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-RESEARCH ARTICLE-

EXCHANGE RATE STABILITY AND FISCAL DISCIPLINE – EMPIRICAL EVIDENCE ON MALAYSIAN RINGGIT

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─Abstract─

Fiscal discipline represents a fundamental economic condition for promoting a more equitable economic environment. Although previous research has identified a complex relationship between government fiscal policy and living standards, several studies emphasise the role of fiscal discipline in supporting economic stability and equitable development. Nevertheless, the extent to which public finance improves living standards through domestic currency stability remains inconclusive. Against this background, the present study examines whether changes in Malaysian government revenue influence the value of the Ringgit exchange rate over time. The Malaysian Ringgit has strengthened against the US dollar since 2023, making it particularly relevant to investigate the underlying factors contributing to its appreciation over the past 18 years. The study adopts the Keynesian framework as its theoretical foundation and uses annual secondary data obtained from the World Bank database for the period from 2008 to 2025. For empirical estimation, the study employs the Johansen-Juselius cointegration technique alongside the Engle-Granger Cointegration (EG) test. The empirical findings indicate the existence of a significant long-run relationship between total government revenue and the Ringgit exchange rate. A similar long-run relationship is also identified between government debt and the exchange rate. However, in the short run, total government revenue does not Granger-cause movements in the Ringgit exchange rate. The policy implications suggest that credible public finance is crucial for promoting an equitable economic environment and sustaining long-term economic growth. The findings indicate that increases in total government revenue are associated with an appreciation of the domestic currency against major international currencies. Fiscal discipline can signal the government's capacity to control inflation and minimise the risk of sovereign debt default, thereby strengthening market confidence. Greater fiscal credibility may subsequently encourage foreign capital inflows and increase demand for the domestic currency. In turn, a stronger domestic currency can protect consumers' purchasing power and contribute to sustained long-term economic growth.

Keywords: Malaysian Ringgit Exchange Rates, Total Government Revenue, Total Government Debt, Fiscal Discipline, Johansen-Juselius Cointegration Test.

INTRODUCTION

Fiscal discipline is an important component of strengthening national competitiveness, particularly in developing countries. By definition, fiscal discipline refers to a government’s effort and commitment to implementing a credible public finance policy through balanced annual budgets, reduced fiscal deficits, and effective public debt management (Lehtimäki, 2025). By practising fiscal discipline, governments can maintain macroeconomic stability, attract foreign direct investment, promote equitable income distribution, and mitigate potential sovereign debt crises (Brändle & Elsener,

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2024). By controlling public debt and ensuring sustainable expenditure, governments can strengthen credibility, reduce borrowing costs, and establish essential financial buffers to withstand economic shocks, such as global financial crises (Fatás et al., 2026). Fiscal discipline can therefore contribute to efficient public service financing, infrastructure development, and effective economic regulation, thereby supporting overall societal welfare (Lobonț et al., 2025).

The Malaysian Ringgit (MYR) has demonstrated significant strengthening since 2023, marking one of its strongest periods in Asia, with substantial gains against the US dollar and other major currencies. The strengthening of the MYR exchange rate can be attributed not only to the effectiveness of Bank Negara Malaysia's policy tools but also to improved economic fundamentals, including strong GDP growth, increased investor confidence, and a narrower interest rate differential between Malaysia and the United States. Specifically, the rally reflects improved economic performance, as demonstrated by solid GDP growth in 2025, which ranged between 5.2% and 6.3%, together with the Malaysian government's fiscal consolidation efforts, particularly through subsidy rationalisation. Increased FDI, combined with strong electrical and electronics (E&E) exports, has further strengthened demand for the MYR. A stable exchange rate is particularly important for promoting sustainable economic growth, which, in turn, contributes to protecting consumer purchasing power.

Economists have long examined the complex relationship between fiscal discipline and an equitable economic environment (Potrafke, 2025). Accordingly, examining the theoretical framework underlying this relationship can provide further insights into their interconnectedness and potential implications for the wider economy (Potrafke, 2025). One prominent theory that can explain this relationship is Keynesian income theory in an open economy. According to this theory, when a government practises fiscal discipline, it reduces the risk of sovereign debt default. This can attract foreign capital inflows as investors seek safer assets, thereby increasing demand for the local currency and contributing to its appreciation. Forni and Gambetti (2016) provide important evidence regarding the effects of government spending in an open economy. Their study confirms that real exchange rate appreciation can result from expansionary fiscal policy.

Total government revenue (TGR) represents the financial resources collected by the state through taxation, duties, and other income-generating activities. Higher government revenue strengthens the government's capacity to finance public expenditure without relying excessively on borrowing, thereby improving fiscal sustainability and investor confidence. Empirical evidence suggests that positive shocks to government revenue can contribute to real exchange rate appreciation by supporting economic growth and reducing fiscal imbalances (Driss & Benbouziane, 2014). Furthermore, fiscal stability resulting from adequate revenue collection can increase the attractiveness of domestic assets, thereby raising demand for the domestic currency and contributing to its appreciation.

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In contrast, total government debt (TGD), or national debt, represents the cumulative amount borrowed by the government to finance previous fiscal deficits and public expenditure. Excessive debt levels may weaken a country's fiscal position, increase concerns regarding future inflation or debt repayment capacity, and ultimately reduce investor confidence. Several studies have demonstrated that increases in government debt significantly influence exchange rate dynamics, with debt shocks frequently associated with currency depreciation and greater exchange rate volatility McMillin, W.D. and Koray, 1990). High government debt can discourage foreign investment and increase the risk premiums demanded by investors, thereby placing downward pressure on the domestic currency. The relationship between fiscal instruments and exchange rates is therefore supported by both theoretical and empirical literature. As stated earlier, Masih and Masih (1996) suggests that sound fiscal discipline is an important prerequisite for strengthening a domestic currency through improved economic fundamentals and increased capital inflows.

The estimation methods selected for the empirical investigation are the Johansen-Juselius Cointegration test and the Engle-Granger Cointegration approach, which provide robust tools for analysing multivariate relationships (Granger et al., 2000). Through these econometric methods, the study examines the behaviour of the variables of interest and develops a more comprehensive understanding of the relationship between the Malaysian Ringgit exchange rate (ER) and total government revenue (TGR).

This study aims to contribute to the ongoing discourse by examining the impact of fiscal discipline on the performance of the Malaysian Ringgit against major currencies, particularly the U.S Dollar (USD). The USD is selected as the benchmark because it is the world's primary reserve currency. Its dominance is supported by the size of the U.S. economy, global confidence in its financial institutions, and the historical legacy of international trade arrangements such as the Bretton Woods system. Today, many major commodities, including crude oil, copper, and gold, continue to be priced and settled in USD. This pricing mechanism makes the USD the most widely preferred unit of measurement for global economic activity.

There are five sections in this paper. Section 2 provides the literature review on the importance of TGR and TGD in strengthening foreign exchange rates. Section 3 describes the estimation methods used in this study and their statistical results. Section 4 explains the empirical findings, while Section 5 concludes the paper.

LITERATUTRE REVIEW

The relationship between fiscal discipline and currency appreciation has been extensively examined in the open-economy macroeconomic literature (Aisen & Hauner, 2013; Cebula, 2003; Franchino, 2024; Kameda, 2014; Tenderere & Mishi,

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2025). Fiscal discipline, generally characterised by reduced budget deficits and sustainable public debt levels, can influence exchange rates through several channels, including interest rates, capital flows, current account balances, and investor confidence (Fleming, 1962; Gale & Orszag, 2004; Mundell, 1963; Patnaik, 2001). However, both theoretical and empirical evidence indicates that the effect of fiscal discipline on currency appreciation is not straightforward and depends on the underlying economic mechanisms and policy environment.

The foundation of the fiscal policy–exchange rate relationship can be traced to the seminal works of Mundell (1963) and Fleming (1962), commonly referred to as the Mundell–Fleming framework. Mundell (1963) argues that, under conditions of high capital mobility and flexible exchange rates, expansionary fiscal policy increases domestic interest rates, attracts foreign capital, and causes the domestic currency to appreciate. Conversely, fiscal contraction or greater fiscal discipline may reduce aggregate demand and lower interest rates, thereby weakening appreciation pressures. This framework suggests that fiscal discipline does not necessarily result in currency appreciation and may even contribute to currency depreciation in the short run. Similarly, Fleming (1962) demonstrates that the effectiveness of fiscal policy depends considerably on the prevailing exchange rate regime. Under a floating exchange rate system, fiscal expansion tends to appreciate the currency through increased capital inflows, whereas under a fixed exchange rate regime, the exchange rate adjustment mechanism is constrained. Together, these studies establish that fiscal policy influences exchange rates primarily through interest rate differentials and international capital movements.

The intertemporal approach to exchange rates later extended the Mundell–Fleming model through the work of Obstfeld and Rogoff (1995), who developed intertemporal models of exchange rate determination. Their work emphasises that fiscal policy affects exchange rates through wealth effects, consumption decisions, and expectations regarding future economic conditions. Fiscal deficits increase government borrowing and may alter expectations about future taxation and national wealth, thereby influencing consumption and investment behaviour. According to Obstfeld and Rogoff (1995), fiscal shocks can generate movements in the real exchange rate through changes in domestic absorption and international portfolio allocation. Fiscal discipline, by improving long-term fiscal sustainability, may strengthen investor confidence and contribute to real currency appreciation. Unlike the Mundell–Fleming framework, which primarily focuses on short-run interest rate effects, the intertemporal approach highlights the importance of expectations and long-term macroeconomic fundamentals in determining exchange rate outcomes.

Another significant strand of literature examining fiscal policy and exchange rates is the twin deficits hypothesis, which links fiscal deficits to current account imbalances (Trachanas & Katrakilidis, 2013). Feldstein (1986) provides an influential contribution

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by arguing that large fiscal deficits can appreciate the domestic currency. According to Feldstein, government borrowing increases domestic interest rates, attracts foreign capital inflows, and raises demand for the domestic currency. Consequently, the exchange rate may appreciate despite deteriorating fiscal balances. This finding introduces an important ambiguity into the relationship between fiscal discipline and currency appreciation. While conventional wisdom suggests that sound fiscal management should strengthen a currency, Feldstein's analysis indicates that fiscal deficits themselves may induce appreciation through financial market mechanisms. Consequently, fiscal discipline may reduce interest-rate-driven capital inflows and weaken appreciation pressures, at least in the short run.

The broader twin deficits literature, however, presents a more nuanced relationship. Chinn and Prasad (2003) examine the medium-term determinants of current account balances across industrialised and developing economies and identify a significant association between fiscal balances and external balances. Their findings indicate that improvements in fiscal balances tend to be associated with stronger current account positions. Since stronger external balances generally support a country's currency, fiscal discipline may contribute to currency appreciation over the medium to long term by improving external sustainability and reducing dependence on foreign financing. The reviewed studies demonstrate that the relationship between fiscal discipline and currency appreciation depends on the transmission channel under consideration. The Mundell–Fleming framework suggests that fiscal contraction may reduce appreciation pressures by lowering domestic interest rates and capital inflows. In contrast, intertemporal models emphasise the positive effects of fiscal sustainability on expectations, investor confidence, and long-term exchange rate strength. The twin deficits literature further complicates this relationship by demonstrating that fiscal deficits may themselves generate currency appreciation through higher interest rates and increased foreign capital inflows.

Overall, the literature suggests that fiscal discipline can support currency appreciation when it improves macroeconomic fundamentals, strengthens current account balances, and enhances policy credibility. However, in the short run, fiscal consolidation may reduce interest rate differentials and capital inflows, thereby limit appreciation or even contributing to depreciation. Consequently, the effect of changes in total government revenue on the strengthening of the domestic currency is context-dependent and varies according to the relative importance of interest rates, investor confidence, and the trade balance. As such, our hypothesis is expressed as follows:

H1: Increase in total government revenue (TGR) strengthens Malaysian Ringgit (ER).

Taken together, this study seeks to demonstrate that fiscal discipline is more likely to strengthen a currency over the medium to long term by improving economic

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fundamentals and enhancing policy credibility, although its short-run effects may vary depending on prevailing economic conditions and the broader fiscal policy framework.

METHODOLOGY

As this study focuses on time-series forecasting, the Vector Autoregressive (VAR) model is employed as the main estimation tool. VAR is selected because of its flexibility, ease of application, and effectiveness in forecasting time-series data. First, the Johansen-Juselius Multivariate Cointegration test is conducted, followed by the Vector Error Correction Model (VECM). Both approaches form integral components of the VAR framework. To strengthen the empirical analysis, out-of-sample shock analysis is conducted using Variance Decomposition (VDC). To empirically examine the causal relationship between ER and TGR, the empirical model is functionally expressed as follows:

$$ER = f(TGR, TGD) \quad \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where:

ER = Malaysian Ringgit Exchange Rate (RM/USD)
TGR = Percentage Annual Change in Total Government Revenue (%)
TGD = Percentage Annual Change in Total Government Debt (%)

This study uses annual time-series data covering the period from 2008 to 2025, obtained from the Bank Negara Malaysia database. The selected period encompasses several significant economic disruptions, including the European debt crisis in 2009, the COVID-19 pandemic in 2020, and the Russian-Ukraine War in 2022. Empirically, the estimated model is mathematically expressed as follows:

$$ER_t = \beta 0 + \beta 1 TGR_t + \beta 2 TGD_t + \mu t \quad \ldots\ldots\ldots\ldots\ldots (2)$$

Where:

μ_t = Error term, assumed to be normally distributed
β_0 = Intercept in the cointegrating equation

Justification of the Model Variables

TGR is the principal variable of interest in the estimated model. Adequate and stable government revenue is essential for maintaining effective public administration and supporting economic performance over both the short and long run. Through the national budget, government revenue is channelled back into the circular flow of income to finance public services, support economic growth, and promote macroeconomic stability through fiscal and monetary policies. Sustained revenue

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growth also enables governments to invest in critical infrastructure, including roads, bridges, hospitals, and utilities, while financing essential public goods such as national defence, the judicial system, and environmental protection. These functions are fundamental to the effective operation of markets and the broader economy. Moreover, sustained growth in government revenue can strengthen the domestic currency by reducing reliance on deficit financing, containing inflation expectations, and enhancing investor confidence (Guo & He, 2020).

Prakash and Panigrahi (2024) note that many developing countries initially depend on external borrowing, including financing from the World Bank or International Monetary Fund, to meet budgetary shortfalls. A systematic shift from foreign-currency to domestic-currency borrowing can reduce exposure to external currency shocks and strengthen confidence in the government's capacity to meet its financial obligations without excessive reliance on foreign loans or external assistance. Such a strategy also mitigates currency-mismatch risks, whereby depreciation of the domestic currency increases the cost of servicing foreign-currency-denominated debt and places additional pressure on government finances (Brkić, 2021). Accordingly, TGR and TGD are closely connected to ER and may exert substantial influence on the value of the domestic currency relative to major foreign currencies.

Model Specifications

Our empirical framework is grounded in the Theory of Fiscal Sustainability, with particular emphasis on whether fiscal instruments such as TGR and TGD influence the strength of a country's domestic currency against major world currencies. Following Lin (1994), the study examines both the long-run and dynamic relationships between ER and the two explanatory variables, with the objective of determining their direction and magnitude.

As noted earlier, the Johansen–Juselius (1990) cointegration test is employed to identify the number of cointegrating vectors within the empirical model. Johansen (1988) proposes two statistics for determining the cointegration rank, namely the lambda trace and lambda max statistics. To further assess methodological robustness, the Engle-Granger (1987) cointegration test is applied to examine the existence of equilibrium relationships among the four non-stationary time-series variables. The econometric procedure begins with unit-root tests for all time-series variables, followed by the Johansen–Juselius Cointegration test. The analysis then proceeds to the Granger Causality test through VECM to examine short-run causal dynamics within the long-run equilibrium framework. Finally, Variance Decomposition is employed to assess the dynamic interactions among the endogenous and exogenous variables through out-of-sample simulations.

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EMPIRICAL FINDINGS

We employ econometric time-series analysis based on 18 annual observations covering the period from 2008 to 2025. This section presents the empirical findings from the Johansen–Juselius Multivariate Cointegration test and VECM, together with the diagnostic tests associated with the VECM.

Table 1 presents the individual unit-root test results for all time-series variables at both level and first difference. At level, the Augmented Dickey-Fuller (ADF) stationarity test fails to reject the null hypothesis, indicating that all three variables are non-stationary. However, the null hypothesis is rejected for all variables after first differencing, confirming their stationarity at first difference. Accordingly, the variables in the empirical model are integrated of order one, I(1). The optimal lag length for the unit-root analysis is determined using AIC, with the specification yielding the lowest AIC preferred. Based on this criterion, the model is most efficiently specified at lag 1.

Table 1: Unit Root Test (with a constant) via ADF

Null: Presence of Unit Root (Nonstationary) At Level

Variable	Lag	P-value < Tau
TGR	1	0.0098
	2	0.1722
	3	0.2813
TGD	1	0.1794
	2	0.1803
	3	0.3753
ER	1	0.0177
	2	0.0191
	3	0.0557

Note: ADF-Augmented Dickey-Fuller chi-squared test

Null: Presence of Unit Root (Nonstationary) At First Difference

Variable	Lag	P-value < Tau
TGR	1	<0.0001***
	2	0.0012***
	3	0.0023***
TGD	1	0.0003***
	2	0.0059***
	3	0.1640
ER	1	0.0015***
	2	0.0097***
	3	0.0551

Note: *** and ** represent level of significance at 1% and 5% levels respectively.

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The results of the Johansen–Juselius multivariate analysis are presented in Table 2. Both the lambda trace (λtrace) and lambda max (λmax) statistics are reported to determine the cointegration rank among the variables. The null hypothesis of no cointegrating vector (r = 0) is rejected by both tests. The λmax and λtrace statistics indicate the presence of at least two cointegrating vectors in the estimated model, providing evidence of a long-run equilibrium relationship among the variables under investigation. Since Cheung and Lai (1999) argue that the λtrace statistic is more robust than the λmax statistic, the empirical model is considered to contain at least two cointegrating vectors. Accordingly, the normalised eigenvectors without an intercept term are expressed as follows:

$$ER = -110.4041TGR + 203.7071TGD\ldots\ldots (1)$$

The normalized cointegrating vectors presented in Equation 1 indicate that, in the long run, ER is negatively related to TGR and positively related to TGD. The inverse relationship between ER and TGR is consistent with the Theory of Fiscal Sustainability, which suggests that higher government revenue from sources such as taxes and duties can reduce budget deficits and strengthen fiscal discipline. Improved fiscal conditions can enhance investor confidence by lowering perceptions of sovereign risk, thereby increasing demand for the Malaysian Ringgit and supporting its appreciation. The empirical findings therefore indicate that higher government revenue, particularly when accompanied by improved fiscal sustainability, is associated with long-run exchange-rate strengthening. Afonso (2009), in their analysis of the United States, United Kingdom, Germany and Italy, report a similar relationship. Likewise, Driss and Benbouziane (2014) demonstrate that positive fiscal shocks, including substantial increases in government revenue, can contribute to real appreciation of the domestic currency and represent an important source of exchange-rate movements. These findings are therefore consistent with Afonso (2009) and Driss and Benbouziane (2014).

In contrast, TGD exhibits a positive relationship with ER, indicating that a one-percent increase in TGD is associated with approximately a 204-percent decrease in ER in the long-run equilibrium. This finding is consistent with the Fiscal Theory of Price Level (FTPL), which suggests that rising government debt can weaken fiscal credibility and consequently place downward pressure on the value of the domestic currency. The result is also consistent with Coulibaly et al. (2024) and Park et al. (2020). Coulibaly et al. (2024) emphasise that economies with greater debt exposure become more vulnerable to adverse currency movements, particularly when domestic currency depreciation increases the burden associated with external liabilities. In such circumstances, reserve accumulation through international borrowing may be required to mitigate these vulnerabilities.

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As discussed earlier, the Johansen–Juselius cointegration test is employed to identify the number of cointegrating relationships among the non-stationary variables. The results reported in Table 2 provide evidence of a long-run equilibrium relationship among the three variables in the system. The Maximum Eigenvalue test identifies one cointegrating vector (r = 1), whereas the Trace test indicates up to three cointegrating vectors. As both tests reject the null hypothesis of no cointegration at the 1% significance level, the findings confirm that the variables share a stable long-run relationship and tend to move together over time. The presence of cointegration therefore supports the use of VECM to capture both short-run adjustments and long-run equilibrium dynamics. However, the Johansen–Juselius approach has an important limitation. Masih and Masih (1996) note that the direction of short-run causality cannot be established through the multivariate Johansen–Juselius approach alone. As argued by Engle and Granger (1987), the direction of causality can instead be identified through VECM, since cointegrated variables must possess an error-correction representation.

Table 2: Johansen-Juselius Cointegration Tests

H0: Rank=r	H1:Rank=r +1	Eigenvalue	Maximum	Pr > Max
0	1	0.9447	49.2045	< 0.0001**
1	2	0.5320	12.9093	0.0806
2	3	0.3317	6.8515	0.0089**
H0: Rank=r	H1: Rank > r	Eigenvalue	Trace	Pr > Trace
0	0	0.9447	68.9653	<.0001**
1	1	0.5320	19.7608	0.0101*
2	2	0.3317	6.8515	0.0089**

Note: ** and * represent level of significance at 1% and 5% levels respectively.

The VECM estimates are presented in Table 3. The model achieves its most efficient specification at lag 1, as indicated by the lowest AIC value. The analysis focuses on the ER equation because it is the only equation in which the ECT is statistically significant at the 5% level. The ECT is expected to be negative and lie between -1 and 0, with its sign indicating the direction and magnitude of adjustment towards the long-run equilibrium. The estimated coefficient therefore captures the speed at which ER responds to deviations from the equilibrium relationship with the explanatory variables. The significant ECT confirms the presence of a stable long-run equilibrium relationship within the ER model. The estimated adjustment coefficient indicates that approximately 86% of the previous period's disequilibrium is corrected within the current period. This relatively high speed of adjustment suggests that ER responds rapidly to deviations from its long-run equilibrium path, allowing the system to return towards equilibrium within a comparatively short period. Such a strong adjustment mechanism also enhances the reliability of the model in capturing the dynamic behaviour of the time-series variables.

At this stage, the empirical findings are broadly consistent with the study's

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expectations, confirming that TGR represents an important determinant of the Ringgit exchange rate. This finding is also consistent with Zhang et al. (2025), who demonstrate that improvements in fiscal balances through revenue-enhancing measures can strengthen external stability and alleviate exchange-rate pressures, particularly when fiscal adjustment reduces sovereign risk premiums and enhances investor confidence.

Table 3: Vector Error Correction Estimates via VECM (1)

Vector Error Correction Model at Lag 1			
Error Correction	**D(ER)**	**D(TGR)**	**D(TGD)**
Error Correction Term (ECT)	-0.86327*** (0.38997) [0.0489]	-0.26949 (0.60283) [0.6635]	-0.03232 (0.08947) [0.7248]
D (ER (-1))	0.08050 (0.31181) [0.8010]	0.14645 (0.48200) [0.7669]	-0.12441 (0.07154) [0.1099]
D (TGR (-1))	-0.05461 (0.19311) [0.7826]	-0.30129 (0.29852) [0.3345]	0.03822 (0.04431) [0.4067]
D(TGD (-1))	0.47091 (0.34369) [0.1980]	0.15721 (0.53130) [0.7791]	0.18328 (0.07885) [0.0411]
C	0.01222 (0.02486) [0.6326]	0.00739 (0.03842) [0.8509]	-0.00344 (0.00570) [0.5582]

Note: Standard errors in () & p-value in [ ]. *** and ** represent level of significance at 1% and 5% levels respectively.

The ER model is the only specification that produces statistically significant results. As reported in Table 4, the within-sample Granger Causality results based on simultaneous Wald F-tests reveal no significant short-run relationship between ER and the two explanatory variables. Specifically, neither TGR nor TGD 'Granger-causes' ER in the short run. This result is consistent with Inthakesone et al. (2023), who examined ASEAN economies using ARDL and Toda–Yamamoto causality methods and found an absence of short-run causality in several ASEAN countries, including Malaysia.

Their findings suggest that fiscal variables may have limited predictive power for short-term exchange-rate movements, thereby reinforcing the results obtained from our Granger Causality analysis. VECM further strengthens the empirical framework by modelling both short-run dynamics and long-run equilibrium relationships while addressing issues associated with heteroskedasticity and predictor endogeneity. Kuo (2016) notes that VECM can address endogeneity by explicitly incorporating the short-run dynamics of the system alongside its long-run equilibrium relationship. Moreover, within a dynamic framework such as VECM, lagged values of endogenous variables can serve as instrument variables, thereby providing further support for robust estimation.

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Table 4: Granger Causality Wald F-Test

ER Model		
Group 1: Dependent Variable	ER	
Group 2: Independent Variables	TGR TGD	
Chi-Square	DF	Pr > ChiSq
1.42	2	0.4923

Note: *** significant at 1% level

To reinforce the findings obtained from VECM, dynamic simulations based on VDC are employed, with the results presented in Table 5. This technique provides further evidence on the underlying relationships among the variables by assessing the consistency of the causality results and identifying their relative degrees of exogeneity and endogeneity. More specifically, VDC measures the extent to which innovations in one variable account for fluctuations in the other variables within the empirical model. The results in Table 5 indicate that TGD is the most endogenous variable, whereas ER emerges as the most exogenous variable and thus represents the leading factor in the model. Among the two explanatory variables in the ER model, TGD contributes to variations in ER, although its explanatory contribution remains very small. In addition, TGR is relatively exogenous, as only approximately 5% of its own shocks are explained by innovations originating from the other two variables.

Table 5: Variance Decomposition (VDC) by Variable

VDC of	Lead (Years)	ΔER	ΔTGR	ΔTGD
ΔER	1	1.00000	0.00000	0.00000
	5	0.99973	0.00000	0.00027
	10	0.99966	0.00000	0.00034
	20	0.99963	0.00000	0.00037
ΔTGR	1	0.07697	0.92303	0.00000
	5	0.05186	0.94576	0.00238
	10	0.04720	0.94981	0.00299
	20	0.04485	0.95186	0.00329
ΔTGD	1	0.04485	0.00507	0.91513
	5	0.71994	0.00580	0.27426
	10	0.86435	0.00530	0.13035
	20	0.93114	0.00507	0.06379

Empirical rigour is essential for validating the theoretical economic model and assessing the robustness of its proposed relationships. In this regard, the VDC results provide additional support for the findings obtained from the Granger Causality test by examining the dynamic contribution of shocks beyond the sample period. This out-of-sample shock analysis also provides further insight into the exogeneity and endogeneity of the variables by tracing how innovations in one variable contribute to fluctuations in another over time. As a supplementary estimation tool, VDC enhances the explanatory

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precision of the model by quantifying both the magnitude and persistence of causal effects. It therefore provides an indication of the economic significance of the identified relationships and whether they have meaningful implications in practical terms. For the ER model, the results show that TGR and TGD do not 'Granger-cause' ER, and consequently account for less than 1% of the forecast error variance in ER.

CONCLUSION

This study examined whether an increase in TGR contributes to the strengthening of the Malaysian Ringgit. The findings confirm a significant long-run equilibrium relationship between ER and TGR, but no statistically significant short-run relationship. This suggests that the effect of higher government revenue on currency strength takes time to materialise, while short-run ER movements are more strongly influenced by capital flows, interest rate differentials, monetary policy, and speculative activities. Thus, TGR appears to function primarily as a long-term stabilising factor. The findings suggest that stronger public finances can support domestic currency appreciation over time by improving fiscal stability, investor confidence, and capital inflows. Therefore, BNM should closely monitor speculative activities and disorderly transactions in foreign exchange markets to minimise excessive short-term volatility. The study is subject to several limitations. Future research could incorporate additional external-sector variables and employ panel-data approaches, such as static panel data regression and GMM, to obtain more robust estimates. Comparative analysis of ASEAN economies, particularly Malaysia, Thailand, the Philippines, and Vietnam, could also provide broader insights into the relationship between fiscal discipline and currency performance.

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