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# Analysis of factors affecting inflation rates during the crisis period in six ASEAN countries during 1997 – 2021

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## ABSTRACT

Inflation is a macroeconomic indicator that can affect domestic and international economic conditions. Although economic growth, money supply, international trade, and unemployment play an important role in an economy, when looking at economic stability, the inflation rate is an important factor. Therefore, the purpose of this study is to find out what factors affect the inflation rate during the crisis period from 1997 to 2021 in six ASEAN countries. This study uses variables that determine the inflation rate. First, which shows that economic growth affects the inflation rate, then second, the variable money supply, which shows that the money supply or broad money affects the operation of inflation. Next is the third variable of exports, the fourth is the import variable. The fifth variable is unemployment in a region, which can also affect inflation. The last variable is the crisis variable, as a dummy variable used to support the research. The data analysis method uses panel data analysis with data sources from the world bank. The results show that the variables that affect the movement of the inflation ratio in ASEAN 6 are economic growth, broad money, and unemployment.

Keywords : Inflation; Money Supply; Economic Growth; Exports; Imports; Unemployment

## 1. INTRODUCTION

Inflation is one of the macroeconomic problems that exist in all countries. While economic growth, money supply, international trade, and unemployment play important roles in shaping the economy, economic stability can be emphasised on achieving inflation stability. Therefore, discussions and studies on inflation need to be deepened by considering the involvement of various countries.

Several different opinions have been expressed in the literature about the factors determining/interacting with inflation. First, that economic growth affects the inflation rate, both in the short and long term, this research was conducted by Christianingrum & Syafri (2019). Second, money supply or broad money has a positive effect on inflation as evidenced by Jumhur et al. (2018), Prasasti & Slamet (2020), Ardiansyah & Widianita (2023), Reawaruw (2017), Christianingrum & Syafri (2019). Third, international trade can have a positive effect on inflation as shown by Jumhur et al. (2018), Wulandari & Laut (2022), Dona et al. (2022), Ulfa & Abbas (2018).

Fourth, the presence of unemployment in a region can also affect inflation as explained by the research results of Siregar et al. (2023) and research from A.W Phillips. Based on the four groups of opinions above, this research will explore the relationship of variables, the results of which will fall into which of the four groups above.

Studies and discourses on inflation in the literature tend to pay less attention to the determinants of inflation during crisis periods in ASEAN countries. Some of these crisis periods consist of the monetary crisis in 1997-1998, the economic crisis in 2008, and most recently during the COVID-19 pandemic in 2020-2021.

The causes of the crisis that has emerged in ASEAN are diverse. There are three types of inflation based on its causes, namely demand pull inflation, cost push inflation, and demand supply inflation. A high increase in food prices and scarcity accompanied by a recession is called Cost Push Inflation. One example of Cost Push Inflation is the case of the monetary crisis in Indonesia in 1998, when inflation soared to 77.63%, with an economic contraction of more than 13% caused by the Asian Financial Crisis, which began on 2 July 1997 when Thailand was burdened by a large foreign debt. To overcome this, Thailand provided a monetary policy that was considered good, but it turned out that the policies taken were inappropriate, making things worse and impacting other ASEAN countries. Indonesia was the most affected, in addition to suppressing the value of the Rupiah to be highly depreciated, also the heated political and social situation contributed to exacerbate the situation, coupled with the natural disaster of severe drought in many areas caused by El Nino, making food supplies reduced, so that food prices soared.

The solution to the problems in Indonesia was with the help of the IMF, after the first agreement to solve this problem went wrong and had a more severe effect on Indonesia, finally making a second agreement containing 50 main reform programmes, such as providing social safety nets, slowly removing certain subsidies for the community, and stopping Suharto's system of power by ending the monopolies run by his group.

A decade later in 2008-2009 came the crisis that started in the United States, referred to as The mother of all crises, with a major crisis and impact on the world, but several countries in Asia such as China, India, South Korea, Indonesia, Malaysia and Singapore, as well as from another continent namely Australia survived this crisis because inflation was still well under control.

Then in 2020-2021, the COVID-19 pandemic emerged, which became a problem for all countries in the world due to restrictions on activities that had a serious impact on economic activities. Restrictions carried out both in the immediate region and between countries have a negative impact on the economy of many countries. Problems with exports and imports were hampered and fell sharply in 2020, so that the fulfilment of domestic production was also hampered, which resulted in a lack of supply due to the impact of social restrictions to lockdowns. During the COVID-19 pandemic, the price of medical devices skyrocketed, as well as the price of rhizome materials for health, and production materials and basic foodstuffs also became more expensive, causing inflation.

This inflation is also caused by cost push inflation, which is the result of social restrictions that hamper and limit the distribution of goods and services, causing scarcity. Scarcity can lead to a crisis.

Crisis events are always related to inflation, which can affect the amount of money in circulation in society. The effect is caused by inflation and the money supply or broad money, which has a close relationship. The quantity theory of money explains that the price level in economic activity is directly proportional or in line with the amount of money in circulation, which means that if the money supply has increased rapidly compared to the large output of goods/services, inflation will certainly occur. Apart from the influence of the money supply, another opinion about inflation is also conveyed by the neoclassicals about the effect of the inflation rate on economic growth, namely sustained inflation can permanently affect the real growth rate, either positively or negatively. According to Philips' research in 1958, high inflation can have a positive effect on economic growth, as well as lowering unemployment, while according to monetarists, inflation can have a negative impact on economic growth. Inflation is an economic phenomenon that is always interesting to discuss, especially in relation to its impact on unemployment. Inflation and unemployment are problems for the economy of every country. Its ever-increasing development impedes economic growth for the better.

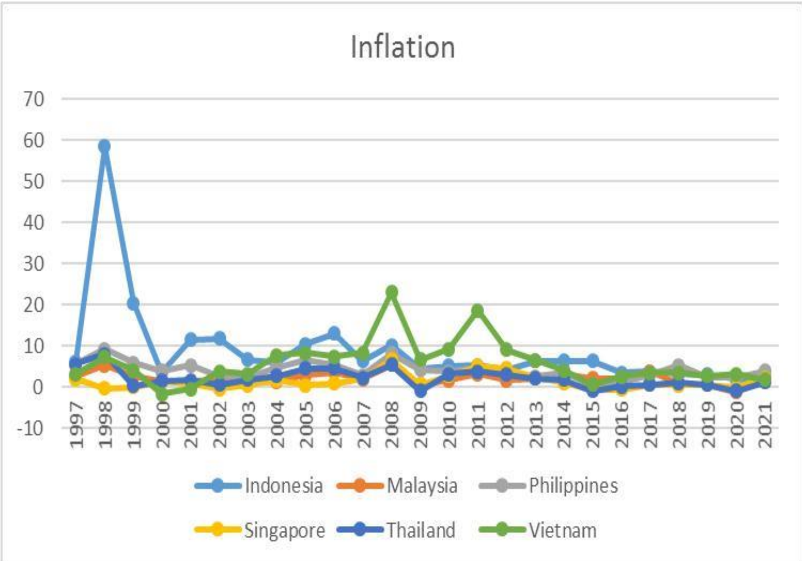


**Figure 1. Inflation Chart of 6 ASEAN Countries 1997-2021**

*Source : International Monetary Fund (IMF), latest data*

Inflation tends to occur in developing countries as well as countries in ASEAN. Domestic failures or shocks will cause price fluctuations in the domestic market and end up with inflation in the economy (Baasir, 2003). Indonesia experienced an increase in inflation in 2005 by 10.71% from 6.4% in 2004 to 17.11% in 2005. Inflation in 2005 was influenced by the pressure to adjust the price of fuel oil. The high price of oil on the international market caused the government to seek to remove fuel subsidies. In 2008, the government again raised the price of fuel oil because the crude oil price again reached its maximum price so that inflation again reached the digit to 11.06 (Preview Ukrida Newsletter, 2013:1). Inflation in Singapore is almost always below 2%. The country is usually successful in controlling prices. In 2008 inflation in the country was 7.3% and 2.62% due to the loose monetary policy of the United States and the global financial crisis in 2008. Furthermore, inflation in Vietnam was 24% in 2008 with an average economic growth of 7.5% per year.

This research uses 7 variables, 1 dependent variable is inflation, while the other 6 variables include the amount of money, then economic growth variables, export variables, imports, unemployment, and crisis dummy variables in 3 different eras. This latest research on inflation rates from a different perspective, with a broad scope and using expert opinions, is expected to provide an up-to-date picture of ASEAN's weaknesses and strengths in the economic field.

**Ecomonic Crisis**

An economic crisis is generally defined as a fall in the value of the domestic currency against the main foreign currency, usually the US dollar, accompanied by an increase in the overall price level. Information about rising interest rates, falling foreign exchange reserves and large currency depreciation in an index can be called symptoms of a crisis. The World Bank defines a financial crisis when the crisis index exceeds 1.5 times the standard deviation of the average. The crisis index only uses the rupiah exchange rate indicator against the US dollar with a limit of 2 times the standard deviation above the average. It can be concluded that an economic crisis occurs when the value of the domestic currency falls, accompanied by an increase in all prices on the market (Hilman, 2017).

In Hilman (2017), Zulhelmy revealed four main factors in the economic crisis. First, the elimination of gold as a reserve currency. Second, there is debt using a ribawi contract. Third, the stock exchange system and capital markets. And finally, unclear ownership, whether state ownership, public ownership or private ownership.

The persistence of the problem and the depth of the ongoing crisis indicate that something is fundamentally wrong. This depends on the basic philosophy of life because this will determine our analysis of the causes of this problem. No sacrifice will be effective unless it is directed at the mainstream of the crisis. Unfortunately, the mistake that is generally made is that the root of the problem is only looked for in the symptoms. As a result, healing is only temporary, such as analgesic drugs, reducing pain only temporarily. A few moments later, the crisis reappeared, even more profound and serious (Broll & Jauer, 2014).

## 2. METHOD

The data used in this research is panel data. The data in this study is an annual panel data from 1997 to 2021. The research year is adjusted to the times of crisis in 3 different eras. This research, 6 variables consisting of 1 dependent variable, namely Inflation, and 5 independent variables, namely economic growth, money supply, exports, imports and unemployment, take data from the world bank. For one independent variable, namely Crisis, using a dummy model, which without using data, is made as a variable that helps to support the results of data processing research on the crisis, inflation and its relationship with other independent variables. Thus, this study uses three dummies, namely the 1997-1998 dummy, the 2008-2009 dummy, and the 2020-2021 dummy.

The dependent variable in this study, Inflation, according to Bank Indonesia, is one of the factors that affect good and sustainable economic growth. This can happen if the inflation rate is low and stable, so that it can provide benefits for the welfare of a country. In addition, to reduce inflationary pressures, if there is an appreciation in the value of the Rupiah, it will have an impact on the cheap price of imported goods, and national export commodities become more competitive, so that it will encourage local business competition.

In the case of unemployment, although it is a short-term problem, it is crucial, especially when compared to the six countries examined in this study, the Philippines and Indonesia hold the highest number of unemployed. Based on the Phillips curve theory in the research conducted by the Budget Analysis and Implementation Bureau of the DPR RI, when unemployment is high, it tends to reduce the inflation rate, but in the case of Indonesia, with a variety of factors, high unemployment still does not reduce the value of inflation, which is both equally high. Data processing in this study was obtained from the World Bank website.

## 3. RESULTS AND DISCUSSION

### 3.1 RESULT

**A. Descriptive Analysis**

Even though they still have similarities, each country has its own advantages and weaknesses. The following is a graph of the state of inflation in 6 ASEAN countries in 1997- 2021.

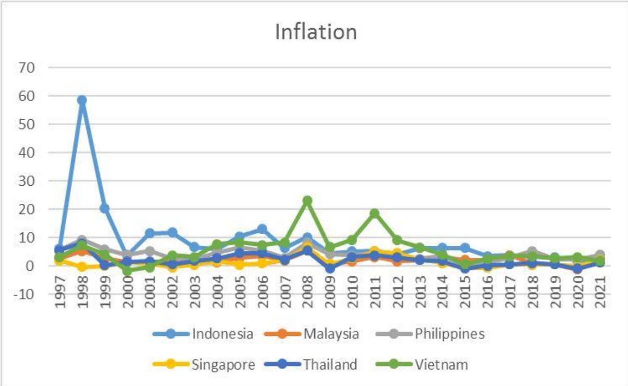


**Figure 2. Inflation Graph for 6 ASEAN Countries 1997-2021**
*Source: International Monetary Fund (IMF), latest data*

Each country has a different inflation situation. From figure 2 above, the inflation with the highest fluctuation value compared to other ASEAN countries was Vietnam, in 2008-2009, at which time a major crisis occurred in the United States. The financial crisis in 2008-2009 was caused by bad credit in the US property sector (subprime mortgage). As a result, the US economy contracted by 0.34% in 2008 and 3.07% in 2009 which had an impact on all countries in the world, because the exchange rate changed to adjust to conditions in America. Apart from that, world food prices also contributed to high inflation at that time. In 2011 Vietnam's inflation also increased, and was once again the highest compared to other ASEAN countries. This situation is caused by a decline in economic growth. Vietnam's economic decline has been quite sharp. However, this only happened until 2011, in 2014 Vietnam began to regulate inflation movements to become stable, and it has been proven that until 2022 Vietnam's inflation will still be stable.

Meanwhile in Indonesia, the highest peak of inflation in the graphic image above occurred in 2005-2006. The highest inflation that year was caused by increases in various sectors, such as property prices, water, electricity and fuel prices, while the most dominant commodity was city transportation rates. However, after that, inflation in Indonesia was still relatively normal, not much different from other ASEAN countries.

The first independent variable, namely the Money Circulation (JUB) or broad money in ASEAN 6, has different conditions, this is based on differences in economic, political and social conditions in each country. As we can see in the graph below.


**Figure 3. Broad Money Graph for 6 ASEAN Countries 1997-2021**
*Source: International Monetary Fund (IMF), latest data*

Starting in 1997 and reaching its peak in 1998, Indonesia experienced a fairly severe monetary crisis compared to other ASEAN countries. The beginning of the crisis in 1997 was the impact of the economic crisis in Thailand, which affected all ASEAN countries. Indonesia experienced the highest inflation, namely 77% and the Rupiah exchange rate plummeted, from IDR 2,500 to IDR 16,900 USD, and there was a contraction in the Indonesian economy of 13.7%. However, in 1999 it returned to normal, this was because Indonesia was assisted by the IMF in creating 50 revised economic reform policy packages, and demanded that the economic and political monopoly run by the Soeharto family be stopped.

The country of Vietnam experienced the highest amount of money in circulation in 1999, this was the impact of the crisis in Asia which started in Thailand in 1997, which then continued to reduce Vietnam's GDP to 6% in 1998 and 5% in 1999. In 2007 Vietnam became the country in Southeast Asia most affected by inflation caused by the global crisis in America. In subsequent years, the amount of money circulating in Vietnam was still relatively normal, and relatively stable until 2021.

In 2013, the Philippines experienced a 22.36% increase in broad money compared to 2012. The increase in money supply was in line with the decline in domestic economic growth in the Philippines. Apart from that, natural disasters such as typhoon Haiyan also have an impact on national economic activity. However, by making good policies, the Philippines succeeded in getting through this problem, as evidenced by the money supply returning to normal from 2014 to 2021. In other ASEAN countries such as Malaysia, Singapore, Indonesia, Thailand since 2000 it has still been observed to be normal until 2021.

The second independent variable, namely economic growth, can be seen in the graph below:


**Figure 4. Economic Growth Graph for 6 ASEAN Countries 1997-2021**

*Source: International Monetary Fund (IMF), latest data*

Economic growth is taken from data on state income growth, or what can be called GDP Growth. In 1998, during the monetary crisis, the economic growth of these 6 countries fell sharply, Indonesia was the country with the worst condition, while the Philippines and Singapore were not as bad as other ASEAN countries. However, the situation began to improve in 1999 and 2000. However, in 2001 Singapore and Malaysia experienced an economic contraction of 2.2% caused by the global recession and a decline in technology. However, at the end of 2001, after a review of economic policies was carried out, several policies were produced which made their economy recover.

We can see that in 2009 the ASEAN economy declined again, although not as badly as in 1998, this was the effect of the 2008 global crisis, but in 2010 Singapore set a record to become the country with the highest and fastest economic growth in Asia. This economic growth reached a fantastic figure of 14.7%, resulting from the revival of exports since 2009, and very large income from the tourism sector, due to tourist interest when 2 new casinos opened.

In 2020, ASEAN economic growth experienced another decline due to the Covid-19 pandemic, especially when the lockdown policy was implemented in almost all ASEAN countries, in order to minimize contact so that the spread of Covid-19 did not become wider. However, in 2021, concessions will be given, even though Covid cases are still increasing, this is being done so that the economy does not decline sharply.

Furthermore, the third variable, namely exports, has various conditions in ASEAN 6, this is proven in the graph and explanation below:

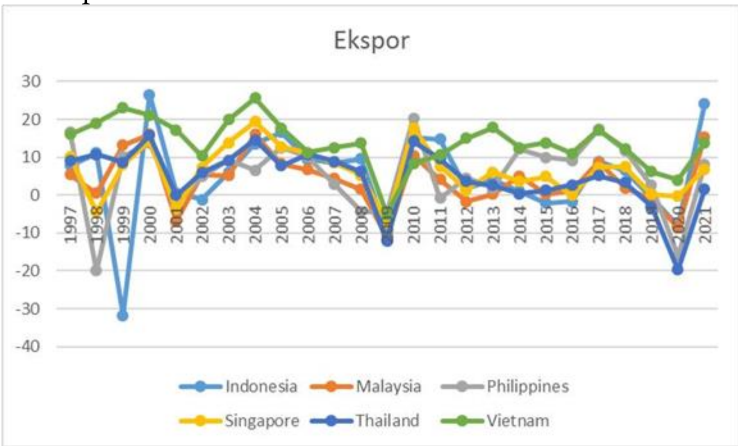


**Figure 5. Export Graph of 6 ASEAN Countries 1997-2021**
*Source: International Monetary Fund (IMF), latest data*

From the figure 5 above, almost all countries experienced the highest exports in 2004-2005, but then they fluctuated. Malaysia's exports declined starting in 2006, and were lowest in 2008, then increased and returned to normal but were still fluctuating. This is different with exports from Vietnam, from the beginning of the 2004 period it was at the top of the export chain but after that it experienced a decline, but is still the highest compared to the other 5 ASEAN countries. Meanwhile, overall exports from Indonesia, the Philippines and Singapore fluctuated from the beginning of the 1997 period to 2021, with the highest exports in 2010. Although after that there was a decline, after that they stabilized.

The fourth independent variable, namely imports, has a varied history in Southeast Asia, as shown by the movement of the graph below:

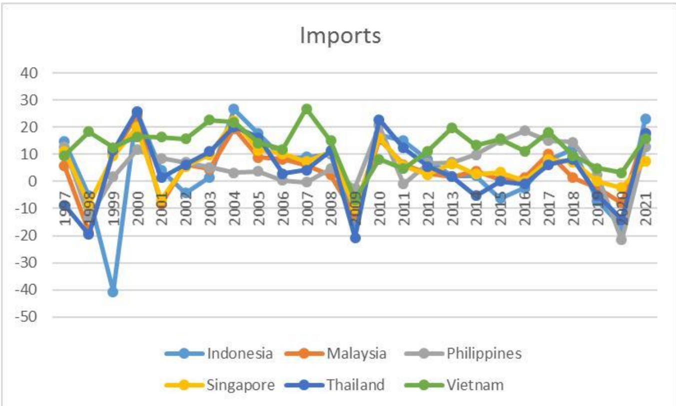


**Figure 6. Import graph for 6 ASEAN countries 1997-2021**
*Source: International Monetary Fund (IMF), latest data*

From the import graph (figure 6), the lowest imports in Southeast Asia occurred in Indonesia in 1999, when there was a sharp decline due to the monetary crisis. Other countries, such as Malaysia, the Philippines, Singapore, Thailand and Vietnam, experienced their lowest imports during the crisis period in 1998. The highest imports were made by Vietnam, from 2006-2007, then experienced a decline after that. Meanwhile, the lowest imports occurred in 2009, then it happened again in 2020, during the Covid-19 pandemic. Import movements for all 6 countries are fluctuating, but the highest average imports are still held by Vietnam.

In the case of unemployment in these 6 ASEAN countries, there are similarities and differences, as explained in the graph below:

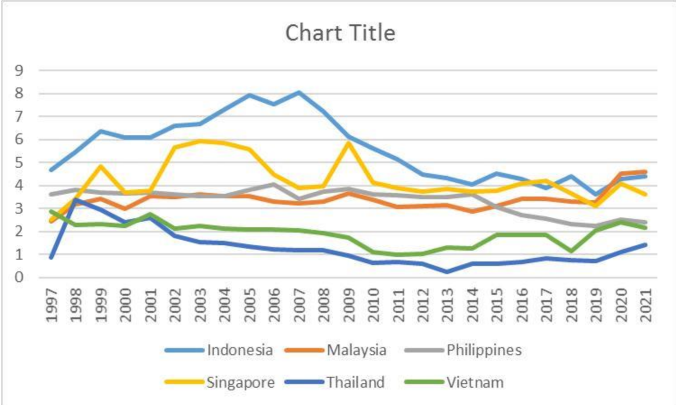


**Figure 7. Unemployment Graph for 6 ASEAN Countries 2002-2022**
*Source: International Monetary Fund (IMF), latest data*

Similar to Indonesia, the five other ASEAN countries such as Malaysia, the Philippines, Singapore, Thailand and Vietnam also experienced an increase in the number of unemployed in 1998-1999 as a result of the monetary crisis, and since 2002 and started to decline in 2010, but increased again in the future. covid 19 pandemic in 2020, after which it experienced a decline at the end of the 2021 period. Of the 6 countries above, the Philippines and Indonesia are the countries with the highest number of unemployed people, although they experience a decline every year, but considering the area and large population, it is not surprising that both countries it occupies the highest position.

## B. Quantitative Analysis

Quantitative analysis regarding the comparison of inflation during the crisis in Asia in 1998, the global financial crisis in 2008, and the economic crisis in the Covid-19 era in 2020- 2021 in 6 ASEAN countries uses panel data, with a combination of time series and cross section data. The time series data used is annual data for the period 1998-2021 from Indonesia, Malaysia, the Philippines, Thailand, Singapore and Vietnam. Using 7 variables, consisting of 1 dependent variable, namely inflation, and 6 independent variables, namely the amount of money in circulation or broad money, economic growth or GDP growth, exports, imports, unemployment obtained from the world data bank, and 1 dummy variable in the form of 3 crisis era.
The six independent variables will be tested, to see which variables have an influence on inflation movements. After that, see which point of view is really suitable to be used as a comparison of these 3 different crisis eras.

## C. Data Analysis Result

Below are the results of estimation testing using panel data regression in this research:

### 1. Panel data regression test results with the common effect model

From the results of the common effect model estimation test, the following results were obtained:

**Table 1. Regression Estimates Results of Common Effects Model**

| Variable | Coefficient | Std. Error | t-Statistic | Prob |
|---|---|---|---|---|
| GDP | -0.535859 | 0.200450 | -2.673284 | 0.0089 |
| BROAD_MONEY | 0.271644 | 0.050003 | 5.432507 | 0.0000 |
| EXPORT | 0.022656 | 0.096628 | 0.234464 | 0.8152 |

| Variable | Coefficient | Std. Error | t-Statistic | Prob |
|---|---|---|---|---|
| IMPORT | 0.043860 | 0.094774 | 0.462785 | 0.6446 |
| UNEMPLOYMEN T | 0.748081 | 0.244650 | 3.057764 | 0.0029 |
| CRISIS | 4.414972 | 2.214070 | 1.994053 | 0.0492 |

Source: eviews 9, processed

GDP growth variable has a significance or probability value below 0.05, which means that the variable is significant at the 5% level. For the variable money supply or broad money has a probability value below 0.05, and is significant at the 5% level. For the export variable, the probability value is above 0.05 and is not significant at the inflation rate, with a value above 5%. This is also the same as the import variable, which has a probability above 0.05%, which is 0.644. The unemployment variable has a probability below 5%, with a probability value of 0.002, so unemployment affects the inflation rate in ASEAN 6. For the crisis dummy variable also affects the inflation rate, with a probability value below 0.049

**a) Panel data regression test result**

The results of the fixed effects model estimation test are shown in the table below:

**Table 2. Regression estimation results of fixed effects model**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 3.766053 | 1.890821 | 1.991755 | 0.0496 |
| GDP | -0.334160 | -0.158295 | 2.110996 | 0.0377 |
| BROAD_MONEY | 0.165288 | 0.058702 | 2.815732 | 0.0060 |
| EXPORT | 0.144804 | 0.079130 | 1.829961 | 0.0708 |
| IMPORT | 0.028892 | 0.063853 | 0.452486 | 0.6521 |
| UNEMPLOYEMENT | -0.402513 | 0.479555 | -0.839346 | 0.4036 |
| CRISIS | 2.218561 | | | |
| Fixed Effects (Cross) | | | | |
| _INDONESIA—C | 5.302581 | | | |
| _SINGAPORE—C | -1.587392 | | | |
| _THAILAND—C | -2.451253 | | | |
| _VIETNAM—C | -1.366071 | | | |

Source : Reviews 9, processed

From the table 2 for the variable GDP Growth or economic growth has a significant probability value on the inflation variable below 0.05, namely 0.037. In the variable money supply or broad money is also significant to the inflation variable below 0.05, namely 0.006. Exports have a probability value above 0.05, which indicates that exports do not affect the inflation rate, with a significance of 0.070. Furthermore, the Import variable also has a similarity to the export variable, with a probability value above 0.05, which is 0.652, so exports do not affect the inflation rate.

b) Panel data regression test results with model random effects
Below is a table of the results of the random effects regression model of each independent variable on the inflation rate:

**Table 3. Estimation regression result of random effects model**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 0.386387 | 1.672262 | 0.231057 | 0.8178 |
| GDP | -0.564480 | 0.236941 | -2.382363 | 0.0194 |
| BROAD_MONEY | 0.265960 | 0.056072 | 4.743181 | 0.0000 |
| EXPORT | 0.020668 | 0.097746 | 0.211444 | 0.8330 |
| IMPORT | 0.047164 | 0.096563 | 0.488425 | 0.6265 |
| UNEMPLOYMENT | 0.710259 | 0.295916 | 2.400207 | 0.0185 |
| CRISIS | 4.274024 | 2.312889 | 1.847915 | 0.0680 |

Source : Reviews 9, processed

The economic growth variable or GDP growth has a probability value or degree of significance below 0.0, or 5%, at 0.019, which means that this variable affects the movement of the dependent variable. The money supply variable also significantly affects the inflation rate, with a probability

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value below 0.05 or less than 5%, at 0.000. The international trade variable which consists of exports and imports, has a probability value above 0.05 or above 5%, with a nominal 0.833 and 0.626 respectively. Both variables do not affect the inflation rate. Another case with the unemployment variable, which has a probability value of 0.018, below the significance degree of 5%, shows that the level of unemployment affects the inflation rate.

## A. SELECTION TEST PANEL DATA REGRESSION MODEL

a) **Uji Chow (CEM vs FEM)**

It is one of the tests in selecting the regression model used for panel data. The Chow test is used in seeing what model is suitable in this test, whether the Common Effects Model or the Fixed Effects Model. The Chow test results can be seen in the table below:

**Table 4. Chow test result**

Redundant Fixed Effects Tests
Pool: POOLED_DATA
Test cross-section fixed effects

| Effects Test | Statistic | d.f. | Prob. |
|---|---|---|---|
| Cross-section F | 5.584899 | (3,85) | 0.0015 |

Source : Reviews 9, processed

The Chow test results above are processed with eviews. In this Chow test, when looking at the probability value below 0.05, which is 0.0145, in this case the test must be continued in the Hausman test.

b) Hausman Test

In the Hausman test results, if the value of cross section chi square <0.05 then the Fixed Effects Model is selected. But if the value of the cross section chi square >0.05 then the selected model in this panel test is the Random Effects model.

**Table 5. Hausman Test**

Correlated Random Effects - Hausman Test

Pool: POOLED_DATA

Test period random effects

| Test Summary | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob. |
|---|---|---|---|
| Period Random | 11.504051 | 6 | 0.0740 |

** WARNING: estimated period random effects variance is zero.

Source : eviews 9, processed

From the test results above, the probability of the cross section chi square is more than 0.05, which is 0.0740. It can be concluded that the correct model is the Random Effects Model (REM).

The selected model is the Random Effects Model. From this test, there is no need to test classical assumptions, because the random effects model has used the GLS method, which assumes that the GLS or generalised least square estimation method is able to overcome the problems of heteroscedasticity and autocorrelation.

## B. THE BEST MODEL DATA PANEL

Based on the test results that have been carried out, the regression model chosen is the random effects model. Using cross section data, namely 6 ASEAN countries, consisting of Indonesia, Malaysia, Philippines, Singapore, Thailand, Vietnam. While the time series data uses data on inflation rates, economic growth, total money in circulation, exports, imports, unemployment and 1 dummy variable in the form of a crisis. The research data is from 1998-

2021. The panel data regression estimation results are shown in the table below:

**Table 6. Estimation Regretion Result random effects model**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 0.386387 | 1.672262 | 0.231057 | 0.8178 |
| GDP | -0.564480 | 0.236941 | -2.382363 | 0.0194 |
| BROAD_MONEY | 0.265960 | 0.056072 | 4.743181 | 0.0000 |
| EXPORT | 0.020668 | 0.097746 | 0.211444 | 0.8330 |
| IMPORT | 0.047164 | 0.096563 | 0.488425 | 0.6265 |
| UNEMPLOYMENT | 0.710259 | 0.295916 | 2.400207 | 0.0185 |
| CRISIS | 4.274024 | 2.312889 | 1.847915 | 0.0680 |

Source : eviews 9, processed

From the table 6 above, we can see the constant value and the coefficient that creates the regression equation results as below:

Inflasi = 0.3863 + 0.5644GDP + 0.2659Broad_money + 0.0206Export + 0.0471Import + 0.7102Unemployment + 4.2740Crisis (1)

The regression equation above concludes that the constant value of 0.3863 is obtained if economic growth, the amount of money in circulation, exports, imports, unemployment and 1 dummy variable in the form of a crisis is 0 then the inflation rate will be 0.3863.

With a coefficient value of GDP growth of -0.5644 shows that this variable is not directly proportional to the inflation rate. If economic growth increases by one per cent and other variables are constant, the inflation rate will decrease by -0.5644 per cent. On the variable broad money coefficient of 0.2659, is directly proportional to the inflation rate. If the money supply increases by one unit and other variables are constant, the inflation rate will increase by 0.2659. Furthermore, the third variable, exports, has a coefficient of 0.0206. If exports increase by one unit and other variables are constant, the inflation rate will increase by 0.0206.

For the import variable, the coefficient value is positive, at 0.0471, which means that the import variable is directly proportional to the inflation rate. If imports increase by one unit and other variables remain constant, the inflation rate will increase by 0.0471. The unemployment variable has a positive coefficient of 0.7102, indicating that this variable is directly proportional to the inflation rate. If unemployment increases by one unit and other variables are constant, the inflation rate will increase by 0.7102. The last variable, the crisis dummy variable, is not statistically significant. This indicates that there is no difference in the inflation rate between crisis and non-crisis periods, and has a directly proportional relationship with the inflation rate, with a coefficient value of 4.2740. If the crisis increases by one per cent and other variables remain constant, then the inflation rate will increase by 4.2740 per cent.

### 3.2 DISCUSSION

1. **The influence of economic growth on inflation movements in 6 ASEAN countries from 1998 to 2021**

The economic growth variable has a significant and negative relationship with the inflation rate, indicated by a probability value of 0.0194, which is below the significance figure of 0.05, and has a negative coefficient value of -0.5644. From these results it is concluded that the higher economic growth, the lower the inflation rate in ASEAN 6 countries. Increased economic growth can occur if inflation in the country is stable or low (not too low). The same thing is, if there is an increase in the inflation rate, then economic growth will decrease.

The relationship between economic growth and inflation is in accordance with the theory of monetaristism, namely that inflation can have a negative impact on economic growth. Similar to Keyness's theory regarding the long-term relationship between inflation and economic growth, in the long-term relationship between inflation and economic growth, inflation will rise but economic growth will decrease.

In this research, the results are the same as several previous studies, the first being research from Pratiwi et al. (2017), when the inflation rate decreases, economic growth increases, and when the ITF is implemented, the increase in economic growth becomes more rapid.
Although economic growth influences the movement of the inflation ratio, it is important to remember that there are other factors that also play a role in inflation movements, such as global economic conditions, political problems or even war, and natural disasters.

2. **The influence of money supply on inflation movements in 6 ASEAN countries from 1998 to 2021**

Based on the results of this panel regression test, the broad money variable has a significant probability and is positive for the inflation rate. The probability value of the money supply variable is 0.000, with a positive coefficient of 0.2659. From these results it can be concluded that when there is an increase in the money supply, inflation also increases. Likewise, when there is high inflation, it is certain that the money supply at that time is increasing.
The results of this research are in line with the quantity theory of money, which explains that the price level in economic activities is directly proportional or in line with the amount of money in circulation. Apart from that, it is supported by previous research from Prasasti & Slamet (2020), which shows that there is a significant relationship between the effect of policy on the amount of money in circulation and inflation and interest rates.

The relationship between money supply and inflation is complex and can be influenced by various factors, including money velocity, changes in production capacity (real output), and public expectations.

3. **The influence of exports on inflation movements from 6 ASEAN countries from 1998 to 2021**

From the results of the random effect model test, it shows that the export variable does not influence inflation movements. This is proven by a probability value that is above 0.05 or above the degree of significance, namely 0.8330, with a coefficient value of 0.0206. Shows that exports do not have a significant relationship even though it is positive.

If exports cannot influence the inflation rate, then this can be influenced by various factors. For example, if increased exports are balanced by increased domestic production, thereby preventing a surge in demand for goods and services, this can help control inflation. Additionally, if the economy has excess capacity or if export markets are not a significant driver of overall economic activity, the impact on inflation may be limited. For example, Indonesia, the Philippines, which has an economy that is supported by MSMEs (MSMEs are the largest contributors to income), and is not too dependent on export activities like Singapore, Thailand or Vietnam. Inflation is basically a complex phenomenon that is influenced by many variables, and its dynamics can vary depending on the economic conditions and policies of each country.

4. **The influence of imports on inflation movements from 6 ASEAN countries from 1998 to 2021**

The import variable does not have a significant relationship even though it is positive with the inflation variable. This is shown by the results of panel regression with a random effect model, with a coefficient of 0.0471 and a probability of 0.6265. Import movements will not affect inflation movements. and vice versa, when inflation rises, it will not affect the value of imports.

This can happen if imports cannot influence the inflation rate, and may be caused by several factors. For example, if imported goods are not classified as essential (not fuel or manufacturing materials), or if there is strong competition in the domestic market, imported products may not significantly affect prices. Apart from that, if a country's currency is strong, it can certainly help mitigate inflationary pressures due to imports, such as Singapore and Malaysia, for example, because the prices of imported goods may be relatively stable or even decrease. Overall, the impact of imports on inflation is influenced by a combination of economic factors, markets and various policies used by the ASEAN 6 countries.

5. **The influence of the number of unemployed on inflation movements from 6 ASEAN countries from 1998 to 2021**

The number of unemployed in ASEAN 6 has a significant probability and positive relationship with the inflation movement variable. This is proven by a positive coefficient value of 0.7102 and a probability value of less than 0.05 or 5%, worth 0.0185. From these processed results, it is concluded that changes in the number of unemployed affect inflation movements, and vice versa. If the unemployment rate rises, then inflation will also be high.

In previous research, the same results were also obtained by Pratiwi et al. (2017). Using panel data analysis, Inflation Targeting has a positive impact on unemployment and economic growth. When Indonesia implemented the Infation Targeting Framework policy, the number of unemployed managed to decrease. When the inflation rate decreases, economic growth increases, and when the ITF is implemented, the increase in economic growth becomes more rapid. The ITF is considered an option for ASEAN (developing countries) to improve the economy.

In line with the findings from previous research, Melindawati et al in 2021 found that the Philips Curve theory could not be implemented in Indonesia. It is important to know that the Philips Curve theory explains that the higher inflation is, the more unemployment will decrease. It can be concluded that the theory is inversely proportional to the results obtained, namely, with high inflation rates, it will have an impact on increasing the number of unemployed in Indonesia. In the ASEAN region, this can happen because the conditions of each country are different, starting from geographical conditions, large population, gaps in education and the economy, and others also contribute.

6. **The influence of the crisis on inflation movements in 6 ASEAN countries from 1998 to 2021**

From the results of the panel test with the random effect model, it produces a positive coefficient value of 4.2740 with a probability value above 0.05 worth 0.0680. The crisis variable does not have a significant relationship even though it is positive, which means that the crisis variable does not have a significant effect on inflation movements, and vice versa. This variable is used to support the results of the research. There is no significant evidence that the presence or absence of certain categories can have a significant impact on the dependent variable, after taking into account other variables in the model.

## 4. CONCLUSION

From the results of this research, it can be concluded that the movement of the inflation ratio in ASEAN 6 is influenced by the movement of economic growth, broad money supply and unemployment, so that the most appropriate point of view in looking at the comparison of these three different crisis eras is the monetary policy used , as well as unemployment and public health perspectives. Based on this research, the policy recommendations that can have implications for ASEAN 6 are: Carry out maximum coordination and monitoring between central banks in ASEAN in monetary and fiscal policies, especially for economic indicators such as inflation, economic growth and money supply; Collaborate in making monetary and fiscal policies, but also adapt them to the conditions of each ASEAN member country, so that they suit needs and do not cause fluctuations in the impact of these policies; Be open and transparent with the conditions occurring in each country, so that if there are signs of a crisis or other economic problems, mitigation can be carried out so that it does not spread widely to other ASEAN countries, and can also minimize the risk impact; Cooperating in skills development to improve the quality of ASEAN human resources which are superior and highly competitive, this can be done by conducting comparative studies, exchanges and other training; Create a group or forum that focuses on workers in ASEAN. This forum can contain experts, entrepreneurs, labor representatives, and others, who function as a bridge or facilitator in resolving labor problems in ASEAN, including through dialogue between country representatives, and creating joint policies that are adapted to their respective characters, rules and needs. each country.

Encourage, facilitate and support entrepreneurship and MSMEs as much as possible, so that these businesses develop and are able to create new jobs, thereby reducing the number of unemployed and improving the country's economy. Bearing in mind the limitations of this research which is only limited to six ASEAN countries, the suggestion for future researchers is to expand the reach of the research not only to the six ASEAN countries but also to other countries.

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