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### HOW THE FINANCIAL OPENNESS ACCELERATES THE ECONOMIC GROWTH OF LEADING ASEAN ECONOMIES

Isfenti Sadalia<sup>1</sup>, Nisrul Irawati<sup>2</sup>, Masyhuri Hamidi<sup>3</sup>, Giriati<sup>4</sup>, Saadah Yuliana<sup>5</sup>

<sup>1,2</sup>Faculty of Economics and Business, Universitas Sumatera Utara, Medan, Indonesia
<sup>3</sup>Faculty of Economics, Universitas Andalas, Padang, Indonesia
<sup>4</sup>Faculty of Economics and Business, Universitas Tanjungpura, Pontianak, Indonesia
<sup>5</sup>Faculty of Economics, Universitas Sriwijaya, Palembang, Indonesia

E-mails: <sup>1</sup>isfenti@usu.ac.id

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Abstact. This research study has given important implications for regulators through elaborating the association between economic growth, financial openness among the five member countries of ASEAN including Philippines, Indonesia, Thailand, Malaysia, and Singapore. An insight has been provided about the relation of economic growth and trade openness from the practical aspect in ASEAN economies. Therefore, the policy makers are supported through this information to develop, overview, and revise the existing regulations and policies of financial openness. This research study has made significant contributions through analyzing the association between economic growth and financial openness from the theoretical aspect. The study has argued that the current literature is extended by this study through focusing on the developing economies of ASEAN. Banking sector is a crucial institution for any economy and economic growth is negatively influenced through collapse of the banking activities. Further, financial system comes at risk through financial openness, but it has a considerable role in the development of economies. The financial system liberalization is the main factor, which drives economic growth among the ASEAN countries. There is need for the policy makers to review and alter the existing regulations of financial openness.

Keywords: ASEAN, financial openness; economic growth; trade

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### 1. Introduction

In last few decades, financial openness has been widely noted around the world. Financial openness is defined as the free flows of cross-country investments which are derived from the liberalized government regulation. According to Erten and Ocampo (2017), the process of financial openness has closely brought together the financial market and institutions around the world. Previous studies have identified few approaches in which the financial system is being opened to other countries. Among them are financial liberalization, capital account deregulation, relaxation in the cross-country savings and investment and deregulation in current account transactions (Ezeanyeji Clement, 2016; Cortés & Strahan, 2017). Benefits of financial openness to the financial system have been highlighted by the previous literature. According to Norlida (2017) and John (2016), financial openness will increase the risk sharing and risk diversification activities that would reduce the overall investment risk of the investors. Next, the financial liberalization also increases the efficiency in capital allocation which could improve the functions of the financial market. As noted by Nyasha and Odhiambo (2018) and Shahbaz, Rehman, and Muzaffar (2015), financial liberalization enhances the investment and savings activities

by reducing the government controls. As the financial constrains being eliminated by the process of financial deregulation, the investors are being compensated with the level of returns that is appropriate with their investment risks.

Therefore, the liberalized financial system would the benefit the poor and rich countries by promoting venture opportunities and financial development. Thus, the economy gain benefits from the efficiency in capital allocation in the deregulated financial market. In addition, according to Marshal (2016), financial openness has increased the investment activities which lead to improvement in the economic activities. According to these studies, the financial openness has increased the stock market productivity and liquidity which benefit the investors and companies in the long run.

On the other hand, financial openness also has few disadvantages. According to IMF (2007), higher capital account inflows would weaken the macroeconomic stability, depreciate the local currency and also deteriorate the capital account. According to Converse (2018) financial openness could also increase the risk of contingent and crisis. They argue that the international fund increases the volatility movement in capital account and also liquidity in the financial system. This has resulted in few unwanted consequences such as financial crisis, bank runs and credit crunch.

Despite the risk associated with financial openness, the role of financial openness in the economic development is still considered to be vital to the policy maker. Previous studies have proven the positive impact of financial openness on the economic growth (ECNG) in both developed countries (Al-Shayeb & Hatemi-J, 2016; Norlida, 2017) and developing countries (Hye & Wizarat, 2013; Fang, Zakaria & Shokory, 2016). They have highlighted few reasons on this positive relationship such as increment in productivity, spillover effect, risk sharing and reduction in asymmetric information.

In theory, financial openness is conducted to improve the ECNG by increasing the investments activities, capital flows transaction and enhancing the competition that lead to higher ECNG. According to Obstfeld and Taylor (2017), financial openness can also directly influence the productivity factor such as enhancing corporate governance, encouraging financial development and leading to higher ECNG. However, the previous studies that examine the relationship between financial openness and ECNG have produced mix findings. There are few issues and problems related to the relationship between financial openness and ECNG. Although, financial openness is expected to have positive impacts, however it also reduces the ECNG through various channels. Firstly, the impact of international financial liberalization process increases the probability of financial crises that leads to the decrease in the ECNG (Rancière & Tornell, 2016). The spill over effect of the financial crisis has been transferred to other countries from the liberalization process. The significance of financial openness has increases over the past few decades around the world. The free flow of investment across the countries that are the result of liberalized government regulation is referred as financial openness. The institutions and financial markets have come closer around the world in financial openness process (Erten & Ocampo, 2017). Few approaches have been identified by previous studies that in which the finances are open for other economies. These approaches include the relaxation of saving across countries, deregulation in transactions of current account, deregulation of capital account and financial liberalization (Ghasemi, 2016; Cortés & Strahan, 2017).

The previous studies have highlighted the advantages of financial openness for the financial system. The activities of risk diversification and risk sharing increase with financial openness and the risk of overall investment for the investors is reduced (John, 2016; Marshal, 2016; Norlida, 2017). Further, the capital allocation efficiency increases with financial liberalization that can increase the financial market functioning. Nyasha and Odhiambo (2018) and Shahbaz et al. (2015) highlighted that financial liberalization improves investment and saving activities by reduction the government control. With the elimination of financial constraints through financial deregulation, investors are given the returns suitable with the risks of investment.

Both the rich and poor economies are benefited through the liberalized system of finance by enhancing the

opportunities of venture and financial development. Therefore, benefits are received through capital allocation efficiency in the market, which is deregulated. Moreover, the investment activities have increased through financial openness, which result in better activities in the economy (Marshal, 2016; Goral & Akgoz, 2017). Some research studies have claimed that the productivity of stock market and liquidity has increased through financial openness that gives advantage to the companies and investor in long term (Figure 1).



Figure 1. ECNG in ASEAN Countries

Source: World Bank

The figure shows the picture of economic turmoil in ASEAN economies, indicating an overall decline in ECNG in these countries. Meanwhile, the figure 1 shows high economic turbulence in Thailand. There are some disadvantages of financial openness. The macroeconomic stability is weakened with greater inflow of capital account, which depreciates the capital account as well as local currency (IMF, 2007). It has been signified by researchers that the crisis and risk of contingent increases through financial openness (Joshua, 2016; Converse, 2018). The researchers have argued that the financial system liquidity and volatility movement of capital account increases through international fund. Some uncertain consequences including credit crunch, bank runs, and financial crisis can be the outcomes of financial openness.

Irrespective of the fact that there are several risks linked with the financial openness, it has a considerable role for policy makers in economic development. It has been proved by previous research studies that financial openness has a positive influence on the growth of developed and developing economies (Haque & Chandio, 2013; Al-Shayeb & Hatemi-J, 2016; Norlida, 2017). Some causes for the positive association have been signified by the researchers including spillover effect, increase in productivity, reduction in asymmetric information and risk sharing.

The ECNG is improved through financial openness through increase in the activities of transactions of capital flows, investment activities, increase in competition, which result in superior economic performance. The productivity can be influenced by financial openness in a direct way including the promotion of financial development and improving the corporate government resulting in better growth of economy (Obstfeld & Taylor, 2017). The relation between ECNG and financial openness has been examined by previous research studies, which have revealed mixed results (Asongu & De Moor, 2017; Herve, 2018). The relation of ECNG and financial openness has certain problems and issues. There are likely to have positive influences of financial openness but it can reduce the ECNG in different ways. The chances of financial crisis increase through the influence of the process of international financial liberalization, which results in lower ECNG (Rancière & Tornell, 2016). The liberalization process transfers the influence of financial crisis to other economies.

Financial openness results in higher competition, which creates a negative influence on the local players in the market. A contestable market is created by financial liberalization that creates higher performance in terms of efficiency and competition in the banking sector. However, better technology is available to the foreign players, which gives them advantage and enable to focus on the sector, which is profitable rather than risky. In this way,

the risky projects are left for the domestic players (Claessens & Van Horen, 2015). The issue of asymmetric information is caused by financial openness, which can create problems for the financial system. The best returns with lowest financing cost are provided b the domestic financial institutions through competition. The process of assessment can be scarified for higher returns. The capital formation is damaged and ECNG declines because of symmetric information (Rancière & Tornell, 2016).

Moreover, issues of moral hazards are created through integrated financial system due to increase in the pressure for competition. The efforts of monitoring and screening are reduced by the lenders for gaining higher profits in the liberalized system. The risk taking are promoted by financial openness and result in decline of ECNG and banking crisis (Alessi & Detken, 2018). The banking system is harmed by the liberalized system through activities involving risk transfer (Norlida, 2017). More risk is taken by the banks when the opportunities of hedging are not successful, which result in instability of the banking sector.

# 2. Literature Review

The significant of financial system liberalization has been highlighted by the financial liberalization theory, which was developed by Nyasha and Odhiambo (2018) and Shahbaz et al. (2015), in improving the growth of economy. The financial repression including the reduction of interest rate, government lending and tightening of the capital movement causes problems for the funds flow in the economy (e.g. Luzgina, 2017; Nikitina et al., 2018; Baltgailis, 2019, Sasongko et al., 2019; Fabus et al. 2019; Sriyana, 2019; Dalevska et al., 2019; Vorotnikov et al., 2019). The credit is limited through financial repression to the profitable projects only. The decrease in return for the investors leads to reduction of ECNG.

The credit efficiency is increased through financial liberalization through funds distribution to the productive sector and it improves the financial saving because of increase in rate of interest. The economic development is reduced through repressed financial system due to misuse of funds by the government (Hye & Wizarat, 2013). The level of investment and savings is reduced because of controlling the lending and deposit rates by the government. Therefore, reduction in control of government in the financial system because of liberalization of interest rate, the intervention of government is reduced improving the allocation of investment/savings to the profitable industries. These allocations of funds to the productive sector result in superior ECNG and development.

The previous research studies have tested the association between ECNG and financial openness with reference to the developed as well as developing economies. A positive association has been concluded b some studies for the relation of ECNG and trade openness over a sample based on 26 economies including United Kingdom, Spain, Germany, Slovakia, Netherlands, Greece, Portugal, Poland, and Sweden (Ishak, 2016; Ehigiamusoe & Lean, 2019). The ECNG was estimated using proxy of GDP and it was found by the study that a positive influence is created by financial openness on capital accumulation, ECNG, and efficiency growth during the years 1990-2007. It was argued by the author that the increase in productivity could be defined by the influence of financial openness created on ECNG through financial liberalization. In the similar way, the relation between ECNG and financial openness was analyzed by Norlida (2017) for Poland over the period of 1990-2002 through use of GCT (Granger Causality Test) and EGT (EngleGranger Test), and ADF (Augmented Dickey-Fuller Test). A positive relation has been indicated for the relation of ECNG and financial liberalization. Moreover, it was found that the ECNG is enhanced through financial liberalization in Korea. The index of financial liberalization developed by Bouzid (2016) was used in the research that is based on interest rate, financial market deregulation, and barriers to entry, banking sector privatization and improving the prudential guidelines. It has been agreed by these studies that economic development is greatly influenced through financial openness. Alternative, an insignificant relation between ECNG and financial liberalization of Greece was discovered by Al-Shayeb and Hatemi-J (2016) by using data for period of 1990- 2009. It has been argued by this research that the intended outcome is not provided by trade openness to the foreign participants set by the government.

The literature based on the emerging countries has been discussed in the next part. Some research studies have agreed that the ECNG is positively influenced through financial openness. A study was conducted by Okafor,

Onwumere, and Chijindu (2016) on the association of ECNG and trade openness for Pakistan. Analyzing the period of before (1965-1986) and after liberalization (1987-2008), it was found by the research that there has been an increase in ECNG after the liberalization. In the similar way, the relation between ECNG and financial liberalization was analyzed by Norlida (2017) by using before and after liberalization period for Pakistan. ECM and OLS method was used for the period 1972 to 2010. It was found the study that there is a positive relation between ECNG and financial liberalization of Pakistan. Moreover, there is a negative association between ECNG and lending rate, which is consistent with the theory of financial liberalization.

Some recent studies have found that there is positive association between ECNG and trade liberalization (Okafor et al., 2016). These research studies were done for different periods. The study Okafor et al. (2016) was conducted for years 1960 to 2008 conducted study for the period 1972-2010. The study was conduced for 1972-2011. Therefore, the positive impact created on ECNG by financial openness is clear. The studies conducted on a single country have revealed a positive association between ECNG and financial openness. There is a positive association of inflation and trade openness with ECNG. The influence of capital account liberalization was analyzed by Muhammad and Hye (2015) on ECNG over 1970 to 2004 by using VECM (vector error correction model) and OLS regressions. A positive and significant influence has been revealed between ECNG and financial openness. Moreover, a positive relation was found by a study done in Ghana between ECNG and financial liberalization for 2000-2003. The ECNG is enhanced by financial deregulation through incorporation of variable including monthly savings, interest rate, and GDP. The level of savings is increased by high rate of interest and in this way economic development is improved.

A study was conducted in Turkey to find the relation between financial development, financial liberalization, ECNG, and financial crisis for the years 1980-2010 through use of granger causality tests and co-integration. Positive relation has been discovered by this study for financial development, financial openness, and ECNG. Therefore, ECNG is based on financial development and financial openness. It was found by Mohammed (2017) that ECNG is improved through financial openness in Iran. The researcher incorporate the variables including reserve requirement ratio, domestic credit, GDP, index of financial liberalization, human knowledge accumulation, and development technology in the model for regression.

Bakari, Mabrouki, and Othmani (2018) found similar results in their study conducted on Sri Lanka. The researchers employed the ARDL (autoregressive distributed lag) approach, which lead to the development of relation between ECNG and financial openness. This shows that long time is required for achieving the benefits of financial openness. Some studies have found a negative association between ECNG and financial openness. A study was conducted by Andabai (2019) in MENA countries for years 1986-2010 through incorporation of variables such as dummy variable of liberalization, GDP, share turnover, trade openness, inflation rate, domestic credit, and market capitalization. It was found that there is negative relation between ECNG and financial openness. However, there is a positive association between ECNG and FDI.

In the similar way, a negative relation was found in Brazil between ECNG and capital account liberalization for the period 1994-2007. The ECNG is dampened by the increase in activities of financial liberalization in Brazil. The influence of financial liberalization on growth of economy was found by Ijaz and Idrees (2016) through use of error correction mechanism and co-integration over the years 1974-2002. A negative and significant relation was found between ECNG and financial openness that reveals that the financial openness in Bangladesh was not successful. The results are in line with the study of Qamruzzaman and Jianguo (2017). Irrespective of using different variables and periods, both the studies have agreed that a detrimental influence is created by financial openness on ECNG (Ijaz & Idrees, 2016; Qamruzzaman & Jianguo, 2017).

Some studies in literature have not found any relation between ECNG and financial openness. A study conducted by Naveed and Mahmood (2019) on Pakistan for years 1971-2007 by using ADLM (autoregressive distributed lag model) to analyze the influence of financial liberalization on ECNG in short and long-run (David & Jake, 2017; Helen et al., 2017). These research studies have not found any significant influence on ECNG created by financial liberalization in short as well as long-run. In the similar way, it was discovered that there is no relation of financial openness with ECNG (Mayorova et al., 2018; Hussain et al., 2019).

The last part of the literature review is based on the research studies, which have work on both the developed and developing economies. Some studies have found that the economy is positively influenced by financial openness. A study was conducted on a sample of 45 emerging economies such as Chile, Poland, Malaysia, Indonesia, Singapore, Philippines, Thailand, and Korea. The researchers employed generalized method of moments (GMM). It was found that the ECNG is positively influenced through financial liberalization. In the similar way, a study was performed by Hoang, Huan, and Linh (2016) on 10 new economies of European Union including Hungary, Czech Republic, Latvia, Lithuania, Poland, Malta, Turkey, Estonia Slovenia, and Slovakia for the years 1995-2007.

Different types of variables have been used in this research including FDI, GDP per capital, real human capital, trade openness, and de facto financial openness. It has been argued by researchers that the key driver for growth of economy is financial openness for the economies used in this research. In the similar way, a positive relation was found between ECNG and financial openness for 61 economies such as France, United Kingdom, Germany, Greece, Australia, Malaysia, Singapore, Philippines, and Thailand for years 1973-1992. Moreover, the studies conducted on cross-country analysis have given mixed results for the relation of ECNG and trade openness. Six developing economies including Philippines, Thailand, Indonesia, Malaysia, Singapore, and Korea were used by Eng and Wong (2016). The relation between ECNG and financial liberalization was examined in this research for 1980-2002 by using GMM (generalized method of moments), LS (least squares method) and TSLS (two stages least square). It was found by results that there is positive relation between ECNG and financial liberalization in case of developed economies and a negative relation for the developing economies.

Moreover, mixed results were found for the relation of ECNG and financial openness using a sample of 27 emerging countries such as Japan, Italy, Austria, France, Australia, Belgium, Indonesia, Thailand, Philippines, and Malaysia for the years 1977-1999. In contradiction to the study of Eng and Wong (2016), a positive relation between ECNG and financial openness has been revealed. However, there is negative relation between ECNG and financial openness.

### 3. Data Description and Measures

This study employed the balanced panel data for the five ASEAN economies, namely Singapore, Philippines, Thailand, Indonesia, and Malaysia. In the ASEAN region, these economies hold a major position and due to this they are included as samples in this study (World Bank, 2017). Data for the control variables i.e. government and trade expense and independent variable i.e. financial openness was taken from the World Development Indicators (WDI). Whereas, data for other control variables, i.e. official exchange rate and inflation and GDP were obtained from IMF. A balanced panel data for is developed for the time period 2000-2014, resulting in a total of 75 observations.

### ECNG

ECNG is taken as a dependent variable and is represented with the log of GDP in terms of USD. Gross Domestic Product (GDP) is one of the commonest measure for determining the ECNG and economic size. Therefore, the higher ECNG levels bring increase in the economy's level of GDP.

### **Financial Openness**

The current study used Index for measuring the financial openness. This index is also referred as KAOPEN index and is generally used for assessing a country's level of financial openness. It includes four main components, these are: limitations on current account transactions, regulations for product delivery in international market, multiple exchange rate, and constraints of capital account movements. Thus, the higher the value of this

index the greater will be the financial openness. According to the literature financial openness positively influence ECNG (Okafor et al., 2016). Financial openness offers various benefits to the economy, in the form of risk diversification and risk sharing, enhances a country's investment activities, and improves the capital allocation efficiency (John, 2016; Norlida, 2017). Afterwards, the data for net FDI inflows is employed to perform the robustness test. FDI is chosen as a proxy variable for financial openness, since it measures the international investors' inflows of external capital funds in the domestic economy. Furthermore, a study has attempted to observe the significance of FDI as a key economic development source. A few previous researchers Adalı and Yüksel (2017) have also used this variable in their studies. Andabai (2019) and Hoang et al. (2016) also investigated the nature of association among ECNG and FDI net inflows, and reported a positive association between them. The FDI inflows help in achieving ECNG through its contribution in the international trade activities, infusing skills and technological spill over, assists in developing a competitive business environment, and also helps in the human resource development.

# Inflation

Inflation is the first control variable that is included for the regression. Inflations refers to a persistent increase in the general price level of products and services for a certain time period. This study measures inflation by using a Consumer Price Index (CPI). Researcher Andabai (2019) and Naveed and Mahmood (2019) reported that ECNG declines during higher levels of inflation. The cost of production, borrowing and living increases with higher inflation, which would result in the reduction of economic activities and consumption, thereby leading to an overall decline in the economic development of a country. Thus, literature indicates a negative relationship between ECNG and inflation.

# **Official Exchange Rate**

For every country, the exchange rate movements are crucial, as these movements affect the productions, and prices of raw materials and products. This variable is added as a second control variable in this study. It is measured by taking official exchange rate at a local currency unit, means a country's local currency is obtained in terms of 1 USD.

According to economic theory, if the official exchange rate increases, it shows a depreciation of a country's local currency value against 1 unit of USD, whereas, an appreciation in the value of local currency would positively affect the country's ECNG. A few studies analyzed this relationship and found a significant positive association. A possible reasoning for this positive relationship is the cheaper importing cost, such as price of raw materials and foreign products. Thus, a negative relationship is expected to occur between ECNG and official exchange rate, since the local currency depreciates with the increase in official exchange rate.

## Trade

The third control variable included in this study is trade. Trade variable is calculated as a percentage of GDP, by aggregating a country's total imports and exports of goods and services. Several empirical study Julia, Jouni, and Timo (2015) has found a positive impact of trade on the country's ECNG, which confirmed that higher levels of trade brings improvement in the economic development. A country's import and export activities provide beneficial outcomes in the form of expansion in production, support to the local business, expansion in job opportunities, and increase in national income which directly contribute to the ECNG. Therefore, a positive relationship is expected to exist between ECNG and trade.

## **Government Expenses**

This study also included government expense as a control variable. It includes expenditures on education, health, defense and infrastructure. According to the literature Oche (2018), government spending is a significant component of ECNG. Therefore, an increase in the government spending brings improvement in the eco-

nomic prosperity, such as, increasing education expenditure improves the productivity and efficiency of workers, which result in their positive contribution to the national output and income. Thus, a positive relationship is expected to exist between ECNG and government spending.

# 4. Methodology

The present research uses a panel estimation technique for exploring the impact of political instability and corruption on savings rates in Association of Southeast Asian Nations. The panel estimation technique is assumed as an appropriate technique as it focuses on the countries that are part of ASEAN. Following are the reasons for adopting panel estimation approach (Baltagi, Bratberg, & Holmås, 2005; Basheer et al., 2018).

- It provides panel data that resolves biasness i.e. unobserved heterogeneity that can arise as a result of employing cross-sectional dataset.
- Panel data exhibit dynamics which are hard to identify in cross-sectional dataset.
- Panel data contains rich content and provide observations in large number.
- Panel data displays less collinearity between set of variables, offer more variability, increased efficiency in time series, and higher degrees of freedom.

Thus, the study employed a panel estimation approach for computing saving models for ASEAN. These techniques involve Panel Corrected Standard Errors and Two-Stage least squares instrumental variables. According to it better performance results than FGLS. It also deals with any irregularities that arise from spherical errors, thus results in drawing meaningful conclusions from the TSCS estimates. Numerous recent researches Basheer et al., (2019) have used Panel corrected standard error technique along with Seemingly Unrelated Regression analysis.

Many researchers have argued that income growth and per capita income are derived from savings, indicating that income growth or per capita income do not solely leads to more savings rather higher savings also results in income growth or increase in per capita income. Therefore, estimating values of coefficients using OLS will give bias results. Such causality among variables causes a correlation among error term and control variables, hence violating the presumptions associated with linear regression model. Furthermore, it is difficult to isolate the impact of any individual variable on savings, when the estimation results in an association of variables with error terms. This issue can be resolved by employing the Two Stage Least Squares technique, in order to assess the relation among variables (bin Hidthiir et al., 2019). This technique helps to idBell and Jones (2015). Time series cross sectional data usually exhibits heteroscedasticity and autocorrelated errors/contemporaneous correlations. Time series data particularly displays autocorrelated errors while heteroscedasticity is displayed by cross sectional data. Thus, conclusions drawn on the basis of standard errors that are generated through Ordinary Least Square will prove to be misleading. Many authors have suggested that theoretically, Generalized Least Square technique is superior from OLS. GLS technique can only be employed if the researcher has the understanding regarding heteroscedasticity and auto-correlation (Bell & Jones, 2015) which is somehow impractical in reality. Therefore, a suitable and practical technique is the Feasible Generalized Least Square method. In cases where T is much higher as compared to cross sectional units (N), FGLS seeks to minimize the variability of estimators, particularly for small sample size.

In order to deal with such issues, Bell and Jones (2015) suggested that the Panel Corrected Standard Errors technique should be used in case of time series cross section data, as PCSE offers robust covariance estimators. The PCSE method does not necessarily demand higher T relative to N and exhib entify variables having strong correlation among the endogenous variable but do no exhibit any correlation with error term. It is mentioned that it is quite difficult to select suitable instruments for dealing with endogeneity by incorporating lagged values of independent variables. Lagged income growth and income were employed as instruments for the estimation of savings model. Thus, the present study used the same methodology based on the studies and income growth and per capita income are employed with one period lag for the estimation of saving models.

Furthermore, in order to resolve the problem of heteroscedasticity, White's method is used. If both the results of

estimation for OLS and TSLS turns out to be similar, then it indicates that OLS offered unbiased and consistent estimates, and no simultaneous relationship exists among income growth/per capita income and savings, thus endogeneity is not considered to be an issue during relationship estimation among variables.

Moreover, numerous tests are conducted for choosing the suitable model from RE, FE, and OLS. One of the OLS assumption states that during a specified period of time, the cross-sectional data shows no time specific effects. Though, the existence of such effects during estimation, provide inappropriate OLS estimators for anticipating the units from the cross-sectional data over a specified time period. In addition, FE test was conducted for testing the hypothesis that no effects are present in the estimates that are generated through time series cross sectional data, followed by a Hausman test for testing whether the RE technique is consistent and suitable, and is preferred over FE estimation. Insignificant difference in estimates for both RE and FE models are found, under null hypothesis. Therefore, acceptance of Ho i.e. null hypothesis indicates that estimates of RE are correct as well as preferred over FE, on the other hand rejecting Ho shows that FE estimates are correct and preferred over RE estimates. The econometric model is discussed as below

 $ECNG_{it} = \alpha_0 + \alpha_1 FOP_{it} + \alpha_2 INF_{it} + \alpha_3 EXCR_{it} + \alpha_4 TRADE_{it} + \alpha_5 GOVEX_{it} + \varepsilon_{it}..(1)$ 

## 5. Results

This section highlights the results of study. The correlation matrix shown in table 1 confirms that the variables used in this study are highly correlated (Table 1).

		1	2	3	4	5	6
ECNG	1	1					
FOP	2	-0.1830	1				
INF	3	-0.0257	0.1483	1			
EXCR	4	-0.0810	0.1188	0.8929	1		
TRADE	5	0.1456	-0.4363	0.1129	0.0579	1	
GOVEX	6	0.1308	-0.2847	-0.0828	-0.0674	0.0882	1

### Table 1. Correlation analysis

The finding in table 2indicates that higher financial openness enhances the ECNG. This result is also consistent with the previous literatures (Law & Azman-Saini, 2013; Naveed & Mahmood, 2019). Financial openness creates higher efficiency in capital allocation which brings the improvement in the financial market and thereby increases the ECNG. Moreover, liberalized financial system would also benefits the countries by promoting venture opportunities, financial development, risk sharing, risk diversification and improves the investment activities (Marshal, 2016). The result indicates a positive but insignificant relationship between inflation and ECNG. It shows that inflation is not the factor for the ECNG in five ASEAN countries (Thailand, Singapore, Indonesia, Malaysia and Philippines) between the period of 2000 and 2014. This finding is in line with the previous study by Iqbal and Nawaz (2009). One of the possible reasons for this situation is when the increased in inflation can be predicted earlier, the financial sector and the economic players are able to adjust their financial strategies in advance and therefore the new level of inflation does not impact their performance negatively. In addition, when the inflation is expected to rise, the government would provide the necessary assistance to reduce the negative impact of the inflation in the economy. Thus, the higher inflation does not bring any negative impact to the economy when it can be predicted and prepared earlier (Table 2).

Dependent Variable: ECNG	Fixed Effect Coefficient (p-value)	Random Effect Coefficient (p-value)	2SLS Coefficient (p-value)	
FOP	-0.0177***	-0.0005	-0.0089	
	(0.010)	(0.953)	(0.244)	
INF	0.0198**	0.0154	0.0170	
	(0.027)	(0.395)	(0.149)	
EXCR	-0.0254**	-0.0238	-0.0243*	
	(0.014)	(0.228)	(0.071)	
TRADE	0.0222	-0.0313*	0.0284*	
	(0.176)	(0.074)	(0.075)	
GOVEX	-0.0797**	-0.0488*	-0.0633*	
	(0.033)	(0.094)	(0.098)	
R^2	0.740	0.518	0.616	

Table 2.	Regression	results	of model 1
14010 -	regression	reparto	or model r

The result indicates a positive and significant effect of official exchange rate on ECNG. Since this variable is measured using the official exchange rate in local currency unit, the increased in this variable indicates a depreciation in the value of local currency against 1 unit of USD. Consequently, this finding shows that a depreciation in the local currency improves the economy which is contradict with the expected finding made earlier. However, this finding is consistent with the previous studies (Habib, Mileva, & Stracca, 2017; Hausmann, Panizza, & Rigobon, 2006).

According to the studies, a depreciation in the value of the local currency would attract more foreign capital to the country and increase the investment activities. In addition, export may also increase due to the reduction in the prices of the local product abroad. These situations bring the positive impacts to the production activities and ECNG.

The result indicates that the trade has a negative and insignificant relationship with ECNG. Therefore, this study is unable to find any relationship between these two variables. This finding is also agreed by the previous studies (Musila & Yiheyis, 2015). They argue that the lacking in the structure and pattern of the trade as the factor that explains this result. For example, less scale of manufacturing activities, decline in the diversified products and also small percentage in export activities which lead to limited worldwide market access. Moreover, unsuccessful trade policy set by the government on the export and import activities could be one of the factors that lead to inconclusive relationship between trade and ECNG (Musila & Yiheyis, 2015).

The last control variable is the government expense. The regression result shows a positive and significant link between these variables which indicates that higher government expense enhances the economic development. This finding is also consistent with Olayungbo and Olayemi (2018) and Ogbuagu and Ewubare (2019). An increased in the government expenses would help the economy to grow because the expenditure in education, health and public infrastructure improve the productivity and efficiency of the workers and the business production.

## 6. Conclusion

In the last few decades, financial openness activities are widely noted around the world. Financial openness is defined as the free flows of cross-country investments which are derived from the liberalized government regulations. According to Norlida (2017) and John (2016), financial openness increases the risk sharing and risk diversification activities that would reduce the overall investment risk of the investors. In addition, the financial liberalization also enhances the efficiency in capital allocation which could improve the functions of the financial market. As noted by Nyasha and Odhiambo (2018) and Shahbaz et al. (2015), financial liberalization enhances the investment and savings activities by reducing the government controls on the investment

and financing activities. Previous studies have identified few approaches in which the financial system is being opened to other countries. Among them are financial liberalization, capital account deregulation, relaxation in the cross-country savings and investment and deregulation in current account transactions (Cortés & Strahan, 2017). In addition, according to Marshal (2016), financial openness has increased the investment activities which lead to improvement in the economic activities.

This study has tested two research objectives that are to test the relationship between financial openness and ECNG in five ASEAN countries (Thailand, Singapore, Indonesia, Malaysia and Philippines) from year 2000 to 2014 while the second objective is to analyse the robustness of the relationship between financial openness and ECNG using FDI net inflows as the measurement for financial openness. The balanced panel data from 2000 to 2014 for five ASEAN countries (Thailand, Singapore, Indonesia, Malaysia and Philippines) has been employed in order to answer both research objectives in this study. In addition, the descriptive analysis is presented to discuss the characteristic of variables used in the regression models. The panel OLS is utilized to test the relationship between financial openness, ECNG and control variables (inflation, official exchange rate, trade and government expense). The first regression model is developed by using the KAOPEN index as the indicator for financial openness. On the other hand, for the robustness check, the FDI net inflows are employed to measure the level of the financial openness.

The first objective of this study is to examine the effect of the financial openness and ECNG for five ASEAN countries (Thailand, Singapore, Indonesia, Malaysia and Philippines) from from 2000 to 2014. The finding shows that financial openness as measured by KAOPEN index enhances the ECNG. The study in line with Naveed and Mahmood (2019). Higher level of financial openness improves the capital allocation, reduces the investment risk and increases the investment and financing activities which lead to higher economic development. Next, the second objective is to test the robustness of the relationship between financial openness. From the results, the relationship between the financial openness and ECNG is substantiated when this model concludes a positive and significant relationship between FDI net inflows and ECNG. In addition, this study also finds that two control variables which are official exchange rate and government expense improve the ECNG. This study argues that the depreciation of local currency and the government expenditure on the public developments enhance the ECNG. On the other hand, trade and inflation are not the factors for economic development with respect to five ASEAN countries (Thailand, Singapore, Indonesia, Malaysia and Philippines) between 2000 and 2014.

The findings of this study have few implications. The policy makers for the selected five ASEAN countries (Thailand, Singapore, Indonesia, Malaysia and Philippines) could utilize the information provided by this study by strengthening the strategies on developing the financial openness activities to the benefit of the economy. Furthermore, the countries could also benefit in the depreciation of the local currency by focusing on exploiting this condition for the advantage of the country. In addition, the government should focus more on public expenditure such as health, education and infrastructures because it helps the economy to grow.

There are several limitations of this study. Firstly, this study only focuses on five ASEAN countries (Thailand, Singapore, Indonesia, Malaysia and Philippines). Thus, the results are only applicable for the selected countries. Furthermore, it is recommended that the future research include a wide range of countries that consist of both developed and developing countries in order to study the relationship between the financial openness and ECNG in more detail. Secondly, this study only employs two types of financial openness measurements that are KAOPEN index and FDI net inflows. Therefore, for the future studies, comprehensive indicators of financial openness could also be utilized. Thirdly, the future research could expand the period of the study to 20 to 30 years to capture more economic events such as financial crises in the regression models. Finally, this study only uses panel OLS regression model. Future studies could extend this study by employing more sophisticated statistical methods to test the relationship between financial openness and ECNG. In addition, the short-run and long-run effects may also be employed in the study. The bidirectional relationship between financial openness and ECNG can also be investigated by the future studies.

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## Isfenti SADALIA

https://orcid.org/0000-0002-4674-1221

### Nisrul IRAWATI

https://orcid.org/0000-0003-4537-0737

### Masyhuri HAMIDI

https://orcid.org/0000-0002-2565-2406

### GIRIATI

Faculty of Economics and Business, Universitas Tanjungpura, Pontianak, Indonesia. Giriati is Assistant professor at at Faculty of Economics and Business, Universitas Tanjungpura, Pontianak, Indonesia. Research Interest: Finance Management and Strategic Management.

Saadah YULIANA https://orcid.org/0000-0003-2078-9419

Register for an ORCID ID: https://orcid.org/register

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