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THE IMPACT OF EXCHANGE RATE FLUCTUATIONS ON VIETNAM'S EXPORTS: A VECM ANALYSIS WITH SOCIOECONOMIC INSIGHTS

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ABSTRACT

This study investigates the influence of exchange rate variations on Vietnam's exports through a Vector Error Correction Model (VECM), analysing both short-term dynamics and long-term equilibrium linkages, while incorporating socioeconomic perspectives from Vietnam's export-oriented economy. Using annual time series data from 1990 to 2023, obtained from the World Bank and the General Statistics Office of Vietnam, the research demonstrates that exchange rate depreciation substantially promotes long-term export development, facilitated by improved pricing competitiveness. Nonetheless, short-term effects are varied, indicating adjustment costs and socioeconomic difficulties, including labour market disruptions and dependence on imported commodities. The research underscores the impact of macroeconomic variables—GDP growth, trade openness, inflation, and unemployment—on export performance, with socioeconomic ramifications for employment and income inequality in Vietnam's trade-focused industries. Essential policy measures support a stable exchange rate framework, with trade and macroeconomic strategies that mitigate socioeconomic vulnerabilities, to improve export competitiveness and foster sustainable trade expansion. This research enhances the literature by offering empirical evidence about the interaction between exchange rate movements and socioeconomic determinants within an emerging market context.

KEYWORDS: Exchange Rate, Vietnam's Exports, VECM Model, Macroeconomic Determinants, Emerging Markets.

1. INTRODUCTION

The swift economic expansion of Vietnam is predominantly ascribed to its export sector. Vietnam's integration into global trade has become currency rates a crucial factor in its export performance. In recent decades, Vietnam has seen significant tension and transformation as it shifted from a centrally planned economy to a market one. This occurred during a period of trade liberalisation, characterised by exceptionally high exchange rates dictated by the foreign market, which subsequently grew increasingly reliant and stable in Vietnam.

The exchange rate is a crucial macroeconomic element influencing international trade; a depreciation of the domestic currency enhances exports and trade volume, whereas an appreciation diminishes export capacity. The relationship between currency rate fluctuations and exports is intricate, with prior research emphasising the significance of country-specific data, as inflation, along with global demand and production, frequently influences overall exchange rates and export performance. Research frequently produces inconclusive outcomes on fluctuations in exchange rates and commerce; hence, an analysis of the exchange rates of a particular nation is quite beneficial.

This study aims to analyse the long-term and short-term links between exports and key macroeconomic variables: exchange rate (EXR), GDP growth (GDP), trade openness (TO), inflation (INF), and unemployment (UNEMP). The study used the VECM to examine the temporal interactions of macroeconomic factors and the convergence of short-run dynamics to the long-run equilibrium position. The Johansen cointegration test assesses long-term linkages, whereas the VECM framework models both long-run causality and short-run dynamics inside a single model.

This study enriches the current literature by utilising an extensive time series dataset from 1990 to 2023, documenting Vietnam's significant economic transformations, including its transition from a centrally planned to a market-oriented economy and its incorporation into global trade networks post-WTO accession in 2007. This paper employs the VECM to concurrently analyse short-run dynamics and long-run equilibrium relationships among a wider array of macroeconomic variables, including GDP growth, trade openness, inflation, and unemployment, in contrast to prior studies like Nguyen & Vo (2020), which utilised the ARDL model with a narrower focus on exchange rate impacts. The incorporation of post-2020 data enables the study to address recent global economic disturbances, including the COVID-19 pandemic, so offering a more thorough and current examination of Vietnam's export patterns.

2. LITERATURE REVIEW AND RESEARCH HYPOTHESIS

2.1. Theoretical Background

Exchange rates for exports have consistently been a fundamental topic in international trade theory. The Marshall-Lerner Condition posits that a depreciation of the domestic currency enhances export performance when the aggregate of the price elasticities of exports and imports surpasses one. The J-Curve Hypothesis asserts that currency depreciation can initially diminish export revenue, as price increases may not lead to higher revenue until a longer-term adjustment occurs.

Macroeconomic variables such as GDP, openness, inflation, and unemployment, together exchange rate fluctuations, significantly impact export performance, irrespective of currency depreciation or appreciation. Endogenous growth posits that an increase in GDP, sufficient to support domestic production, will enhance competitive conditions in overseas markets. Theory of trade liberalisation posits that increased trade openness facilitates greater export expansion more effectively than reduced trade barriers and enhanced market access. Conversely, inflation and unemployment may impede export growth due to rising manufacturing costs and declining economic efficiency.

2.2. Empirical Studies

Numerous empirical studies have sought to investigate the correlation between exchange rate fluctuations and exports in several emerging nations, including Vietnam. The research utilised many econometric methodologies, including the Autoregressive Distributed Lag (ARDL) model, Vector Autoregression (VAR), and the Vector Error Correction Model (VECM), to analyse both short-term and long-term associations.

Numerous studies indicate that the exchange rate elasticity of exports suggests that currency depreciation enhances export competitiveness and elevates export volumes. Bahmani-Oskooee and Ratha (2004) examined the relationship between exchange rates and exports in various developing nations, concluding that domestic currency depreciation statistically enhances exports in the long term, contrasting with the ambiguous impacts shown in the short term. In a similar vein, Hossain (2009) analysed the exports of Asian economies over time, employing cointegration to investigate the relationship between exchange rates and exports. He found that heightened

exchange rate uncertainty diminishes exports; while economic theory links significant fluctuations to temporary increases in export growth, the overall uncertainty ultimately suppresses exporters.

Numerous empirical studies have investigated the impact of exchange rate variations on trade performance in Vietnam. Pham and Riedel (2012) employed a VAR model and determined that Vietnamese exports positively react to the devaluation of the Vietnamese đồng. Nonetheless, they discovered that the magnitude of the benefit is contingent upon the composition of export commodities, with labour-intensive sectors exerting a more favourable influence than capital-intensive ones. Nguyen and Vo (2020) utilised ARDL analysis and discovered a long-term positive correlation between devaluation and export growth, accompanied by significant short-term volatility. This work builds upon Nguyen & Vo (2020) by employing the VECM, which encompasses both short-run dynamics and long-run equilibrium linkages among a wider array of macroeconomic factors, including exchange rates, GDP growth, trade openness, inflation, and unemployment. The prolonged time series data from 1990 to 2023, encompassing Vietnam's economic liberalisation and post-2020 global shocks like the COVID-19 pandemic, facilitate a more thorough examination than the abbreviated time frames employed in previous research. This study employs Impulse Response Functions and Variance Decomposition to provide profound insights into the dynamic responses and relative contributions of each variable to export fluctuations, thereby elucidating the mechanisms of exchange rate shock transmission in Vietnam's export sector. Alongside currency rates, other studies have investigated additional macroeconomic factors influencing exports. Bahmani-Oskooee and Wang (2007) underscore the significance of GDP growth among trading partners, indicating that an increase in economic growth in nations consuming Vietnamese commodities will drive demand. Inflation is significant; Nguyen (2018) asserts that elevated domestic inflation may erode any pricing advantage obtained from depreciation, hence nullifying any beneficial effect on exports.

To contextualise Vietnam's experience in Southeast Asia, comparative analyses of countries like Thailand and Indonesia offer significant insights into the impact of exchange rate volatility on export performance. Jongwanich (2010) utilised a VECM methodology to examine Thailand's exports and discovered that exchange rate depreciation substantially enhances export growth in the long term, akin to Vietnam; however, short-term effects are mitigated by a considerable dependence on imported intermediate goods, a difficulty also noted in Vietnam. Siregar and Rajan (2004) analysed Indonesia's export dynamics through a cointegration framework and observed that exchange rate volatility adversely affects exports, especially in labour-intensive industries, due to heightened uncertainty and cost constraints. These findings align with Vietnam's experience, where dependence on imported inputs and sector-specific dynamics affect export reactions to fluctuations in exchange rates. Vietnam's swift integration into global trade networks following its WTO accession in 2007, together its emphasis on labour-intensive exports like textiles and electronics, sets its export structure apart from Thailand's more diversified export base and Indonesia's commodity-centric exports. The regional comparisons underscore the significance of country-specific elements, such as trade openness and industrial structure, in influencing the exchange rate-export relationship, hence emphasising the value of this study's examination of Vietnam's distinct economic situation.

Recent studies have incorporated structural elements such as trade openness, industrial development levels, and integration into global supply chain management. Nguyen et al. (2022) utilised a VECM approach to illustrate the significant improvement in export performance resulting from Vietnam's trade liberalisation policies following its accession to the World Trade Organisation (WTO) in 2007. Vo and Le (2021) examined the impact of foreign direct investment (FDI) and discovered that rising FDI inflows corresponded with greater export volumes, whether directly or through the integration of multinational enterprises into a production network in Vietnam.

Notwithstanding this amount of literature, there exists credible dissent on the impact of exchange rate policy on the stimulation of exports. Numerous studies endorse the conventional view that devaluation is advantageous for exports; nevertheless, some contend that Vietnam's significant dependence on imported intermediate goods has diminished the net benefits. According to Minh and Hoang (2023), a depreciated đồng increases manufacturing costs for exporters reliant on imported supplies, hence undermining certain advantages of currency devaluation.

2.3. Hypothesis Development

Based on the theoretical and empirical insights from the literature, **the following hypotheses are proposed**

H1: Exchange rate depreciation has a positive impact on Vietnam's export growth in the long run.

H2: Exchange rate fluctuations have a significant

short-run effect on Vietnam's exports.

3. RESEARCH DATA AND METHODOLOGY

3.1. Data Source and Variables

This study employs annual time series data for Vietnam spanning from 1990 to 2023. The data utilised in this research are sourced from the World Bank's World Development Indicators (WDI) and the General Statistics Office of Vietnam (GSO), with major variables presented in Table 1.

Table 1: Variables in the Model.

Variables	Description	Data sources
Dependent variable		
EXP (Exports)	Merchandise exports as a percentage of GDP	World Bank (WDI), GSO Vietnam
Independent variables		
EXR (Change in exchange rate)	Annual percentage change in the nominal exchange rate of VND against USD	World Bank (WDI)
Control variables		
GDP (GDP Growth)	Annual percentage growth rate of real GDP	World Bank (WDI)
TO (Trade openness)	(Exports + Imports) / GDP, measuring Vietnam's trade integration	World Bank (WDI)
INF (Inflation)	Measured by the Consumer Price Index (CPI)	World Bank (WDI)
UNEMP (Unemployment rate)	Percentage of the labor force that is unemployed	World Bank (WDI)

3.2. Model Specification

We employ a Vector Error Correction Model to evaluate the impact of exchange rate fluctuations on exports, incorporating both short-term dynamics and long-term equilibrium linkages. A VECM is advantageous for examining non-stationary time series exhibiting cointegration, since it facilitates a clear depiction of long-run equilibrium while capturing short-run dynamics.

The VECM model can be specified as follows

$\Delta Y_t = \Pi Y_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \Delta Y_{t-i} + \varepsilon_t$

Where

Y_t is the vector of endogenous variables.

ΔY_t represents first-differenced variables, capturing short-run dynamics.

$\Pi = \alpha\beta'$ is the cointegration matrix, **where**

$\beta' Y_{t-1}$ represents the long-run equilibrium relationships.

α is the adjustment speed towards equilibrium.

Γ_i are short-run coefficients.

ϵ_t is the error term.

The appropriate lag duration for the VECM model was established using information criteria, namely the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC), to ensure its robustness. These criteria reconcile model fit with parsimony by selecting the lag time that minimises information loss. Following an evaluation of multiple lag lengths, a lag of two was selected due to the minimal AIC and BIC values, signifying that two lags sufficiently encapsulate the short-run dynamics without overfitting the model.

3.3. Estimation Procedure

Stationarity Test: Before estimating the VECM model, it is essential to verify that the time series variables exhibit stationarity features. A time series is considered stationary if it maintains a consistent mean and variance throughout time. The incorporation of non-stationary variables in regression models may yield false outcomes.

Typically, the Augmented Dickey-Fuller (ADF) unit root test is employed to ascertain the stationarity of the variables. This assessment determines the integration order of each variable. Identifying the order of integration is essential; a variable that is non-stationary at its level but attains stationarity after initial differencing is classified as integrated of order I(1). The cointegration test and subsequent estimation of the VECM model are permissible only if all variables within the VAR framework are integrated of order I(1).

Johansen Cointegration Test: The VECM technique is designated for cointegrated variables; thus, the subsequent step is to evaluate if the chosen series exhibits a long-run equilibrium connection. This examination employs the Johansen cointegration test as developed by Johansen and Juselius (1990).

The Johansen cointegration test comprises two primary statistical assessments the Trace Test and the Maximum Eigenvalue Test.

The Trace Test evaluates the null hypothesis of the absence of cointegrating links among the variables. At this juncture, the calculated test statistic is juxtaposed with the critical value, leading to the

conclusion that at least one cointegrating equation is present, hence rejecting the previously established null hypothesis, which implies the existence of a long-term link.

The Maximum Eigenvalue Test evaluates the number of cointegrating vectors by determining if the largest eigenvalue is significantly distinct from zero. This examination centres on the predominant cointegrating relationship within the system. Should the greatest eigenvalue test statistic surpass the crucial threshold, it indicates the existence of at least one cointegrating equation. The two tests enhance one another in detecting the presence and quantity of cointegrating relationships, so ensuring a rigorous assessment of long-term equilibrium among the variables.

Upon identifying at least one cointegrating link, we validate the presence of a long-term equilibrium among the variables and advance to the estimation of the Vector Error Correction Model.

Specification of the VECM Model: In light of cointegration, the VECM model is formulated to encompass both short-term dynamics and long-term equilibrium relationships. The standard representation of the VECM equation for exports (EXP) and **its principal determinants is as follows**

$$\Delta EXP_t = \lambda ECT_{t-1} + \sum_{i=1}^{p-1} \gamma_i \Delta EXR_{t-i} + \sum_{j=1}^{p-1} \theta_j \Delta GDP_{t-j} + \sum_{k=1}^{p-1} \delta_k \Delta TO_{t-k} + \sum_{m=1}^{p-1} \phi_m \Delta INF_{t-m} + \sum_{n=1}^{p-1} \psi_n \Delta UNEMP_{t-n} + \varepsilon_t$$

Where

ECT_{t-1} is the error correction term from the long-run cointegration equation

$ECT_{t-1} = EXP_{t-1} - \beta_1 EXR_{t-1} - \beta_2 GDP_{t-1} - \beta_3 TO_{t-1} - \beta_4 INF_{t-1} - \beta_5 UNEMP_{t-1}$

λ is the speed of adjustment, where a significant negative value indicates correction towards equilibrium.

γ_1, θ_j, δ_k, ϕ_m, ψ_n are short-run coefficients capturing how past changes in the independent variables affect exports.

Diagnostic Tests: To guarantee the reliability and validity of the VECM estimation, multiple diagnostic tests are conducted. The Autocorrelation Test employs the Breusch-Godfrey LM test to identify serial correlation in the residuals. Autocorrelation may suggest model misspecification, perhaps leading to biassed results. Upon detection of serial correlation, requisite modifications to the model are implemented to rectify it. The Heteroskedasticity Test employs the Breusch-Pagan-Godfrey test to evaluate the constancy of residual variance across time. Heteroskedasticity may result in inefficient estimators and compromise the precision of statistical findings. In the presence of heteroskedasticity, robust standard errors or alternative correction techniques are utilised. The Normality Test is conducted using the Jarque-Bera test to assess if the residuals adhere to a normal distribution. This assessment examines the skewness and kurtosis of the residuals to verify their compliance with the assumptions of the VECM model. Non-normal residuals may suggest potential model specification problems that require further examination.

The Stability Test is conducted utilising the CUSUM and CUSUMSQ tests, which evaluate the temporal stability of the estimated coefficients. These tests assess the structural stability of the VECM model across the sample period. Should instability be identified, structural breaks or model re-specifications may be required.

Impulse Response Function (IRF) and Variance Decomposition (VD): To examine the dynamic impacts of exchange rate fluctuations on exports, two significant post-estimation methodologies are utilized: the Impulse Response Function and Variance Decomposition. The Impulse Response Function delineates the reaction of exports to a one standard deviation perturbation in exchange rate, GDP, inflation, trade openness, and unemployment over a designated timeframe. This study elucidates the impact of abrupt alterations in any explanatory variable on exports across time, facilitating comprehension of both short-term and long-term dynamics. The volatility Decomposition determines the percentage of volatility in exports attributed to disturbances in each explanatory variable. This strategy aids in comprehending the relative significance of various factors influencing export volatility. A greater proportion ascribed to exchange rate shocks, for example, would indicate that exchange rate volatility significantly influences export performance.

4. RESULTS AND DISCUSSION

4.1. Descriptive Statistics

Table 2 illustrates significant variability in both exports as a percentage of GDP (EXP) and annual exchange rate fluctuations (EXR). Upon examining EXP, the mean of 60.70% with a standard deviation of 18.82 and a range of 28.72%-93.85% indicates considerable variability in the trade sector's economic contribution. In contrast, EXR exhibits a mean of 5.55% accompanied by a substantial standard deviation, signifying pronounced fluctuations or volatility.

The minimum value of EXR was -5.01%, signifying periods of currency appreciation, whereas the maximum value of 54.83% over the years denotes substantial depreciation, further exemplifying the fluctuations in trade and exchange rates over time.

Table 2: Descriptive Statistics of Variables in the Model.

Variable	Obs	Mean	Std. dev.	Min	Max
EXP	34	60.7019	18.8215	28.7228	93.8502
EXR	34	5.5485	11.8989	(5.0100)	54.8257
GDP	34	6.6173	1.5623	2.5537	9.5405
TO	34	124.8995	33.8932	66.2123	186.6758
INF	34	5.7795	4.6778	(1.7103)	23.1155
UNEMP	34	1.9095	0.4513	0.9990	2.8700

The pairwise correlation matrix in Table 3 shows that all correlation coefficients are below 0.8, indicating no serious multicollinearity issues among the variables.

Table 3: Pairwise Correlation Matrix.

	EXP	EXR	GDP	TO	INF	UNEMP
EXP	1.0000					
EXR	(0.4273)	1.0000				
GDP	(0.4182)	(0.1736)	1.0000			
TO	0.7899	(0.4439)	(0.4012)	1.0000		
INF	(0.1225)	0.1017	(0.0028)	(0.0622)	1.0000	
UNEMP	(0.3368)	0.1384	(0.0191)	(0.2993)	(0.3572)	1.0000

4.2. Stationary Test

The stationarity testing findings in Table 4 indicate that all variables are non-stationary at the level, since the p-values for each variable exceed 0.05. Upon applying the first difference to each variable, all variables attain stationarity, with p-values below 0.05. Consequently, the variables (EXP, EXR, GDP, TO, INF, and UNEMP) are integrated of order one, I(1), necessitating that all regression analyses utilise first-differenced data or conduct suitable econometric estimations to ensure dependable regressions.

Table 4: Stationary Test.

Variable	Level p-value	First Difference p-value
EXP	0.7731	0.0078
EXR	0.8851	0.0000
GDP	0.1134	0.0000
TO	0.6011	0.0019
INF	0.1262	0.0000
UNEMP	0.3010	0.0003

4.3. Test for Co-Integration

The Johansen cointegration test findings in Table 5 suggest the presence of a long-run link among the variables. When the maximum rank is established at zero, the Trace statistic (115.8809) exceeds the 5% critical value (94.1500), resulting in the rejection of the null hypothesis of no co-integration. This indicates the presence of at least one co-integrating relationship among the variables, signifying that they possess a shared stochastic trend across time. When the maximum rank is established at one, the Trace statistic (64.4878) is inferior than the critical value (68.5200). As a result, the null hypothesis that there is at most one co-integrating equation cannot be rejected. This indicates that while there is robust evidence for a single co-integrating link, further co-integrating vectors lack statistical significance. These findings indicate that the test corroborates the existence of a singular co-integrating connection among the variables. Consequently, the Vector Error Correction Model (VECM) must be estimated with a rank of 1 to accurately reflect the long-term equilibrium dynamics while permitting short-term corrections.

Table 5: Johansen Co-Integration Test.

Maximum rank	Params	LL	Eigenvalue	Trace statistics	Critical value 5%
0	6.0000	(473.2817)	0.8946	115.8809	94.1500
1	17.0000	(447.5851)	0.7893	64.4878*	68.5200
2	26.0000	(434.6586)	0.5432	38.6348	47.2100
3	33.0000	(425.7884)	0.4158	20.8945	29.6800
4	38.0000	(419.7799)	0.3052	8.8775	15.4100
5	41.0000	(415.3690)	0.2346	0.0556	3.7600
6	42	-415.34118	0.00168		

4.4. Estimation Results

The adjustment coefficient of -1.995 is statistically significant (p-value = 0.000), signifying that exports exhibit a robust response to deviations from the long-run equilibrium. The negative sign indicates that when exports decline below the equilibrium level, they will subsequently rise to rectify the discrepancy, and conversely. This robust adjustment mechanism indicates a swift reversion to equilibrium, demonstrating a solid long-term correlation between exports and other essential economic variables.

Table 6: Error Correction Model (ECM) for Exports.

D_EXP	Coefficient	P-value
_ce1 L1.	-1.995182	0.000

Table 7 examines the influence of several macroeconomic factors on exports (EXP), with particular emphasis on fluctuations in exchange rates (EXR). The findings indicate that the initial lag of EXR exerts a negative and marginally significant influence on export growth, but the second lag demonstrates a positive and more pronounced effect. This indicates that a depreciation in the exchange rate may initially reduce exports, likely due to cost adjustments and short-term uncertainties. Nonetheless, over time, depreciation appears to enhance export competitiveness, resulting in heightened exports in subsequent periods. The combined impact of exchange rate fluctuations highlights the necessity of accounting for time lags in the analysis of exchange rate policies. In the short term, enterprises may encounter elevated input costs and adaptation challenges, which constrain the immediate advantages of a depreciated currency. As enterprises adapt and global demand rises, the beneficial impact on exports becomes more evident. This underscores the gradual propagation of exchange rate effects inside the export industry. Additional macroeconomic variables function as control factors inside the model. GDP growth adversely impacts exports, likely due to heightened domestic demand diminishing the supply available for exportation. Trade openness exerts a significant negative impact, potentially signifying heightened foreign competition. Inflation exhibits a beneficial impact, presumably indicating price modifications that improve export competitiveness. Moreover, elevated unemployment appears to redirect an increased volume of commodities to international markets, as diminished domestic demand compels companies to seek external purchasers. The adverse impact of GDP growth on exports, as indicated by the model, can be logically substantiated by the domestic demand hypothesis, which asserts that accelerated GDP growth enhances local consumption and investment, thus diminishing the availability of commodities for export. This is especially pertinent in Vietnam, where increasing local demand, fuelled by an expanding middle class and urbanisation, may shift output from export markets to domestic markets. Edwards (1989) contends that in developing economies, robust GDP expansion frequently results in heightened local absorption, potentially displacing export-oriented industry. Bahmani-Oskooee and Wang (2007) similarly discovered that in nations with burgeoning domestic markets, export development may be limited as firms prioritise local demand. The negative effect of trade openness, while paradoxical, coincides with the import competition theory, which implies that increasing trade liberalization exposes home exporters to intensified overseas competition, potentially lowering export performance in particular sectors. In the context of Vietnam, the enhanced trade liberalisation post-WTO admission in 2007 has resulted in augmented imports of intermediate goods and intensified competition from overseas manufacturers, as observed by Nguyen et al. (2022). This may disproportionately impact labour-intensive export sectors, which encounter difficulties in sustaining cost competitiveness. These findings emphasise the intricate relationship among macroeconomic development, trade policy, and export dynamics, underscoring the necessity for targeted strategies to reconcile domestic and export-oriented goals.

Table 7: Effects of Variables on Exports.

Variables	LD	L2D
EXP	1.709501***	1.330279***
EXR	-.0391258*	.0593693**
GDP	-.8648691**	-.0940058*
TO	-.8182941***	-.5867014***
INF	1.030573***	.0915782**
UNEMP	6.771782**	3.711013**
*Note: *, **, ** represent significance level of 10%, 5%, 1%, respectively.*		

The impulse response function (IRF) depicted in figure 1 illustrates that fluctuations in the exchange rate exert a consistent and constrained influence on export performance across time. The response line varies marginally around zero, suggesting that exchange rate shocks do not result in substantial alterations in exports in the short run. This indicates that the relationship between exchange rate fluctuations and exports is quite weak. This may be attributable to variables such as exchange rate pass-through, the configuration of export businesses, or hedging strategies that mitigate the impact of currency changes. The limited impact of exchange rate fluctuations on exports can be attributed to the significant reliance of Vietnamese export sectors on imported inputs, which diminishes their sensitivity to currency depreciation. Moreover, enduring commercial agreements and pricing tactics in foreign currencies may safeguard against transient fluctuations in exchange rates. This suggests that exchange rate volatility alone may not significantly influence export performance, particularly in nations where other structural factors, such as production capacity, market demand, and trade agreements, are more consequential. The remaining variables, such as GDP growth, inflation, trade openness, and unemployment, function as control variables inside the model. Although GDP growth and unemployment exert significant influence on exports, they primarily indicate overarching economic circumstances rather than direct monetary consequences. Inflation and trade openness exert generally constant or negligible impacts, supporting the assertion that exchange rate shocks alone do not significantly impact export trends.

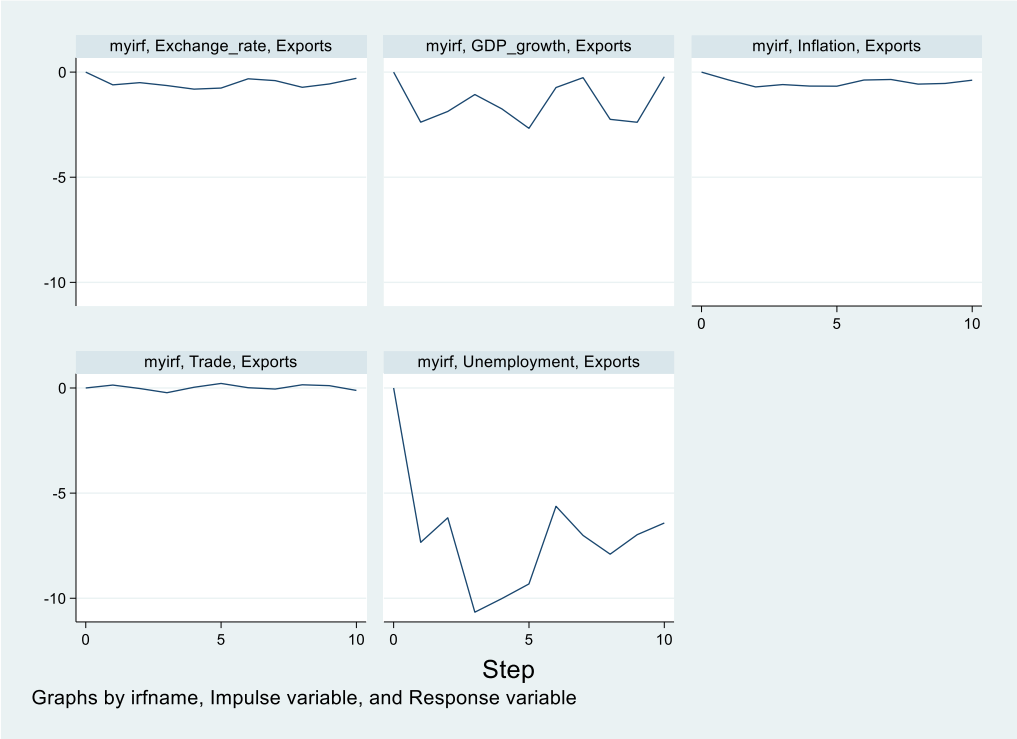

Figure 1: Impulse Response Functions of Exchange Rate and Macroeconomic Variables on Exports.

Figure 2 presents the Variance Decomposition analysis, demonstrating the response of exports to exchange rate shocks over time, with additional macroeconomic control factors. The initial panel, "Exchange Rate → Exports," indicates a notable positive reaction of exports to fluctuations in the exchange rate. Initially, the impact is minimal; but, from step 2 onwards, exports commence a steady climb, culminating in a high around steps 6-7 before stabilising. This indicates that a depreciation of the exchange rate results in a gradual yet sustained increase in exports, probably due to enhanced price competitiveness in global markets. The long-term effect is favourable, signifying continued export

expansion after an exchange rate disturbance. The additional panels illustrate the impact of control factors (GDP growth, inflation, trade openness, and unemployment) on exports. Although they display differing levels of impact, none exert as robust or constant an effect as the exchange rate. GDP growth and inflation exhibit modest positive responses, although trade openness and unemployment demonstrate comparatively lesser effects.

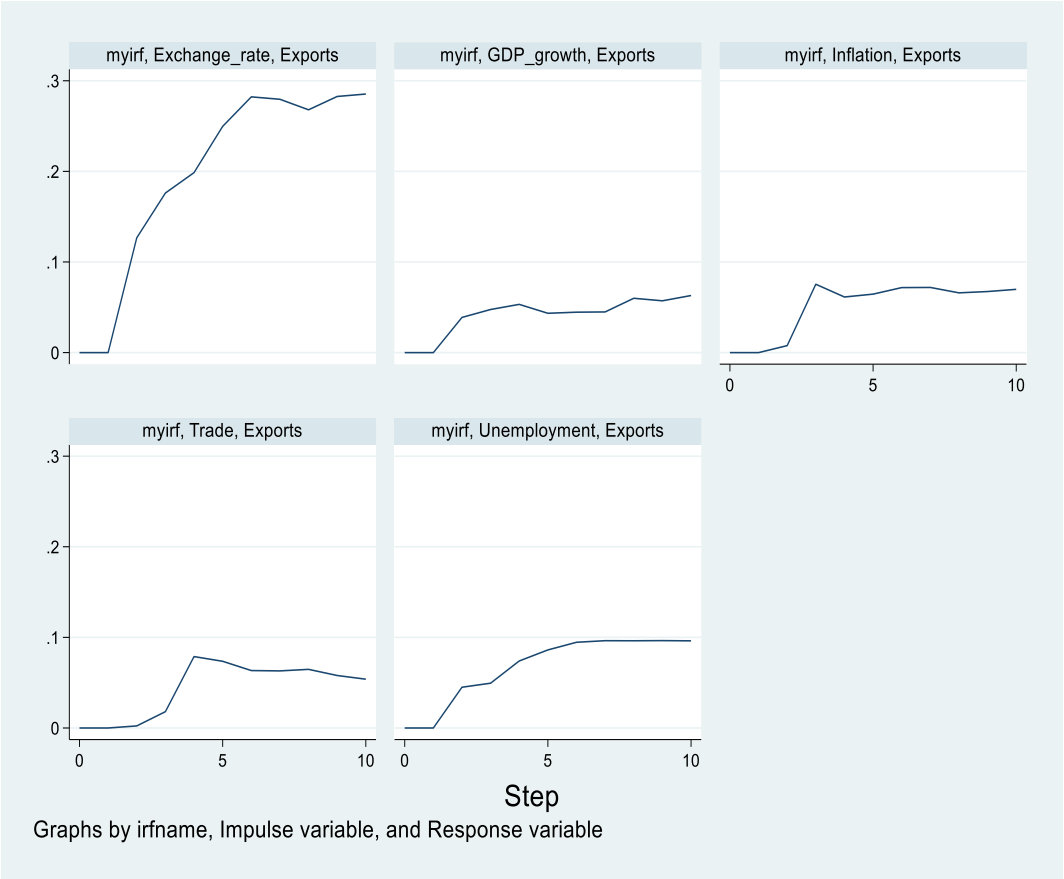

Figure 2: Variance Decomposition of Exports to Macroeconomic Shocks.

5. POLICY IMPLICATIONS AND CONCLUSION

5.1. Policy Implications

This study demonstrates that export inclination is significantly influenced by exchange rate fluctuations. Trade-oriented economies necessitate a meticulously controlled exchange rate regime to enhance exports. Given the substantial impact of exchange rate fluctuations on exports, authorities should consider implementing measures to promote stability in exchange rates and mitigate excessive volatility. A key policy advice is to adopt a managed exchange rate regime, allowing central banks to act selectively to prevent sudden depreciations or appreciations from destabilising trade. When rates fluctuate erratically, exporters face significant uncertainty over pricing and long-term investment strategies. Therefore, regulating excessive volatility through foreign currency market interventions or exchange rate stabilisation should focus on fostering a stable environment for exporters. This recommendation is consistent with the State Bank of Vietnam's (SBV) managed floating exchange rate regime, which permits the Vietnamese đồng to vary within a trading band while allowing SBV interventions to stabilise the currency against external shocks. The results of this study endorse the SBV's strategy of targeted interventions to alleviate excessive volatility, as demonstrated by the varied short-term impacts of exchange rate variations on exports. To improve export competitiveness, the SBV should optimise its crawling peg mechanism by establishing smaller bands during times of global economic uncertainty, such as those experienced during the COVID-19 pandemic, to offer exporters enhanced predictability. The SBV's collaboration with fiscal authorities to synchronise monetary policy with trade goals—such as sustaining competitive real exchange rates—can further bolster export-driven sectors, especially labour-intensive industries like

textiles and electronics, which are susceptible to fluctuations in exchange rates. The monetary policy should concurrently have a trade focus to promote heightened exports. Attention will be paid to the impact of fluctuating interest rates or inflation-targeting policies on dynamic exchange rate behaviour. In addition to financial strategies, trade policies must to be formulated to facilitate the growth of exports. Governments can negotiate advantageous trade agreements, reduce trade obstacles, and offer incentives for export-driven sectors. These measures can facilitate enterprises' entry into other markets and reduce their dependence on local demand. Moreover, investment in infrastructure and logistics, including ports, transportation networks, and digital trade facilitation, can reduce transaction costs and enhance export efficiency. The research highlights the necessity for policies that promote macroeconomic stability. The exchange rate significantly influences export performance; however, additional factors such as GDP growth, inflation, and unemployment also impact trade dynamics. Governments must implement measures to sustain economic development, regulate inflation, and enhance labour market conditions. All these measures foster a stable climate for international commerce.

6. CONCLUSION

This study enhances the current literature regarding the relationship between exchange rate fluctuations and exports, emphasising the significance of exchange rate regulation and the critical role of exchange rates in trade. The analysis suggests that devaluation of the currency rate would likely enhance exports, while significant volatility would generate uncertainty and impede the long-term trade stability essential for sustaining exports over time. Policymakers should regulate their exchange rate through responsible intervention, which may involve permitting the exchange rate to float while ensuring that any adjustments are predictable during interventions. This analysis should involve several macroeconomic variables. For instance, GDP growth, trade openness, inflation, and unemployment served as control variables, however they also influence the relationship between exchange rates and exports. Their inclusion illustrates the comprehensive macroeconomic environment and structural concerns influencing exchange rate policies. For instance, elevated inflation would diminish the advantages of a devalued currency. GDP growth would amplify the advantages of the depreciated currency by augmenting production capacity and improving competitiveness as the new exchange rate is integrated into the domestic economy.

This indicates that although exchange rates are significant, a comprehensive economic management strategy is necessary to enhance or optimise export potential. Subsequent research could enhance this study by examining industry-sector reactions to exchange rate variations. Certain sectors may exhibit varying degrees of vulnerability to exchange rate fluctuations for import inputs, contingent upon the global demand conditions for product sales and the pricing structure policies in place. Future academic research opportunities exist to evaluate the nonlinearities of exchange rate fluctuations, including threshold effects and asymmetric reactions to exchange rate variations. Utilising non-linear models like the threshold Vector Error Correction Model (TVECM) may improve the analysis by accurately reflecting asymmetric and regime-dependent reactions of exports to exchange rate variations. A TVECM could pinpoint important thresholds in exchange rate volatility or depreciation levels, beyond which export reactions markedly change, highlighting structural disparities in Vietnam's export sectors, such as textiles compared to electronics. These models would facilitate a more sophisticated comprehension of the interplay between exchange rate shocks and macroeconomic as well as socioeconomic factors across varying economic conditions, as indicated by Hansen (2017) and Teräsvirta et al. (2010), who illustrate the efficacy of threshold models in encapsulating non-linear dynamics within economic time series. This method may elucidate if Vietnam's export performance demonstrates differing patterns during high and low volatility times, offering policymakers insights to refine policies more effectively. Moreover, abrupt or unforeseen fluctuations in global capital flows and anticipations of exchange rates may represent potential avenues for future research regarding the origins of trade shocks and their effects on trade performance. Incorporating elements of the global financial market would enable scholars to comprehend how speculation and investor emotion contribute to the stabilisation of currency rates, which in turn affects export competitiveness. This study illustrates the significance of exchange rates in influencing exports and the associated policy implications for trade competitiveness. A robust exchange rate strategy, along with supportive trade and macroeconomic policies, can guarantee a stable and dynamic export sector.

As global economic conditions and trends progress, a synergy of thorough research and

effective policy coordination will yield growth and enduring prosperity.

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REFERENCES

Aghion, P., Bacchetta, P., Rancière, R., & Rogoff, K. (2009). "Exchange rate volatility and productivity growth: The role of financial development." Journal of Monetary Economics, 56(4), 494-513.

Audrey Sallenave (2010), Real exchange rate misalignments and economic performance for the G20 countries, International Economics, Volume 121, January 2010, 59-80 BIS (2020). "Exchange Rate Volatility and its Impact on Global Trade." Bank for International Settlements Working Paper.

Bleaney, M., & Greenaway, D. (2001). "The impact of terms of trade and real exchange rate volatility on investment and growth in sub-Saharan Africa." Journal of Development Economics, 65(2), 491-500.

Axel F.A. Adam-Müller (1997), Export and hedging decisions under revenue and exchange rate risk: A note, European Economic Review, Volume 41, Issue 7, July 1997, 1421-1426

César Calderón, Klaus Schmidt-Hebbel (2003), Macroeconomic policies and performance in Latin America, Journal of International Money and Finance, Volume 22, Issue 7, December 2003, 895-923

Campa, J. M., & Goldberg, L. S. (2005). "Exchange rate pass-through into import prices." Review of Economics and Statistics, 87(4), 679-690.

Dell'Ariccia, G. (1999). "Exchange rate fluctuations and trade flows: Evidence from the European Union." IMF Staff Papers, 46(3), 315-334.

Dornbusch, R. (1988). "Exchange rates and inflation." MIT Press.

Edwards, S. (1989). "Real exchange rates, devaluation, and adjustment: Exchange rate policy in developing countries." MIT Press.

Eichengreen, B. (2008). "Globalizing capital: A history of the international monetary system." Princeton University Press.

Engel, C., & Rogers, J. H. (1996). "How wide is the border?" American Economic Review, 86(5), 1112-1125.

Frankel, J. A. (2005). "On the renminbi: The choice between adjustment under a fixed exchange rate and adjustment under a flexible rate." NBER Working Paper, 11274.

Ghosh, A. R., Gulde, A.-M., Ostry, J. D., & Wolf, H. (1997). "Does the exchange rate regime matter for inflation and growth?" IMF Economic Issues, 2.

Goldberg, L. S., & Klein, M. W. (1998). "Foreign direct investment, trade, and real exchange rate linkages in developing countries." NBER Working Paper, 6344.

Gopinath, G., Itskhoki, O., & Rigobon, R. (2010). "Pass-through at the dock: Pricing to market and exchange rate pass-through across industries." American Economic Review, 100(5), 304-336.

Huu, T. N. (2023). Adaptive Management Approaches in ASEAN Economies: Navigating Inflation, Unemployment, and Economic Growth Dynamics. Revista Gestão & Tecnologia, 23(4), 396–419. https://doi.org/10.20397/2177-6652/2023.v23i4.2724

IMF (2022). "Exchange Rate Policies and Trade Performance: A Global Perspective." International Monetary Fund, Washington, D.C.

Krugman, P. (1989). "Exchange-rate instability." MIT Press.

Lane, P. R., & Milesi-Ferretti, G. M. (2002). "External wealth, the trade balance, and the real exchange rate." IMF Working Paper, 02/51.

Levy-Yeyati, E., & Sturzenegger, F. (2005). "Classifying exchange rate regimes: Deeds vs. words." European Economic Review, 49(6), 1603-1635.

Obstfeld, M., & Rogoff, K. (1995). "The mirage of fixed exchange rates." Journal of Economic Perspectives, 9(4), 73-96.

OECD (2019). "Macroeconomic Indicators and Exchange Rate Misalignment in Emerging Economies." OECD Economic Outlook.

Rodrik, D. (2008). "The real exchange rate and economic growth." Brookings Papers on Economic Activity, 2008(2), 365-412.

Rose, A. K. (2000). "One money, one market: Estimating the effect of common currencies on trade." Economic Policy, 15(30), 7-46.

Taylor, J. B. (2001). "The role of the exchange rate in monetary-policy rules." American Economic Review, 91(2), 263-267.
World Bank (2021). "Macroeconomic Stability and Exchange Rate Dynamics in Developing Countries." World Bank Report.
WTO (2018). "Trade and Exchange Rate Policies in a Globalized Economy." World Trade Organization Annual Report.
Yeyati, E. L., & Sturzenegger, F. (2007). "Fear of floating and exchange rate policy in emerging markets." IMF Staff Papers, 55(1), 103-131.