

Determinants of Economic Growth in ASEAN-4 Countries (Indonesia, Malaysia, Philippines, and Thailand)

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Abstract

A country that is successful in its economy is a country that has succeeded in rapidly encouraging the existence of international trade and maintaining the monetary policy in an increasingly integrated world economy. This study intends to evaluate the effect of monetary policy and international trade on economic growth in four ASEAN countries (Indonesia, Malaysia, Philippines, and Thailand), 2008 quarter I to 2019 quarter IV. By using panel data analysis, the results show that monetary policy with the instrument of interest rate policy has a negative effect on economic growth. An expansive monetary policy has effectively accelerated economic growth, while international trade is not driving economic growth in ASEAN-4 countries.

Keywords: growth, monetary policy, international trade, panel data.



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I. INTRODUCTION

ASEAN was initially formed by six countries, namely Brunei, Indonesia, Malaysia, Philippines, Singapore, and Thailand. Based on the level of income per capita, Brunei and Singapore are high-income countries. At the same time, Indonesia, Malaysia, the Philippines, and Thailand (ASEAN-4) are middle-income countries, according to the World Bank classification. In Table 1, it can be seen that the level of economic growth in all countries is relatively similar. However, if viewed from the level of foreign trade, Malaysia and Thailand have a higher percentage of exports and imports to Gross Domestic Product (GDP) compared to Indonesia and the Philippines. Indonesia's central bank policy rate had the highest interest rate at six percentage points and Thailand, the lowest at three percentage points in 2018.

Table 1.
ASEAN-4 Macroeconomic Data for 2018

No	Country	GDP per Capita (US \$)	Exports (% of GDP)	Imports (% of GDP)	Policy Interest Rate (%)
1	Indonesia	4,193	20.96	22.05	6.00
2	Malaysia	11,198	68.75	61.74	3.25
3	Philippines	3,318	31.68	44.37	4.75
4	Thailand	8,170	66.81	56.48	3.00

Source: The Bank of Indonesia, 2019

The economy has always been driven by aggregate supply and demand (Mankiw, 2010). The balance between the two will produce an equilibrium price and output (Sukirno, 2015). In a recession, expansionary monetary policy can boost economic growth. Monetary policy can raise output through the changes in policy interest rates transmitted to short-term interest rates on the money market and subsequently to bank interest rates with medium/long tenors. The cost of capital will affect investment spending and promote economic growth (Mishkin, 2010).

Trade can not only be done within the country but is broader than that. Broader market segmentation, technology exchange, and increased productivity are some of the advantages of free trade (Krugman, 2011). Ricardo's theory, which explains the benefits obtained from specialization and trade, is a theory that, until now, has become the basis for foreign trade theory. Based on Ricardo's theory, countries are encouraged to run a free trade system (Salvatore, 2007).

The global crisis in 2008 has caused a recession in many countries, including countries in Southeast Asia. This study took the 2008-2019 research period to analyze the effects of international trade and economic policies at post-crisis. Is international trade capable of being an engine of growth, and how is monetary policy able to manage economic growth? The analysis was only carried out on four countries due to the similarity of characteristics of these countries as the founding countries of ASEAN, which are included in the category of middle-income countries.

II. LITERATURE REVIEW

Monetary policy is an action of the central bank in influencing the monetary variables (such as money supply, credit, and interest rates) to pursue specific economic targets (Mishkin, 2010; Samimi, 2011; Warjiyo & Solikin, 2016). As a macroeconomic policy, the objectives of monetary policy are economic growth, job creation, the stability of price, and the balance of payments (Mankiw, 2010). Ideally, these four targets, as the ultimate goal of monetary policy, can be reached simultaneous and sustainable achievement. However, it is difficult to achieve in many countries, and there is such a tendency to be contradictory. A contractionary monetary policy to reduce the inflation rate can stimulate contraction on economic growth. Empirical experience shows that the economy deteriorates because of its dual purposes monetary policy. For this reason, the majority of central banks, including Bank Indonesia, focus on a single goal of achieving and maintaining low and stable inflation (Warjiyo & Solikin, 2016).

The current economy demands every country to compete in the pursuit of world market share. Every country has a reciprocal relationship in international trade (Krugman, 2011). Contextually, international trade is defined as trade engaged by residents of a country with residents of others based on reciprocal agreement. The population in question can be between individuals, institutions, or the government of a country with another country. In the case of many countries, international trade is a major factor in driving economic growth. International trade also boosts industrialization, expansion in transportation and communication, globalization, and the existence of multinational corporations (Hasoloan, 2013).

Research related to the effect of monetary policy and international trade on economic growth has not shown consistent results over time. Research by Herlina (2013), Seprilina (2013), and Maslan (2017) in Indonesia, Albu (2006) in Romania, and Obamuyi (2009) in Nigeria found that monetary policy with an interest rate instrument can influence economic growth through its influence on investment and maintaining stability. However, Imoisi (2018) found that monetary policy has no short-run impact on growth in Nigeria, but it is in the long run. The openness of international trade is also able to boost economic growth (Keho, 2017; Sun & Heshmati, 2010), but it is not able to drive economic

growth (Elias et al., 2018; Moyo et al., 2017), where trade openness encourages imports so that it inhibits economic growth.

According to the Neoclassical growth theory, the positive relationship between international trade and economic growth is explained by the efficiency effect that comes from decreased rent-seeking and the benefits derived from external and internal economies of scale from international trade liberalization (Rodriguez & Rodrik, 2001). This efficiency effect is considered to be the primary source of long-term economic growth from the new or endogenous growth theory ('new' or endogenous growth theory), which predicts international trade together with investment in physical capital and human capital can increase economic growth (Mogoe & Mongale, 2014). Fitriani (2019) proves that international trade, in this case, exports, has a positive influence on economic growth. Likewise, with a study conducted by Solomon (2007). The data used in Indonesia's aggregate data from 1980 to 2006 covering gross domestic income, real exports, real imports, the real exchange rate of the rupiah against the dollar, the number of workers, and the crisis that hit Indonesia, with the ARDL (Autoregressive Distributed Lag) Bound Testing Cointegration method. A conclusion that in the long-run real exports and real imports have a positive effect on economic growth.

III. RESEARCH METHODOLOGY

The data is panel data consisting of four countries with a time series of quarterly for the period 2008.1-2019.4. The analysis tool used is the regression model estimation using panel data. The panel data model in this study is as follows:

$$g_{it} = \alpha_0 + \alpha_1 r_{it} + \alpha_2 \text{trade} + e_{it}$$

$$\alpha_1 < 0; \alpha_2 \neq 0$$

Where g denotes economic growth (in percent), r is the central bank's interest rate (in percent), trade is the number of exports and imports (percentage of Gross Domestic Product), i is countries (Indonesia, Malaysia, Philippines, and Thailand), and t is a quarterly time series.

In the panel data regression model estimation technique, there are three models, namely the Pooled Least Square or Common Effect, the Fixed Effects, and the Random Effects (Gujarati, 2012). To choose which technique to apply in panel data regression, a test stage is carried out to determine the most appropriate technique for estimating panel data regression, namely: Chow test to choose between the Pooled Least Square (common) method or the Fixed Effects technique. The second is the Hausman Test to choose between Fixed Effects or Random Effects techniques (Widarjono, 2018).

1. Chow Test

Chow test is a test to specify the common effects with the most appropriate fixed effects model for panel data estimation. The Chow test hypothesis is as follows (Gujarati, 2012):

$H_0: \alpha_1 = \alpha_2 = \dots \alpha_n = 0$; Common Effects Model

$H_1: \alpha_1 = \alpha_2 = \dots \alpha_n \neq 0$; Fixed Effects Model

Viewing the chow test results can be done in two ways. The first way is by looking at the F statistical value and the F table statistical value, or the second way by looking at the probability value (p -value) and the alpha value (α) (Gujarati & Porter, 2009).

2. Hausmann test

Hausman test is applied to specify the most appropriate model between Fixed Effects or Random Effects model for panel data. The difference between fixed effects and random effects models lies in their constant value, where the fixed effects model does not contain random variables (interference). In contrast, the random-effects model contains the influence of random variables (interference). In the fixed-effect model, the estimation results are not usually and not efficient, but if the random effects, the estimation results are biased and efficient. The hypothesis in the Hausman test is (Greene, 2005):

H₀: Cov (X, μ) = 0; Random Effects Model

H₁: Cov (X, μ) ≠ 0; Fixed Effects Model

If the Hausman test results show the Hausman statistical value is bigger than the χ^2 (chi-square) or the probability is smaller than the significance level value, then H₀ rejected, and accept H₁, the Fixed Effects is better than the Random Effects.

IV. FINDING AND DISCUSSION

1) IV.1. Model Testing

From the test results with the chow test Model Table 2, the probability value of F is 0.0000 (<0.05), meaning that reject H₀. It means that the right model is the Fixed Effect.

Table 2 Model Test Results

Redundant Fixed Effects Tests

Equation: EQ01_GROWTH

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	10.072041	(3,154)	0.0000
Cross-section Chi-square	28.665128	3	0.0000

After the Chow test was carried out, the results showed that the Fixed Effect Model was the right model for panel data regression, then performed the Hausman test. It determines whether the Fixed Effect Model or the Random Effect Model is most proper.

Table 3. Hausman Model Test Results

Correlated Random Effects - Hausman Test

Equation: EQ01_GROWTH

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	4.181206	2	0.1236

The test result shows that the Chi-Square probability value is 0.1236 (> 0.05), which means that H₀ is accepted. This H_a is rejected, so according to the Hausman test, the appropriate model for this panel data test is the Random Effect Model.

IV.2. Analysis

In the post-global crisis time frame, the reference interest rate variable (IR) affects economic growth. It is known that the t-statistical probability value is 0.0109 percent smaller than alpha (> 0.05), and the coefficient value is negative, meaning that any change in the reference interest rate affects economic growth. The t-statistical probability value of the international trade variable (Trade) is 0.7189 percent greater than alpha (> 0.05), meaning that any changes in international trade do not affect economic growth.

Table 4. Random Effect Result

Variables	Coeff	Probability t-stat
IR	-0.625686	0.0109*
TRADE	-0.021289	0.7189

2) * Significant at $\alpha=5\%$

Monetary policy reference interest rates have an effect on economic growth with the regression coefficient -0.625686. It means that every 1 percent increase in the benchmark interest rate will result in a decrease in the economic growth of -0.62 percent (Table 4). Every central bank raising interest rates will reduce economic growth because by increasing the reference interest rate, people will reduce consumption and prefer to save. On the other hand, the community will reduce credit loans to banks because of higher interest rates so that consumption and investment will decrease. Empirical studies conducted by Samimi (2011) in Iran and Onyeiwu (2012) in Nigeria, and Mahendra (2008) in Indonesia show that there is a positive effect of expansionary monetary policy on economic growth. The central bank can carry out comprehensive monetary policy by increasing the money supply or lowering policy interest rates.

The international trade variable has no effect on economic growth when there is an increase or decrease in international trade on economic growth. The results of this study are supported by research by Aziz (2010) and Arslan, et al. (2019), where trade openness encourages more imports so that it inhibits economic growth.

V. CONCLUSION AND FURTHER RESEARCH

The monetary policy variable (reference interest rate) has a negative effect on economic growth. This means that every decrease in the reference interest rate will increase economic growth. The Central Bank can actively implement monetary policy in order to boost economic growth. The international trade variable has no important effect on economic growth. So that international trade policies are needed to increase the competitiveness of local products in the international market by considering the availability of local raw materials to limit the demand for imported goods, which can lead to price increases.

Further research can be developed by adding variables and research objects so that it is not limited to only four countries in ASEAN. Research variables can be developed by looking at the monetary policy transmission channel through the interest rate channel, where the policy interest rate will be transmitted to the real sector through the money market and banking interest rates. International trade variables can be separated into exports and imports so that the influence of each of these variables on economic growth can be analyzed in more depth. Furthermore, research methods can be developed by combining time series analysis, such as autoregressive models.

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