Signifikan: Jurnal Ilmu Ekonomi
Volume 14(1), 2025: 163 - 178
P-ISSN: 2087-2046; E-ISSN: 2476-9223
https://doi.org/10.15408/sjie.v14i1.45081

Fiscal Sustainability and Country Risk Profile: Empirical Evidence in Indonesia

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JEL Classification:
H62
H60
H63
C32

Received: 24 February 2025

Revised: 17 March 2024

Accepted: 20 March 2025

Available online: April 2025

Published regularly: April 2025

ABSTRACT

Research Originality: This research examines fiscal sustainability by considering the fiscal behavior of different government regimes and analyzing the correlation between fiscal sustainability and a country's risk profile using the VARX method, with the real effective exchange rate (REER) as an exogenous variable.

Research Objectives: This study aims first to determine whether Indonesia's fiscal conditions are sustainable across different government regimes. It then investigates whether a significant link exists between Indonesia's fiscal sustainability and its country's risk profile, as reflected by sovereign spreads from 2005 to 2024.

Research Methods: This study used the Vector Autoregressive Exogenous (VARX) method to capture endogeneity, exogeneity, simultaneity, direct effects, indirect effects, and shock-response of the variables used to measure the relationship between fiscal sustainability and sovereign risk.

Empirical Results: The findings indicate a significant relationship between fiscal sustainability and country risk, where an increase in the primary balance raises investor risk perception. Meanwhile, if debt management policies are implemented prudently and effectively, a rise in the debt-to-GDP ratio does not always widen the sovereign spread.

Implications: These results suggest that, despite differences in government regimes, policymakers should focus on strengthening the government's ability to manage debt prudently and either generate a primary balance surplus or reduce the deficit by sustainably enhancing revenue and spending policies to maintain fiscal sustainability and lower the country's risk profile.

Keywords:
fiscal sustainability; government debt; primary balances; sovereign spread

How to Cite:
Mufid, A.H., & Widyawati, D. (2025). Fiscal Sustainability and Country Risk Profile: Empirical Evidence in Indonesia. *Signifikan: Jurnal Ilmu Ekonomi*, *14*(1), 163-178. https://doi.org/10.15408/sjie.v14i1.45801.

INTRODUCTION

In the aftermath of the 2008–2009 global financial crisis, chronic fiscal imbalances have emerged as a major risk to the global economy. As financial and capital markets have become increasingly focused on fiscal risks, ensuring fiscal sustainability has become a key concern for policymakers across countries at all income levels (Shastri et al., 2020), particularly in economies experiencing rising government debt, including Indonesia (Widiastuti et al., 2023). Therefore, maintaining fiscal sustainability is a critical public policy priority for safeguarding economic development and the welfare state (Marín-Rodríguez et al., 2023) in developed and developing nations. In recent years, this issue has been linked to the accumulation and size of public debt and a country's risk profile. Maintaining fiscal sustainability is crucial as a necessary condition to reduce the country's risk profile as little as possible (Blanchard & Johnson, 2018).

Many empirical studies have examined fiscal sustainability and sovereign risk profiles. Research on fiscal sustainability suggests that an increase in the public debt-to-GDP ratio typically prompts an immediate fiscal policy response, involving primary balance adjustments such as reduced deficits or increased surpluses to maintain fiscal stability (Paniagua et al., 2017; Solikin & Choirunnisah, 2019; Rusdiyantoro & Simanjuntak, 2022; Leonardo & Thomas, 2024). Furthermore, Campos and Cysne (2025) analyzed fiscal sustainability across a panel of 88 countries from 2000 to 2020 using the cross-sectional panel ARDL method to estimate both short- and long-run effects, as well as the fiscal reaction function (FRF) of the government's primary surplus in response to rising public debt. Their findings indicate that fiscal sustainability was maintained in advanced and emerging economies before the pandemic. However, when incorporating the COVID-19 period, emerging economies exhibited signs of fiscal unsustainability, while low-income countries were already fiscally unsustainable before the pandemic. Several studies have also examined fiscal sustainability in Indonesia. Using a value-at-risk (VaR) approach, Sriyana and Hakim (2017) found that Indonesia's fiscal position remained sustainable between 1990 and 2014. This finding is further supported by studies from Marisa (2015), Pamungkas (2016), Basorudin (2019), Widjanarko (2020), Ikhsan and Virananda (2021), Juanda and Gladiola (2022), and Adrison (2023), which also confirm the presence of fiscal sustainability in Indonesia.

Apart from studies on fiscal sustainability, numerous other studies have separately explored the relationship between debt—as one of the key variables of fiscal sustainability—and a country's risk profile. Several studies have found that sovereign spreads serve as an indicator of investor confidence in a government's ability to meet its debt obligations (Belhocine & Dell'Erba, 2013; Presbitero et al., 2016; Mpapalika, 2019; Dachraoui et al., 2020; and Fedderke, 2021). Other studies have examined fundamental factors as determinants of sovereign spreads. Baldacci et al. (2008), Aizenman et al. (2016), as well as Kariyawasam and Jayasinghe (2022) found that country-specific factors play a more significant role than global factors in determining sovereign spreads. Similarly, Novianti and Danarsari (2013) identified key macroeconomic and global

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determinants of sovereign spreads in Indonesia, such as the debt service ratio, real effective exchange rate, fiscal balance-to-GDP ratio, output level, the VIX index, and US interest rates, which contribute to assessing potential default risk.

Furthermore, Heimberger (2023), applying regression methods to data from 22 OECD countries from 1970–2018, found that differentials between government bond interest rates and economic growth rates are key determinants of public debt dynamics. Financial markets tend to react to changes in debt levels, with higher debt-to-GDP ratios often leading to an increase in the risk premium on government bonds. This condition suggests that investors perceive a higher risk of default as debt levels rise.

However, most existing studies do not directly explore the relationship between fiscal sustainability and country risk profiles. Furthermore, research in this area has yet to incorporate the impact of different government regimes, which can significantly influence fiscal sustainability and sovereign risk. In general, study on fiscal sustainability has emphasized three key trends: (i) the relationship between fiscal sustainability and economic growth, (ii) methodologies and models for assessing fiscal sustainability, and (iii) demographic concerns and their impact on fiscal sustainability (Marín-Rodríguez et al., 2023). Nevertheless, few studies have investigated the link between fiscal sustainability and a country's risk profile. This connection is crucial, as it can shape investor perceptions of investment risk (Baldacci et al., 2011). A high debt-to-GDP ratio tends to widen spreads, underscoring the importance of fiscal sustainability. Countries with high debt burdens are often penalized by international capital markets. Financial markets typically respond with broader credit spreads when policymakers overlook fiscal risk, particularly for countries with weak fiscal discipline or a default history.

To address this research gap, this study examines the relationship between fiscal sustainability and sovereign risk by analyzing how the fiscal behavior of different government regimes influences public debt accumulation and the primary balance—two key indicators commonly used to assess fiscal sustainability. Using quarterly data from 2005 to 2024 and the vector autoregression with exogenous variables (VARX) method, this study aims to determine whether Indonesia's fiscal conditions are sustainable or unsustainable across different government regimes. It then investigates whether a significant link exists between Indonesia's fiscal sustainability and its country's risk profile, as reflected by sovereign spreads. There are four novelties in this study: (i) examining fiscal sustainability by considering fiscal behavior of different government regimes which have influenced the dynamics of the debt-to-GDP ratio and the primary balance-to-GDP ratio differently; (ii) analyzing correlation between fiscal sustainability and country risk profile; (iii) using VARX method with the real effective exchange rate (REER) as an exogenous variable; and (iv) exploring direct effects and indirect effects of endogenous variables through the impulse response function analysis.

METHODS

This study employs the primary balance-to-GDP ratio and the government debt-to-GDP ratio as key fiscal sustainability indicators, alongside the sovereign spread (10-year government bond yield spread) as a proxy for the country's risk profile. From Q1 2005 to Q4 2024, these variables will be treated as endogenous variables. Additionally, a government regime dummy is included to capture fiscal policy behavior. At the same time, the real effective exchange rate is used as an exogenous variable in the VARX model, as it reflects the impact of exchange rates on trade with partner countries, thereby influencing fiscal policy, mainly through exports and imports (Bajo-Rubio & Berke, 2014). Consequently, it can affect government debt and the primary balance: these variables and their operational definitions are shown in Table 1.

Table 1. Operational Variables

Variables	Definition	Measurements	Data Source	References
Primary Balance	The primary balance-to-GDP ratio, which is the difference between government revenue and government expenditure excluding interest payments on debt, relative to the GDP level.	Total Primary Balance/GDP (%)	Ministry of Finance	(Pamungkas, 2016; Ikhsan & Virananda, 2021; Leonardo & Thomas, 2024)
Sovereign Spread	The difference between the yield on government bonds and the yield on risk-free bonds denominated in the same currency (USD).	10-Year Government Bond Yield – 10-Year US Treasury Yield	*Bloomberg*	(Mpapalika & Malikane, 2019; Fedderke, 2021; Kariyawasam & Jayasinghe, 2022)
Central Government Debt/GDP	The total outstanding loans of the central government at a given time, including bonds, treasury bills, and loans from international institutions or other countries, relative to the GDP level. The debt level consists of both domestic and external debt.	Total Central Government Debt/GDP (%)	Ministry of Finance	(Pamungkas, 2016; Ikhsan & Virananda, 2021; Widiastuti, Fitrady & Widodo. 2023; Leonardo & Thomas, 2024)
Real effective exchange rate (REER)	The value of a country's currency relative to multiple other countries' currencies, adjusted for the inflation rate at a given year or the consumer price index of a specific country.	Nominal Effective Exchange Rate * Price index of trading partner countries (foreign inflation)/ Domestic price index	*Bank for International Settlements*	(Novianti & Danarsari, 2013; Hofmann, Shim & Shin, 2017)
Dummy Government	A dummy variable capturing the periods of the SBY and Jokowi administrations.	Dummy Government: 1 for Jokowi period, 0 otherwise	Own calculation	-

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To examine fiscal sustainability based on the fiscal reaction function (FRF) model and its correlation with the sovereign spread, we use the following specification of the VARX model:

$$b_t = \alpha_1 + \sum_{i=1}^{p} \beta_{11} b_{t-i} + \sum_{i=1}^{p} \beta_{12} p_{t-i} + \sum_{i=1}^{p} \beta_{13} S_{t-i} + \delta_1 e_t^* + \delta_1 DPRES_t + \varepsilon_t \quad (1)$$

$$p_t = \alpha_2 + \sum_{i=1}^{p} \beta_{21} b_{t-i} + \sum_{i=1}^{p} \beta_{22} p_{t-i} + \sum_{i=1}^{p} \beta_{23} S_{t-i} + \delta_2 e_t^* + \delta_2 DPRES_t + \varepsilon_t \quad (2)$$

$$s_t = \alpha_3 + \sum_{i=1}^{p} \beta_{31} b_{t-i} + \sum_{i=1}^{p} \beta_{32} p_{t-i} + \sum_{i=1}^{p} \beta_{33} S_{t-i} + \delta_3 e_t^* + \delta_3 DPRES_t + \varepsilon_t \quad (3)$$

Where P_t is primary balance/GDP, b_t is debt-to-GDP ratio, and s_t is sovereign spread, with two exogenous variables: e_t^* is real effective exchange rate, and $DPRES_t$ is government regime dummy.

The VARX model in this study is carried out in five (5) stages, namely: (i) the data stationarity test; (ii) determining the optimal lag length; (iii) the stability test; (iv) estimating model parameters; and (v) determining the impulse response function. The stationarity test is conducted using the Phillips-Perron (PP) test method, whereas the determination of the optimal lag length using the PP unit root test is performed through the Sequential Modified LR Test Statistic (LR), Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwarz Information Criterion (SC), and Hannan-Quinn Information Criterion (HQ). Meanwhile, the stability test in the VARX model is conducted by analyzing the inverse roots of the autoregressive (AR) characteristic polynomial.

RESULTS AND DISCUSSION

Table 2 presents descriptive statistics of all variables used in this study. The debt-to-GDP ratio averaged 31.1%, with a median of 29.3%. The highest value recorded was 47.2% in 2005: Q4, while the lowest occurred in 2013: Q1 with 21.0%. The downward trend in the debt-to-GDP ratio until the early 2010s was associated with relatively stable economic growth and tighter fiscal policy following the 1997-1998 Asian financial crisis. However, in recent years, especially after the COVID-19 pandemic, the debt-to-GDP ratio has increased again due to increased government spending on economic recovery.

Meanwhile, the primary balance-to-GDP ratio showed an average of -0.105%, indicating that the government generally experiences a primary balance deficit, where state expenditure excluding debt interest exceeds state revenue. The median primary balance/GDP ratio was recorded at -0.10%, with a high point of 1.65% in 2008: Q1 and a low point of -2.25% in 2020: Q3. The improvement in the primary balance-to-GDP surplus ratio in 2008 was related to the surge in global commodity prices that boosted state revenues, while the worsening primary balance-to-GDP deficit ratio in 2020 reflected the impact of high fiscal spending during the pandemic and the impact of the global economic slowdown.

Table 2. Summary Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max
Debt/GDP Ratio (b_t)	80	31,483	6,857	21,912	47,34
Primary Balance Ratio/GDP (p_t)	80	-0,105	0,705	-2,248	1,648
Sovereign Spread (s_t)	80	1,912	1,615	-1,479	9,769
Real Effective Exchange Rate (e_t^*)	80	100,94	5,71	83,18	112,58

Source: data processing

The sovereign spread over the observation period averages 1.91%, indicating that the 10-year Indonesian government bond yield is consistently higher than the 10-year US Treasury. The median sovereign spread was recorded at 1.82%, with a high point of 9.77% in 2008: Q4 and a low point of -1.47% in 2021: Q4. The sharp rise in sovereign spread in 2008 was due to the global financial crisis, which increased the risk of emerging markets, including Indonesia. Meanwhile, the significant decline in the sovereign spread in 2021 reflects the low-interest rate policy in the United States and the lower risk perception of the Indonesian economy post-pandemic. Finally, the real effective exchange rate (REER) averages 100.94, indicating that Indonesia's real exchange rate tends to appreciate compared to the base year. The median REER was recorded at 100.62, with a high point of 112.58 in 2010: Q2 and a low point of 83.18 in 2005: Q3. The REER appreciation in 2010 was related to significant foreign capital inflows and strong economic growth, while the REER depreciation in 2005 reflected the after-effects of the Asian financial crisis and exchange rate adjustments by Bank Indonesia.

Table 3. Stationarity Test Results

Phillip - Person (PP) Stationarity Test				
Variables	Level		First Difference	
	T-stat	Prob	T-stat	Prob
b_t	-2.160	0.224	**-9,663**	**0.0000**
p_t	**-6,807**	**0.000**	-	-
s_t	**-2,608**	**0,0957**	-8,596	0.0000
e_t^*	**-4,029**	**0,002**	-	-

Source: data processing

Based on the unit root test with the PP statistical test as shown in Table 3, all variables used in this study, namely the primary balance/GDP ratio (P_t), the sovereign spread (S_t) and the effective real exchange rate (e_t^*) show stationary at level, while the debt/GDP ratio (b_t) is stationary at first difference. This conclusion is based on the absolute value of PP statistics of all research variables that are greater than their critical values, both at the 99 percent, 95 percent, and 90 percent confidence levels.

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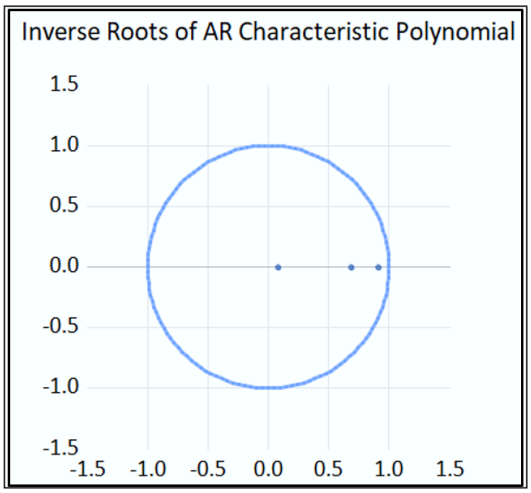
Table 4. Optimal Lag Test

Lag	Log-L	LR	FPE	AIC	SC	HQ
0	-424,825	NA	13,602	11,124	11,396	11,233
1	-292,503	264,286*	0,576*	7,962*	8,505*	8,179*
2	-284,426	14,290	0,591	7,985	8,801	8,312

Source: data processing

Figure 1 Stability Test: Inverse Root of the AR Characteristic Polynomial



Source: data processing

Furthermore, the result of the stability model test, as shown in Figure 1, suggests that the characteristic roots of all variables used in this study generally have a modulus smaller than one, and the inverse roots of AR characteristic polynomial points of the model are all in the unit circle. Thus, it can be concluded that the VARX model of fiscal sustainability and risk profile used as the basis of analysis in this study is stable and valid.

The results of the VARX estimation on fiscal sustainability and risk profile are shown in Table 5. We first examine Indonesia's fiscal sustainability as an initial step in investigating the relationship between fiscal sustainability and a country's risk profile.

The results show that the coefficient of the debt-to-GDP ratio has a positive direct effect on the primary balance-to-GDP ratio and is statistically significant at the 99% confidence level over the entire observation period across all government regimes (2005–2024). This result fulfills one of the necessary conditions for achieving fiscal sustainability, namely the positive relationship between the government debt-to-GDP ratio and the primary balance-to-GDP ratio (Afonso, 2008). The findings of this study are also consistent with those of previous researchers, such as Insanu and Purwanti (2020), who found that debt has a significant positive long-term effect on fiscal sustainability, and Widiastuti et al. (2023), who found that fiscal sustainability tests—using both debt stationarity and the fiscal reaction function—produced consistent results, indicating the presence of fiscal sustainability in Indonesia.

Table 5. FRF Estimation Results of Fiscal Sustainability and Sovereign Spread

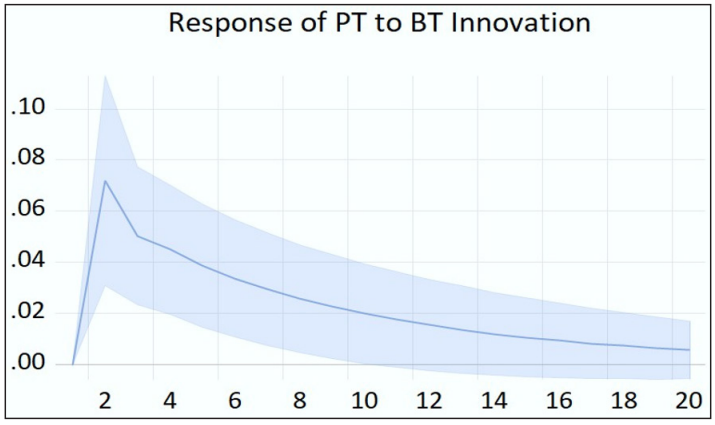
Variables	b_t (Equation (1))			p_t (Equation(2))			S_t (Equation(3))		
	Full Period	SBY period	Jokowi period	Full Period	SBY period	Jokowi period	Full Period	SBY Period	Jokowi period
b_t-1	0,871***	0,830***	0,968*	0,021**	0,035***	-0,015	-0,034*	-0,031	-0,030
p_t-1	0,403	0,748	0,563	0,112	-0,109	0,013	0,390	0,359	0,388*
S_t-1	-0,248	-0,322	0,120	0,022	0,025	-0,071	0,689***	0,665***	0,771*
c	14,134	18,320	11,336	-2,128	-2,447	-6,354	7,684	7,680	6,933
$DPRES_t$	0,964*	-	-	-0,316**	-	-	-0,292	-	-
e_t^*	-0,101**	-0,129*	-0,099	0,015	0,014	0,066*	-0,058**	-0,058	-0,056*
F-Statistic	222.673	-	-	3.795	-	-	40.579	-	-
	-	125.318	-	-	5.282	-	-	12.822	-
	-	-	118.422	-	-	1.429	-	-	49.694
R-Square	0.940	-	-	0.206	-	-	0.735	-	-
	-	0.937	-	-	0.383	-	-	0.601	-
	-	-	0.931	-	-	0.140	-	-	0.850

Note:*** significant at 1%, ** significant at 5%, * significant at 10%

Source: data processing

This finding is further supported by the Impulse Response Function (IRF) analysis, which examines how the primary balance-to-GDP ratio responds to a shock in the debt-to-GDP ratio. As illustrated in Figure 2, a shock to the debt-to-GDP ratio has a positive direct and indirect effect on the primary balance-to-GDP ratio, suggesting that Indonesia's fiscal conditions are sustainable. Specifically, when the debt-to-GDP ratio increases in the first quarter, the primary balance-to-GDP ratio rises, reaching its peak in the second quarter. Consequently, this increase in the primary balance-to-GDP ratio allows the government to either reduce new debt issuance or meet debt servicing obligations, thereby facilitating a decline in the debt-to-GDP ratio in subsequent periods. From the third quarter onward, the debt-to-GDP ratio gradually converges and stabilizes in the medium term.

Figure 2. Response of Primary Balance/GDP Ratio to Debt/GDP Ratio Shocks for the Period 2005-2024



Source: data processing

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Although, in the long run, the overall impact of the debt-to-GDP ratio on the primary balance-to-GDP ratio supports Indonesia's fiscal sustainability, the slower response of the primary balance-to-GDP ratio to debt shocks suggests weak fiscal sustainability (Ghosh et al., 2013). This result implies that while Indonesia demonstrates long-term fiscal sustainability—where the positive adjustment speed of the primary balance-to-GDP ratio aligns with debt dynamics—the government must exercise caution when accumulating additional debt to prevent fiscal fatigue (Ghosh et al., 2013).

To test the consistency of the research results over the entire observation period (2005–2024) and simultaneously assess fiscal sustainability under the SBY and Jokowi administrations, it is necessary to analyze the estimation results of fiscal sustainability and risk profile based on each government period. As shown in Table 5, the estimation results indicate that the dummy variables representing different presidential administrations have a significant yet distinct impact on the debt-to-GDP ratio and the primary balance-to-GDP ratio, highlighting the importance of distinguishing between government periods.

Furthermore, the estimation results in Table 5 provide evidence that during the SBY administration, the debt-to-GDP ratio had a positive and significant relationship with the primary balance-to-GDP ratio. This finding suggests that fiscal sustainability was achieved during President SBY's tenure. Empirical data show that throughout SBY's administration (2005–2014), the primary balance-to-GDP ratio was in surplus for approximately 57.5% of the observation period, while it was in deficit for the remaining 42.5%. Similarly, during this period, the debt-to-GDP ratio declined significantly from 47.34% in 2005 to 24.68% in 2014. The achievement of fiscal sustainability during President SBY's tenure was also supported by government debt growth, which averaged only around 10% per year between 2005 and 2014—considerably lower than the nominal GDP growth, which averaged 28% per year over the same period.

In contrast, during the Jokowi administration (2015–2024), there was no significant relationship between the debt-to-GDP ratio and the primary balance-to-GDP ratio, indicating the absence of fiscal sustainability. President Jokowi's administration pursued expansionary fiscal policies, leading to a growing budget deficit. Empirical data show that under President Jokowi, the primary balance-to-GDP ratio was in deficit for approximately 67.5% of the observation period, while it was in surplus for only 32.5%. Consequently, as reflected in the estimation results in Table 5, during President Jokowi's tenure, the coefficient of the debt-to-GDP ratio did not exhibit a significant direct relationship with the primary balance-to-GDP ratio, meaning that the necessary conditions for achieving fiscal sustainability were not met.

Figure 3 (SBY's administration) illustrates that a shock to the debt-to-GDP ratio has both direct and indirect positive effects on the primary balance-to-GDP ratio, indicating the presence of fiscal sustainability. The positive response of the primary balance-to-GDP ratio to a debt-to-GDP ratio shock suggests that when the debt-to-GDP ratio rises in the first quarter, the primary balance-to-GDP ratio tends to

increase, reaching its peak in the second quarter. As a result, this increase in the primary balance-to-GDP ratio provides an opportunity for the government to reduce the issuance of new debt or meet debt service obligations, thereby contributing to a decline in the debt-to-GDP ratio in subsequent periods. The premature end of the positive response of the primary balance-to-GDP ratio to a rise in the debt-to-GDP ratio indicates a weak level of fiscal sustainability in Indonesia. Given this condition, the government should exercise caution when accumulating additional debt to prevent fiscal fatigue (Ghosh et al., 2013).

Figure 3. Response of Primary Balance/GDP Ratio to Debt/GDP Ratio Shocks for SBY Period, 2005- 2014

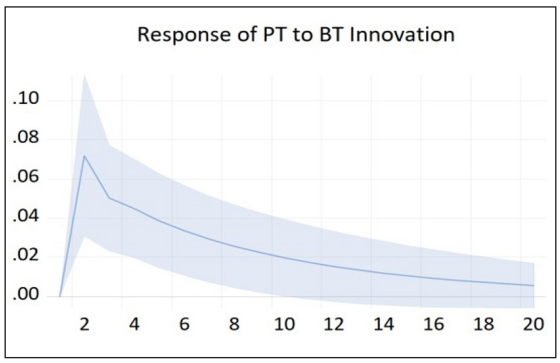
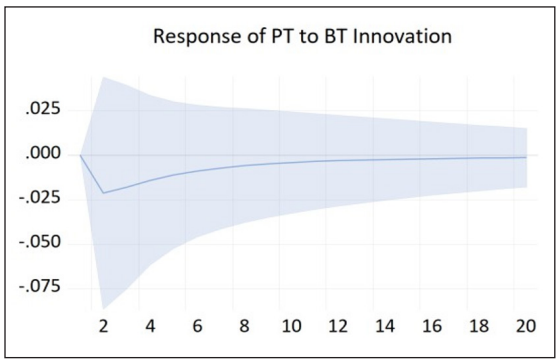


Figure 4. Response of Primary Balance/GDP Ratio to Debt/GDP Ratio Shocks for Jokowi Period, 2015- 2024



Source: data processing

In contrast, during President Jokowi's administration, as shown in Figure 4, an initial shock to the debt-to-GDP ratio was met with a negative response from the primary balance-to-GDP ratio, reaching its lowest point in the second quarter. Consequently, the primary balance-to-GDP ratio response continues to decline in the following periods. The results of the IRF analysis suggest that during President Jokowi's tenure, fiscal sustainability was not achieved, as the reduction in the primary balance deficit tends to occur at a slower pace than the increase in debt. This pattern indicates the presence of fiscal fatigue.

Having analyzed fiscal sustainability, we examine its relationship with the sovereign spread. Based on the VARX model estimation results in Table 5, the debt-to-GDP ratio has a significant direct effect in narrowing the sovereign spread. This result suggests that prudent and effective debt management supports fiscal sustainability and is crucial in reducing Indonesia's risk profile. The government's efforts to maintain the debt-to-GDP ratio below 60% and the fiscal deficit-to-GDP ratio below 3%—within the IMF's recommended limits—have been well received by investors. This perception has attracted foreign investors, mainly as Indonesia is one of the most promising emerging markets, offering high government bond yields and strong economic growth. Consequently, Indonesia has become a key destination for investors seeking high-yield opportunities in emerging markets. Additionally, new debt issuance aimed at financing productive investments—such as infrastructure development, economic transformation,

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or expenditures that support pro-poor, pro-job, and pro-growth policies—may be perceived by the market as a strategic move to enhance economic growth and strengthen future debt servicing capacity.

Figure 5. *Sovereign Spread* Response to Debt/GDP Ratio Shocks for the Period 2005-2024

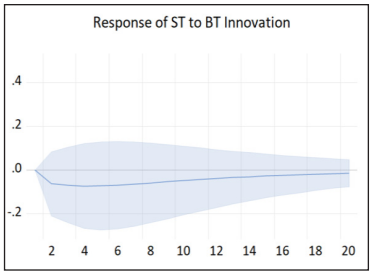


Figure 6. *Sovereign Spread* Response to Debt/GDP Ratio Shocks for SBY Period 2005-2014

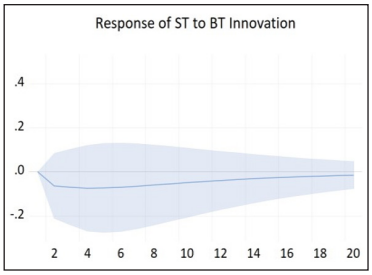
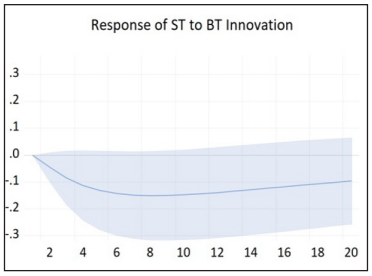


Figure 7. *Sovereign Spread* Response to Debt/GDP Ratio Shocks for Jokowi Period 2015-2024



Source: data processing

The VARX estimation results on the link between fiscal sustainability and the sovereign spread are further supported by the IRF analysis presented in Figures 5, 6, and 7 above. Figures 5 and 6 illustrate a similar response pattern of the sovereign spread on the shock of debt-to-GDP across the full observation period (2005–2024) and the SBY administration (2005–2014). Specifically, a shock to the debt-to-GDP ratio has both a direct and indirect negative effect on the sovereign spread, indicating that an increase in the debt-to-GDP ratio is met with a narrowing of the sovereign spread. During the Jokowi administration (2015–2024), the sovereign spread's response to a debt-to-GDP ratio shock generally followed the same pattern as observed in the full period and the SBY administration. However, the response is slower in magnitude and convergence. The negative response of the sovereign spread to the debt-to-GDP ratio shock persists for an extended period, peaking around the sixth quarter (1.5 years after the initial shock). This trend can be attributed to Indonesia's prudent and sound debt management policies, which align domestic interest rates with U.S. interest rate developments while maintaining a competitive debt interest rate spread. As a result, despite rising debt levels, the sovereign spread narrows due to well-maintained and competitive yields.

Furthermore, the IRF analysis in Figures 8, 9, and 10 reveals a consistent pattern in the sovereign spread's response to a positive shock in the primary balance-to-GDP ratio. This pattern is evident across the full observation period (2005–2024) and during the SBY administration (2005–2014). Similarly, under the Jokowi administration, the response follows a comparable trajectory but with a slower magnitude and convergence. According to the IRF results, shocks to changes in the primary balance-to-GDP ratio have both direct and indirect positive effects on the sovereign spread. This suggests that an increase in the primary balance-to-GDP ratio leads to a widening of the sovereign spread. However, this positive response is temporary, peaking in the second quarter before gradually weakening and converging by the sixth quarter (1.5 years after the initial shock).

Figure 8. Sovereign Spread Response to Primary Balance/GDP Ratio Shocks for the Period 2005- 2024

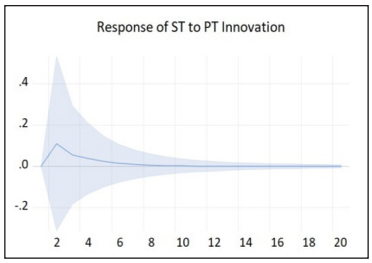


Figure 9: Sovereign Spread Response to Primary Balance/GDP Ratio Shocks for SBY Period 2005- 2014

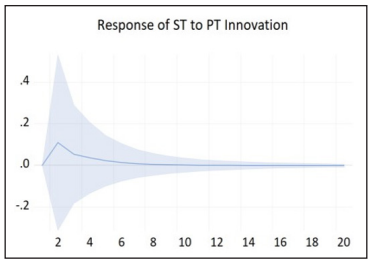
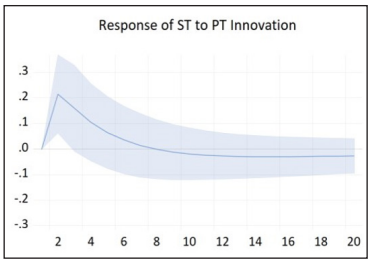


Figure 10. Sovereign Spread Response to Primary Balance/GDP Ratio Shocks for Jokowi Period 2015-2024



Source: data processing

This finding implies that while Indonesia's fiscal conditions were generally sustainable during 2005–2024, investor concerns about sovereign risk persisted due to weak fiscal sustainability. These concerns led investors to demand higher yield premiums, ultimately contributing to the widening of the sovereign spread in Indonesia. This condition also indicates the phenomenon of fiscal fatigue, where the growth of the primary balance-to-GDP ratio can no longer keep pace with the faster-growing debt-to-GDP ratio. Empirical data shows that the primary balance-to-GDP ratio has been on a declining trend—either through a reduction in surplus or an increase in the primary deficit—both in the final years of the SBY administration and throughout the Jokowi administration. Consequently, investors perceive an increase in the primary deficit negatively, impacting Indonesia's risk profile. As a result, investors tend to demand higher returns in response to the growing primary deficit. This finding is further supported by research from Basri and Sumartono (2023), which states that a persistent budget deficit—mainly since the fourth quarter of 2011—has led investors to require higher returns to compensate for increased country risk.

Another variable that affects the VARX system but is not influenced by the endogenous variables in the model is the real effective exchange rate (REER) index. Over the full observation period, the estimation results of the VARX model indicate that REER has a negative and significant effect on the government debt-to-GDP ratio at the 95% confidence level. This suggests that an appreciation of the real effective exchange rate (REER) lowers the cost of servicing external debt denominated in U.S. dollars and/or other foreign currencies, thereby decreasing the government debt-to-GDP ratio.

REER also has a negative effect on the sovereign spread, meaning that an inflow of U.S. dollars and/or other strong foreign currencies into the economy reduces Indonesia's sovereign spread. This finding is consistent with the research conducted by Hofman et al. (2017), which states that an appreciation of the domestic exchange rate signals a positive perception of the domestic economy from investors. As a result, foreign investors are more likely to allocate their funds to the domestic economy, leading to a decline in sovereign spreads (Hofman et al., 2017).

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CONCLUSION

Indonesia's fiscal condition during 2005–2024 has been sustainable but shows signs of weakening (weak fiscal sustainability). Given the importance of government regimes in fiscal sustainability, this study finds that Indonesia's fiscal condition remained sustainable during the SBY administration (2005–2014). In contrast, fiscal sustainability was absent during the Jokowi administration (2015–2024). Considering this fiscal sustainability condition, this study identifies a link between fiscal sustainability and Indonesia's risk profile. When there is a shock to the primary balance-to-GDP ratio, the sovereign spread responds positively, indicating that investors perceive higher risks, as reflected in an increase in the sovereign spread. Conversely, when there is a shock to the debt-to-GDP ratio, the sovereign spread responds negatively, suggesting that an increase in debt does not necessarily heighten risk perception.

This research suggests that, despite differences in government regimes, fiscal policymakers should focus on managing debt prudently while optimizing tax and non-tax revenues and improving spending quality to maintain fiscal sustainability and reduce the country's risk profile. Therefore, policymakers should prioritize enhancing government revenue and spending policies to strengthen the government's ability to generate a primary budget surplus or reduce the deficit, thereby narrowing the sovereign spread.

For future research, further analysis could be conducted by incorporating additional exogenous variables that influence the relationship between fiscal sustainability and risk profile, such as foreign investment flows and real exchange rates, which impact the debt-to-GDP ratio and primary balance. Additionally, future studies could expand the scope of country risk assessment beyond sovereign spreads by incorporating alternative indicators such as Credit Default Swaps, the International Country Risk Guide, credit ratings, and other relevant risk measures that influence investor perceptions.

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