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Tandatangan Pustakawan



## DOES OKUN'S LAW EXIST IN SELECTED ASEAN COUNTRIES?

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# THESIS SUBMITTED IN FULFILLMENT FOR THE DEGREE OF MASTER OF ECONOMICS

# SCHOOL OF BUSINESS AND BUSINESS UNIVERSITI MALAYSIA SABAH 2012



#### DECLARATION

I hereby declare that the materials in this dissertation are original except for quotations, excerpts, summaries and references which have been duly acknowledged.

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## ABSTRACT

Nowadays, unemployment is an important issues in some developing countries. High unemployment means the labour resources are not being used efficiently. Okun's law postulates an inverse relationship between movements of the unemployment rate and the real gross domestic product (GDP). The objective of this paper is to check the validity of Okun's law in selected ASEAN countries such as Indonesia, Malaysia, Thailand, Singapore and Philippines. This study highlights method to estimate the Okun coefficient which is to use a first difference measure of unemployment. By using the annual data covering the period 1980-2009, the panel and times series techniques are used to test the relation between unemployment rate and real GDP and to obtain estimates for Okun's coefficient. Pedroni cointegration technique is used in order to find long run relation between unemployment rates and real GDP. Furthermore, the vector error correction model (VECM) is to find the short term behaviour of real GDP to its long run value. The simple regression is to examine the relationship between unemployment rate and real GDP. This study verifies negative relationship between unemployment rate and real GDP. The empirical results reveals that Okun's law can be confirmed in some ASEAN countries. The empirical analysis proves that Malaysia, Thailand and Singapore show the existence of Okun's law. However, Indonesia and the Philippines show that Okun's law is non-existent.



## ABSTRAK

## ADAKAH HUKUM OKUN WUJUD DI NEGARA-NEGARA ASEAN?

Kini, kadar pengangguran adalah isu terpenting dibeberapa negara yang membangun. Pengangguran yang tinggi bermakna sumber buruh yang tidak digunakan dengan cekap. Hukum Okun postulat hubungan yang songsang antara pergerakan kadar pengangguran dan produk dalam negeri kasar (KDNK) sebenar. Objektif kajian ini ialah untuk menyemak kesahihan Hukum Okun di negara-negara ASEAN yang terpilih seperti Indonesia, Malaysia, Thailand, Singapura dan Filipina. Kajian ini membincangkan kaedah untuk menganggar pekali Okun yang yang menggunakan ukuran pembezaan pertama pengangguran. Dengan menggunakan data tahunan yang meliputi tempoh 1980-2009, panel dan teknik siri masa digunakan untuk menguji hubungan antara kadar pengangguran dan KDNK sebenar dan untuk mendapatkan anggaran untuk koefisien Okun. Teknik kointegrasi Pedroni digunakan untuk mencari hubungan jangka panjang antara kadar pengangguran dan KDNK sebenar. Tambahan pula, model vektor pembetulan ralat (VECM) adalah untuk mencari gelagat jangka pendek Keluaran Dalam Negara Kasar (KDNK) sebenar kepada nilai jangka panjang. Regresi mudah adalah untuk mengkaji hubungan di antara kadar pengangguran dan KDNK sebenar. Kajian ini mengesahkan hubungan yang negatif antara kadar pengangguran dan KDNK sebenar. Hasil kajian menunjukkan bahawa Hukum Okun boleh disahkan dalam beberapa negaranegara ASEAN. Analisis membuktikan bahawa Malaysia, Thailand dan Singapura menunjukkan wujud Hukum Okun. Walau bagaimanapun, Indonesia dan Filipina menunjukkan tiada Hukum Okun wujud.



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## **CHAPTER 1**

#### INTRODUCTION

#### 1.1. Background of Study

Melvin Okun is one of the famous economists who suggested that there is a relationship between unemployment rate and economic growth. These two variables show the negative relationship that can occur in the long-run period and is named as Okun's Law. Unemployment and Gross Domestic Product (GDP) should move together. It is very important implication for macroeconomics. Furthermore, Okun documented that United States unemployment tends to fall by one percentage point for every three percentage point rise in the gross national product as stated by Neely (2010). Meanwhile, Okun showed zero real output growth in a given quarter and accordingly was associated with an increase in the unemployment rate of 0.3 percentage point in that quarter. As Knotek (2007) put it;

"Rapid output growth is associated with a falling unemployment rate, and slow or negative output growth is associated with a rising unemployment rate, (p.75)"

United States also has a negative relationship of the two variables by Okun. Moreover, this country is also one of the members of Organisation for Economic Co-operation and Development (OECD) and stated as a developed country. At the same time, it is still has an increasing unemployment. Besides, in this developed country, it shows as how easily employers can terminate workers or hire temporary workers as stated by Neely (2010). This is one of the contributing factors in the increase of unemployment rate.



For a developing country such as Malaysia, it shows that there is a negative relationship between unemployment rate and real GDP as shown by Noor, Nor and Ghani (2007). But, at the same time, they stated that even though there is Okun's Law in this country, it unable to solve the problem of unemployment. It is still dependent on the policymakers to readjust the rule so that it will benefit the people.

Okun's Law is only a rule of thumb, stated by Knotek (2007). This is because it is primarily an empirical observation rather than a result derived from theory. Okun's Law suggested that a decline by 1 percent in unemployment rate will increase 3 percent in output. Here, Okun's Law is approximate because factors other than employment such as productivity will affect output. From the Okun's original statement, he stated that a 3 percent increase in output corresponds to a 1 percent decline in the rate of unemployment, 5 percent increase in labour force participation, 5 percent increase in hours worked per employee and a 1 percent increase in output per hours worked based on labour productivity.

Based on the short and long period, Knotek (2007) had mentioned that when the real GDP slows down, it is not coincided with a rising unemployment. This situation was happens in United States (2006). It shows that Okun's Law is not only a law but a structural feature of the economy. Moreover, the Okun's Law also does not accord a stable relationship over time. In these two variables, unemployment and output show the difference in recession and expansions, and recent expansions have been longer than average. But, at the same time, it shows the data has having a weakening effect on the contemporaneous relationship between output and unemployment and thus coincides with a stronger relationship between past output growth and current unemployment. Okun's Law also one of a tool of forecasting that can be improved by allowing for a dynamic relationship between these two variables.



Khemraj, Madrick and Semmler (2006) examined the phenomenon of jobless growth in the United States by using Okun's Law theory. In their study, it showed a declining response towards job growth and in the Okun coefficient. However, in other countries such as Germany and France, the coefficient showed a vice verse effect: i.e. it has not been falling but rising instead. Furthermore, governments should provide some sort of security against emergencies, such as those arising from natural disasters, health shocks, joblessness and unemployment. The government should readjust the structural part of it. But, the mission of relocating jobs cannot be achieved solely by re-education and re-skilling of the labour force or by better labour market search and matching institutions.

Besides, the unemployed mass needs income and health care stated by Khemraj, Madrick and Semmler (2006). It shows the low levels of unemployment payments benefits and the short duration of unemployment payment in the United States. They also mention about Robert Reich Clinton who argued for higher levels of unemployment benefits and for a longer coverage period as essential precautionary measure against structural and cyclical unemployment.

The ASEAN countries are used as a case study. ASEAN with its full name being *Association of Southeast Asian Nations* is a group that combines certain Asian countries in the one association. There are ten members comprising ASEAN namely are Indonesia, Malaysia, Thailand, Singapore, Philippines, Brunei, Burma (Myanmar), Cambodia, Laos, and Vietnam. This statement is stated by ASEAN portal. It was formed in 8 August 1967 after Singapore achieved its independence in 1965. The meeting was conducted in the main hall of the Department of Foreign Affairs building in Bangkok, Thailand. The five leaders were Adam Malik of Indonesia, Narcisco R. Ramos of the Philippines, Tun Abdul Razak of Malaysia, S. Rajaratnam of Singapore, and Thanat of Thailand who set together and signed a document on the creation of this new association (ASEAN). This association aims to accelerate economic growth, social progress, and cultural development among its members, protection of regional peace and stability, and also afford opportunities for member countries to discuss differences among them peacefully.



Since there are only five countries available for data collection, therefore this current study only uses selected countries such as Indonesia, Malaysia, Thailand, Singapore and Philippines.

In this present study, the relationship between unemployment rate and real GDP would also be affected by financial crisis. After 1990, there are three occasions when financial crisis was happened. This stated by ASEAN portal. The years were in 1992 and 1993, 1997 and 1998, and the latest is in 2008 and 2009. During those years, the unemployment rate rapidly increased. This was because some of the firms retrenched their employees and some of them reduced the working hours. Therefore, even the country is developed or still developing, it still has the problem of increasing unemployment rate.

Unemployment is one of the most important issues for a developing economy. From International Economy perspective, the "Unemployed" can be defined as the people who are registered as able, available and willing to work at the going wage rate but who are unable find to work despite an active search for work. Nowadays, it is very difficult to find suitable work. At the same time, most of the graduate students are unable to find the suitable jobs. They can also be categorised as being unemployed. This can be proven by Kavoussi (2012) which she stated that only 51% of graduated students at Rutgers University get the full time jobs after graduation in 2006. At the same time, high unemployment means that labour resources are not being used efficiently. Hence, full employment should be a major macroeconomic goal for any government because it maximises output (Zaleha, Norashidah & Judhiana (2007). Unemployment has a direct relationship on real GDP. Besides, there are several factors for the increase of unemployment rates in certain years. For example, the unemployment rate increases during a financial crisis or recession. This is because there are many companies fired their workers. At the same time, rapid increase of population would also be one of the factors that increased the unemployment rate such as in Indonesia and Philippines.



## 1.2. Unemployment Rate and Economic Growth in ASEAN countries

Based on the selected ASEAN Countries (Indonesia, Malaysia, Singapore, the Philippines and Thailand), Figure 1 shows the trend of unemployment rate and Economic Growth. In this graph, there are five trends and they are divided based on the countries concerned. Country one is Indonesia, country two is Malaysia, country three is Thailand, country four is Singapore, and the last country is Philippines as country five.

Figure 1 shows the economic growth and unemployment rate. In 1980s, all ASEAN countries have an increasing unemployment rate. Additional information, there are four countries that can be labelled as developing countries which are Indonesia, Malaysia Thailand and Philippines. There is one developed country which is Singapore. As previously mentioned, the financial crisis happened in three times in 1990s. The years of financial crisis are 1992 and 1993, 1997 and 1998, and 2008 and 2009.





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Figure 1: Unemployment Rate and Economic Growth in ASEAN Countries

In Figure 1, it shows the increasing of unemployment rate from year to year. Among the selected ASEAN countries, unemployment rates in Indonesia and Philippines were comparatively high in 1997 and 1998. Indonesia's unemployment rate was 3.0 percent and GDP growth is 9.0 percent in 1980. The unemployment slightly decreased to 2.4 percent and GDP growth maintains at 9.0 percent in 1990. In 2000, the GDP decreased by 5 percent, while the unemployment rates rapidly increased by 6.4 percent during the financial crisis. In 2009, it shows that unemployment rate continuously increase to 7.9 percent. The GDP growth remain at 5.0 percent.

Malaysia's unemployment rate was 5.6 percent and GDP growth rate is 7.0 percent in 1980. The unemployment rates decreased to 5.1 percent and GDP growth rate increased to 9.0 percent in 1990. In 2000, while GDP growth rate retains at 9.0 percent, the unemployment rates decreased to 3.0 percent. However, the Financial Crisis in 2007-2009 shows an increase of unemployment rate to 3.7 and decreased the GDP growth rate to -2.0 percent.

In Thailand, the unemployment rate recorded at 0.9 percent and GDP growth is 5.0 percent in 1980. In 1990, the unemployment rate and GDP growth increasing together which show 2.2 percent and 11.0 percent. Moreover, in 2000, it started to decrease to 2.4 percent for unemployment rate and 5% for GDP growth. During the financial crisis, it shows the unemployment rate decreased to 1.2 percent and GDP growth rate recorded at -2.0 percent in 2009.

The unemployment rate in Singapore started with 3 percent which shows higher percentage point than Thailand. For GDP, it is recorded as 10 percent. However, the unemployment rate start decreased from 3 percent to 1.8 percent in 1990. This country tried to maximise the labour sources with more efficiently while remains GDP in the same percentage. Unfortunately, the unemployment rate rapidly increasing started from 1.8 percent to 6.0 percent and the GDP decrease from 10 percent to 9 percent in 2000.



At the same time, Singapore also affected to the financial crisis which show the decreasing of GDP growth rate from 9 percent to -1.0 percent. However, the unemployment rates show a good move by falling 0.1 percent in the same year.

In Philippines, the unemployment rates show 4.8 percent higher than Singapore percentage. For GDP growth, it was recorded at 5 percent in 1980. In 1990, these correlation shows negative relationship between GDP growths and unemployment rate. This situation shows that the unemployment rate increased from 4.8 percent to 8.1 percent. For GDP growth rate, it shows a decrease from 5 percent to 3 percent. The increasing of unemployment rate will due to the increase of population or baby boomer. In 2000, the unemployment still increases from 8.1 to 11.2 percent while GDP growth rate increase from 3 percent to 4 percent. In financial crisis 2009, the unemployment rates for Philippines show decrease from 11.2 percent to 7.5 percent while the GDP growth show decreasing from 4 percent to 1 percent.

In overall, the economic growth in ASEAN countries can be seen as having the most decreased of economic growth during 1997 and 1998. It is shown that the economy of Indonesia, Malaysia and Thailand declined to the point of negative growth. Indonesia showed approximately negative fifteen (-15) percentage of economic growth, while Thailand showed approximately a negative seven (-7) percentage, and lastly Singapore showed approximately a negative eleven (-11) percentage.

In Singapore, it showed an increasing of GDP rate followed by the increase of unemployment rate in 1998. However, it is started to move downward after the 2000s. Here, it showed that Singapore had a simultaneous movement of unemployment rate and economic growth until 2004. Then the graph also showed a decreasing of unemployment rate versus an increasing economic growth started from 2007 until 2009.



In 1980s, Philippines also showed that the rapid decrease in economic growth while unemployment rate show increasing. In 1984, the graph present the simultaneous movement between unemployment rate and economic growth. In 1996, it showed the starting point for financial crisis in 1997. The unemployment rate showed rapidly increase while the economic growth was decreased. In 1998, again it showed the simultaneous relationship between unemployment rate and economic growth. This trend continued until the end of 2009.

#### 1.3. Research Problems

The purpose of the present study is to examine the relationship between unemployment rate and real GDP in selected ASEAN countries. Based on Melvin Okun theory, he pointed that by reducing the unemployment will be one of the contribution factors in increase in the economic growth. The researcher suggested by decrease at one percent of unemployment rate will brings an increase of three percent of economic growth.

Based on researcher, he also stated that this law is useful for policymakers and economists alike and also as a forecasting tool. On the other hand, Tatom (1987) stated that the Okun's Law was not originally intended to explain the unemployment rate, but to provide a means for measuring potential output. Based on his study, Okun's Law is one of the alternative methods have been developed to measure potential output which have a stronger basis in economic theory and statistical method. Figure 2 shows the real problem between unemployment and economic growth.





Figure 2: The Relationship between Unemployment and Economic Growth

Based on Macro Perspective (see Figure 2), it can be explained by using the Okun's Law. The increase in unemployment rate will decrease the economic growth. At the same time, it will also decrease the real savings and decrease the standard of living. The RS increases is because, based on Dr. Shostak (2010), governments which did not decrease their unemployment rate, the real saving will not be affected. This means that particular government saves money. This will cause the decreasing of standard of living because the governments does not using that money to decrease the unemployment. But, when the government plans to reduce the unemployment rate, the real saving (RS) would decrease. This is to show that the government spend the money to decrease the unemployment. In this case it will show the increase of economic growth.



At the same time, this situation would affect the work environment and also the items in salary. Based on a Micro Perspective view, we can see that when unemployment increases, the number of workers will decrease. Therefore, firm will be willing to pay high salaries. This study has been stated by Dr. Shostak (2010). When firms are willing to pay high salaries, employees also being the consumers will spend their money, and thus ensures increasing of expenses to coincide with the increase in economic growth items for gross domestic products. Vice versa, when the government is willing to decrease the unemployment rate, the number of workers will increase. When the number of workers increases, it will force the firms to reduce the salary. When the salary reduces, employees also being the consumers will reduce their expenses. This will decrease economic growth in terms of gross domestic products.

It shows that policymakers play a main role in improving the economic growth in each of the countries based on their method to resolve the unemployment problem. Besides that, ASEAN countries, being close neighbourhood, will affect each other on the increase in unemployment rate, especially when illegal workers came and compete with the local people for seeking jobs. Furthermore, this study uses selected five ASEAN countries because the availability of data which was provided by the World Development Indicator. There will be several questions discussed in these selected ASEAN countries, namely:

- (a) Does Okun's Law exist in ASEAN countries?
- (b) To what extend the Okun's Law applies in selected ASEAN countries?
- (c) How does the illegal foreign worker affect the unemployment rate?



#### 1.4. Research Objective

Through the main objective based on Okun's Law, this study sets to explore on how the policymakers could use Okun's Law to make new policies to increase economic growth. At the same time, the research objective of this study is also to examine the relationship between unemployment rate and the real GDP in ASEAN countries and to answer the question whether these selected ASEAN countries have Okun's Law or not. Furthermore, this study also examines the Okun's Law theory for the whole combine ASEAN countries (Panel data) and also the countries individually (Time Series data). Besides, this study also concern about the decrease of unemployment rate will affect the number of unemployment of other country.

## 1.5. Significance of Study

In this study, it would benefits to the local people and the close neighbourhood countries. Effectiveness of policies will be one of the factors determining the rise economic growth. The benefit boasts the increase in job opportunities to the unemployed, especially young graduates and the less educated people. Besides, when each country increases job opportunities, it would also benefit all it's nearest neighbouring countries. This is because it would reduce the influx of illegal workers from each of these countries and thus local people would face less competition in terms of finding jobs.

#### 1.6. Scope of Study

The scope of this study is the selected ASEAN countries which are Indonesia, Malaysia, Thailand, Singapore and Philippines. Since these countries are close neighbourhood and affected each other, it is very suitable for this research. Moreover, there are two countries such as Indonesia and Philippines which show high population. The increasing of population is also one of the factors that can increase the unemployment rate. Here, this study would test by using the panel data which are combined selected ASEAN countries and cross-section data for each of the country.



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