

Exchange Rate Volatility, Bilateral Trade, and Investment in Association of Southeast Asian Nations from 2000 to 2021

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Abstract

The purpose of the study was to investigate the relationship between exchange rate volatility and macroeconomic indicators of trade and investment between countries in the Association of Southeast Asian Nations (ASEAN) region. Data was collected from UNCTAD STAT, Refinitiv Eikon, World Bank, and the CEPII Gravity database for nine ASEAN countries (excluding Myanmar) (2000-2021). Additional data was added from the Chinn-Ito index of economic openness and OECD foreign direct investment restrictiveness index. A gravity model was constructed to investigate the effects of real exchange rate volatility on bilateral trade (net imports) and bilateral net inward foreign direct investment (FDI). Fixed-effects panel analysis was conducted in GRETL. The study is the only identified research on the macroeconomic effects of exchange rate volatility on bilateral macroeconomic relationships in ASEAN. It contributes to a mixed literature on the empirical effects of exchange rate volatility on macroeconomic indicators and bilateral macroeconomic relationships at the regional level. The study could not include Myanmar due to data unavailability. The time period was also limited due to data availability. The findings imply that the impact of exchange rate volatility on macroeconomic indicators is country-specific, with a variety of effects observed. Therefore, exchange rate volatility may act in concert with other factors, rather than on its own. Exchange rate volatility had significant negative effects on bilateral trade for five countries. Exchange rate volatility had significant negative effects on net inward FDI flows for seven countries.

Keywords

Regional Trade, ASEAN, Bilateral Investment, Bilateral Trade, Exchange Rate Volatility

1. Introduction

The Association of Southeast Asian Nations (ASEAN) was originally founded in 1968 and now includes a total of ten countries (Macdonald, 2019). The ASEAN Agreement has undergone gradual change, with increasingly close economic and social ties between countries culminating in the 2015 ASEAN Economic Community (AEC) Agreement, whose ultimate aim is to create a single market through economic cooperation and co-development (Macdonald, 2019). The countries of ASEAN are socially and economically diverse. They range in size from Brunei Darussalam (population 437,480 as of 2020) to Malaysia (population 275.23 million) (World Bank, 2023). Economically, countries range as well; Cambodia (GDP per capita \$4192 as of 2020) is the lowest-income country in the region, while Singapore (GDP per capita \$93,397 as of 2020) is one of the wealthiest countries in the world (World Bank, 2023). Thus, despite the economic unifying goals of the AEC, the countries within the ASEAN region are very different from one another. These differences are known to inhibit regional trade to some extent (Doanh et al., 2022).

The purpose of this research was to investigate the effects of exchange rate volatility on the bilateral economic relationships between ASEAN countries. One of the ways in which countries in ASEAN differ from one another is in their monetary policy, including exchange rate policies. While several countries, including Brunei, Singapore, and Vietnam, use various pegged exchange rate policies, others use managed floating or free-floating exchange rates (International Monetary Fund, 2021). Differences in exchange rate policies are known to result in substantial differences in exchange rate volatility (Frieden, 2015). Thus, this policy difference between countries could have a significant effect on external macroeconomic relationships.

Exchange rates, particularly exchange rate volatility, is viewed theoretically as a risk factor in international trade under various classical theories including exchange rate hysteresis (Baldwin, 1989), exchange rate misalignment (Baldwin & Lyons, 1994), price volatility (Gali & Monacelli, 2005), and merchant risk aversion (Viaene & de Vries, 1992), as well as dynamic equilibrium trade models (Sercu & Uppal, 2003). However, these theoretical explanations are not firmly grounded. Attempts to investigate the effects of exchange rates and exchange rate volatility empirically have found mixed effects as well. Furthermore, meta-analyses on international trade (Bouoiyour & Selmi, 2016; Haile & Pugh, 2013; Ozturk, 2006) and FDI (Li, Owen, & Mitchell, 2018; Moraghen, Seetanah & Sookia, 2019) have routinely remarked on the inconsistent data, geographies, methodologies, and theoretical foundations of such studies. In reviewing studies for this research, it was found that the evidence on regional bilateral relationships was particularly weak, with most studies focusing either on single-country pairs or conversely, global analyses. Thus, this study seeks to contribute a better empirical understanding of the role of exchange rate volatility in bilateral trade and investment relationships at the regional level, focusing on ASEAN.

2. Literature Review

2.1. Exchange Rates and Exchange Rate Volatility

Exchange rates can be defined as the value of a domestic currency in terms of one or more international currencies (Moosa & Bhatti, 2010). Bilateral exchange rates, representing the exchange between two currencies, can be measured either using a nominal measure or a real (or price-level adjusted) measure (Evans, 2011). Exchange rates can also be expressed as an effective exchange rate, which represents the exchange rate of a domestic currency against a basket of exchange rates, typically including major trading partners (MacDonald, 2007). Nominal effective exchange rates (NEER) are calculated without price level adjustment, while real effective exchange rates (REER) are calculated using price level adjustment (MacDonald, 2007).

Exchange rate volatility is defined as the interperiod variance in exchange rates within a currency pair (Gali & Monacelli, 2005). Exchange rate volatility is typically associated with exchange rate regimes; fixed exchange rate policies are associated with low levels of exchange rate volatility, while intermediate and floating regimes are associated with higher exchange rate volatility levels (Frieden, 2015). Inflation-targeting regimes, which adjust exchange rates in order to control domestic inflation, are also associated with higher exchange rate volatility (Ouyang et al., 2016). Exchange rate volatility also varies across time horizons, even in the absence of policy changes, with short-run volatility typically being more predictable than long-run volatility (Marston, 1987). There are also local conditions that can play a role in exchange rate volatility, particularly dual exchange rate policies, heavy trading in informal exchange, and dollarized economies (Evans, 2011). Thus, while there are some generally well-understood causes of exchange rate volatility, there can also be a lot of variation between countries and time periods. Furthermore, the evidence of macroeconomic effects of real exchange rates and exchange rate volatility is mixed, although overall, there are signs that REER depreciation does contribute to economic growth, particularly in developing countries (Ridhwan et al., 2024). This research was concerned with the effect of exchange rate volatility on two macroeconomic trade relationships: bilateral trade and bilateral investment.

2.2. Exchange Rate Volatility and Bilateral Trade

There have been several theories which have been used to address a potential relationship between exchange rate volatility and international trade flows. The classical theory of exchange rate hysteresis proposes that there is a feedback effect between exchange rates and trade flows, with firm entry through trade feeding back into exchange rates (Baldwin, 1989). Misaligned exchange rate policies—for example, the use of a fixed exchange policy when a floating exchange policy would be better to achieve economic growth under the country's current conditions have also been proposed as a theoretical explanation (Baldwin & Ly-

ons, 1994). It has also been proposed that the higher variability of the real price of goods under floating exchange rate policies could create short-run uncertainty (Gali & Monacelli, 2005) and merchant risk aversion (Viaene & de Vries, 1992), thus inhibiting trade. The dynamic equilibrium model (Sercu & Uppal, 2003) has also been used to explain the feedback effect of exchange rate volatility into the complex macroeconomic system. However, none of these theories has been fully accepted, particularly given the mixed empirical evidence.

Previous studies have provided some empirical support for an influence of exchange rate volatility on international trade flows. One meta-analysis found generally negative effects of exchange rate volatility on trade flows, although these findings were very mixed (Ozturk, 2006). These findings were supported by a later and more extensive meta-analysis (Haile & Pugh, 2013), as well as a meta-regression (Bouoiyour & Selmi, 2016). There have also been a few studies from East Asia and the ASEAN region, which have had mixed findings. One of these studies examined ASEAN-4 countries (Indonesia, Malaysia, Singapore, and Thailand), using data from each country's five largest trade partners (Soleymani et al., 2017). The authors found a short-run negative effect on both export and import flows. Another study, which examined Thailand and its 20 largest trading partners, found a negative long-run effect of exchange rate volatility, but no significant short-run effects on trade flows (Dau & Sethapramote, 2021). A study of East Asian countries found a significant negative effect of exchange rate volatility on trade partners (Hayakawa & Kimura, 2009). However, a study of ASEAN + 3 (including China, Japan, and South Korea) found no significant effect on bilateral trade flows between countries (Nguyen & Vo, 2017), while a study of Malaysia-Thailand trade found variation at the industry level (Aftab et al., 2017). A recent global study found that there was such an effect, but that crude oil prices were endogenous, meaning the effect disappeared once this was controlled (Vilela Vieira & MacDonald, 2016).

In summary, the theoretical and empirical positions of the literature support a negative effect of exchange rate volatility on trade, although these studies are mixed in their methodologies, data sources, and findings. Thus, the research investigates the following:

Hypothesis 1: Higher rates of exchange rate volatility will have a negative effect on bilateral trade between ASEAN countries.

3. Data and Methods

3.1. Data and Sources

Data was collected for nine ASEAN countries (2000 to 2021). Myanmar was excluded from data collection due to inconsistent data availability. Data was sourced from a variety of standard databases, including the CEPII Gravity database (CEPII, 2021; Conte et al., 2021), Refinitiv Eikon (Refinitiv, 2022), the World Governance Indicators (World Bank, 2021), and UNCTAD STAT (UNCTAD, 2022). Additional data was added, including the FDI restrictiveness index (OECD, 2024) and

the normalized Chinn-Ito index of financial openness (Chinn & Ito, 2023) to reflect regulatory pressures and constraints on trade and FDI. A summary of the variables and data sources is provided in Table 1. It should be noted that the series for trade flows (TRADE) could only be sourced to 2020; therefore, the analysis period for trade is shorter than the analysis period for FDI flows.

Table 1. Summary of variables and data sources.

Variable	Definition	Source
Dependent Variables		
Bilateral trade flows (TRADE)	Bilateral trade flows as reported by exporter (\$USD) (Conte et al., 2021) (Available to 2020)	CEPII Gravity Database
Inward FDI flows (FDIF)	Inward FDI flows minus outward FDI flows (\$USD) (Duce, 2003) (Available to 2021)	UNCTAD STAT Database
Independent Variable		
Exchange rate volatility (EXCHVOL)	Standard deviation of daily BID exchange rate (Serenis & Tsounis, 2012). Calculated via cross-exchange rates from USD.	Refinitiv EIKON
Control Variables		
Geographic distance (DIST)	Geographic distance between most populated cities of each country (km) (Conte et al., 2021)	CEPII Gravity Database
GDP per capita difference (GDPPCD)	GDP per capita (country A) – GDP per capital (country B) (Conte et al., 2021)	CEPII Gravity Database
Population difference (POPD)	Population (country A) – Population (country B) (Conte et al., 2021)	CEPII Gravity Database
Political instability (POLINST)	Political Instability sub-index of the World Bank World Governance Indicators (WGI) (World Bank, 2024)	Worldwide Governance Indicators
Capital Openness (OPEN)	Normalized Capital Openness of the destination country (Chinn & Ito, 2023)	Chinn-Ito Index

3.2. Research Model

The research used the gravity model as the basis for analysis. The gravity model is a theoretical model which assumes that economic exchange is higher between countries that are ‘closer’ geographically or politically, based on Heckscher-Ohlin and Ricardian theories of competitive advantage and competition (Yotov et al., 2016). It assumes that elasticity of demand, substitutability, and costs of trade drive trade between two countries (Yotov et al., 2016). Costs of trade depend on factors like geographic distance and adjacency (common borders), existing political linkages such as historic colonial relationships, and cultural ‘distance’ factors such as shared language (Yotov et al., 2016). The basic form of the gravity model is stated as:

$$\log X_{i,j} = \beta_0 + \beta_1 \log GDP_{i-j} + \beta_2 \log DIST_{i,j} + \beta_3 \log POPD_{i,j} + \varepsilon_{i,j} \quad (1)$$

In which $X_{i,j}$ represents bilateral trade flows, GDP_{i-j} represents difference in

GDP of trade partners, $DIST_{i,j}$ represents geographic distance, and $POPD_{i,j}$ represents population difference (Shepherd, 2016). To this basic equation, other terms may also be added to represent common language, historic ties, shared borders, and other control variables (Shepherd, 2016).

In this research, the standard form of the variables, rather than the log form, was used. This was due to empirical specification problems with using log transformations, in that the number of missing variables due to negative values significantly degraded the dataset. This research added an additional control variable of political instability (POLINST), due to high variations within the region and its acknowledged role in trade flows (Broda & Romalis, 2011). While the gravity model specifies common official language as a potential factor in trade (Anderson, 2011), in practice, there were few shared languages except between Singapore and Malaysia, and therefore, this was eliminated due to invariance. Instead, a variable representing the regulatory restrictiveness of the trade climate were added as controls. This variable was the Chinn-Ito index of financial openness (OPEN), which indicates regulatory constraints on capital movements (Chinn & Ito, 2023). The Chinn-Ito index is a normalized coefficient, with 0 indicating complete capital closure and 1 indicating complete capital openness (Chinn & Ito, 2023). Given the definitions of the variables, it is expected that OPEN will be related to both TRADE and FDIF.

There were two final equations constructed based on this model, investigating the effects of exchange rate volatility (EXCHVOL) on bilateral trade flows (TRADE) (Equation (2)) and FDIF (Equation (3)) respectively.

$$\log TRADE_{i,j} = \beta_0 - \beta_1 EXCHVOL_{i,j} + \beta_2 GDP_{i-j} - \beta_3 DIST_{i,j} - \beta_4 POPD_{i,j} - \beta_5 POLINST_i + \beta_6 OPEN + \varepsilon_{i,j} \quad (2)$$

$$\log FDIF_{i,j} = \beta_0 - \beta_1 EXCHVOL_{i,j} + \beta_2 GDP_{i-j} - \beta_3 DIST_{i,j} - \beta_4 POPD_{i,j} - \beta_5 POLINST_i + \beta_6 OPEN + \varepsilon_{i,j} \quad (3)$$

Analysis

Following common practice with the gravity model (Shepherd, 2016), analysis was conducted using a fixed effects panel regression approach. Analysis was conducted in the GRETLM econometric software package.

4. Findings

4.1. Exchange Rate Volatility and Trade Flows

Table 2 summarizes the analysis of Equation 2 (EXCHVOL \rightarrow TRADE) in each of the nine ASEAN countries investigated. Autocorrelation was investigated using the Durbin-Watson (d) statistic, which in all cases indicated no excessive autocorrelation ($p > 0.05$). However, residuals were not normally distributed in most of the datasets ($p < 0.001$), and there was evidence for heteroskedasticity (Wald chi-square $p < 0.001$) in most datasets as well. Thus, there was some

Table 2. Regression of exchange rate volatility and trade flows (EXCHVOL→TRADE) in nine ASEAN countries.

	Brunei	Cambodia	Indonesia	Laos	Malaysia	Philippines	Singapore	Thailand	Vietnam
<i>Const</i>	15.257***	11.924***	32.756***	14.546***	14.186***	-7.146***	14.819***	13.002***	12.420***
EXCHVOL	-0.006**	-0.004***	-0.005**	-0.006	-0.008*	0.281***	-0.004***	0.021**	-0.005***
GDPPCD	-0.152***	-0.021	-0.028***	-0.123***	-0.013	0.004	0.071***	0.044***	0.019v
DIST	-0.002	.	.	-0.005***	-0.002**	0.009***	-0.001***	0.001***	0.001***
POPD	0.000	.	.	.
POLINST	-0.052	0.094	-0.898***	-0.002	-0.647	-0.199	0.169	0.998***	0.392***
OPEN	-2.378*	3.530***	0.818***	-3.417***	3.386***	-0.860***	-1.910***	1.071***	-0.213
<i>Model Fit</i>									
LSDV									
R-Squared	0.460	0.646	0.941	0.766	0.383	0.476	0.813	0.828	0.837
LSD F	8.833***	16.675***	146.042***	28.254***	5.635***	8.036***	39.064***	43.791***	46.450***
Durbin-Watson d	2.036	1.823	1.640	2.160	1.201	1.284	1.591	1.959	1.574
Normality of residuals	6.671**	17.895***	39.866***	4.233	35.082***	17.445***	28.381***	0.771	2.982
Wald Chi-square	39.808***	11.307	47.250***	62.368***	23.793***	17.386**	42.130***	20.294***	71.645***
<i>Observations</i>	149	133	132	126	132	129	131	132	132

Note. Dependent variable: TRADE; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$; . = Variable eliminated due to high collinearity

variance from the assumptions of panel analysis, which were likely due to the relatively small series lengths (Wooldridge, 2013). Such violations can introduce bias into the estimates (Wooldridge, 2013), which was considered as an issue, but as there was no way to adjust the length of the data series, the analysis continued.

The relationship of EXCHVOL and TRADE was the central issue of concern. There were a mixture of findings. With the exception of Philippines and Thailand, the EXCHVOL→TRADE was negative. However, the effect of EXCHVOL on TRADE was not significant in Laos, and in Malaysia it was marginally significant ($p < 0.10$). These findings indicate that overall, EXCHVOL has a negative relationship to TRADE, which was anticipated given the literature. However, also per prior studies, there was a mix of directionality, and the strength of the effect varied. This may be due to the influence of various control variables; for example, GDPPCD, DIST, POPD, and POLINST, which had significant effects in some countries with varying directionality, and OPEN, which was significant for all countries except Vietnam, but had varying directionality as well. Thus, H1 was supported to a great extent, with most countries exhibiting a negative effect of EXCHVOL on TRADE. However, this effect was not entirely consistent.

4.2. Exchange Rate Volatility and FDIF

Table 3 summarizes the analysis of Equation 3 (EXCHVOL → FDIF) in nine ASEAN countries. As with the previous analysis, the Durbin-Watson statistic ($p < 0.001$) indicated no excessive autocorrelation, but residuals were not normally distributed in most datasets ($p < 0.001$) and there was evidence of heteroskedasticity according to the Wald test in many of the datasets as well ($p < 0.001$). Therefore, as expected these data series did violate some of core assumptions of regression, which was likely due to the small dataset size.

The central EXCHVOL→FDIF relationship was not entirely consistent. Brunei, Cambodia, and Malaysia exhibited a negative effect of EXCHVOL on FDIF, but the effect of EXCHVOL on FDIF in the Philippines was positive. Indonesia, Laos, Singapore, Thailand, and Vietnam did not show a significant effect of EXCHVOL on FDIF. Control variables also had variable effects within this model, raising the possibility that within-country variations in these factors could also have an effect on outcomes. In particular, OPEN had a significant positive effect in several countries, which indicates that the overall capital openness of the country has a significant influence on FDI. Overall, there was only weak support for Hypothesis 2, and it is clear that this relationship is dependent on exogenous factors.

Table 3. Regression of exchange rate volatility and FDI flows (EXCHVOL → FDI) in nine ASEAN countries.

	Brunei	Cambodia	Indonesia	Laos	Malaysia	Philippines	Singapore	Thailand	Vietnam
<i>Const</i>	6.067	7.290***	7.029***	7.615***	8.062***	-7.146**	6.660***	4.656***	4.720***
EXCHVOL	-0.003***	-0.003**	-0.003	-0.002	-0.007**	0.281***	-0.002	-0.010	-0.003
GDPPCD	-0.026***	0.006	-0.036**	-0.072***	-0.010	0.004	0.015**	0.018	0.024*
DIST	.	-0.002***	0.000***	-0.001***	-0.001**	.	0.000	0.001***	0.002***
POPD	0.000***	.	.	0.000***	.	-0.199	.	0.000**	0.000
POLINST	0.423	0.147	-0.168	0.029	0.237	-0.860	0.780**	1.172***	1.148***
OPEN	1.571	5.231***	1.458**	0.799	1.367**	0.009***	-0.083	3.142***	2.139***
<i>Model Fit</i>									
LSDV R-Squared	0.642	0.737	0.549	0.625	0.664	0.476	0.613	0.755	0.644
LSD F	14.968***	17.285***	8.324***	10.402***	13.368***	8.036***	9.738***	20.887***	12.685***
Durbin-Watson d	1.581	1.746	1.411	1.725	1.367	1.284	1.595	1.755	1.785
Normality of residuals	6.467**	16.154***	1.525	5.326**	1.533	23.732***	9.109**	12.395***	6.825**
Wald Chi-square	12.937	125.074***	25.885***	34.349***	15.298	503.994***	37.772***	12.741	121.734***
Observations	113	94	95	95	102	129	94	102	105

Note. Dependent variable: FDIF; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$; . = variable eliminated due to collinearity.

5. Discussion

There were mixed findings on the relationship between EXCHVOL and TRADE,

with most countries having significant negative effects but Laos (non-significant) and Malaysia (positive). Both the general negative trend of the findings and the observed variation in direction and significance of effects is broadly consistent with prior studies conducted by [Ozturk \(2006\)](#), [Haile and Pugh \(2013\)](#), and [Bouoiyour and Selmi \(2016\)](#), which have shown a high degree of variability between markets and time periods. The findings are also somewhat inconsistent with a study conducted in an earlier time period among ASEAN-4 countries, which limited on the five largest trade partners, and which found that Thailand and Singapore both had the expected negative effects ([Soleymani et al., 2017](#)). This difference in findings may be due to the difference in methodology, as [Soleymani et al. \(2017\)](#) focused on the country's five largest trading partners, rather than investigating the country's regional trade relationships. There are some possible reasons that this difference could occur, for example, lower levels of short-run price uncertainty ([Gali & Monacelli, 2005](#)) or merchant risk aversion ([Viaene & de Vries, 1992](#)) associated with closer regional trading partnerships. Another explanation could be differences between the dynamic equilibrium in trade at the regional and global level ([Sercu & Uppal, 2003](#)), which could result in differences in effects on trade flows between regional and global partners. Thus, the specific trade relationships between regional and large trading partners could result in differences in effects of EXCHVOL.

With respect to the relationship of EXCHVOL and FDI, there were also a mix of findings. The findings in some countries were consistent with prior studies by [Li et al. \(2018\)](#) and [Moraghen et al. \(2019\)](#), which have found a general negative effect of exchange rate volatility on FDI. The variability in findings is also not unexpected, given that these prior studies have also shown high variability in findings, as have studies in Belt and Road countries ([Latief & Lefen, 2018](#)). However, the findings were also inconsistent with a prior study in ASEAN-4 countries, which focused on top investing countries ([Lily et al., 2020](#)). Thus, it is possible that there is a difference between regional and global trading partnerships in the EXCHVOL-FDI relationship, as well as in EXCHVOL-TRADE relationships. This is an opportunity to investigate further. The reason for the positive effect observed in Laos is also uncertain, but it may be due to the very small FDI inflows that Laos experiences, combined with a poorly developed financial market, which has been observed to be related to positive inflows in other situations ([Kraiche & Gaudette, 2013](#)). It could also be due to factors such as very low production costs ([Froot and Stein, 1989](#)), which could induce FDI flows due to localization advantages ([Dunning, 1988](#)) even with high levels of exchange rate volatility. Deeper investigation of regional FDI flows could yield more information about what factors influence the relationship between exchange rate volatility and macroeconomic performance indicators such as FDI flows. Consideration of capital openness is also worth investigating, since it is known to influence FDI decisions ([Asiedu & Lien, 2004](#); [Chinn & Ito, 2023](#)). While it was not the focal variable of this study, it has significant potential to influence FDI flows,

and should be examined further.

It is important to distinguish here between regional and global flows of trade and FDI. While ASEAN countries do have close economic relationships fostered by a history of regional trade agreements and cultural and population ties (Macdonald, 2019), this does not necessarily mean that they are each others' largest or even major trade partners. It has been noted that in practice, flows of both trade and FDI are global, with both demand and capital coming predominantly from wealthier North American and European countries (Feenstra, 2015). Therefore, these results are not necessarily representative of either the effects of EXCHVOL in general or the relationships of ASEAN countries to their major trade partners. However, it does raise the interesting possibility that regional trade flows and FDI flows may be influenced by factors other than the macroeconomic indicators that were investigated here. This poses an opportunity for further research.

6. Conclusion

This research began with the aim of investigating the effect of exchange rate volatility on bilateral economic relationships between ASEAN countries. The study was intended as an empirical contribution to a body of literature that has mixed empirical findings and uncertain theoretical grounding. The findings showed that, in general, exchange rate volatility has a negative influence on bilateral trade and bilateral FDI flows in the ASEAN region. However, just like earlier studies, there was a high degree of variability in the findings. Overall, this supports the idea that the relationship between exchange rate volatility and international economic relationships of trade and investment is not straightforward. There may be many other factors which confound this relationship, causing differences in directionality and significance. In conclusion, the ASEAN region is typical in its atypicality in response to exchange rate volatility.

There are some limitations to this study. The research was designed to investigate regional trade relationships, and as a result, the bilateral relationships it includes are not necessarily those with the included countries' largest trade partners. This may be one of the reasons for differences between this study's findings and the findings of other studies, which have typically focused on the largest, rather than closest, trade partners. Furthermore, the focus of this research on bilateral and regional trade relationships limits its applicability to global relationships of trade and FDI flows. Another limitation is the exclusion of ASEAN's smallest state in economic terms, Myanmar. This exclusion was unavoidable due to inconsistent data availability for Myanmar. However, if adequate data can be sourced, it may be interesting to compare Myanmar with Laos, to understand how exchange rate volatility effects these two countries. The time series was also relatively short, which was due to the length of available data series for smaller countries. These limitations do not affect the usability of the data as it stands, but they do justify continuing to investigate this question.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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