Bilateral Trade Between Vietnam and Korea, and its Impact on Vietnam's Economic Growth: ARDL Cointegration Approach

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Abstract: This paper examines the nexus between Korea – Vietnam bilateral trade and Vietnam's economic growth over 1995 – 2019 by employing the ARDL cointegration test. The result is that the trade share of Korea to Vietnam has a statistically positive impact on Vietnam's economic growth in the long run perspective while foreign direct investment has an adverse effect. This finding suggests Vietnam should promote trading with Korea but should not be overly reliant on foreign investments.

Keywords: Vietnam, Korea, bilateral trade, economic growth, ARDL

1. INTRODUCTION

Trade openness as a stimulus of economic growth is now intensively studied by previous literature in international economics. On the one hand, international trading allows technological diffusion to exploit comparative advantage across borders. On the other hand, openness helps to boost foreign investments in recipient countries, which supports growth by improving business efficiency and supplementing domestic investment. Adeel-Farood et al. (2017) confirm the economic linkage between international trade and output growth.

While most of the previous studies attempt to explain the underlying relationship between trade openness and economic growth in broad contexts, this study would only focus on the bilateral trade between Korea and Vietnam. The rising trade volume between Vietnam and Korea makes up this research motivation to identify the impact of this trade flow on Vietnam's economic growth. Since Vietnam and Korea established their formal relationship in 1992, Korea has become one of the leading trading partners of Vietnam. There are currently three free trade agreements between 2 countries (Vietnam – Korea FTA, ASEAN – Korea FTA, and Regional Comprehensive Economic Partnership Agreement or RCEP). Thanks to these facilitating frameworks, the bilateral trade volume has increased drastically from just 1.5 billion USD in 1995 to over 66.7 billion USD in 2019 (see Figure 1 below). Furthermore, in 2019, Korea ranked the fourth position (7.6%) in terms of Vietnam's exports and the second position (18.9%) in terms of Vietnam's imports (ADB, 2020) – see Figure A1 in the appendix. Therefore, this bilateral trade and its implication for Vietnam's economic growth are well worth comprehensive research. The research shall employ the Autoregressive distributed lag (ARDL) approach, as suggested by Kumar (2019), Kalai and Zghidi (2019), to investigate the impact of the trade share of Korea to Vietnam on Vietnam's economic growth, with four control variables, namely gross capital formation, foreign direct investment (FDI) net inflow, government spending, and households' spending of Vietnam.

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2. LITERATURE REVIEW

The relationship between trade openness and economic growth is one of the most prevailing questions in the research scenario. Awokuse (2008) finds empirical evidence supporting that import has a more substantial stimulus on economic growth than export. This study employs vector error correction models with the Johansen cointegration test for long-run impact and the Granger causality test for short-run impact in three Latin American countries, namely Argentina, Columbia and Peru, from 1990 to 2002. It contradicts the study of Nasreen and Anwar (2014), which indicates that FDI and export have a significantly positive effect on economic growth, while import has an insignificant negative impact. Furthermore, Kalai and Zghidi (2019) also support the positive spill-over externalities of FDI on trade liberalisation in determining the economic growth of fifteen MENA (Middle East, North African) economies during 1999 – 2012.

Balassa (1985) introduces an export factor in the production function to examine the effects of export on the economic growth of 43 developing economies during 1973 - 1978. The finding is countries that pursue export-oriented strategies tend to have higher economic growth in response to the 1973 oil shock. Mamun and Nath (2005) identify the positive linkage between export and GDP growth in Bangladesh over 1976 - 2003. The study employs the error correction model and Granger causality test to confirm the long-run causality from exports to output growth. Export-led model positively contributes to economic growth in two ways, namely capital accumulation and efficiency improvement (Ghirmay et al., 2001).

However, Hye et al. (2013) support the explanatory power of export-led and import-led models on economic growth and

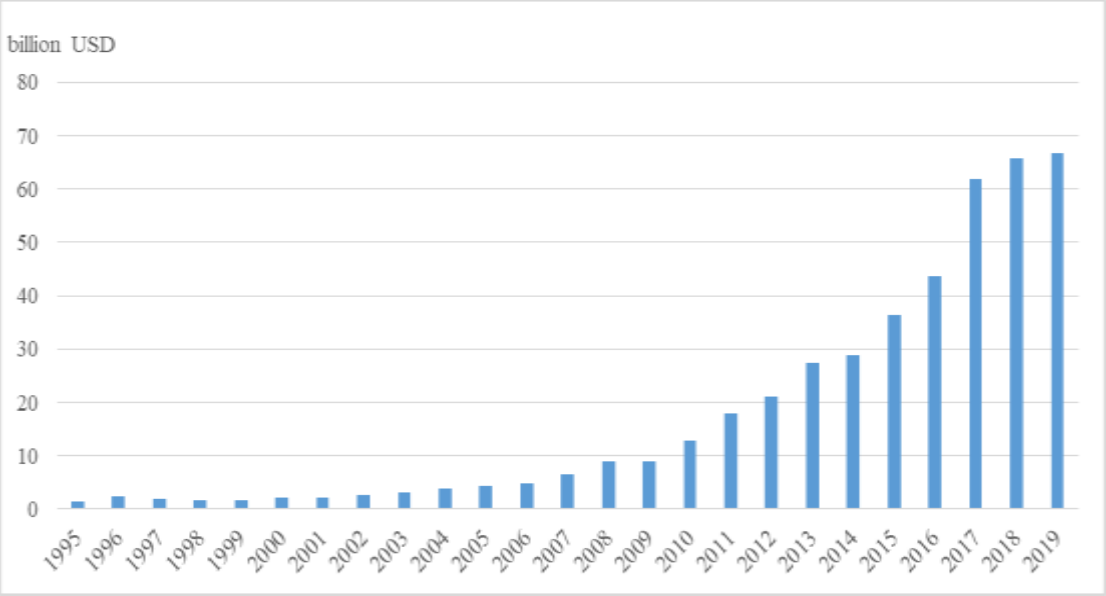

Fig. (1). Vietnam – Korea bilateral trade between 1995 – 2019.

Source: Trade integration indicator of Asian Development Bank (2023).

domestic employment by using the ARDL method to examine the openness and growth nexus for 6 South Asian economies (India, Pakistan, Nepal, Bangladesh, Bhutan and Sri Lanka). Employing the same method, Kumar (2022) confirms the role of trade openness on economic growth in the case of India - China. While Sarkar and Bhattacharyya (2006) indicate no favourable effect of trade openness on the economic development of India and Korea during 1956 – 2000, Shahbaz (2012) confirms that trade openness stimulated economic growth in Pakistan for 1971 - 2011.

Furthermore, trade openness and economic growth have a long-run impact on FDI inflow, but there is no short-run Granger causality from trade openness to economic growth (Belloumi, 2014). By including geographic factors in the model, Frankel and Romer (1999) confirm that a one per cent increase in trade leads to at least a 0.5 per cent increase in income per capita of 63 countries in 1985. Das and Paul (2011) apply the Generalised method of moments (GMM) process to investigate the relationship between trade openness and output growth in the 12 best-performing Asian economies over 1971 - 2009. The study also suggests the positive effect of trade and capital accumulation on economic growth, while labour size has no significant impact.

Few researchers have studied the relationship between trade and economic growth in Vietnam. For instance, Nguyen (2020) uses the Ordinary Least Square method to explore the impact of FDI and trade on Vietnam's economic growth for 2000 - 2018. He concludes that FDI and export have a significantly positive effect on economic growth, while import has an insignificant negative effect. Ta et al. (2020) employ ARDL to examine the impact of microeconomic (location advantage), macroeconomic (market size, trade openness) and policy (monetary and tax rate) factors on FDI flow to Vietnam during 1995 - 2017. The research finds out the long-run effect of competitive wage rates, trade and favourable government policy on FDI inflow and economic growth in the long run.

3. METHODOLOGY

The research has been implemented utilising a quantitative method to identify the underlying effect of the bilateral trade between Korea and Vietnam on Vietnam's economic growth between 1995 and 2019). Firstly, Augmented Dickey-Fuller (ADF) test would be employed to investigate the integration order of concerning factors. Secondly, ARDL can be used to identify both short-term and long-run relationships. Thirdly, the study uses four diagnostic tests (Breusch Godfrey Serial Correlation LM Test, Breusch Pagan Godfrey Heteroskedasticity Test, Jarque Bera Normality Test, and Ramsey RESET test) to evaluate the fitness of the model. Lastly, the cumulative sum (CUSUM) and cumulative sum of square (CUSUM SQ) of recursive residuals test for examining the stability of the model.

3.1. Data Collection and Description

The study employs annual time series data from secondary sources, World Development Indicators of the World Bank (2023), and Asian Development Bank (2023). The sample period is between 1995 and 2019. The research uses seven economic variables: GDP growth, GDP per capita growth, gross capital formation, FDI inflow, government spending and household spending of Vietnam, and trade share of Korea to Vietnam.

3.2. Correlation

Table **3** below indicates the correlation between economic factors in this study. It is noticeable that GDP growth and GDP per capita growth are highly correlated at 0.98. These two factors have mildly positive relationships with trade share, FDI, and private spending, a weakly positive relationship with government spending, and a negative association with gross capital spending.

Table 1. Description of Variables.

Factor	Full Name	DATA FORM	Frequency	Time Span	Source
GDPG	Vietnam's GDP growth	Percentage	Annually	1995-2021	WDI
GDPCG	Vietnam's GDP per capita growth	Percentage	Annually	1995-2021	WDI
TS	Trade share of Korea to Vietnam	Percentage of GDP	Annually	1995-2021	ADB
GCF	Vietnam's Gross capital formation	Percentage of GDP	Annually	1995-2021	WDI
FDI	Vietnam's FDI net inflow	Percentage of GDP	Annually	1995-2021	WDI
GOV	Vietnam's Government spending	Percentage of GDP	Annually	1995-2021	WDI
PRI	Vietnam's Private spending	Percentage of GDP	Annually	1995-2021	WDI

Table 2. Descriptive Statistics.

	GDPG	GDPCG	TS	FDI	GCF	PRI	GOV
Mean	6.791194	5.607625	9.009640	5.450281	32.29302	63.98599	8.051301
Median	6.787316	5.618680	8.263268	4.900893	32.01950	65.08824	8.130781
Maximum	9.540480	7.672176	14.05321	9.713081	39.56627	74.44199	10.91617
Minimum	4.773587	3.438781	5.604015	3.390404	27.14424	55.70365	5.465202
Std. Dev.	1.128520	1.024701	2.553388	2.000358	3.278753	6.032349	2.010233
Skewness	0.689764	0.037670	0.571530	1.053516	0.375599	0.086290	0.076444
Kurtosis	3.535698	2.763472	2.152571	2.700137	2.396976	1.675555	1.355739
Jarque-Bera	2.281323	0.064189	2.109085	4.718234	0.966599	1.858268	2.840591
Probability	0.319608	0.968415	0.348352	0.094504	0.616745	0.394895	0.241643
Sum	169.7798	140.1906	225.2410	136.2570	807.3254	1599.650	201.2825
Sum Sq. Dev.	30.56539	25.20030	156.4750	96.03441	258.0052	873.3416	96.98485

Source: The author's calculation.

Table 3. Correlation Matrix.

	GDPG	GDPCG	TS	GCF	FDI	GOV	PRI
GDPG	1.000000	0.981255	0.334107	-0.210768	0.350519	0.016392	0.323158
GDPCG	0.981255	1.000000	0.332915	-0.081397	0.260416	0.013460	0.209507
TS	0.334107	0.332915	1.000000	-0.454113	0.086817	0.776335	-0.411067
GCF	-0.210768	-0.081397	-0.454113	1.000000	-0.015512	-0.353842	-0.116453
FDI	0.350519	0.260416	0.086817	-0.015512	1.000000	-0.142660	0.639646
GOV	0.016392	0.013460	0.776335	-0.353842	-0.142660	1.000000	-0.700665
PRI	0.323158	0.209507	-0.411067	-0.116453	0.639646	-0.700665	1.000000

Source: The author's calculation.

3.3. Econometric Model

To assess the nexus between bilateral trade and economic growth in the case of Vietnam and Korea), the study would propose the econometric model as follows:

$GDPG_t = \lambda_0 + \lambda_1 TSt + \lambda_2 GCFt + \lambda_3 FDIt + \lambda_4 GOVt + \lambda_5 PRI_t + \varepsilon_{it}$ (Equation 1)

$GDPCG_t = \lambda_0 + \lambda_1 TS_t + \lambda_2 GCF_t + \lambda_3 FDI_t + \lambda_4 GOV_t + \lambda_5 PRI_t + \varepsilon_{it}$ (Equation 2)

In which gross capital formation (GCF), foreign direct investment (FDI), government spending (GOV), and household spending are regarded as control variables.

3.4. Augmented Dickey-Fuller Test

The research utilises the Augmented Dickey-Fuller (1981) test to examine the integration order of economic data. The null hypothesis is $\mu = 1$, or the series is non-stationary against the alternative hypothesis of $\mu < 1$, indicating the stationarity.

With constant:

$\Delta x_t = \lambda + \mu\, x_{t-1} + \sum_{i=1}^{n} \gamma_i\, \Delta y_{t-i} + u_t$ (Equation 3)

With constant and trend:

$\Delta x_t = \lambda + \varphi t + \mu\, x_{t-1} + \sum_{i=1}^{n} \gamma_i\, \Delta y_{t-i} + u_t$ (Equation 4)

In which λ is a constant term, φt stands for non-stochastic time trend.

3.5. Autoregressive Distributed Lag

The research would utilise the Autoregressive Distributed Lag (ARDL) method for three reasons. Firstly, it would be appropriate if all factors are not integrated in the same order. Secondly, unlike the Johansen cointegration test, the ARDL is more suitable when the sample size is relatively small (Narayan et al., 2007). Finally, the method can be used to unbiasedly assess both the long-run and short-run causal effects (Kumar, 2022). Equations (5), (6) can be illustrated to capture the long-run and short-run impacts as Pesaran et al. (2001) suggest:

$$D(GDPG_t) = \mu_0 + \mu_1\, GDPG_{t-1} + \mu_2\, TS_{t-1} + \mu_3\, GCF_{t-1} + \mu_4\, FDI_{t-} + \mu_5\, GOV_{t-1} + \mu_6\, PRI_{t-1} + \sum_{i=1}^{p} \beta_{1,i} D(GDPG_{t-p}) + \sum_{i=1}^{q1} \beta_{2,i} D(TS_{t-q1}) + \sum_{i=1}^{q2} \beta_{3,i} D(GCF_{t-q2}) + \sum_{i=1}^{q3} \beta_{4,i} D(FDI_{t-q3}) + \sum_{i=1}^{q4} \beta_{5,i} D(GOV_{t-q4}) + \sum_{i=1}^{q5} \beta_{6,i} D(PRI_{t-q6}) + u_t \quad \text{(Equation 5)}$$

$$D(GDPCG_t) = \mu_0 + \mu_1\, GDPG_{t-1} + \mu_2\, TS_{t-1} + \mu_3\, GCF_{t-1} + \mu_4\, FDI_{t-} + \mu_5\, GOV_{t-1} + \mu_6\, PRI_{t-1} + \sum_{i=1}^{p} \beta_{1,i} D(GDPCG_{t-p}) + \sum_{i=1}^{q1} \beta_{2,i} D(TS_{t-q1}) + \sum_{i=1}^{q2} \beta_{3,i} D(GCF_{t-q2}) + \sum_{i=1}^{q3} \beta_{4,i} D(FDI_{t-q3}) + \sum_{i=1}^{q4} \beta_{5,i} D(GOV_{t-q4}) + \sum_{i=1}^{q5} \beta_{6,i} D(PRI_{t-q6}) + u_t \quad \text{(Equation 6)}$$

In which D(_) shows the first difference, u_t is the error term. μ_1, μ_2, μ_3, μ_4, μ_5, μ_6 are the long run multipliers. β_1, β_2, β_3, β_4, β_5, β_6 are short run coefficients. p, q_1, q_2 ,q_3 ,q_4, q_5, are lag operators of dependent and independent variables respectively. The lagged value of D(GDPG), D(GDPCG), D(TS), D(GCF), D(FDI), D(GOV) and D(PRI) are employed to study the short-run cointegration. The null hypothesis ($\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6 = 0$) suggesting non-significant cointegration in the long term is tested against the alternative hypothesis of significant cointegration ($\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6 \neq 0$). The ARDL approach could be implemented in two different steps. The first step involves F bound cointegration tests for identifying the long-term cointegrating relationship. The second step is to estimate the long-run and short-run causality among concerned factors with error correction terms. ARDL model is a widely applicable approach in justifying economic matters with small datasets such as Kumar (2022), Ta et al. (2020), Kalai and Zghidi (2019), and Hye et al. (2013).

4. EMPIRICAL FINDINGS

In this section, the research will investigate the underlying impact of bilateral trade between Vietnam and Korea on the growth rate of Vietnam, controlling for other factors (FDI, saving rate, public and private spending). Before running the regression model, the study would utilise the Augmented Dickey-Fuller test to justify the integration orders. After confirming the integration orders, the research would use the ARDL approach to find long- and short-term relationships.

4.1. Unit Root Tests

Because the ARDL model only operates appropriately when all factors are I(0) or I(1), examining the stationary properties of all relevant data would be compulsory. The study employs the Augmented Dickey-Fuller (ADF) approach for unit root tests. The null hypothesis is that the variable has a unit root with a constant, constant and linear trend. Table **4** provides results in which all variables confirm the integration of order zero or one. It implies the study could employ the ARDL method in later stages.

4.2. F Bound Cointegration Tests

In this step, the ARDL model carries out with the F bound test for long-run cointegration, suggested by Pesaran et al. (2001). It is illustrated in Table **5** that the F statistics of both GDPG (16.34) and GDPCG (15.91) models exceed the upper bound critical value of 6.37 at one percent significant level. The finding supports previous studies of Kumar (2022), and Hye et al. (2013) by providing reliable evidence in favour of the cointegration relationship between economic growth and trade in Vietnam.

4.5. Long-Run and Short-run Causality

Based on the suggested ARDL model in the previous step, the study estimates long-run and short-run causality for Vietnam's GDP growth and GDP per capita growth (see Tables 6 and 7). It is highlighted that bilateral trade between Korea and Vietnam has a long-run impact on Vietnam's economic development; specifically, a 1% increase in bilateral trading with Korea (out of total trade) would result in a 0.35% increase in GDP growth and 0.36% increase GDP per capita growth in Vietnam.

Gross capital formation, private and government spending have positive impacts on Vietnam's economic growth. In contrast, foreign direct investment has significant adverse effects due to crowding out domestic investment and foreign dependence. All economic variables have a statistically substantial short-run relationship with economic growth. Coefficients in ECT(-1) show that deviations from the short-run equilibriums are adjusted annually at the rate of 128.5% and 131.9% to the long-run equilibriums in the GDP growth and GDP per capita growth models respectively.

Table 4. ADF Results.

Series	Levels	First Difference	Critical Values			*Xt ~ I(d)*
			10%	5%	1%	
Exogenous: Constant						
GDPG	-3.121642 (0)	-4.198614 (1)	-2.64	-3.00	-3.77	*I(0)***
GDPPG	-2.198243 (4)	-4.375497 (1)	-2.64	-3.00	-3.77	*I(1)****
TS	-0.552994 (0)	-4.212460 (0)	-2.64	-3.00	-3.77	*I(1)****
FDI	-4.090231 (0)	-3.824587 (0)	-2.64	-3.00	-3.77	*I(0)****
GCF	-1.936309 (0)	-4.593822 (0)	-2.64	-3.00	-3.77	*I(1)****
PRI	-2.000263 (1)	-3.457174 (1)	-2.64	-3.00	-3.77	*I(1)***
GOV	-1.108768 (0)	-4.730542 (0)	-2.64	-3.00	-3.77	*I(1)****
Exogenous: Constant and Linear Trend						
GDPG	-2.713579 (0)	-4.453631 (1)	-3.26	-3.64	-4.47	*I(1)***
GDPPG	-2.214719 (4)	-4.570276 (1)	-3.26	-3.64	-4.47	*I(1)****
TS	-1.594033 (0)	-5.965624 (0)	-3.26	-3.64	-4.47	*I(1)****
FDI	-3.840662 (1)	-3.788745 (1)	-3.26	-3.64	-4.47	*I(0)***
GCF	-1.624383 (0)	-4.675677 (0)	-3.26	-3.64	-4.47	*I(1)****
PRI	-3.444284 (1)	-3.449412 (0)	-3.26	-3.64	-4.47	*I(0)**
GOV	-1.851223 (0)	-4.713545 (0)	-3.26	-3.64	-4.47	*I(1)****

Note: ***, **, * means the level of statistical significance at 1%, 5% and 10% respectively. Akaike Information Criterion chooses the best length of lag in parentheses. The maximum lag length is assumed at 5.

Table 5. ARDL Models and F Bound Cointegration Tests.

ARDL	F Statistics	I(0)			I(1)			Conclusion
		10%	5%	1%	10%	5%	1%	
Bound test when GDPG is explained factor								
ARDL(2, 2, 2, 2, 2, 1)	16.33737***	2.578	3.125	4.537	3.858	4.608	6.370	Cointegrated
Bound test when GDPCG is explained factor								
ARDL(2, 2, 2, 2, 2, 1)	15.90685***	2.578	3.125	4.537	3.858	4.608	6.370	Cointegrated

Note: *** denotes the level of statistical significance at 1%. The best length of lag in parentheses are chosen by Akaike Information Criterion (AIC). Critical values are suggested by Pesaran et al. (2001).

Diagnostic Tests

The study implements the following diagnostic tests: the Breusch-Godfrey test for serial correlation, the Breusch-Pagan-Godfrey test for heteroskedasticity, the Jarque-Bera test for normality, and the Ramey test for Regression Equation Specification Error. Results in Table 8 below indicate that the specified model is free from common statistical problems. The research can use regression findings to make valid conclusions about the underlying impact of Korea – Vietnam bilateral trade on Vietnam's economic growth.

Stability Tests

The study also conducts cumulative sum (CUSUM) and cumulative sum of square (CUSUM SQ) of recursive residuals tests for examining model stability. The empirical evidence affirms the models are stable and reliable for econometric analysis.

Table 6. Long-Run and Short-Run Causality Test for Vietnam's GDP Growth.

Short Run Impact				Long Run Impact			
Variable	**Coefficient**	**SE**	**Prob.**	**Variable**	**Coefficient**	**SE**	**Prob.**
D(GDPG(-1))	0.34708	0.059502	0.0011	TS	0.348234	0.062445	0.0014
D(TS)	-0.234396	0.055955	0.0058	FDI	-0.746282	0.127552	0.0011
D(TS(-1))	-0.110765	0.067485	0.1518	GCF	0.284887	0.043843	0.0006
D(FDI)	-0.076973	0.056487	0.2219	PRI	0.39027	0.059246	0.0006
D(FDI(-1))	0.702385	0.104061	0.0005	GOV	0.60898	0.134234	0.0039
D(GCF)	0.270353	0.032985	0.0002	C	-31.5092	5.156588	0.0009
D(GCF(-1))	-0.25629	0.036573	0.0004				
D(PRI)	0.057607	0.045087	0.2486				
D(PRI(-1))	-0.182013	0.032808	0.0014				
D(GOV)	0.441606	0.078589	0.0014				
ECT(-1)	-1.284875	0.089591	0.0000				

Source: The author's calculation.

Table 7. Long-Run and Short-Run Causality Test for Vietnam's GDP Per Capita Growth.

Short Run Impact				Long Run Impact			
Variable	**Coefficient**	**SE**	**Prob.**	**Variable**	**Coefficient**	**SE**	**Prob.**
D(GDPCG(-1))	0.358627	0.061238	0.0011	TS	0.359452	0.060781	0.001
D(TS)	-0.1977	0.054931	0.0114	FDI	-0.724706	0.124905	0.0011
D(TS(-1))	-0.134983	0.068845	0.0976	GCF	0.298436	0.042011	0.0004
D(FDI)	-0.073826	0.056832	0.2416	PRI	0.344611	0.057877	0.001
D(FDI(-1))	0.730024	0.106408	0.0005	GOV	0.516493	0.130651	0.0075
D(GCF)	0.288658	0.033327	0.0001	C	-29.66734	5.043166	0.0011
D(GCF(-1))	-0.255432	0.037197	0.0005				
D(PRI)	0.021081	0.045223	0.6575				
D(PRI(-1))	-0.176464	0.032708	0.0017				
D(GOV)	0.361227	0.078009	0.0036				
ECT(-1)	-1.319023	0.093651	0.0000				

Source: The author's calculation.

Table 8. Diagnostic Test Results.

Four Diagnostic Tests	GDPG Model		GDPCG Model	
	Statistics	**P value**	**Statistics**	**P value**
Breusch-Godfrey Serial Correlation LM Test	0.935801	0.4641	0.991959	0.4468
Heteroskedasticity Test: Breusch-Pagan-Godfrey	0.923458	0.5868	1.014789	0.5330
Jarque Bera Normality Test	1.087765	0.5805	0.891263	0.6404
Ramsey RESET Test	0.044664	0.9568	0.042746	0.9586

Source: The author's calculation.

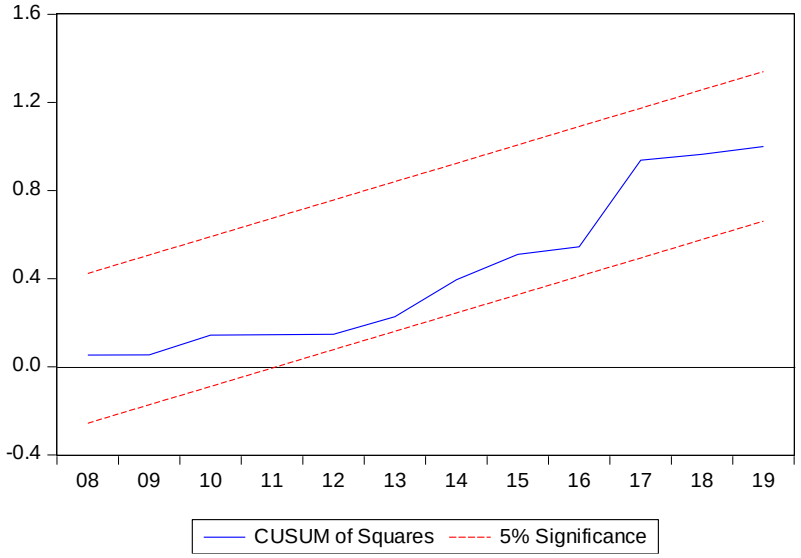

Fig. (1). Plot of CUSUM test for Vietnam GDP growth model.

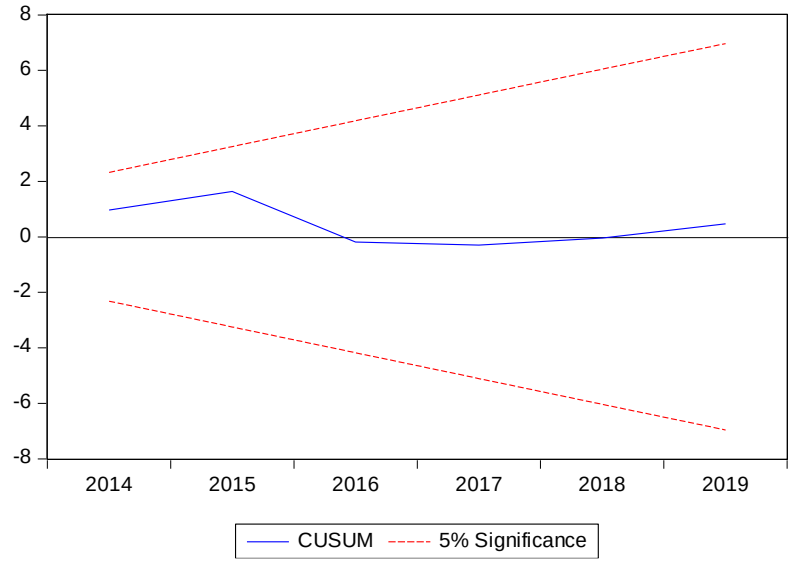

Fig. (2). Plot of CUSUM test for Vietnam GDP per capita growth model.

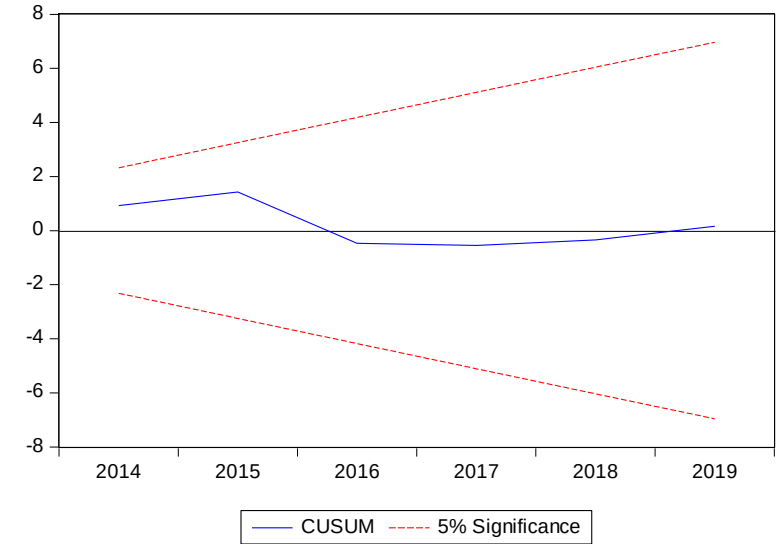

Fig. (3). Plot of CUSUM of SQUARE test for Vietnam GDP growth model.

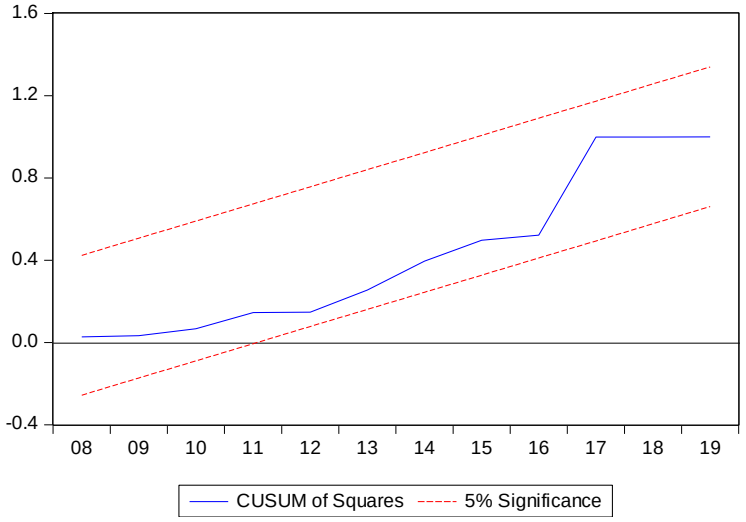

Fig. (4). Plot of CUSUM of SQUARE test for Vietnam GDP per capita model.

5. CONCLUSION AND DISCUSSION

The study comprehensively investigates the trade pattern between Vietnam and Korea, focusing on identifying the impact of bilateral trade on Vietnam's economic growth. By utilising the ARDL cointegration method, as suggested by Kumar (2022) and Hye et al. (2013), the study confirms the bilateral trade between Korea and Vietnam has both short and long-run impacts on Vietnam's economic growth while controlling other economic factors, namely FDI, gross capital formation, government expenditure and household spending. Because Vietnam has a high level of trade openness (164.7% of GDP in 2019) and Korea is one of Vietnam's leading trading partners, their trading patterns would significantly impact Vietnam's

economic growth in terms of both GDP and GDP per capita. The economic influence of Korean investors (e.g. Samsung, LG) on Vietnam's trade balance is recognised, with the main trading products being machinery and electrical items. The bilateral trade between the two countries has been seriously analysed in Vietnam's long-term economic plan. Unlike the previous findings of Nguyen (2020), Kalai and Zghidi (2019), the study suggests that FDI inflow has a significantly adverse effect due to crowding out domestic investment and foreign dependence. Hence, the policy implication is that Vietnam's government should promote trade integration with Korea to sustain economic growth in the long run but should not be overly reliant on foreign investment.

CONFLICT OF INTEREST STATEMENT

The author declares that he has no conflict of interest.

APPENDIX

Figure A1. Vietnam top Trading Partners (2000 -2019).

Direction of Trade **Calendar Year ($ Million)**	**2000**	**2005**	**2010**	**2015**	**2019**
Exports, total	14,482	32,537	70,249	160,262	259,384
1. United States	5.1%	18.2%	20.3%	20.9%	23.6%
2. China, People's Republic of	10.6%	9.9%	10.4%	10.3%	16.0%
3. Japan	17.8%	13.3%	11.0%	8.8%	7.8%
4. Korea, Republic of	**2.4%**	**2.0%**	**4.4%**	**5.6%**	**7.6%**
5. Hong Kong, China	2.2%	1.1%	2.1%	4.3%	2.8%
Imports, total	15,646	36,761	83,365	174,966	249,013
1. China, People's Republic of	9.0%	16.0%	24.0%	28.3%	30.3%
2. Korea, Republic of	**11.2%**	**9.8%**	**11.7%**	**15.8%**	**18.9%**
3. Japan	14.7%	11.1%	10.8%	8.1%	7.8%
4. Taipei, China	12.0%	11.7%	8.4%	5.3%	6.1%
5. United States	2.3%	2.3%	4.5%	4.5%	5.8%

Source: Asian Development Bank, Key Indicators for Asia and the Pacific 2023.

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