

# The Impact of Foreign Direct Investment on Economic Growth: Evidence from Vietnam

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## Abstract

The relationship between Foreign Direct Investment (FDI) and economic growth has long been a topic of great interest in the field of international development. Although this interest has provided rich insights into the impact of FDI on growth in developing countries, there are very few empirical analyses of the linkage in Vietnam compared to other developing countries. Therefore, this study investigates the impact of FDI inflows on economic growth in Vietnam over the period from 1990 to 2013 using time series analysis techniques that address the problem of nonstationarity. Specifically, the Unit root test and Cointegration approach are applied to ensure that the regressions are not spurious. The empirical results reveal that FDI inflows, domestic investment, trade openness and secondary education have positive impacts on economic growth whereas inflation rate is found to have negative effect on economic growth. In addition, the impact of government consumption on economic growth is negative and statistically insignificant. Ultimately, this paper suggests that Vietnamese government should improve regulations governing business activities by easing the process of business start-up, controlling price, enhancing public spending on education and training, and augmenting cooperation between training centers and Foreign-invested enterprises.

**Keywords:** Foreign Direct Investment, economic growth, time series, unit root test, cointegration, Vietnam.

## 1. Introduction

Foreign Direct Investment (FDI) is often considered as important catalysts for economic growth in the developing countries. The relationship between FDI and economic growth has long been a topic of great interest in the field of international development. In the era of volatile flows of global capital, the stability of FDI emerges as an effective channel to faster growth in the developing countries (Makki and Somwaru, 2004). The neoclassical growth models as well as endogenous growth models provide the basis for most of the empirical work on the FDI-growth linkage.

While this relationship remains ambiguously, most macroeconomic studies, however, support the view of a positive role of FDI within particular economic conditions (Lean and Tan, 2011; Alshehry, 2015; Adhikary, 2015). There are three main channels through which FDI can bring about economic growth. The first is through the release it affords from the binding constraint of domestic savings. In this case, FDI enhances domestic savings in the process of capital accumulation. Second, FDI is the main conduit through which technology spillovers lead to an increase in factor productivity and efficiency in the utilization of resources, which leads to growth. Third, FDI leads to increase in exports as a result of increased capacity and competitiveness in domestic production. This nexus is often said to depend on another factor, called “absorptive capacity”, which includes the level of human capital development, type of trade regimes and the degree of openness (Umoh et al., 2012; Strauss, 2015).

FDI inflows into Vietnam since 1988 have been regarded as a very impressive phenomenon of the economic transition from a centrally-planned economy to a market-oriented economy (Nguyen and Nguyen, 2007; Ohno and Le, 2014). According to the General Statistics Office of Vietnam (GSO), since the introduction of the reform policy known as Doi Moi in 1986, annual FDI inflows into Vietnam have increased significantly from US\$ 0.32 billion in 1988 to approximately US\$ 12.5 billion in 2014 in terms of implementation capital, with an annual growth rate of 15.4%. During this period, inward FDI has assisted Vietnam in many different ways, including augmenting financial resources and production capacities, supporting export activities, generating employment and transferring both physical capital and intangible assets, such as technology and international expertise.

Therefore, this study aims to investigate the effect of FDI on economic growth within the context of Vietnam over the period from 1990 to 2013 using time series analysis techniques that address the problem of nonstationarity. Specifically, the Unit root test and Cointegration approach are applied to ensure that the regressions are not spurious.

The remainder of this study is organized as follows. Section 2 presents a review of the literature on the

impact of FDI on economic growth. Section 3 reports some FDI facts and trends in Vietnam while section 4 provides a description of the data, models and estimation procedures used. Section 5 discusses the outcomes of the empirical investigation. Finally, section 6 concludes with some remarks and proposes policy implications.

## 2. Literature Review

Despite reasonable theoretical grounds for presuming a positive impact of FDI on economic growth, existing empirical evidence on this nexus is inconclusive.

### 2.1. Studies that support the positive effect of FDI on economic growth

Bahname (2012) studies the impact of FDI on economic growth in Southern Asia for the period 1977-2009. The results reveal that FDI, along with other variables such as human capital, economic infrastructure and capital formation have positive and significant effects on economic growth. Consistent with the work of Bahname, Abdullahi et al. (2012) conclude that FDI promotes economic growth among selected countries of Africa and Asia in the period 1990-2009 and thus, they recommend for more openness of the economies, more investment in infrastructure and more political commitment to the fight against corruption.

In another study, Carp (2012) emphasizes the importance of the FDI flows on the host country economic growth, through the view of the representative, theoretical and empirical research for the approached field. By analyzing the literature review concerning the effects of FDI in the beneficiary country, the results reveal that the impact of capital flows exerted in the host country is significant and the main channels through which the effects are transmitted are: financial markets, host country absorptive capacity, human capital and technological. Similarly, following Insah (2013), the elasticity of economic growth with respect to FDI had a positive sign and also significant at the 1% level by applying the Dynamic Ordinary Least Squares technique.

By focusing on the impact of inward FDI stock on output growth in the U.S. economy, the estimation results indicate the strong impact of FDI stock on output growth and verify the hypothesis that FDI stock, as compared with domestic capital, labor, export and multifactor productivity, constitutes an essential factor of economic growth in the U.S. economy (Kornecki and Borodulin, 2011).

Recently, using time series data between 1970 and 2012, Adamu et al. (2015) find a positive and significant relationship between FDI and real GDP proxy for economic growth in Nigeria. Therefore, the existence of this positive linkage necessitates the need to continue implementing policies that will attract FDI especially in the non-oil sectors of Nigeria.

The positive impacts of FDI on economic growth are also supported through many empirical studies (Ghatak and Halicioglu, 2007; Lean and Tan, 2011; Alshehry, 2015; Adhikary, 2015).

In the case of Vietnam, Nguyen (2006) finds that FDI and economic growth are important determinants of each other in Vietnam as their expected coefficients are positive and statistically significant. His study also concludes that the link between FDI and domestic investment in Vietnam is complementary. Likewise, by using the panel data that covers 61 Vietnam's provinces in 1995-2006, Hoang et al. (2010) reveal that there is a strong and positive effect of FDI on economic growth in Vietnam as a channel of increasing the stock of capital. Human capital and trade in Vietnam are not yet the channels that give access to advance technology and knowledge transfers from FDI inflows to increase Vietnam's economic growth.

### 2.2. Studies that do not support the positive effect of FDI on economic growth

Some other studies find the impact of FDI on growth is ambiguous. For instance, Carkovic and Levine (2002) employ statistical techniques and two databases to reassess the relationship between economic growth and FDI. After resolving biases plaguing past work, they find that exogenous component of FDI does not exert a robust, independent influence on growth. Similarly, Katerina et al. (2004) conduct empirical research on the effects of FDI on economic growth mainly focuses on the US and the western European countries. By employing Bayesian analysis, the empirical results show that FDI does not exhibit any significant relationship with economic growth for the transition countries.

In the case of Bangladesh, Shimul et al. (2009) attempt at finding the long-run relationship or cointegration between FDI and economic growth using time series data of 1973-2007. The results of Granger Causality test indicate that FDI and openness are not significantly causing the GDP per capita both in the short and long run. The study thus suggests adopting appropriate steps so that FDI can be used as a contributing factor to the economic development. Geijer (2008) also finds the similar results by using a multiple regression analysis with GDP per capita as dependent variable in Mexico.

Louzi and Abadi (2011) study the FDI-led growth hypothesis in Jordan. Based on time series data from 1990 to 2009, the econometric framework of cointegration and error correction mechanism is employed to capture two way linkages between interested variables. The empirical results reveal that FDI inflows do not exert an independent influence on economic growth, while domestic investment and trade liberalization have positive impacts on GDP growth.

Recently, Mehrara and Musai (2015) examine the causal relationship between FDI and GDP for Middle East and North Africa region countries by applying panel unit root tests and panel cointegration analysis for the period 1970-2010. Their findings indicate that FDI does not have any significant effects on GDP in short-run and long-run with no growth benefit for the recipient country.

### 2.3. Studies that support the conditional positive effect of FDI on economic growth

Various explanations have been offered for the obscure effect FDI has on growth. It has been argued that the effect of FDI on growth depends on the stock of human capital, degree of development of the financial sector, openness of the trade regime and the size of the economy.

Borensztein et al. (1998), by using data on FDI flows from industrial countries to 69 developing countries over the period 1970-1989, find that FDI is an important vehicle for the transfer of technology, contributing relatively more to growth than domestic investment. Nevertheless, the higher productivity of FDI holds only when the host country has a minimum threshold stock of human capital. Therefore, FDI contributes to economic growth only when a sufficient absorptive capability of the advanced technologies is available in the host economy.

Omran and Bolbol (2003) suggest that Arab FDI inflows have a favorable effect on growth if interacted with financial variables at a given threshold level of development. The authors also find that, in reform countries, FDI could Granger cause financial development. Likewise, Zadeh and Madani (2012) aim to investigate the role financial market developments play in mediating the impact of FDI on economic growth. The findings suggest that the impact of FDI on GDP growth rate is non-linear in nature. FDI has a negative effect on economic growth when financial development is low level but FDI has a positive effect on economic growth when financial development exceeds a threshold level, which is the ratio of private creditors in GDP.

Using threshold regression techniques developed by Caner and Hansen (2004), Jyun-Yi and Chih-Chiang (2008) investigate whether the impact of FDI on economic growth is dependent upon different absorptive capacities. The empirical results show that FDI alone plays an ambiguous role in contributing to economic growth based on a dataset of 62 countries covering the period from 1975 to 2000. Moreover, under the threshold regression, they find that initial GDP and human capital are important factors in explaining FDI. FDI is found to have a positive and significant impact on growth when host countries have better levels of initial GDP and human capital. The importance of the stock of human capital as a determinant for FDI's effect on growth is highlighted by other studies using the same analytical framework (Wijeweera et al., 2010; Shahrivar and Jajri, 2012).

### 3. Overview of Economic Growth and FDI in Vietnam

Vietnam is a development success story. Political and economic reforms (Doi Moi) launched in 1986 have transformed Vietnam from one of the poorest countries in the world, with per capita income below US\$ 100, to a lower-middle income country within a quarter of a century with per capita income of US\$ 2,052 by the end of 2014 (World Bank (WB), 2015). The ratio of population in poverty has fallen from 58% in 1993 to 11.1% in 2012, and most indicators of welfare have improved. Vietnam has already attained five of its ten original Millennium Development Goal targets and is well on the way to attain two more by 2015.

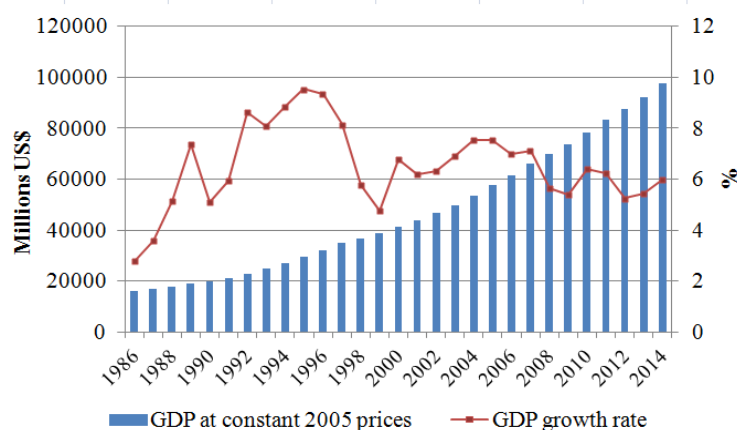


Figure 1. GDP and GDP growth rate of Vietnam, 1986-2014  
 Source: WB, 2015.

As shown in Figure 1, Vietnam has experienced a period of rapid GDP growth, which stood at 8.2% in 1991-1995 as compared to 4.8% in 1986-1990. This rate dropped to 7.0% in 1996-2000 due to the negative impacts of the Asian financial crisis. Between 2001 and 2006, GDP growth recovered to 7.2% on average,

reaching 7.5% in 2007 as Vietnam became a formal member of the World Trade Organization. Vietnam has succeeded in gradually replacing the centrally-planned economy, bureaucracy and a subsidy mechanism by a socialist-oriented market economy with growing dynamism. The high GDP growth rate has been sustained, along with stronger industrialization and expanded integration with the world and regional economy. However, the GDP growth rate slowed down to 5.8% per year in the period 2008-2014 which can be attributed to the impact of the global financial and economic downturn.

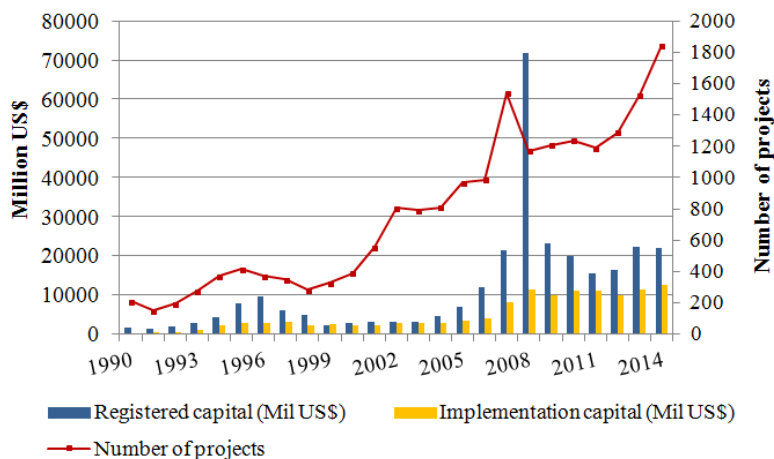


Figure 2. FDI inflows into Vietnam, 1988-2014

Source: Statistical Yearbook of Vietnam, 2014.

Along with exports, FDI inflows have increased considerably since the passage of the first Law on Foreign Investment of Vietnam in 1987. To better respond to business requirements and feedback from foreign investors, this Law was amended and supplemented several times, notably in 1996 and 2002, which created a more open and attractive environment to draw foreign investors into crucial industries such as export-oriented processing and manufacturing, and key economic zones of the country. Figure 2 presents registered and implemented FDI in Vietnam from 1988 to 2014. Since 1991, the country has observed a huge influx of FDI. The registered FDI inflows increased nearly 30 times from US\$ 341 million in 1988 to their peak of US\$ 10.2 billion in 1996. The implemented FDI also grew significantly, rising from US\$ 328.8 million in 1991 to US\$ 2.7 billion in 1996. FDI inflows then reduced rapidly as a result of the Asian financial crisis until 2000. A recovery period of FDI inflows began slowly from 2001 due to the cautious behavior of foreign investors following the crisis. For instance, although reform had been extended further, registered capital for 2005 was considerably lower than that in 1996. Fortunately, inward FDI seems more reliable as the ratio between realized capital and registered capital in 2005 was higher than that in 1996. The fundamental reform of FDI-related policy in late 2005 has caused a sudden increase of FDI in recent years. The registered FDI in the period 2006-2008 was about five times compared with the previous period from 2001 to 2005 and equivalent to 150% in comparison with the total registered FDI of all years from 1988 to 2005. Nevertheless, during the period 2009-2014, the registered FDI decreased remarkably because of the global financial and economic crisis.

Table 1: FDI inflows into Vietnam by sector, 1988-2014

Sector	FDI Inflows by Sector (%)
Manufacturing	55.95
Real estate activities	19.10
Construction	4.51
Accommodation and Food service activities	4.43
Electricity, gas, steam and air conditioning supply	3.87
Information and communication	1.63
Wholesale and retail trade; repair of motor vehicles and motorcycles	1.59
Transportation and storage	1.49
Agriculture, Forestry and Fishing	1.47
Arts, entertainment and recreation	1.44
Mining and quarrying	1.34
Professional, scientific and technical activities	0.71
Human health and social work activities	0.69
Water supply, sewerage, waste management and remediation activities	0.53

Source: Statistical Yearbook of Vietnam, 2014.

As shown in Table 1, the majority of FDI inflows in Vietnam were into manufacturing, accounting nearly 54% of the number of projects and 56% of registered capital, whilst the service sector accounted

approximately 40% of registered capital. This can be attributed to the low profitability and risk associated with agriculture as well as the promising development future of manufacturing industries in Vietnam. Within the manufacturing, during the early part of 1990s, FDI inflows were concentrated in import substitution and non-tradable industries such as oil and mining sector to serve the temporarily protected domestic market (Ketels et al., 2010). Nevertheless, recently FDI inflows have shifted to more export-oriented and labor-intensive industries such as light and heavy industries. In the service sector, while getting smaller in relative terms, the hotel and tourism still remain significant.

**Table 2: Top 10 countries of origin of FDI inflows into Vietnam, 1988-2014**

Country of Origin	FDI Inflows by Country of Origin (%)
Korea	14.93
Japan	14.77
Singapore	13.03
Taiwan	11.27
British Virgin Islands	7.12
Hong Kong	6.17
United States	4.35
Malaysia	4.28
China	3.16
Thailand	2.67

Source: Statistical Yearbook of Vietnam, 2014.

Regarding the sources of FDI, most of the FDI inflows into Vietnam are originated from Asian countries. Table 2 presents the top 10 countries of origin of inward FDI in Vietnam for the period 1988-2014. Among these countries, Korea accounted for the largest share of FDI inflows. Its cumulatively registered capital amounted to US\$ 37.7 billion, followed by Japan with US\$ 37.3 billion and Singapore with US\$ 32.9 billion. The geographic proximity between Vietnam and these Asian countries may be one of the reasons for the large proportion of FDI inflows coming from Asia. In addition, multinational corporations (MNCs) of Asian countries, typically tend to consider developing countries as their export production bases. They usually relocate their production capacities into developing countries for reducing production costs. With a population of nearly 91 million people, Vietnam is naturally endowed with a large labor resource and has a comparative advantage in labor-intensive products, making it appealing to MNCs searching for locations with low production costs.

#### 4. Methodology and Data

##### 4.1. Methodology and Model Specification

Based on the theoretical models of the neoclassical and endogenous growth as well as various empirical analysis models such as Borensztein et al. (1998), Hoang et al. (2010), and Adhikary (2015), the econometric model is derived from a production function framework in which FDI is incorporated as one of the factor inputs, along with domestic investment, trade openness, inflation rate, government expenditure and human capital. The model for this study is specified as follows:

$$\ln(GGR_t) = \beta_0 + \beta_1 \ln(FDI_t) + \beta_2 \ln(DI_t) + \beta_3 \ln(TO_t) + \beta_4 \ln(IR_t) + \beta_5 \ln(GC_t) + \beta_6 \ln(SE_t) + \mu_t$$

Where  $\beta_1, \beta_2, \dots, \beta_{10}$  are coefficients of elasticities; Ln represents the natural logarithm of variables; and  $\mu$  is the error term,

GGR = GDP growth rate

FDI = Foreign Direct Investment inflows in Vietnam

DI = Domestic investment

TO = Trade openness (sum of exports and imports as a percentage of GDP)

IR = Inflation rate

GC = Government consumption (as a percentage of GDP)

SE = Secondary education, general pupils (as a share of population)

The adoption of log linear specification to estimate the coefficient of variables has various reasons. First, the relation between these different variables is not linear. Second, in the case of log model, the value of coefficients could be interpreted in terms of percentage or elasticity rather than unit. In addition, we expect that FDI inflows, domestic investment, trade openness and secondary education have positive effects on economic growth whereas inflation rate and government consumption are expected to have negative relationship with economic growth in Vietnam.

As regards the estimation methods for time series data, the unit root test is firstly employed to check the stationarity condition of the variables (Johnston and Ramirez, 2015). Second, once the stationarity properties of the individual series are established, linear combinations of the integrated series are tested for cointegration. The cointegrated relation among variables is generally interpreted as their long-term equilibrium. To conduct the cointegrating test, this study applies the Johansen cointegration methodology.

#### 4.2. Data

This study is based on the annual time series dataset in Vietnam ranging from 1990 to 2013. The data were obtained and calculated from General Statistics Office of Vietnam and World Development Indicators published by the World Bank for Vietnam. Since the data of FDI, exports and imports were in US dollar, they were converted into Vietnamese Dong using yearly average exchange rate.

### 5. Empirical results

#### 5.1. Unit root test

Time series data may be characterized by the challenges of non-stationarity which leads to spurious results. To test for stationarity of each variable, Augmented Dickey-Fuller (ADF) unit root test is applied to the variables in level and at first difference. The ADF test results for the variables involved in the analysis are shown in Table 3. The findings indicate that the null hypothesis of presence of unit root or non-stationary has been rejected for all the first difference variables specified. This shows that all variables exhibit integrated order one or I(1). This also means that the series are non-stationary in level but stationary in first difference. Thus, the implication is that there is a possibility of having a cointegrating vector of which coefficient can directly be explained as the long-term equilibrium.

Table 3: Augmented Dickey-Fuller Unit Root Test Results

Series	Level		First Difference	
	Without Trend	With Trend	Without Trend	With Trend
LnGGR	-2.301	-3.185	-4.237***	-4.227**
LnFDI	-1.568	-2.244	-4.009***	-3.866**
LnDI	-2.297	-0.967	-5.487***	-5.280***
LnTO	-2.150	-1.368	-10.209***	-9.888***
LnIR	-2.570	-2.663	-3.280**	-3.557*
LnGC	-0.733	-1.078	-8.709***	-8.280***
LnSE	-1.554	-2.497	-4.089***	-4.177**

Source: Author's calculation.

Note: \*, \*\* and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

#### 5.2. Cointegration test

As all variables exhibit integrated order one or I(1), the next step is to use Johansen's test to examine the existence of long-term relationships among the variables of interest. The test has two forms, namely, the Johansen trace test and the maximum eigenvalue test. Results of these tests are presented in Table 4 which provides the number of cointegrating vectors.

Table 4: Johansen Cointegration Test Results

Hypothesized Number of Cointegrating Equation(s)	Eigenvalue	Trace Statistics	5% Critical Value
None*	-	319.292	124.24
At most 1*	0.9949	203.013	94.15
At most 2*	0.9743	122.509	68.52
At most 3*	0.9087	69.839	47.21
At most 4	0.8785	23.460	29.68
At most 5	0.5059	7.952	15.41
At most 6	0.2330	2.115	3.76
At most 7	0.0917	-	-

Source: Author's calculation.

Note: \* denotes rejection of the null hypothesis at the 5% significance level.

As shown in Table 4, the trace test and maximum eigenvalue test indicate the existence of 4 cointegrating vectors at the 5% level of significance. This finding confirms that there is a long-run relation among GDP growth rate, FDI, domestic investment, trade openness, inflation rate, government consumption, and secondary education in Vietnam.

Table 5: Empirical results

Variable	Coefficient	Std. Error	t-Statistics	Prob.
LnFDI	0.2431***	0.0622	3.91	0.001
LnDOI	1.6079***	0.5590	2.88	0.010
LnTO	0.6947**	0.3149	2.21	0.041
LnINF	-0.1936*	0.0939	-2.06	0.055
LnGC	-0.0953	0.4103	-0.23	0.819
LnSEC	0.1869**	0.0874	2.14	0.046

Source: Author's calculation.

Note: \*, \*\* and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

The results regarding long-term relationship between the variables are shown in Table 5. The coefficient of FDI inflows is positive and statistically significant, indicating that FDI has a positive effect on economic growth. It also reveals that the 1% rise in inward FDI tends to increase 0.24% in GDP growth rate. This result is consistent with the proponent of the FDI-led growth hypothesis such as Borensztein et al. (1998), Lean and Tan (2011), Insah (2013) and Iqbal and Abbas (2015). FDI has been an essential source that directly supported the creation of various industrial sectors in Vietnam with high demands for technology and value-added products, such as machinery manufacturing, energy, computers and telephones. In addition, FDI has played an increasingly important role in the country's export and import activities as well as ensured the supply of foreign exchanges and national balance of payments during the past years.

Domestic investment shows a positive and statistically significant relationship with economic growth at the 1% level of significance. This conforms to both economic and statistical expectation. Its coefficient of elasticity also reveals that the positive impact of domestic investment on Vietnam's economic growth is higher than that of FDI. The promulgation of the Enterprise Law in 2001, which significantly simplified the procedures for establishing domestic private firms, along with the political statements confirming the importance of private enterprises, became a landmark for the development of the domestic private sector. As a result, the number of newly established private firms started growing steadily since 2001 (Kokko and Tran, 2014).

The estimation results also reveal that openness to trade including imports and exports has a positive and statistically significant impact on Vietnam's economic growth. This suggests that a decline in the level of restrictions applied on trade exchanges tends to promote economic growth in the case of Vietnam. Yaseen (2014) and Adhikary (2015) also find a strong positive linkage between trade openness and economic growth. Vietnam has been executing trade policies on rapidly promoting export growth but still protecting domestic industries. Nevertheless, the level of protection has been considerably reduced. Until now, Vietnam has successfully generated trade relationship with over 160 countries and territories as well as signed more than 90 bilateral trade agreements, of which the Vietnam - US bilateral trade agreement; ASEAN free trade agreement (AFTA-1996); ASEAN-China, ASEAN-Japan, ASEAN-Korea free trade agreements; the accession into the WTO in 2007; and recently Trans-Pacific Partnership free trade agreements in 2015 are the most important ones. As a result, many opportunities to attract investment into Vietnam have been opened up.

Inflation rate, on the other hand, has a negative and statistically significant influence on the economic growth. Particularly, a 1% increase in the rate of inflation will lead to around 0.19% decrease in economic growth. Consistent with the argument of Yaseen (2014), high inflation rate will reduce returns on investment, raise economic instability, and restrain investment in production and business activities. As a result, it leads to the slowdown of economic development.

Government spending has a negative and statistically insignificant effect on the economic growth. It implies that the efficiency of government expenditure is not sufficient to enhance the economic growth in Vietnam over the period from 1990 to 2013.

The impact of secondary education as a proxy for human capital on economic growth is positive and statistically significant at the 1% significance level. It demonstrates the importance of the educated labor force on the growth prospect of the Vietnamese economy. Higher level of human capital tends to push the growth of aggregate output, prevent the decrease of marginal product, enhance cross sharing of knowledge and reverse engineering, thereby promoting economic growth (Adhikary, 2015). Olatunji and Shahid (2015) also suggest that a greater level of education in the workforce can boost economic growth.

### 5.3. Diagnostic test

To affirm the goodness of the estimated model, the diagnostic test was employed (Salim et al., 2015). Table 6 reveals that the model, in general, passes all the diagnostic tests, including the Breusch-Godfrey Serial Correlation LM test, Jacque-Berra normality test, Ramsey RESET stability test and autoregressive conditional heteroscedasticity (ARCH) test. All calculated statistics were insignificant, indicating that there is no problem of serial correlation, heteroscedasticity, non-normality, and functional form misspecification in the model.

Table 6: Diagnostic test

Test	F-Statistics	p-Value
Breusch-Godfrey LM test	1.725	0.1891
Jacque-Berra test	1.385	0.5003
Ramsey RESET test	0.350	0.7918
ARCH test	2.240	0.1344

Source: Author's calculation.

## 6. Conclusion

FDI has long been one of the most viable channels of wealth and technological transfer between the developed and the developing countries around the world. This is because FDI coordinated through multinational corporations has the potential to promote the well-being of many societies (Idoko et al., 2015). This study analyzes the effect of inward FDI on economic growth in Vietnam in the period 1990-2013 by applying time series analysis techniques. The empirical results reveal that FDI inflows, domestic investment, trade openness and secondary education have positive impacts on economic growth whereas inflation rate is found to have negative effect on economic growth. In addition, the impact of government consumption on economic growth is negative and statistically insignificant. These findings are consistent with the previous studies of Bahname (2012), Yaseen (2014) and Adamu et al. (2015).

In addition, this study suggests that Vietnamese government should improve regulations governing business activities by easing the process of business start-up, reducing government bureaucracy, controlling price, enhancing the compliance with international trade commitments, raising public spending on education and training, augmenting cooperation between training centers and Foreign-invested enterprises, etc. These policies may enhance the attraction of FDI, thereby increasing economic growth in Vietnam.

Despite these important findings, this research is not without limitations. First, although the sample size is sufficient for the present study, comparable regional or provincial data for the period 1990-2013 are not available. It is thus impossible to compare the impact of FDI on economic growth across the Vietnamese regions or provinces. Therefore, given the limitation of the data availability on FDI in Vietnam, more studies need to be conducted in the future to both confirm and expand upon this work using a dataset at regional or provincial level and FDI data segmented by industries. Second, it may also be worthwhile to examine the causal relationship between FDI and economic growth in Vietnam by applying the Granger causality test. Third, future work should address how the effect of FDI on growth of Vietnam's economy varies by industrial structure, the policy regime, the development of infrastructure, interest rate and exchange rate. Finally, this study can be further extended by analyzing the effect of FDI-led economic growth on income distribution and poverty reduction in Vietnam.

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