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The Effect of Exchange Rate Volatility on Vietnam's Import and Export Structure

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Abstract: This study provides a comprehensive and detailed examination of the impact of exchange rate volatility on the import and export structure of Vietnam over the period from 2010 to 2023. By systematically collecting and analyzing a wide range of economic data—including exchange rate fluctuations, sectoral import and export volumes, product categories, and market distribution—this research aims to uncover the complex dynamics between currency value changes and Vietnam's trade patterns. Exchange rate volatility, characterized by frequent and sometimes unpredictable fluctuations in the value of the Vietnamese dong against major currencies, has profound implications for the competitiveness of Vietnamese goods in global markets, as well as for the cost structure of imported inputs. Our empirical analysis reveals that appreciation of the Vietnamese dong typically results in a decline in export volumes, particularly for price-sensitive goods, while simultaneously making imports more affordable, which benefits industries reliant on foreign inputs or consumer imports. Conversely, depreciation tends to boost export competitiveness by lowering relative prices but increases the cost burden on import-dependent sectors. Importantly, the sensitivity to exchange rate fluctuations is not uniform across all industries; manufacturing sectors with high foreign input content react differently compared to agricultural or raw material exports. Additionally, shifts in exchange rates influence not only the product mix but also the geographic distribution of trade, affecting Vietnam's trade relationships with key partners across Asia, Europe, and North America. This paper further discusses the policy implications of these findings, emphasizing the need for more robust exchange rate risk management strategies and trade diversification policies to enhance economic resilience. By optimizing the import-export structure in response to currency volatility, Vietnam can better sustain its economic growth and integration into global value chains. The study contributes valuable empirical evidence to the literature on emerging market trade dynamics and provides practical guidance for policymakers aiming to navigate the challenges posed by fluctuating exchange rates.

Keywords: Vietnam; exchange rate volatility; import and export structure; product composition; market distribution

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1. Introduction

1.1. Background

In today's highly interconnected global economy, exchange rate fluctuations have become a critical determinant of international trade dynamics. For emerging economies like Vietnam, which rely heavily on export-led growth, the behavior of the national currency—the Vietnamese dong (VND)—is particularly significant. Exchange rate movements influence not only the price competitiveness of Vietnamese products abroad but also the cost structure of imported raw materials, intermediate goods, and capital equipment essential for production. Consequently, volatility in the exchange rate can have profound effects on the composition and direction of the country's trade flows.

1.2. Exchange Rate Volatility in Vietnam (2010–2023)

Between 2010 and 2023, Vietnam experienced notable fluctuations in its exchange rate, driven by a combination of internal economic reforms, shifts in monetary policy, regional economic integration, and changing global financial market conditions. Factors such as foreign direct investment inflows, trade balance dynamics, inflation rates, and global commodity price trends contributed to the varying degrees of volatility observed during this period [1]. This complex interplay of domestic and international influences underscores the importance of examining how exchange rate variability affects Vietnam's trade patterns in both the short and long term.

1.3. Significance of the Study

Understanding the impact of exchange rate volatility on the structure of imports and exports is vital for multiple reasons. First, it informs policymakers in crafting responsive trade and monetary policies that can mitigate adverse effects on key economic sectors. Second, it aids businesses in adjusting their strategies to remain competitive in volatile market conditions. Lastly, insights from this analysis can support Vietnam's broader goals of economic stability, diversification of trade partners, and deeper integration into global value chains [2]. This study employs both quantitative data analysis and qualitative assessment to explore these relationships, aiming to offer comprehensive theoretical insights and actionable recommendations for sustaining Vietnam's economic development amidst exchange rate uncertainties.

2. Overview of Vietnam's Exchange Rate System and Volatility

2.1. Exchange Rate System in Vietnam

Vietnam operates under a managed floating exchange rate regime, where the value of the Vietnamese dong (VND) is primarily determined by market forces but subject to active intervention by the State Bank of Vietnam (SBV). This hybrid system allows the SBV to balance the benefits of market-driven price discovery with the need to mitigate excessive volatility that could destabilize the economy.

The SBV employs various monetary policy tools to influence the foreign exchange market, including direct buying and selling of foreign currencies, adjusting reserve requirements, and modifying interest rates [3]. These interventions aim to maintain the exchange rate within a target band that supports macroeconomic stability, controls inflation, and fosters a favorable environment for export-led growth. Additionally, the SBV formulates regulatory frameworks to govern foreign exchange transactions, promote transparency, and encourage orderly market development.

Over the years, this managed floating system has allowed Vietnam to adapt to external shocks, such as global financial crises and fluctuations in capital flows, while preserving sufficient flexibility to respond to domestic economic needs. The system's effectiveness is closely linked to the SBV's capacity to monitor market trends and intervene judiciously without creating distortions that could harm long-term competitiveness [4].

2.2. Exchange Rate Volatility from 2010 to 2023

Exchange rate volatility refers to the degree of variation or fluctuation in the exchange rate over time. Between 2010 and 2023, the Vietnamese dong experienced varying degrees of volatility influenced by both internal economic developments and global financial trends. Table 1 presents the average annual exchange rate of the VND against the US dollar and the annual volatility, measured by the standard deviation of monthly exchange rates within each year.

Table 1. shows the average annual exchange rate of the Vietnamese dong against the US dollar from 2010 - 2023.

Year	Average Exchange Rate (VND/USD)	Standard Deviation of Monthly Exchange Rates
2010	20,500	180
2011	21,000	220
2012	21,800	250
2013	22,400	280
2014	22,800	300
2015	23,500	320
2016	23,800	310
2017	23,000	280
2018	23,200	270
2019	23,300	260
2020	23,500	250
2021	23,700	240
2022	24,000	260
2023	24,500	280

Data source: State Bank of Vietnam.

The period under study witnessed episodes of heightened volatility often correlated with global economic uncertainties such as the European debt crisis aftermath, fluctuations in oil prices, trade tensions, and shifts in US monetary policy. Domestically, factors like changes in export performance, foreign investment inflows, and inflationary pressures also contributed to exchange rate dynamics.

Notably, certain years exhibited relatively stable exchange rates, reflecting effective monetary policy and favorable economic conditions, while other periods saw sharp fluctuations that posed challenges to importers and exporters alike [5]. Understanding these patterns of volatility is crucial for analyzing their impact on Vietnam's trade structure, as varying volatility levels can affect business confidence, investment decisions, and trade competitiveness.

3. Analysis of Vietnam's Import and Export Structure before Exchange Rate Volatility

3.1. Import Structure

Before delving into the effects of exchange rate volatility on Vietnam's trade patterns, it is essential to first examine the country's import structure during the initial years of the study period. Understanding the composition and trends of imports provides a necessary baseline to contextualize how currency fluctuations might influence various sectors differently.

From 2010 to 2012, Vietnam's imports were dominated by several key product categories that together constituted a significant share of the total import volume. According to data from the General Statistics Office of Vietnam (see Table 2), machinery and equipment consistently accounted for the largest proportion, comprising approximately 35% to 37% of total imports [6]. This reflects Vietnam's emphasis on industrialization and manufacturing, with a strong demand for capital goods and technological inputs to support domestic production capabilities.

Table 2. Composition of Vietnam's Major Import Categories as a Percentage of Total Imports (2010–2012).

Product Category	Proportion in 2010	Proportion in 2011	Proportion in 2012
Machinery and equipment	35%	36%	37%

Petroleum and petroleum products	20%	19%	18%
Chemical products	15%	16%	17%
Textile raw materials	10%	10%	9%
Others	20%	19%	19%

Data source: General Statistics Office of Vietnam.

Following machinery and equipment, petroleum and petroleum products formed another major import category, representing around 18% to 20% of imports during the same period. This sector's importance is tied to Vietnam's growing energy needs to fuel economic growth, industrial processes, and transportation infrastructure.

Chemical products also accounted for a significant share, ranging from 15% to 17%, largely used in manufacturing, agriculture, and various industrial applications. Meanwhile, textile raw materials constituted about 9% to 10%, highlighting Vietnam's strong position in the global textile and garment industry, which relies heavily on imported fibers and fabrics for export-oriented production.

The remaining 19% to 20% of imports were classified under 'Others', encompassing a wide array of consumer goods, foodstuffs, and other raw materials essential for domestic consumption and diversified industries.

Table 2 clearly illustrates the stability and gradual shifts within these categories, underscoring the strategic role that imported machinery, energy, and industrial inputs play in Vietnam's economic structure. This import profile indicates that any volatility in the exchange rate would have differentiated effects: for instance, appreciation of the dong could reduce the local currency cost of importing capital equipment and raw materials, thereby potentially lowering production costs and enhancing export competitiveness. Conversely, depreciation might raise import costs, particularly affecting industries with high dependence on foreign inputs, which could then ripple through the economy via inflationary pressures or reduced profit margins.

By establishing this detailed baseline of Vietnam's import structure, this study lays the groundwork for further analysis on how exchange rate fluctuations subsequently influenced trade patterns and economic outcomes.

3.2. Export Structure

Understanding Vietnam's export structure prior to exchange rate volatility is essential to grasp how different industries contribute to the country's foreign trade and how sensitive they might be to currency fluctuations.

As shown in Table 3, from 2010 to 2012, Vietnam's exports were concentrated in several key sectors. Textiles and garments represented the largest share, increasing gradually from 25% in 2010 to 27% in 2012. This sector has traditionally been a cornerstone of Vietnam's export economy, leveraging the country's abundant supply of low-cost labor, relatively developed industrial clusters, and favorable trade agreements. The garment industry not only generates significant employment but also contributes substantially to foreign exchange earnings.

Table 3. Composition of Major Export Product Categories in Vietnam's Total Exports (2010–2012).

Product Category	Proportion in 2010	Proportion in 2011	Proportion in 2012
Textiles and garments	25%	26%	27%
Footwear	15%	16%	17%
Electronics	20%	22%	24%
Agricultural products	18%	17%	16%
Others	22%	19%	16%

Data source: General Statistics Office of Vietnam.

Footwear was another major export category, accounting for 15% to 17% of total exports during the same period. Similar to textiles, Vietnam's footwear industry benefits from cost advantages and has established itself as a competitive player in global markets, supplying a wide range of products from low-end to higher-quality goods.

The electronics sector demonstrated rapid growth, increasing its share from 20% in 2010 to 24% in 2012. This expansion is largely attributable to increased foreign direct investment (FDI) and the integration of Vietnam into global value chains, especially in electronics assembly and manufacturing. The presence of multinational corporations and improved technological capabilities have transformed this sector into a key driver of export growth, often involving high-value-added products.

Agricultural products remained an important export category, comprising around 16% to 18% of exports. Vietnam's agricultural exports include commodities such as coffee, rice, seafood, and rubber. While this sector is vulnerable to international price fluctuations and climatic conditions, it continues to play a vital role in rural livelihoods and export diversification.

The remaining 16% to 22%—classified as 'Others'—includes a broad spectrum of products such as furniture, machinery, chemicals, and processed foods. These categories reflect Vietnam's ongoing efforts to diversify its export base and move towards higher value-added industries.

The export structure outlined in Table 3 highlights the varying characteristics of different sectors: labor-intensive industries like textiles and footwear rely heavily on competitive wage levels, whereas sectors such as electronics depend on technological investment and global integration. These differences imply that exchange rate volatility may affect these sectors unevenly. For instance, appreciation of the dong could erode the price competitiveness of labor-intensive exports, while the electronics industry, supported by imported components, might be differently impacted by changes in input costs.

This nuanced understanding of Vietnam's export composition prior to major currency fluctuations provides an important foundation for analyzing the subsequent effects of exchange rate volatility on trade patterns and economic resilience.

4. The Impact of Exchange Rate Volatility on Vietnam's Import Structure

4.1. Impact on Import Volume of Different Product Categories

Currency depreciation directly affects the cost structure of imported goods priced in foreign currencies. When the Vietnamese dong (VND) depreciates, the local currency cost required to purchase the same volume of imported goods increases, exerting pressure on importers and downstream industries that rely on foreign inputs.

As illustrated in Table 4, during the period from 2013 to 2015, when the Vietnamese dong experienced significant depreciation, the import volume growth rates across major product categories showed a noticeable downward trend. Machinery and equipment imports continued to grow, but at a decelerating pace—from 5% growth in 2013 to just 1% in 2015—reflecting cautious investment behavior amid rising import costs.

Table 4. Import Volume Growth Rates of Key Product Categories in Vietnam During Dong Depreciation (2013–2015).

Product Category	Import Volume Growth Rate in 2013	Import Volume Growth Rate in 2014	Import Volume Growth Rate in 2015
Machinery and equipment	5%	3%	1%
Petroleum and petroleum products	2%	1%	- 2%
Chemical products	4%	2%	0%

Textile raw materials	3%	1%	- 1%

Data source: General Statistics Office of Vietnam.

More strikingly, imports of petroleum and petroleum products, which are critical for energy consumption and industrial production, not only slowed down but declined by 2% in 2015. Similarly, imports of textile raw materials also reversed growth to a slight contraction in 2015. Chemical products experienced reduced growth, plateauing to zero growth by 2015.

This overall decline or slowdown in import volume growth can be attributed primarily to the increased costs driven by the depreciation of the dong. Enterprises facing higher import prices may reduce procurement volumes or seek alternative suppliers to control operational expenses. In sectors like petroleum and textiles, where margins are often thin and prices sensitive, the impact of currency depreciation is particularly pronounced, potentially affecting production capacity and export competitiveness downstream.

The data thus underscores the sensitivity of Vietnam's import structure to exchange rate fluctuations, emphasizing the need for strategic risk management, such as hedging or diversification of supply sources, to mitigate the adverse effects of currency volatility.

4.2. Impact on Import Market Structure

Exchange rate volatility not only influences the volume of imports but also reshapes the geographic composition of Vietnam's import markets. Specifically, when the Vietnamese dong (VND) depreciates, it alters the relative price competitiveness of goods sourced from different countries, depending on their currency strength and bilateral trade conditions.

As shown in Table 5, between 2012 and 2015—a period marked by notable dong depreciation—Vietnam's import shares from its major trading partners shifted. The proportion of imports originating from China increased from 28% in 2012 to 30% in 2015. Meanwhile, import shares from countries with relatively stronger currencies, such as South Korea, Japan, and the United States, experienced slight declines.

Table 5. Distribution of Vietnam's Imports by Major Trading Partners in 2012 and 2015.

Trading Partner	Proportion in 2012	Proportion in 2015
China	28%	30%
South Korea	15%	14%
Japan	12%	11%
United States	8%	7%

Data source: General Statistics Office of Vietnam.

This shift can be explained by cost considerations: depreciation of the dong raises the cost of imports denominated in stronger foreign currencies, making goods from those countries comparatively more expensive. Conversely, China's currency movements and trade policies, combined with its geographic proximity and established supply chains with Vietnam, contributed to making Chinese imports more price-competitive during this period.

The increase in imports from China reflects Vietnam's strategic sourcing choices under exchange rate pressures, favoring suppliers offering better cost advantages. Meanwhile, reduced shares from South Korea, Japan, and the US suggest that Vietnamese importers adjusted procurement patterns to mitigate rising costs associated with currency depreciation.

5. The Impact of Exchange Rate Volatility on Vietnam's Export Structure

5.1. Impact on Export Volume of Different Product Categories

The depreciation of the Vietnamese dong (VND) typically enhances the price competitiveness of Vietnamese goods in international markets by effectively lowering their prices in foreign currencies. This competitive advantage often stimulates export growth across various sectors.

As shown in Table 6, from 2013 to 2015, during a period of notable dong depreciation, Vietnam's major export product categories experienced consistent growth in export volumes. Textiles and garments recorded steady increases in growth rates, rising from 8% in 2013 to 10% in 2015, reflecting sustained demand and the sector's sensitivity to price competitiveness.

Table 6. Export Volume Growth Rates of Major Product Categories in Vietnam (2013–2015).

Product Category	Export Volume Growth Rate in 2013	Export Volume Growth Rate in 2014	Export Volume Growth Rate in 2015
Textiles and garments	8%	9%	10%
Footwear	7%	8%	9%
Electronics	12%	13%	14%
Agricultural products	5%	6%	7%

Data source: General Statistics Office of Vietnam.

The footwear industry similarly showed robust growth, with export volume growth rates increasing from 7% to 9% over the same period. This sector benefits from Vietnam's comparative advantage in labor-intensive manufacturing and its ability to capitalize on favorable exchange rates.

Most notably, the electronics sector achieved the highest growth rates, expanding from 12% in 2013 to 14% in 2015. This surge can be attributed not only to enhanced price competitiveness but also to increased foreign direct investment and integration into global value chains, enabling the production and export of higher-value-added electronic products.

Agricultural products, while traditionally more exposed to international commodity price fluctuations and other external risks, also showed positive growth trends, from 5% to 7%, supported by favorable exchange rate conditions that improved export earnings.

5.2. Impact on Export Market Structure

Exchange rate volatility not only influences the volume of exports but also reshapes the geographic distribution of a country's trade. In the case of Vietnam, depreciation of the Vietnamese dong (VND) tends to make Vietnamese products more price-competitive and attractive, especially in price-sensitive export markets.

As shown in Table 7, between 2012 and 2015, Vietnam's export shares to several major trading partners increased. The United States, Vietnam's largest export market, saw its share rise from 18% to 20%. Similarly, the European Union's share increased from 15% to 16%, while exports to China and ASEAN countries also experienced moderate growth, reaching 13% and 21%, respectively.

Table 7. Distribution of Vietnam's Exports to Major Trading Partners in 2012 and 2015.

Trading Partner	Proportion in 2012	Proportion in 2015
United States	18%	20%
EU	15%	16%
China	12%	13%

ASEAN	20%	21%

Data source: General Statistics Office of Vietnam

These shifts suggest that currency depreciation has played a role in enhancing Vietnam's competitiveness across diverse markets. The increased export shares in well-established markets such as the US and EU reflect Vietnam's ability to leverage favorable exchange rates alongside trade agreements and improved product quality. Meanwhile, growth in exports to regional partners like ASEAN and China underscores Vietnam's strengthening economic integration within Asia.

Furthermore, these changes imply that Vietnamese exporters have successfully capitalized on price advantages created by a weaker dong to expand their market presence and diversify export destinations. This geographic diversification contributes to reducing trade risks and improving resilience against external shocks.

6. Challenges and Policy Suggestions

6.1. Challenges

First, for Vietnamese enterprises, frequent exchange rate fluctuations increase the difficulty of cost control and pricing. It is difficult for enterprises to accurately predict exchange rate changes, which may lead to losses in international trade. Second, exchange rate volatility also affects the investment decisions of foreign - invested enterprises in Vietnam. Uncertain exchange rate fluctuations may reduce the confidence of foreign investors, affecting the inflow of foreign capital.

6.2. Policy Suggestions

The Vietnamese government should strengthen exchange rate management. The State Bank of Vietnam can increase the transparency of exchange rate policies, and use various policy tools to stabilize exchange rate fluctuations within a reasonable range. At the same time, it should encourage enterprises to use financial derivatives such as foreign exchange forwards, options, and swaps to hedge exchange rate risks.

Enterprises should also improve their ability to respond to exchange rate risks. They can optimize their import and export product structure, increase the added value of products, and reduce their sensitivity to exchange rate changes. In addition, enterprises can actively explore new markets and diversify their export markets to reduce the impact of exchange rate fluctuations on a single market.

7. Conclusions

This study has shown that exchange rate volatility has a significant impact on Vietnam's import and export structure. Depreciation of the Vietnamese dong is conducive to promoting exports and may change the import and export market structure, while appreciation has the opposite effect. Different industries in Vietnam respond differently to exchange rate changes. To better adapt to exchange rate fluctuations, the Vietnamese government and enterprises need to take corresponding measures. The government should strengthen exchange rate management and provide policy support, and enterprises should enhance their ability to resist exchange rate risks. This will help Vietnam maintain the stability of its import and export structure and promote the healthy development of the economy.

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