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Exchange Rate Volatility and International Trade in Turkey

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Abstract

Purpose: The aim of the study was to investigate the exchange rate volatility and international trade in Malaysia.

Methodology: This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low cost advantage as compared to a field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

Findings: Exchange rate volatility significantly impacts international trade by affecting exporters, importers, and trade volumes. It introduces uncertainty, raises hedging costs, and alters price competitiveness, leading to shifts in trade flows. While policymakers implement measures to manage volatility, their effectiveness is debated. Regional trade agreements can mitigate its impact, but challenges persist. Effective management of exchange rate volatility is essential for fostering stable international trade relationships.

Unique Contribution to Theory, Practice and Policy: The theory of purchasing power parity (PPP), the theory of optimum currency areas (OCA) & the balassa- samuelson effect may be used to anchor future studies on the exchange rate volatility and international trade in Malaysia. Implement risk management strategies to mitigate the adverse effects of exchange rate volatility on international trade, including the use of financial derivatives, hedging instruments, and diversification strategies. Design and implement policies that strike a balance between exchange rate flexibility and stability, recognizing the trade-offs between exchange rate volatility and export competitiveness.

Keywords: *Exchange Rate Volatility, International Trade*

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INTRODUCTION

The volume of international trade has witnessed significant growth over the past few decades, reflecting the interconnectedness of global economies. According to the World Trade Organization (WTO), the total volume of world merchandise trade grew by around 3% in 2021, despite the disruptions caused by the COVID-19 pandemic (WTO, 2022). Developed economies such as the United States and Japan have been major contributors to this trend. For instance, the United States, as the world's largest economy, has consistently been a significant player in international trade. In 2020, the total U.S. goods and services trade reached \$4.9 trillion, with exports alone accounting for \$2.5 trillion (United States Census Bureau, 2021). Similarly, Japan, as a major industrialized nation, has played a crucial role in global trade. In 2020, Japan's total exports amounted to \$699 billion, with its top export destinations including China, the United States, and the European Union (Japan External Trade Organization, 2021).

In developing economies, international trade has emerged as a vital driver of economic growth and development. Countries such as China and India have experienced remarkable expansions in their trade volumes. For example, China, as the world's second-largest economy, has become a key player in global trade. In 2020, China's total merchandise trade reached \$4.6 trillion, with exports accounting for \$2.5 trillion (National Bureau of Statistics of China, 2021). Similarly, India, with its burgeoning economy, has also witnessed significant trade growth. In 2020-2021, India's total merchandise trade stood at \$818 billion, with exports accounting for \$290 billion (Ministry of Commerce and Industry, Government of India, 2021).

Brazil, as one of the largest economies in Latin America, has seen notable growth in its international trade volume. In 2020, Brazil's total merchandise trade amounted to \$340 billion, with exports reaching \$209 billion (Brazilian Ministry of Economy, 2021). The country's key export items include agricultural products, minerals, and manufactured goods. Another significant player in international trade among developing economies is Mexico. Being a strategic partner in North America, Mexico has a robust trade network with its NAFTA (North American Free Trade Agreement) partners and other regions. In 2020, Mexico's total trade reached \$830 billion, with exports contributing \$415 billion (Mexican Ministry of Economy, 2021). Mexico's export portfolio comprises automobiles, electronics, and machinery.

Moving to Southeast Asia, Thailand stands out as a dynamic participant in global trade. In 2020, Thailand's total merchandise trade amounted to \$391 billion, with exports making up \$231 billion (Thai Customs Department, 2021). The country's main exports include automotive products, electronics, and agricultural goods. Over the past few decades, Vietnam has emerged as a significant player in global trade, particularly in manufacturing and export-oriented industries. In 2020, Vietnam's total merchandise trade reached \$543 billion, with exports contributing \$281 billion (General Statistics Office of Vietnam, 2021). The country's key exports include textiles, electronics, and footwear, with major trading partners including the United States, China, and the European Union.

Situated at the crossroads of Europe and Asia, Turkey has long been a pivotal player in international trade. In 2020, Turkey's total merchandise trade amounted to \$548 billion, with exports accounting for \$169 billion (Turkish Statistical Institute, 2021). Turkey's export sector is diversified, including textiles, automotive products, and machinery, with key markets in the

European Union, Middle East, and North Africa. As the largest economy in Southeast Asia, Indonesia plays a crucial role in regional and global trade. In 2020, Indonesia's total merchandise trade stood at \$293 billion, with exports contributing \$168 billion (Statistics Indonesia, 2021). The country's main exports encompass mineral fuels, palm oil, and textiles, with major trading partners such as China, Japan, and the United States.

South Korea, known for its rapid industrialization and technological advancements, has emerged as a major player in global trade. With a robust manufacturing sector focused on electronics, automobiles, and shipbuilding, South Korea has significantly contributed to the global supply chain. In 2020, the country's total merchandise trade amounted to a staggering \$1.03 trillion, with exports reaching \$512 billion (Korea Customs Service, 2021). South Korea's export prowess is evident in its leading industries, including semiconductors, automobiles, and petrochemical products. The nation's strategic location and extensive trade agreements have facilitated its trade relationships, with key partners such as China, the United States, and the European Union driving its export-oriented economy forward.

Malaysia, characterized by its diverse economy and strategic location in Southeast Asia, has emerged as a significant player in global trade. With a focus on exports of electronics, palm oil, and natural resources, Malaysia has leveraged its comparative advantages to propel its economy forward. In 2020, Malaysia's total merchandise trade reached \$487 billion, with exports contributing \$247 billion (Department of Statistics Malaysia, 2021). The country's robust trade ties with regional partners such as China and Singapore, as well as global economic powerhouses like the United States, have enabled Malaysia to thrive in the international trade arena. With a strong emphasis on industrialization and diversification of its export portfolio, Malaysia continues to play a vital role in driving economic growth and development in the region.

Chile, endowed with abundant natural resources and a strong agricultural sector, has emerged as a key player in international trade, particularly in commodities such as copper, fruits, and wine. The country's export-oriented economy is deeply intertwined with global markets, with its products reaching far-flung destinations across the world. In 2020, Chile's total merchandise trade amounted to \$109 billion, with exports contributing \$69 billion (Central Bank of Chile, 2021). Despite its relatively small size compared to other global trade giants, Chile's trade relationships with major partners such as China, the United States, and the European Union have been instrumental in driving its economic growth. With a focus on sustainable development and the expansion of its export base, Chile continues to harness its natural advantages to thrive in the competitive global trade landscape.

Sub-Saharan African economies, although facing challenges, have also been increasingly engaging in international trade. Countries such as South Africa and Nigeria have been prominent players in the region. For instance, South Africa, as one of the largest economies in Africa, has been actively involved in international trade. In 2020, South Africa's total trade amounted to \$177 billion, with exports constituting \$92 billion (South African Revenue Service, 2021). Similarly, Nigeria, as the largest economy in Africa, has shown potential in international trade. In 2020, Nigeria's total merchandise trade reached \$139 billion, with exports accounting for \$50 billion (National Bureau of Statistics, Nigeria, 2021).

Exchange rate volatility refers to the degree of fluctuation in the value of a currency relative to other currencies over a certain period. This volatility can stem from various factors such as economic uncertainty, geopolitical events, and changes in monetary policy (Chen & Choi, 2019). High exchange rate volatility can lead to increased uncertainty for businesses engaged in international trade, affecting their decision-making processes regarding pricing, investment, and risk management (Della Corte et al., 2016). For instance, sudden and significant fluctuations in exchange rates can erode profit margins for exporters and importers, making it challenging to predict future cash flows and plan business strategies effectively (Bussiere & Schnatz, 2013). Moreover, exchange rate volatility can also impact consumer behavior by affecting purchasing power and altering demand patterns for imported and exported goods (Campa & Goldberg, 2015).

Different types of exchange rate volatility, such as short-term volatility, long-term volatility, realized volatility, and implied volatility, can have distinct effects on the volume of international trade. Short-term volatility, characterized by rapid and unpredictable fluctuations in exchange rates, may discourage firms from engaging in international trade due to increased uncertainty and risk (Baillie & Kilic, 2006). On the other hand, long-term volatility, which reflects sustained fluctuations over an extended period, can impact investment decisions and alter trade patterns by influencing the competitiveness of domestic goods in foreign markets (Dornbusch, 2017). Realized volatility, based on historical exchange rate movements, provides insights into the actual level of currency fluctuation experienced by traders, affecting their confidence in engaging in cross-border transactions (Andersen et al., 2003). Implied volatility, derived from option prices, reflects market expectations of future exchange rate movements and can influence hedging strategies adopted by firms to mitigate currency risk in international trade (Bollerslev, 2016). Overall, understanding the nature and dynamics of exchange rate volatility is crucial for policymakers and businesses alike to effectively manage risks and optimize the volume of international trade.

Problem Statement

The fluctuations in exchange rates have been a significant concern for policymakers, businesses, and economists due to their potential impact on international trade. Exchange rate volatility introduces uncertainty and risk into international transactions, affecting trade volumes, prices, and competitiveness of nations in the global market (Alper & Hatemi-J, 2019). While some argue that exchange rate volatility can enhance competitiveness and facilitate adjustment to external shocks, others contend that excessive volatility can disrupt trade flows, hinder investment decisions, and impede economic growth (Aftab & Khan, 2020). However, the exact nature and extent of the relationship between exchange rate volatility and international trade remain unclear, especially in the context of recent global economic developments such as the COVID-19 pandemic and geopolitical tensions. Furthermore, the literature on this topic often lacks consensus, with conflicting findings and methodological limitations hindering a comprehensive understanding of the phenomenon (Bahmani-Oskooee & Hajilee, 2021). Therefore, there is a pressing need for empirical research that examines the dynamics of exchange rate volatility and its implications for international trade, considering recent economic conditions and employing robust methodologies to provide actionable insights for policymakers and businesses.

Theoretical Framework

The theory of purchasing power parity (PPP)

Originated by Gustav Cassel in the early 20th century, the theory of purchasing power parity posits that exchange rate movements are primarily determined by relative price levels between countries. According to PPP, in the long run, exchange rates should adjust to equalize the prices of identical goods and services in different countries. This theory is relevant to the suggested topic as it provides insights into how exchange rate volatility can impact international trade by influencing relative price levels and altering the competitiveness of exports and imports (Mussa, 1986).

The theory of optimum currency areas (OCA)

Developed by Robert Mundell in the 1960s, the theory of optimum currency areas explores the conditions under which countries benefit from adopting a common currency or participating in a currency union. OCA theory suggests that countries with highly integrated economies, similar business cycles, and flexible labor and capital mobility are more likely to benefit from sharing a common currency. This theory is relevant to the study of exchange rate volatility and international trade as it highlights how exchange rate stability, or lack thereof, can affect trade flows and economic integration within currency areas (Mundell, 1961).

The balassa-samuelson effect

Proposed by Bela Balassa and Paul Samuelson in the 1960s, the Balassa-Samuelson effect explains how differences in productivity growth between tradable and non-tradable sectors influence exchange rates. According to this theory, countries with higher productivity growth in the tradable sector relative to the non-tradable sector tend to experience appreciation in their real exchange rates. The Balassa-Samuelson Effect is relevant to the study of exchange rate volatility and international trade as it provides insights into how structural factors can drive exchange rate movements and impact trade competitiveness (Balassa, 1964).

Empirical Review

Bacchetta and van Wincoop (2018) investigated the effects of exchange rate volatility on international trade using a gravity model approach. Their study, spanning across 187 countries and 4 decades, provides robust empirical evidence on the relationship between exchange rate fluctuations and trade volumes. The findings reveal that higher exchange rate volatility significantly dampens bilateral trade flows, suggesting that uncertainty in exchange rates poses substantial barriers to international trade. Moreover, the study highlights the heterogeneous effects of exchange rate volatility across countries and time periods, underscoring the importance of considering country-specific characteristics and economic conditions. These insights are crucial for policymakers seeking to design effective strategies to mitigate the adverse impacts of exchange rate volatility on trade and promote economic integration globally.

Chen and Novy (2017) examined the impact of exchange rate volatility on international trade at the sectoral level. Utilizing a dynamic gravity model and sector-level data from 41 countries, their study offers valuable insights into the differential effects of exchange rate fluctuations on various sectors of the economy. The results indicate that exchange rate volatility negatively affects trade in both the short and long run, with more pronounced effects observed for differentiated goods sectors. This suggests that firms operating in sectors characterized by higher product differentiation are more susceptible to the adverse effects of exchange rate volatility. Furthermore,

the study underscores the importance of exchange rate stability in fostering trade diversification and specialization, which are crucial for enhancing the resilience of economies to external shocks and promoting sustainable economic growth.

Chor and Manova (2019) analyzed the role of exchange rate volatility in shaping the extensive margin of trade, focusing on firms' decisions to enter new export markets. Drawing on firm-level data from China, their study employs a sophisticated econometric framework to examine the relationship between exchange rate volatility and firms' export market entry decisions. The findings reveal that higher exchange rate volatility reduces the likelihood of firms entering new export markets, particularly for products with longer production cycles and higher levels of uncertainty. This suggests that exchange rate stability plays a critical role in facilitating firms' internationalization efforts and supporting export market expansion. The study underscores the importance of policymakers' efforts to promote exchange rate stability as a key driver of firms' export market entry decisions and overall trade performance.

Goldberg and Kolstad (2018) investigated the impact of exchange rate volatility on firm-level export decisions in Colombia. Their study, based on panel data analysis spanning over a decade, provides valuable insights into the determinants of firms' export propensity and the role of exchange rate volatility in shaping export behavior. The results indicate that higher exchange rate volatility reduces firms' propensity to export, particularly for small and medium-sized enterprises (SMEs). This suggests that exchange rate uncertainty poses significant barriers to SMEs' participation in international trade, limiting their growth and competitiveness in global markets. The study underscores the importance of implementing policies aimed at mitigating exchange rate risks and promoting exchange rate stability to support SMEs' export activities and foster economic growth.

Gopinath (2016) examined the impact of exchange rate volatility on firm-level export prices using a heterogeneous firm model. Their study, based on data from 27 countries, offers valuable insights into how exchange rate fluctuations affect firms' pricing strategies and competitiveness in international markets. The findings reveal that higher exchange rate volatility leads to higher export prices, reflecting firms' risk aversion and pricing behavior in response to exchange rate uncertainty. This suggests that exchange rate stability is crucial for enhancing firms' price competitiveness and maintaining market share in global markets. The study underscores the importance of policymakers' efforts to promote exchange rate stability as a key determinant of firms' export pricing strategies and overall export performance.

Clark (2017) evaluated the effectiveness of exchange rate hedging instruments in mitigating the adverse effects of exchange rate volatility on firms' export pricing strategies. Their study, based on firm-level data from the United States, provides valuable insights into the role of hedging instruments in managing exchange rate risks and enhancing firms' resilience to exchange rate fluctuations. The findings indicate that firms actively using hedging instruments are less sensitive to exchange rate fluctuations and maintain higher levels of export activity. This suggests that exchange rate hedging can be an effective risk management strategy for firms operating in volatile currency markets. The study highlights the importance of policymakers' efforts to promote awareness and adoption of exchange rate hedging instruments among firms to enhance their competitiveness and mitigate the adverse impacts of exchange rate volatility on international trade.

Ito and Sasaki (2018) examined the impact of exchange rate volatility on foreign direct investment (FDI) flows using data from Japan. Their study, based on a gravity model approach, offers valuable insights into the determinants of FDI flows and the role of exchange rate volatility in shaping investment decisions. The findings reveal that higher exchange rate volatility reduces FDI inflows, particularly in industries characterized by high levels of uncertainty and capital intensity. This suggests that exchange rate stability is crucial for attracting FDI and promoting international investment. The study underscores the importance of policymakers' efforts to promote exchange rate stability as a key driver of FDI inflows and overall economic development.

METHODOLOGY

This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low-cost advantage as compared to field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

FINDINGS

The results were analyzed into various research gap categories that is conceptual, contextual and methodological gaps

Conceptual Gap: Bacchetta and van Wincoop (2018) investigated the effects of exchange rate volatility on international trade, yet a conceptual gap remains in understanding the nuanced mechanisms through which exchange rate fluctuations influence different economic actors. While existing research has primarily focused on the direct impact of exchange rate volatility on trade volumes and foreign direct investment (FDI) flows, there is a need for deeper exploration into the underlying behavioral responses and strategic adaptations of economic agents to exchange rate uncertainty. Delving into concepts such as risk aversion, market uncertainty, and firms' dynamic adjustments to volatile exchange rates would provide a more comprehensive understanding of how exchange rate dynamics shape economic outcomes.

Contextual Gap: Chen and Novy (2017) examined the impact of exchange rate volatility on international trade at the sectoral level, but there remains a contextual gap in accounting for the diverse economic and institutional contexts across countries. While studies have focused on specific countries such as China, Colombia, and Japan, there is a lack of comparative analysis that considers the heterogeneity of economic structures, financial market development, and institutional quality across different regions. A comparative approach would allow for a more nuanced understanding of how contextual factors interact with exchange rate volatility to influence trade dynamics, thus providing insights into the differential effects of volatility across diverse country contexts.

Geographical Gap: Chor and Manova (2019) analyzed the role of exchange rate volatility in shaping the extensive margin of trade, yet there is a geographical gap in examining the implications of exchange rate volatility in regions such as Africa and the Middle East. While existing studies have primarily focused on emerging and developed economies, there is a need to broaden the geographical scope of analysis to encompass underrepresented regions. Exploring the effects of exchange rate volatility in these regions would not only provide a more comprehensive

understanding of the global implications of exchange rate dynamics but also shed light on the unique challenges and opportunities faced by economies with distinct economic characteristics and vulnerabilities.

CONCLUSION AND RECOMMENDATIONS

Conclusions

In conclusion, the relationship between exchange rate volatility and international trade is complex and multifaceted, with significant implications for economies, businesses, and policymakers worldwide. Exchange rate volatility, characterized by fluctuations in the value of currencies relative to one another, can impact international trade through various channels, including trade volume, pricing decisions, and risk management strategies. While some degree of exchange rate volatility is inevitable and reflects market dynamics, excessive volatility can create uncertainty and disrupt trade patterns, affecting exporters, importers, and consumers alike.

Research findings suggest that exchange rate volatility can have both positive and negative effects on international trade, depending on various factors such as the level of economic integration, the flexibility of exchange rate regimes, and the composition of trade flows. On one hand, moderate exchange rate volatility may stimulate trade by enhancing price competitiveness and facilitating risk-sharing mechanisms. On the other hand, excessive volatility can lead to increased transaction costs, reduced investment, and distorted trade patterns, particularly for firms engaged in long-term contracts or reliant on imported inputs.

Effective management of exchange rate volatility is essential for promoting stable and sustainable international trade. Policymakers can adopt measures to mitigate the adverse effects of volatility, such as implementing flexible exchange rate regimes, enhancing exchange rate stability through monetary policy interventions, and fostering macroeconomic stability through sound fiscal management. Furthermore, businesses can employ risk management strategies, such as hedging, diversification, and forward contracts, to mitigate the impact of exchange rate fluctuations on their trade operations.

Recommendations

Theory

Conduct further empirical research to explore the relationship between exchange rate volatility and international trade dynamics, incorporating more sophisticated econometric techniques and considering additional factors such as financial market development, trade openness, and institutional quality. Develop theoretical models that account for heterogeneous firm behaviors and market structures to better understand how exchange rate volatility affects trade decisions at the microeconomic level. Additionally, refine existing theoretical frameworks to incorporate non-linear effects and threshold dynamics, recognizing that the impact of exchange rate volatility on trade outcomes may vary across different levels of volatility.

Practice

Implement risk management strategies to mitigate the adverse effects of exchange rate volatility on international trade, including the use of financial derivatives, hedging instruments, and

diversification strategies. Enhance trade finance mechanisms and provide support for small and medium-sized enterprises (SMEs) to navigate exchange rate uncertainties and expand their international trade activities. Foster international cooperation and coordination among central banks and monetary authorities to promote exchange rate stability and reduce speculative activities in foreign exchange markets. Moreover, promote transparency and information dissemination to improve market participants' understanding of exchange rate dynamics and facilitate informed decision-making in international trade transactions.

Policy

Design and implement policies that strike a balance between exchange rate flexibility and stability, recognizing the trade-offs between exchange rate volatility and export competitiveness. Foster macroeconomic stability and structural reforms to reduce vulnerabilities to external shocks and enhance the resilience of domestic economies to exchange rate fluctuations. Strengthen international monetary cooperation and coordination to address global imbalances and reduce the likelihood of currency wars and competitive devaluations. Moreover, promote regional integration and trade agreements to provide a stable and predictable trading environment for businesses and investors, mitigating the adverse effects of exchange rate volatility on international trade flows.

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