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Determinants Of Ekonomic Growth In ASEAN-10

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Article Info	ABSTRACT
Keywords: Economic growth, Investment, Inflation, Labor.	Stock price fluctuations in energy sector companies are often influenced by various factors, including the company's financial performance. One indicator that can affect stock price fluctuations is the profitability ratio, which includes the Return on Assets (ROA) and Earning Per Share (EPS) ratios. This study aims to analyze the effect of profitability ratios on stock prices of energy sector companies in Indonesia. The method used in this study is panel data regression, which allows analyzing the relationship between independent and dependent variables by taking into account variations between companies and over time. The results show that the Return on Assets (ROA) ratio has a positive effect on stock prices of energy sector companies, meaning that the higher the ROA, the higher the company's stock price. On the other hand, the Earning Per Share (EPS) ratio does not show a significant effect on stock prices in the energy sector. These findings contribute to the understanding of the factors that influence stock prices in the energy sector, as well as their implications for investors and company managers in making investment decisions and financial policies.
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INTRODUCTION

In the current era of globalization, almost all countries in the world run an open economic system, opening themselves to international trade. This of course results in the emergence of competitive economic competition. There needs to be synergy between countries to support each other in terms of meeting needs. Support and cooperation between countries in the Southeast Asian region to anticipate globalization has been going well, the real form of which is the formation of the Association of South East Asia Nation (ASEAN). ASEAN or the Association of Southeast Asian Nations is a Southeast Asian Regional Organization which was formed to foster cooperation between member countries in order to accelerate economic growth, promote regional peace and stability, and form cooperation in various areas of mutual interest.

ASEAN is a fairly broad and large economic region so it has promising economic potential. The population of ASEAN member countries based on *Wordbank data* continues to experience positive growth, except for Singapore, which in 2020 and 2021 experienced a population decline of -0.31 percent and -4.08 percent. The slowdown in growth occurred due to low birth rates due to the Singaporean population tending to choose to have fewer children and immigration policies being tightened during and after the Covid-19 pandemic .

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From Table 1. Based on *worldbank.org* data, the population of the 10 ASEAN countries in 2022 will reach 679 million people, this number places ASEAN as the region with the third largest population in the world, where the ASEAN population is equivalent to 8.4% of the world's population.

The year 2015 through the formation of the ASEAN Economic Community (AEC) was a decisive moment for ASEAN to strengthen the community in the regional area. The MEA is a representative form and a real contribution from countries in the Southeast Asian region to make ASEAN an economic region that should be taken into account in international economic chess. MEA has four strategic plans, namely achieving a single market and unified production base, a highly competitive economic area, equitable economic growth, and integration with the global economy. This strategic plan begins with achieving a single market and unified production base that frees up the flow of goods, services, investment, skilled labor and capital between ASEAN countries.

ASEAN's contribution to global trade in 2021 will be around USD 1.73 trillion . This contribution comes from the value of intra-ASEAN export trade which controls around 20 percent of the global export trade value. This value is so large that trade between ASEAN member countries is very important to maintain stability.

Throughout 2021, during the Covid-19 pandemic, the economies of most ASEAN member countries managed to grow positively. Even though the ASEAN region shows continued positive growth , not all member countries can achieve economic growth at the expected level.

Based on data, over the last five years the economic growth of ASEAN countries has fluctuated, especially in 2020 at the start of the Covid-19 pandemic, most countries in the world, including countries in the ASEAN region, experienced an economic slowdown, but along with the discovery of the Covin-19 vaccine 19 and the population's economic activity has begun to return to normal, the economic growth of ASEAN countries in 2021 will increase again and grow positively. It can be seen from Table 1.2 that after Covid-19 in 2021, the largest contraction in economic growth in the ASEAN region was in Myanmar, which experienced a contraction of -17.91 percent, while the highest economic growth occurred in Singapore at 8.88 percent.

There are several encouraging and inhibiting factors for a country to achieve economic growth. Countries that are able to maximize driving factors will find it easier to achieve economic growth. Vice versa, countries that are unable to minimize inhibiting factors will find it more difficult to increase economic growth.

The dynamics of economic growth in the ASEAN region are certainly caused by many factors, a number of previous theories and research that studied the determinants of economic growth in the ASEAN region generally only studied the determinants of economic growth in a small number of ASEAN member countries as research targets, for example Azam et al. (2015) who analyzed the relationship between energy consumption and growth in five ASEAN member countries or Thanh (2015) who studied the influence of inflation on economic growth in five ASEAN member countries. Apart from that, previous research generally only examines the determinants of economic growth in ASEAN countries associated with macroeconomic variables and there has been no specific study regarding the determinants of

ASEAN economic growth associated with macroeconomic variables and non-economic variables.

ASEAN is a region whose members adhere to an open economic system. The economic openness of ASEAN member countries includes, among other things, international trade and other forms of economic integration. International trade paves the way for a country to engage in economic integration which will ultimately encourage investment in developing countries. According to Mankiw (2007) and Rahmaddi and Ichihashi (2011), a country that implements a policy of economic openness will gain many positive benefits such as establishing international relations, expanding market share, increasing modernization of technology & science, and being able to encourage international capital inflows and prevent monopoly in the global market. Data for 2022, the value of foreign direct investment in most ASEAN countries will still be below five percent, except for Singapore and Cambodia.

Based on macroeconomic theory from the expenditure side, gross domestic product is the sum of several variables including investment. By increasing the value of domestic and foreign investment, it will increase the capital stock and increase productivity. One of the capital stocks can be obtained through the Foreign Investment (PMA) scheme. Foreign Direct Investment (PMA) is able to make a significant contribution to development in developing countries. As a component of capital flows, PMA is considered a fairly stable capital flow compared to other capital flows, for example portfolio investment and foreign debt (Safira, et al. 2018), but there are other views related to foreign investment directly by Boyd and Smith which states that foreign direct investment reduces economic growth due to liberalization, deregulation and privatization policies.

The percentage of the working population in the ASEAN Region in 2022 will average above 50 percent of the total working age population (15 years and over). This is a positive value considering that human resources, in this case labor, is one of the production factors which plays an important role in increasing production. However, the theory related to labor which states that increasing the number of workers encourages increased economic growth, is not in line with the results of research conducted by Vannesha Astot, Sri Ulfa Sentosa (Astot & Sentosa, 2022) which found that the number of workers does not have a positive and significant influence on economic growth of ASEAN countries.

Inflation data for ASEAN countries for the period 2022 is mostly above five percent. In theory, this figure is still in the mild inflation category because the increase in the value of goods and services is still below 10 percent a year, but a figure above five percent is necessary. received attention because inflation figures for ASEAN countries for the past five years were mostly below three percent. According to the journal by Erika Feronika Br Simanungkalit with the title "The Effect of Inflation on Economic Growth in Indonesia". This journal explains that price increases resulting from inflation will encourage entrepreneurs to increase their production. This increase in production will have a good impact on economic growth because it can increase national GDP. (Simanungkalit, 2020) but there is other research by Tafeta Febryani S, Sri Kusreni (Febryani, 2017) which found that inflation does not show a significant influence on economic growth in ASEAN countries.

The exchange rate is an important variable in a country's economy. The rise and fall of exchange rates will have an impact on world trade traffic. Depreciation of the exchange rate

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will be detrimental to the importing country because the price of foreign goods will become more expensive, but on the other hand, for the exporting country, this condition will be very profitable for that country because the goods they produce are cheaper and therefore more in demand on the international market (Sari, 2019). The weakening of the rupiah exchange rate indicates weak conditions for carrying out foreign transactions, both exports and imports and foreign debt. over the last five years there have been no significant changes in the currency exchange rates of ASEAN countries even though economic growth in the last five years has varied.

Seeing the different fluctuations in economic growth in the ASEAN region, there is no specific study that links macroeconomic variables and non-economic variables with ASEAN economic growth, as well as the existence of research gaps that are not in line with economic theory regarding the factors that influence economic growth, so through the research "Analysis of Determinants of ASEAN-10 Economic Growth", it is hoped that it will be known what variables can encourage and hinder economic growth in most ASEAN countries, because basically every country definitely wants to carry out development in all fields and is expected to achieve high economic growth , and can realize the goal of prospering society and equalizing the distribution of income in order to realize economic and social justice for society (Munzir, 2016) .

This research is a development of research conducted by several previous researchers who examined ASEAN economic growth. Previous research was generally carried out only in a few ASEAN countries, this research was conducted in 10 (Ten) ASEAN countries, namely Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam. This research uses panel data with a 12 year data series starting from 2011 to 202 2 to analyze the determinants of economic growth in ASEAN countries more comprehensively.

The difference with previous research is in the combination of research variables, where most previous research only included economic variables as determinant variables for ASEAN economic growth. Research by Riyad, Mohamad (2012) with the title factors influencing economic growth in six ASEAN countries in 1990-2009 used the variables trade openness , foreign direct investment , domestic investment, government spending, labor force and inflation then analyzed their influence on ASEAN economic growth . Research by Maulida, Ana Kurnia, et al (2020) entitled analysis of the determination of economic growth in the ASEAN region for the 2007-2018 period analyzes the influence of inflation, investment and exports on economic growth in countries in the ASEAN region in 2007-2018.

Previous research that used non-economic variables used population variables as determinant variables, namely research by Puteh, Anwar (2009) with the title factors influencing economic growth in ASEAN countries 5 years 1990-2007 using trade openness , investment, population and inflation variables. then analyze its influence on ASEAN economic growth. Meanwhile, research that uses the human development index variable as a determinant variable for economic growth is research conducted by Awaludin, Muthalib, and Suriadi (2021) which examines the influence of government spending, human development index and inflation on economic growth in ASEAN countries using panel data analysis. ARDL model for determinant analysis.

Apart from that, there are also differences in the use of indicators in research compared to previous research, where research by Taosige Wau, Umi Mai Sarah, Diana Pritanti, Yesi Ramadhani, M. Saiful Ikhsan (2022) with the title Determinants of Economic Growth in ASEAN Countries: Panel Data Model using Investment variables, Inflation, Labor, Exchange Rates are determinants of ASEAN economic growth, but the labor variable indicator used is the labor force participation rate (TPAK).

This research, apart from using a combination of Investment, Inflation, and Labor, to see its influence on ASEAN economic growth using panel data analysis. The economic growth variable indicator uses the percentage of GDP growth at constant prices in 2015, the investment variable is measured using the percentage of *Foreign Direct Investment* (FDI), the inflation variable is measured using the percentage of growth in the consumer price index, the labor variable uses the percentage variable of the number of working population aged 15 years.

METHODS

This research was conducted in ten (10) ASEAN countries, namely Brunei Darussalam, Cambodia, Indonesia, Laos PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam. The research period is 2011-2022. Data sourced from the *Worldbank.org website.* Penel data is very useful because it can see economic effects that cannot be analyzed using only cross-time and cross-individual data (Puteh, 2009). Panel data model analysis uses three approaches consisting of *Common Effect, Fixed Effect and Random Effect* .

Analysis of the regression equation using the *Eviews 12 program* is as follows:

$$Y = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \mu_{it} \qquad (1)$$

Where :

Y = Dependent variable (dependent variable)

β_0 = Constant

$\beta_1 \beta_2 \beta_3$ = Regression Coefficient

$X_1, X_2, X_3,$ = Independent variable (independent variable)

μit = *Error term or error*

Panel Data Regression Estimation

According to Widarjono (2018) , the regression model estimation method using panel data (*pooled data*) can be done using three approaches, namely:*Common Effect Models (CEM), Fixed Effect Model (FEM), Random Effect Models (REM)*

Classic assumption test

A good regression model (excluding simple regression models) must meet classical assumptions. Fulfillment of classical assumptions is intended so that when working on the regression model there are no statistical problems. In addition, the resulting regression model meets statistical standards so that the parameters obtained are logical and reasonable. The classical assumption testing process is carried out together with the regression testing process so that the steps carried out in classical assumption testing use the same work steps as the regression test (Gani & Amalia, 2015), namely Normality Test, Multicollinearity, Hetertoscedasticity, Autocorrelation.

Determination of Regression Estimation Methods

There are three tests to determine the panel model to be used, namely the Chow Test, Hausman Test, and The Breusch-Pagan LM Test. Chow test is used to choose between CEM and FEM models. The Breusch-Pagan LM test is used to choose between the CEM and REM models. The Hausman test is used to choose between FEM and REM models.

Statistical Testing

Statistical testing aims to measure the estimation results of a model in order to explain these results. What is included in statistical testing is the determinant coefficient (R2), t statistical test, and f test.

RESULTS AND DISCUSSION

Description of Research Results

This research analyzes the relationship between economic variables and economic growth in 10 ASEAN countries, namely Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Mianmar, Philippines, Singapore and Thailand. Economic variables are described by several variables, namely Foreign Direct Investment, Inflation, Percentage of working population, Exchange Rate and Human Development Index. In this research, these five variables are independent variables, *while* the dependent *variable* is economic growth. which is described by the rate of economic growth. This research period starts from 2018-2022 using secondary data published by *World Bank* .

This research uses panel data, namely combined data from *time series* and *cross sections* . Panel data can be estimated using three methods, namely, *Common Effect Models* (CEM), *Fixed Effect Model* (FEM), And *Random Effect Model* (REM). To determine the most appropriate method to use in the model, the best model selection test can be carried out.

Common Effect Models (CEM)

The output of *Common Effect Models* (CEM) from the results of panel data testing is as follows:

Table 1. *Common Effect Models (CEM)* output results from panel data testing results

Variables	Coefficient	Std. Error	t-Statistics	Prob.
C	4.153400	4.989139	0.832488	0.4069
INFLATION	0.112984	0.114909	0.983248	0.3276
INVESTMENT	0.101653	0.055075	1.845719	0.0676
LABOR	0.091407	0.069260	1.319764	0.1896
R-squared	0.185728	Mean dependent var		4.135130
Adjusted R-squared	0.149699	S.D. dependent var		3.872341
S.E. of regression	3.570755	Akaike info criterion		5.432536
Sum squared resid	1440.783	Schwarz criterion		5.572659
Log likelihood	-317.2359	Hannan-Quinn Criter.		5.489435
F-statistic	5.154867	Durbin-Watson stat		1.247786
Prob(F-statistic)	0.000269			

Source: 2024 Panel Data Processing Results

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Fixed Effect Model (FEM)

The Fixed Effect Model (FEM) output from the results of panel data testing is as follows:

Table 2. *Fixed Effect Model (FEM)* output results from panel data testing results

Variables	Coefficient	Std. Error	t-Statistics	Prob.
C	17.21987	18.75851	0.917976	0.3608
INFLATION	0.039817	0.106425	0.374134	0.7091
INVESTMENT	0.325088	0.144286	2.253080	0.0264
LABOR	0.508561	0.150865	3.370962	0.0011
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.435650	Mean dependent var	4.135130	
Adjusted R-squared	0.359680	S.D. dependent var	3.872341	
S.E. of regression	3.098647	Akaike info criterion	5.217177	
Sum squared resid	998.5680	Schwarz criterion	5.567486	
Log likelihood	-295.4220	Hannan-Quinn Criter.	5.359426	
F-statistic	5.734486	Durbin-Watson stat	1.610843	
Prob(F-statistic)	0.000000			

Random Effect Models (REM)

The output of *Random Effect Models (REM)* from the results of panel data testing is as follows:

Table 3. *Random Effect Models (REM)* output results from panel data testing results

Variables	Coefficient	Std. Error	t-Statistics	Prob.
C	-2.125530	6.883622	-0.308781	0.7581
INFLATION	0.090359	0.102327	0.883039	0.3791
INVESTMENT	0.114277	0.078619	1.453552	0.1488
LABOR	0.250151	0.092664	2.699536	0.0080
Effects Specification				
			S.D.	Rho
Cross-section random			1.443736	0.1784
Idiosyncratic random			3.098647	0.8216
Weighted Statistics				
R-squared	0.152933	Mean dependent var	2.183509	
Adjusted R-squared	0.115452	S.D. dependent var	3.561474	
S.E. of regression	3.349959	Sum squared resid	1268.112	
F-statistic	4.080307	Durbin-Watson stat	1.369834	
Prob(F-statistic)	0.001923			
Unweighted Statistics				
R-squared	0.122773	Mean dependent var	4.135130	
Sum squared resid	1552.176	Durbin-Watson stat	1.119140	

Penentuan Metode Estimasi Regresi

There are three tests to determine the panel model to be used, namely the Chow Test, Hausman Test, and *The Breusch-Pagan LM Test.* Chow test is used to choose between CEM

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and FEM models. *The Breusch-Pagan LM* test is used to choose between the CEM and REM models. The Hausman test is used to choose between FEM and REM models.

Test Chow

The Chow test is a test to determine the correct *Fixed effect* or *Comment Effect model to use by estimating panel data.* The output from the Chow Test can be seen in the following table:

Table 4. Chow Test output results

Redundant Fixed Effects Tests
Equation: Untitled
st cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	5.117362	(9,104)	0.0000
Cross-section Chi-square	43.627707	9	0.0000

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.153400	4.989139	0.832488	0.4069
INFLASI	0.112984	0.114909	0.983248	0.3276
INVESTMENT	0.101653	0.055075	1.845719	0.0676
LABOR	0.091407	0.069260	1.319764	0.1896

R-squared	0.185728	Mean dependent var	4.135130
Adjusted R-squared	0.149699	S.D. dependent var	3.872341
S.E. of regression	3.570755	Akaike info criterion	5.432536
Sum squared resid	1440.783	Schwarz criterion	5.572659
Log likelihood	-317.2359	Hannan-Quinn criter.	5.489435
F-statistic	5.154867	Durbin-Watson stat	1.247786
Prob(F-statistic)	0.000269		

Based on the results of panel data testing using the Chow Test, it shows that the p-value < α (0.05) or 0.000, then H0 is accepted so that the model follows *the Fixed Effect Model (FEM).*

Hausman test

The Hausman test is based on the idea that both OLS and GLS methods are consistent but OLS is inefficient under the null hypothesis. On the other hand, the alternative hypothesis is that the OLS method is consistent and the GLS method is inconsistent. Therefore, the null hypothesis test is that the results of the two estimates are not different so that the Hausman test can be carried out based on the difference in estimates.

Table 5. Hausman Test output results

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	24.040616	5	0.0002

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Cross-section random effects test comparisons:				
Variable	Fixed	Random	Var(Diff.)	Prob.
INFLASI	0.039817	0.090359	0.000855	0.0840
INVESTASI	0.325088	0.114277	0.014638	0.0814
LABOR	0.508561	0.250151	0.014174	0.0300
Variables	Coefficient	Std. Error	t-Statistics	Prob.
C	17.21987	18.75851	0.917976	0.3608
INFLATION	0.039817	0.106425	0.374134	0.7091
INVESTMENT	0.325088	0.144286	2.253080	0.0264
LABOR	0.508561	0.150865	3.370962	0.0011
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.435650	Mean dependent var	4.135130	
Adjusted R-squared	0.359680	S.D. dependent var	3.872341	
S.E. of regression	3.098647	Akaike info criterion	5.217177	
Sum squared resid	998.5680	Schwarz criterion	5.567486	
Log likelihood	-295.4220	Hannan-Quinn criter.	5.359426	
F-statistic	5.734486	Durbin-Watson stat	1.610843	
Prob(F-statistic)	0.000000			

Based on the Hausman test results, it shows that the p-value < α (0.05) or 0.000, then H0 is accepted so that the model follows *the Fixed Effect model (FEM).* Based on the results of the Chow test and Hausman test, it shows that the FEM model is selected, so there is no need to carry out the *Lagrange Multiplier* test (LM-Test)

Classic Assumption Test Results

Normality Test Results

This test aims to find out whether the residual values that have been standardized in the regression model are normally distributed or not. This test is carried out by looking at *the Jarque-Bera* value and the Probability *value* . The assessment criteria, if *the Jarque-Bera* value is smaller than 2 and the Probability value *is* greater than 0.05 then it can be said that the data is normally distributed.

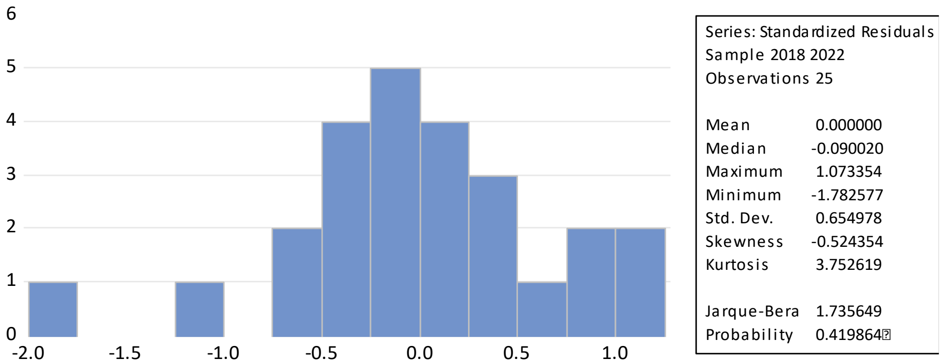

Figure 1, Normality Test Results
Source: Processed data (2022)

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From Figure 5.16 above, it appears that the *Jarque-Bera value* is smaller than 2 (1.735649 < 2) and the Probability value *is* greater than 0.05 (0.419864 > 0.05). Thus, it can be said that the data in this study is normally distributed.

Autocorrelation Test Results

The autocorrelation test is the relationship between members of a series of observations ordered by time (*time series data*) or place (*cross section data*) (Gujarati, 2013). A good regression model is a regression that is free from autocorrelation. One test that can be used to detect autocorrelation is the *Breusch-Godfrey test* or what is called *the Lagrange Multiplier* (LM). The assessment criteria, if the value of *Prob. Chi-Square* greater than 0.05 means that there is no autocorrelation, otherwise autocorrelation will occur.

Table 6. Autocorrelation Test Results

Breusch-Godfrey Serial Correlation LM Test:				
F-statistic	0.586185	Prob. F(2,95)		0.3279
Obs*R-squared	1.479124	Prob. Chi-Square(2)		0.3831
Test Equation:				
Dependent Variable: PE				
Method: Least Squares				
Date: 07/21/24 Time: 13:27				
Sample: 2018 2022				
Included observations: 25				
Presample missing value lagged residuals set to zero.				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.263103	0.325352	0.808671	0.4282
INVESTMENT	0.000809	0.000493	1.640690	0.1165
INFLATION	-0.000293	0.155159	-0.001892	0.9985
LABOR	-0.690690	10.29205	-0.067109	0.9472
P.E	0.010584	0.108795	0.097288	0.9227
R-squared	0.573049	Mean dependent var		3.038000
Adjusted R-squared	0.487659	S.D. dependent var		3.918445
S.E. of regression	2.804744	Akaike info criterion		5.077358
Sum squared resid	157.3317	Schwarz criterion		5.321133
Log likelihood	-58.46697	Hannan-Quinn criter.		5.144971
F-statistic	0.586185	Durbin-Watson stat		1.603369
Prob(F-statistic)	1.479124			

Source: Processed data (2022)

Based on the results in Table 6 above , you can see the value of *Prob. Chi-Square* of 0.3831 is greater than 0.05. This means that in the regression model used there is no autocorrelation.

Multicollinearity Test Results

This test is useful to find out whether the regression model found a correlation between the independent variables. A good model is a model in which there is no correlation between the independent variables. According to Gujarati (2013), if the correlation coefficient between independent variables is > 0.8, it can be concluded that the model experiences

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multicollinearity problems. On the other hand, if the correlation coefficient is <0.8, the model is free from multicollinearity.

Table 7. Multicollinearity Test Results

	INFLATION	INVESTMENT	HDI	EXCHANGE RATE	LABOR
INFLATION	1	0.5099510999873503	-0.7102031762928879	0.7659262809670745	0.6111511112431339
INVESTMENT	0.5099510999873503	1	-0.7052094122374596	0.6660067193867112	0.7890606968231638
LABOR	0.6111511112431339	0.6890606968231638	-0.6828995553462485	0.7320044416534838	1

Source: Processed data (2024)

Based on the results in Table 7, it can be seen that none of the correlations between the independent variables have a value of more than 0.8. This means that in this regression model there is no multicollinearity or in this model there is no correlation between the independent variables.

Heteroscedasticity Test Results

This test is used to determine whether the residual has a homogeneous (constant) variance or not. With the heteroscedasticity test, it is hoped that the residuals will have a homogeneous variance. The test was carried out using the *Breusch-Godfrey test* or what is called *the Lagrange Multiplier* (LM). The assessment criteria, if the value of *Prob. Chi-Square* greater than 0.05 means that heteroscedasticity does not occur, otherwise heteroscedasticity will occur. The assessment criteria, if the value of *Prob. Chi-Square* is greater than 0.05, so it can be stated that the residuals are distributed randomly or have a homogeneous variance, so the data can be stated that the heteroscedasticity assumption is met.

Tabel 8. Hasil Uji Heteroskedastisitas

Heteroskedasticity Test: Breusch-Pagan-Godfrey				
F-statistic	0.294076	Prob. F(4,97)		0.2940
Obs*R-squared	3.542041	Prob. Chi-Square(4)		0.2371
Scaled explained SS	4.924203	Prob. Chi-Square(4)		0.1703
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.201816	22.92612	0.008803	0.9931
INFLATION	-0.218538	0.290867	-0.751333	0.4641
INVESTMENT	-0.048532	0.211489	-0.229477	0.8216
LABOR	0.092468	0.256871	0.359980	0.7239
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.446527	Mean dependent var		1.345894
Adjusted R-squared	0.114444	S.D. dependent var		1.464948
S.E. of regression	1.378574	Akaike info criterion		3.769151

Sum squared resid	28.50701	Schwarz criterion	4.256702
Log likelihood	-37.11439	Hannan-Quinn criter.	3.904377
F-statistic	1.344624	Durbin-Watson stat	2.934006
Prob(F-statistic)	0.294076		

The results of the heteroscedasticity test using *Breusch-Godfrey* obtained the *Prob value. Chi-Square* is 0.2371. So it can be concluded that the residuals have a homogeneous variance and the heteroscedasticity assumption is met.

Analysis Model Regression And Proving Hypothesis

Results Testing Regression Data Panel

The estimation methods used in data processing results with panel data regression are *Common Effect Models* (CEM), *Fixed Effect Model* (FEM), and *Random Effect Model* (REM). This research uses one *dependent variable* , namely economic growth, and five *independent variables* namely Foreign Direct Investment, Inflation, Percentage of working population, Exchange Rate and Human Development Index. The following is an explanation regarding the results Regression Panel Data With 3 The estimation method is described in table 9.

Table 9. Results Regression Panel Data With 3 Estimation Method

Variable		Method Estimate		
		CEM	FEM	REM
FDI	Coefficient	0.101653	0.325088	0.114277
	t- stat	1.84	2.25	1.45
	Prob	0.067	0.026	0.148
If	Coefficients	0.112984	0.039817	0.090359
	t- stat	0.98	0.37	0.88
	Prob	0.327	0.709	0.379
LABOR	Coefficients	0.091407	0.508561	0.250151
	t- stat	1.31	3.37	2.69
	Sample	0.189	0.001	0.008
KONSTANTA	Koefisien	4.153400	17.21987	-2.125530
	t-stat	0.83	0.91	-0.30
	Prob	0.406	0.360	0.758
Adj R-Squared		0.1496	0,3696	0.1154
R-Squared within		0,1857	0.4356	0.1529
F-stat		5,154	5,734	4,080
Prob (F- Stat)		0,000	0,000	0.001

Source: Estimation results regression (2024)

Based on the results of the Chow test and Hausman test, it shows that the FEM model was chosen, so the regression equation model is as follows:

$$Y = \beta_0 + \beta_1 FDI_{it} + \beta_2 If_{it} + \beta_3 TK_{it} + \mu_{it}$$

Y = 17.21987 + 0.325088 +0.039817 +0.508561+17.21987

The regression equation above can be interpreted as follows:

1. The constant of 17.21987 states that if the variables Amount of Investment (X1), Inflation (X2), Percentage of working population (X3), Exchange Rate (X4), and Human Development Index (X5) are considered constant, then the Economic Growth variable (Y) is equal to 17.21987 .
2. The Investment regression coefficient (X1) is 0.039817 , stating that every additional Investment (X1) of 1% will increase the Economic Growth variable (Y) by 0.039817 assuming the other independent variables are constant in size.
3. The Inflation regression coefficient (X2) is 0.027160, stating that every additional 1% of Inflation (X2) will increase Economic Growth (Y) by 0.027160 assuming the other independent variables are constant in size.
4. The regression coefficient for the percentage of the working population (X3) is 5.480005 , stating that every increase in the percentage of the working population (X3) by 1% will increase the Economic Growth variable (Y) by 5.480005 assuming the other independent variables are constant in size.

Statistical Testing

Statistical testing aims to measure the estimation results of a model in order to explain these results. What is included in statistical testing is the determinant coefficient (R2), t statistical test, and f test.

1. Determination Coefficient Test (*Adjusted* ^{R2})
   Based on the panel data regression estimation results shown in Table 5.1. The coefficient of determination or R ^{2}obtained a result of 0.3696. This shows that 37% of the independent variables (Foreign Direct Investment, Inflation, Percentage of working population, Exchange Rate and Human Development Index) are able to explain the dependent variable, namely economic growth, while the remaining 63% is explained by independent variables outside this model.
2. F-Statistics Test (Simultaneous)
   Based on the panel data regression estimation results shown in Table 5.1. It can be seen that the probability value in 10 countries in FEM is 0.000. If the f value is significant < α = 0.05, it means that the independent variables have a joint influence on the dependent variable. It can be said that $H_1 = b_1, b_2, b_3$ f : 0, meaning that simultaneously there is an influence of the independent variables namely Investment (X1), Inflation (X2), Percentage of working population (X3), Exchange Rate (X4), and Human Development Index (X5) on the dependent variable (Economic Growth, Y).
3. t-Statistics Test (Partial Test)
   To test the influence of each independent variable on the dependent variable, this is done by comparing the probability value of each independent variable with its use (α = 5%). The following are the estimated parameter values and the resulting significance values:

Table 10. T-statistical test

Independent Variable	Prob. t-statistics	Relationship with independent variables	Information
Investment (X1)	0.026	Positive (+)	Accepted
Inflation (X2)	0.709	Positive (+)	Rejected

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Percentage of working population (X3)	0.001	Positive (+)	Accepted

Discussion

The Influence of Investment on ASEAN Economic Growth.

Based on the results of partial panel data testing, it shows that investment in Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Mianmar, Philippines, Singapore and Thailand have a positive and significant influence on ASEAN economic growth, The rapid investment of foreign direct investment and domestic investment is an indicator and reflects a good economy in a country because this investment is supported by the quality of human and natural resources and guarantees of security and political stability regulated by the government. It can be seen that the growth rate of foreign investment in ASEAN countries has fluctuated and it can be seen that the highest investment was in Indonesia in 2017 with a growth rate of 351.7 % . The main factor for the high level of foreign investment in Indonesia is Natural Resources (SDA), such as the availability of forest products, mining materials, natural gas and petroleum which are able to attract investors into the country. Meanwhile, the lowest investment was in Myanmar in 2018 with an investment growth rate reaching -67.74%. This can be caused by a lack of effectiveness both in terms of Natural Resources (SDA) and Human Resources (HR) where the average is still has a relatively low level of education, so it does not really attract foreign investors to invest in the country.

This is in accordance with the theory of Todaro and Smith (2009) regarding foreign direct investment on economic growth, where the growth of foreign direct investment in developing countries is very rapid. This is also in accordance with research (Dritsaki, 2014: 181) which states that foreign direct investment is an important factor in the process of economic growth in any country because the presence of foreign direct investment will lead to market opening and increase efforts to export in the host country so that it will encourage the creation of new jobs, strengthen technology transfer and increase total economic growth.

The Effect of Inflation on ASEAN Economic Growth

The t-statistical test results are in Table 5.8. shows that inflation in Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Mianmar, Philippines, Singapore and Thailand have an insignificant effect on economic growth, in other words the inflation variable has a small effect on economic growth because the results are not significant.

The increase and decrease in economic growth is influenced by aggregate demand, where aggregate demand itself is influenced by prices. In accordance with the law of demand where if price rises then demand falls. According to Keynesian theory, which was pioneered by JM Keynes, states that in the short term national output and employment opportunities are mainly determined by aggregate demand. Keynesians believe that monetary policy and fiscal policy must be used to overcome unemployment and reduce the rate of inflation

The results of this research are in contrast to research conducted by Wau, Taosige Sarah, Umi Mai Pritanti, Diana Ramadhani, Yesi Ikhsan, M Saiful (2022) which said that ever-increasing inflation will have a positive and significant impact on the level of economic growth in the long term. A low inflation rate because the value of *direct finance* is greater and more significant than *financial development* will have an impact on per capita economic growth.

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Appropriate policies are needed so that inflation does not increase. These policies include open market operations, *discount rates* , moral appeals and *reserve requirement* ratios which are usually called policies monetary policy to overcome inflation. Study

Datta (2011) conclude that In the last period inflation had a negative effect on economic growth and proved that the relationship between these two variables was stable in the long term. According to theory, rising inflation without the government handling it will cause the economy to become sluggish. Because when inflation occurs, the prices of domestic goods will increase. This increase makes a country's economy weak.

The results of this research are in line with research conducted by Riyat (2012), the inflation rate may not have an effect on economic growth due to the success of a country in suppressing inflation at a low level, namely below 10%. Therefore, even though the inflation rate has no effect on economic growth, if it is left alone until there is a high increase in the inflation rate, even to the point of hyper inflation, then this event will occur. will affect the economy so that economic growth becomes negative or decreases.

In conclusion, the data obtained shows that inflation in Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Mianmar, Philippines, Singapore and Thailand tends to have a small average of between 0% and 5%. A low inflation rate does not affect economic growth.

The Influence of Labor on ASEAN Economic Growth.

Based on the results of the significant t test, it shows that labor has a positive and significant effect on economic growth. Workers are individuals who offer skills and abilities to produce goods or services so that the company can make a profit, and for this, these individuals will receive a salary or wage according to the skills they have. According to Law Number 13 of 2003 concerning Manpower, it is explained that labor is every person who is able to do work to produce goods and/or services, both to meet their own needs and those of the community. By increasing the number of workers, it will be possible for a region to increase production in producing goods and services which can later spur economic growth in the region.

Todaro (2003) states that population growth and labor growth are traditionally considered to be one of the positive factors that spur economic growth. Workers who get jobs and work productively will contribute to economic growth. A larger workforce means increasing production levels, while greater population growth means the size of the domestic market is larger. However, it is still questionable whether the rapid rate of population growth will actually have a positive or negative impact on economic development.

These results are in accordance with research conducted by Alisman (2018) which found that the workforce has a significant negative effect on economic growth. A high level of labor force will not increase the profits of a region without being balanced by sufficient employment opportunities needed to carry out economic activities that can increase people's per capita income.

He Influence of Investment, Inflation and Labor on ASEAN Economic Growth.

Based on the results of the simultaneous F-statistics test, it is known that the probability value in 10 countries in FEM is 0.000. This means that simultaneously there is an influence of the independent variables, namely Investment, Inflation, Percentage of working population, Exchange Rate, and Human Development Index on the dependent variable Economic Growth.

This shows that if there is an increase in investment, inflation, percentage of working population, exchange rate and human development index, it will have an impact on increasing ASEAN economic growth significantly. Economic growth is an increase in the long-term capacity of the country concerned to provide various economic goods to its population. This increase in capacity is made possible by technological, institutional and ideological advances or adjustments to various existing conditions.

Economic growth is the process of increasing per capita output in the long term. The emphasis is on three aspects, namely: process, per capita output and the long term. Economic growth is a process, not a picture of the economy in a certain period. Through economic growth we can see the dynamic aspects of an economy, namely how an economy develops or changes over time.

CONCLUSION

Investment in Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Mianmar, Philippines, Singapore and Thailand have a positive and significant influence on ASEAN economic growth. Inflation in Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Mianmar, Philippines, Singapore and Thailand have no significant effect on economic growth, in other words the inflation variable has a small effect on economic growth because the results are not significant. Labor has a positive and significant effect on economic growth. This means that if labor participation increases, then economic growth will also increase. To increase economic growth in each ASEAN country, the 10 ASEAN countries should be able to increase their work productivity which is also accompanied by good work quality. The high productivity and quality produced by the workforce will certainly be an attraction for foreign investors who want to invest their business capital in the country. Then for business people in ASEAN, pay attention to exchange rate trends and export-import conditions that affect net exports. Consider more proactive currency risk management strategies, including hedging, to reduce the impact of exchange rate fluctuations on business performance

REFERENCE

Astot, V., & Sentosa, SU (2022). *The Effect of Trade Openness, Foreign Direct Investment, Government Expenditure, Labor Force, and Inflation on Economic Growth in ASEAN Countries* . *659* , 451–456.

Central Statistics Agency (BPS). 2022. Human Development Index 2021. Central Statistics Agency.

Central Statistics Agency (BPS). 2023. Human Development Index 2022. Central Statistics Agency

Febryani, T. (2017). Determinants of Economic Growth in 4 ASEAN Countries. *Journal of Applied Economics* , *2* (1), 10–20. https://doi.org/10.20473/jiet.v2i1.5501

Fuady, W. (2010). The Relationship between Investment and Taxes with Income Gaps and Economic Growth. *Dharma Economics* , *17* , 1–11. http://ejurnal.stiedharmaputra-smg.ac.id/index.php/DE/article/view/166/144

Gujarati, Damodar. (1995). Basic Econometrics, Third Edition, McGraw Hill International Editions.

Haidar, MI (2021). *Analysis of economic growth of ASEAN countries Analysis of economic growth of ASEAN countries* . *23* (3), 593–605.

Iffa KA, Jalu A P. (2022). Analysis of the Determinants of Economic Growth in Indonesia: 1991-2020.

Mankiw, N. Gregory, (2007). Macroeconomics Sixth Edition, Jakarta: Erlangga

Munzir, NAKS (2016). Analysis of Economic Growth in ASEAN Countries. *Journal of Development* , *4* (2), 18–26.

Ribeiro, R.S.M., Mccombie, J.S.L., & Lima, G.T. (2017). *Does Real Exchange Rate Undervaluation Really Promote Economic Growth?*

Riyad, Mohamad, Ekonomi, F., Magister, P., Dan, P., & Public, K. (2012). *Factors Influencing Economic Growth in Six ASEAN Countries Factors Influencing Economic Growth in Six ASEAN Countries* .

Rosnawintang, Tajuddin, Adam Pasrun, YP, & Saidi, LOS (2021). *Effects of Crude Oil Prices Volatility, the Internet and Inflation on Economic Growth in ASEAN-5 Countries: A Panel Autoregressive Distributed Lag Approach* . *11* (1), 15–21.

Sanida, N. (2021). *Determinants of Inflation in ASEAN-5 Countries (Indonesia, Malaysia, Philippines, Thailand and Vietnam)* . *5* .

Malaysia, Philippines, Thailand and Vietnam) . *5* .

Todaro, Michael, P. and Stephen C. Smith. (2003). Economic Development in the Third World, eighth edition. Jakarta : Erlangga

Sholekhah, U. (2018). Analysis of Determinants of Human Development Index (Case Study in 6 ASEAN Countries). *Journal of Development Economics* , 11.

Wau, T., Sarah, UM, Pritanti, D., Ramadhani, Y., & Ikhsan, MS (2022). *Determinants of Economic Growth of ASEAN Countries: Panel Data Models Determinants of Economic Growth of ASEAN Countries: Panel Data Models* . *13* (28), 163–176. https://doi.org/10.33059/jseb.v13i2.5205.Kata

Winarno, Wing Wahyu. (2007). Econometric and Statistical Analysis with Eviews. Yogyakarta: UPP STIM YKP