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The Impact of Exchange Rates and the Inflation-Targeting Regime on Exports: Evidence from the Regional Comprehensive Economic Partnership

Jose Adlai M. Tancangco
Hazel C. Parcon-Santos

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Abstract

The Impact of Exchange Rates and the Inflation-Targeting Regime on Exports: Evidence from the Regional Comprehensive Economic Partnership

Jose Adlai M. Tancangco and Hazel C. Parcon-Santos

This study explores the effects of exchange rates and the inflation-targeting regime on goods and services exports among member countries of the Regional Comprehensive Economic Partnership (RCEP). The findings reveal that domestic currency depreciation enhances exports, with a larger impact on goods than services. A country with a floating exchange rate regime exporting to a country with the same regime tend to have lower services exports. Notably, exchange rate volatility does not significantly affect overall export levels. Exporters under an inflation-targeting regime see increased goods and, even more so, services exports. Furthermore, actual inflation rates are crucial. Lower inflation in the exporting country and higher inflation in the partner country enhance goods exports. These findings highlight the important roles of the exchange rate and monetary policies, as well as controlling inflation in shaping trade dynamics within the RCEP region.

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Corresponding author email	:	parconhc@bsp.gov.ph

Jose Adlai M. Tancangco is a Research Associate II and Hazel C. Parcon-Santos is a Principal Researcher from the Bangko Sentral ng Pilipinas (BSP) Research Academy.

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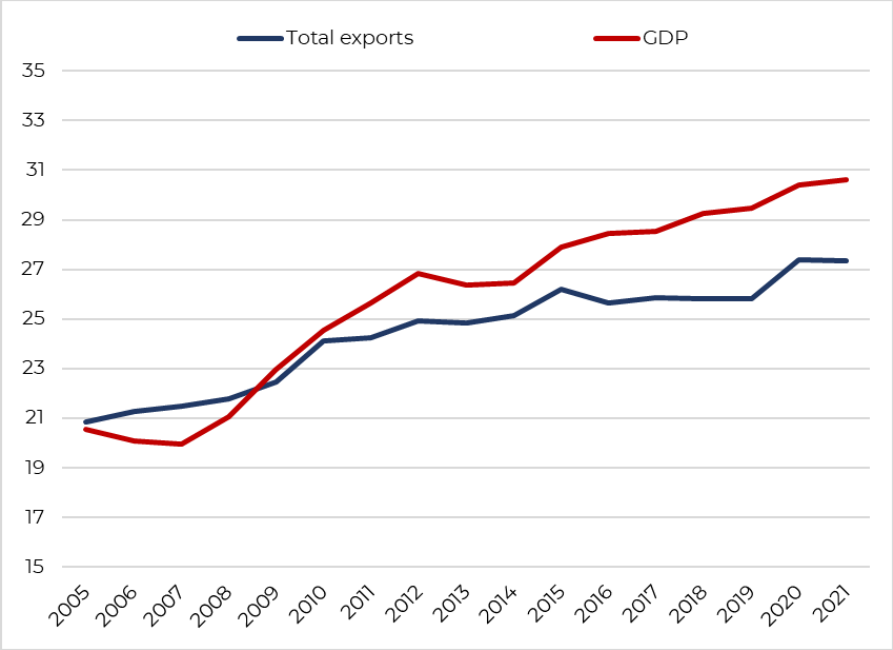
I. Introduction

The Regional Comprehensive Economic Partnership (RCEP), established in 2020 and effective in 2022, comprises 15 diverse Asia-Pacific economies: Brunei (BRN), Cambodia (KHM), Indonesia (IDN), Lao People's Democratic Republic (PDR) (LAO), Malaysia (MYS), Myanmar (MMR), the Philippines (PHL), Singapore (SGP), Thailand (THA), Vietnam (VNM), Australia (AUS), China (CHN), Japan (JPN), South Korea (KOR), and New Zealand (NZL).

Recognized as the largest trading bloc, RCEP represents about 28.0 percent of world gross domestic product (GDP) as of end-2023 and is poised to become a new center of gravity for global trade (United Nations Conference on Trade and Development [UNCTAD], 2021). Intra-RCEP trade in goods and services grew from US$2.5 trillion in 2019 to US$2.9 trillion in 2023. Moreover, the shares of intra-RCEP exports to total world exports and RCEP countries' GDP to world GDP have both steadily increased from 2005 to 2021 (*Figure 1*). These trends underscore the growing significance of RCEP to world exports and output.

Figure 1. Share of the Regional Comprehensive Economic Partnership to World Exports and Output
2005–2021



Source: World Development Indicators (World Bank, 2024a; World Bank, 2024b)

RCEP members are expected to benefit from the agreement to varying degrees, shaped by factors such as tariff concessions (UNCTAD, 2021), trade facilitation (Wang & Thangavelu, 2022), liberalization of modern services (Findlay et al., 2022), and investment liberalization (Matsuura, 2022). This study delves into other factors affecting trade among RCEP member-economies, particularly exchange rates and monetary policy frameworks. These are critical elements of international trade that have remained underexplored within the RCEP context. The varying exchange rate arrangements and monetary policies among member economies present a unique opportunity to analyze their impact on economic outcomes.

This study focuses on how exchange rates and the adoption or non-adoption of inflation targeting (IT) as a monetary policy framework influence exports. It aims to fill the gap in existing literature by considering both goods and services exports, as previous studies have primarily concentrated on goods. Given the rising significance of services in global trade[1] and among RCEP economies,[2] understanding these dynamics is essential.

The study utilizes an augmented gravity model and applies the Poisson pseudo-maximum likelihood (PPML) estimator to data from 2005 to 2021. It investigates the effects of changes in real effective exchange rates, exchange rate volatility, floating exchange rate regime, and the adoption of an IT regime on exports.

Empirical findings confirm theoretical expectations, indicating that currency appreciation reduces exports across both goods and services sectors. Other exchange rate variables appear significant only for exports in services. In particular, floating exchange rate regimes adopted by trading partners tend to reduce services exports. Meanwhile, exporters benefit when their own economy adopts an IT regime framework.

By exploring these relationships within the RCEP framework, this study aims to provide insights that can help member countries fully capitalize on the trade benefits anticipated from this significant economic partnership.

The rest of the paper proceeds as follows: Section II presents stylized facts on RCEP exports, exchange rates, and monetary policy frameworks. Section III reviews related literature and situates this paper in the broader research context. Section IV describes the empirical approach for estimating the relationship between trade, exchange rates, and monetary policy and presents the empirical results. Section V offers conclusions.

II. Stylized Facts

II.A. Trade

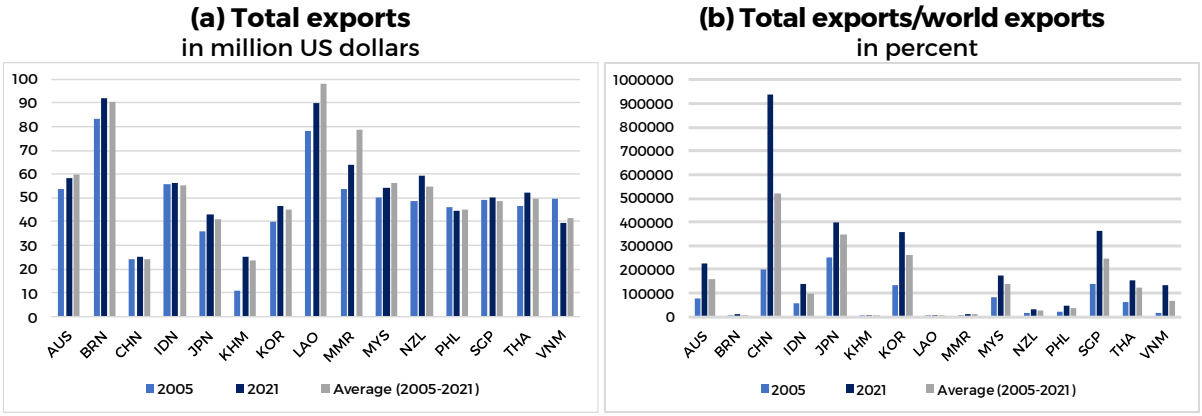
The value of intra-RCEP goods and services exports of each member country has increased from 2005 to 2021 (*Figure 2-a*). On average, China is the leading exporter in the region, followed by Japan and South Korea. During the same period, almost all RCEP member countries have seen an increase in their share of goods and services exported to the RCEP region compared with their total exports to the world (*Figure 2-b*), highlighting the importance of intra-RCEP trade for these countries.

On average, Lao PDR and Brunei export over 90.0 percent of their goods and services to the RCEP region relative to the world. While China and Japan have the highest export values in the region, these represent less than 25.0 percent of their total exports.

[1] In 2022, global services exports were valued at $7.1 trillion, representing 7.1 percent of world GDP and 23.0 percent of total world trade (UNCTAD, 2023).

[2] For the past 20 years, the RCEP region has reported significantly higher growth rates for trade in services compared to the global average across all modes. The RCEP region averaged a growth rate of 9.7 percent, while world growth averaged 6.5 percent (Crivelli et al., 2022).

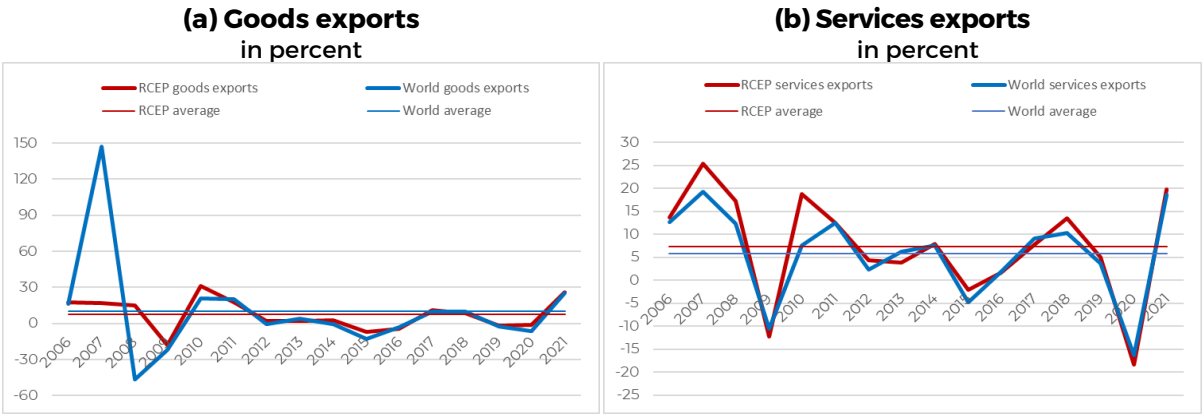
Figure 2. Intra-Regional Comprehensive Economic Partnership Goods and Services Trade
2005 and 2021



Sources: Statistics on International Trade in Services (Organisation for Economic Co-operation and Development, 2024a; United Nations Comtrade, 2024)

From 2005 to 2021, world goods exports expanded by an average rate of 10.0 percent, outpacing the 7.4-percent growth of aggregate RCEP goods exports (*Figure 3-a*). In contrast, aggregate RCEP services exports experienced a more robust growth at 7.4 percent, surpassing the global services exports growth rate of 5.7 percent (*Figure 3-b*).

Figure 3. Aggregate Regional Comprehensive Economic Partnership Exports and World Exports Growth
2005–2021



Sources: Statistics on International Trade in Services (Organisation for Economic Co-operation and Development, 2024a; World Integrated Trade Solution, n.d.)

II.B. Exchange Rates

Based on the *de facto* classification in the International Monetary Fund (IMF)'s *2022 Annual Report on Exchange Arrangements and Exchange Restrictions*, eight of the 15 RCEP member countries utilize a floating exchange rate regime.[3]

The remaining countries employ various forms of pegged or managed arrangements (*Table 1*).[4] Between 2005 and 2021, several countries, including Indonesia, Cambodia, Lao PDR, Myanmar, Malaysia, the Philippines, and Singapore, experienced shifts in their *de facto* exchange rate regimes.

Table 1. De Facto Exchange Rate Arrangement of Regional Comprehensive Economic Partnership Member Economies

2005–2021

floating | crawl-like, currency board, stabilized

Country	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
AUS																	
BRN																	
CHN																	
IDN																	
JPN																	
KHM																	
KOR																	
LAO																	
MMR																	
MYS																	
NZL																	
PHL																	
SGP																	
THA																	
VNM																	

Source: Annual Report on Exchange Arrangements and Exchange Restrictions (International Monetary Fund, 2022)

Exchange rate volatility has generally declined among RCEP member countries from 2005 to 2021 (*Figure 4-a*). By 2021, almost all RCEP members reported lower degrees of exchange rate volatility compared with 2005 (*Figure 4-b*). Singapore exhibited the lowest average exchange rate volatility over this period. This stability can be attributed to its crawl-like arrangement, which allows the Singapore dollar to fluctuate within a targeted policy band while being managed against a basket of currencies from its major trading partners and competitors (IMF, 2022). Conversely, Japan, operating under a free-floating exchange rate regime, displayed the highest exchange rate volatility. Japanese authorities typically intervene only during disorderly market conditions, with the last recorded intervention by the Ministry of Finance (MOF) occurring from 31 October 2011 to 4 November 2011, amounting to ¥9,091.6 billion (IMF, 2022).[5]

[3] A floating arrangement refers to either a floating or a free-floating exchange rate system.

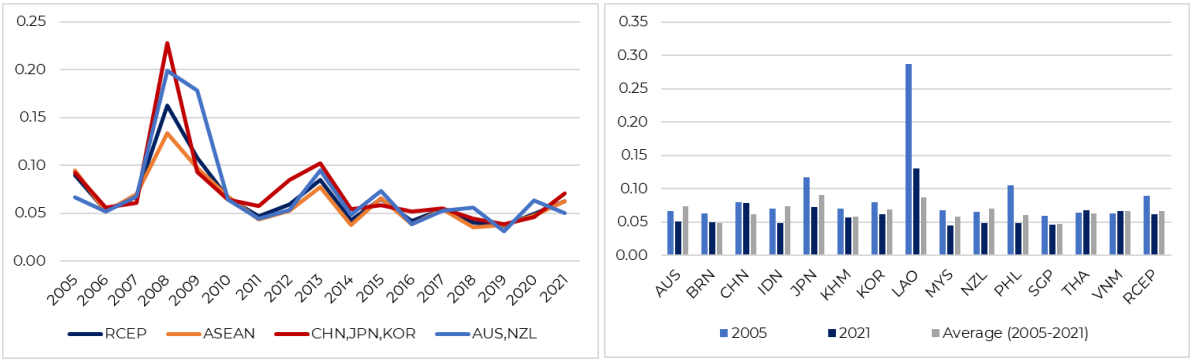
[4] Pegged or managed arrangements refer to currency boards, conventional pegs, stabilized arrangements, crawling pegs, crawl-like arrangements, pegged arrangements within horizontal bands, and other managed arrangements.

[5] The principal intervention currency is the United States (US) dollar. Interventions fall within the mandate of the MOF. The Bank of Japan (BOJ), acting as the agent of the MOF, intervenes in the market through financial institutions and/or brokers.

Within the RCEP region, 10 member countries generally experienced currency appreciation between 2005 and 2021 (*Figure 5).* The Vietnamese dong recorded the most significant appreciation of 51.5 units. In contrast, only four countries—Brunei, Japan, South Korea, and Malaysia—saw a depreciation during this period, with the Japanese yen showing the largest depreciation at 29.0 units. On average, the Korean won had the lowest real effective exchange rate (REER), while the Laotian kip had the highest REER.

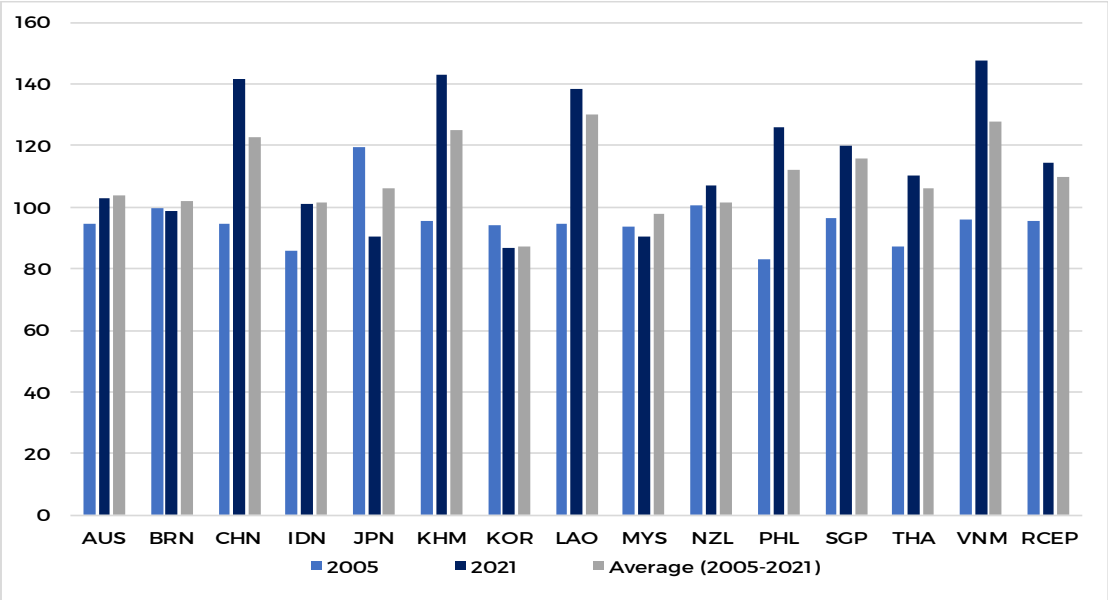
Figure 4. Exchange Rate Volatility

(a) By country group **(b) By country**



Sources: Bloomberg LP (2024); Authors' calculations
Exchange rate volatility calculated as the standard deviation of monthly percentage changes in the nominal exchange rate.
Data for Myanmar (MMR) not available.

Figure 5. Average Real Effective Exchange Rates by Country
2005–2021



Sources: Bruegel Real Effective Exchange Rate Database (Darvas, 2012); Authors' calculations
The real effective exchange rates (REERs) are based on 170 trading partners.
An (a) increase (decrease) of the REER denotes appreciation (depreciation).
Data for Myanmar are unavailable.

II.C. Monetary Policy Framework and Inflation

Among the eight countries with *de facto* floating exchange rate arrangements (*Table 2*), most utilize IT as their monetary anchor. Malaysia is the sole exception, adopting a monetary policy approach that prioritizes price stability and sustainable economic growth while also considering the effects of monetary policy on financial stability. Although Bank Negara Malaysia (BNM) does not set an official inflation target like many other countries, it actively communicates its inflation forecasts to guide expectations and inform policy decisions (Khor et al., 2018). Among RCEP member countries, the earliest IT adopter was New Zealand—the first to have a specified inflation target. The last IT adopter in the group was Japan.

Table 2. Exchange Rate Arrangement and Monetary Anchor by Country
2021

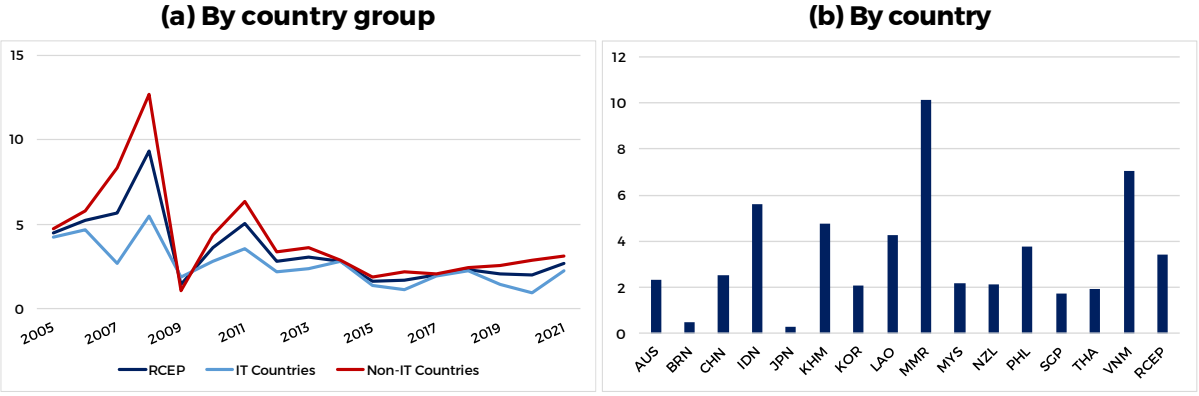
Country	Exchange rate arrangement	Monetary anchor
Australia	free-floating arrangement	inflation targeting (1993)
Brunei	currency board	exchange rate
China	crawl-like arrangement	monetary aggregates
Cambodia	stabilized arrangement	exchange rate
Indonesia	floating arrangement	inflation targeting (2005)
Japan	free-floating arrangement	inflation targeting (2013)
Korea	floating arrangement	inflation targeting (2001)
Laos	crawl-like arrangement	exchange rate
Malaysia	floating arrangement	non-inflation targeting
Myanmar	other managed arrangement	monetary aggregates
New Zealand	floating arrangement	inflation targeting (1990)
Philippines	floating arrangement	inflation targeting (2002)
Singapore	stabilized arrangement	exchange rate
Thailand	floating arrangement	inflation targeting (2000)
Vietnam	crawl-like arrangement	exchange rate

Sources: International Monetary Fund (2022); Jahan (n.d.)
The adoption dates of inflation targeting are enclosed in parentheses.

Among the seven countries with pegged or managed exchange rate arrangements, five use the exchange rate as their monetary anchor. The exceptions are China and Myanmar, which both rely on monetary aggregates as their monetary anchor.

On average, inflation in the RCEP region declined from 2005 to 2021 (*Figure 6-a*). . Among member countries, Japan had the lowest average inflation rate, while Myanmar had the highest. Vietnam had the second highest average inflation rate for the period, largely due to the high inflation rates it experienced during the Global Financial Crisis (GFC) of 2008 and the immediate years that followed (*Figure 6-b*). Notably, countries adopting an IT framework generally report lower inflation rates compared with non-IT countries (*Figure 6-a*).

Figure 6. Inflation by Country Group and Country Average
in percent
2005–2021



Sources: World Development Indicators (World Bank, 2024c); Authors' calculations

The preceding analysis indicates that the growth in intra-RCEP trade has been accompanied by shifts in exchange rate regimes and monetary policy frameworks, alongside decreases in both exchange rate volatility and inflation rates. The next section explores whether these factors have played a role in facilitating the trade expansion in the region.

III. Review of Related Literature

Numerous empirical studies have examined the impact of various exchange rate variables on trade, including the impact of exchange rate volatility on international trade. The primary argument is that exchange rate volatility can reduce trade by increasing the uncertainty associated with transaction costs. Firms may face unpredictable costs and revenues when converting currencies, which may lead them to limit their exposure to foreign markets. Additionally, exchange rate uncertainty may reduce the willingness of international traders to enter into long-term trade contracts.

The findings from these studies are varied. Some showed that exchange rate volatility significantly reduces bilateral exports or trade flows (Banik & Roy, 2020; Hayakawa & Kimura, 2008; Klein & Shambaugh, 2006; Nicita, 2013; Njoroge, 2020; Pomfret & Pontines, 2013; Vo et al., 2019; Wong & Chong, 2016).

Others did not find a robust relationship between trade and exchange rate volatility. For example, Clark et al. (2004) suggested that allowing for time-varying country effects diminishes the negative association between volatility and trade. Senadza and Diaba (2017) reported that volatility has a negative effect only in the short run. Meanwhile, Satawatananon (2014) observed a short-run negative impact limited to the textile sector, with no long-term effect. Chi and Cheng (2016) noted that the relationship varies depending on the country pair. Some studies also found no significant relationship at all (Hondroyiannis et al., 2008; Prajakschitt, 2015; Tenreyro, 2007).

Interestingly, a smaller number of studies reported a positive relationship between exchange rate volatility and trade flows (Senadza & Diaba, 2017). Exchange

rate volatility can be trade-creating if exporters and importers decide to increase their trade volumes to compensate for its possible effects (Bahmani-Oskooee & Hegerty, 2009).

A potential factor contributing to these mixed results is the increasing availability of financial hedging instruments, which may reduce firms' vulnerability to unpredictable currency movements (Senadza & Diaba, 2017). While these instruments offer a way to manage exchange rate risks, they come with additional costs that firms must bear. These expenses can deter companies—especially smaller firms with limited resources—from participating in international trade. Additionally, firms in countries with less developed financial markets may find hedging particularly challenging (Chui et al., 2016; Upper & Valli, 2016).

Some studies shift their focus from actual exchange rate volatility to the exchange rate regime adopted by a country. A fixed exchange rate regime is believed to promote trade by ensuring currency stability. This expectation is supported by the findings of Klein and Shambaugh (2006), which highlight that a fixed exchange rate between two countries raises the amount of their bilateral trade; Wong and Chong (2016), which found that a currency union has strong positive effects on trade; and Santana-Gallego and Pérez-Rodríguez (2019), which find that intermediate exchange rate regimes between completely fixed and completely flexible promote flows of goods between countries.

Other research explores how changes in exchange rate levels (i.e., appreciation or depreciation) affect trade flows. Countries may devalue their currencies (under a fixed exchange rate regime) or allow their currency to depreciate (under a floating regime) to enhance international competitiveness and improve their trade balance. Devaluation or depreciation typically boosts exports by making them cheaper and discourages imports by making them more expensive. This theory is supported by some studies such as Fang et al. (2005), Leigh et al. (2017), and Pomfret and Pontines (2013).

However, others argue that shifting production patterns have altered the expected relationship between exchange rate changes and trade. In the context of global value chains (GVCs), where final products heavily rely on imported inputs and cross national borders before reaching consumers, the trade effects of exchange rates may be weakened (Ahmed et al., 2017; Amiti et al., 2014; Cheng et al., 2016; Georgiadis et al., 2019; Tan et al., 2019). While currency depreciation makes exports appear cheaper abroad, it increases the price of imported inputs, potentially reducing exporters' overall profitability. The relationship becomes complicated as the number of countries involved in the production chain increases.

Some studies contended that limited evidence supports claims that GVC participation has changed the basic relationship between exchange rate and trade (Adler et al., 2023; De Soyres et al., 2021; Leigh et al., 2017). These studies argued that while GVCs introduce complexities into the relationship, they do not fundamentally alter established dynamics. The responsiveness of trade balances to exchange rate changes remains significant but with reduced elasticities due to GVC intricacies. For instance, Adler et al. (2023) asserted that this relationship is altered in the short and medium terms but remains stable in the long run. De Soyres et al. (2021) highlighted that when production linkages are regional and involve countries sharing a currency—such as within the European monetary union—

but products are exported to a third currency zone, export responsiveness to trading partner exchange rates persists. Meanwhile, Leigh et al. (2017) found that tighter financial conditions and lower economic slack have a greater influence on reducing export responsiveness to exchange rates than GVCs.

Most research focuses on merchandise or goods trade, with relatively few studies examining the impact of exchange rate variables on services trade. The limited research suggests that the effects vary depending on the type of service. For example, Sahoo et al. (2018) found that exports of traditional services in India—such as communications, insurance, transportation, travel, construction, and personal services—are negatively affected by real exchange rate movements. In contrast, modern services like finance and information technology show no significant impact from exchange rate changes.

Similarly, Cheng (2020) found that currency depreciation affects US services exports differently depending on the type of service and time horizon. While some types of services are insensitive to exchange rate fluctuations, depreciation tends to raise services exports in the long run but not in the short run. In contrast, Xu et al. (2022) reported that changes in China's exchange rates affect nearly all service categories in the short run but not in the long run.

Eichengreen and Gupta (2013), in their analysis of a broad range of developed and developing economies, concluded that currency depreciation has a stronger effect on services exports than on goods exports. Their study also revealed that this impact is particularly more pronounced for modern services than traditional ones, contradicting the findings of Sahoo et al. (2018). They also noted that currency appreciation does not significantly impact export growth and found no evidence of differential effects between advanced and developing countries.

Inflation is another crucial factor significantly affecting international trade. An increase in the general price level impacts not only the domestic economy but also global markets. Higher inflation can reduce a country's export competitiveness by making its goods and services relatively more expensive than those from other countries.

The monetary policy framework implemented by a country's central bank plays a vital role in shaping inflation dynamics. Many central banks adopt an IT approach, committing to maintain inflation within a specified range through adjustments in monetary policy, primarily by changing interest rates. This strategy helps anchor inflation expectations among consumers and businesses, leading to more stable economic conditions (Jahan, n.d.). Consequently, adopting an IT regime is expected to boost a country's exports.

To date, to the best of the authors' knowledge, only one study examined the impact of adopting an IT regime on bilateral trade. Wong and Chong (2016) found that bilateral trade increases when at least one trading partner implements an IT regime. They also found that higher inflation rates in both trading partners lead to a reduction in their bilateral trade. Notably, the IT regime of the importing country has a more significant positive effect on bilateral trade than that of the exporting country. This suggests that exporters prefer to sell to markets with greater price stability. This finding warrants further investigation, as their research, like many others, focused solely on trade in goods.

The preceding discussion highlights several gaps in the literature that this study aims to address. First, given the limited research on the impact of various exchange rate variables on services trade, this study examines how exchange rates affect both goods and services exports. This approach allows for a comparison of the relative importance of exchange rates for services versus goods exports. Second, this study contributes to the scarce literature on the effects of an IT regime on bilateral trade. While many studies have focused on the impact of different exchange rate variables on trade, almost none has explicitly considered the impact of the monetary policy framework adopted by trading countries. Finally, this research situates its analysis within the context of the RCEP, currently the world's largest trading bloc. To date, to the best of the authors' knowledge, only Tancangco (2022) has explored the impact of exchange rates on trade within the RCEP. However, the study focused exclusively on goods trade and did not consider the monetary policy framework of the member countries.

IV. Empirical Analysis

IV.A. Data and Methodology

This study employs the gravity model to examine the relationship between exports, exchange rates, and inflation targeting. Initially proposed by Tinbergen (1962), the fundamental form of the gravity model applied to international trade is expressed as:

$$T_{ij} = a_0 Y_i^{a_1} Y_j^{a_2} C_{ij}^{a_3} \quad i \neq j \tag{1}$$

where T_{ij} refers to the trade flows from country *i* to country *j*; Y_i represents the economic size of country *i*; Y_j represents the economic size of country *j*; and C_{ij} is the trade cost between countries *i* and *j*, with geographical distance as the common proxy variable.

The gravity model in log-linear form can be expressed as follows:

$$lnT_{ij} = a_0 + a_1 lnY_i + a_2 lnY_j + a_3 lnC_{ij} + \varepsilon_{ij} \tag{2}$$

where a_1, a_2, and a_3 are the parameters to be estimated and e_{ij} is an error term.

In general, the expected signs are $a_1>0$, $a_2>0$, and $a_3<0$. This means that, according to the gravity model, larger country pairs are expected to trade more with each other, while countries farther apart are expected to trade less due to higher transport costs.

The gravity model has been widely used in empirical trade literature and has proven to be stable over time and across different sample countries (Herman, 2023). Over the years, the model has evolved to enhance its explanatory power for international trade analysis.

One of the notable additions to the gravity model was the inclusion of multilateral resistance terms, which account for the relative trade costs between countries (Anderson & Van Wincoop, 2003). This modification considers that a

country's trade attractiveness is influenced not only by bilateral factors but also by the overall trade relations of a country with other countries (Herman, 2023).[6]

Subsequent uses of the gravity model have expanded the concept of trade costs beyond mere geographical distance to reflect various non-physical factors that influence international trade dynamics.

Some studies have explored the impact of laws or agreements (e.g., tariffs, trade agreements), various economic policies (e.g., fiscal, industrial, exchange rate policies), regulatory environment (e.g., customs procedures, corruption, transparency), cultural factors (e.g., common language, common colonizer), and even political factors (e.g., geopolitical alliances, political stability).

We modify and augment *Equation 2* by including the effects of various exchange rate variables and the IT regime:

$$E_{ij} = a_0 + a_1(GDP_i * GDP_j) + a_2X + a_3ER + a_4IT + \varepsilon_{ij} \quad (3)$$

where E_{ij} refers to the exports of either goods or services, or both, from country *i* to country *j*; GDP_i and GDP_j are the gross domestic products of country *i* (exporter) and country *j* (importer), respectively; ***X*** is a vector containing both physical (including geographical distance) and non-physical factors that may affect trade between the two countries; ***ER*** is a vector of exchange rate variables; and ***IT*** is a vector of variables associated with the IT framework.

ER contains the following: the REER ratio between the exporting and importing countries, the exchange rate volatility between the trading partners, and a dummy variable indicating a floating exchange rate regime adopted by both countries *i* and *j*.[7]

IT contains the following: a dummy variable indicating whether the exporting country has an IT regime and the actual inflation rates of countries *i* and *j*.

X contains the following: geographical distance; dummy variables for contiguity, common language, and common colonizer; a free trade agreement (FTA) dummy; and dummy variables for periods covered by the GFC and the COVID-19 pandemic. Country-year fixed effects were included to incorporate multilateral resistance variables that vary over time but are specific to each country. The inclusion of multilateral resistance terms ensures robust and reliable estimates (Herman, 2023).[8,9] The country-year fixed effects also capture the impact of country-

[6] For instance, if country A reduces tariffs with country B, it may not only increase trade between A and B but also alter the trade dynamics with other countries, as resources are reallocated based on new relative prices and costs.

[7] Harms and Knaze (2021) argued that the potential gains of exchange rate stability are not limited to countries within a currency union; they also apply to other types of pegs. This highlights the importance of examining bilateral exchange rate regimes. The same principle holds for floating exchange rate arrangements. When both trading partners have floating exchange rates, the potential trade-reducing effects of such arrangement become more pronounced, as floating currencies tend to be less stable than those in non-floating country pairs.

[8] Using country-fixed effects is a computationally simple approach to account for multilateral resistance terms that yield unbiased results (Herman, 2023; Salvatici, 2013).

[9] As Shepherd (2016) suggested, exporter and importer GDPs are multiplied in *Equation 3* to create a unique variable for each country pair. This approach ensures that the variable varies across importers

specific policies, such as trade and industrial policies, on the overall export performance of a country.

Table 3 provides the definitions and sources of the variables used in the empirical estimations. *Table 4* presents the summary statistics.

In line with recent empirical literature, this study employs the PPML estimator to estimate the gravity model. Santos Silva and Tenreyro (2006) demonstrated the superiority of the PPML estimator over traditional linear estimators for estimating gravity equations. In particular, the PPML is consistent in the presence of heteroskedasticity and zero values in the dependent variable and does not impose strict distributional assumptions on the data. Additionally, the PPML approach allows the dependent variable to be entered in levels, effectively dealing with zero dependent variables.

Table 3. Definitions and Sources of Variables

Variable	Description	Source
Total exports	Sum of goods and services of country *i* and country *j* in current USD at year *t*	UN Comtrade (2024); OECD (2024a)
Goods exports	Sum of goods exports of country *i* and country *j* in current USD at year *t*	UN Comtrade (2024)
Services exports	Sum of services exports of country *i* and country *j* in current USD at year *t*	OECD (2024a)
GDP product	Product of the nominal gross domestic products of country *i* and country *j* at year *t* (in log)	World Bank (2024b); Authors' calculations
Distance	Geographical distance between country *i* and country *j*	Mayer & Zignago (2011)
Contiguity	Dummy variable; Equal to 1 if countries *i* and *j* share a common land border	Mayer & Zignago (2011)
Common colonizer	Dummy variable; Equal to 1 if countries *i* and *j* were both under the same colonial power	Mayer & Zignago (2011)
Common language	Dummy variable; Equal to 1 if countries *i* and *j* share the same official language or primary language	Mayer & Zignago (2011)
FTA	Dummy variable; Equal to 1 if countries *i* and *j* have an existing bilateral Free Trade Agreement at year *t*	ARIC (2024)
REER ratio	Ratio of the annual real effective exchange rate (REER) of country *i* to that of country *j* at year *t*, where the respective REERs of countries *i* and *j* are weighted against 170 trading partner countries	Darvas (2012); Authors' calculations
ER both float	Dummy variable; Equal to 1 if both countries *i* and *j* adopt a floating exchange rate regime (*de facto* classification) at time *t*	IMF (2022)
ER volatility$_{ij,t}$	Exchange rate volatility between countries *i* and *j* at year *t*: $\sqrt{\frac{\sum_m^M(\Delta lnER_{ij,m}-\overline{\Delta lnER_{ij,m}})^2}{M}}$ where *ER* is the nominal exchange rate between countries *i* and *j* at month *m* and *M* = 12	Bloomberg (2024); Authors' calculations
IT exporter	Dummy variable; Equal to 1 if country *i* adopts an inflation targeting framework at year *t*	Jahan (n.d.)
IT one	Dummy variable; Equal to 1 if either country *i* or country *j* adopts an inflation targeting framework at year *t*	Jahan (n.d.)

for each exporter and across exporters for each importer. Separately including exporter and importer GDPs in the equation increases the likelihood of these variables' high correlation with country-year fixed effects and other country-specific policy variables.

IT both	Dummy variable; Equal to 1 if both countries *i* and *j* adopt an inflation targeting framework at year *t*	Jahan (n.d.)
Inflation_exporter	Actual average inflation rate of country *i* at year *t*	World Bank (2024c)
Inflation_importer	Actual average inflation rate of country *j* at year *t*	World Bank (2024c)
FVA share	Percentage of foreign value added in total exports of an economy	OECD (2024b)
COVID	Dummy variable; Equal to 1 for years during the COVID-19 pandemic (2020–2021)	N/A
GFC	Dummy variable; Equal to 1 for years during the Global Financial Crisis (2008–2009)	N/A

Table 4. Summary Statistics of Variables

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
Total exports (in log)	3,401	20.77	2.94	10.10	25.93
Goods exports (in log)	3,401	20.40	3.35	3.59	25.83
Services exports (in log)	3,570	4.81	2.72	-4.96	10.33
GDP product (in log)	3,570	52.48	2.78	44.29	59.76
Distance (in log)	3,570	7.92	0.85	5.35	9.22
Contiguity (dummy)	3,570	0.12	0.33	0	1
Common colonizer (dummy)	3,570	0.10	0.29	0	1
Common language (dummy)	3,570	0.09	0.28	0	1
FTA (dummy)	3,570	0.18	0.39	0	1
REER ratio (in log) (t-1)	3,094	0	0.20	-0.60	0.60
ER both float (dummy)	3,570	0.30	0.46	0	1
ER volatility (t-1)	3,094	0.07	0.06	0	1.19
ER volatility (t-1) * ER float	3,094	0.02	0.05	0	0.49
IT exporter (dummy)	3,570	0.44	0.50	0	1
IT one (dummy)	3,570	0.52	0.50	0	1
IT both (dummy)	3,570	0.17	0.38	0	1
Inflation_exporter	3,570	3.41	4.23	-1.35	35.02
Inflation_importer	3,570	3.41	4.23	-1.35	35.02
FVA share (t-1)	3,570	0.81	1.64	0	19.70
FVA share (t-1) * REER ratio (t-1)	3,094	0	0.37	-3.19	3.63
COVID	3,570	0.12	0.32	0	1
GFC	3,570	0.12	0.32	0	1

The estimations cover the period 2005–2021 at an annual frequency.[10] All 15 RCEP member countries were considered as exporters (country *i*) and importers (country *j*), which yielded 210 unique country pairs. However, some countries had missing data for certain explanatory variables for selected years. Notably, Myanmar lacked REER data for the entire sample period, while Brunei Darussalam, Cambodia, Lao PDR, Myanmar, and Vietnam had missing goods exports data. Thus, actual estimations included 182 unique country pairs. Clustering by distance was done to improve model accuracy and produce estimates that are robust to heteroscedasticity.

[10] The period covered is limited by the availability of services exports data, which, at the time of writing, extends only until 2021.

IV.B. Baseline Model Results

The baseline estimates demonstrate that the coefficients of standard gravity variables are in line with the theory (*Table 5.1*). However, the magnitude and statistical significance of the coefficients vary per type of exports. The product of the trading partners' GDPs and the contiguity variable are both positive and statistically significant for all estimates, while the distance variable is negative and statistically significant for all estimates. The results also show that the dummy for common colonizer is positive and statistically significant for total and goods exports. Common language is insignificant across all estimates.

Table 5.1. Impact of Standard Gravity Model Variables on Exports

Dependent variable	(1) Total exports	(2) Goods exports	(3) Services exports
GDP product[a]	0.813*** (0.043)	0.853*** (0.047)	0.770*** (0.029)
Distance[a]	-0.411*** (0.076)	-0.408*** (0.080)	-0.442*** (0.097)
Contiguity	0.420*** (0.115)	0.380*** (0.123)	0.489*** (0.180)
Common language	0.097 (0.143)	0.051 (0.147)	0.242 (0.191)
Common colonizer	0.485** (0.211)	0.549** (0.227)	0.213 (0.262)
Constant	-33.322*** (2.756)	-35.813*** (2.961)	-33.529*** (1.849)
Observations	3,401	3,401	3,570
R-squared	0.951	0.950	0.890
RESET test statistic	0.062	0.132	0.062

Country-year fixed effects are included but not reported.
Robust standard errors are in parentheses.
[a] In natural logarithm form
*** p<0.01, ** p<0.05, and * p<0.1

IV.C. Augmented Model Results

The augmented model estimates show that the REER ratio and the presence of an IT exporter are statistically significant in affecting total exports (*Table 5.2*). A negative and significant relationship exists between the REER ratio and total exports, wherein a 1.0-percent increase in the REER ratio leads to a 1.25-percent decrease in total exports. The increase in the REER ratio is characterized by an appreciation in the exporting country's currency relative to the importing country, making the estimates consistent with traditional trade theory.

Moreover, a positive and significant relationship was observed between an IT exporter and total exports. This suggests that countries adopting an IT framework experience a 0.69-percent increase in total exports.

Table 5.2. Impact of Exchange Rates, Inflation Targeting, and Standard Gravity Variables on Exports

Dependent variable	(1) Total exports	(2) Goods exports	(3) Services exports
GDP product[a]	0.835***	0.832***	0.724***
	(0.037)	(0.041)	(0.028)
Distance[a]	-0.443***	-0.433***	-0.530***
	(0.077)	(0.083)	(0.066)
Contiguity	0.482***	0.412***	0.586***
	(0.123)	(0.132)	(0.162)
Common language	0.173	0.104	0.362***
	(0.143)	(0.162)	(0.138)
Common colonizer	0.550**	0.613**	0.320
	(0.226)	(0.250)	(0.212)
FTA	0.232***	0.200***	0.437***
	(0.073)	(0.076)	(0.074)
ER both float	-0.174	-0.109	-0.366**
	(0.135)	(0.151)	(0.156)
REER ratio[a,b]	-1.246***	-1.305***	0.777***
	(0.229)	(0.241)	(0.274)
ER volatility[a,b]	-0.004	-0.008	-0.086
	(0.370)	(0.397)	(0.334)
ER both float * ER volatility[a,b]	-0.695	-0.630	-0.729
	(0.464)	(0.469)	(0.494)
IT exporter	0.685**	0.611**	1.702***
	(0.271)	(0.296)	(0.226)
COVID	-0.149	-0.046	0.201
	(0.277)	(0.301)	(0.190)
GFC	-0.022	-0.119	-0.848**
	(0.329)	(0.349)	(0.365)
Constant	-33.601***	-33.587***	-30.380***
	(2.498)	(2.728)	(1.876)
Observations	3,002	3,002	3,094
R-squared	0.953	0.950	0.921
RESET test statistic	0.065	0.182	0.441

Country-year fixed effects are included but not reported.
Robust standard errors are in parentheses.
[a] In natural logarithm form
[b] Lagged by one year
*** p<0.01, ** p<0.05, and * p<0.1

For other key variables, such as the presence of a floating exchange rate regime in both trading partners, exchange rate volatility, and the interaction term between exchange rate volatility and the exchange rate regime,[11] the coefficients were found to be insignificant for total exports.

Looking specifically at goods and services exports, the coefficients vary in statistical significance, magnitude, and signs, indicative of the differing impacts of various factors on these export categories. The presence of an IT exporter leads to

[11] Following Clark et al. (2004)

an increase in both goods and services exports, with a stronger effect observed for the latter. Exporting countries that adopt an IT framework experience a 0.61-percent increase in goods exports and a 1.70-percent increase in services exports.

For the REER ratio, a negative and significant relationship was found with goods exports, while a positive and significant relationship was found with services exports. This result will be discussed in detail in subsequent paragraphs.

A negative relationship was also found between the presence of floating exchange rate regimes in both trading partners and services exports. Specifically, a country with a floating exchange rate regime that exports to another country with the same arrangement experiences a 0.37-percent decline in services exports.

The responsiveness of services exports may be attributed to the higher price elasticity of demand, possibly because substitute suppliers are easy to find (Eichengreen & Gupta, 2013). As such, a country that imports services from a country whose currency is unstable can easily shift to other suppliers or exporters.

The standard gravity variables, such as GDP product, distance, and contiguity, are statistically significant across all models (i.e., total exports, goods exports, and services exports). The coefficients of the variables also align with the theory (i.e., positive for GDP product and contiguity and negative for distance) but vary in magnitude, similar to the baseline estimates. Notably, trading partners that share a common language were found to increase services exports but not goods exports.

Meanwhile, the presence of an FTA between trading partners significantly increases exports for all models. The export-increasing effect of FTAs was stronger for services exports (0.44 percent) than for goods exports (0.20 percent). The GFC dummy is negative and significant only for services exports and insignificant elsewhere, while the COVID-19 dummy is insignificant across all models.

All baseline and augmented models passed post-estimation tests. The Ramsey Regression Equation Specification Error Test (RESET) was conducted to check for proper model specification, with the null hypothesis that the model is correctly specified. All models in *Table 5.1* and *Table 5.2* do not reject the null hypothesis at a 5.0 percent significance level. Meanwhile, the variance inflation factor (VIF) was calculated to identify multicollinearity in the models. A VIF value exceeding 10 suggests high levels of multicollinearity, which can introduce bias and potentially distort the results. All models specified in *Table 5.1* and *Table 5.2* had VIF values below 10.

To examine the impact of GVCs on the relationship between exchange rates and trade, a foreign value-added (FVA) variable was incorporated in the analysis. Following the approach of Tan et al. (2019), both the FVA share and the interaction between the FVA share and the REER ratio were included (*Table 5.3*).

The estimates show that the REER ratio is now negative and significant across all models (i.e., total exports, goods exports, and services exports), with a reversal on the positive coefficient observed for services exports (*Table 5.2*). Moreover, the interaction term between FVA share and the REER ratio is positive and statistically significant only for services exports. The observed positive and significant effect of the REER ratio on services exports is similar to the findings of

Tan et al. (2019), which suggest that the export-reducing effects of currency appreciation, as characterized by the REER ratio, are weakened by the presence of FVA in exports.

Figure 7 demonstrates that the average share of intra-RCEP FVA in exports increased for the Association of Southeast Asian Nations (ASEAN) region from 2005 to 2020. For East Asian RCEP members, as well as Australia and New Zealand, the share has been relatively constant over the same period. On a per-country basis, nine out of 15 countries reported an increase in the intra-RCEP FVA share in exports from 2005 to 2020. Although the movements in FVA share in RCEP exports are relatively small, a small percentage point increase can have significant effects on the relationship between exchange rates and trade, as Tan et al. (2019) stated.

The moderating effect of the FVA share on currency appreciation for services exports may have been driven by a category of exports called "manufacturing services on physical inputs owned by others." Said category covers the processing, assembly, labeling, packing, and similar processes undertaken by enterprises that do not own the physical inputs involved in production. A classic example of such a transaction would be a firm in *Country A* providing material inputs to a firm in *Country B*, which then undertakes some form of transformative manufacturing (e.g., processing, assembly) on these inputs while they remain owned by the firm in *Country A*. Thus, a currency appreciation in *Country B* would benefit its firms providing manufacturing services, as they would find it cheaper to import more material inputs from the firms in *Country A.* The finished goods are then exported either back to *Country A* or to another country (i.e., *Country C*). Common examples of manufacturing services include oil refining, natural gas liquefaction, and electronics and clothing assembly (Organisation for Economic Co-operation and Development [OECD], 2017).

Despite the moderating effect of the FVA share on currency appreciation, the net effect of a currency appreciation on services exports remains negative and statistically significant. Additionally, the interaction term between the FVA share and the REER ratio is insignificant for total exports and goods exports. These findings suggest that the traditional or expected effect of a currency appreciation on exports is not entirely modified. This supports previous studies that argue that the responsiveness of trade balances to exchange rate changes remains significant but with reduced elasticities due to GVCs (Adler et al., 2023; De Soyres et al., 2021; Leigh et al., 2017).

Table 5.3. Impact of Exchange Rates, Inflation Targeting, Foreign Value Added, and Standard Gravity Variables on Exports

Dependent variable	(1) Total exports	(2) Goods exports	(3) Services exports
GDP product[a]	0.856***	0.888***	0.875***
	(0.031)	(0.036)	(0.029)
Distance[a]	-0.474***	-0.468***	-0.528***
	(0.077)	(0.083)	(0.060)
Contiguity	0.498***	0.447***	0.538***
	(0.146)	(0.153)	(0.159)
Common language	0.199	0.137	0.372***
	(0.149)	(0.172)	(0.132)

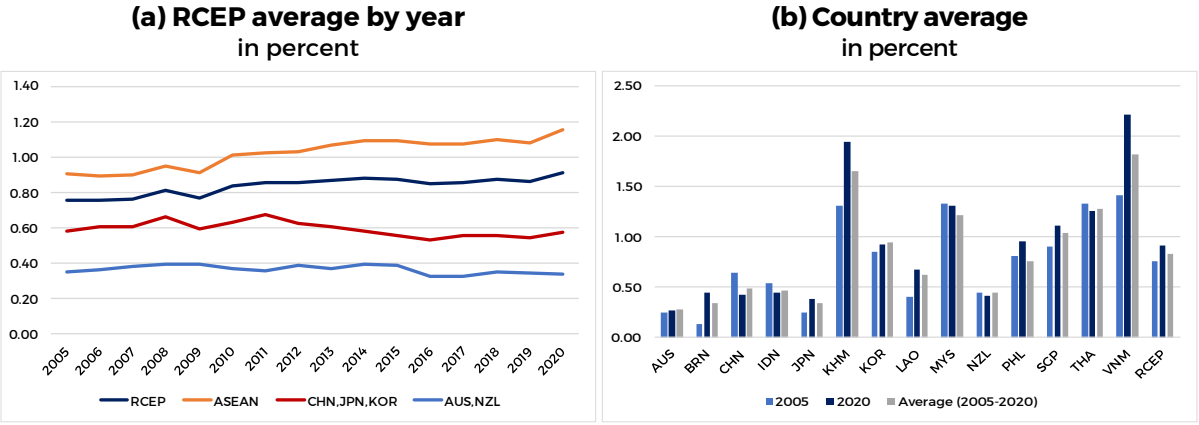
Common colonizer	0.529**	0.596**	0.273
	(0.234)	(0.259)	(0.210)
FTA	0.271***	0.250***	0.400***
	(0.078)	(0.083)	(0.058)
ER both float	-0.163	-0.088	-0.387***
	(0.132)	(0.143)	(0.149)
REER ratio[a,b]	-1.500***	-1.631***	-0.826***
	(0.286)	(0.307)	(0.239)
ER volatility[a,b]	0.019	0.033	-0.070
	(0.368)	(0.393)	(0.334)
ER both float * ER volatility[a,b]	-0.605	-0.568	-0.553
	(0.481)	(0.503)	(0.442)
IT exporter	0.656**	0.411	0.540***
	(0.257)	(0.293)	(0.116)
COVID	-0.944***	-1.031***	-1.057***
	(0.301)	(0.335)	(0.115)
GFC	-0.037	-0.351	-0.547***
	(0.318)	(0.352)	(0.146)
FVA share[b]	-0.038	-0.053*	0.056
	(0.027)	(0.029)	(0.036)
FVA share[b] * REER ratio[a,b]	0.123	0.127	0.129*
	(0.110)	(0.120)	(0.078)
Constant	-34.473***	-36.232***	-37.393***
	(2.142)	(2.422)	(1.715)
Observations	3,002	3,002	3,094
R-squared	0.951	0.949	0.923
RESET test statistic	0.023	0.074	0.700

Country-year fixed effects are included but not reported.
Robust standard errors are in parentheses.
[a] In natural logarithm form
[b] Lagged by one year
*** p<0.01, ** p<0.05, and * p<0.1

Meanwhile, FVA share has a negative and statistically significant impact on goods exports, similar to the findings of Tan et al. (2019). A high FVA share indicates a strong reliance on imported intermediate goods. This dependence makes export production vulnerable to disruptions. For example, geopolitical tensions or natural disasters can significantly affect the availability and cost of imported inputs, resulting in delays and higher production costs. Moreover, domestic firms may find it difficult to compete when a large portion of the value of exported goods is sourced abroad. As a result, overall domestic production may decline, as firms may choose to use cheaper foreign inputs instead of investing in local resources and labor.[12]

[12] Using aggregate data may have distorted the results, as goods exports include a wide range of items, such as raw materials or commodities, manufactured goods, and capital goods.

Figure 7. Average Foreign Value-Added Share of the Regional Comprehensive Economic Partnership
2005–2020



Source: Trade in Value Added Database (Organisation for Economic Co-operation and Development, 2024b); Authors' calculations

IV.D. Robustness Checks

Alternative models were estimated to check the robustness of the results. A model was estimated using the inflation rates of both countries instead of the IT dummy variable. Using actual inflation rates would determine the effect of keeping actual inflation low and stable on exports.

The inflation rate in the exporting country is anticipated to be negatively related to its exports. Higher inflation can increase production costs for goods and services, making them less competitive in international markets. Conversely, a positive correlation is expected between the importing country's inflation rate and imports. When inflation rises in the importing country, driving up input costs, it may lead that country to import goods and services rather than produce them domestically.

The results indicate that the exporter's inflation rate is negative and statistically significant for total and goods exports, while the importer's inflation rate is positive and statistically significant for total and goods exports (*Table 5.4*). The sign of the coefficient for the *Inflation_importer* variable is in line with our expectations. However, the findings of Wong and Chong (2016) suggest the need for further investigation.

Thus, a model was then estimated to replicate the findings of Wong and Chong (2016). Two separate dummy variables were added to indicate if one (*IT one*) or both (*IT both*) trading partners are adopting an IT framework. The actual inflation rates of both countries were likewise included. According to Wong and Chong (2016), including both the IT dummy variables and actual inflation rates would confirm that low inflation is one of the channels through which an IT framework can increase trade.

Table 5.4. Robustness Check: Inclusion of Actual Inflation Rates Instead of the Inflation Targeting Dummy

Dependent variable	(1) Total exports	(2) Total exports	(3) Goods exports	(4) Goods exports	(5) Services exports	(6) Services exports
ER both float	-0.174	-0.163	-0.109	-0.088	-0.366**	-0.387***
	(0.135)	(0.132)	(0.151)	(0.143)	(0.156)	(0.149)
REER ratio[a,b]	-0.392	-1.322**	-0.494	-1.785***	-0.456*	-2.514***
	(0.335)	(0.627)	(0.391)	(0.652)	(0.237)	(0.320)
ER volatility[b]	-0.004	0.019	-0.008	0.033	-0.086	-0.070
	(0.370)	(0.368)	(0.397)	(0.393)	(0.334)	(0.334)
ER both float * ER volatility[b]	-0.695	-0.605	-0.630	-0.568	-0.729	-0.553
	(0.464)	(0.481)	(0.469)	(0.503)	(0.494)	(0.442)
Inflation_exporter	-0.056***	-0.062***	-0.074***	-0.084***	-0.013	0.024
	(0.019)	(0.022)	(0.023)	(0.026)	(0.017)	(0.019)
Inflation_importer	0.050**	0.049***	0.072***	0.071***	0.024**	-0.010
	(0.020)	(0.019)	(0.021)	(0.020)	(0.010)	(0.012)
FVA share[b]	–	-0.038	–	-0.053*	–	0.056
	–	(0.027)	–	(0.029)	–	(0.036)
FVA share[b] * REER ratio[a,b]	–	0.123	–	0.127	–	0.129*
	–	(0.110)	–	(0.120)	–	(0.078)
Observations	3,002	3,002	3,002	3,002	3,094	3,094
R-squared	0.953	0.951	0.950	0.949	0.921	0.923
RESET test statistic	0.065	0.023	0.182	0.074	0.441	0.700

Country-year fixed effects are included but not reported.
Robust standard errors are in parentheses.
Standard gravity and other control variables are included in the estimates and available in *Annex 1.*
[a] In natural logarithm form
[b] Lagged by one year
*** p<0.01, ** p<0.05, and * p<0.1

The results show a positive and statistically significant relationship between *IT one* and exports across all models (*Table 5.5*). This positive and significant effect is magnified when both trading partners adopt an IT framework (*IT both*), as seen across all models. The coefficients for the actual inflation rates of exporters and importers are also in line with our expected signs. However, the actual inflation rate variables are not statistically significant for services exports.

All models from *Table 5.1* to *Table 5.5* were estimated using ordinary least squares. The results, as shown in *Annex 2*, have the same implications using the PPML technique. Nonetheless, this study relies on the estimates provided by the PPML, as they are considered more appropriate and robust for reasons discussed earlier.

Table 5.5. Alternative Model Results
replication of Wong and Chong (2016)'s model

Dependent Variable	(1) Total Exports	(2) Goods Exports	(3) Services Exports
ER both float	-0.129	-0.080	-0.253
	(0.113)	(0.123)	(0.170)
REER ratio[a,b]	-0.687**	-0.786**	0.260
	(0.341)	(0.373)	(0.483)
ER volatility[b]	-0.084	-0.064	-0.229
	(0.347)	(0.368)	(0.320)
ER both float * ER volatility[b]	-0.758*	-0.671	-0.905**
	(0.431)	(0.443)	(0.456)
Inflation_exporter	-0.093***	-0.103***	-0.017
	(0.015)	(0.021)	(0.013)
Inflation_importer	0.077***	0.078**	-0.011
	(0.028)	(0.033)	(0.016)
IT one	0.556***	0.450**	0.597***
	(0.173)	(0.188)	(0.207)
IT both	1.034***	0.848**	1.034***
	(0.325)	(0.343)	(0.383)
Observations	3,002	3,002	3,094
R-squared	0.953	0.950	0.922
RESET test statistic	0.070	0.186	0.498

Country-year fixed effects are included but not reported.
Robust standard errors are in parentheses.
Standard gravity and other control variables are included in the estimates and available in *Annex 1*.
[a] In natural logarithm form
[b] Lagged by one year
*** p<0.01, ** p<0.05, and * p<0.1

Below is a summary of the findings on the main variables of concern (i.e., exchange rates and IT):

First, trading partners with floating exchange rate regimes export less to each other, but this is only true for services exports. This result suggests that countries prefer trading partners with more stable exchange rate regimes.

Second, exchange rate volatility has no impact on the exports of RCEP member countries, at least for the sample period considered. As seen in *Figure 4-a*, exchange rate volatility in RCEP member countries has generally gone down since the GFC. While there were bouts of increased volatility (e.g., during the 2013 taper tantrum), these were much lower than the volatility seen during the GFC.

Even during the COVID-19 pandemic, exchange rate volatility in most countries in the sample was short-lived and lower compared with other periods. This may be attributed to the success of RCEP member countries in managing exchange rate movements (Khor et al., 2018).

Third, the traditional relationship between the changes in exchange rates and exports remains. A currency appreciation negatively affects both goods and services exports, but the impact on goods exports is larger. However, the impact of a currency appreciation on services exports is moderated by the country's FVA share.

Finally, IT is beneficial to a country, as it leads to greater exports of both goods and services, with a larger impact on the latter. This implies that low and stable inflation, provided by an IT framework, helps reduce production costs for goods and services, enhancing their competitiveness in international markets.

V. Conclusion

This study underscores the significant roles that exchange rates and monetary policy framework can play in shaping trade within the RCEP region.

The findings indicate that a depreciation of the domestic currency can potentially increase a country's exports. Currency movements associated with floating exchange rate regimes can reduce services trade, suggesting that strategic currency management could help enhance exports.

The results likewise suggest that an IT regime is trade-enhancing. Low and stable inflation can improve a country's export performance. This highlights the importance of maintaining low and stable prices for RCEP countries.

The findings of our study must be viewed in light of certain considerations and limitations. First, while our results suggest that a currency depreciation can potentially increase a country's exports, careful consideration is needed before using it as a direct policy tool to target exports. Other factors, such as trade and industrial policies, also influence the trade balance, affecting domestic firms' capacities and competitiveness.

In particular, factors like domestic firms' productive capacity, the country's infrastructure, and the economy's regulatory environment have important implications for export performance but were not explicitly considered in the empirical analysis.[13] Even if the exchange rate is used as a policy tool to improve trade performance, it will not be sufficient if the supply-side factors that constrain the capacity of domestic firms to produce competitively will not be addressed.

Additionally, changes in the exchange rate impact the economy not just through the trade channel. Another common channel is the financial channel, where the exchange rate affects the balance sheets of different economic agents, with currency mismatches that may be imperfectly unhedged. This means that exchange rate movements have implications for financial stability. Authorities must also consider the pass-through effect of exchange rate changes on inflation, particularly for countries that heavily import their domestic needs.

Another caveat is the possibility of endogeneity issues, which can be caused by simultaneity or reverse causality. To enhance the validity of the findings, future studies could employ the instrumental variables technique. Further research is

[13] While we included country-year fixed effects in our estimations, which could have possibly captured country-specific policies, our specifications cannot distinguish their effects on exports.

likewise warranted to expand the coverage of countries beyond the RCEP region to confirm whether the results are generalizable. Additionally, to provide a more comprehensive analysis, future work could include imports and the overall trade balance in the analysis. Disaggregating goods trade into raw and manufactured, as well as services trade into traditional and modern, may yield additional insights.

References

Adler, G., Meleshchuk, S., & Buitron, C. O. (2023). Global value chains and external adjustment: Do exchange rates still matter? *Economic Modelling, 118*, 106073. https://doi.org/10.1016/j.econmod.2022.106073

Ahmed, S., Appendino, M., & Ruta, M. (2017). Global value chains and the exchange rate elasticity of exports. *The B.E. Journal of Macroeconomics, 17*(1), 20150130. https://doi.org/10.1515/bejm-2015-0130

Amiti, M., Itskhoki, O., & Konings, J. (2014). Importers, exporters, and exchange rate disconnect. *American Economic Review, 104*(7), 1942–1978. https://doi.org/10.1257/aer.104.7.1942

Anderson, J. E. & Van Wincoop, E. (2003). Gravity with gravitas: A Solution to the border puzzle. *American Economic Review*, *93*(1), 170–192. https://doi.org/10.1257/000282803321455214

Asia Regional Integration Center. (n.d.). *Free trade agreements*. Retrieved September 1, 2024, from https://aric.adb.org/database/fta

Bahmani-Oskooee, M. & Hegerty, S. W. (2009). The effects of exchange-rate volatility on commodity trade between the United States and Mexico. *Southern Economic Journal*, *75*(4), 1019–1044. https://www.jstor.org/stable/27751431

Banik, B. & Roy, C. K. (2020). Effect of exchange rate uncertainty on bilateral trade performance in South Asian Association for Regional Cooperation countries: a gravity model analysis. *International Trade Politics, and Development*, *5*(1), 32–50. https://doi.org/10.1108/itpd-08-2020-0076

Bloomberg. (2024). *Currencies*. https://www.bloomberg.com/markets/currencies

Cheng, K. C., Hong, G. H., Seneviratne, D., & Van Elkan, R. (2016). Rethinking the exchange rate Impact on trade in a world with global value chains. *International Economic Journal, 30*(2), 204–216. https://doi.org/10.1080/10168737.2016.1148418

Cheng, K. M. (2020). Currency devaluation and trade balance: Evidence from the United States services trade. *Journal of Policy Modeling*, *42*(1), 20–37. https://doi.org/10.1016/j.jpolmod.2019.09.005

Chi, J. & Cheng, S. K. (2016). Do exchange rate volatility and income affect Australia's maritime export flows to Asia? *Transport Policy*, *47*, 13–21. https://doi.org/10.1016/j.tranpol.2015.12.003

Chui, M., Kuruc, E., & Turner, P. (2016). *A new dimension to currency mismatches in the emerging markets–non-financial companies* [Bank for International Settlements Working Paper No. 550]. https://www.bis.org/publ/work550.htm

Clark, P., Tamirisa, N., Wei, S. J., Sadikov, A., & Zeng, L. (2004). Exchange rate volatility and trade flows: Some new evidence. *International Monetary Fund Policy Papers*, *2004*(23), 1–69. https://doi.org/10.5089/9781498330282.007

Crivelli, P. A., Marand, J., & Pascua, G. Y. (2022). *Liberalizing services trade in the Regional Comprehensive Economic Partnership: Status and ways forward* [Policy brief]. Asian Development Bank. https://www.adb.org/sites/default/files/publication/847906/adb-brief-237-liberalizing-services-trade-rcep.pdf

Darvas, Z. (2012). *Real effective exchange rates for 178 Countries: A new database* [Bruegel Working Paper No. 2012-06]. https://www.bruegel.org/working-paper/real-effective-exchange-rates-178-countries-new-database

De Soyres, F., Frohm, E., Gunnella, V., & Pavlova, E. (2021). Bought, sold, and bought again: The impact of complex value chains on export elasticities. *European Economic Review, 140*, 103896. https://doi.org/10.1016/j.euroecorev.2021.103896

Eichengreen, B. & Gupta, P. (2013). *The real exchange rate and export growth: Are services different?* [Bank of Korea Working Paper No. 2013-17]. https://doi.org/10.2139/ssrn.2579533

Fang, W., Lai, Y., & Miller, S. M. (2005). *Export promotion through exchange rate policy: Exchange rate depreciation or stabilization?* [University of Connecticut Working Paper No. 2005-07]. https://digitalcommons.lib.uconn.edu/cgi/viewcontent.cgi?article=1079&context=econ_wpapers

Findlay, C., Ye, Z., & Roelfsema, H. (2022). Regional Comprehensive Economic Partnership and modern services. In F. Kimura, S. Urata, S. Thangavelu, & D. Narjoko (Eds.), *Dynamism of East Asia and Regional Comprehensive Economic Partnership: The framework for regional integration* (pp. 89–117). Economic Research Institute for ASEAN and East Asia.

Georgiadis, G., Gräb, J., & Khalil, M. (2019). *Global value chain participation and exchange rate pass-through* [European Central Bank Working Paper No. 2327]. https://doi.org/10.2139/ssrn.3481697

Harms, P. & Knaze, J. (2021). Bilateral de-jure exchange rate regimes and foreign direct investment: A gravity analysis. *Journal of International Money and Finance*, *117*, 102438. https://doi.org/10.1016/j.jimonfin.2021.102438

Hayakawa, K. & Kimura, F. (2008). *The effect of exchange rate volatility on international trade in East Asia* [Economic Research Institute for ASEAN and East Asia Discussion Paper No. 2008-03]. https://www.eria.org/publications/the-effect-of-exchange-rate-volatility-on-international-trade-in-east-asia/

Herman, P. R. (2023). *Gravity estimation: Best practices and useful approaches* [United States International Trade Commission Working Paper No. 2023-10-C]. https://www.usitc.gov/publications/332/gravity_estimation_best_practices_and_useful.htm

Hondroyiannis, G., Swamy, P., Tavlas, G., & Ulan, M. (2008). Some further evidence on exchange-rate volatility and exports. *Review of World Economics*, *144*, 151–180. https://doi.org/10.1007/s10290-008-0141-4

International Monetary Fund. (2022). *Annual report on exchange arrangements and exchange restrictions*. https://www.elibrary.imf.org/display/book/9798400235269/9798400235269.xml?code=imf.org

Jahan, S. (n.d.). *Inflation targeting: Holding the line.* Finance and Development. https://www.imf.org/external/pubs/ft/fandd/basics/72-inflation-targeting.htm

Khor, H. E., Guajardo, J., & Peiris, S. J. (2018). Evolution of monetary policy frameworks. In A. Corbacho & S. J. Peiris (Eds.), *The ASEAN way: Sustaining growth and stability* (pp. 15–44). International Monetary Fund.

Klein, M. W. & Shambaugh, J. C. (2006). Fixed exchange rates and trade. *Journal of International Economics*, *70*(2), 359–383. https://doi.org/10.1016/j.jinteco.2006.01.001

Leigh, D., Lian, W., Poplawski-Ribeiro, M., Szymanski, R., Tsyrennikov, V., & Yang, H. (2017). *Exchange rates and trade: A disconnect?* [International Monetary Fund Working Paper No. 2017-058]. https://www.imf.org/-/media/Files/Publications/WP/2017/wp1758.ashx

Matsuura, T. (2022). *Investment liberalization in East and Southeast Asia* [Economic Research Institute for ASEAN and East Asia Discussion Paper No. 2022-457]. https://www.eria.org/research/investment-liberalisation-in-east-and-southeast-asia

Mayer, T. & Zignago, S. (2011). *Notes on CEPII's distances measures: The GeoDist database* [Centre d'Études Prospectives et d'Informations Internationales Working Paper No. 2011-25]. http://dx.doi.org/10.2139/ssrn.1994531

Nicita, A. (2013). *Exchange rates, international trade, and trade policies* [United Nations Conference on Trade and Development, Policy Issues in International Trade and Commodities Study No. 56]. https://unctad.org/system/files/official-document/itcdtab57_en.pdf

Njoroge, L. (2020). The effects of exchange rate volatility on exports in COMESA: A panel gravity model approach. *Journal of Applied Finance & Banking*, *10*(6), 203–223. https://doi.org/10.47260/jafb/10610

Organisation for Economic Co-operation and Development (2017). *Manual on statistics of international trade in services 2010 compiler's guide online chapter 1: Measuring manufacturing services on physical inputs owned by others and merchanting*. https://one.oecd.org/document/STD/CSSP/WPTGS(2017)2/en/pdf

Organisation for Economic Co-operation and Development (OECD) (2024a). *OECD–World Trade Organization balanced international trade in services* [Data set]. https://doi.org/10.1787/tis-data-en

Organisation for Economic Co-operation and Development (2024b). *Trade in value added 2023 edition: Principal indicators, shares* [Data set]. https://data-explorer.oecd.org/?pg=0&bp=true&snb =14&tm=TIVA

Pomfret, R. & Pontines, V. (2013). *Exchange rate policy and regional trade agreements: A case of conflicted interests?* [Asian Development Bank Institute Working Paper No. 436]. https://www.adb.org/publications/exchange-rate-policy-and-regional-trade-agreements-case-conflicted-interests

Prajakschitt, P. (2015). *Exchange rate volatility and trade: The case of trade among China and ASEAN countries* [Master's essay, Lund University]. http://lup.lub.lu.se/student-papers/record/7793864

Sahoo, M., Babu, M. S., & Dash, U. (2018). Asymmetric effects of exchange rate movements on traditional and modern services exports: Evidence from a large emerging economy. *Journal of International Trade & Economic Development*, *28*(4), 508–531. https://doi.org/10.1080/09638199.2018.1561744

Salvatici, L. (2013). *The gravity model in international trade* [African Growth and Development Policy Technical Note No. TN-04]. https://agrodep.org/sites/default/files/AGRODEP-TN-04.pdf

Santana-Gallego, M. & Pérez-Rodríguez, J. V. (2019). International trade, exchange rate regimes, and financial crises. *The North American Journal of Economics and Finance*, *47*, 85–95. https://doi.org/10.1016/j.najef.2018.11.009

Santos Silva, J. M. C. & Tenreyro, S. (2006). The log of gravity. *The Review of Economics and Statistics*, *88*(4), 641–658. https://doi.org/10.1162/rest.88.4.641

Satawatananon, K. (2014). *The effects of exchange rate volatility on commodity trade flows between the United States and Thailand* [Doctoral dissertation, University of Wisconsin-Milwaukee]. https://dc.uwm.edu/etd/756

Senadza, B. & Diaba, D. D. (2017). Effect of exchange rate volatility on trade in Sub-Saharan Africa. *Journal of African Trade*, *4*(1), 20–36. https://doi.org/10.1016/j.joat.2017.12.002

Shepherd, B. (2016). *The gravity model of international trade: A user guide*. Economic and Social Commission for Asia and the Pacific. Economic and Social Commission for Asia and the Pacific. https://www.unescap.org/resources/gravity-model-international-trade-user-guide-updated-version

Tan, K. G., Trieu Duong, L. N., & Chuah, H. Y. (2019). Impact of exchange rates on ASEAN's trade in the era of global value chains: An empirical assessment. *The Journal of International Trade & Economic Development*, *28*(7), 873–901. https://doi.org/10.1080/09638199.2019.1607532

Tancangco, J. A. (2022). How do exchange rates affect the Big One? An empirical analysis of the effect of exchange rates on Regional Comprehensive Economic Partnership exports using the gravity model. *The Philippine Review of Economics*, *59*(2), 135–165. https://doi.org/10.37907/5erp2202d

Tenreyro, S. (2007). On the trade impact of nominal exchange rate volatility. *Journal of Development Economics*, *82*(2), 485–508. https://doi.org/10.1016/j.jdeveco.2006.03.007

Tinbergen, J. (1962). *Shaping the world economy: Suggestions for an international economic policy*. Twentieth Century Fund.

United Nations Comtrade (2024). *United Nations commodity trade statistics database* [Data set]. United Nations. Retrieved September 1, 2024, from https://comtradeplus.un.org

United Nations Conference on Trade and Development. (2021). *A new centre of gravity: The Regional Comprehensive Economic Partnership and its trade effects*. United Nations.

United Nations Conference on Trade and Development. (2023). *Handbook of Statistics*. United Nations.

Upper, C. & Valli, M. (2016). Emerging derivatives markets? *Bank for International Settlements Quarterly Review*, 67–80. https://www.bis.org/publ/qtrpdf/r_qt1612g.htm

Vo, D. H., Vo, A. T., & Zhang, Z. (2019). Exchange rate volatility and disaggregated manufacturing exports: Evidence from an emerging country. *Journal of Risk and Financial Management*, *12*(1), 12. https://doi.org/10.3390/jrfm12010012

Wang, W. & Thangavelu, S. (2022). Trade facilitation in Regional Comprehensive Economic Partnership countries. In F. Kimura, S. Urata, S. Thangavelu, & D. Narjoko (Eds.), *Dynamism of East Asia and Regional Comprehensive Economic Partnership: The framework for regional integration* (pp. 71–88). Economic Research Institute for ASEAN and East Asia.

Wong, K. M. & Chong, T. T. L. (2016). Does monetary policy matter for trade? *International Economics*, *147*, 107–125. https://doi.org/10.1016/j.inteco.2016.04.001

World Bank (2024a). *Exports of goods and services* [Data set]. Retrieved September 1, 2024, from https://data.worldbank.org/indicator/NE.EXP.GNFS.CD

World Bank (2024b). *Gross domestic product* [Data set]. Retrieved September 1, 2024, from https://data.worldbank.org/indicator/NY.GDP.MKTP.CD

World Bank (2024c). *Inflation, consumer prices* [Data set]. Retrieved September 1, 2024, from https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG

World Integrated Trade Solution. (n.d.). *World product exports 1988–2022* [Data set]. September 1, 2024, from https://wits.worldbank.org/CountryProfile/en/Country/WLD/StartYear/1988/EndYear/2022/TradeFlow/Export/Indicator/XPRT-TRD-VL/Partner/WLD/Product/Total

Xu, J., Bahmani-Oskooee, M., & Karamelikli, H. (2022). China's trade in services and role of the exchange rate: An asymmetric analysis. *Economic Analysis and Policy*, *74*, 747–757. https://doi.org/10.1016/j.eap.2022.04.006

Annexes

Annex 1. Control Variables of Poisson Pseudo-Maximum Likelihood Estimates

Table 1-A. Control Variables for Table 5.4

Dependent variable	(1) Total exports	(2) Total exports	(3) Goods exports	(4) Goods exports	(5) Services exports	(6) Services exports
GDP product[a]	0.769***	0.791***	0.795***	0.803***	0.891***	0.733***
	(0.038)	(0.044)	(0.043)	(0.047)	(0.022)	(0.024)
Distance[a]	-0.443***	-0.474***	-0.433***	-0.468***	-0.530***	-0.528***
	(0.077)	(0.077)	(0.083)	(0.083)	(0.066)	(0.060)
Contiguity	0.482***	0.498***	0.412***	0.447***	0.586***	0.538***
	(0.123)	(0.146)	(0.132)	(0.153)	(0.162)	(0.159)
Common language	0.173	0.199	0.104	0.137	0.362***	0.372***
	(0.143)	(0.149)	(0.162)	(0.172)	(0.138)	(0.132)
Common colonizer	0.550**	0.529**	0.613**	0.596**	0.320	0.273
	(0.226)	(0.234)	(0.250)	(0.259)	(0.212)	(0.210)
FTA	0.232***	0.271***	0.200***	0.250***	0.437***	0.400***
	(0.073)	(0.078)	(0.076)	(0.083)	(0.074)	(0.058)
COVID	0.219	0.032	0.486	0.362	-1.599***	-0.631***
	(0.266)	(0.237)	(0.299)	(0.238)	(0.219)	(0.212)
GFC	-0.596	-0.342	-0.946	-0.516	-0.072	0.180
	(0.624)	(0.573)	(0.739)	(0.667)	(0.481)	(0.468)
Constant	30.632***	-31.492***	-32.217***	32.457***	37.989***	-31.053***
	(2.528)	(2.622)	(2.840)	(2.853)	(1.445)	(1.462)
Observations	3,002	3,002	3,002	3,002	3,094	3,094
R-squared	0.953	0.951	0.950	0.949	0.921	0.923
RESET test statistic	0.065	0.023	0.182	0.074	0.441	0.700

Country-year fixed effects are included but not reported.
Robust standard errors are in parentheses.
[a] In natural logarithm form
*** p<0.01, ** p<0.05, and * p<0.1

Table 1-B. Control Variables for Table 5.5

Dependent variable	(1) Total exports	(2) Goods exports	(3) Services exports
GDP product[a]	0.756***	0.783***	0.840***
	(0.035)	(0.039)	(0.022)
Distance[a]	-0.439***	-0.430***	-0.523***
	(0.080)	(0.086)	(0.070)
Contiguity	0.480***	0.411***	0.572***
	(0.124)	(0.132)	(0.167)
Common language	0.190	0.115	0.387***
	(0.147)	(0.172)	(0.140)
Common colonizer	0.569**	0.624**	0.369
	(0.238)	(0.259)	(0.234)
FTA	0.227***	0.196***	0.434***
	(0.072)	(0.075)	(0.076)
COVID	-0.101	0.226	-2.219***
	(0.270)	(0.296)	(0.454)
GFC	-0.587	-0.588	0.524*
	(0.722)	(0.845)	(0.317)
Constant	-29.888***	-31.515***	-35.425***
	(2.342)	(2.609)	(1.376)
Observations	3,002	3,002	3,094
R-squared	0.953	0.950	0.922
RESET test statistic	0.070	0.186	0.498

Country-year fixed effects are included but not reported.
Robust standard errors are in parentheses.
[a] In natural logarithm form
*** p<0.01, ** p<0.05, and * p<0.1

Annex 2. Ordinary Least Square Estimates

Table 2-A. Impact of Standard Gravity Model Variables on Exports

Dependent variable	(1) Total exports	(2) Goods exports	(3) Services exports
Nominal GDP product[a]	1.021***	1.200***	0.847***
	(0.040)	(0.060)	(0.028)
Distance[a]	-0.529***	-0.550***	-0.432***
	(0.144)	(0.178)	(0.121)
Contiguity	1.217***	1.529***	0.582***
	(0.282)	(0.384)	(0.180)
Common language	0.047	-0.098	0.331**
	(0.189)	(0.244)	(0.159)
Common colonizer	0.637*	0.816	0.438**
	(0.333)	(0.507)	(0.202)
Constant	-30.776***	-41.240***	-37.837***
	(2.658)	(3.808)	(2.049)
Observations	3,401	3,401	3,570
R-squared	0.928	0.898	0.967
RESET test statistic	0.000	0.000	0.000

Country-year fixed effects are included but not reported.
Robust standard errors are in parentheses.
[a] In natural logarithm form
*** p<0.01, ** p<0.05, and * p<0.1

Table 2-B. Impact of Exchange Rates, Inflation Targeting, and Standard Gravity Variables on Exports

Dependent variable	(1) Total exports	(2) Goods exports	(3) Services exports
Nominal GDP product[a]	1.029***	1.143***	0.802***
	(0.041)	(0.066)	(0.030)
Distance[a]	-0.573***	-0.566***	-0.512***
	(0.130)	(0.171)	(0.095)
Contiguity	1.191***	1.453***	0.672***
	(0.289)	(0.405)	(0.160)
Common language	0.033	-0.141	0.351**
	(0.190)	(0.255)	(0.144)
Common colonizer	0.692**	1.145**	0.181
	(0.343)	(0.471)	(0.221)
FTA	0.365**	0.373	0.294***
	(0.183)	(0.241)	(0.109)
ER both float	-0.220	-0.378	0.027
	(0.236)	(0.339)	(0.126)
REER ratio[a,b]	-1.143***	-1.251***	0.625*
	(0.344)	(0.451)	(0.318)
ER volatility[a,b]	0.562	0.590	0.490
	(0.534)	(0.839)	(0.360)
ER both float * ER volatility[a,b]	-1.427*	-1.886*	-1.192**
	(0.780)	(0.982)	(0.551)
IT exporter	1.208***	1.563***	1.308***
	(0.195)	(0.309)	(0.205)
COVID	-0.610	-0.255	0.394**
	(0.582)	(0.759)	(0.194)
GFC	0.452*	0.619*	-0.655*
	(0.259)	(0.371)	(0.352)
Constant	-30.332***	37.044***	-34.841***
	(2.460)	(3.924)	(2.112)
Observations	3,002	3,002	3,094
R-squared	0.932	0.905	0.968
RESET test statistic	0.000	0.000	0.000

Country-year fixed effects are included but not reported.
Robust standard errors are in parentheses.
[a] In natural logarithm form
[b] Lagged by one year
*** p<0.01, ** p<0.05, and * p<0.1

Table 2-C. Impact of Exchange Rates, Inflation Targeting, Foreign Value Added, and Standard Gravity Variables on Exports

Dependent variable	(1) Total exports	(2) Goods exports	(3) Services exports
Nominal GDP product[a]	1.029***	1.158***	0.957***
	(0.034)	(0.047)	(0.036)
Distance[a]	-0.602***	-0.603***	-0.528***
	(0.129)	(0.171)	(0.094)
Contiguity	1.147***	1.398***	0.634***
	(0.275)	(0.386)	(0.155)
Common language	0.059	-0.107	0.358**
	(0.198)	(0.265)	(0.142)
Common colonizer	0.716**	1.174**	0.209
	(0.335)	(0.460)	(0.216)
FTA	0.362**	0.371	0.282***
	(0.174)	(0.231)	(0.103)
ER both float	-0.195	-0.345	0.035
	(0.234)	(0.333)	(0.123)
REER ratio[a,b]	-1.386***	-1.582***	-0.699***
	(0.356)	(0.464)	(0.218)
ER volatility[a,b]	0.547	0.569	0.507
	(0.544)	(0.855)	(0.357)
ER both float * ER volatility[a,b]	-1.300*	-1.725*	-1.116**
	(0.773)	(0.971)	(0.559)
IT exporter	1.246***	1.530***	0.191
	(0.224)	(0.350)	(0.145)
FVA share[b]	-0.056	-0.075	-0.008
	(0.045)	(0.060)	(0.019)
FVA share[b] * REER ratio[a,b]	0.331**	0.420**	0.232***
	(0.135)	(0.168)	(0.079)
COVID	-0.384	-0.678	-0.741***
	(0.346)	(0.438)	(0.172)
GFC	0.631*	0.740	-0.359*
	(0.376)	(0.552)	(0.192)
Constant	-30.115***	-37.521***	-41.957***
	(2.117)	(2.926)	(2.168)
Observations	3,002	3,002	3,094
R-squared	0.933	0.906	0.968
RESET test statistic	0.000	0.000	0.000

Country-year fixed effects are included but not reported.
Robust standard errors are in parentheses.
[a] In natural logarithm form
[b] Lagged by one year
*** p<0.01, ** p<0.05, and * p<0.1

Table 2-D. Inclusion of Actual Inflation Rates Instead of Inflation Targeting Dummy

Dependent variable	(1) Total exports	(2) Total exports	(3) Goods exports	(4) Goods exports	(5) Services exports	(6) Services exports
GDP product[a]	0.992***	0.973***	1.146***	1.017***	0.926***	0.833***
	(0.041)	(0.045)	(0.055)	(0.061)	(0.027)	(0.030)
Distance[a]	-0.573***	-0.602***	-0.566***	-0.603***	-0.512***	-0.528***
	(0.130)	(0.129)	(0.171)	(0.171)	(0.095)	(0.094)
Contiguity	1.191***	1.147***	1.453***	1.398***	0.672***	0.634***
	(0.289)	(0.275)	(0.405)	(0.386)	(0.160)	(0.155)
Common language	0.033	0.059	-0.141	-0.107	0.351**	0.358**
	(0.190)	(0.198)	(0.255)	(0.265)	(0.144)	(0.142)
Common colonizer	0.692**	0.716**	1.145**	1.174**	0.181	0.209
	(0.343)	(0.335)	(0.471)	(0.460)	(0.221)	(0.216)
FTA	0.365**	0.362**	0.373	0.371	0.294***	0.282***
	(0.183)	(0.174)	(0.241)	(0.231)	(0.109)	(0.103)
ER both float	-0.220	-0.195	-0.378	-0.345	0.027	0.035
	(0.236)	(0.234)	(0.339)	(0.333)	(0.126)	(0.123)
REER ratio[a,b]	0.099	-0.777*	0.201	-1.705**	-0.699***	-2.317***
	(0.661)	(0.460)	(0.918)	(0.722)	(0.218)	(0.251)
ER volatility[b]	0.562	0.547	0.590	0.569	0.490	0.507
	(0.534)	(0.544)	(0.839)	(0.855)	(0.360)	(0.357)
ER both float * ER volatility[b]	-1.427*	-1.300*	-1.886*	-1.725*	-1.192**	-1.116**
	(0.780)	(0.773)	(0.982)	(0.971)	(0.551)	(0.559)
Inflation_exporter	-0.037**	-0.045**	-0.070***	-0.097***	-0.020	0.008
	(0.018)	(0.021)	(0.020)	(0.028)	(0.013)	(0.014)
Inflation_importer	0.025	0.024	0.069***	0.066***	0.012	-0.015
	(0.020)	(0.020)	(0.018)	(0.017)	(0.011)	(0.012)
FVA share[b]	–	-0.056	–	-0.075	–	-0.008
	–	(0.045)	–	(0.060)	–	(0.019)
FVA share[b] * REER ratio[a,b]	–	0.331**	–	0.420**	–	0.232***
	–	(0.135)	–	(0.168)	–	(0.079)
COVID	0.327	0.449	1.315***	1.349**	-1.155***	-0.870***
	(0.356)	(0.307)	(0.455)	(0.534)	(0.198)	(0.157)
GFC	1.194**	0.979*	1.606**	1.183	0.315	0.554
	(0.598)	(0.538)	(0.775)	(0.719)	(0.429)	(0.429)
Constant	29.055***	-27.518***	38.306***	30.909***	40.310***	36.208***
	(2.770)	(2.853)	(3.708)	(3.684)	(1.788)	(1.895)
Observations	3,002	3,002	3,002	3,002	3,094	3,094
R-squared	0.932	0.933	0.905	0.906	0.968	0.968
RESET test statistic	0.000	0.000	0.000	0.000	0.000	0.000

Country-year fixed effects are included but not reported.
Robust standard errors are in parentheses.
[a] In natural logarithm form
[b] Lagged by one year
*** p<0.01, ** p<0.05, and * p<0.1

Table 2-E. Alternative Model Results

replication of Wong and Chong (2016)'s model

Dependent variable	(1) Total exports	(2) Goods exports	(3) Services exports
GDP product[a]	0.958***	1.101***	0.922***
	(0.038)	(0.052)	(0.023)
Distance[a]	-0.573***	-0.566***	-0.512***
	(0.129)	(0.171)	(0.094)
Contiguity	1.203***	1.464***	0.691***
	(0.287)	(0.401)	(0.156)
Common language	0.018	-0.155	0.327**
	(0.193)	(0.256)	(0.145)
Common colonizer	0.671*	1.125**	0.146
	(0.348)	(0.486)	(0.224)
FTA	0.367**	0.375	0.299***
	(0.182)	(0.242)	(0.108)
ER both float	-0.288	-0.442	-0.085
	(0.202)	(0.280)	(0.123)
REER ratio[a,b]	-0.890	-1.172	0.680
	(0.562)	(0.730)	(0.448)
ER volatility[b]	0.607	0.632	0.564
	(0.533)	(0.847)	(0.341)
ER both float * ER volatility[b]	-1.359*	-1.822*	-1.079**
	(0.749)	(0.949)	(0.530)
Inflation_exporter	-0.049***	-0.063***	0.006
	(0.016)	(0.020)	(0.012)
Inflation_importer	0.054**	0.070**	-0.055***
	(0.022)	(0.028)	(0.014)
IT one	1.176***	1.424***	0.027
	(0.293)	(0.434)	(0.166)
IT both	2.451***	2.942***	0.218
	(0.558)	(0.781)	(0.277)
COVID	-0.569	0.184	-2.477***
	(0.347)	(0.460)	(0.342)
GFC	0.436	0.879	0.808***
	(0.530)	(0.797)	(0.239)
Constant	-27.040***	-35.624***	-39.539***
	(2.626)	(3.532)	(1.441)
Observations	3,002	3,002	3,094
R-squared	0.932	0.905	0.968
RESET test statistic	0.000	0.000	0.000

Country-year fixed effects are included but not reported.
Robust standard errors are in parentheses.
[a] In natural logarithm form
[b] Lagged by one year
*** p<0.01, ** p<0.05, and * p<0.1