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# Impact of Globalization on Economic Growth in Vietnam: An Empirical Analysis

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**Abstract**

*This study aims at investigating the impact of globalization on economic growth in the case of Vietnam. Empirical analysis is done by using time series data for the period from 1995 to 2014. The paper tested the stationary cointegration of time series data and utilized the error correction modeling technique to determine the short run relationships among economic growth, globalization, foreign direct investment, balance of trade and exchange rate variables. Then, the long run relationship between economic growth and the variables representing economic integration were estimated by ordinary least square. The results show that globalization, measured by the KOF index, promotes economic growth and Vietnam has gained from integrating into the global economy. The overall index of globalization had positively and significantly impacted the economic growth in Vietnam. The results also indicated that economic globalization had a significantly positive effect on economic growth in the period examined. The study further revealed that foreign direct investment and the exchange rate affect economic growth positively whereas balance of trade affects economic growth negatively.*

**Keywords**: Globalization; economic growth; trade balance; foreign direct investment; cointegration.

**JEL code**: F63, O47, C32.

## 1. Introduction

Globalization reflects an ongoing process of greater interdependence among countries and their citizens (Fischer, 2003). There are four main driving forces behind increased interdependence: trade and investment liberalization, technological innovation and the reduction of communication costs, entrepreneurship, and global social networks. Globalization is described as the growing economic interdependencies of countries worldwide through the increasing volume and variety of cross-border transactions in goods and services and of international capital flows, as well as through the rapid and widespread diffusion of technology and information. As a multidimensional concept, globalization expresses the extension process of economic, political and social activities across national borders.

Today, there are two main views on globalization, one given by anti-globalists and the other by supporters of globalization. The anti-globalists view globalization as a controlling and influencing force used by overseas corporations to dominate international trade (Konyeaso, 2016). Western organizations have throughout the years increased their commitments in developing countries due to this being more profitable for them. One reason is due to the large quantity of resources found in these parts of the world. Many highly globalized developing countries have not been able to profit from globalization and are still facing the same problems they have been facing for many decades. According to the globalists, globalization is viewed as a beneficial process. It is presumed the only true way to beat poverty (Konyeaso, 2016). They argue that one of the main characteristics of globalization is greater trade in goods and services both between nations and within regions. Many of the industrializing countries are winning a rising share of world trade and their economies are growing faster than in richer developed nations, especially after the global financial crisis. Another important characteristic of globalization is the increasing transfers of capital, including the expansion of foreign direct investment, by trans-national companies and the rising influence of sovereign wealth funds. Foreign direct investment will help developing nations to industrialize, create jobs, bring business opportunities, and acquire manufacturing skills (Konyeaso, 2016).

Globalization could be either a success or a failure depending on its management (Stiglitz, 2002). There is success when it is well managed, for instance in the case of East Asian countries. Their success is based on exports, closing technological, capital and knowledge gaps. However, there is failure when globalization is managed by international economic institutions. Stiglitz argued that the problem is not with globalization but with how it is managed by international institutions who set the rules of the game.

Following the globalization trend, Vietnam has made considerable efforts for economic integration with the world since the late 1980s. Vietnam joined ASEAN, APEC, and ASEM in 1995, 1998, and 2001. The country continues to move toward greater international economic integration, through more opening up of trade with China, expanding bilateral links with the US, accessing the WTO in 2007, and signing the TPP in 2015. In addition to a more

open trade policy, Vietnam has improved the investment environment to attract foreign direct investment. In Vietnam, trade and foreign investment are the two strongest linkages to the global economy. In more than 20 years, Vietnam has made a number of convincing economic achievements. The average annual economic growth rate was 6.5 percent over the period 1995 – 2016. In 1995, Vietnam's GDP per capita of US$ 288 placed it among the poorest countries in the world. In 2008, a GDP per capita of US$ 1164 led to Vietnam's attainment of lower middle-income status by the World Bank classification. In the year 2016, GDP per capita reached US$ 2185. Economic growth in Vietnam has been accompanied by trade liberalization reforms that have led to an explosion in international trade. Exports as a share of GDP grew from 32.81 percent in 1995 to 93.62 percent in 2016, while imports grew from 41.91 percent to 91.06 percent over that same period. The key to the remarkable gains of the Vietnamese economy is the liberalization of domestic markets, foreign investment attraction, a trade openness policy and other macroeconomic policies.

Vietnam has experienced an increasing level of the overall globalization index (KOF), from 29.29 in 1995 to 56.69 in 2014. Due to the increasing trend of globalization, finding the effect of globalization on economic growth is most important. However, the relationship between globalization and economic growth in Vietnam has not been deeply evaluated by previous researchers (for example John Thoburn (2004), Jenkins (2006), and Pham Lan Huong (2013) etc.) and there is apparently a need to fill this research gap. Therefore, the aim of this study is to investigate the impact of globalization on economic growth in Vietnam for the period from 1995 to 2014.

This paper is organised as follows: after a short literature review of relevant studies on the impact of globalization on economic growth, the methodology of the study is presented. The next section exposes the main findings, and the final section concludes the paper with several policy recommendations.

## 2. Literature review

The relationship between globalization and growth is a heated and highly debated topic in the growth and development literature. Economists have long been interested in determining how globalization affects economic growth. Theoretical growth studies report a contradictory discussion on the relationship between globalization and growth. Some of the studies found a positive effect of globalization on growth, others argued that globalization has a harmful effect on growth. Despite the conflicting theoretical views, many studies have empirically examined the impact of globalization on economic growth in developed countries as well as in developing ones. Many of them appeared after 2006 when Dreher introduced a new comprehensive index of globalization - KOF (an acronym for the German word "Konjunkturforschungsstelle"). The overall globalization index (KOF) covers the economic, social and political dimensions of globalization. Economic globalization is characterized as long-distance flows of goods, capital and services, information and perceptions that accompany market exchanges. Political globalization is characterized by a diffusion of government policies. Social globalization is

expressed as the spread of ideas, information, images and people (Fidelis, 2012).

There have been numerous studies on the effects of globalization on economic growth. Dreher (2006) examined the impact of globalization on the growth of 123 countries between 1970 and 2000. Ordinary Least Squares (OLS) regression and Generalized Method of Moment (GMM) techniques have been used for the analysis. The overall result showed that globalization promotes economic growth. The economic and social dimensions have a positive impact on growth whereas the political dimension has no effect on growth.

Zhuang and Koo (2007) used a panel dataset covering 56 countries in the period from 1991 to 2004 to investigate the effects of globalization on economic growth. The variables include GDP growth rate, labor, capital, foreign direct investment, portfolio capital flow, trade, consumer price indices, per capita GDP, human capital, indicators of technology, and real exchange rates. By using the generalized least squares estimation, results strongly suggest that economic globalization has a significantly positive effect on economic growth for all countries.

Rao and Vadlamannati (2009) examined the impact of globalization on the growth rate of 21 poor African countries during 1970 - 2005. The variables used in the study include log(output per worker), log(capital per worker), index of globalization, index of institutional reforms, the rate of inflation and the ratio of current government expenditure to GDP. They employed a systems GMM method of estimation and found a small but significant positive association between globalization and economic growth in 21 low-income African countries.

Kakar (2011) determined the long run effect of globalization on economic growth in Pakistan from the year 1980 to 2009 by employing the time series data, co-integration and error correction technique. The variables include GDP growth rate, foreign direct investment inflow, population growth rate, real effective exchange rate, government expenditure on education and health as a percentage of GDP and trade as a percentage of GDP. The results show that globalization can be a useful tool for economic growth for a developing country like Pakistan.

Plegrinova et al. (2012) studied the relationship between globalization and important macroeconomic indicators in twelve developed countries on the European and North American continents from 1995 to 2009. They considered the effect of rising FDI, balance of payments and GDP per capita on the KOF globalization index. By using nonparametric regression model (panel data regression), the results indicate that there is a statistically significant relationship between the KOF index of globalization and foreign direct investments as well as GDP per capita. They could not accept the hypothesis of a statistically significant relationship between the KOF index of globalization and the balance of payments of selected countries.

Umaru (2013) analyzed the effects of globalization on Nigeria's economic performance between the years 1962 and 2009 by using the Annual Average Growth Rate technique. He found that globalization affects the petrol, manufacturing industry and solid mineral sectors in negative ways, but it effects the agriculture, transportation and communication sectors

in positive ways. Konyeaso (2016) also studied the impact of globalization on the Nigerian economy between 1986 and 2013. By using the multiple regression technique, the results show that there is a positive relation between globalization and economic growth. The Nigerian economy is gaining from globalization mainly due to foreign direct investment and trade openness.

Chelly and Deluna (2014) examined the relationship among economic growth, financial and trade globalization in the Philippines from 1980 to 2011. The variables considered in the study include real GDP growth rate, financial openness (the sum of FDI inflow and external debts divided by GDP) and trade openness (the trade to GDP ratio). The study used the Vector Autoregressive VAR(1) model and the Granger Causality test. It was found that the current value of GDP is positively affected by the previous value of itself and trade openness. The estimation results suggested that growth in trade volumes accelerates economic growth. However, financial openness has no significant effect on the current value of GDP.

Ying (2014) analyzed the connection between globalization and economic growth in ASEAN countries between the years 1970 and 2008 by using the Fully Modified Ordinary Least Squares technique. He found that economic globalization effects economic growth in a positive way but social and political globalization affects it in negative ways.

Suci (2015) also explored the development of the globalization level and economic growth in ASEAN countries. Based on the panel data of six developing ASEAN countries from 2006 to 2012, the study found that the overall index of globalization (KOF) had a positive and significant impact on economic growth in the region. Economic and political globalization positively impacted the economic growth but social globalization did not affect growth. Inflation, infrastructure, quality of education, technological preparedness, and government spending also had positive impacts on economic growth.

Olimpia Neagu (2017) studied the impact of globalization on economic growth in Romania for a time span of 24 years between 1990 and 2013. In order to highlight the impact of globalization, expressed by the KOF globalization index and its components, on the economic growth rate, the author estimated an econometrical model and found a statistically strong and positive link between the GDP per capita dynamics and the overall globalization index as well as between the GDP growth rate and economic and political globalization. However, the social dimension of globalization was found to have a negative impact on economic growth in Romania.

In Vietnam, there also exists a number of studies on the effect of globalization on poverty, employment and some aspects of human development such as education, health care, etc. For example, John Thoburn (2004) studied globalization and poverty in Vietnam and found that Vietnam has seen a striking reduction in poverty since its opening to the outside world in the early 1990s, and evidence for this poverty reduction is not sensitive to where the poverty line is drawn. However, inequality has risen. Jenkins (2006) explored the ways in which globalization affected the labour market in Vietnam by analyzing the impact of FDI on

employment. He concluded that the expansion of foreign firms to labor-intensive manufacturing has not had a substantial impact on employment because of the high productivity and low value-added nature of much of this investment. Not only have the direct employment effects of FDI in Vietnam not been very substantial, but the indirect effects have also been minimal and possibly even negative. Nguyen Thi Hong Tu et al. (2004) studied globalization's effects on health care and occupational health in Vietnam. They concluded that the process of globalization has given rise to serious problems for the health of workers. Pollution of the working environment in workplaces is at a high level and the situation of diseases related to occupations and occupational diseases of workers have been detected and have increased yearly. Besides that, Hien and Simon Fraser (2007) analyzed the impact of globalization on higher education in Vietnam and showed that the merging of higher education institutions, abandonment of state monopolies in education, increasing diversity in education provision, re-orienting curricula to meet market needs, and introducing competition into the educational sector in order to enhance the efficiency and effectiveness of the educational services are all impacts of globalization on the education system in Vietnam. In addition, Pham Lan Huong (2013) analyzed the effects of globalization and the necessity of Vietnamese educational management for integration into the world, etc. Despite the numerous studies, knowledge of the effect of globalization on economic growth in Vietnam is still scarce. This study tries to fill this gap by examining the effect of globalization on economic growth in Vietnam.

**3. Methodology and data**

In order to investigate the effect of globalization on economic growth in Vietnam, this study used the gross domestic product of Vietnam to present economic growth and the KOF globalization index to measure globalization. The KOF is built from each component (in the Appendix) and transformed into an index from the scale of 1 to 100. It covers the economic, social and political dimensions of globalization. These indexes also range from zero to one hundred, where bigger numbers demonstrate higher globalization (see the Appendix for detail).

The equations for estimation are specified as follows:

$$\log\left(GDP_t\right) = \alpha_0 + \alpha_1 KOF_t + \alpha_2 \frac{FDI_t}{GDP_t} + \alpha_3 BOT_t + \alpha_4 EXR_t + \varepsilon_t \quad (1)$$

$$\log\left(GDP_t\right) = \beta_0 + \beta_1 EGI_t + \beta_2 \frac{FDI_t}{GDP_t} + \beta_3 BOT_t + \beta_4 EXR_t + u_t \quad (2)$$

Where, the equation (1) evaluates the overall impact of globalization on economic growth while equation (2) is designated to assess the impact of globalization in an economic aspect on economic growth. The dependent variable, for simplicity of description and interpretation of results, is log(GDP).

The expected explanatory variables consist of:

KOF: Overall Globalization Index measures a nation's overall integration into the global economy. The overall globalization index has three components: an economic globalization

index (36%), a social globalization index (38%) and a political globalization index (26%) (Dreher, 2006).

EGI: Economic Globalization Index measures how a country is economically integrated. The Economic Globalization Index includes two sub-indexes: flows (50%) and restrictions (50%) (see the Appendix for details).

FDI/GDP: Foreign Direct Investment is measured as a percentage of GDP. The FDI variable that shows the attractiveness of a country for foreign investors is used to capture the effect of the outside resource of capital on economic growth. It has been generally argued that FDI has a positive effect on the economic growth (Saba Ismail et al., 2015).

BOT: Balance of Trade that demonstrates the ability of the economy to succeed in foreign markets is measured as exports minus imports.

EXR: Foreign Exchange Rate, which is the value of local currency units per dollar. The exchange rate is expected to influence economic growth through the effect of the exchange rate on the profitability of international trade and investment.

$\alpha_0$, $\beta_0$ are constants; $\alpha_i$, $\beta_i$ ($i = \overline{1,4}$) are parameters.

$\varepsilon_t$, $u_t$ are error terms.

The estimation of the two equations (1), (2) by the ordinary least square technique may yield spurious regression if the variables are not stationary. In order to overcome this problem, all variables are subjected to a unit root test to determine the time series properties. The Augmented Dickey-Fuller (ADF) unit root test is employed on all variables to check the order of integration. In case all selected variables are integrated at the same order, the Johansen cointegration test is then used to examine the long run relationship among the chosen variables. Otherwise, the Auto Regressive Distributed Lag model for cointegration can be considered. Once the variables are found to be cointegrated, meaning that long run equilibrium holds among them, they may still be in disequilibrium in the short run. Therefore, an error correction model is estimated to determine the short run dynamics of the system. In this study, equations (1) and (2) are transformed into the following error correction models:

$$\Delta\log(GDP_t) = \gamma_0 + \gamma_1\Delta KOF_t + \gamma_2\Delta(FDI_t/GDP_t) + \gamma_3\Delta(BOT_t) + \gamma_4\Delta EXR_t + \gamma_5\varepsilon_{t-1} + \theta_t \quad (3)$$

$$\Delta\log(GDP_t) = \delta_0 + \delta_1\Delta EGI_t + \delta_2\Delta(FDI_t/GDP_t) + \delta_3\Delta(BOT_t) + \delta_4\Delta EXR_t + \delta_5 u_{t-1} + \vartheta_t \quad (4)$$

Where:

$\Delta$ is the first difference;

$\gamma_5$, $\delta_5$ are the speeds of adjustment that are linked with cointegration equations;

$\varepsilon_{t-1}$, $u_{t-1}$ are one-year period lag of error correction terms derived from randomness of equations of OLS models (1), (2).

Data used for estimating these models is from various sources as below:

• The World Bank Development Indicators Database;

• The Global Economy Database (2017);

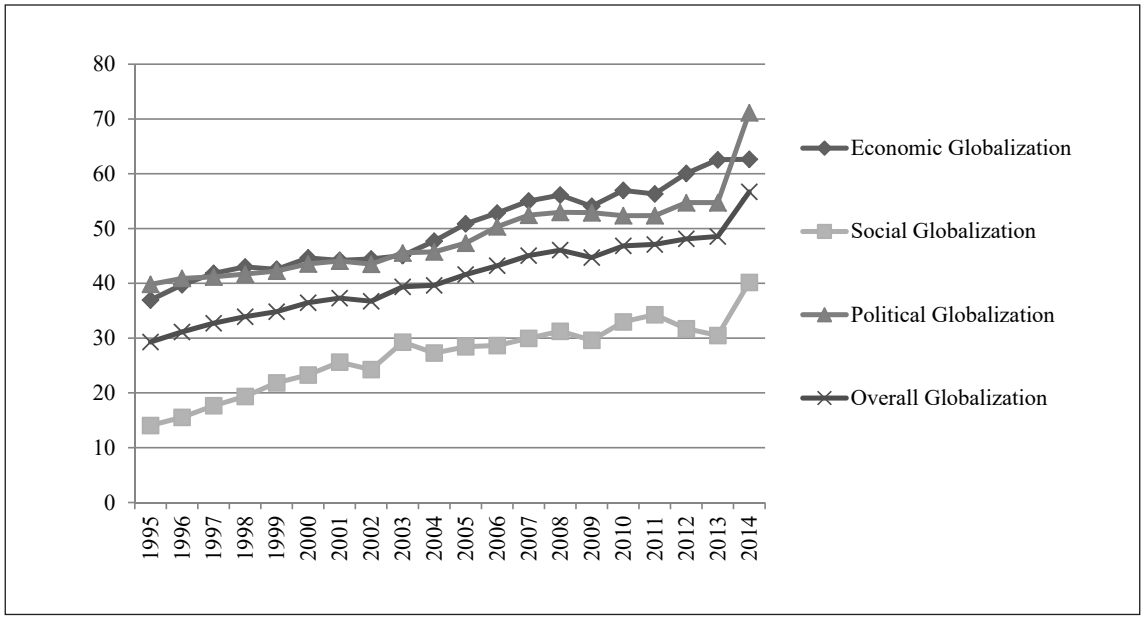
• KOF Index of Globalization (2017).

In this study, data on variables is taken for the period from 1995 to 2014. This restriction on the period of data is due to unavailability of data on globalization[1].

**4. Results and discussion**

Vietnam experienced an increase in its glo-

**Figure 1: Development of globalization in Vietnam**




balization level during 1995 – 2014. In 2014, Vietnam sat at the 89th position with a globalization index (KOF) of 56.69. In the three globalization components, Vietnam is ranked 84th in terms of economic globalization, 89th in political globalization, and 123rd in social globalization in the world. It is apparent that the country has given priority to the economic aspect as compared to political and social aspects.

This study intends to scrutinize the impacts of globalization on economic growth in Vietnam from 1995 to 2014. First, the Augmented-Dickey Fuller unit root test is employed for the level of all variables of interest followed by the first difference. The results in Table 1 show that log(GDP), economic globalization, overall

**Table 1: ADF Unit root test results**

| Variables | Level | | 1st Difference | | Results |
|---|---|---|---|---|---|
| | t-statistic | Prob. | t-statistic | Prob. | |
| Log(GDP) | 0.6020 | 0.9857 | -3.5243 | 0.0195 | I(1) |
| KOF | 0.5272 | 0.9830 | -3.5605 | 0.0182 | I(1) |
| EGI | -0.4824 | 0.8746 | -3.4681 | 0.0248 | I(1) |
| FDI/GDP | -1.8312 | 0.3551 | -3.2877 | 0.0311 | I(1) |
| BOT | -1.1284 | 0.6819 | -3.3782 | 0.0261 | I(1) |
| EXR | -0.1351 | 0.9303 | -3.3936 | 0.0262 | I(1) |

*ADF test type: Intercept without trend.*

**Table 2: Johansen cointegration test**

| A. Series: log(GDP) KOF FDI/GDP BOT EXR | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Unrestricted Cointegration Rank Test** | | | | | | | |
| **Hypothesized No. of CE(s)** | **Eigenvalue** | **Trace** | | | **Maximum Eigenvalue** | | |
| | | **Trace Statistic** | **0.05 Critical Value** | **Prob.**** | **Max-Eigen Statistic** | **0.05 Critical Value** | **Prob.**** |
| None | 0.986925 | 145.6834 | 69.81889 | 0.0000* | 78.06631 | 33.87687 | 0.0000* |
| At most 1 | 0.817906 | 67.61709 | 47.85613 | 0.0003* | 30.65821 | 27.58434 | 0.0195* |
| At most 2 | 0.704376 | 36.95888 | 29.79707 | 0.0063* | 21.93598 | 21.13162 | 0.0385* |
| At most 3 | 0.544245 | 15.02290 | 15.49471 | 0.0588 | 14.14441 | 14.26460 | 0.0522 |
| At most 4 | 0.047633 | 0.878493 | 3.841466 | 0.3486 | 0.878493 | 3.841466 | 0.3486 |
| Trace test indicates 3 cointegrating equations at the 0.05 level | | | | | Max-eigenvalue test indicates 3 cointegrating equations at the 0.05 level | | |
| **B. Series: log(GDP) EGI FDI/GDP BOT EXR** | | | | | | | |
| **Unrestricted Cointegration Rank Test** | | | | | | | |
| **Hypothesized No. of CE(s)** | **Eigenvalue** | **Trace** | | | **Maximum Eigenvalue** | | |
| | | **Trace Statistic** | **0.05 Critical Value** | **Prob.**** | **Max-Eigen Statistic** | **0.05 Critical Value** | **Prob.**** |
| None | 0.899631 | 105.8614 | 69.81889 | 0.0000* | 41.38025 | 33.87687 | 0.0053* |
| At most 1 | 0.827245 | 64.48118 | 47.85613 | 0.0007* | 31.60587 | 27.58434 | 0.0144* |
| At most 2 | 0.641677 | 32.87532 | 29.79707 | 0.0214* | 18.47378 | 21.13162 | 0.1131 |
| At most 3 | 0.382838 | 14.40153 | 15.49471 | 0.0726 | 8.687222 | 14.26460 | 0.3131 |
| At most 4 | 0.272006 | 5.714313 | 3.841466 | 0.0168 | 5.714313 | 3.841466 | 0.0168 |
| Trace test indicates 3 cointegrating equations at the 0.05 level | | | | | Max-eigenvalue test indicates 2 cointegrating equations at the 0.05 level | | |
| * denotes rejection of the hypothesis at the 0.05 level | | | | | | | |
| **MacKinnon-Haug-Michelis (1999) p-values | | | | | | | |

globalization, the ratio of foreign direct investment to GDP, balance of trade, and the foreign exchange rate are non-stationary at levels. The Table also indicates all variables are stationary at the first difference and integrated at order 1. This suggests a series of variables may reveal a logical long run relationship among them.

Since the variables in the models are non-stationary and are integrated of the same order, the Johansen cointegration test is used to determine the long run relationship among the variables in each model. Results in Table 2 confirm the existence of the long run relationship between log(GDP) and included variables in the models (1) and (2) as indicated by the Trace statistic and the Max-Eigen statistic values.

**Table 3: Results of error correction models (3) and (4)**

| Independent Variables | Model 3 | | Model 4 | |
|---|---|---|---|---|
| | Coefficient | Prob. | Coefficient | Prob. |
| C | 0.120617 | 0.0001 | 0.091508 | 0.0034 |
| D(KOF) | 0.001953 | 0.7854 | | |
| D(EGI) | | | 0.017147 | 0.1194 |
| D(FDI/GDP) | 2.501313 | 0.0305 | 1.645760 | 0.1420 |
| D(BOT) | 0.002392 | 0.5174 | 0.000973 | 0.8001 |
| D(EXR) | -3.99E-06 | 0.8797 | 4.98E-06 | 0.8538 |
| ECM1(-1) | -0.307890 | 0.0861 | | |
| ECM2(-1) | | | -0.402440 | 0.0767 |
| R-squared | 0.467707 | | 0.476917 | |
| Adjusted R-squared | 0.262979 | | 0.275731 | |
| Prob (F-statistic) | 0.096865 | | 0.097503 | |
| Durbin-Watson stat | 1.903529 | | 1.551754 | |
| Sum squared resid | 0.029556 | | 0.029045 | |

*Dependent Variable: D(Log(GDP)); Sample: 1995 2014.*

The Trace-statistics results reveal that there are three cointegrating equations at a 5% level, while Max-eigen statistic value also indicate two and three cointegrating equations among the variables in models (1) and (2) respectively at the 5% level. Thus, all the variables in model (1) as well as in model (2) are cointegrated and have a long run equilibrium relationship with each other.

In econometric analysis, a cointegrated set of time series variables must have an error correction representation that reflects the short run adjustment mechanism. The short run models (3) and (4) are estimated in first difference forms and the results are reported in Table 3. The values of ECM1(-1) and ECM2(-1) represent the error correction terms $\varepsilon_{t-1}$ and $u_{t-1}$, respectively.

The results in Table 3 clearly show that the error correction variables (ECM1 and ECM2) were significant, validating the error correction model specification. The coefficients of error correction terms have a negative sign (-0.31 and 0.40, respectively) as expected and they are significant at a 10% level. The error correction term shows how fast the model returns to stability at any disturbance or shock. The speeds of adjustment between short run dynamics and long run equilibrium values are 31% and 40%, meaning about 31% and 40% respectively of the discrepancy between long term and short term log(GDP) corrected within a year (yearly data). The significance of the coefficients of ECM1 and ECM2 connotes the existence of a long run equilibrium relationship between economic growth and the explanatory variables.

In the short run, the overall globalization index, the economic globalization index, foreign direct investment and balance of trade, all have positive effects on economic growth. Among them, foreign direct investment is positively related with economic growth and statistically significant at 5% (for model 3) whereas other variables are not statistically different from zero at any levels. The results confirm the importance of foreign direct investment in Viet-

**Table 4: The estimation results of the impact of globalization on economic growth in Vietnam**

| Independent Variables | Model 1 | | Model 2 | |
|---|---|---|---|---|
| | Coefficient | Prob. | Coefficient | Prob. |
| KOF | 0.039615 | 0.0018 | | |
| EGI | | | 0.048248 | 0.0000 |
| FDI/GDP | 5.290381 | 0.0006 | 3.216118 | 0.0096 |
| BOT | -0.006689 | 0.2050 | -0.007179 | 0.0838 |
| EXR | 0.000148 | 0.0000 | 0.000114 | 0.0001 |
| C | -0.235312 | 0.1570 | -0.360797 | 0.0129 |
| R-squared | 0.984741 | | 0.990774 | |
| Adjusted R-squared | 0.980671 | | 0.988314 | |
| Prob (F-statistic) | 0.000000 | | 0.000000 | |
| Durbin-Watson stat | 1.891823 | | 1.905875 | |
| Sum squared resid | 0.148804 | | 0.089968 | |
| Ramsey test (Prob.) | 0.1252 | | 0.4066 | |
| Breusch-Pagan-Godfrey test (Prob.) | 0.3516 | | 0.5313 | |
| Breusch-Godfrey Serial correlation LM test (Prob.) | 0.9969 | | 0.4424 | |
| Jarque-Bera probability | 0.5488 | | 0.8691 | |

*Dependent Variable: Log(GDP); Sample: 1995 2014.*

nam's growth process. The implication is that policy measures targeted at improving foreign direct investment can effectively enhance the economic growth rate. The foreign exchange rate variable shows a mixed effect on economic growth but it is statistically insignificant. This implies that the foreign exchange rate contributes no significant impact on economic growth in the short run.

Furthermore, the coefficients of determination of these models, represented by an R2 value of 0.47, imply that 47 percent of changes in the dependent variable are explained by the included explanatory variables. The models pass the Ramsey tests for functional form misspecification (p-value: 0.8961 (model 3); 0.3520 (model 4)). The models are free of autocorrelation in the specification because p-values of the Breusch-Godfrey Serial correlation LM tests are 0.6626 (model 3) and 0.5847 (model 4). The models (3) and (4) are also free from heteroskedasticity problems, the Breusch-Pagan-Godfrey tests show the variance of unobserved error is constant (p-values are 0.3098, 0.1647, respectively). The normality tests indicate the scores of Jarque-Bera probability (0.7942 for model (3) and 0.7574 for model (4)) are larger from $\alpha = 5\%$.

The results of the estimated long run equations (1), (2) which capture the effect of overall globalization, economic globalization and macroeconomic variables on economic growth in Vietnam are presented in Table 4.

The overall globalization index significantly and positively influenced the growth of GDP in Vietnam at a real degree of 1%. The estimated results of model (1) indicate that an increase of the globalization level index overall as big as 1 unit will enhance the growth of GDP by 3.96%, *ceteris paribus*. This result is in line with the study by Suci (2015) that found a positive and significant impact of the overall globalization

index on economic growth of ASEAN countries during 2006 – 2012.

The economic globalization index was found to influence significantly and positively the growth of GDP at a real degree of 1% with a coefficient score of 0.048. This implies an increase in the index of economic globalization level of 1 unit will lead to the growth of GDP by 4.8%, *ceteris paribus*. This result is consistent with the studies conducted by Ying (2014) and Suci (2015) for ASEAN countries in 1970 – 2008, and 2006 – 2012 correspondingly.

The estimated results from models (1) and (2) show the positive coefficient (5.2904 and 3.2161, respectively) between foreign direct investments and economic growth and it is statistically significant at the 1% level. The positive influence of FDI on economic growth is in accordance with the theoretical expectation.

The negative coefficient for the variable of balance of trade (-0.007) is due to trade deficit. For many years, Vietnam has had a trade deficit. For a developing country that is in the first stages of development such as Vietnam, a high demand for material, machinery, and modern techniques has made a trade deficit unavoidable. However, the trade deficit has had a negative effect on economic growth in Vietnam. This result is consistent with the finding of Gould and Ruffin (1996) that a negative correlation exists between trade imbalances and economic growth, but the relationship is weak and imbalanced trade values have little impact on the economic growth rate, once the fundamental determinants of economic growth are taken into account. Najid Ahmad (2013) also found that there is a strong negative correlation that exists between the GDP growth and trade deficit in Pakistan in the long run. He suggested that a trade deficit is better for economic growth in the short run but long run dependency would be harmful for the economic growth of Pakistan.

The foreign exchange rate significantly and positively affected economic growth at a degree of 1 percent with the coefficient of 0.0001. This means that an increase in the foreign exchange rate of 1 unit will increase economic growth as much as 0.01%, *ceteris paribus*. Thus, the exchange rate was found to exert a positive impact on economic growth in Vietnam. In the economic literature, there are controversies over the relationship between the exchange rate and economic growth. The effect of the exchange rate on economic growth depends on whether the exchange rate is over or undervalued. Munthali (2010) indicated that in the case of undervaluation, the exchange rate was found to result in positive economic growth, while overvaluation of the exchange rate resulted in negative economic growth. However, based on panel data and a large sample of 93 countries (both developed and developing), Razin and Collins (1997) found that only a very high overvaluation has a negative and statistically significant impact on growth. They also stated that undervaluation seems to have no significant impact on growth. On the contrary, based on a sample of 60 countries over the period 1965 – 2003, Aguirre and Calderon (2005) concluded that an important undervaluation has a negative impact on the growth of developing countries, while an average overvaluation (up to 12%) increases growth by 3 to 11% yearly. They noticed that an important overvaluation has an adverse effect on growth. According to

Bereau (2009), significant overvaluation seems to have no important impact on the economic growth. In Vietnam, the VND has generally been considered to be overvalued due to its long term fixing to the USD, the low trading band and the high inflation rate in Vietnam compared to that of the United States. The estimated results from Models (1) and (2) showed the positive and statistically significant impact of the exchange rate on economic growth in Vietnam.

The R2 adjusted results reveal that more than 98% of the total variation of economic growth can be explained by changes in the level of globalization and other key macroeconomic variables. Also, the F-statistic results show that the simultaneous interaction of globalization levels and other key macroeconomic variables had significant effects on economic growth in Vietnam during the review period.

Models (1) and (2) pass the Ramsey tests for functional form misspecification. To identify the problem of heteroskedasticity, the Breusch-Pagan-Godfrey tests show that the variance of unobserved error was constant. Also, the Breusch-Godfrey Serial correlation LM tests, used to find out whether the models are free from autocorrelation problems, show that the models do not have the problem of autocorrelation. The normality tests indicate the scores of Jarque-Bera probability were larger from $\alpha = 5\%$ and thus it can be concluded that these models would distribute normally.

**5. Conclusions and recommendations**

This study empirically examined the impact of globalization on economic growth in Vietnam. The ordinary least square and cointegration techniques were used to examine the long term relationship existing among variables while error correction models were also applied in order to determine the short run dynamics around the equilibrium relationship.

The study showed that the Vietnamese economy is gaining from globalization. The empirical results concluded that globalization has a positive effect on economic growth in the short run as well as in the long run. The overall globalization index has a positive and significant impact on the economic growth. Moreover, economic globalization was found to be positively influential toward economic growth. The findings of the results revealed that the presence of globalization could enhance economic growth in Vietnam. These results are consistent with the finding of Suci (2015) and Ying (2014) to some extent on the beneficial aspects of globalization in ASEAN countries. Thus, the findings of this paper support previous literature on the contribution of globalization to economic growth. The study further showed that the ratio of foreign direct investment to GDP and foreign exchange rate affect economic growth positively whereas balance of trade affects economic growth negatively.

Although Vietnam has integrated into the world economically, politically and socially, the increase in the globalization level, especially in the aspect of economic globalization can be suggested through the increase in trade volume, in FDI and portfolio investment as well as the decrease in barriers and taxes in international trade.

According to the results of the analysis, the

following recommendations are made. First and foremost, there is a need for the Vietnamese government to support the development of the globalization level of the country to catch a higher level of growth rate. Secondly, there is a need for the Vietnamese government to continue proactive and sound policies aimed at encouraging foreign direct investment, ensuring foreign exchange rate stability and facilitating international trade to maximize the benefits of globalization and reduce its harmful effects on economic development at large.

## APPENDIX

**Table 5: Components of overall globalization index**

| Components | Weights |
|---|---|
| **Economic globalization** | **36%** |
| ***Actual Flow*** | ***50%*** |
| Trade (percentage of GDP) | 22% |
| Foreign direct investment, stocks (percentage of GDP) | 27% |
| Portfolio investment (percentage of GDP) | 24% |
| Income payments to foreign nationals (percentage of GDP) | 27% |
| ***Obstacles*** | ***50%*** |
| Hidden import barriers | 24% |
| Mean tariff rates | 28% |
| Taxes on international trade | 26% |
| Capital account restrictions | 23% |
| **Social globalization** | **38%** |
| ***Data on personal contacts*** | ***33%*** |
| Telephone traffic | 25% |
| Transfers | 3% |
| International tourism | 26% |
| The foreign population according to the total population | 21% |
| International letters per capita | 25% |
| ***Data on information flows*** | ***35%*** |
| Internet usage per 1000 people | 36% |
| Television per 1000 people | 38% |
| Trade in newspapers | 26% |
| ***Data on cultural proximity*** | ***32%*** |
| Number of McDonald's restaurants per capita | 44% |
| Number of IKEA per capita | 44% |
| Trade in books | 11% |
| **Political globalization** | **26%** |
| Number of embassies in country | 25% |
| Membership in international organisations | 27% |
| Participation in United Nation Security Council mission | 22% |
| International treaties | 26% |

*Source: Suci (2015).*

## Note:

1. In 2017, KOF released the data on globalization up to 2014.

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