From Markets to Fields: The Impact of Vietnam's 1985 Dong Devaluation on Rice Exports

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Abstract

This study investigates the impact of Vietnam's 1985 currency devaluation on rice export performance amid the country's transition from a centrally planned to market economy. Using a Structural Vector Autoregressive (SVAR) model, the analysis finds that real exchange rate depreciation led to a statistically significant but transitory increase in rice export volumes, which supports trade theory that links weaker currencies to improved competitiveness. However, the short-lived nature of the response highlights the limitations of exchange rate policy in isolation. Historical context reinforces the empirical findings: the 1985 devaluation, alongside the launch of Doi Moi reforms, marked a structural break that enabled Vietnam's emergence as a leading rice exporter. The results underscore a broader policy insight for emerging economies: while devaluation can jumpstart exports, its effectiveness depends on complementary reforms in productivity, infrastructure, and trade liberalization.

Keywords: currency devaluation, monetary policy, exchange rates, rice exports, Vietnam, Doi Moi, SVAR

Introduction

Historical Context

Emerging from nearly a century of political conflict and economic stagnation, Vietnam faced the daunting task of rebuilding its sovereignty at the end of the Vietnam War in 1975. In the post-war period, the country's monetary policy was characterized by rigid price controls and an overvalued exchange rate leading to mounting macroeconomic imbalances (Cima & Library of Congress, 1989; Drabek, 1990; Minot & Goletti, 2000; Vu & Nguyen, 2021). The State Bank of Vietnam (SBV) issued new banknotes at a 10:1 exchange ratio for old banknotes and adjusted the official exchange rate from 1.20 Vietnam dong (VND) per United States dollar (USD) to 15 VND per USD (Cima & Library of Congress, 1989). While this devaluation aimed to stabilize the economy and reduce fiscal imbalances, it instead triggered hyperinflation and price volatility, forcing policymakers to introduce broader market-oriented reforms under Doi Moi in 1986 (Cima & Library of Congress, 1989; Drabek, 1990).

While the broader economy suffered under these conditions, the agricultural sector is expected to have faced distinct challenges, which makes it a crucial focus of this research. As the backbone of Vietnam's economy, agriculture accounted for 51 percent of Produced National Income (PNI) in 1985 (Cima & Library of Congress, 1989). Within this sector, rice is of particular significance due to its dominant role in Vietnam's agricultural production, consumption, and trade (Minot & Goletti, 2000). Given the heavy reliance on agriculture and the importance of rice in both domestic markets and international trade, the effect of the 1985 devaluation on rice exports warrants deeper examination.

Research Question

This research analyzes the impact of the 1985 dong devaluation on rice exports. In theory, a currency devaluation or a weaker currency corresponds to cheaper exports or greater export competitiveness in the short run, holding all else constant. This study aims to examine this hypothesis within the historical and economic context of Vietnam.

Although there is a growing body of literature on emerging markets, Vietnam's unique economic trajectory remains underexplored, particularly regarding the 1985 devaluation. Most existing studies acknowledge this event as a precursor to the Doi Moi reforms but do not examine its independent economic consequences, particularly in agriculture. This study fills the outstanding gap by analyzing the impact of this particular currency devaluation on trade.

This research is relevant to the contemporary Vietnamese economy because it portrays a building block in Vietnam's journey from a country plagued by famine to one of the top rice exporters in the world (Cima & Library of Congress, 1989; USDA, 2025). Moreover, despite its transition to a market economy, Vietnam continues to operate under a managed floating exchange rate system, with the SBV under direct government oversight (SBV, n.d.). Given this structure, historical cases of state-managed, rather than market-driven, devaluations provide valuable insights into potential risks and trade-offs. Overall, the research will contribute to a more holistic understanding of Vietnam's economic history and guide policy decisions regarding currency regimes.

Research Outcome

This study employs a Structural Vector Autoregressive (SVAR) model to examine the dynamic relationship between exchange rate movements and Vietnam's rice exports, with particular attention to the 1985 devaluation as a pivotal policy shock. The results reveal a

pronounced asymmetry in shock transmission: real exchange rate shocks lead to a statistically significant short-run increase in rice export volumes. This confirms the theoretical prediction under the Marshall-Lerner condition that a depreciation improves price competitiveness and stimulates external demand.

However, the export response to depreciation is short-lived. The positive effect peaks early and fades over subsequent periods, suggesting that while devaluation can trigger immediate gains in trade performance, its impact dissipates without supporting structural reforms. This temporal limitation likely reflects market adjustment lags, supply constraints, or reversal of price advantages due to inflation or trade frictions.

These empirical patterns are consistent with Vietnam's historical trajectory. The 1985 devaluation marked a decisive break from an overvalued and inflexible exchange rate regime and set the stage for the Doi Moi reforms initiated in 1986. These reforms liberalized markets, dismantled the dual exchange rate system, and catalyzed agricultural trade expansion. Time series data corroborate this turning point: rice exports remained stagnant prior to 1985 but grew rapidly throughout the late 1980s and 1990s, positioning Vietnam as a leading global rice exporter by the early 2000s.

The alignment between model-based evidence and macroeconomic history reinforces the study's core insight: exchange rate devaluation, when embedded within broader liberalization efforts, can act as a powerful catalyst for export growth in transition economies. This research contributes to the literature by providing empirical validation of the role of currency realignment in agricultural trade development. The findings offer timely policy guidance for other emerging economies seeking to strategically manage their exchange rates in support of export-led growth.

Ethical Considerations

Data Use and Collection

The use of FAOSTAT data is granted through the CC BY 4.0 License and the FAOSTAT Statistical Database Terms of Use. The data is recorded as reported by member countries, which are responsible for verifying its accuracy before submission. The FAO further validates the data by examining transmission errors, outliers, and consistency. To mitigate potential biases in the analysis, the study involves comparing the FAOSTAT data with supplementary data sources as needed. Importantly, the data retrieved for this research does not contain sensitive or personally identifiable information.

Stakeholder Impact

This research has direct ethical implications for Vietnam's rice farmers, policymakers, and international trade partners. Farmers, whose livelihoods depend on market conditions, may adjust their production or pricing strategies based on economic analyses. Policymakers rely on sound economic research to craft trade and agricultural policies, and any misleading conclusions could lead to ineffective or even harmful decisions that distort market dynamics. International trade partners, including rice importers and foreign investors, may also be influenced by this research when assessing Vietnam's trade competitiveness and economic stability. Their perceptions could shape trade agreements, investment decisions, and long-term commercial relationships. To mitigate these risks, the research must be conducted with methodological rigor and transparency. Moreover, ensuring that conclusions are framed within their proper economic and historical context is crucial for providing insights that are both accurate and responsible.

Methodological Rigor

The chosen SVAR model relies on key assumptions outlined in the Methods section. Violations of these assumptions can introduce biases, distort relationships, and lead to false conclusions. To mitigate these risks, rigorous data management and model validation techniques are employed. Any unaddressed weaknesses are clearly communicated. Beyond technical rigor, the research upholds standards of transparency and reproducibility to guarantee reliable findings.

Result Interpretation

The study focuses on Vietnam at the national level, specifically examining its rice sector in terms of production and trade over the period 1975–2023. Any broader inferences extending findings to other levels, countries, industries, or time periods must be made cautiously. There is also a risk of misinterpreting causality where only correlation exists, which could result in policy recommendations unjustified by robust evidence. Such misinterpretation might further reinforce overly simplistic narratives about the effects of currency devaluation on agriculture, undermining intricate policy debates. As the study upholds transparency regarding its scope and limitations, economic stakeholders and the academic community are advised to interpret the results in a nuanced manner.

Ethical Guidelines

The research ensures compliance with ethical soundness by engaging in peer reviews and seeking feedback from experts. Incorporating diverse perspectives in identifying potential biases or oversights further strengthens the study's credibility. Standards outlined by academic institutions and professional organizations in economics and data analytics are also followed to foster research that is both impactful and ethically sound.

Literature Review

Literature Review Approach

This literature review examines the economic consequences of the 1985 devaluation, with a particular focus on its impact on domestic agricultural prices and international exports. The review follows a thematic approach, first analyzing the broader effects of trade liberalization and currency devaluation on Vietnam's integration into global agricultural markets, tracing the country's shift from a net food importer to a major agricultural exporter. Finally, it identifies gaps in the literature, particularly concerning the independent impact of the 1985 devaluation versus the broader Doi Moi reforms and regional disparities in economic benefits.

This topic is highly relevant to contemporary discussions on Vietnam's monetary policy. While the country has transitioned to a market economy from a centrally planned one prior to the 1990s, its currency remains under a managed floating exchange rate system, with the State Bank of Vietnam (SBV) maintaining direct government oversight (SBV, n.d.). Understanding the historical consequences of state-managed devaluations, as seen in 1985, provides valuable insights into the risks and trade-offs of government intervention in currency markets. More broadly, this research contributes to a deeper understanding of Vietnam's economic history and offers lessons for policymakers casting the country's economic trajectory.

Impact of the 1985 Dong Devaluation on Rice Exports

The 1985 devaluation of the Vietnam dong and the subsequent Doi Moi economic reforms marked a turning point in Vietnam's agricultural trade, transforming the country from a net food importer to a major agricultural exporter. Prior to these reforms, Vietnam faced chronic food shortages and state-imposed price controls, which restricted farmers' ability to trade and respond to market conditions (Minot & Goletti, 2000; Vu & Nguyen, 2021). However, by the

late 1980s, Vietnam had shifted from a food-deficient nation to a key supplier of rice, coffee, and seafood on the global market. By 1989, rice exports reached 1.5 million tons, and by 1998, Vietnam was the world's third-largest rice exporter, shipping over 3.8 million tons (Minot & Goletti, 2000; Dang et al., 2006). This dramatic shift was largely due to exchange rate adjustments that enhanced price competitiveness, trade liberalization, and productivity improvements in the agricultural sector.

While the devaluation made Vietnamese agricultural products more competitive internationally, the transition to an export-oriented agricultural economy was not without challenges. In the early years of reform (1985–1988), inflation surged, leading to higher input costs for fertilizers, seeds, and machinery, which initially offset the benefits of export competitiveness (Drabek, 1990; Vu & Nguyen, 2021). Furthermore, the Vietnamese government maintained an overvalued exchange rate until 1989, effectively discouraging agricultural exports and reducing farmer earnings (Drabek, 1990). This delay in full trade liberalization meant that many farmers did not immediately benefit from the policy shifts, as foreign exchange shortages limited their ability to invest in better production techniques (Drabek, 1990). Thus, while the devaluation ultimately facilitated export growth, its short-term impact on agricultural investment and production was mixed.

One of the most significant obstacles to early export growth was government intervention in rice trade. Even as Vietnam emerged as a global rice exporter, the state imposed export quotas and trade restrictions, aiming to balance food security concerns with international trade opportunities (Minot & Goletti, 2000). These quotas effectively functioned as an implicit tax on farmers, limiting their ability to benefit from rising global rice prices. By the mid-1990s, the government gradually replaced these quotas with export taxes, which allowed for greater

flexibility in trade policy while still ensuring revenue generation (Minot & Goletti, 2000). However, these policy restrictions delayed the full liberalization of Vietnam's agricultural markets, highlighting the tension between state control and market forces in the early years of reform.

The broader liberalization of agricultural trade played a crucial role in expanding Vietnam's foreign market presence beyond rice. The removal of state control over trade allowed private traders and cooperatives to enter international markets, increasing the export of coffee, rubber, and seafood (Cima & Library of Congress, 1989; Vu & Nguyen, 2021). Between 1985 and 1999, rice exports rose from 109,900 tons to over 3.3 million tons, while coffee exports surged from 3,900 tons to 357,500 tons (Dang et al., 2006). This rapid growth of agricultural exports was supported by improvements in productivity, with total factor productivity (TFP) in agriculture growing at 3.44% per year between 1985 and 1990 (Vu & Nguyen, 2021). However, after 1990, TFP growth slowed, as capital investment in machinery and infrastructure replaced labor-driven productivity gains, raising questions about the sustainability of Vietnam's long-term agricultural export strategy.

Despite the overall success of Vietnam's export-driven agricultural growth, challenges remained in terms of trade competitiveness and price stability. While the removal of rice export quotas in the mid-1990s led to a 20-25% increase in domestic rice prices, it also contributed to a 2-4% decline in world rice prices, as Vietnam's rising exports expanded global supply (Minot & Goletti, 2000). This put pressure on Vietnam to enhance quality and adopt value-added processing to maintain its competitive edge in the international market. Furthermore, terms of trade became less favorable in the late 1990s, as global oversupply reduced export revenues, underscoring the risks associated with heavy reliance on commodity exports (Dang et al., 2006).

A key debate in the literature concerns the role of state intervention in shaping Vietnam's agricultural export success. While Minot & Goletti (2000) argue that government-imposed quotas initially restricted export growth, Drabek (1990) criticizes the slow pace of trade liberalization, noting that state-controlled trade mechanisms created inefficiencies that prevented farmers from fully benefiting from global price fluctuations. On the other hand, some scholars highlight the importance of phased liberalization in preventing food insecurity and economic instability, suggesting that Vietnam's gradual transition to an export-driven model helped ensure long-term stability (Cima & Library of Congress, 1989). This ongoing debate underscores the complexity of balancing domestic food security with the demands of a competitive global market.

Gaps in Existing Literature

Many existing studies acknowledge the devaluation as a precursor to the broader Doi Moi reforms (Minot & Goletti, 2000; Cima & Library of Congress, 1989), but few examine its independent effects on agricultural markets. This lack of distinction limits the understanding of how monetary policy shocks influenced agriculture prior to the full-scale market liberalization of 1986. While studies such as Drabek (1990) and Nguyen and the General Statistics Office of Vietnam (2020) recognize the severe inflationary consequences of the devaluation, they primarily frame these effects within the broader transition to a market economy, rather than analyzing the specific causal mechanisms linking devaluation to agricultural price instability and farmer responses.

Beyond quantitatively analyzing the dynamic relationship between exchange rates and rice exports in Vietnam, this research provides empirical evidence on how currency devaluations shape agricultural markets. By bridging historical policy analysis with modern econometric

methods, this research offers practical insights for policymakers seeking to balance economic growth and export competitiveness.

<div align="center">**Data**</div>

Data Source and Access

All data in this research is sourced from the Statistics Division of the Food and Agriculture Organization of the United Nations (FAOSTAT). FAOSTAT datasets are freely available under the Creative Commons Attribution 4.0 International (CC BY 4.0) License. This means that users are permitted to access, download, copy, adapt, and redistribute the data, provided proper attribution is given. The FAOSTAT Statistical Database Terms of Use confirm the right to use the data for research, statistical analysis, and evidence-based decision-making.

Dataset and Variables

A dataset for each variable is retrieved from FAOSTAT then processed and merged. The overall dataset is a tabular time series covering Vietnam's rice sector and foreign exchange market from 1975 to 2023. Connected within the SVAR framework are the two key variables the annual VND per USD exchange rates, referred to as the Annual Exchange Rate variable, and the annual rice export quantities, referred to as the Export Quantity variable. In addition, the monthly VND per USD exchange rates, referred to as the Monthly Exchange Rate variable, from August to December 1985 are analyzed separately to amplify the devaluation. It is also important to note that, although the trade data includes various categories of rice-related products, "Rice, milled" meaning rice processed and ready for trade, is the focus of this research.

Table 1

Variable Specifications

Variable	Description	Unit	Data Type
Year	Year	Not applicable	Discrete
Monthly Exchange Rate	Monthly exchange rates in VND per USD	VND per USD	Monthly time series, continuous
Nominal Exchange Rate	Annual nominal exchange rates in standard VND per USD	Standard VND per USD	Annual time series, continuous
Real Exchange Rate	Annual real exchange rates calculated as annual nominal exchange rates multiplied by a ratio of the United States' Gross Domestic Product (GDP) deflator and Vietnam's GDP deflator	Not applicable	Annual time series, continuous
Export Quantity	Amount of "Rice, milled" exports	Tons	Annual time series, continuous
Real GDP	Real GDP values in standard VND with 2015 prices as the baseline	Million Standard VND	Annual time series, continuous
United States' GDP Deflator	GDP deflator values in USD with 2015 prices as the baseline reflecting both changes in prices and changes in the composition of the United States' GDP	USD	Annual time series, continuous
Vietnam's GDP Deflator	GDP deflator values in VND with 2015 prices as the baseline reflecting both changes in prices and changes in	VND	Annual time series, continuous

	the composition of the Vietnam's GDP		

Note. GDP deflators are used in the calculation of real exchange rates because consumer price index (CPI) data is unavailable pre-2000.

Methods

Structural Vector Autoregressive (SVAR) Model

This study investigates the impact of the 1985 devaluation of the Vietnam dong on rice export performance and employs a SVAR model to uncover the causal dynamics among key macroeconomic variables. The SVAR framework is particularly well-suited for this research context due to its ability to identify and isolate structural shocks, such as deliberate policy-induced exchange rate changes, within a multivariate system. In Vietnam's case, exchange rate movements, especially major devaluations like the one in 1985, are not the result of market-driven processes but instead stem from top-down government intervention. Given the managed nature of Vietnam's currency regime during the reform era, it is reasonable to treat exchange rate shocks as exogenous within the SVAR framework. This assumption allows for a clearer interpretation of their impact on trade outcomes, as it rules out reverse causality from exports to the exchange rate.

The SVAR model extends the traditional reduced-form Vector Autoregression (VAR) by imposing structural restrictions informed by economic theory or statistical properties of the data (Sims, 1980; Amisano & Giannini, 1997). These restrictions enable the identification of distinct, economically interpretable shocks rather than relying solely on correlation-based dynamics. Prior applications, such as Loría et al. (2010) on Mexico's exchange rate policy and Mao et al. (2021) on Chinese agricultural exports, demonstrate the effectiveness of SVAR models in capturing both short-term reactions and longer-term adjustments to currency changes. These studies also

highlight the importance of modeling exchange rate shocks as exogenous policy instruments, an insight that directly informs the approach taken here.

To empirically identify structural shocks, this study uses the Changes in Volatility (CV) method, a heteroskedasticity-based identification strategy proposed by Rigobon (2003). The CV method exploits known shifts in the volatility of structural innovations to recover the structural matrix without requiring contemporaneous restrictions. This is particularly appropriate in the Vietnamese context, where the 1985 devaluation represents a well-defined structural break in the economic regime. The assumption underpinning this method is that the statistical properties of the system, specifically, the variances of the shocks, change between stable periods and periods of structural adjustment. The *svars* package in R, presented by Lange et al. (2021), provides a reliable and flexible implementation of this identification technique.

By leveraging the CV method, the model is able to identify the exchange rate shock as a distinct structural innovation linked to the policy regime shift of 1985, rather than an endogenous response to economic performance. This approach ensures that the estimated impulse responses and historical decompositions reflect the causal impact of exchange rate policy on rice exports, rather than spurious correlations. Ultimately, the SVAR-CV framework aligns well with the institutional features of Vietnam's economy, the timing of the devaluation, and the research objective of understanding how externally imposed currency changes propagate through the agricultural trade system.

Structural Vector Autoregressive (SVAR) Model Implementation in R

All estimation is conducted in R using the *svars* package, which is specifically built for statistically identified SVAR models (Lange et al., 2021).

The SVAR model assumes the following form:

$$A_0 Y_t = A_1 Y_{t-1} + A_2 Y_{t-2} + \cdots + A_p Y_{t-p} + \varepsilon_t \tag{1}$$

In this model, Y_t is a vector of endogenous macroeconomic variables including the intended response variable Export Quantity, the intended impulse variable Real Exchange Rate, and the control variable Real GDP. A_0 is the matrix that encodes contemporaneous structural relationships between the variables and is the primary object of identification. ε_t is a vector of orthogonal structural shocks such that $Cov(\varepsilon_t) = I$.

The model is rewritten in the following reduced form:

$$Y_t = B_1 Y_{t-1} + B_2 Y_{t-2} + \cdots + B_p Y_{t-p} + u_t \tag{2}$$

In this form, $u_t = A_0^{-1} \varepsilon_t$ and $Cov(u_t) = \Sigma_u$. Estimating this model involves first fitting the reduced-form VAR to recover the residual covariance matrix Σ_u, followed by decomposing Σ_u to recover the structural innovations ε_t.

To identify the structural shocks, this study adopts a heteroskedasticity-based identification strategy, specifically the CV method developed by Rigobon (2003). This approach exploits exogenous shifts in the variance of the reduced-form residuals over known historical regimes, namely before and after the 1985 devaluation. Under this framework, the reduced-form error covariance matrix is allowed to differ across two volatility regimes, and the system is identified by assuming that the structural shocks have distinct relative variances in these periods. Compared to traditional theory-based restrictions, the CV method requires fewer subjective assumptions and is particularly suited for macroeconomic settings where structural breaks are associated with identifiable policy events, such as currency devaluations. Recent applications of this method in SVAR analysis such as Lütkepohl & Netsunajev (2017) and Herwartz & Plödt (2016) confirm its practical value and econometric soundness.

The strengths of the CV approach include its ability to identify and interpret structural shocks using empirically verifiable changes in volatility, without heavily relying on theoretical exclusion restrictions. It is well-suited for historical macroeconomic policy analysis, particularly when examining the effects of large policy shifts such as exchange rate regime changes. Furthermore, because the identification hinges on observable regime shifts, it offers robustness in small samples, which is especially valuable given the annual frequency of the data. However, there are limitations to acknowledge. The method assumes that volatility changes are exogenous and sufficiently distinct across regimes; if this assumption is violated, the structural decomposition may be invalid. In addition, identification based on heteroskedasticity may be sensitive to model specification and regime definition. Nevertheless, the CV method offers a theoretically sound and empirically tractable approach for this study, aligning well with the research objective of uncovering the structural impact of exchange rate devaluation on Vietnam's rice economy.

Analytical Process

The empirical analysis begins with data preprocessing in R. Separate datasets containing exchange rates, rice exports, and macroeconomic indicators are loaded and merged using consistent time identifiers. The resulting panel is reshaped into a wide time-series format to enable efficient transformation and modeling. Preliminary time-series visualizations are produced to explore trends in each variable and to highlight the 1985 devaluation as a potential structural break.

To ensure the validity of the econometric approach, the time series are first tested for stationarity. This step includes visual inspection through line plots, as well as formal statistical testing using the Augmented Dickey-Fuller (ADF) test. Non-stationary variables are differenced

accordingly to achieve stationarity. The resulting stationary series, confirmed via ADF test statistics, are then assembled into a multivariate time-series matrix suitable for VAR modeling.

Next, the optimal lag structure is determined using a combination of information criteria: Akaike Information Criterion (AIC), Hannan-Quinn Criterion (HQ), Schwarz Criterion (SC), and Final Prediction Error (FPE). These criteria balance model fit and parsimony to capture the appropriate dynamic interactions among variables. Based on this selection, a reduced-form VAR model is estimated as a benchmark.

The SVAR model is then identified using a recursive (Cholesky-type) short-run restriction, with the real exchange rate treated as a policy-induced exogenous shock. A structural break is imposed in 1985 to capture the institutional shift associated with Vietnam's exchange rate reform and market liberalization. Model estimation proceeds using the vars and *svars* packages in R.

Model results are analyzed through impulse response functions (IRF), which trace the dynamic effects of a one-time shock in the real exchange rate on rice exports. To further explore the transmission mechanisms, forecast error variance decomposition (FEVD) is conducted to assess the relative contribution of each shock to fluctuations in export performance. Historical decomposition plots are used to reconstruct the export time series based on structural shocks, and counterfactual simulations are implemented to isolate the impact of individual variables, particularly the real exchange rate, on export outcomes.

This approach integrates structural time-series modeling with economic history to quantify the effects of exchange rate policy on trade performance, while remaining sensitive to the specific institutional and macroeconomic context of Vietnam during its transition to a market economy.

Results

Data Visualization

Figure 1

Monthly Vietnam Dong (VND) Per United States Dollar (USD) Exchange Rates 1985
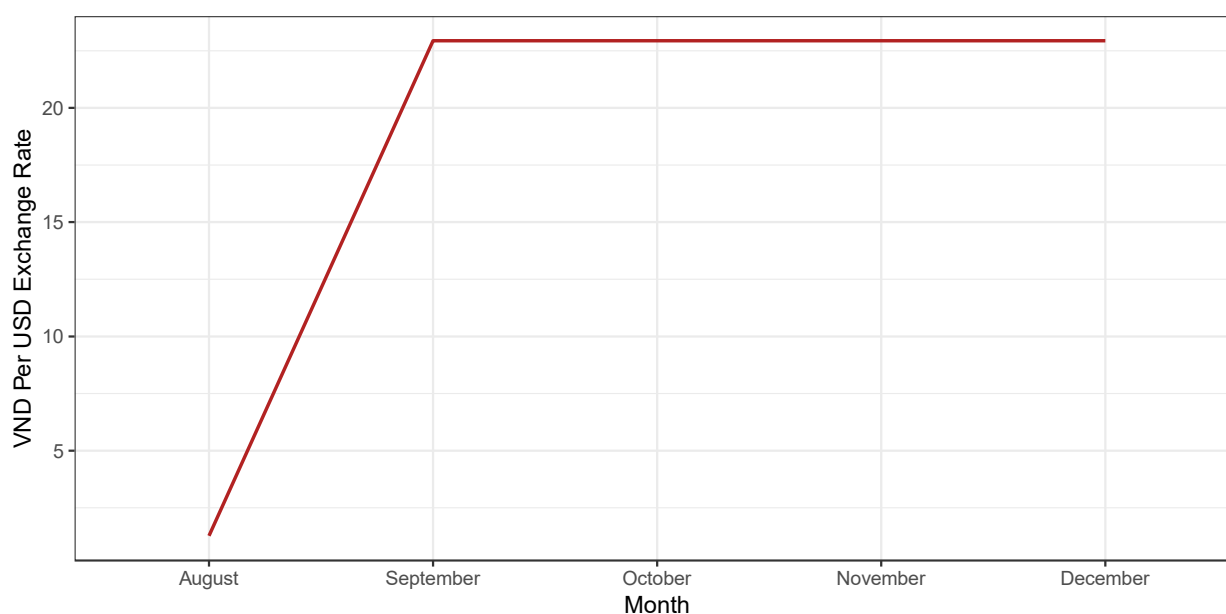
The graph illustrates the monthly exchange rates of the VND per USD in 1985, highlighting a significant devaluation of the Vietnamese currency. In August 1985, the official exchange rate stood at approximately 1 VND per USD. By September, this rate had sharply increased to nearly 23 VND per USD, indicating a more than twenty-fold rise in the cost of acquiring one U.S. dollar. This abrupt adjustment reflects a deliberate and substantial devaluation of the Vietnamese dong by state authorities. The exchange rate remained fixed at this higher level from September through December 1985, suggesting that the devaluation was implemented as a one-time corrective measure rather than part of a gradual depreciation strategy.

This policy shift occurred in the context of growing macroeconomic imbalances, including persistent inflation, trade deficits, and distortions arising from a dual exchange rate system. The devaluation aimed to realign the official exchange rate with the prevailing black-

market rate, restore export competitiveness, and prepare the economy for the broader structural reforms that would follow under the Doi Moi program initiated in 1986. By lowering the foreign currency price of Vietnamese goods, the devaluation was expected to stimulate exports, reduce reliance on imports, and improve the balance of payments. However, the weaker currency also raised the domestic cost of imported goods, likely intensifying inflationary pressures in the short run.

The graph captures a pivotal moment in Vietnam's economic history, marking a shift toward market-oriented policy tools. The 1985 devaluation represented not only a technical correction of the exchange rate but also a symbolic break from prior central planning orthodoxy. It laid the groundwork for Vietnam's subsequent transition to a more liberalized and globally integrated economic framework.

Figure 2

Nominal Vietnam Dong (VND) Per United States Dollar (USD) Exchange Rates 1975–2023
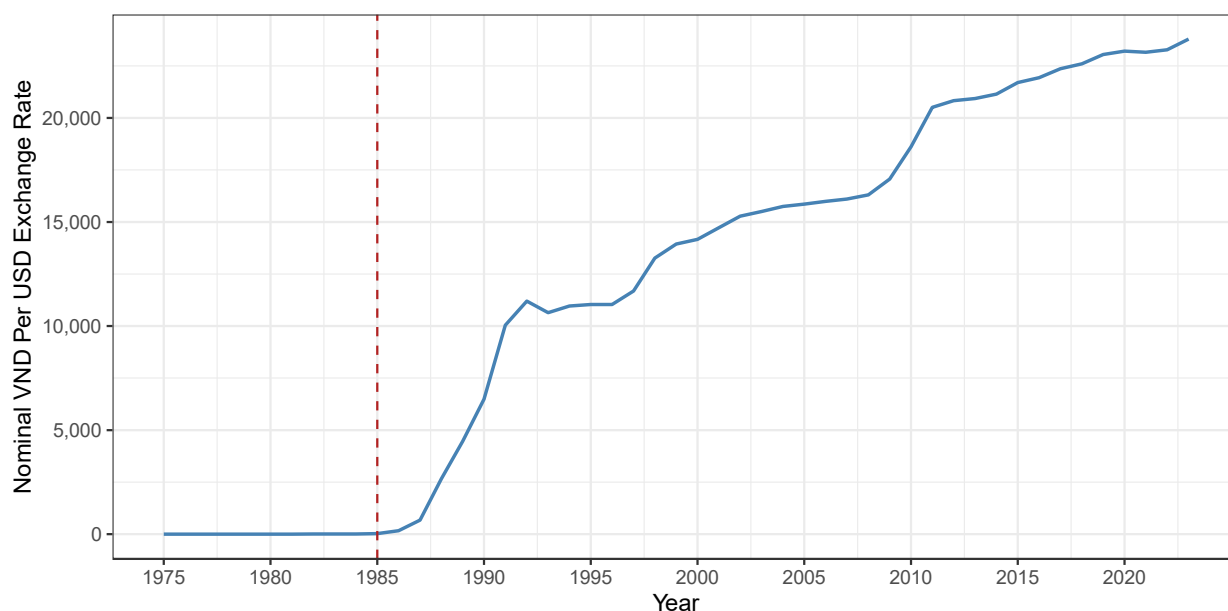
The graph displays the annual nominal VND per USD exchange rates from 1975 to 2023, highlighting the long-term evolution of Vietnam's exchange rate regime. From 1975 until the

mid-1980s, the exchange rate remained relatively stable and low, reflecting a fixed official rate consistent with Vietnam's centrally planned economic system. During this period, foreign exchange markets were heavily regulated, and multiple exchange rates operated simultaneously resulting in significant distortions.

The red vertical line marks the year 1985 which represents a pivotal moment in Vietnam's exchange rate history, as the government implemented a substantial devaluation of the dong in an effort to correct severe macroeconomic imbalances. In the late 1980s and early 1990s, the exchange rate continued to depreciate rapidly, indicating ongoing adjustments in response to market liberalization and structural reforms. The adoption of a more flexible exchange rate system during this period allowed Vietnam to gradually phase out the dual exchange rate regime. By the mid-1990s, the rate of depreciation began to moderate, and from the 2000s onward, the exchange rate followed a more gradual and managed depreciation path. This pattern suggests the implementation of a managed float regime, wherein the State Bank of Vietnam intervenes to guide the currency within a specified range.

The graph illustrates the transformation of Vietnam's exchange rate regime from a rigid, centrally determined system to a more flexible and market-aligned framework. The sustained depreciation of the dong over this nearly five-decade period reflects a combination of structural reforms, inflation differentials, external account adjustments, and policy efforts aimed at maintaining export competitiveness. The devaluation in 1985 stands out as a turning point that not only corrected distortions in the exchange rate system but also marked the beginning of Vietnam's integration into the global economy.

Figure 3

Real Vietnam Dong (VND) Per United States Dollar (USD) Exchange Rates 1975–2023
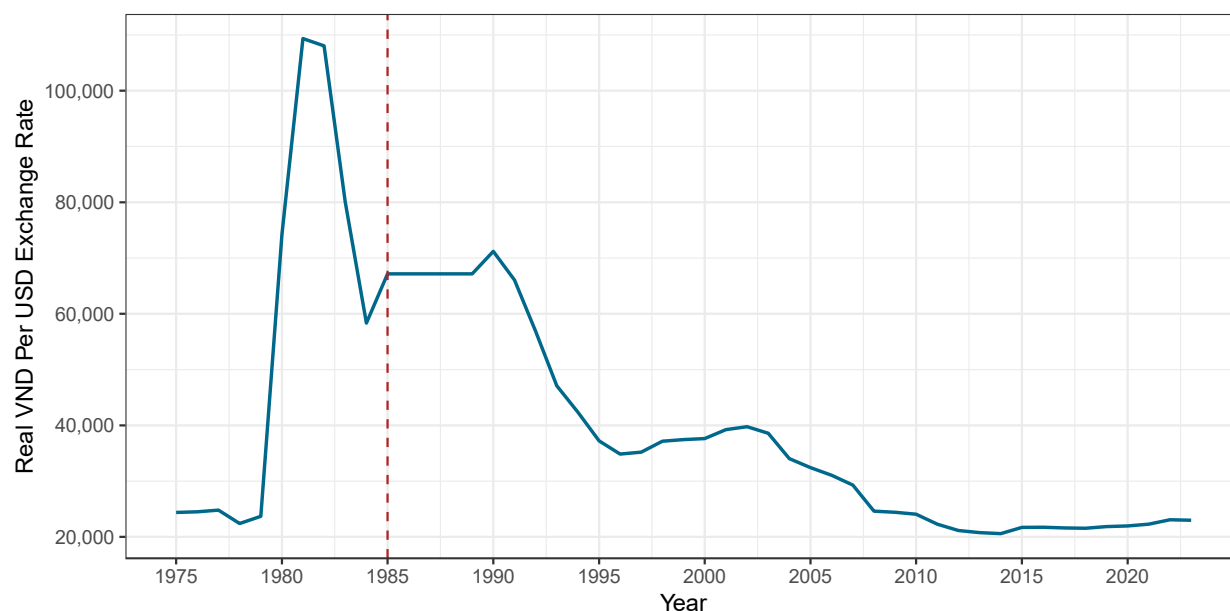
The graph presents the real annual exchange rates of the VND per USD from 1975 to 2023, adjusted using the GDP deflators of both Vietnam and the United States. In the years preceding 1985, the real exchange rate appears relatively stable but begins to surge in the early 1980s. This sharp increase reflects a rapid depreciation of the dong in real terms, which may have resulted from sustained domestic inflation and macroeconomic instability under Vietnam's centrally planned regime. The spike is indicative of growing pressure on the fixed exchange rate system, which became increasingly misaligned with market fundamentals and black-market rates. Another notable feature is the sharp decline then moderate increase in the lead-up to 1985, which marks Vietnam's official devaluation of the dong.

Following this devaluation, the real exchange rate stabilized at a much higher level than its pre-1985 average, signaling a structural change in currency policy aligned with the early stages of Vietnam's Doi Moi economic reforms. Post-1985, the trend shows a gradual but persistent real appreciation of the dong through the late 1980s and 1990s, likely driven by

inflation control and increased macroeconomic stability. From the 2000s onward, the real

exchange rate continued to decline steadily, reflecting slower inflation, improved monetary

policy, and continued export-oriented growth. This decline also suggests increasing price

competitiveness for Vietnam's goods in the international market, reinforcing the long-term

effects of structural reform.

The graph encapsulates the evolution of Vietnam's exchange rate regime, highlighting

the 1985 devaluation as a turning point that initiated broader macroeconomic liberalization. The

trajectory post-1985 reflects Vietnam's ongoing integration into global markets and its shift from

central planning to a managed floating exchange rate system under the Doi Moi reforms.

Figure 4

Export Quantities of Rice in Tons 1975–2023
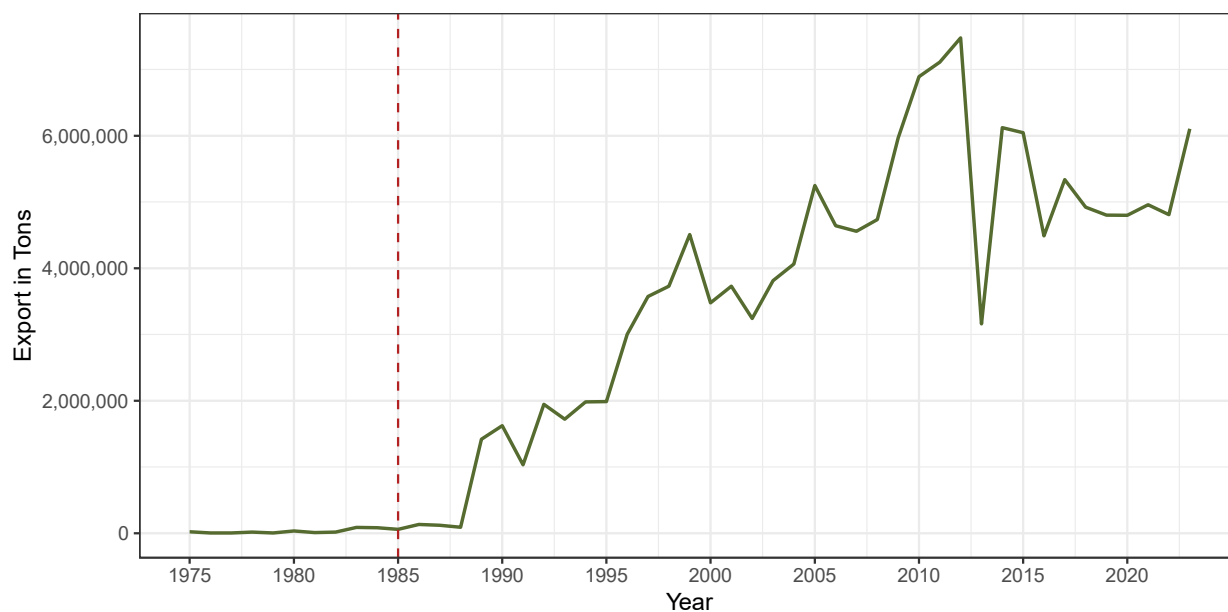
The graph displays the quantity of rice exports from Vietnam, measured in tons, over the

period 1975 to 2023. From 1975 through the mid-1980s, rice export volumes remained minimal

and largely stagnant. This trend reflects the constraints of Vietnam's centrally planned economy

during the post-reunification period, characterized by state control over agricultural production,

collective farming, and restricted participation in international trade. Agricultural output during this period was primarily directed toward domestic consumption, and institutional limitations hindered Vietnam's ability to engage in competitive global export markets.

A pronounced shift occurs a few years after 1985, as indicated by the red vertical line marking the year of Vietnam's major exchange rate devaluation. In the late 1980s, rice exports began to rise significantly, coinciding with the initiation of the Doi Moi reforms in 1986. These reforms liberalized agricultural markets, allowed for private trade in rice, and reduced state monopolies over export activity. The combination of price liberalization and greater exposure to world markets led to rapid gains in agricultural productivity and export capacity. As a result, rice exports increased substantially from the late 1980s onward, establishing Vietnam as one of the world's leading rice exporters by the 2000s.

From the 1990s through the early 2010s, rice exports exhibited a generally upward trajectory, although interspersed with fluctuations due to changing domestic policies, weather-related disruptions, and global market conditions. A peak in rice export volumes is observed in the early 2010s, after which a more volatile pattern emerges. This variation likely reflects increased sensitivity to international price movements, competition from other exporters, and adjustments in Vietnam's trade and agricultural strategies.

The graph underscores the transformative impact of the 1985 exchange rate devaluation and subsequent economic reforms on Vietnam's agricultural export performance. The shift from a stagnant, state-controlled trade regime to a market-oriented system enabled a sustained expansion in rice exports, contributing to broader economic growth and integration into global markets. This structural change highlights the critical role of macroeconomic liberalization in enhancing sectoral productivity and international competitiveness.

Statistical Tests

Table 2

Augmented Dickey-Fuller (ADF) Test Results

Variable	Differencing Order	ADF Statistic	Lag Order	p-value	Conclusion with 95% Confidence
Export Quantity	1	-4.3994	3	0.01	Stationary
Real Exchange Rate	0	-4.8928	3	0.01	Stationary
Real GDP	2	-3.5709	3	0.04554	Stationary

The ADF test results confirm the stationarity of the transformed time series used in the analysis, validating their inclusion in the SVAR model. Notably, the Real Exchange Rate variable is stationary, so no differencing is necessary.

For the Export Quantity variable, stationarity is achieved after first differencing. The ADF test produces a test statistic of –4.3994 with a p-value of 0.01 and a lag order of 3. Since the p-value falls below the 5% significance threshold, the null hypothesis of a unit root is rejected, indicating that the first-differenced export quantity series is stationary. This suggests that the series does not contain a persistent trend in its differenced form, making it appropriate for inclusion in time series modeling without risking spurious regression results.

In contrast, the Real GDP series required second differencing to reach stationarity. The ADF test on the twice-differenced series yields a test statistic of –3.5709 with a p-value of 0.04554, also at a lag order of 3. As this p-value is below the 5% threshold, the null hypothesis is again rejected, confirming that the Real GDP series is stationary after second differencing. This implies that the Real GDP variable is integrated of order two (I(2)), meaning it contains a more pronounced trend component than Export Quantity. Although Real GDP is not central to the main SVAR specification in this study, the result informs future modeling decisions, particularly

when incorporating macroeconomic control variables that may require higher-order transformations.

These results reinforce the methodological soundness of the SVAR model. Ensuring that the variables used are stationary is essential for accurate estimation and inference. The stationarity of the differenced Export Quantity and Real GDP series supports the reliability of the impulse response and variance decomposition analyses conducted in this research.

Table 3

Lag Order Selection Results

Lag	AIC(n)	HQ(n)	SC(n)	FPE(n)
1	82.89863	83.03397	83.26358	1.006223×10^{36}
2	82.30078	82.57146	83.03067	5.559056×10^{35}
3	82.19264	82.59866	83.28748	5.05168×10^{35}
Selected	3	2	2	3

The lag selection output presents the values of four common information criteria across lag lengths 1 through 3. Among these, AIC and FPE both select three lags, while HQ and SC select two lags. This divergence reflects the underlying priorities of each criterion: AIC and FPE prioritize minimizing forecast error and tend to favor more complex models, whereas HQ and SC apply stricter penalties for added model complexity to avoid overfitting.

While AIC and FPE suggest that a three-lag specification slightly improves model fit, the marginal improvements are minimal. Specifically, AIC decreases from 82.30078 at lag 2 to 82.19264 at lag 3, and FPE drops from 5.559056×10^{35} to 5.05168×10^{35}. These modest gains do not clearly justify the cost of estimating additional parameters, which can introduce inefficiencies, especially in smaller samples. In contrast, both HQ and SC, which are more conservative, select a two-lag model, highlighting that it provides a better balance between explanatory power and parsimony.

Choosing two lags is also consistent with best practices in time series modeling, where overly complex specifications may lead to issues such as multicollinearity, inflated standard errors, and reduced degrees of freedom. From an economic standpoint, a two-period lag structure is often sufficient to capture short-run dynamics in macroeconomic variables such as exchange rates and exports, particularly when working with annual data.

Therefore, despite the slightly better fit at lag 3, the two-lag specification is more appropriate in this context. It is supported by more conservative criteria, achieves a near-comparable fit, and helps maintain model interpretability and robustness.

Table 4

Granger Causality and Instantaneous Causality Test Results

Test Type	Null Hypothesis	Test Statistic	Degrees of Freedom	p-value	Conclusion with 95% Confidence
Granger Causality	Real Exchange Rate does not Granger-cause Export Quantity and Real GDP.	0.75127	df2 = 117	0.5591	Fail to reject null hypothesis
Instantaneous Causality	No instantaneous causality between Real Exchange Rate and Export Quantity and Real GDP	1.4366	df = 2	0.4876	Fail to reject null hypothesis

The Granger causality and instantaneous causality tests presented here assess whether the Real Exchange Rate has predictive power over export quantity and real GDP within the context of the VAR model named. The results indicate that Real Exchange Rate does not Granger-cause Export Quantity and Real GDP, as the F-statistic is 0.75127 with a p-value of 0.5591. Since the p-value is well above the 5% significance level, we fail to reject the null hypothesis. This means that lagged values of the real exchange rates do not provide statistically significant information for predicting future changes in export quantities or real GDP values in this model specification.

In addition to the Granger test, the analysis also includes a test for instantaneous causality, which evaluates whether there is contemporaneous correlation between Real Exchange Rate and the other two variables, after accounting for lagged effects. The chi-squared statistic for this test is 1.4366 with 2 degrees of freedom and a p-value of 0.4876. Again, this result is not statistically significant at the 5% levels, suggesting that no significant contemporaneous relationship exists between real exchange rates and export quantities or real GDP values.

Together, these findings imply that, in this particular VAR specification, real exchange rates do not exhibit a statistically significant dynamic or contemporaneous causal influence on rice exports or real GDP. This may reflect limitations in the model specification such as time aggregation effects from the use of annual data or structural factors that mute the direct effect of exchange rate movements. Nonetheless, this result stands in contrast to the SVAR findings, which did detect a meaningful structural response of exports to exchange rate shocks. This contrast further reinforces the value of using structural identification strategies like SVAR-CV to uncover economically meaningful relationships that may not be visible through reduced-form testing alone.

Analyses of Structural Vector Autoregressive (SVAR) Model Results

Figure 5

Impulse Response Function (IRF) Results
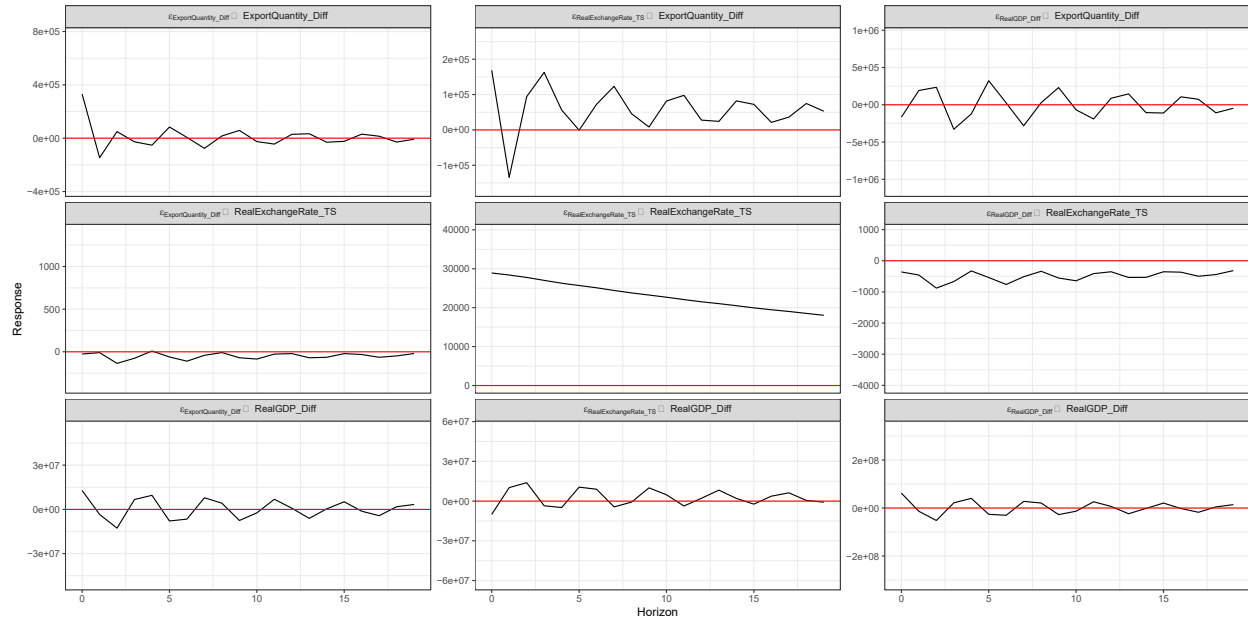
The IRF output provides insight into the dynamic interactions among the variables in the

SVAR model, with a particular emphasis on how shocks propagate through Vietnam's rice

export economy. Of primary interest is the response of Export Quantity to a shock in Real

Exchange Rate, shown in the middle plot of the first column. This graph captures the effect of a

real exchange rate depreciation, interpreted as a positive shock to the real VND per USD rate, on

rice export growth.

The plot reveals a positive and statistically significant response of rice exports to a real exchange rate shock in the first few periods. The black line representing the impulse response rises above the red zero baseline and remains outside the shaded confidence band, indicating that the effect is both positive and statistically reliable in the short term. This result aligns with classical trade theory, particularly the Marshall-Lerner condition, which suggests that a depreciation in the exchange rate enhances the price competitiveness of exports, thereby boosting export volumes. The sharp but short-lived nature of the response suggests that devaluation offers an effective but temporary stimulus to trade.

Over time, the effect dissipates and becomes statistically insignificant as the black line returns toward zero and the confidence interval widens. This pattern indicates that the positive export effect of depreciation is transitory, likely due to adjustment in global demand, capacity limitations in rice production, or offsetting domestic inflation. These dynamics reinforce the notion that while currency devaluation can provide a short-term boost to export performance, it is not a substitute for long-term productivity and structural reform.

The other IRF panels support this asymmetry. The response of the real exchange rate to export shocks, middle panel in the top row, is weak and statistically insignificant, with the impulse response fluctuating around zero within the confidence band. This supports the exogeneity assumption used in the SVAR model that exchange rate shocks are policy-induced rather than reactive to export performance.

Similarly, responses involving Real GDP are minimal across the board. Shocks to GDP do not meaningfully affect either exchange rates or exports, and GDP itself does not respond strongly to shocks from other variables. This suggests that, at least within the scope of this model, Vietnam's rice export dynamics are primarily driven by price competitiveness via exchange rate movements, rather than broader macroeconomic growth trends.

In sum, this IRF analysis validates the study's core hypothesis: real exchange rate depreciation significantly increases rice exports in the short run, confirming the effectiveness of devaluation as a policy lever. However, the short duration of this effect also underscores the importance of complementary reforms to sustain export growth beyond the initial impulse.

Furthermore, the weak response of the real exchange rate to export shocks, visible in the top-middle panel, suggests that the exchange rate remains largely insulated from trade dynamics, which supports the treatment of exchange rate shocks as exogenous within the SVAR framework. This aligns with the institutional reality of Vietnam's managed exchange rate regime, where currency adjustments are policy-driven rather than market-determined.

In summary, the IRF results validate the central claim of the study: currency depreciation can effectively boost export performance in the short run, but its lasting impact depends on broader macroeconomic and structural reforms. For countries like Vietnam, especially in the context of historical economic transitions, these findings highlight the importance of using exchange rate policy as part of a coordinated development strategy rather than as a standalone tool.

Figure 6

Forecast Error Variance Decomposition (FEVD) Results
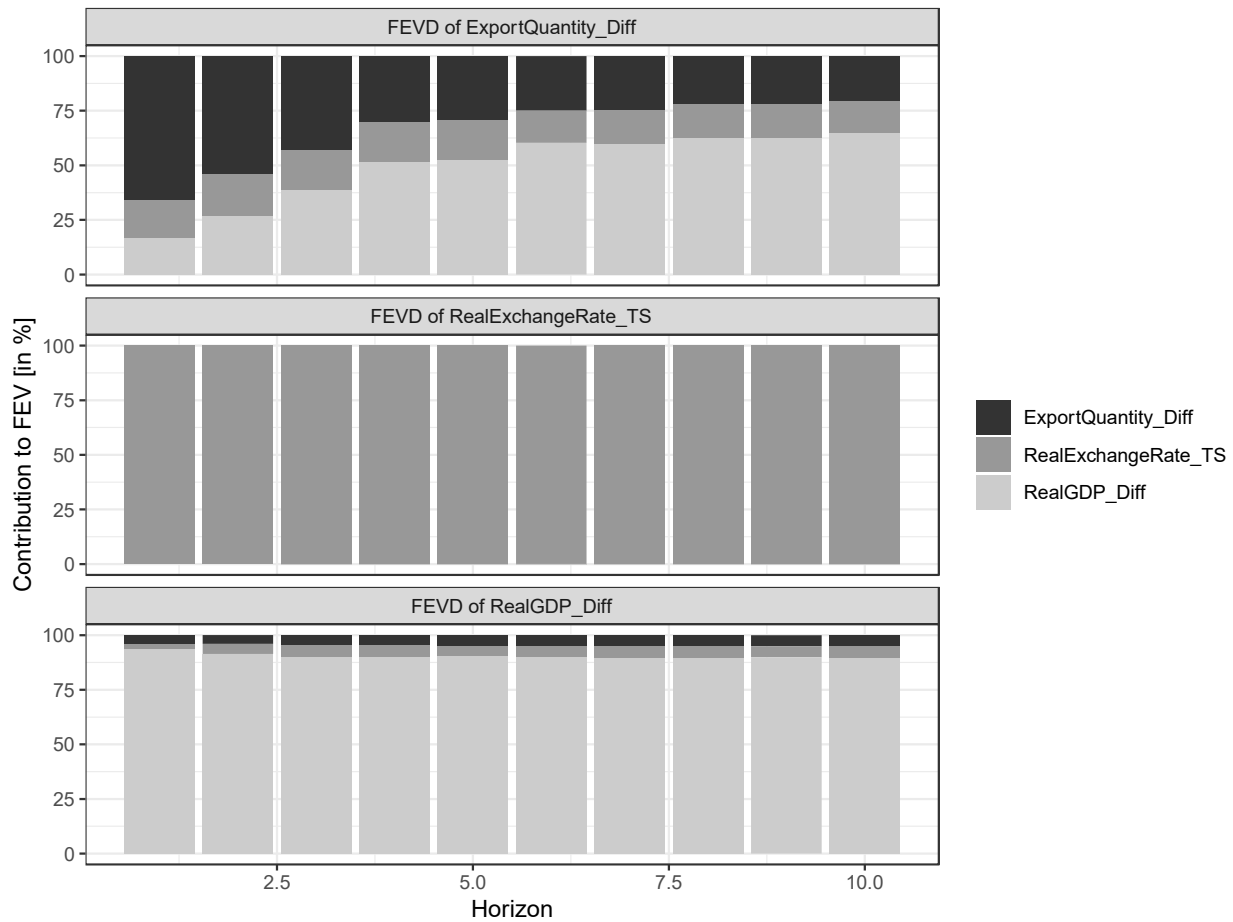
The FEVD output provides insight into the relative importance of structural shocks in explaining the variability of each variable over time. The decomposition is shown for Export Quantity, Real Exchange Rate, and Real GDP across a 10-period horizon.

In the top panel, which represents the FEVD of Export Quantity, the contribution of Real Exchange Rate shocks (dark gray) grows steadily over time. Initially, shocks to Export Quantity itself (black) dominate the variance, but by the 10th period, Real Exchange Rate shocks explain more than 40% of the variation in rice export growth. This confirms the earlier impulse response finding that exchange rate movements are a key driver of export dynamics in Vietnam.

Meanwhile, the contribution of Real GDP (light gray) remains minimal across all horizons, indicating that macroeconomic output plays a negligible role in short-run fluctuations of rice export volumes.

The middle panel, which shows the FEVD of Real Exchange Rate, demonstrates that exchange rate shocks are overwhelmingly self-driven. Real Exchange Rate accounts for nearly 100% of its own forecast error variance, with virtually no influence from export or GDP shocks. This supports the model's structural assumption that exchange rate changes in Vietnam during this period were policy-induced, exogenous, and not reactive to trade or growth outcomes.

In the bottom panel, Real GDP is similarly explained almost entirely by its own shocks, with little to no contribution from exports or exchange rate changes. This indicates that Vietnam's GDP fluctuations are largely independent of short-term changes in the rice export sector and exchange rate policy, at least within the scope of this bivariate trade-focused SVAR model.

Taken together, the FEVD results reinforce a core conclusion of the study: real exchange rate shocks are among the most influential structural drivers of rice export performance, particularly over medium-term horizons. They also confirm that both exchange rate and GDP dynamics are largely autonomous processes in this context, strengthening the interpretation of exchange rate policy as a powerful but isolated instrument for influencing trade outcomes.

Figure 7

Historical Decomposition Results
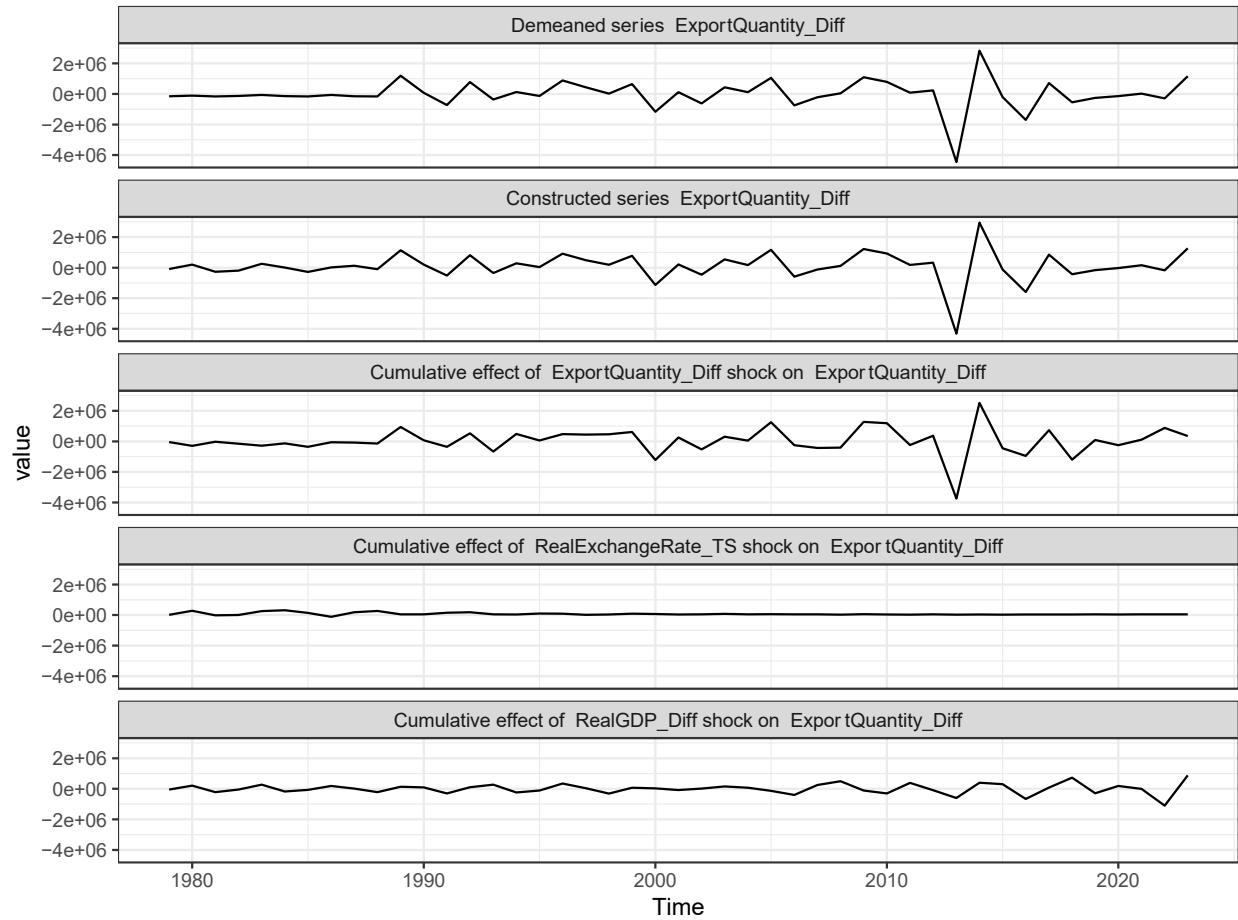
The figure displays the historical decomposition of Vietnam's rice export growth using a SVAR model. This decomposition isolates the cumulative effects of structural shocks from each variable, Export Quantity, Real Exchange Rate, and Real GDP, on the evolution of rice export growth over time.

The first panel shows the demeaned series of Export Quantity, which represents the actual historical export growth data with its mean removed. The second panel reconstructs this series using the SVAR model's identified structural shocks. The close alignment between the

demeaned and reconstructed series indicates a good model fit, suggesting that the SVAR specification successfully captures the major fluctuations in export growth.

The third panel illustrates the cumulative effect of export shocks on themselves. These own shocks account for the majority of the volatility in the export growth series, particularly during the sharp drop around 2008–2009, which aligns with the global financial crisis. This confirms the finding from the FEVD that export dynamics are heavily self-driven in the short run.

In contrast, the fourth panel shows the cumulative effect of real exchange rate shocks on export growth. The nearly flat line throughout the time period suggests that, despite exchange rate shocks having a statistically significant short-term effect in the impulse response analysis, their cumulative contribution is minimal when viewed over the full historical sample. This implies that although depreciation can boost exports temporarily, these shocks have not been the primary source of long-term trends or large fluctuations in Vietnam's rice export performance.

The fifth panel reports the cumulative effect of real GDP shocks on export growth, which also remains relatively small and stable over time. This finding reinforces earlier results that macroeconomic output shocks do not play a substantial role in shaping rice export dynamics, at least within the time frame and model structure employed.

This historical decomposition supports the conclusion that rice export growth in Vietnam has been driven primarily by idiosyncratic or sector-specific shocks, rather than structural changes in the real exchange rate or GDP. While exchange rate depreciation can offer short-term gains in export performance, sustained growth appears to depend more on export-specific factors such as production capacity, trade policy, or sectoral investment.

Figure 8

Counterfactual Analysis Results
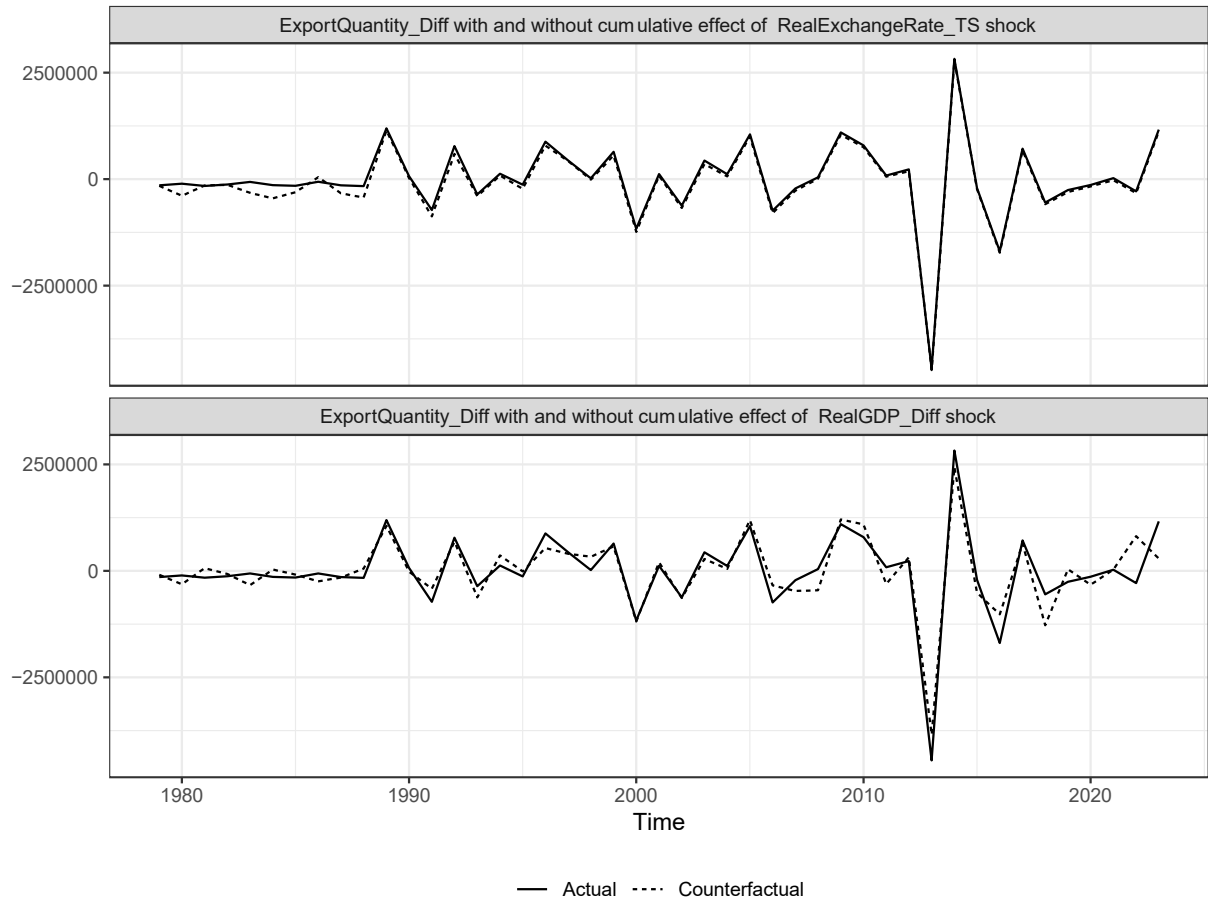
The figure presents a counterfactual analysis of Vietnam's rice export growth, evaluating

how exports would have evolved in the absence of structural shocks from real exchange rates

and real GDP. This type of analysis helps isolate the contribution of specific shocks to the

historical behavior of the target variable by comparing the actual series (solid line) to a

counterfactual series (dashed line) where the effect of one shock is removed.

In the top panel, the counterfactual removes the cumulative effect of real exchange rate

shocks. The actual and counterfactual export paths are nearly indistinguishable for most of the

period, indicating that real exchange rate shocks had limited cumulative influence on export

growth over time. This confirms earlier findings from the historical decomposition and FEVD that while real exchange rate shocks may produce short-run responses as seen in impulse response functions, their long-term contribution to export dynamics is minimal. Notably, during major export disruptions, such as the sharp drop during the 2008–2009 global financial crisis, the counterfactual path closely mirrors the actual one, implying that other shocks, not exchange rate policy, drove those export declines.

The bottom panel conducts the same counterfactual for real GDP shocks. Again, the actual and counterfactual lines remain closely aligned across the time series, with only minor deviations in the late 2000s and early 2010s. This reinforces the earlier conclusion that real GDP shocks exert negligible influence on rice export performance. The structural dynamics of rice exports appear largely immune to broader macroeconomic growth variations.

Taken together, this counterfactual analysis underscores a central insight of the study: Vietnam's rice export growth has not been significantly shaped by real exchange rate or GDP shocks in a cumulative sense. While exchange rate depreciation can deliver a short-term boost, long-run export performance depends more on factors such as supply-side improvements, sector-specific shocks, or policy interventions unrelated to macroeconomic volatility.

Conclusion

This study investigates the dynamic relationship between exchange rate movements and rice export performance in Vietnam, using a SVAR framework. The empirical evidence reveals a short-run but statistically significant positive response of rice export volumes to real exchange rate depreciation, affirming the theoretical expectation that weaker currencies enhance international price competitiveness. Conversely, shocks to export quantities do not meaningfully influence the exchange rate, reinforcing the view that Vietnam's exchange rate setting,

particularly during the post-reform period, has treated trade performance as largely exogenous to currency policy. These findings underscore that while exchange rate devaluation can stimulate export growth in the short term, its impact is transient and should not be overestimated.

The historical context enhances the empirical interpretation. The 1985 devaluation of the Vietnamese dong marked a decisive break from the distortions of a dual exchange rate system and the constraints of central planning. Paired with the sweeping Doi Moi reforms, this policy pivot liberalized agricultural trade and laid the groundwork for Vietnam's rise as one of the world's leading rice exporters. The long-term upward trend in rice exports post-1985 illustrates the combined power of macroeconomic stabilization, exchange rate realignment, and institutional reform in unlocking a country's export potential.

However, the analysis is not without limitations. The SVAR model, while effective in tracing structural shocks, depends on identifying assumptions that can be sensitive to model specification. The use of annual data restricts the ability to capture more granular short-run dynamics that may be evident in quarterly or monthly observations. Additionally, the current model does not include potentially influential variables such as rice prices or demand, each of which could mediate the transmission of exchange rate changes to export outcomes.

The policy implications are especially salient for Vietnam and other export-oriented developing economies. While the findings confirm that exchange rate devaluation can offer short-term gains in external competitiveness, they also highlight the limitations of relying solely on currency instruments to promote sustained export growth. In Vietnam's case, continued success in rice and broader agricultural exports will depend on complementary structural investments in irrigation and logistics infrastructure, productivity-enhancing technologies, and trade facilitation measures. These initiatives are particularly crucial given Vietnam's managed

float regime, which balances the need for competitiveness with macroeconomic and financial stability.

The relevance of these insights is heightened by shifting global trade dynamics. Vietnam's deep integration into global supply chains, coupled with growing protectionist pressures, limits the strategic space for currency depreciation. Aggressive devaluation could provoke trade countermeasures or deteriorate terms of trade if major partners perceive undervaluation as unfair competition. In this environment, price competitiveness alone may not guarantee market access. Thus, currency policy must be accompanied by robust trade diplomacy, institutional credibility, and diversification of export markets to mitigate geopolitical risks.

Future research should explore these dynamics further by incorporating higher-frequency data, additional macroeconomic controls, and disaggregated export flows by destination market. This would enable a more granular understanding of how exchange rate shocks propagate through different trade relationships and policy regimes. Comparative studies with other emerging agricultural exporters could also help identify common patterns and country-specific strategies in managing exchange rates for export competitiveness.

In conclusion, exchange rate policy, particularly devaluation, has played a meaningful but temporary role in enhancing Vietnam's rice export performance. Yet the country's enduring success in global agricultural markets has been anchored not by currency manipulation, but by structural reform, economic liberalization, and targeted investment. As Vietnam navigates an increasingly uncertain and protectionist global trade landscape, sustained export competitiveness will depend not only on prudent exchange rate management, but on the resilience, adaptability, and strategic governance of its export economy.

Appendix

GitHub Repository

https://github.com/elysianguyen/Markets-to-Fields.

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