



## Factors Determining Stock Indices In Asean Countries

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### Article Info

#### Article history:

Received September 5, 2025

Revised February 28, 2026

Accepted March 12, 2026

#### Keywords:

Exchange Rate,  
GDP per Capita,  
Inflation Rate,  
Interest Rate,  
Shanghai Stock Index

### ABSTRACT

*This study aims to examine and analyze the effect of GDP per capita, inflation, interest rates, and the local currency exchange rate against the US dollar and the Shanghai stock index on the stock price index, with interest rates as a moderating variable in ASEAN during the 2014 – 2023 period. The sampling method used was purposive sampling, and six countries were obtained with a total of 720 observational data points. The analysis method used was Moderated Regression Analysis (MRA) with the Eviews application. The results show that GDP per capita, inflation, and the exchange rate have a positive and significant effect on the stock price index. Meanwhile, inflation has a negative and significant effect on the stock price index and the Shanghai stock index has a positive but not significant effect on the stock price index. Interest rates are able to moderate the effect of GDP per capita, inflation and the exchange rate on the stock price index. However, interest rates are not able to moderate the effect of the Shanghai stock index on the stock price index in ASEAN countries. This indicates the importance and necessity for local authorities to regulate macroeconomic dynamics on the stock price index in ASEAN. As well as the need to increase the integration of China's financial market with ASEAN's financial markets to enhance market integration and effectiveness.*

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## 1. INTRODUCTION

Southeast Asian countries have come together to form the Association of Southeast Asian Nations (ASEAN), particularly through the launch of the ASEAN Economic Community (AEC) in 2015, which aims to unify economies in investment, trade and policy harmonization [1]. Initiative such as the ASEAN Trading Link, which connects the stock exchanges of Malaysia, Singapore and Thailand, demonstrate a commitment to expanding cross-border access and creating greater liquidity in regional stock markets. Although economic integration has shown positive developments, ASEAN capital market remain vulnerable to external shocks. The Asian Financial Crisis in 1997, the global crisis in 2008, and the COVID-19 pandemic highlight the persistent vulnerabilities of ASEAN capital markets, demonstrating that stability in the region remains fragile despite progress in integration [2]. When the pandemic broke out, most stock indices in ASEAN fell sharply.

Figure 1: Changes in Stock Market Indices in Southeast Asia During the Pandemic

Indeks Pasar	Januari 2020	Maret 2020	Perubahan (%)
IHSG (Indonesia)	6.300	3.937	-37,5%
FTSE KLCI (Malaysia)	1.588	1.219	-23,2%
SET Index (Thailand)	1.600	1.053	-34,2%
PSEi (Filipina)	7.800	4.623	-40,7%
STI (Singapura)	3.252	2.208	32,1%
VN-Index (Vietnam)	990	660	-33,3%
MSEC (Myanmar)	500	312	-37,6%
CSX index (Kamboja)	820	590	-28,0%
LSX Composite (Laos)	1.150	872	-24,2%
BSIT Index (Brunei)	1.300	1.020	-21,5%

Source: www. ojk.go.id

Although economic integration has shown positive developments, ASEAN capital markets remain vulnerable to external shocks. Empirical studies during the COVID-19 pandemic shows that ASEAN-5 stock markets experienced heightened volatility and spillover effects, indicating that their stability remains vulnerable to global shocks and not yet fully secured [3]. When the pandemic broke out, most stock indices in ASEAN fell sharply. Indonesia JCI corrected by 37.5% Philippines' fell by around 40.7% and Vietnam's VN-Index fell by around 33.3% [4]. The decline in stock indices implied a decline in investor confidence [5] a reduction in capital flow and an increase in systemic risk to regional financial stability [6]

This had a serious impact on the stability of stock markets in the region. One of the main causes of volatility was uncertainty in economic and fiscal policies to address the impact of the pandemic. For example, the government decisions regarding social restrictions, declining economic activity, supply chain disruptions and uncertainty over economic stimulus policies. This triggered a wave of massive sell-offs that exacerbated market fluctuations and resulted in sharp fluctuations in stock indices in various ASEAN countries [7]

Stock market dynamics in Southeast Asia are influenced by various factors. Domestically macroeconomic indicators play a crucial role. Per capita gross domestic product (GDP) growth, for example, is often used as a reflection of people's purchasing power and economic performance. Rising GDP per capita often reflects stronger purchasing power, which tends to stimulate investment and strengthen stock indices in emerging markets [8]. Conversely, uncontrolled inflation diminishes real income and reduces consumption, which in turn discourages investor participation in stock markets [9]. On the other hand, interest rates play a critical role in stock market movements because higher rates increase firms's capital costs and encourage investor to shift toward safer assets [10]. In addition to domestic factors, external influences cannot be ignored. The Shanghai Stock Exchange in China is often used as a benchmark for international investors because China is a major trading partner for many ASEAN countries.

Although there have been many studies discussing the influence of macroeconomic variables on stock price indices in ASEAN countries. Most studies are still limited to analyzing only one or two factors without considering the interaction of variable more comprehensively. Furthermore, the role of interest rates as a moderating variable in the relationship between GDP per capita, inflation, exchange rates, and external influence, such as the Shanghai index on stock price indices in ASEAN has rarely been studied. Therefore, this study attempts to fill this gap by analyzing the influence macroeconomic variables with interest rates as a moderating variable. It focuses on six ASEAN countries, namely

Indonesia, Malaysia, Singapore, Thailand, Vietnam, and the Philippines with a research period from 2014 to 2023.

## 2. METHOD

This study employs panel data statistical modeling to analyze the relationship between various economic factors and the stock index in ASEAN countries which are Indonesia, Malaysia, Singapore, Thailand, Vietnam, and Philippines. The analysis investigates how GDP per capita, inflation rate, currency exchange and the Shanghai Stock Index are related to the stock index, with interest rates serving as a moderator variabel. The research uses scondary data in monthly from 2014 to 2023. This data, which includes GDP per capita, inflation rates, exchange rate history, the Shanghai stock index, and stock price indices of ASEAN countries, was sourced from various online and the official website of the countries studied. Purposive sampling, a technique based on specific criteria, was used to select the sample countries. The standards for country section were :

- a. the country had an active stock exchange throughout the 2014-2023 period
- b. complete and relevant data for each variable was available

Based on these criteria, six countries were selected, resulting in 720 sample data. For the regression analysis, three potential models could be used : the Common Effect Model, the Fixed Effect Model, and the Random Effect Model. To determine the most suitable model, a series of tests-the Chow Test, Hausman Test, and Lagrange Multiplier Test – were conducted.

## 3. RESULTS AND DISCUSSION

### 3.1 Descriptive Data Analysis

Table 1. Test Results of Descriptive Statistics

	<b>Log_Indx (Y)</b>	<b>Log_GDPkapita (X1)</b>	<b>Log_In (X2)</b>	<b>Kurs_Arc (X3)</b>	<b>Log_SSIX (X4)</b>	<b>Log_SB (Z)</b>
Mean	7.8439	8.8835	-0.0032	0.1638	8.0265	1.0622
Median	7.8032	8.3411	-0.0043	0.0268	8.0545	1.1786
Max	9.0766	11.130	2.9684	0.7340	8.4409	2.0476
Min	5.2602	7.7994	-2.7783	4.0905	7.6119	-1.0498
Std. Dev	0.7727	1.0498	0.9977	0.2486	0.1514	0.6805

Source: Data processed by Researches, 2025

Statistical analysis of macroeconomic variabels show significant variation among ASEAN countries. The GDP per capita variable (in log) has a average of 8.8835 and a standard deviation of 1.0498, with a large range of value from 7.7994 to 11.1304, indicating clear economic inequality. The median value which is lower than the average, indicates the presence of outliers at the upper end, namely countries with very high GDP per capita. Meanwhile, the inflation variable (in log) has an average of -0.0032 and a standard deviation of 0.99, with a range from -2.78 to 2.97, indicating fairly large fluctuations. Its media value, -0.0044, which is nearly identical to the average, indicates a relatively symmetrical distribution.

The exchange rate variable (Kurs\_Arc) shows an average of 0.16 and a median value of 0.027, with a standard deviation of 0.25 and a maximum value of 0.73. This right-skewed data distribution indicates that a small number of countries experienced very high exchange rate changes, reflecting instability between countries. For the Shanghai Stock Index (Log\_SSIX), the mean of 8.03 and low standard deviation of 0.15 reflect stable movement. The narrow range of value (7.61 to 8.44) and median of 8.05, which is close to the mean, indicate a symmetrical and normal distribution. For the interest rate variable (Log\_SB(z)), the mean value of 1.06 and the median value of 1.8 with a wide range ( -10.5 to 2.05) and standard deviation of 0.68 indicate significant policy heterogeneity. Meanwhile, the stock

index variable (Log\_Indx) has average of 7.84 and a standard deviation of 0.77, with data ranging from 5.26 to 9.08. The median value, which is close to the average, indicates that the data tends to be normally distributed without significant extreme deviations.

### 3.2 Structural Break Test (Chow Test)

Table 2. Results of the Chow Test

Effect test	t-statistic	d.f	Prob.
Cross-Section F	2557.306294	(5, 708)	0.0000
Cross-Section Chi-Square	2113.359681	5	0.0000

Source: Data processed by Researches, 2025

Based on Table 2, the Chow test shows significant results with an *F Probability value* of 0.0000 < significance level of 0.5. Thus it can be concluded that the null hypothesis is rejected. Indicating heterogeneity between cross-section unit and the Fixed Effect Model is more appropriate for analysis.

### 3.3 Hausman Test

Table 3. Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq .d.f	Prob.
Cross-Section F	954.329999	5	0.0000

Source: Data processed by Researches, 2025

Based on table 3, the Chow test shows the significant results with an F probability value of 0.0000 < significance level of 0.05. Thus it can be concluded that the null hypothesis is rejected, indicating that there is no correlation between individual effects and explanatory variables and that the Fixed Effect Model is more appropriate for analysis.

In this study, the test results clearly reject H0 and accept the alternative hypothesis (Ha). This indicates that there is systematical variation between observation units [11]. The FEM method is able to control for unobserved effects inherent in each entity [12]. Panel data analysis using the Fixed Effect Model is considered appropriate because it controls for unobserved heterogeneity and minimizes bias across individual entities [13]. Therefore, this study does not apply the Lagrange Multiplier Test. This is because the results of the Chow and Hausman tests consistently show that the Fixed Effect Model (FEM) is the most appropriate method.

### 3.4 T test

Table 4. Results of the t-test

Variabel	Coefficient	Std. Error	t-statistic	Prob.
C	2.2116	1.1540	1.9163	0.0557
Log_gdpkapita	0.4930	0.1429	3.4485	0.0006
Inf_z	0.0225	0.0114	1.9676	0.0495
Kurs_Arcsinh	4.2708	0.5378	7.9408	0.0000
Log_SSIX	0.0828	0.0937	0.8834	0.3773
Log_SB	-3.5612	0.5823	-6.1156	0.0000
Log_gdp_Log_SB	0.3999	0.0736	5.4280	0.0000
Inf_z_Log_SB	-0.0318	0.0087	-3.6474	0.0003
Kurs_Arcsinh_Log_SB	-1.4655	0.2889	-5.0725	0.0000
Log_SSIX_Log_SB	0.0240	0.0660	0.3636	0.7163

Source: Data processed by Researches, 2025

Based on the test results in table 4 above, the following equation model used in this study is :  

$$INDX = 2.2116 + 0.4930\log\_gdp + 0.0225\inf\_z + 4.2708kurs\_arcsinh - 0.0828\log\_ssix - 3.5612\log\_sb + 0.3999\log\_gdpkapita\_log\_sb - 0.0318\inf\_z\_log\_sb - 1.4655kurs\_arcsinh\_log\_sb + 0.0240\log\_ssix\_log\_sb$$

Based on the regression equations above, the following is a discussions of the relationship between GDP per capita, inflation, interest rates and the Shanghai Stock Index with the ASEAN stock price index, with interest rates as the moderating variable for the period 2014-2023: .

1. The constant (C) has a coefficient value of 2.2116 with a significance level of  $0.000 < 0.05$ , indicating that it is statistically significant
2. GDP per capita (Log\_Gdpkapita) shows a coefficient of 0.4930 with a p-value of  $0.0006 < 0.05$ , indicating statistical significance in this model. It means, GDP per capita in log form, shows a positive and significant influence on the stock price index
3. Inflation (inf\_z), in form the z-score, has a coefficient of 0.0225 with a probability value of  $0.0006 < 0.05$ . Indicate a significant positive influence between inflation in the form transformation and the stock price index
4. The exchange rate (Kurs\_Arcsinh) has a coefficient of 4.270 with a probability value of  $0.0495 < 0.05$ , indicating a positive and significant relationship between the exchange rate (in Arcsinh transformation form) and the stock price index in ASEAN countries.
5. The Shanghai Stock Index (Log\_SSIX) has a coefficient of 0.0828 with a p-value of  $0.03773 > 0.05$ , so it is considered insignificant in this model. The influence of Shanghai stock market (in logarithmic form) on the stock price index in ASEAN countries is positive but not strong enough to influence this model.
6. The interest rate (Log\_SB) has a coefficient of -3.5612 with a p-value of  $0.0000 < 0.05$ , indicating a negative and significant relationship between the interest rate (in logarithmic form) and the stock price index in ASEAN countries.

### 3.5 F test

Table 5. F Test Results

<b>F-Statistic</b>	<b>1100.175</b>
Prob (F-Statistic)	0.000000

Source: Data processed by Researches, 2025

Based on the statistical output above, the Prob-value obtained is  $0.000 < 0.05$ , which can be interpreted as the independent variables, GDP per capita, inflation, currency exchange, the Shanghai stock index and interest rate as a moderating variable simultaneously influence the stock price index variable in ASEAN countries in the form of transformation.

### 3.6 Coefficient of Determination (R<sup>2</sup>)

Table 6. Koefisien Determinasi (R<sup>2</sup>)

<b>R-Squared</b>	<b>0.956469</b>
Adjusted R-Squared	0.955600

Source: Data processed by Researches, 2025

Based on the statistical output above, the adjusted R-Squared value is 0.955600 or 95.56%. Table 6 above indicates that the variation of GDP per capita, , inflation, currency exchange, the Shanghai stock index and interest rate as a moderating variable can explain the variation in the rise or fall of stock price

index variables in ASEAN countries for period 2014 – 2023 by 95.56%. The remaining 4.44% can be explained by other variables outside the regression model in this study.

### 3.7 Regression Analysis with Moderating Variables (MRA Test)

Table 7. Results of the MRA Test

Variabel	Coefficient	Std. Error	t-statistic	Prob.
C	2.2116	1.1540	1.9163	0.0557
Log_gdpkapita	0.4930	0.1429	3.4485	0.0006
Inf_z	0.0225	0.0114	1.9676	0.0495
Kurs_Arcsinh	4.2708	0.5378	7.9408	0.0000
Log_SSIX	0.0828	0.0937	0.8834	0.3773
Log_SB	-3.5612	0.5823	-6.1156	0.0000
Log_gdp_Log_SB	0.3999	0.0736	5.4280	0.0000
Inf_z_Log_SB	-0.0318	0.0087	-3.6474	0.0003
Kurs_Arcsinh_Log_SB	-1.4655	0.2889	-5.0725	0.0000
Log_SSIX_Log_SB	0.0240	0.0660	0.3636	0.7163

Source: Data processed by Researches, 2025

According to the table above and the MRA results shown in table , it can be inferred as follows:

1. The result shows that the interaction of the interest rate variable (Log\_SB) has a significant effect with a p-value  $0.000 < 0.05$ . Then the interest rate as moderating variable interacts with the GDP per capita variable (Log\_gdp\_Log\_SB) on the stock price index with a significance value of  $0.0000 < 0.05$ , thus it can be stated as a quasi-moderating variable and can be concluded that the interest rate variable (Log\_SB) can significantly strengthen or weaken the relationship between GDP per capita and the stock price index in ASEAN countries
2. The result shows that the interaction of the interest rate variable (Log\_SB) has a significant effect with a p-value  $0.000 < 0.05$ . Then the interest rate as moderating variable interacts with the inflation rate variable (Inf\_z\_Log\_SB) on the stock price index with a significance value of  $0.0003 < 0.05$ , thus it can be stated as a quasi-moderating variable and can be concluded that the interest rate variable (Log\_SB) can significantly strengthen or weaken the relationship between inflation rate and the stock price index in ASEAN countries
3. The result shows that the interaction of the interest rate variable (Log\_SB) has a significant effect with a p-value  $0.0000 < 0.05$ . Then the interest rate as moderating variable interacts with the exchange rate variable (Kurs\_Arcsinh\_Log\_SB) on the stock price index with a significance value of  $0.0000 < 0.05$ , thus it can be stated as a quasi-moderating variable and can be concluded that the interest rate variable (Log\_SB) can significantly strengthen or weaken the relationship between exchange rate (Kurs\_Arcsinh) and the stock price index in ASEAN countries
4. The result shows that the interaction of the interest rate variable (Log\_SB) has a significant effect with a p-value  $0.0000 < 0.05$ . Then the interest rate as moderating variable interacts with the Shanghai stock index variable (Log\_SSIX) on the stock price index with a significance value of  $0.7163 > 0.05$ , thus it can be concluded that the interest rate variable (Log\_SB) unable to strengthen or weaken the relationship between Shanghai stock index (Log\_SSIX) and the stock price index in ASEAN countries.

### 3.8 Discussion

The finding of this study that GDP per capita has a significant positive effect on stock prices indices in ASEAN countries supports the macroeconomic. Increased household income can boost

consumer spending and investment, leading to better corporate performance and rise in stock prices by Mankiw [14]. The findings of this study are consistent with research conducted by Lee [15], which revealed that GDP per capita has a significant effect in stock price indices in the Malaysian and Singaporean capital market

The finding show that inflation has a positive and statistically significant effect on stock price indices in ASEAN countries during the period from 2014 – 2023. In other words, the rising of inflation in ASEAN countries generally responded to with an increase in stock price indices during period observed. The finding supports research by Saputro [16] which show that inflation in Indonesia and Malaysia has a positive effect on stock price index movements, especially when inflation remains at a moderate level and can be predicted by the market. Stock exchange in ASEAN countries tend to be resistant to moderate inflation and may even increase because it considered an indicator of economic growth according to Candrra [17].

The finding shows that exchange rates have a positive and statistically significant effect on stock price indices in ASEAN countries. This means that when the value of local currencies against the US dollar rises, stock price indices in ASEAN countries also tend to increase. This finding is in line with the results presented by Nguyen [18] exchange rate has a positive impact on stock price indices in Vietnam and Malaysia, especially when export companies dominate the index. The same hing is explained by Putra and Santosa [19] , who argue that an exchange rate that tends to be stable, even if weak, can increase export competitiveness and strengthen the stock markets in Indonesia and Philippines.

The finding shows that the Shanghai stock index does not have a statistically significant effect on stock price indices in ASEAN countries. Even though China is one of the largest trading partners in ASEAN countries and has an important position in the Asian Economy. This study found that the integration between the capital markets of Shanghai Stock Exchange and stock exchanges in the ASEAN region is still not strong enough to form a significant direct relationship. This finding is consistent with research conducted by Sukamana and Ibrahim [20], which indicates that the impact of the Chinese stock index on stock markets in Southeast Assia is still moderate and not significant in contemporary terms.

The test of interest rates as moderation variable, shows that interest rates significantly affect the relationship between GDP per capita, inflation, and exchange rates with the stock price index. This evidenced by a p-value of less than 0.05 for each interaction and is categorized as Quasi-Moderation. However, interest rates cannot moderate the relationship between the Shanghai Stock Index and stock price indices in ASEAN countries. This is because the p-value for this interaction is much greater than 0.05 which is 0.7163. On the other hand, this study is limited to only six countries in the ASEAN region, so the results cannot be generalized to other countries outside the countries that were the objects of observation. In this syudy, the factors used focused on macroeconomics, such as GDP per capita, inflation, exchange rates, interest rates, and the Shanghai Stock Index, without including other factors.

Based on the results of study presented, researchers formulate the implication. Which are, first the findings imply that macroeconomic stability and growth play a very important role in determining the direction of the capital market. The government needs to maintan economic growth, price stability,a and exchange rates in order to maintain the investment climate. Monetary authorities need to formulate policies that not only consider inflation targets, but also consider their impact on the border financial market. This implications is a signal to ASEAN policymarkers to strengthen economic coordination and integration in order to improve the efficiency of region stock markets.

#### **4. CONCLUSION**

This study aims to explore further the factors determining stock indices in six ASEAN countries. By testing the influence of GPD per capita, inflation rates, exchange rates, and the Shanghai Stock Index

on stock price indices moderated by interest rates in Indonesia, Malaysia, Singapore, Thailand, Vietnam and Philippine during the period 2014 – 2023. The results of this study are as follows :

- a. GDP per capita has a positive and significant effect on stock price indices in ASEAN countries
- b. Inflation rates have a positive and significant effect on stock price indices in ASEAN countries
- c. Exchange rates have a positive and significant effect on stock price indices in ASEAN countries
- d. Shanghai stock index has a positive and insignificant effect on stock price indices in ASEAN countries
- e. Interest rates have a negative and significant effect on stock price indices in ASEAN countries
- f. Interest rates can moderate the relationship between GDP per capita and the stock price index in ASEAN countries
- g. Interest rates can moderate the relationship between inflation rates and the stock price index in ASEAN countries
- h. Interest rates can moderate the relationship between exchange rates and the stock price index in ASEAN countries
- i. Interest rates can not moderate the relationship between Shanghai stock index and the stock price index in ASEAN countries

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