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# The Effect of Economic Globalization on Unemployment Rate in Six ASEAN Countries

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## Abstract

This study aims to determine the effect of Economic Globalization, Economic Growth and Inflation on Unemployment in six ASEAN countries (Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam), using annual data for the period 2007 to 2021. Data were obtained from the World Bank, and the economic globalization was the KOF Globalization Index. The study employed the Autoregressive Distributed Lag (ARDL) panel method. The unit root test revealed that the variables were integrated of order  $I(0)$  and  $I(1)$ . The results show that in the long run, economic globalization and inflation have a negative and significant effect on unemployment in six ASEAN countries. Meanwhile, economic growth has a positive and insignificant effect on unemployment in six ASEAN countries. In the short run, only inflation in the previous period has a positive and significant effect on unemployment in six ASEAN countries.

**Keywords:** economic globalization; economic growth; inflation; unemployment.

## 1. Introduction

Globalization is the process of forming the world as an economic entity through increased technological, communication and transportation links between countries in order to promote economic growth and national-level development. With globalization, companies are increasingly able to influence domestic and international politics through the expansion of operations with mergers and acquisitions. Changes in trade in goods and services, foreign direct investment and exchange rate fluctuations are expected to have an impact on employment and labor income thereby reducing the unemployment rate. The formation of ASEAN (Association of Southeast Asian Nations) as a highly integrated regional economy is one reflection of the globalization process. In recent years, countries in the world, especially ASEAN members, have experienced an increase in the globalization index. The KOF globalization index has a measurement scale from 1 to 100. The higher the index value indicates that the level of globalization that occurs in a country is increasing.

Table 1 shows that economic globalization is highest in Singapore. The degree of economic globalization in Singapore is above 90 percent. This makes Singapore a very open country both in terms of trade and investment. Different conditions are experienced by Indonesia. Indonesia has experienced a decline in economic globalization, meaning that the openness of foreign trade and foreign investment has decreased. This decline was caused by a change in economic policy by the government to protect the infant industry.

Table 2 shows that the unemployment rate in the six ASEAN countries varies and fluctuates from 2007-2021. This means that labor absorption in each period is dynamic. This shows that the economic structure, employment and government policies related to the labor market and investment in reducing unemployment in each country are different. In Indonesia, the unemployment rate has decreased significantly from 2007 to 2021. This change in improving unemployment conditions is inseparable from various international cooperation and the Indonesian government. Thailand, Philippines, and Vietnam have relatively low unemployment rates every year. This is related to active participation in international trade that can increase global market access.

Table 1. Economic Globalization in 6 ASEAN countries in 2007-2021

Year	Country					
	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
2007	60,74	75,55	60,63	93,74	64,49	56,03
2008	58,15	74,20	57,68	94,06	65,95	57,53
2009	55,46	73,77	56,93	93,61	63,11	55,89
2010	53,55	72,67	53,46	94,12	64,41	56,80
2011	52,04	73,13	53,05	93,53	64,69	56,98
2012	52,77	73,54	52,41	93,42	65,86	58,42
2013	52,71	74,07	52,23	93,61	65,25	59,01
2014	54,63	76,32	55,46	94,58	65,72	58,90
2015	50,93	75,66	55,76	93,33	64,66	57,34
2016	49,73	75,28	55,32	93,46	65,11	59,19
2017	49,47	75,86	57,30	93,58	66,53	59,72
2018	50,55	75,34	57,15	93,69	66,02	59,53
2019	49,79	75,41	56,20	93,82	68,83	59,47
2020	48,37	73,85	54,33	93,92	66,08	57,23
2021	47,75	74,27	54,83	93,84	67,58	56,97

Source: ETH Zurich 2023

Table 2. Unemployment in 6 ASEAN countries in 2007-2021

Year	Country					
	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
2007	8,06	3,23	3,43	3,9	1,18	2,03
2008	7,21	3,32	3,72	3,96	1,18	1,893
2009	6,11	3,66	3,86	5,86	1,49	1,74
2010	5,61	3,39	3,61	4,12	0,62	1,11
2011	5,15	3,05	3,59	3,89	0,66	1
2012	4,47	3,1	3,5	3,72	0,58	1,03
2013	4,34	3,16	3,5	3,86	0,25	1,32
2014	4,05	2,88	3,6	3,74	0,58	1,26
2015	4,51	3,1	3,07	3,79	0,6	1,85
2016	4,3	3,44	2,7	4,08	0,69	1,85
2017	3,78	3,41	2,55	4,2	0,83	1,87
2018	4,39	3,3	2,34	3,606	0,77	1,16
2019	3,59	3,26	2,24	3,1	0,72	1,68
2020	4,25	4,54	2,52	4,1	1,1	2,1
2021	3,83	4,083	3,4	4,64	1,21	2,38

Source: Worldbank 2024

The problem of unemployment is certainly not only influenced by economic globalization. As a result of globalization, trade barriers between countries are reduced and employment relationships are created through the flow of imports and exports, capital and labor. Through this cooperation, most countries will experience increased economic growth. Inflation is one of the indicators that also determines the unemployment rate. This is because inflation is a symptom that causes a continuous increase in the general price level. All countries in ASEAN will certainly experience inflation, therefore inflation can be used as a measure of the good and bad economic problems faced by a country.

## 2. Literature Review

### 2.1. Economic Globalization

Globalization has a positive impact on increasing national income, the global influx of capital, the emergence of new business opportunities, increasing loans and investments, increasingly diffuse technology, growing energy and communication substructures, and improving the quality of labor and working conditions in accordance with human rights [1].

### 2.2. Unemployment

Unemployment is a macroeconomic problem faced by both developing and developed countries. According to Keynes' theory [2], unemployment can occur due to a lack of aggregate demand in the economy. If aggregate expenditure is insufficient to support the full level of production, then unemployment will occur. Keynes' theory of unemployment highlights the importance of government intervention in addressing aggregate demand imbalances that can lead to high levels of unemployment.

### 2.3. Economic Growth

According to the [3], economic growth is the increase in the amount of goods and services a country produces over time. Economic growth means an increase in the size of a society's economic activity and an increase in per capita income. Gross domestic product (GDP) is used as an indicator to determine a country's economic growth and refers to the highest value of services and goods produced in a country over a period of time [4].

### 2.4. Inflation

The relationship between inflation and unemployment can be explained by the Phillips Curve. The Phillips Curve is a curve that describes the trade-off between unemployment and inflation. The Phillips Curve was first discovered by William Philips in his essay "The Relationship between unemployment and the rate of change of money wage rates in the United Kingdom, 1861 to 1957". This curve refers to the inverse relationship between unemployment and inflation in the short run. The theory states that when the unemployment rate is high, the inflation rate tends to be low and vice versa within a certain level.

## 3. Method

The type of approach used in this research is quantitative research. This research includes three independent variables, namely economic globalization, economic growth, and inflation. This research also uses one dependent variable, namely unemployment. The data used is time series data from 2007 to 2021 in six ASEAN countries (Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam) and sourced from ETH Zurich and Worldbank.

The data analysis used in this research is the Autoregressive Distributed Lag (ARDL) panel model analysis. ARDL is a combination of autoregressive (AR) and distributed lag (DL) methods. This model can distinguish the short-term and long-term responses of the variables under study. To test the effect of economic globalization on the unemployment rate is shown in the following equation:

$$UNEMP_{it} = \alpha - \beta_1 KOFGE_{it} - \beta_2 GDP_{it} - \beta_3 INF_{it} - \beta_4 KOFGE_{it-1} - \beta_5 GDP_{it-1} - \beta_6 INF_{it-1} + \beta_7 UNEMP_{it-1} + \varepsilon_{it}$$

Descriptions:

$UNEMP_{it}$  : Unemployment (%)

$\beta_1, \beta_2, \beta_3$  : Coefficient of independent variable at time t

$\beta_4, \beta_5, \beta_6$  : Coefficient of independent variable at lag t-1

$\beta_7$  : Coefficient of dependent variable at lag t-1

$KOFGE_{it}$  : Economic globalization (index)

$GDP_{it}$  : Economic growth (%)

$INF_{it}$  : Inflation (%)

$\varepsilon_{it}$  : error term

The data analysis steps using the ARDL panel method in this study are as follows:

- **Stationarity Test**  
Before performing regression using time series data, it is necessary to conduct a stationarity test on all variables to determine whether the variable is stationary or not. In this study, the stationarity test used is the ADF (Augmented Dickey Fuller) test using levels of 1%, 5%, and 10%. If the ADF probability value is less than the critical value, then the data is declared stationary. The ADF test is conducted at the level and first difference level.
- **Optimum Lag Test**  
The next test carried out after stationary is the optimum lag test. The optimum lag test is conducted to determine the optimum lag length that will be used for further analysis. The optimum lag criteria can be seen from the Akaike Information Criterion (AIC) model to select the maximum relevant lag length.

- ARDL Model Estimation

After confirming that the variables used are stationary, the next step is to estimate the ARDL Panel model. This study uses the Pooled Mean Group (PMG) to generate long-run and short-run coefficients for the whole panel as well as short-run coefficients separately for each unit.

#### 4. Results and Discussion

Based on the unit root test results in Table 3, there are three variables that are stationary at the level, namely economic globalization, economic growth and inflation. Meanwhile, the unemployment variable is stationary at the first difference level and no variable is stationary at the second difference level. Therefore, the autoregressive distributed lag (ARDL) model is feasible to use.

Table 3. Result of Stationarity Test

Variables	Level Form		First Difference Form		Order of Integration
	Test Statistic	Prob.	Test Statistic	Prob.	
KOFGE	25.3783	0.0131**	48.4119	0.0000*	I(0)
GDP	34.9713	0.0005*	61.5578	0.0000*	I(0)
INF	42.6516	0.0000*	66.6003	0.0000*	I(0)
UNEMP	10.6917	0.5555	47.6896	0.0000*	I(1)

Source: E-views processed

Based on table 4, economic globalization has a significant negative effect on the unemployment variable in the long run in six ASEAN countries. This is because the t-statistic probability value of economic globalization is <0.05. Inflation also has a significant negative effect on unemployment in six ASEAN countries in the long run. Meanwhile, economic growth has a positive and insignificant effect on unemployment in six ASEAN countries in the long run.

Table 4. Result of Long-term equation

Long Run Equation				
Variable	Coefficient	Std.Error	t-Statistic	Prob.
KOFGE	-0.136027	0.028497	-4.773445	0.0000
GDP	0.023565	0.030610	0.769874	0.4469
INF	-0.086886	0.013966	-6.221325	0.0000

Source: Author processed data

Table 5. Result of Short-term equation

Long Run Equation				
Variable	Coefficient	Std.Error	t-Statistic	Prob.
COINTEQ01	-0.649845	0.132925	-4.888821	0.0000
D(UNEMP(-1))	0.151790	0.247492	0.613310	0.5439
D(KOFGE)	-0.036315	0.35774	-1.015118	0.3174
D(KOFGE(-1))	-0.050540	0.037460	-1.349187	0.1865
D(GDP)	-0.023286	0.036226	-0.642802	0.5248
D(GDP(-1))	-0.029647	0.029834	-0.993734	0.3276
D(INF)	0.020242	0.043413	0.466267	0.6441
D(INF(-1))	0.086433	0.037980	2.275762	0.0295
C	7.948651	2.067430	3.844702	0.0005

Source: Author processed data

From the ARDL short-term estimation results in the table above, it can be seen that the change in inflation in the previous period has a significant positive effect on the short-term unemployment variable in six ASEAN countries. Meanwhile, the direct and lag changes of other variables do not significantly affect the short-term unemployment variable in six ASEAN countries. Based on the ARDL test results, the following equation can be obtained:

$$UNEMP_{it} = 7.948651 - 0.136027KOFGE + 0.023565GDP - 0.086886INF - 0.050540KOFGE(-1) - 0.029647GDP(-1)$$

$$1) + 0.086433\text{INF}(-1) + 0.151790\text{UNEMP}(-1) + \varepsilon_{it}$$

The interpretation of panel ARDL model is as follows:

- The constant value of 7.948651 means that when the value of the independent variables, namely economic globalization, economic growth and inflation, is assumed to be fixed, then unemployment will increase by 7.948651 units in six ASEAN countries (Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam).
- The economic globalization variable (X1) shows a probability value of 0.0000 ( $<0.05$ ), and a coefficient value of -0.136027, so it can be concluded that the economic globalization variable has a significant negative effect on the unemployment variable in the long run in six ASEAN countries.
- Economic growth variable (X2) has a positive relationship direction toward unemployment with a coefficient value of 0.023565. However, the economic growth variable has a probability value of 0.4469 ( $>0.05$ ), meaning that the economic growth variable has a positive and insignificant effect on long-term unemployment in six ASEAN countries.
- Inflation variable (INF) has a coefficient value of -0.086886 with a probability value of 0.0000 ( $<0.05$ ), meaning that inflation has a significant negative effect on long-term unemployment in six ASEAN countries. When inflation increases by one unit, unemployment will decrease by 0.086886.
- Unemployment in the previous period UNEMP(-1) has a coefficient value of 0.151790 with a probability value of 0.5439 ( $>0.05$ ). This means that unemployment in the previous period does not significantly affect unemployment in six ASEAN countries.

Analysis of the Relationship Results of Independent Variables to Dependent Variables:

- Effect of economic globalization on unemployment in six ASEAN countries in 2007 to 2021  
The estimation results show that in the long run the level of economic globalization has a negative and significant effect on unemployment with a coefficient value of -0.136027. This means that an increase in the level of economic globalization by 1 unit will reduce unemployment by 13.6 percent. This is consistent with the hypothesis that an increase in economic globalization will reduce unemployment in six ASEAN countries (Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam). The increase in international trade due to economic globalization will increase production which opens up many jobs so as to reduce unemployment. This result is in line with research conducted by [5], who examined the impact of economic globalization in Malaysia for the period 1980-2014, using the ARDL method, and found that in the long run, economic globalization can reduce unemployment in Malaysia.  
However, in the short term, economic globalization has a negative and insignificant effect on unemployment in six ASEAN countries (Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam). This insignificant effect can be caused by many other factors that affect unemployment such as technological changes that can change labor needs. Some jobs may become irrelevant due to automation or new technological developments.
- Effect of economic growth on unemployment in six ASEAN countries in 2007 to 2021  
In the long run, economic growth is found to have an insignificant positive effect on unemployment because the probability is greater than 5%. The coefficient of economic growth of 0.023565 is not in accordance with the research hypothesis that economic growth has a significant negative effect on unemployment in six ASEAN countries. Economic growth, which is characterized by an increase in the amount of goods and services produced by a country, is known to have no significant effect on reducing unemployment in six ASEAN countries.  
In the short run, economic growth has a negative and insignificant effect on unemployment in six ASEAN countries (Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam). The relationship between economic growth and unemployment can be complex and insignificant due to various factors such as: uncertainty in economic policy or global market conditions that make companies choose to wait until conditions are more stable before adding labor.
- Effect of inflation on unemployment in six ASEAN countries in 2007 to 2021  
The estimation result in the long run shows that inflation rate has a negative and significant effect on unemployment with a coefficient value of -0.086886. This means that an increase in inflation by 1 unit will decrease unemployment by 8.6 percent. This result is consistent with the hypothesis that an increase in inflation will reduce unemployment in six ASEAN countries (Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam). Based on the Philips curve, when inflation increases, firms will increase their labor force, thus leading to a decrease in the unemployment rate. In the short term, the previous period inflation has a positive and significant effect on unemployment in six ASEAN countries (Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam) with a coefficient value of 0.086433. It means that an increase in inflation rate by 1 unit will increase unemployment by 8.6 percent. This shows that in the previous period, high inflation made companies reduce production and labor so that unemployment increased.

## 5. Conclusion

Based on the results obtained from the research on the effect of economic globalization on the unemployment rate in 6 ASEAN countries in 2007-2021 using the ARDL panel method, it can be concluded as economic globalization has a negative and significant effect on unemployment in six ASEAN countries in the long run. Economic growth has a positive and insignificant

effect on unemployment in six ASEAN countries in the long run. Inflation has a negative and significant effect on Unemployment in six ASEAN countries in the long run. Meanwhile, inflation in the previous period has a positive and significant effect on unemployment in six ASEAN countries in the short term.

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