CORRUPTION, GROWTH, AND FDI SPILLOVERS: EVIDENCE FROM EMERGING MARKET ECONOMIES

KORUPSI, PERTUMBUHAN, DAN LIMPAHAN FDI: BUKTI DARI NEGARA BERKEMBANG

Firsty Ramadhona Amalia Lubis¹, Amir Hidayatulloh², Nurul Azizah Az Zakiyyah³
Ahmad Dahlan University¹,²,³
firsty.ramadhona@ep.uad.ac.id

ABSTRACT
Countries with substantial increases in economic growth and similar characteristics to developed countries are usually referred to as emerging markets. The problem faced by emerging market countries is the need for more capital investment into the country so that domestic savings are added through efforts to find buy and imports. This study looks at the effect of economic growth, trade openness, control of corruption, and regulatory quality on FDI, specifically in developing countries. The analysis method used the Generalised Method of Moments panel. The data used from 2014-2021 with the analysis areas of Indonesia, Malaysia, the Philippines and Thailand. The results showed that the economic growth variable had a positive and significant effect on FDI, the trade openness variable had a negative and significant effect on FDI, the control of corruption variable had a negative and significant effect on FDI, and the regulatory quality variable had a positive and significant effect on FDI in ASEAN emerging market countries.

Keywords: Growth, Trade openness, Control of corruption, and Regulatory quality

INTRODUCTION
Southeast Asian countries have joined an organization called ASEAN. Investors choose the ASEAN region as an investment destination because it has stable economic dynamics compared to other countries, and a large enough population makes it possible for investors to improve human resources through their investment. This aligns with the FDI that entered ASEAN in 2021, mainly from America, China, and Japan. The US invested US$40 billion in ASEAN, China US$13.6 billion, and Japan US$12 billion (ASEAN, 2022).

Chart 1. Foreign Direct Investment Inflows in Emerging Markets 2014-2021 (BoP, USS)
Source: World Bank (2023)
Graph 1 explains that economic growth in 2014-2021 in emerging market countries experienced instability, especially in 2016 and 2020. The Covid-19 pandemic caused Indonesia, Malaysia, the Philippines, and Thailand to experience a decline in economic growth. However, entering 2021, it managed to increase economic growth significantly. The Philippines grew from a minus 9.51 percent to 5.70 percent. Then, Indonesia has an economic growth of 3.69 percent. They were followed by Malaysia and Thailand with 3.09 percent and 1.53 percent respectively.

A country is an emerging market when it has similar characteristics to developed countries in the economic field and a significant increase in economic growth. This is the transition of the country's change from developing to developed countries (Corporate Finance Institute, 2023). Bloomberg, the IMF, and the World Bank state that the measures or indicators for countries classified as emerging markets are based on GDP, inflation, public debt, and ease of doing business. In addition, the level of corruption and financial freedom are also considered in the emerging market category.

In general, the economic growth of the destination country is essential in considering investment from investors. Economic growth can also increase public spending, impacting goods and services. If it continues, this condition can encourage investors to allocate capital to a country (Anwar, 2016). Globalisation has an impact on trade, namely the opening of foreign markets. To enter the international market, it is necessary to pay attention to the conditions of trade opening (Salvatore, 2007). Adam Smith explained that when a country wants to open trade with another country, it will benefit both. However, in the process, the country should not insist on maintaining a surplus or causing a deficit to its trading partners.

According to research by Goswami & Haider (2014), countries with high and relatively stable economic growth will attract more FDI than countries with fluctuating economic growth rates. In the research of Anwar (2016), the results showed that economic growth positively and significantly affects FDI.

Trade openness can reduce barriers such as tariffs, quotas, and subsidies. This means that when investors invest, comparative advantage is utilized to make a profit. This is done by returning imported goods to the country of origin. Thus, the commercial opening rate attracts investors (Hoang, 2012).

Corruption negatively impacts FDI flows as it causes delays and uncertainty in business processes and naturally increases business costs (Habib & Zurawicki, 2002). Corruption in the form of bribery represents resources that could be allocated more efficiently to conduct business transactions, thus causing a "distortion effect." Bribes and extortion paid by firms distort the actual costs of doing business (Robertson & Watson, 2004). ASEAN is one of a set of countries with the same problem, namely corruption. Foreign Direct Investment (FDI) can be influenced by control of corruption. The government has power that is used for personal interests, so that it is involved in corruption cases. This means that the management of corruption from policymakers needs to be better applied (Daniel Kaufmann & Mastruzzi, 2009). According to the 2020 Corruption Perceptions Index released by Transparency International (TI), Southeast Asia has the highest corruption ranking in the world. This is because ASEAN's efforts to crack down on corruption perpetrators are still relatively punitive (World Bank, 2023).
Control of corruption measures the extent to which public authorities can prevent corruption. The rise of corruption cases will reduce government performance; therefore, controlling corruption is very important. Corruption can undermine the stability of the government; this will, in the long run, which can affect the interest of investors who will invest in a country (Lambsdorff, 2002).

Regulatory quality is one of the indicators of good governance used to measure government performance in improving the country's economic performance (World Bank, 2023). If a country's regulation quality is better, investors will reconsider their plans to invest because they think that maximum profits will be difficult to achieve. According to Sabir, Rafique, & Abbas (2019), poor regulatory quality can make it difficult for investors to maximize returns and disrupt investment flows.

Capital for developing countries can be obtained from foreign capital, which positively impacts the economy. The government can focus on minimizing barriers for FDI to enter a country through various policies implemented. One of them is the ease of investors in having capital flows. This study focuses on the specific determinants of FDI in emerging markets. The variables used are economic growth, trade openness, corruption control, and regulatory quality. The countries selected are countries that are included in the emerging markets in the ASEAN region, namely Indonesia, Malaysia, the Philippines, and Thailand. The novelty of this research is that it uses the GMM dynamic panel model, which, to the researchers' knowledge, still needs to be used for research on Foreign Direct Investment in ASEAN.

METHODS

This study uses panel data analysis to test the hypothesis of this study. Panel data analysis combines time series data for 2014–2021 and cross-sectional data, namely Indonesia, Malaysia, the Philippines, and Thailand data obtained from the World Development Index (WDI) and Worldwide Governance Indicators.

The model used is a panel data econometric analysis; the reason for using a dynamic panel data model is to see the correlation conditions between dynamic economic variables. Baltagi (2005) mentioned that Arrelano Bond can overcome the correlation problem between explanatory variables to produce more constant parameters. The equation can be written with:

\[ y_{it} = \delta y_{i,t-1} + \beta x'_{it} + \mu_{it} \]

The correlation between lagged and explanatory variables is part of the Arellano Bond technique. The first difference form is as follows:

\[ y_{it} - y_{i,t-1} = \delta(y_{i,t-1} - y_{i,t-2}) + (v_{it} - v_{i,t-1}) \]

Furthermore, to produce a more consistent estimator in the first step. The estimator in the GMM model is optimal of \( \delta_1 \) for \( N \to \infty \), and \( T \) is fixed. In the GMM estimator, there is no need for initial conditions or distributions of \( V_i \) and \( \mu_i \). Two step results in the Arellano Bond GMM.

According to Blundell & Bond (1998), to obtain efficient estimates of dynamic panel data, it is necessary to utilize initial conditions. To solve problems related to weak instruments in FD-GMM estimators, SYS-GMM can be used. For example, in dynamic panel data, there is an autoregressive model without exogenous regressors. For example, there are autoregressive models without exogenous regressors, such as:

\[ y_{it} = \delta y_{i,t-1} + \mu_{i} + v_{it} \]

Given \( E(\mu_{i}) = 0, E(v_{it}) = 0 \) and \( E(\mu_{i}v_{it}) = 0 \) for \( i = 1, \ldots, N ; t = 1, \ldots, T. \) (Blundell & Bond, 1998) focus on \( T = 3 \) and thus there is only one orthogonal given by \( E(y_{1t} \Delta v_{i3}) = 0 \), so \( \delta \) can be just
identified. For the first regression stage, the instrument variable is obtained by regressing $\Delta y_{i2}$ on $y_{i1}$ (Blundell & Bond, 1998). Attribute the bias and poor precision of the FD-GMM estimator to the weakness of the instrument and characterized by its gauge concentration.

The use of the SYS-GMM estimator can be extended by using the log difference of $y_{it}$ as an instrument for the level equation, in addition to the log level of $y_{it}$ as an instrument for the FD-GMM equation, due to the lighter stationarity requirement in the initial condition process. With increasing $\delta 1$, the SYS-GMM estimator is more efficient than FD-GMM (Baltagi, 2005).

Model:

$$FD_{it} = \beta_0 + \delta FDI_{it-1} + \beta_1 G_{it} + \beta_2 T_{0it} + \beta_3 COC_{it} + \beta_4 RQT_{it} + \epsilon_{it}$$  \hspace{1cm} (3.4)

Description:

FDI: Foreign Direct Investment (US$)
G: Growth (%)
TO: Trade Openness (%)
COC: Index Control of Corruption
RQ: Index Regulatory Quality
$\beta$: Coefficient
i: Cross-section
t: Time Series (2014-2021)

Dynamic panel model estimation was conducted using the FD-GMM method. The Sargan test was conducted for instrument validation testing. Meanwhile, the consistency of the instrument uses Arellano-Bond. Autocorrelation does not occur in this estimation. The Sargan test is used to identify variables with valid categories and estimate GMM to ensure the absence of heteroscedasticity.

The expectation of the test is to accept the null hypothesis with a significance level of 5%. In line with this, the model specification used is based on (Arellano & Bond (1991); Arellano & Bover (1995); Blundell & Bond (1998); Olayiwola, Osabuohien, Okodu, & Ola-David (2015); Adeleye, Osabuohien & Bowale (2017). If the use of the FD-GMM method does not produce biased and valid estimates, it can use SYS-GMM with the same test as before (Blundell & Bond, 1998).

RESULT AND DISCUSSION

This research aims to identify the variables that affect FDI in ASEAN emerging market countries. Analyse descriptive statistical data to describe or describe the data as it is without making conclusions from the data; the type of data used in this study is secondary data, where data is obtained through other trusted parties. The data used is panel data for four emerging market countries 2014-2021. The following is a recapitulation of the descriptive analysis results of each variable data.

Table 1. Descriptive Data

<table>
<thead>
<tr>
<th>Variabel</th>
<th>Mean</th>
<th>Std. Deviasi</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td>1.12</td>
<td>6.87</td>
<td>-4.95</td>
<td>2.51</td>
</tr>
<tr>
<td>Growth</td>
<td>3.40</td>
<td>3.94</td>
<td>-9.51</td>
<td>7.14</td>
</tr>
<tr>
<td>Trade Openness</td>
<td>87.5</td>
<td>38.0</td>
<td>32.9</td>
<td>138.3</td>
</tr>
<tr>
<td>Control of Corruption</td>
<td>-0.29</td>
<td>0.30</td>
<td>-0.59</td>
<td>0.39</td>
</tr>
<tr>
<td>Regulatory Quality</td>
<td>0.225</td>
<td>0.22</td>
<td>-0.14</td>
<td>0.79</td>
</tr>
</tbody>
</table>

Source: Stata.14 data proses

The table above is a description of each variable used in this study. Observations refer to the total amount of data used in the study. The max value is the maximum or highest value in each variable, while the min value or minimum value is the lowest in each variable. Mean is the average value of each data in the study. In determining the data distribution in a sample and how close each data is to the mean value using standard deviation. At this stage, the estimation of dynamic panel data regression models
with the SYS GMM approach is carried out.

**Table 2. Diff. GMM and System GMM**

<table>
<thead>
<tr>
<th>Variabel</th>
<th>Diff. GMM</th>
<th>System GMM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef</td>
<td>Prob</td>
</tr>
<tr>
<td>δ FDI</td>
<td>-0.30</td>
<td>0.041</td>
</tr>
<tr>
<td>Growth</td>
<td>1.05</td>
<td>0.882</td>
</tr>
<tr>
<td>Trade Opennes</td>
<td>4.12</td>
<td>0.00</td>
</tr>
<tr>
<td>Control of Coruption</td>
<td>-7.04</td>
<td>0.07</td>
</tr>
<tr>
<td>Regulatory Quality</td>
<td>7.31</td>
<td>0.39</td>
</tr>
<tr>
<td>AR (2) test</td>
<td>0.249</td>
<td>0.1806</td>
</tr>
<tr>
<td>Hansen Test</td>
<td>0.3672</td>
<td>0.3284</td>
</tr>
<tr>
<td>Cons</td>
<td>2.50</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Source: Stata.14 data proses

The Hansen test for diff-GMM estimation rejects the null hypothesis as inappropriate in this context and proceeds to estimate the model using the sys-GMM estimator where both specification tests indicate that the instruments are valid. Thus, we can conclude that the sys-GMM estimation is robust and appropriate.

**Table 2. Result SYS-GMM**

<table>
<thead>
<tr>
<th>Variabel</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>Z-statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>δ FDI</td>
<td>-0.29</td>
<td>0.11</td>
<td>-2.68</td>
<td>0.007</td>
</tr>
<tr>
<td>Growth</td>
<td>7.55</td>
<td>3.76</td>
<td>2.01</td>
<td>0.045</td>
</tr>
<tr>
<td>Trade Opennes</td>
<td>-1.65</td>
<td>3.20</td>
<td>-5.17</td>
<td>0.000</td>
</tr>
<tr>
<td>Control of Coruption</td>
<td>-1.30</td>
<td>4.99</td>
<td>-2.60</td>
<td>0.009</td>
</tr>
<tr>
<td>Regulatory Quality</td>
<td>1.47</td>
<td>5.29</td>
<td>2.78</td>
<td>0.005</td>
</tr>
<tr>
<td>Cons</td>
<td>1.91</td>
<td>2.59</td>
<td>7.38</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Source: Stata.14 data proses

**Interpretation:**

\[ \text{FDI}_{it} = \alpha + \delta \text{FDI}(-0.29)_{it-1} + \beta 1 G(7.55) \text{it} + \beta 2 \text{TO} (-1.65) \text{it} + \beta 3 \text{CoC}(-1,30) \text{it} + \beta 4 \text{RQ}(1.47) \text{it} + \epsilon \text{it} \]

**Description:**

FDI (0.29) => FDI increases by US$1 in the previous period, it will decrease FDI in emerging market countries by US$0.29.

Growth (7.55) => Economic growth increases by 1 per cent, it will increase FDI in emerging market countries by US$7.55.

Trade Opennes (-1.65) => Trade Opennes increases by 1 per cent, it will reduce FDI in emerging market countries by US$1.65.

Control Of Corruption(-1.30) => Control of Corruption index increases by 1 point, it will reduce FDI in emerging market countries by US$1.30.

Regulatory Quality (2.42) => Regulatory Quality Index increases by 1 point, it will increase FDI in emerging market countries by US$2.42.

**Arellano-Bond Test**

The Arellano-Bond test is used to determine the consistency obtained from the Difference Generalised Method of Moments (GMM) process Table 3.

**Table 3. Bond Test**

<table>
<thead>
<tr>
<th>Arellano Bond Test</th>
<th>First Difference</th>
<th>Chi-Sq.Statistic</th>
<th>Prob&gt;Chi2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AR (1) = -</td>
<td>1.33</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>AR (2) = -</td>
<td>1.64</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: Stata.14 data proses

Arellano & Bond (1991) state that mathematically \( \Delta \nu_{it} \) is correlated with \( \Delta \nu_{i,t-1} \), where each element contains \( \Delta \nu_{i,t-1} \) so that the autocorrelation test in the AR(1) and AR(2) autocorrelation test is carried out at order 2. The probability value for AR(1) and AR(2) in the model is more significant than alpha (5%), so there is no autocorrelation in the residuals. So, it can be concluded that the
estimation is consistent, and there is no autocorrelation in the first-difference error of order 2.

Sargan Test

The Sargan test is used to determine validity using data that exceeds the number of estimated parameters. Producing a high cross-section value means determining validity using instrument variables that exceed the estimated parameters (overidentifying conditions). The test in Table 4 determines whether the dynamic panel model used is valid. The probability value of the Sargan test can be used to determine the validity of the dynamic panel model.

Table 4. Sargan Test

<table>
<thead>
<tr>
<th>First Difference</th>
<th>Sargan - Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Sq. Statistic</td>
<td>26.49</td>
</tr>
<tr>
<td>Prob&gt;Chi2</td>
<td>0.328</td>
</tr>
<tr>
<td>Source: Stata.14 data proses</td>
<td></td>
</tr>
</tbody>
</table>

The test results show that the probability of the Sargan test is 0.328, while the significance level of this study is 0.050 or 5%. These results indicate that the Sargan test probability of 0.328 is more significant than 0.050. to ensure that the dynamic panel model used in this study is accurate and can be used properly.

Analysis of the Effect of Economic Growth on Foreign Direct Investment.

The results of the SYS-GMM model estimation show that economic growth has a positive and significant effect on FDI in four ASEAN emerging market countries. This is by the hypothesis and theory used in this study, which states a positive and significant relationship between economic growth and FDI. The results of this study are also in line with the empirical results of Sari & Baskara (2018); Anwar (2016). According to Dunning's theory (1979), foreign investors have various motives for investment; one is internalization, which is the internal strength of multinational companies in the form of political stability, economy, capital, reliable human resources, technology, and innovation in a country. Increased economic growth will affect its ability to produce goods and services, which is favorable for investors (Fazira & Cahyadin, 2018).

Analysis of the Effect of Trade Openness on Foreign Direct Investment.

Trade openness has a negative and significant effect on FDI. When a country has good rules related to trade but is not accompanied by a government that implements openness effectively, it will lead to a decrease in investor interest in the destination country along with unstable economic and political conditions that make investors worried about the risks that may arise (Mudiyanselage, Epuran, & Tescasiu, 2021).

Analysis of the Effect of Control of Corruption on Foreign Direct Investment.

The control of corruption variable negatively and significantly affects FDI in ASEAN emerging market countries. The findings on corruption and FDI are both uniform and partially conclusive. In an environment where economic institutions are generally poor, corruption may sometimes help achieve second-best outcomes by reducing distortions caused by poor policies and bureaucracy (Lui, 1985). This relates to how corruption can help to jump the queue optimally (Aidt, 2003). In this framework, the more rules there are, the more likely they are to conflict with each other, the less likely they are to be effectively enforced, and the greater the chance of corruption (Belgibayeva & Plekhanov, 2016). Shleifer & Vishny (1993) noted that regulations provide opportunities for
politicians and government officials to engage in corruption, for example, extortion of payments from private businesses and citizens in exchange for licenses.

**Analysis of the Effect of Regulatory Quality on Foreign Direct Investment**

The regulatory quality variable positively and significantly affects FDI in ASEAN emerging market countries. These results align with research (Khushnood, Channa, Bhutto, & Erri, 2020), which states that regulatory quality significantly and positively affects FDI inflows. A country's social and economic performance will be influenced by its legal and regulatory standards, with good regulatory quality greatly helping the economy because it will encourage FDI inflows into the country. Marlina, Bahri, Wibowo, & Wiharjo (2023) states that regulatory quality is a condition where the government can strategize and implement policies and rules that promote private sector development. Poor regulatory quality in the country makes investors in the intended market face obstacles related to export and import licenses. With this, regulatory quality can positively impact FDI in ASEAN emerging market countries.

**CONCLUSION**

The results showed that economic growth positively and significantly affects FDI. Trade Openness has a negative and significant effect on FDI. Control of Corruption has a negative and significant effect on FDI. Finally, Regulatory Quality has a positive and significant impact on FDI. ASEAN emerging market countries must have good economic, social, and political attractiveness so that investors are interested in investing and the flow of Foreign Direct Investment can increase. The business climate must be improved so that investors will feel comfortable and safe to invest. The government must create strategies that can increase economic growth so that later, it can increase the flow of FDI.

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