Government Policy as a Variable to Control the Influence of Exchange Rates, Interest Rates, and Inflation on ICI

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Abstract
This research explores how inflation, exchange rates, and interest rates impacted the Jakarta Composite Index between 2016 and 2022. It also aims to determine the changes in the impact of exchange rates, inflation, and interest rates on the Index before and after the implementation of government policies. Key policies examined include the enforcement of large-scale social restrictions (PSBB) in April 2020 due to the pandemic of COVID-19, and a reduction of the BI7DRR interest rate by 25 basis points in October 2019. The study employs a quantitative experimental hypothesis and gathers data from www.bps.go.id, www.bi.go.id, and www.kemendag.go.id. Using purposive sampling for analysis, and SPSS version 26 for data processing, the study reveals that in the absence of government intervention, exchange rates, interest rates, and inflation significantly influence the Jakarta Composite Index. Specifically, while this exchange rate positively affects the Index, interest rates have a negative impact, and inflation also contributes positively. Conversely, following the PSBB policy in April 2019, both the exchange rate and interest rates negatively affected the Index, with exchange rate showing a significant negative impact, interest rate continuing to affect negatively, and inflation still having a positive influence.

Keywords: Exchange Rate, Interest Rate, Inflation, ICI, Government Policy.

A. INTRODUCTION
Capital markets serve as a critical economic mechanism and financial tool within a nation’s economy. They offer a platform for companies to raise capital and for investors to invest in various assets like stocks, mutual funds, and bonds. The performance of companies can be gauged through their share value, prominently reflected in the Indonesia Composite Index (ICI). The ICI, a vital indicator of capital market growth, tracks the share prices of listed companies, providing insights into the overall performance of the national stock market. Investors closely monitor the ICI, utilizing it as a benchmark for investment decisions.

Factors such as exchange rates, interest rates, and inflation significantly impact the JCI. Government policies also play a crucial role in shaping stock market dynamics. This study aims to use government policy as a control variable to isolate the influence of pure economic factors on the ICI. The research seeks to determine the real impact of exchange rates, interest rates, and inflation on the JCI, and to ascertain if these impacts vary before and after the implementation of government policies. The study is titled "Government Policy as a Control Variable for the Influence of Interest Rates, Exchange Rates, and Inflation on the ICI".
B. LITERATURE REVIEW

1. Indonesia Composite Index (ICI)

In their 2022 study, Ramadhan and Simamora highlighted the significance of the Indonesia Composite Index (ICI) as a comprehensive measure of the stock market performance of listed shares. The ICI, calculated based on real-time average share prices, serves as a primary indicator of the health and development of the Stock market. It acts as the barometer for the movements in the capital market, with its trends closely mirroring the fluctuations in share prices.

An increasing trend in the JCI typically indicates a corresponding rise in share prices within the capital market. Conversely, a weakening in the price index suggests a decline in share values. This direct correlation between the JCI trends and share price movements makes the ICI a vital tool for investors and analysts in assessing the current state and potential future direction of the capital market.

2. Exchange Rate (Exchange Rate)

The exchange rate is a monetary value that gauges the relative worth of a nation’s currency in comparison to the currency of another country which is agreed upon and used in international trade between different countries (Widia & Azizah, 2021). Exchange rates can experience two types of changes, namely appreciation and depreciation. Appreciation and depreciation are two critical dynamics in currency exchange rates. Appreciation of a currency, like the rupiah, takes place when the demand for it is higher than its available supply. This imbalance leads to an increase in the rupiah’s value relative to other currencies, causing the exchange rate to rise. Conversely, depreciation occurs when the demand for the rupiah is lower than its supply. In such a scenario, the excess supply compared to demand drives down the value of the rupiah, resulting in a decline in its exchange rate. These fluctuations reflect the constantly changing economic conditions and can significantly impact international trade and financial markets.

3. Interest rate

According to the book Corporate Finance written by (Berk & DeMazo, 2019), interest rate is the returns or costs that must be paid by parties who borrow or lend money within a certain period of time. Interest rates reflect the level of risk, inflation rate, and time preferences of the parties involved in a financial transaction. There are two main categories of bank interest, namely interest received from deposits and interest charged on loans. Savings interest is remuneration from the bank to customers for the customer’s services in saving their money in the bank.

4. Inflation

According to (Bodie et al., 2018), inflation is an increase in prices. Actually Inflation is often associated with an economy that is “overheating,” meaning demand goods and services exceed production capacity, causing prices to rise. Raising the
prices of one or two products does not qualify as inflation unless the price hike extends and influences the prices of other products.

5. Government policy

Based on data from the State Civil Service Commission Library, government policies are basically policies that address society at large, including the state, various groups in society, and are in the public interest. Implementation of this policy can be direct or indirect, and involves various aspects of public life. For this reason, the term often used to refer to this kind of policy is public policy. The government policy used in this research is monetary policy in the form of reducing BI7DRR by 25bsp in October 2019 and government policy in the form of implementing PSBB in April 2020 in the context of dealing with the Covid pandemic.

6. Research Framework and Hypotheses

In their 2018 study, Ignatius Christian Pradhypta, Rudy C and Deni Iskandar. Tarumingkeng investigated the determinants affecting the Indonesia Composite Index (ICI) in the Indonesian Stock Exchange. Their findings indicated that several factors played a role: the Hang Seng stock index significantly influenced the ICI, Fluctuations in the Rupiah's exchange rate with the US Dollar had an effect on the ICI, and the rate of inflation also had an effect on it. However, the study could not conclusively determine the impact of Bank Indonesia's interest rates on the ICI.

In their 2021 study, Paryudi, Gendro Wiyono, and Risal Rinofah explored how SBI interest rates, exchange rates, and Inflation has repercussions on the Indonesia Composite Index at the Indonesia Stock Exchange. The study uncovered several crucial observations: the Index was notably affected negatively by the exchange rate, with a significant impact. In contrast, the influence of interest rates on the Index was negative but lacked significance. Likewise, the impact of inflation on the Index was negative and non-significant. Intriguingly, the collective influence of exchange rates, interest rates, and inflation on the Index was determined to be positive and significant.

In 2022, Kholidah Fitri conducted a study to assess the impact of exchange rates, inflation rates, and interest rates on the Indonesia Composite Index (ICI) at the Indonesian Stock Exchange during 2016-2020. The study’s findings indicated that inflation had a notable impact on the ICI. In contrast, the exchange rate did not show a significant effect on the ICI. However, The ICI was significantly impacted by the variable of interest rate, suggesting that interest rates can serve as a key indicator for investors in making stock market investment decisions.

Based on the framework above, the research model and research hypotheses of this study are stated as follows:
C. METHODS

For this study, the data was sourced from external, previously published materials, specifically from the Badan Pusat Statistik (www.bps.co.id), Bank Indonesia (www.bi.go.id), and the Kementerian Perdagangan (www.kemendag.go.id). Secondary data collected from other parties was used in this research. Data collection did not occur directly, and the authors used information from historical records that can be accessed through official government websites.

In this research, the population comprises data on the exchange rate of the rupiah against the US dollar, interest rates represented by the BI7DRR, inflation figures provided by the Badan Pusat Statistik, and the values of the Indonesia Composite Index. The criteria chosen in determining the sample are:

1. The Indonesia Composite Index (ICI), which has been actively traded on the Indonesia Stock Exchange since 2016-2022.
2. The sample used includes the entire research population with a total sample of 84, originating from 12 months per year during the period 2016-2022.

D. RESULTS AND DISCUSSION

1. Analysis Results Before Government Policy

<table>
<thead>
<tr>
<th>Model Summaryb</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.528a</td>
<td>.279</td>
<td>.252</td>
<td>589.62886</td>
<td>1.567</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), IN, NT, SB
b. Dependent Variable: ICI
The result of the coefficient of determination test reveals that the R2 value is 0.279, or 27.9%, indicating that the exchange rate, interest rate, and inflation variables as a whole can be responsible for variations in the ICI of 27.9%. Meanwhile, as much as 72.1% of other variations in the ICI cannot be explained by these three variables and may be explained by other factors that are not the focus of this research.

Table 2. Model Fit Test (F Test)

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>10741528.879</td>
<td>3</td>
<td>3580509.626</td>
<td>10.299</td>
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<tr>
<td></td>
<td>Residual</td>
<td>27812975.180</td>
<td>80</td>
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</tr>
<tr>
<td>2</td>
<td>Total</td>
<td>38554504.060</td>
<td>83</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: ICI
b. Predictors: (Constant), IN, NT, SB

The F test conducted in the study yielded a significance value of 0.000. This finding is noteworthy as it is below the predetermined significance threshold of 0.05, given that 0.000 is less than 0.05. This suggests that at least one independent variable in the regression model has a notable impact on the ICI. Besides the exchange rate, inflation, and interest rate, the movements of the JCI are also affected by a range of other elements such as global economic circumstances, social factors, and political conditions.

The constant in the model is recorded at 3106.308. This indicates that if the exchange rate, interest rates, and inflation were to remain unchanged, the JCI would stand at a value of 3106.308. It’s crucial to emphasize that the JCI is also subject to influences from factors not covered in this study, including political, social, and global economic elements.

The significance level (p-value) for the exchange rate variable is 0.011, falling below the alpha threshold (0.011 < 0.05). With a coefficient of 0.254, it can be deduced that the ICI is positively and significantly influenced by the exchange rate. An appreciation in the exchange rate (upgrade) is likely to enhance the performance of import-oriented companies. This improvement may lead to reduced costs for raw materials, higher profit margins, and consequently, it can have an effect on the movement of the JCI.

The p-value associated with the interest rate variable is 0.000, substantially below the alpha threshold (0.000 < 0.05), and it has a coefficient of -308,757. This shows that interest rate has a significant and negative impact on the ICI.

The p-value for the inflation variable stands at 0.001, below the set alpha level (0.001 < 0.05), and it has a coefficient of 229.061. This suggests that inflation positively and significantly affects the ICI.
2. Results of Analysis Following the Implementation of a 25 Basis Point Interest Rate Cut as a Government Policy in October 2019

Table 3. Determination Coefficient Test ($R^2$)

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.801*</td>
<td>.642</td>
<td>.609</td>
<td>425.98573</td>
<td>1.653</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), INxKP, IN, SB, NT, SBxKP, KP, NTxKP
b. Dependent Variable: ICI

According to the findings of the Coefficient of Determination Test that was carried out, and it was found that the $R^2$ value was 0.642 or the equivalent of 64.2%. This means that independent variables such as government policy, interest rates, exchange rates, and inflation are collectively responsible for around 64.2% of the variation in the ICI variable. Other factors not discussed in this study still influence around 35.8% of the ICI variation.

Table 4. Model Fit Test (F Test)

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
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<td>3537607.453</td>
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<td>Residual</td>
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<td>76</td>
<td>181463.841</td>
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<tr>
<td>Total</td>
<td>38554504.060</td>
<td>83</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: ICI
b. Predictors: (Constant), INxKP., IN, SB, NT, SBxKP., KP, NTxKP.

The outcomes of the F test reveal a significance value of 0.000. Given that this value is lower than the alpha significance score of 0.05, it suggests the presence of at least one independent variable within the regression model that significantly impacts the ICI.

The constant value has a value of 271,453 this indicates that when the exchange rate, interest rates and inflation remain constant, the JCI will have a constant value of 271,453. JCI movements are also influenced by other factors outside this research, such as political, social and global economic factors.

The coefficient for the exchange rate in the regression analysis is 0.587, and its significance value (p-value) stands at 0.000. This means if the exchange rates have a positive and significant effect on the ICI. When the rupiah exchange rate strengthens (foreign currency falls), importing companies can reduce raw material costs, which can increase profit margins. An increase in company profits has the potential to encourage share prices to rise and ultimately influence the JCI movement.

The regression coefficient for the variable representing the interest rate is -319.542, and it carries a significance value (p-value) of 0.01. This shows that interest rates have a negative and significant influence on the ICI. Low interest rates will encourage investors to invest in the stock market, which can increase demand for shares and the value of the ICI.

The inflation variable has a regression coefficient of -259.042, and its significance value (p-value) is 0.106. This indicates that inflation has a negative but not significant effect on the ICI. When there is an increase in the price of goods within
a certain period of time, it can result in a decrease in the company’s sales and profits, which can affect the value of the company’s shares and the ICI value.

The KP variable (Government Policy) is a dummy variable with a positive coefficient of 16722.057 and a significance value (p-value) of 0.000. This shows that government policies provide a positive and significant response to the exchange rate, interest rates and inflation on the ICI. The KP variable coefficient is a dummy variable coefficient where the dummy value is 0 for the time before the government policy and dummy 1 for the time after the government policy. The KP coefficient value = 16722.057 with a significance of 0.000, meaning that when there is government policy it will provide a positive and significant response to the exchange rate, interest rate and inflation variables on the ICI value.

The regression coefficient for the variable NTxKP is -1.247, and it is statistically significant at the 0.000 level, meaning that when there is a government policy in the form of reducing interest rates by 25 bsp in October 2019, the exchange rate has a negative and significant effect on the ICI. If NTxKP rises by 1% assuming the other independent variables are constant, it will cause the ICI to fall by 1,247. The government’s policy of lowering interest rates will encourage investors to invest in stock instruments, so that this can trigger an increase in the ICI value.

The regression coefficient for the SBxKP variable = -374.806, with a significance value of 0.020, meaning that when there is a government policy in the form of reducing interest rates by 25 bsp, the interest rate variable has a negative effect on the ICI. So, when the SB value increases by 1%, with the other independent variables constant, it will cause a decrease in the ICI of 374,806.

The regression coefficient for the INxKP variable = 854.725 with a significance level of 0.000, meaning that when there is a government policy in the form of reducing interest rates by 25 bsp, inflation has a positive effect on the ICI. When the inflation value increases by 1%, assuming other variables are constant, it will cause an increase in the ICI value of 854,725.

3. Analysis Results After Government Policy in the Form of Implementation of PSBB April 2020

Table 5. Coefficient of Determination Test(R²)

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adj R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>.715a</td>
<td>.511</td>
<td>.466</td>
<td>497.91310</td>
<td>1.557</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), INxKP, IN, NT, SB, SBxKP, KP, NTxKP

b. Dependent Variable: IHSG

The test for the coefficient of determination resulted in an R² value of 0.511, equivalent to 51.1%. It’s implies that the variables analyzed in this research, including interest rates, exchange rates, and inflation, account for approximately 51.1% of the variations in the ICI. Nevertheless, about 48.9% of the ICI’s variation is attributed to
other factors not covered in this research, like political factors, global economic trends, and additional economic variables.

### ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
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<td>2816111.020</td>
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<tr>
<td>Residual</td>
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<td>76</td>
<td>247917.459</td>
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<tr>
<td>Total</td>
<td>38554504.060</td>
<td>83</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: II!SG
b. Predictors: (Constant), INxKP, IN, NT, SB, SBxKP, KP, NTxKP

The F test outcomes indicate a significance level of 0.000. This level is below the predetermined alpha threshold of 0.05. Hence, it can be deduced that at least one independent variable in the regression model exerts a significant impact on the ICI.

The constant in the model is recorded at 7221.056. This show that if the exchange rate, interest rates, and inflation were to remain unchanged, the ICI would have a stable value of 7221.056. that is important to note if the ICI is also subject to influences from factors not covered in this study, including political, social, and global economic elements.

Exchange rate, with a positive coefficient around 0.051 and significance value (p-value) is around 0.699, indicating that although it has a positive impact on the ICI, this impact is not statistically significant. This means that when the Rupiah exchange rate strengthens (weakening foreign currency), importing companies may benefit from lower import costs. This has the potential to increase company profits, share prices and ICI value, but the effect cannot yet be determined significantly.

The interest rate variable, having a negative coefficient of approximately -124.295 and a significance value (p-value) of around 0.213, suggests that interest rates negatively affect the JCI. However, this impact is not statistically significant. A reduction in interest rates might motivate investors to allocate funds to the stock market, potentially boosting share values and the JCI, but this effect is not conclusively significant.

The inflation variable, with a negative coefficient of approximately -442,799 and a significance level (p-value) of around 0.010, indicates that inflation adversely and significantly influences the ICI. Elevated inflation can lead to higher goods prices and reduced demand, potentially having a considerable effect on profits, share prices, and subsequently, the ICI.

The KP (Government Policy) variable, represented as a dummy variable (1 for the presence and 0 for the absence of policy), shows a positive coefficient of approximately 7562.788 and a significance level (p-value) of around 0.238. This suggests that government policy exerts a positive, yet statistically not significant, influence on the relationship between interest rates, exchange rates, inflation, and the ICI.
The variable NTxKP (Exchange Rate after Government Policy), which reflects the impact of the exchange rate after implementing government policy, has a negative coefficient of around -0.550 with a significance value (p-value) of around 0.270. This shows that after the government implemented the PSBB in April 2020, the exchange rate has a negative effect on the ICI, although not significantly, on the ICI.

The variable SBxKP (Interest Rate after Government Policy), which reflects the impact of interest rates after the implementation of government policy, had a negative coefficient of approx -580.251 with a significance value (p-value) of around 0.063. This indicates that after the government implemented the PSBB in April 2020, interest rates had a negative effect, although not significantly, on the JCI.

The variable INxKP (Inflation after Government Policy), which reflects the impact of inflation after the implementation of government policy, has a coefficient of around 1006.765 with a significance value (p-value) of around 0.000. This shows that after the government implemented the PSBB in April 2020, inflation had a significant and positive effect on the ICI.

E. CONCLUSIONS

The examination of various factors influencing the Investment Confidence Index (ICI) reveals multifaceted dynamics. Contrary to hypothesis 1, the exchange rate exhibits both a positive and significant impact on the ICI, dispelling the anticipated negative influence. Meanwhile, interest rates play a pivotal role, exerting a noteworthy negative effect on the ICI; a decrease in interest rates correlates with an increased ICI, whereas an escalation in interest rates corresponds to a decline in the ICI’s value. Inflation, though positively affecting the ICI, fails to garner adequate evidence supporting the notion of a negative impact as posited in hypothesis 3. Government policies, specifically a 25 basis points reduction in interest rates, wield a significant and negative influence on the exchange rate, inversely impacting the ICI. Similarly, the government’s strategy of implementing large-scale social restrictions (PSBB) has an insignificant negative impact on the exchange rate, maintaining an inverse relationship with the ICI. Furthermore, the introduction of PSBB affects interest rates, resulting in a negative but statistically insignificant effect on the ICI. Notably, the impact of inflation on the ICI remains consistent, sustaining a significant and positive influence both before and after the government’s implementation of PSBB.

REFERENCES


