

# Vietnam's Economic Growth Influenced by Export-Oriented Economy

Shang Yuan

School of Economic and Management, Xidian University, Xi'an, Shaanxi, China, 710071

**Abstract:** *With the development of economic globalization and regional economic clustering, foreign trade and foreign direct investment have become important economic activities to strengthen international economic exchanges and strengthen international division of labor. This paper makes an empirical analysis of Vietnam's foreign trade, foreign direct investment, and economic growth. The results show that in the long run, there is a cointegration relationship between GDP, foreign trade, and foreign direct investment, and there is long-term stability between them. The equilibrium relationship between foreign trade and foreign direct investment has a significant impact on GDP. There is no interaction between foreign trade and foreign direct investment, as well as foreign direct investment is the Granger cause of GDP growth.*

**Keywords:** Foreign trade; Foreign direct investment; Granger causality test

## 1. Introduction

Vietnam's reform and opening up in 1986, the government actively integrated into the world economic system and has been deployed to meet the general trend of economic globalization. The country has devoted itself to developing foreign trade, continuously increasing investment in attracting foreign investors, and actively implementing an export-oriented economic model. From 1996 to 2015, the average annual gross domestic product GDP growth rate reached 6.94%. Vietnam has now become one of the most advantageous foreign direct investment destinations in Asia. Investment countries are increasingly rich, and investment industries are increasingly diversified. Therefore, the study of the relationship between foreign direct investment, economic growth as well as foreign trade is conducive to achieving a positive interaction between opening up and economic growth in the new situation. It has important theoretical and practical significance.

Under different economic conditions, foreign trade and foreign direct investment have different effects on economic growth. This paper uses the 1995-2015 time-series data to analyze the effects of Vietnam's foreign trade, foreign direct investment, and economic growth<sup>[1]</sup>. It uses a combination of theoretical analysis and empirical research to establish an econometric model, based on single-integration tests and cointegration tests, Granger causality test empirical analysis of relevant data of Vietnam's foreign trade, foreign direct investment and economic growth. The empirical results show that there is a correlation between Vietnam's foreign trade, foreign direct investment, and economic growth. In particular, foreign direct investment has a significant role in promoting economic growth in Vietnam.

## 2. Research design

This paper analyzes the relationships among Vietnam's economic growth, foreign trade, and foreign direct investment. In the empirical test, the unit root test, co-integration test, and Granger causality test are used to

overcome the problem of "pseudo-regression" caused by the existence of multiple regression and non-stationary time series data[2].

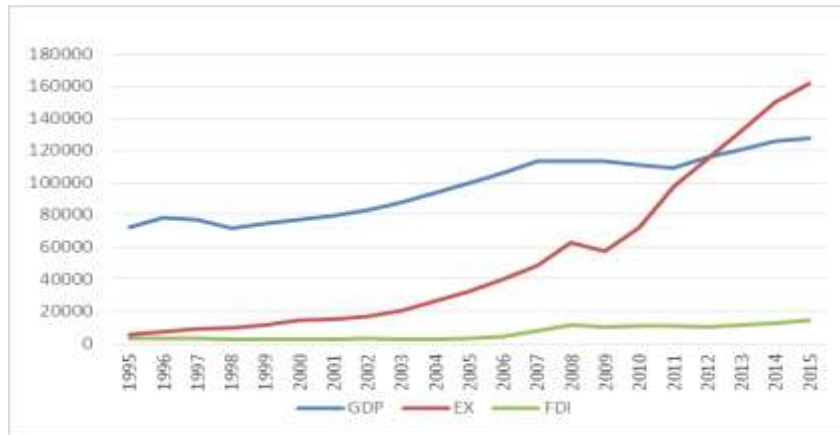
### 2.1 Selection of sample data and variables

The sample data selected in this paper is derived from the WIND database and data released by Vietnam Statistics Bureau on Vietnam's GDP, foreign direct investment FDI, and foreign trade EX from 1995 to 2015. The data is shown in Table 1.

**Table 1:** Total GDP, Total Exports, and Foreign Direct Investment in Vietnam  
(Unit: Million US Dollars)

	GDP	EX	FDI
1995	72368.24387	5448.99	2792.00
1996	78176.40397	7255.96	2938.20
1997	76685.91028	9184.99	3277.10
1998	71772.37625	9360.26	2372.40
1999	74456.18116	11541.36	2528.30
2000	76849.31178	14482.74	2398.70
2001	79040.13159	15029.19	2225.60
2002	82883.33651	16706.05	2884.70
2003	87585.21611	20149.32	2723.30
2004	93624.2126	26485.03	2708.40
2005	99814.4006	32447.13	3300.50
2006	105861.5298	39826.22	4100.40
2007	112986.6576	48561.34	8034.10
2008	113315.0144	62685.13	11500.20
2009	113014.3805	57096.27	10000.50
2010	110657.8462	72236.67	11000.30
2011	108979.0359	96905.67	11000.10
2012	115665.2924	114529.17	10046.60
2013	120406.9112	132032.85	11500.00
2014	125942.3499	150217.14	12500.00
2015	127588.9973	161828.32	14500.00

Sample data trends as shown in Figure 1.



**Figure 1:** Changes in GDP, EX, and FDI

### 2.2 Single inspection

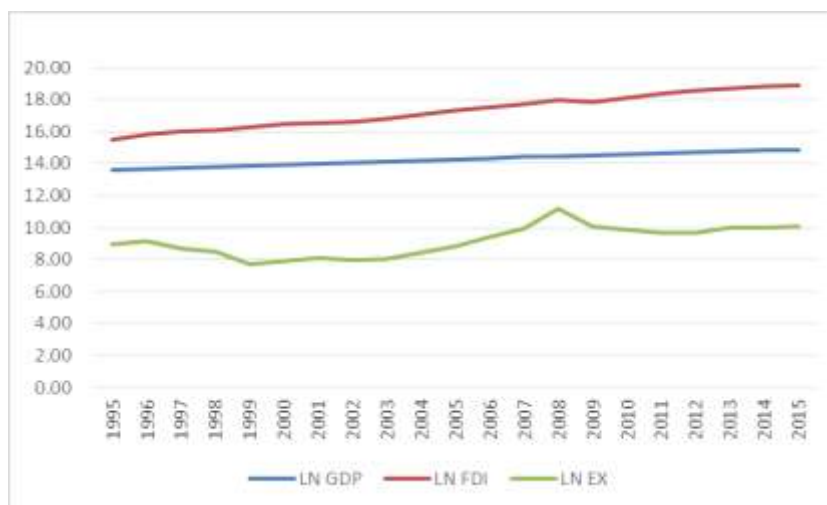
Since the natural logarithm transformation of data does not change the original cointegration relationship and it can be linearized, to a certain extent, it can eliminate the data with strong oscillations in the time series and avoid the phenomenon of heteroscedasticity at the same time. Actual export total EX and actual foreign direct investment FDI are logarithmically transformed [2]. Table 2 shows the logarithmically processed sample data, where LNGDP represents the logarithm of GDP, DLGDP represents the first-order difference sequence of LNGDP, LNFDI represents the logarithm of FDI, DLNFDI represents the first-order difference sequence of LNFDI, and LNX represents EX. The logarithm of the DLNEX represents the LNEX's first-order differential sequence.

**Table 2:** Logarithmic processed sample data

	LNGDP	LNX	LNFDI
1995	11.1895	8.6032	7.9345
1996	11.2667	8.8896	7.9856
1997	11.2475	9.1253	8.0947
1998	11.1813	9.1442	7.7717

1999	11.2180	9.3537	7.8353
2000	11.2496	9.5807	7.7827
2001	11.2777	9.6177	7.7078
2002	11.3252	9.7235	7.9672
2003	11.3804	9.9109	7.9096
2004	11.4470	10.1843	7.9041
2005	11.5111	10.3874	8.1018
2006	11.5699	10.5923	8.3188
2007	11.6350	10.7906	8.9915
2008	11.6379	11.0459	9.3501
2009	11.6353	10.9525	9.2104
2010	11.6142	11.1877	9.3057
2011	11.5989	11.4815	9.3057
2012	11.6585	11.6486	9.2150
2013	11.6986	11.7908	9.3501
2014	11.7436	11.9198	9.4335
2015	11.7566	11.9943	9.5819

The change trend of the sample data after logarithm is shown in Figure 2.



**Figure 2:** Changes in LNGDP, LNFDI and LNX

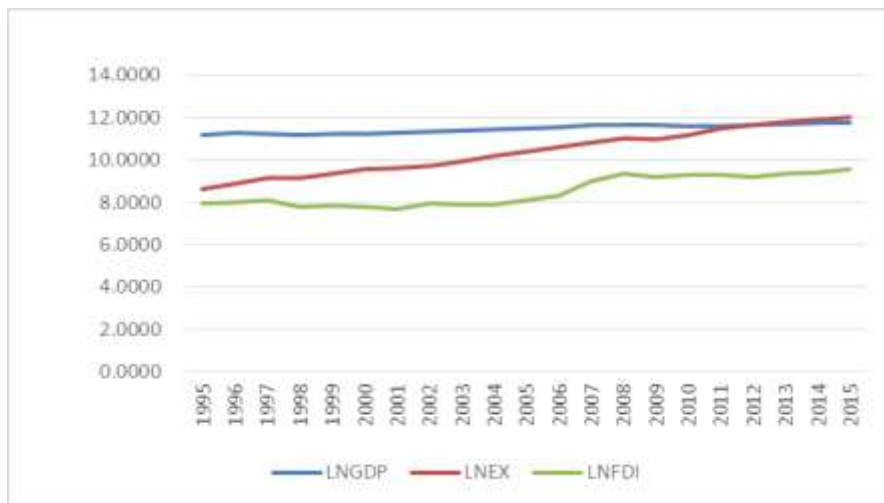
In general, the time series data are non-stationary and cannot satisfy the smooth assumptions in regression analysis. In order to avoid the pseudo-regression of the model being built, the time series data used in the regression analysis must be stable.

Using the single-integration test to test the stationarity of the time series variables, the ADF test method was used to test the stationarity of the variables LNGDP, LNFDI, and LNEX and their difference sequences. The results are shown in Table 3.

**Table 3: ADF test results**

variable	ADF check value	Critical value (5%)	P value	conclusion
LNGDP	1.541012	-1.960171	0.9643	unstable
DLNGDP	-3.060891	-3.02997	0.0471	stable
LNEX	7.156585	-1.959071	1.0000	unstable
DLNEX	-4.744468	-3.02997	0.0015	stable
LNFDI	1.76826	-1.959071	0.9771	unstable
DLNFDI	-3.338441	-3.02997	0.0274	stable

The results showed that the original sequence presented non-stationarity. After the significance level was 5%, the LNGDP, LNFDI, and LNEX first-order differences all showed a stationarity.



**Figure 3: Processed Variable Trends**

From the above test, it can be seen that LNGDP, LNFDI, and LNEX satisfy the first-order single integer, from which we can further examine the cointegration relationship between variables.

### 2.3 Cointegration Analysis

In this paper, Johanson Maximum Likelihood Estimation is used to test the cointegration relationship between variables LNGDP, LNFDI and LNEX [3]. The test results are shown in Table 4.

**Table 4: Cointegration Test Results**

Hypothesized No. of CE(s)	Eigen value	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.722627	32.74521	29.79707	0.0222
At most 1	0.346801	8.379784	15.49471	0.4257
At most 2	0.015053	0.288178	3.841466	0.5914

The test results show that under the 5% confidence level, there is a cointegration relationship among the variables LNGDP, LNFDI, and LNEX, and there is a cointegration equation. Considering the actual situation, the above cointegration sequence has been a stationary sequence and there is a certain long-term equilibrium relationship. The cointegration equation is:  $LNGDP = -$

$$0.6703LNEX + 0.6999LNFDI + C$$

### 2.4 Granger causality test

We conduct the Granger causality test, and the test results are shown in Table 5.

**Table 5: Granger Causality Test Results**

Null hypothesis	F value	P value	conclusion
LNEX is not the Granger cause of LNGDP	3.55364	0.0565	Accepted
LNEX is not the Granger cause of LNFDI	0.50482	0.6142	Accepted
LNFDI is not the Granger cause of LNGDP	4.1494	0.0385	Rejected
LNGDP is not a Granger cause of LNFDI	7.55899	0.0059	Rejected
LNFDI is not the Granger cause of LNEX	0.15639	0.8567	Accepted
LNEX is not a Granger cause of LNFDI	3.67597	0.0521	Accepted

From the test results, it is proved that the change in Vietnam's foreign direct investment is the Granger cause for the change in economic growth. Export foreign trade is not the Granger cause of economic growth. Similarly, the

change in economic growth is the Granger cause of changes in foreign direct investment, but It is not Granger's reason for exporting. Exports are not the Granger cause of foreign direct investment, and foreign direct investment is not the Granger cause of export trade. It is not difficult to know from the test results: At present, foreign direct investment in Vietnam has a significant effect on the promotion of economic growth, and conversely, the role of economic growth in the promotion of foreign direct investment growth is also evident. The test found that the contribution rate of foreign direct investment to Vietnam's economic growth is higher than the contribution rate of export trade to economic growth. It can be seen that foreign direct investment is the core engine of Vietnam's economic development, and the concept data of foreign direct investment and economic growth from Vietnam. It can be seen from the analysis results that the fitting curves of the two growth curves are in good agreement. Granger's analysis shows that there is a more stable causal relationship between the two.

### 3. Analysis of Empirical Results

Based on the above empirical research, regarding the impact of foreign trade and foreign direct investment in Vietnam on economic growth, this paper draws the following conclusions:

- 1) Through cointegration analysis, we can see that in the long run, GDP and foreign trade, foreign direct investment There is a cointegration relationship between them and there is a long-term stable equilibrium relationship between them. Foreign trade and foreign direct investment have a significant impact on GDP.
- 2) From the aspect of causality test, foreign direct investment is the Granger cause of the growth of GDP, and has a relatively large role. In addition, there is no interaction between Vietnam's foreign trade and foreign direct investment.

### 4. Policy Suggestions and Opinions

This article empirically analyzes Vietnam's foreign trade, foreign direct investment, and economic growth through the use of econometric tools, and uses Eviews software to perform unit root tests and co-integration tests to test Granger causality. The results show that there are In the long-term equilibrium relationship, the flexibility of Vietnam's introduction of foreign direct investment over economic growth is higher than that of export trade, which may be attributed to the problems existing in Vietnam's current export trade. According to the analysis of the problems in this paper, some policy suggestions are proposed:

#### 4.1 Policy recommendations on foreign trade

- 1) We will adjust the structure of export commodities and upgrade the industrial structure. This can increase the added value and technological content of products and the core international competitiveness of enterprises.
- 2) Adjust market strategies and expand export markets.

Due to the excessive concentration of export trade in Vietnam, the risk of foreign trade operations has increased and the ability to withstand risks has been reduced. Therefore, actively adjusting the export market structure, market diversification is conducive to the sustained development of export trade.

- 3) Reduce the degree of dependence on foreign trade to avoid the potential risks it brings. In recent years, Vietnam's dependence on foreign trade has been too high, and its effect on the economy has been increasing. The long-term trade deficit has caused difficulties in international payments and has affected the growth of the national economy. It has also reduced the resilience of external shocks. Therefore, the Vietnamese government should optimize domestic export industrial organizations, reduce excessive dependence on foreign products, and increase independent supply capacity.

#### 4.2 Countermeasures and Suggestions on Foreign Direct Investment

- 1) Establishing the concept of serving the government, establishing efficient, honest government agencies at all levels, reducing the approval process, and improving the efficiency of work.
- 2) Improve infrastructure construction, reduce investor transaction costs and costs, reduce development differences between large and small cities, and control the imbalance between foreign direct investment in all regions, creating a more favorable investment environment for foreign investors.
- 3) We will increase the infrastructure construction in the central and western regions, establish a favorable investment environment, and implement preferential policies to allow foreign direct investment to tilt to the central and western regions, thereby reducing the imbalance in the distribution of foreign direct investment in Vietnam.

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