Factors Influencing Unemployment Rate: A Comparison Among Five Asean Countries

Amyir Aljileedi Mustafa Rayhan✉, Heri Yanto

Postgraduate, Universitas Negeri Semarang, Indonesia

Article Info	Abstract
	Unemployment can occur due to imbalances in the labor market. This shows that the number of labor forces offered exceeds the number of labor forces requested. The purpose of the study is to analyze factors influencing the unemployment rate: a comparison among five ASEAN countries. This study used quantitative research. The data collection method in this study is documentation with secondary data since the year 2000-2018. The hypothesis test in this study is done by using Regression analysis and ANOVA with single Classification followed by Post Hoc Analysis. Analysis results analyze factors influencing the unemployment rate: a comparison among ASEAN-5 countries is showed (F=4.599; p<0.002). There is a significant impact of wage, inflation, economic growth and education on unemployment in ASEAN countries. The result found that among the several factors that cause unemployment in a countries the most significant is inflation value is 0.003 < 0.05. While other factors such as wage, economic growth, and education affect but are not significant. Future research should add other variables affecting the unemployment rate.

✉ Correspondence :
Jalan Kelud Utara III No. 37, Semarang, Indonesia 50237
E-mail: amirrihan91@gmail.com

INTRODUCTION

Association of Southeast Asian Nations (ASEAN) is a collection of 10 countries in Southeast Asia, the regional international organization between countries in Southeast Asia was declared on 8 August 1967 in Bangkok, through the signing of the Bangkok declaration, this agreement was signed by five countries are as Indonesia, Philippines, Malaysia, Singapore, and Thailand. The signing of this agreement is also often called the "ASEAN Declaration", the five countries are also referred to as the founding fathers on the establishment of ASEAN organizations (ASEAN Scretariat, 2015). The development will be successful if it can improve welfare in a broad sense. The influence of the condition of the population that has adequate quality will encourage economic growth and vice versa residents who have low quality will become a burden in development.

In the last decade, the south-eastern region of Asia has experienced one of the lowest unemployment rates in the world. In 2010, the region registered a (3.5%) unemployment rate measured as the percentage of the labor force which was less than that of Europe (10%), OECD (8.3%), North America (9.42%) and the global average (5.8%). Despite the low unemployment rate, recent evidence shows that the unemployment rates in most economies of the region show an increasing trend. For instance, during the period of 1990–2012, the unemployment rate increased by 64% in China, 156% in Indonesia, 38% in Korea, and 107% in Japan. Of course, several factors may have contributed to the unemployment problem, including labor market regulations, overall macroeconomic policies, and globalization. The success or failure to overcome unemployment problems depends largely on the adaptation process implemented to respond to the ever-changing global economy (Dutt, Mitra, & Ranjan, 2009). Recently, in the era of globalization, the attention of the scholars has shifted to examine whether policies relating to external sectors have effects on unemployment rates. More specifically, the study attempts to determine whether exposure to international trade creates or destroys jobs. According to Rama (2013) argued that integration with the world market bears the promise of prosperity for the developing and transitional economies, but such integration may also adversely affect such economies.

Inflation is an economic phenomenon that is always interesting to discuss, especially related to its impact on unemployment. Inflation and unemployment are a problem for each country's economy. Its ever-increasing development poses obstacles to economic growth for the better. Inflation tends to occur in developing countries as well as countries in ASEAN. Failure or shocks in the country will cause price fluctuations in the domestic market and end with inflation in the economy (Baasir, 2013).

Indonesia, Philippines, Vietnam, and Myanmar are among the countries with the highest unemployment rates in ASEAN. Unemployment in Indonesia and Philippines is high but still lower than in Vietnam (Detik Finance, 2013:1). The reason for the high unemployment rate is because of the limited employment opportunities in the country and also there is no compatibility between the competency of the labor force and the labor market. Cambodia with unemployment by 0.2% became the country with the lowest unemployment rate in ASEAN in 2012, followed by Singapore at (2.10%) and Laos at (2.2%), Brunei Darussalam at (2.51%) then Malaysia at (2.59%) and Thailand (2.74%).

Seruni (2014) analyzes the relation between Inflation and Unemployment in ASEAN countries from 2003 until 2012. The variables used are Inflation and Unemployment. Inflation measured from the development of consumer price index and unemployment in terms of open unemployment. This research uses qualitative and quantitative analysis techniques, the quantitative analysis used is panel data regression. The result showed that variable Inflation and Unemployment in ASEAN countries in 2003 until 2012 significant and has negative relations.

The present study is organized into five sections. The first section comprise the introduction; the second section is briefly reviews about the unemployment and trade policies in Southeast Asian countries and provides a survey of the conceptual framework and literature review. In section three include the methodology utilized to examine factors influencing the

unemployment rate: a comparison among ASEAN-5 countries. Where as the findings are presented in section four, while the final section concludes the present study.

Unemployment is a measure that is done if someone does not have a job but they are doing an active effort in the last four weeks to find work (Kaufman & Hotchkiss, 1999), also Ponzoni and Zilli (2015) found the trade-off relationship between inflation rate and unemployment rate. They analyzed this relationship based on the inflation in Brazil using Phillips curve. They also said that there is a positive relationship between output and inflation rate.

Unemployment rate is the number of unemployed people as a percentage of the labour force, where the latter consists of the unemployed plus those in paid or self-employment. Unemployed people are those who report that they are without work, that they are available for work and that they have taken active steps to find work in the last four weeks. When unemployment is high, some people become discouraged and stop looking for work; they are then excluded from the labor force. This implies that the unemployment rate may fall, or stop rising, even though there has been no underlying improvement in the labor market.

Structural unemployment refers to unemployment caused by mismatches between labor force structures based on the type of skills, employment, industry or geographical locations and the structure of demand for labor (Lipsey, 1997). Structural unemployment is unemployment caused by wage rigidity and job rationing. Workers who are not employed are not because they are active in finding suitable jobs for them, but at the prevailing wage level, the supply of labor exceeds their demand (Mankiw, 2000). The purpose of the study is to analyze factors influencing the unemployment rate: a comparison among five ASEAN countries.

METHOD

This design of the study is quantitative method. Quantitative method is one of the designated study is a systematic, planned and structured clearly from the outset to the creation of the study design. Another definition states quantitative is study that requires to use a lot of numbers, ranging from data collection, interpretation of these data, as well as the appearance of the results. Similarly, at the conclusion stage of the research will be better when accompanied by pictures, tables, graphs, or other displays.

This study uses a quantitative approach with an experimental method. Where the experimental study method was chosen because to test an idea, does the idea have a causal relationship or affect the results (independent variables). Creswell (2015) revealed that experiments are the best quantitative design that can be used to determine probable cause and effect.

According to Sugiyono, a quantitative research method can be interpreted as a method of research that is based on the philosophy of positivism, is used to examine the population or a particular sample. The sampling technique is generally done at random, data collection using research instruments, quantitative data analysis/statistics to test the hypothesis that has been set (Sugiyono, 2012). Quantitative methods are often also referred to as traditional methods, positivistic, scientific and discovery methods.

Quantitative methods called traditional methods because this method is long enough to use so it's been a tradition, as a method for research. This method is referred to as a method of positivistic because based on the philosophy of positivism. Also referred to as the scientific method because this method has met scientific principles, namely concrete, empirical, objective, measurable, rational and systematic. This method is also called the discovery method because this method can be found and developed a variety of new science and technology. This method is called quantitative methods for research data in the form of figures and using statistical analysis.

The population in this study is all the data about factors influencing the unemployment rate: a comparison among ASEAN-5 countries. Technique sampling used in this research is purposive sampling. The sample in this research is data about factors influencing the unemployment rate: a comparison among ASEAN-5 countries in the period 2000-2018.

The data collection method in this study is documentation with secondary data since the year 2000-2018. Data in this research used is secondary data. The Source of the data is from https://data.worldbank.com for ASEAN-5 countries.

There are two types of tests used in the study, the normality test, and hypothesis testing. The normality test is useful in the early stages of the selection methods of analysis. If they are normal, then use parametric statistics, and if not normally used non-parametric statistics. The purpose of this normality test is to determine whether the regression model or residual confounding variable has a normal distribution. This testing is necessary because to do the t-test and F test assumes that the value of the residuals follows a normal distribution (Mulyani 2007). The hypothesis in this study is done by using Regression analysis:

$$Y = a + b1X1 + b2X2 \ldots\ldots\ldots\ldots\ldots\ldots\ldots.(1)$$

Whereas:
Y = economic growth
a = constant
b1-b2 = coefficient beta
X1 = interest rate
X2 = inflation

1. Significant Partial Test (Test - t)
   For hypothesis testing, test criteria as follows:
   Ho is accepted if Sig. t > 0.05
   Ha accepted if Sig. t < 0.05
2. ANOVA with single Classification followed by Post Hoc Analysis (Tukey–Kramer test, P>0.05).

RESULTS AND DISCUSSIONS

The sample in this study is from the period year 2000-2018. The descriptive statistic reflects the minimum value, mean, maximum value and standard deviation from all data research.

Table 1. Descriptive Statistic for selected economic indicator of Indonesia

	N	Minimum	Maximum	Mean	Std. Deviation
Wage	19	6.80	9.60	7.92	0.89
Inflation	19	2.40	20.40	9.03	5.46
Economic Growth	19	3.60	6.30	5.25	0.71
Education	19	55.10	88.90	72.39	11.83
Unemployment Rate	19	4.00	8.10	5.82	1.39

Source: Data Processed, 2020.

Table 1 showed the minimum value of Wage is 6.80 % and the maximum value (9.60%), mean 7.92% with standard deviation 0.89. The minimum value of Inflation is 2.40% and the maximum value is 20.40% mean of 9.03% with a standard deviation of 5.46. The minimum value of Economic Growth is 3.60% and the maximum value is 6.30% mean 5.25% with a standard deviation of 0.71. The minimum value of Education is 55.10% and the maximum value is 88.90% mean of 72.39% with a standard deviation of 11.83. The minimum value of the Unemployment Rate is 4.00% and the maximum value is 8.10% mean 5.82% with a standard deviation of 1.39.

Table 2. Descriptive Statistic for selected economic indicator of Malaysia

	N	Minimum	Maximum	Mean	Std. Deviation
Wage	19	4.70	5.80	5.40	0.33
Inflation	19	0.20	10.40	4.24	3.06
Economic Growth	19	0.50	8.90	5.25	1.84
Education	19	76.10	85.40	80.52	3.36
Unemployment Rate	19	2.90	3.70	3.30	0.23

Source: Data Processed, 2020.

Table 2 exhibited the minimum value of Wage is 4.70% and the maximum value 5.80%, mean of 5.40% with standard deviation 0.33. The minimum value of Inflation is 0.20% and the

maximum value is 10.40% mean 4.24% with a standard deviation of 3.06. The minimum value of Economic Growth is 0.50% and the maximum value is 8.90% mean of 5.25% with a standard deviation of 1.84. The minimum value of Education is 76.10% and the maximum value is 85.40% mean 80.52% with a standard deviation of 3.36. The minimum value of the Unemployment Rate is 2.90% and the maximum value is 3.70% mean 3.30% with a standard deviation of 0.23.

Table 3. Descriptive Statistic for selected economic indicator of Philippine

	N	Minimum	Maximum	Mean	Std. Deviation
Wage	19	5.00	5.70	5.32	0.14
Inflation	19	-0.60	7.50	3.72	1.87
Economic Growth	19	1.10	7.60	5.34	1.69
Education	19	74.70	88.50	84.42	3.75
Unemployment Rate	19	2.50	4.10	3.46	0.44

Source: Data Processed, 2020.

Table 3 displayed the minimum value of Wage is 5.00% and a maximum of 5.70%, mean 5.32% with a standard deviation of 0.14. The minimum value of Inflation is -0.60% and the maximum value is 7.50% mean 3.72% with a standard deviation of 1.87. The minimum value of Economic Growth is 1.10% and the maximum value is 7.60% mean of 5.34% with a standard deviation of 1.69. The minimum value of Education is 74.70% and the maximum value is 88.50% mean of 84.42% with a standard deviation of 3.75. The minimum value of the Unemployment Rate is 2.50% and the maximum value is 4.10% mean of 3.46% with a standard deviation of 0.44.

Table 4. Descriptive Statistic for selected economic indicator of Thailand

	N	Minimum	Maximum	Mean	Std. Deviation
Wage	19	6.00	7.50	6.71	0.43
Inflation	19	0.20	5.10	2.54	1.49
Economic Growth	19	0.70	7.50	4.12	2.16
Education	19	62.90	120.70	88.59	19.86
Unemployment Rate	19	0.50	2.60	1.13	0.62

Source: Data Processed, 2020.

Table 4 presented the minimum value of Wage is 6.00% and a maximum of 7.50%, a mean of 6.71% with a standard deviation of 0.43. The minimum value of Inflation is 0.20% and the maximum value is 5.10% mean of 2.54% with a standard deviation of 1.49. The minimum value of Economic Growth is 0.70% and the maximum value is 7.50% mean of 4.12% with a standard deviation of 2.16. The minimum value of Education is 62.90% and the maximum value is 120.70% mean 88.59% with standard deviation 19.86. The minimum value of the Unemployment Rate is 0.50% and the maximum value is 2.60% mean 1.13% with a standard deviation of 0.62.

Table 5. Descriptive Statistic for selected economic indicator of Vietnam

	N	Minimum	Maximum	Mean	Std. Deviation
Wage	19	6.50	7.50	7.02	0.21
Inflation	19	0.20	22.70	8.08	6.57
Economic Growth	19	5.20	7.50	6.44	0.69
Education	19	36.90	64.30	48.08	7.15
Unemployment Rate	19	1.00	2.80	1.86	0.51

Source: Data Processed, 2020.

Table 5 elaborated the minimum value of Wage is 6.50% and a maximum of 7.50%, mean 7.02% with a standard deviation of 0.21. The minimum value of Inflation is 0.20% and the maximum value is 22.70% mean of 8.08% with a standard deviation of 6.57. The minimum value of Economic Growth is 5.20% and the maximum value is 7.50% mean 6.44% with a standard deviation of 0.69. The minimum value of Education is 36.90% and the maximum value is 64.30% mean 48.08% with a standard deviation of 7.15. The minimum value of the Unemployment Rate is 1.00% and the maximum value is 2.80% mean of 1.86% with a standard deviation of 0.51.

Result of Multiples Regression Analysis Test

The results of the multiple linear regression analysis (in the F test) as pointed in below table:

Table 6. ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1.	Regression	50.607	4	12.652	4.599	0.002
	Residual	247.585	90	2.751		
	Total	298.192	94			

Source: Data Processed, 2020.

Based on the Table 6 the significance (sig.) in the F test is 0.002 because of sig. $0.002 < 0.05$, then the basis of the unemployment rate in the F test can be concluded that wage, inflation, economic growth, and education have an effect on unemployment in these countries, which means significant. Thus, the R coefficient value in the multiple linear regression analysis has been fulfilled.

Table 7. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1.	(Constant)	-0.630	1.890		-0.333	0.740
	Wage	0.296	0.179	0.183	1.653	0.102
	Inflation	0.128	0.042	0.348	3.014	0.003
	Economic Growth	0.036	0.111	0.034	0.325	0.746
	Education	0.012	0.012	0.126	1.074	0.286

Source: Data Processed, 2020.

Based on the Table 7 the significant value of the Wage (X1) variable is 0.102 because the significant value is $0.102 > 0.05$, it can be concluded that H1 was rejected. The significant value of the Inflation (X2) variable is 0.003 because the significant value is $0.003 < 0.05$, it can be concluded that H1 is accepted. The significant value of the Economic Growth (X3) variable is 0.746 because the significant value is $0.746 > 0.05$, it can be concluded that H1 was rejected. The significant value of the Education (X4) variable is 0.286 because the significant value is $0.286 > 0.05$, it can be concluded that H1 was rejected.

Table 8. Results in Tukey's output Wage further test (Post Hoc Test)

	Analisis	Countries	Mean Difference	Sig.
Wage	Turkey HSD	Ind+Malay	2.52	0.00
		Malay+Philip	0.08	0.98
		Philip+Thai	-1.39	0.00
		Thai+Viet	-0.31	0.30
		Viet+Indo	-0.91	0.00
Inflation	Turkey HSD	Ind+Malay	4.79	0.01
		Malay+Philip	0.52	0.99

	Analisis	Countries	Mean Difference	Sig.
		Philip+Thai	1.19	0.97
		Thai+Viet	-5.55	0.00
		Viet+Indo	-0.95	0.96
E. Growth	Turkey HSD	Ind+Malay	0.01	1.00
		Malay+Philip	-0.10	1.00
		Philip+Thai	1.23	0.11
		Thai+Viet	-2.32	0.00
		Viet+Indo	1.19	0.13
Education	Turkey HSD	Ind+Malay	-8.14	0.16
		Malay+Philip	-3.89	0.81
		Philip+Thai	-4.17	0.77
		Thai+Viet	36.34	0.00
		Viet+Indo	-24.31	0.00
Unemployment	Turkey HSD	Ind+Malay	2.52	0.00
		Malay+Philip	-0.16	0.97
		Philip+Thai	2.33	0.00
		Thai+Viet	-0.74	0.03
		Viet+Indo	-3.96	0.00

Source: Data Processed, 2020.

Based on the test results Table 8, a clearer explanation is given as follows:

The difference in variables between countries combined with other countries from the above results can be seen the average difference between countries in wage for Indonesia and Malaysia is 2.52 and is statistically significant ($p = 0.00$), results can be seen the average difference between countries in inflation for Malaysia and Philippine is 0.52 and is statistically significant ($p = 0.99$), results can be seen the average difference between countries in economic growth for Philippine and Thailand is 1.23 and is statistically significant ($p = 0.11$), results can be seen the average difference between countries in education for Thailand and Vietnam is 36.34 and is statistically significant ($p = 0.00$), results can be seen the average difference between countries in unemployment for Vietnam and Indonesia is -3.96 and is statistically significant ($p = 0.00$).

As stated in the Putri's research (2015), inflation has a positive and significant effect on the unemployment rate. in Haug's research (2014) it is also explained that inflation has a positive effect on unemployment. This is due to the inflation of the type of Cost Push Inflation, which is inflation that occurs due to the continuous increase in the costs of production factors. Costs that continue to rise cause production activities to decline which has an impact on reducing labor absorption.

The results of this study are also in line with Putri's research (2015) which explains that wages have a positive effect on unemployment. In another study conducted by Gorry (2013) that in France an increase in wages can lead to an increase in unemployment. In the short term, an increase in the minimum wage increases the employment rate which makes companies less selective which also leads to a decrease in job creation (Gavrel et al, 2010). Educated unemployment is different from open unemployment. Educated workers are more difficult to find jobs, not because no company is willing to accept them, but because educated workers are more selective in getting jobs.

The results of this study are in line with Prawira's research (2018) which explains that the economic growth variable has a negative effect on unemployment. Economic growth reflects the state of the economy in a region. Increased economic growth can encourage economic activity, by increasing economic activity it encourages companies to produce, and the higher the level of production, the higher the opportunity for companies to develop so that the company will increase the number of workers. From the results

of this study, economic growth should be able to absorb labor.

The results of this study are in line with Rizqi's research (2019) which states that the level of education has a negative effect on unemployment. Education is very important in the future development of a nation and can determine the progress and increase the quality of human resources. Education can be viewed as a human investment, because with education, educated humans can become capital (human capital) for economic development. The level of education of an area can be measured using literacy rates. If the literacy rate of a country is high, it can be said that the community has adequate knowledge and skills. With adequate knowledge and skills, job seekers can be absorbed in employment opportunities and even able to create jobs so that the unemployment rate will also decrease.

CONCLUSION

There is a significant impact of wage, inflation, economic growth and education on unemployment in ASEAN countries. It has been found that among the several factors that cause unemployment in a countries the most significant is inflation. While other factors such as wage, economic growth, and education affect nevertheless are not significant.

Difference between ASEAN countries for the impact of wage, inflation, economic growth, education, on unemployment rate which difference in the impact of wage, Inflation, and unemployment between ASEAN countries that Indonesia has the greatest value compared to other countries. The impact of economic growth between ASEAN countries that Vietnam has the greatest value compared to other countries. The impact of education between ASEAN countries that Thailand has the greatest value compared to other countries.

REFERENCES

Aden, I. (2017). *Impact of education on unemployment evidence from Canada*. Ottawa: Department of Economics of the University of Ottawa.

ASEAN Screatiat. (2015). *ASEAN Statistical Yearbook 2015*. Retrieved from http://asean.org/ accessed 22/9/2019 8.44 pm.

Baasir, F. (2013). *Indonesian Post-Crisis: Political & Economic Records 2003-2004*. Jakarta: Pustaka Sinar Harapan.

Creswell, J. (2015). *Educational Research of Planning, Implementing, and Evaluating Qualitative and Quantitative Research*. Yogyakarta: Pustaka Pelajar.

Detik Finance. (2013). *Great River Diputus Pailit*. http://m.detik.com/finance/bursa-valas accessed at 2nd December 2019).

Djojohadikusumo, S. (2014). *Development of Economic Thought: Basic Economic Theory of Growth and Economics Development*. PT Pustaka LP3ES Indonesia. Jakarta.

Dutt, P., Mitra, D., & Ranjan, P. (2009). International trade and unemployment: Theory and cross-national evidence. *Journal International Economics, 78*(1): 32–44.

Fitri, F., & Junaidi, J. (2016). The influence of education, wages and job opportunities on educated unemployment in Jambi Province. *E-Jurnal Ekonomi Sumberdaya dan Lingkungan, 5*(1), 26–32.

Gavrel, F., Lebon, I., & Rebière, T. (2010). Wages, selectivity, and vacancies: Evaluating the short-term and long-term impact of the minimum wage on unemployment. *Economic Modelling, 27*(5), 1274-1281.

Gorry, A. 2013. Minimum wages and youth unemployment. *European Economic Review, 64*(1), 57-75.

Haug, A, A. & King, I. (2014). In the long run, US unemployment follows inflation like a faithful dog. *Journal of Macroeconomics, 41*(1), 42-52.

Horner, S., Zhang, A., & Furlong, M. (2018). The Impact of higher education on unemployment. *ECON, 31*(1), 1-8.

Mankiw, N. Gregory. (2000). *Macroeconomic Theory Fourth Edition*. Jakarta: Erlangga.

McEachern, W. A. (2000). *Macroenomics: a Contemporary Introduction*. Jakarta: Salemba Empat.

Mulyani. (2007). *Business Research Methodology: To Accounting. Management*, First Edition USU Press, Medan.

Panjawa, J., & Soebagiyo, D. (2014). The Effect of Increasing Minimum Wages on the Unemployment Rate. *Jurnal Ekonomi & Studi Pembangunan, 15*(1), 48–54.

Ponzoni, G. A., & Zilli, J. B. (2015). Unemployment and inflation: An estimated Phillips curve for Brazil (2002-2014). *Journal of Finance and Economics, 3*(5), 77-85..

Prasetyo, P. E. (2009). *Macroeconomic Fundamentals*. Yogyakarta: Beta Offset.

Prawira, S. (2018). The Influence of Economic Growth, Provincial Minimum Wages, and Education Levels on Open Unemployment in Indonesia. *EcoGen, 1*(1), 162–168.

Putri, R. F. (2017). Analysis of the Effect of Inflation, Economic Growth and Wages on Educated Unemployment. *Economics Development Analysis Journal, 4*(2), 175–181.

Rama, M. (2013). Globalization and workers in developing countries (Policy Research Working). *New York: World Bank, 29*(5), 5-11.

Riddell, W. C., & Song, X. (2011). The impact of education on unemployment incidence and re-employment success: Evidence from the US labour market. *Labour Economics*, *18*(4), 453-463.

Rizqi, A. U. A. (2019). Spatial Regression Application to Analyze the Open Unemployment Rate in Central Java in 2018. *Jurnal Ilmu Ekonomi Pembangunan, 19*(2), 1-8.

Seruni, R. (2014). The Patterns of Inflation and Unemployment in ASEAN Countries Years 2003-2012, *Journal of Economic & Development, 4*(2), 55-66.

Sugiyono. (2012). *Methodology Research*. Bandung: CV Alfabeta

Todaro, M & Smith, S. (2004). *Economic Development in the Third World, 8th Edition.* Jakarta: Erlangga