupta for their insightful feedback, and the Thai authorities for their valuable comments and discussions.

INTERNATIONAL MONETARY FUND

THAILAND

SELECTED ISSUES

January 27, 2025

Approved By
Rupa Duttagupta (APD)

Prepared by Seunghwan Kim (APD).

CONTENTS

ASSESSING THAILAND'S DEBT CEILING—ROOM FOR RECALIBRATION?[1]

Pandemic responses and recent fiscal stimulus measures have eroded Thailand's fiscal space, pushing public debt close to the authorities' debt ceiling of 70 percent of GDP. While this situation generally calls for fiscal prudence to bring down debt levels, it also raises the question of whether the current debt ceiling is adequately calibrated. This chapter explores this question and discusses implications for fiscal policy and the broader fiscal framework.

A. Introduction

1. Thailand's debt ceiling plays a central role in safeguarding fiscal prudence. Thailand has a comprehensive set of fiscal rules to ensure fiscal responsibility and debt sustainability (Table 1). Among these, the public debt ceiling, stipulated in the 2018 Fiscal Responsibility Act (FRA), serves as a key anchor guiding fiscal policies. The debt rule has a broad coverage of the public sector—encompassing debt of the general government, state-owned enterprises, government agencies, and guaranteed debt of the special financial institutions. The Fiscal Policy Committee (FPC) determines the level of the debt ceiling, which is currently set at 70 percent of GDP. The ceiling was raised from 60 percent of GDP in September 2021 to provide more space for COVID-19 related measures.

Table 1. Thailand: Fiscal Rules

Rules	Ratio/Threshold	Set by
Public debt	Not to exceed 70 percent of GDP (raised from 60 percent in 2021)	FPC
Government debt service	Not to exceed 35 percent of the annual revenue	FPC
Foreign currency public debt	Not to exceed 10 percent of the total public debt	FPC
Foreign currency public debt service	Not to exceed 5 percent of the exports of goods and services	FPC
Deficit borrowing	Not to exceed 20 percent of the expenditure budget and 80 percent of the budget for principal repayments	Law (PDMA)
Capital expenditure	No less than 20 percent of the annual budget and not less than the fiscal year budget deficit	Law (FRA)

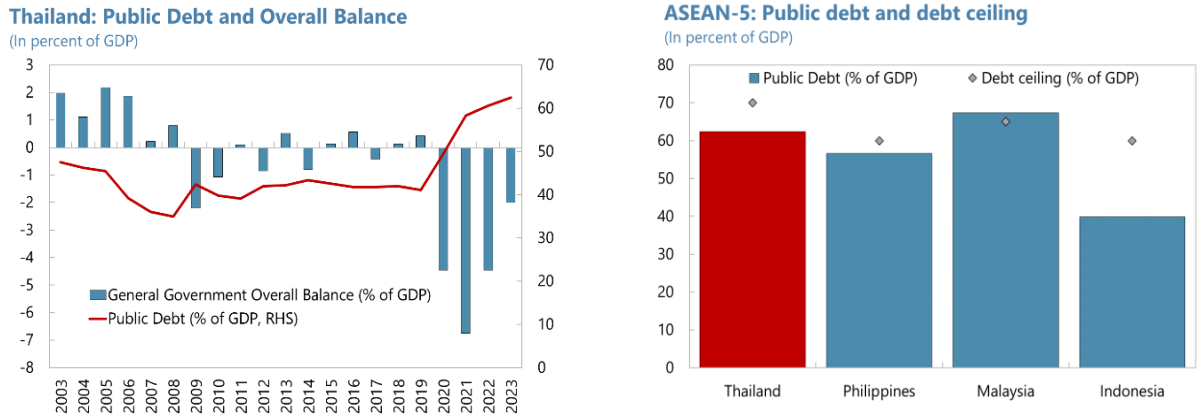
Sources: World Bank (2023), IMF (2022).
Notes: PDMA: Public Debt Management Act; FRA: Fiscal Responsibility Act. The FPC also sets numerical limits on the share of the central contingency fund (2-3.5 percent of total budget), principal repayments (2.5-4.0 percent), and new multi-year commitment (less than 10 percent of total budget). Additionally, FRA Section 28 indicates that the stock of fiscal liability for expenses or revenue loss from compensation arising from quasi-fiscal activities should not exceed 30 percent of total budget. All ratios/thresholds and numerical limits effective until end-November 2024.

[1] Prepared by Seunghwan Kim.

2. Fiscal support during the pandemic has widened Thailand's fiscal deficit and increased public debt. Historically, Thailand's fiscal policy has been characterized by conservatism—with the government deficit kept within 1 percent of GDP following the global financial crisis, and public debt levels maintained at around 40 percent of GDP. However, since the COVID-19 pandemic, fiscal policy has taken a more active role in supporting the economy. Spending increased sharply during the pandemic, with a stimulus package totaling THB 1.56 trillion. Fiscal expansion continued post-pandemic as the Thai government implemented a range of measures to shield households against food and energy price hikes following the war in Ukraine (Box 1). More recently, while the emergency support has been withdrawn, the Thai government has adopted additional fiscal stimulus to support subdued growth. As a result, Thailand's public debt increased to around 63 percent of GDP as of end FY24, and is expected to stay elevated (Figure 1).

3. Thailand's fiscal framework provides necessary flexibility to respond to shocks, but at the cost of weakened expenditure control. The pandemic support package was largely financed by off-budget loans amounting to THB 1.5 trillion (8.9 percent of GDP). While authorizing the off-budget financing allowed the government to deploy relief measures promptly, it weakened transparency and accountability by avoiding scrutiny by the legislature, and bypassing the deficit rule—which prevents deficits from exceeding 20 percent of the annual budget and 80 percent of principal repayments (World Bank, 2023). Moreover, quasi-fiscal operations have expanded, largely due to increasing energy subsidies provided by State-owned Enterprises (SOEs).[2] These factors have weakened the central government's control over overall public spending, contributing to increasing debt.

Figure 1. Thailand: Fiscal Balance and Debt



Note: Singapore does not have a debt ceiling. Malaysia's debt ceiling is indicative (i.e., not based on legislation)
Sources: World Economic Outlook (WEO) Database and IMF Article IV Staff Reports.

[2] The Thailand Oil Fund has accumulated net negative financial position of around THB 100 billion as of end September 2024. The Electricity Generating Authority of Thailand has accrued revenue of THB 85 billion as of end-June 2024. Besides, the authorities have cut excise taxes on fuel products and provided additional discounts and price caps through PTT. Taken together, the associated costs are estimated at around 0.6 percent of GDP in FY24.

Box 1. Thailand: Fiscal Reponses During the Pandemic and in the Aftermath

Thailand provided unprecedented fiscal support during the COVID-19 pandemic and in the aftermath to mitigate the impact of food and energy price hikes following the War in Ukraine.

The Thai authorities' pandemic measures comprised three phases of fiscal stimulus, announced in March 2020, April 2020, and May 2021, totaling THB 1.56 trillion. The government's support was organized into three themes—health, relief, and economic restoration and recovery—with spending envelope of THB 280 billion, THB 886 billion, and THB 391 billion respectively (see Box 1 Table 1). The measures were focused on income support, including cash transfers and subsidies for vulnerable households, informal workers, and farmers. Additionally, the Bank of Thailand (BOT) provided extensive liquidity support. The packages were financed by THB 1.5 trillion (8.9 percent of FY19 GDP) in off-budget loans, combined with budget reallocations, and balances sheets of the BOT and Specialized Financial Institutions (SFIs).

Additional fiscal measures amounting to THB 153 billion (0.9 percent of GDP) were announced in FY22 to mitigate the cost-of-living pressures due to rising commodity prices triggered by the war in Ukraine. The measures included energy subsidies, transfer payments (including through the expanding state welfare card scheme), a cap on electricity prices, and cuts to the employers' and employees' social security contributions.

Support Measures During the Pandemic and in the Aftermath

	THB billion	In percent of FY19 GDP
Fiscal and financial measures during the pandemic	**2,457**	**14.6**
Fiscal stimulus	1,557	9.3
Health spending	280	1.7
Relief (cash handouts)	886	5.3
Economic restoration and recovery	391	2.3
Financial measures	900	5.1
Guarantees on BoT soft loans to SMEs	500	3.0
BoT Stabilization Fund	400	2.4
Additional fiscal measures following the war in Ukraine	**153**	**0.9**
Cost of living support	75	0.4
Subsidy of diesel oil and gas	40	0.2
Temporary cut to social security contributions	34	0.2
Tourism recovery	5	0.0

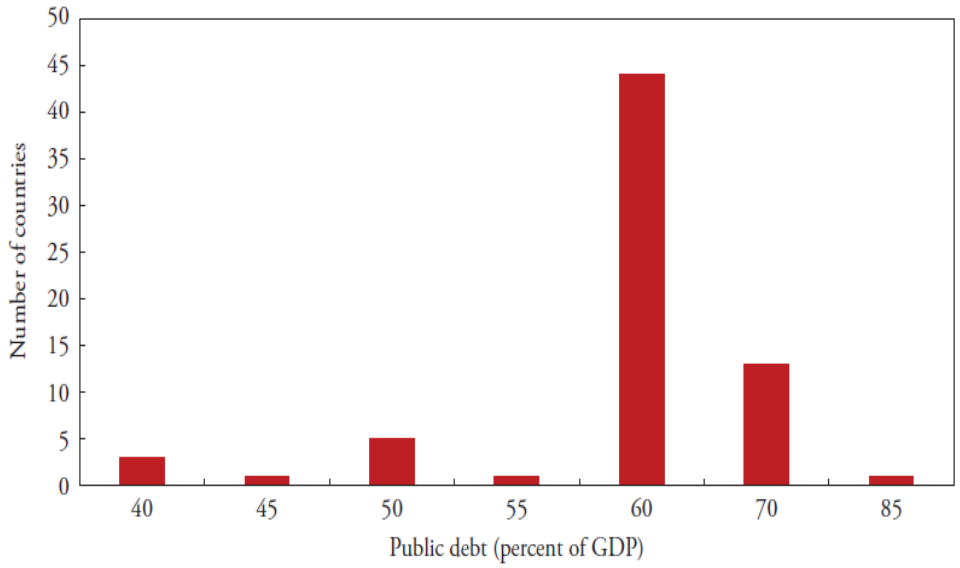
Source: World Bank (2023).

4. This chapter assesses Thailand's debt ceiling and discusses policy implications. While the current debt level (63 percent of GDP in 2024) highlights the need for fiscal prudence to restore fiscal buffers, it also raises the question of remaining fiscal space and whether there is room to further raise the debt ceiling. This chapter explores this question by assessing whether the current debt ceiling is adequately calibrated. Based on the analysis, we also discuss implications for fiscal policies and the broader fiscal framework, and suggest possible refinements to the existing fiscal rules.

B. Assessing Thailand's Debt Ceiling

5. Thailand's debt ceiling is broadly in line with international practices. According to the IMF's Fiscal Rules database, the majority of countries with debt rules have their ceilings calibrated at around 60-70 percent of GDP (Figure 2). The clustering of the ceilings around these values reflects the strong representation of supranational rules. For example, the European Union and the Eastern Caribbean Currency Union impose a debt ceiling of 60 percent of GDP while the Central African Economic and Monetary Community and the West African Economic and Monetary Union both impose a cap of 70 percent of GDP on public debt.

Figure 2. Distribution of Public Debt Ceilings



Source: IMF Fiscal Rules Database.

6. That said, the debt ceiling needs to be calibrated taking into account country-specific factors. Countries' debt carrying capacity can vary widely depending on their economic structure, such as revenue-generating capabilities, depth of financial markets, and quality of institutions, as well as macroeconomic fundamentals. To ensure that the debt ceiling provides an effective policy anchor—allowing for countercyclical fiscal policies while preventing excessive borrowing that leads to fiscal distress—it needs to be tailored to each country circumstances.

7. The adequacy of Thailand's debt ceiling is assessed in two steps. First, we estimate Thailand's "debt limit"—a threshold that public debt should not exceed because debt becomes either unsustainable or negatively impacts growth. Second, based on the estimated debt limit, we calibrate the "debt ceiling", incorporating a "safety margin" (or buffer) to account for potential macroeconomic shocks and considering the level of risk tolerance.

Step 1: Identifying the Debt Limit

8. Estimating the debt limit is inherently difficult. To identify a possible range, we apply three different approaches focusing on: (i) primary balance and debt dynamics; (ii) debt servicing capacity; and (iii) impact on growth.[3] However, the results should not be taken as deterministic. Due to its dynamic nature, the debt limit can shift significantly, depending on the interplay between market expectations and economic and financial conditions.

9. The first approach explores a threshold above which debt would become explosive. Under this approach, debt is considered sustainable if a country can increase its primary balance to curb debt growth. The analytical underpinnings are based on Bohn (1998), who shows that a fiscal policy is sustainable if primary surpluses could offset increases in the public debt. Ghosh et al. (2013) suggests that a stricter sustainability criterion—the primary balance reacting more strongly to debt growth than the interest rate-growth differential—is required for public debt to converge to some finite proportion of GDP. They also find that such fiscal reaction function exhibits "fiscal fatigue", a weakening of the government's ability to control debt by increasing the primary balance, either because tax increases or spending cuts become socially unacceptable or ineffective. This eventually makes the primary balance respond more slowly to rising debt than the financing costs, thus defining a debt level beyond which debt becomes explosive. Hence a debt limit can be estimated at the level where the fiscal reaction function intersects with the interest rate-growth differential (r-g).

10. The analysis suggests that Thailand's debt limit ranges between 80-110 percent of GDP. Staff's empirical analysis on Thailand's fiscal reaction function does not exhibit fiscal fatigue, which may be due to Thailand's historically low debt levels.[4] Instead, as a rule of thumb, the debt limit can be approximated by the debt level where maximum primary balance meets the financing costs under stress:

$$PB_{max} = Debt^{*} \times (r - g)_{stress}$$

We start from the historic high primary balance of 3.4 percent of GDP, and the maximum 10-year bond yield since 2000 (7.8 percent). Assuming a nominal GDP growth rate of 4.7 percent, reflecting 2.7 percent real GDP growth and 2 percent inflation (i.e., mid-point of the BOT's target range), the estimated debt level is around 109.4 percent of GDP. The estimate is highly sensitive to assumptions. For example, a lower growth rate reflecting a declining potential growth (0.5-1 percentage points), and a less ambitious primary balance, accounting for the difficulty of sustaining such a tight fiscal stance, results in an estimate as low as 71.5 percent of GDP (Table 2).

[3] Similar approaches have been applied in other country cases. For example, see IMF Country Reports No. 23/289 (Brazil), 23/179 (Uruguay), 22/224 (Mauritius), and 22/68 (West African Economic and Monetary Union).

[4] Literature shows mixed evidence of fiscal fatigue, especially among emerging market economies. A recent study by Goh and Chow (2023) analyzing 18 advanced and emerging market economies including Thailand show that a universal threshold for fiscal fatigue cannot be identified. In their country-specific analysis, they do not find significant and correct coefficient signs of lagged debt terms to support the fiscal fatigue hypothesis for Thailand.

Table 2. Thailand: Estimates of Debt Limits Based on Maximum Primary Balance

				(Primary Balance/GDP)		
				Max	95% percentile	90% percentile
	r	g	r-g	3.4	3.2	2.9
(r-g)	7.8	4.7	3.1	109.4	103.8	94.6
	7.8	4.2	3.6	94.2	89.4	81.5
	7.8	3.7	4.1	82.7	78.5	71.5

Sources: WEO Database, IMF staff estimates.

11. The second approach focuses on debt-servicing capacity. Building on the Fund's definition of fiscal space,[5] this exercise uses the ratio of interest expenses to revenues as a proxy to gauge the country's capacity to repay debt. According to Comelli et al. (2023), there is empirical evidence that this ratio is closely related to fiscal stress, and the thresholds of the ratio (τ) that could signal an upcoming fiscal stress range from 16 to 19. Based on this approach, debt limits can be estimated using the following formula:

$$D^* = \tau \left(\frac{Revenues/GDP}{Effective\ Interest\ Rate} \right)$$

12. The estimated debt limit ranges from 82 to 100 percent of GDP. Using the historical average revenues (excluding grants) and implied interest rates from 2000 to 2023, the estimated debt limits range from 84.5 to 100.3 percent of GDP. Excluding data during the COVID-19 pandemic (FY20-FY21) leads to a slightly lower estimate of 82.3-97.7 percent of GDP (Table 3).[6]

Table 3. Thailand: Estimates of Debt Limits Based on Debt-Servicing Capacity

Threshold (τ)	Staff Estimates (2000-2023)	Staff Estimates (2000-2023 excl. COVID-19 period)
16	84.5	82.3
19	100.3	97.7

Sources: WEO Database, IMF staff estimates.

13. Finally, the third approach estimates the debt level focusing on its impact on growth. While public debt can stimulate aggregate demand and facilitate growth with public investments, beyond a certain level, it can become a drag on growth. In this approach, we estimate a public debt

[5] Fiscal space is considered to exist when a country can raise spending or lower taxes without endangering market access and debt sustainability. Lowering tax revenue could reduce the debt limit a country can sustain.

[6] Given the lack of precise data on revenues and interest payments at the public-sector level, the debt limit is estimated at the general government level.

level that maximizes growth, following Checherita-Westphal et al. (2014). Assuming that public debt is used exclusively for public capital financing (the "golden rule"), the optimal debt-to-GDP ratio (D^*) depends on the elasticity of output to the public capital stock (α) as follows:

$$D^* = \left(\frac{\alpha}{(1-\alpha)^2}\right)^{1-\alpha}$$

14. The analysis shows that growth-maximizing debt levels for Thailand would range between 31 to 77 percent of GDP. To estimate the elasticity parameter (α), we use panel data from the Penn World Table Version 10.0 (Feenstra et al., 2015) and the IMF's Investment and Capital Stock Dataset for ASEAN-4 countries (Indonesia, Malaysia, Philippines, Thailand) over the period of 1960-2019. In line with Checherita-Westphal et al., the parameter is estimated by a log-log model using pooled OLS, with two different specifications: one with output and labor expressed as shares of private capital stock (Y/K and L/K), and the other expressed as per capita shares (Y/L and K/L). The point estimates for the elasticity range from 16.8 to 31.8 percent (Table 4), which correspond to debt-to-GDP ratios of 30.8 and 77.2 percent respectively.

Table 4. Thailand: Estimation of the Output Elasticity of the Public Capital Stock

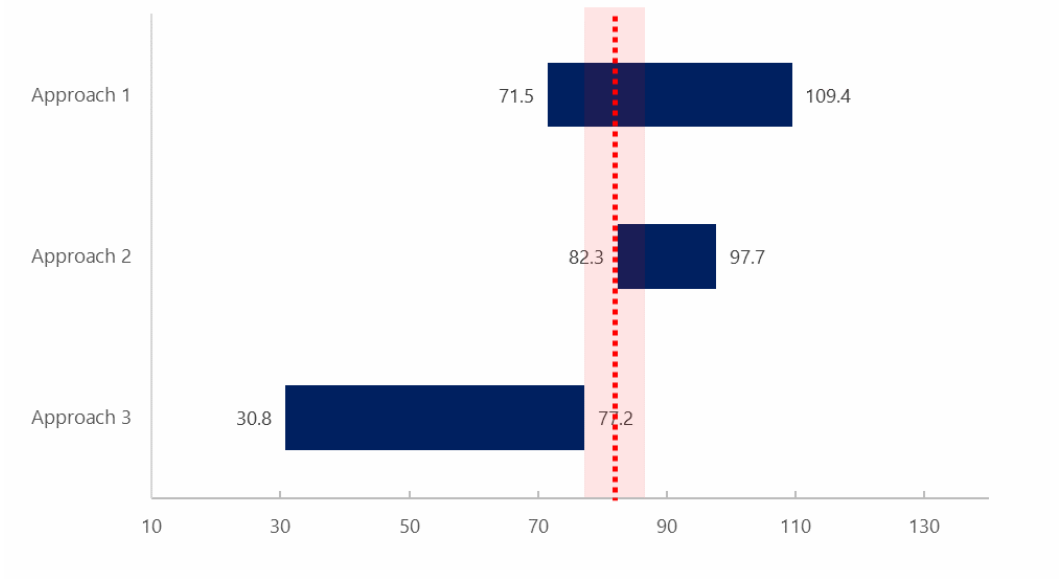
VARIABLES	(1) lnY/K	(2) lnY/L	(3) lnY/K	(4) lnY/L
lnK_g/K	0.168***	0.168***	0.318***	0.318***
	(0.0589)	(0.0589)	(0.0249)	(0.0249)
lnL/K	0.188***		0.573***	
	(0.0460)		(0.0829)	
lnK/L		0.812***		0.427***
		(0.0460)		(0.0829)
Trend			0.0153***	0.0153***
			(0.00307)	(0.00307)
Constant	7.205***	7.205***	-21.86***	-21.86***
	(0.214)	(0.214)	(5.884)	(5.884)
Observations	240	240	240	240
R-squared	0.134	0.755	0.307	0.804
Number of groups	4	4	4	4

Driscoll-Kraay standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1

Source: IMF staff estimates.

15. Overall, the analyses indicate that the debt limit for Thailand would depend importantly on outcomes for growth, interest rate and capacity for fiscal adjustment. The first approach implies that the debt limit can be potentially higher than 100 percent of GDP, but given the high sensitivity to assumptions and considering that the associated debt limit implies a threshold beyond which debt would become explosive, a conservative estimate using lower growth rate and less ambitious primary balance may be appropriate. Similarly, in the second approach a lower estimate points to a range of 82.3-97.7 percent of GDP. The third approach indicates a range of 30.8-77.2 percent of GDP. Based on these estimates, we assess Thailand's debt limit would likely be in the range of 77-87 percent of GDP, with a midpoint of 82 percent of GDP (Figure 3).

Figure 3. Thailand: Summary of Debt Limit Estimates



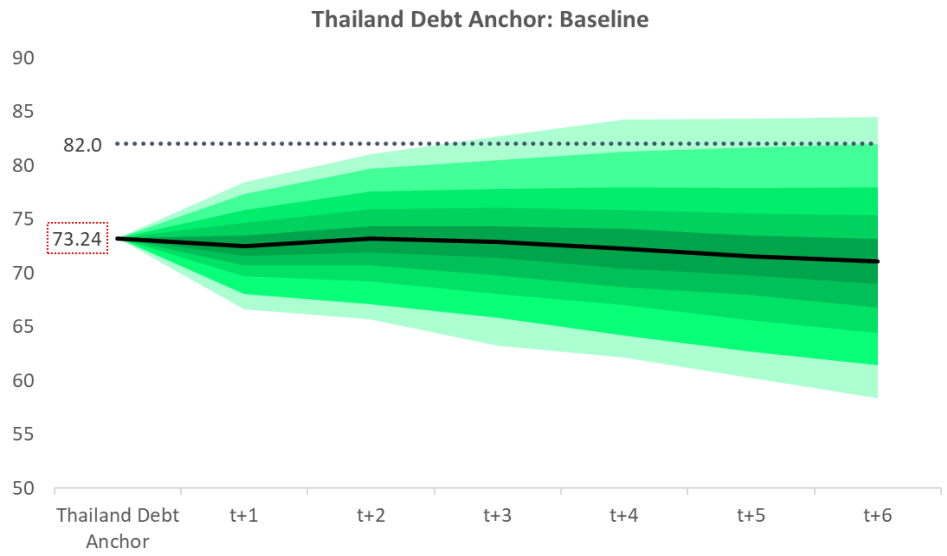
Source: IMF staff elaboration.

Step 2: Accounting for Shocks and Additional Spending Needs

16. To avoid public debt exceeding the estimated "debt limit", the debt ceiling should be set at lower levels, below the safety margin. The rationale for the safety margin—the difference between the debt limit and the ceiling—is to provide a buffer against adverse macroeconomic shocks that could potentially push debt beyond the debt limit. To account for potential shocks, a multivariate normal distribution of key macroeconomic and fiscal variables (i.e., real GDP growth, primary balance, real interest rates, and real exchange rates) is calibrated based on historical data. Multiple simulations are then carried out using the joint distribution, with each simulation producing a path for macroeconomic variables and associated debt trajectory over the medium-term. For the primary balance, we use staff's baseline projections. The resulting debt paths are presented in a fan chart, and the debt ceiling is calibrated as the initial point so that the debt stays below the debt limit with a 90 percent probability in the medium-term horizon.

17. The results show that Thailand's current debt ceiling is broadly consistent with the debt limit and the safety margin. The projected distribution of debt trajectories, considering the impact of potential shocks, indicates that the debt ceiling around 70 percent of GDP would be consistent with Thailand's public debt remaining below the estimated debt limit of 82 percent with 90 percent probability (Figure 4).

Figure 4. Thailand: Calibrated Debt Ceiling and Fan Chart
(Baseline Scenario)



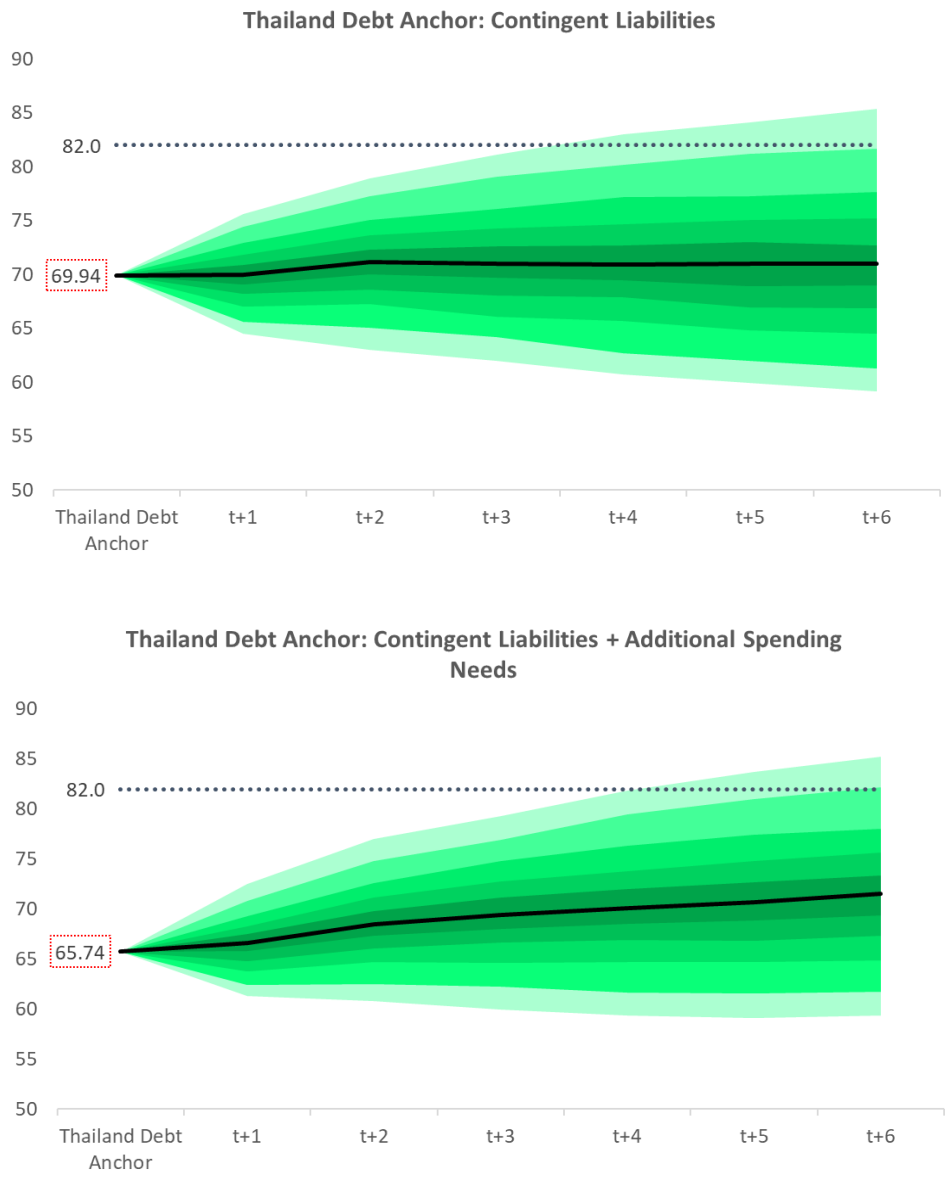
Source: IMF staff estimates.

18. However, a larger safety margin is required if contingent liabilities and additional spending needs are considered. The alternative scenario incorporates two additional factors. First, we consider contingent liabilities, estimated at 3 percent of GDP every 6 years, consistent with existing literature.[7] Further, we account for additional spending needs for climate change adaptation, human capital investment, and addressing population aging. Consistent with staff's recommendations, we incorporate additional spending of 0.7 percent of GDP on an annual basis, but without additional revenues or offsetting measures to cut spending. The simulation results indicate that once contingent liabilities are incorporated, the safety margin required to meet the debt limit increases, thereby reducing the required debt ceiling to below 70 percent of GDP (Figure 5, upper chart). If additional spending needs are considered, the debt ceiling needs to be lowered even further to around 66 percent of GDP (Figure 5, lower chart).

19. Increasing frequency of shocks and the need for potentially larger counter-cyclical fiscal policies would further reduce the required debt ceiling. The above exercise calibrates debt ceiling consistent with 10 percent of risk tolerance of breaching the debt limit. However, as exemplified during the COVID-19 pandemic, a larger or more frequent shocks could necessitate stronger fiscal policy responses. Taking this into account, the risk tolerance may need to be reduced, which would lead to a larger safety buffer and a lower debt ceiling.

[7] Bova et al. (2019) shows that among 80 advanced and emerging market economies, on average a country had a contingent liability-related payout of 6 percent of GDP once every 12 years.

Figure 5. Thailand: Calibrated Debt Ceiling and Fan Chart
(Alternative Scenarios)



Source: IMF staff estimates.

C. Conclusions and Policy Implications

20. Thailand should refrain from further raising the debt ceiling and instead proceed with fiscal consolidation to restore fiscal space. Staff's analysis shows that the adequate debt ceiling could be as low as 66 percent of GDP when accounting for contingent liabilities and additional spending needs. Even under more benign assumptions, the required debt ceiling consistent with the

estimated debt limit is close to the current debt ceiling of 70 percent of GDP. Given that the public debt is already near this level and expected to rise further, fiscal policies need to be tightened to reduce public debt and restore fiscal space. Considering an increasingly shock-prone and uncertain environment, Thailand would benefit from reducing public debt below 60 percent of GDP in the medium term and reinstating the debt ceiling of 60 percent of GDP to preserve fiscal buffers.

21. There is scope to improve the broader fiscal rules framework to support this objective. Short-term operational rules, within a clear medium-term framework, can be strengthened to help achieve the objective to bring down public debt below 60 percent of GDP. For example, the authorities may consider a risk-based rules approach, whereby a more ambitious deficit target embedded in the MTFF is triggered when the debt level is close to the ceiling. A clearly defined escape clause, accompanied by a requirement for a medium-term path to return to the ceiling could also improve credibility. Additionally, the overly complex fiscal rules framework can be streamlined following a careful review of the individual rules.

22. Fiscal transparency needs to be strengthened to avoid "debt surprises." As shown in the alternative scenario, the materialization of contingent liabilities could significantly impact the debt trajectory. Similarly, off-budget operations and quasi-fiscal operations could loosen control over public spending, and eventually lead to debt surprises. While there are existing rules to contain quasi-fiscal operations (e.g., Section 28 of the FRA), information is limited regarding the outstanding financial liabilities of the government, and compensations made to the SOEs clear them. Fiscal transparency can also be improved by reporting the extent of off-budget operations and improving the costing of contingent liabilities.

References

Bova, E., Ruiz-Arranz, M., Toscani, F., and Ture, E. (2019), "The Impact of Contingent Liability Realizations on Public Finances," International Tax and Public Finance 26: 381–417.

Checherita-Westphal, C., Hughes Hallett, A., and Rother, P. (2014), "Fiscal Sustainability Using Growth-maximizing Debt Targets," Applied Economics, 46: 638-647.

Comelli, F., Kovacs, P., Montoya, J., Sode, A., David, A., and Eyraud, L. (2023), "Navigating Fiscal Challenges in Sub-Saharan Africa," International Monetary Fund Departmental Papers, African Department, Washington, D.C.

Eyraud, L., Baum, A., Hodge, A., Jarmuzek, M., Kim, Y., Mbaye, S., and Türe, E. (2018), "How to Calibrate Fiscal Rules: a Primer," International Monetary Fund How to Notes, Fiscal Affairs Department, Washington, D.C.

Feenstra, R. C., Inklaar, R., and Timmer, M. P. (2015), "The Next Generation of the Penn World Table," American Economic Review, 105(10), 3150-3182.

Flores, E., Gupta, P., Lu, Y., Medas, P. A., Prihardini, D., Selim, H., Xin, W., and Yabara, M. (2024), "Upgrading Fiscal Frameworks in Asia Pacific," International Monetary Fund Departmental Papers, Asia and Pacific Department, Washington, D.C.

Goh, A. Z. F., and Chow, Z. Y. (2023), "Fiscal Fatigue: A Cross-Country Empirical Analysis," Bank Negara Malaysia Working Papers.

Ghosh, A. R., Kim, Jun I., Mendoza, E. G., Ostry, J. D., and Qureshi, M. S. (2013), "Fiscal Fatigue, Fiscal Space and Debt Sustainability in Advanced Economies," The Economic Journal 123: 4-30.

International Monetary Fund (2022), '' Fiscal Rules At a Glance: an Update 1985-2021," Technical Manual, Fiscal Affairs Department, Washington, D.C.

World Bank (2023), "Thailand - Public Revenue and Spending Assessment: Promoting an Inclusive and Sustainable Future (English)," Washington, D.C.: World Bank Group.