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The Impact of Inflation and Idr Exchange Rate on Stock Prices In PT Bank Central Asia Which is Already Listed on The Indonesia Stock Exchange

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ABSTRACT

This study aims to determine empirical evidence of the Impact of Inflation, Exchange Rates and Interest Rates on Stock Prices. The independent variables used in this study are Exchange Rates, Inflation, and Interest Rates while the dependent variable in this study is Stock Prices. The financial statements used in this study are Bank Central Asia Tbk. The sample used in this study is the stock price of Bank Central Asia listed on the Indonesia Stock Exchange (IDX), with the number of samples from this study being 46 data from 48 data taken in the monthly Bank Central Asia stock price data period from January 2021 to October 2024. The analysis technique used is descriptive statistical analysis and multiple regression analysis as well as hypothesis testing using SPSS 20. This is proven by the results of the H01 hypothesis state that there is no influence of inflation and the IDR exchange rate simultaneously on stock prices. PT Bank Central Asia Tbk, or in other words, inflation and the IDR exchange rate are proven to simultaneously have a significant influence on stock prices. PT Bank Central Asia Tbk

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1. INTRODUCTION

Along with the increasing trading activity in the capital market, complete information is needed so that the public can access it regarding the development of trading volume in the capital market. One of the information needed is Stock Prices. According to Novianti and Hakim (2019), stock prices can be used as a

benchmark for investors to gain profits from investments made by investing capital in a company. And according to Yuki (2020), stock prices are the price of a stock that occurs in a particular stock market which is determined by market players and is determined by the demand and supply of the shares concerned in the capital market.

Samuelson and Nordhaus (2007), inflation is the annual percentage increase in the general price level as measured by the consumer price index or other price indexes. According to Boediono (2005) inflation is a tendency for prices to increase in general and continuously. High inflation tends to increase the cost of living, which can reduce people's purchasing power and increase the operating costs of companies, including the banking sector. In addition, the central bank may raise interest rates to control inflation, which can reduce people's interest in borrowing. According to Sukirno (2015:397) the exchange rate or often called the exchange rate is the price of one currency against another currency. The exchange rate is one of the most important prices in an open economy considering its enormous influence on the current account balance and other macroeconomic variables.

PT Bank Central Asia (BCA) is one of the largest banks in Indonesia. PT BCA has grown into a very influential financial institution and become one of the pillars of the Indonesian economy. PT BCA has undergone a privatization process and its shares are traded on the Indonesia Stock Exchange.

According to Tannadi (2020:5), shares are proof of ownership of a company, which means that if someone owns shares, that person owns part of the company's ownership. The size of ownership of a company is determined based on the percentage of shares owned from the total shares of the company.

According to Darmadji and Fakhrudin (2011), stock prices are stock prices that occur on the stock exchange at a certain time. Stock prices can change up or down in a very short time. They can change in a matter of minutes and can even change in a matter of seconds.

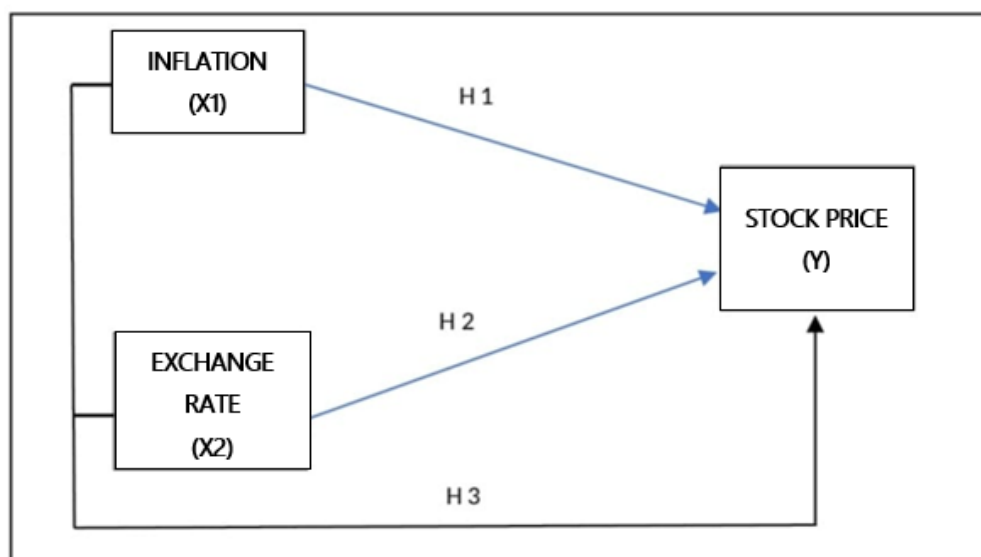
Impact on the Company: High stock prices indicate a positive market perception of the company and can increase its market capitalization value. And rising stock prices make it easier for companies to raise funds, for example by issuing additional shares or bonds with favorable values. Companies often offer stock options to employees. If the stock price is high, the value of these stock options is also high, thus motivating employees. Impact on Investors: Investors can benefit from rising stock prices (capital gains) or suffer losses when stock prices fall. Changes in stock prices affect the value of investors' investment portfolios, which impacts the value of their assets.

According to Putong (2013:276) inflation is defined as an increase in commodity prices caused by the lack of synchronization between the commodity procurement system program and the income level of the people in a particular country. The following is a basic formula for calculating inflation.

$$\text{inflansi (\%)} = \frac{\text{Indeks harga konsumen periode sekarang} - \text{IHK harga sebelumnya}}{\text{IHK Periode sebelumnya}} \times 100\%$$

Conceptual Framework

Figure 1. Hypothesis Model



Source: Author's Illustration

- Simultaneous Effect
- Partial Impact

2. RESEARCH METHOD

Inflation Data and IDR exchange rate against PT Bank Central Asia Tbk. Stock Prices That are registered on the Indonesia stock exchange. This research data was obtained by accessing data on the website www.investing.com, managed by Investing MS Fusion Media Ltd, 7 Florinis Str, Greg Tower, 2nd Floor 1065 Nicosia, Cyprus. The selection of data was done for the availability of data relevant to the research, to ensure that the data processed from this source has a high level of accuracy. The research and data collection process was carried out during the period from January 2021 to October 2024

Independent variables are variables that influence or cause changes in dependent variables, not only changes but can also cause the emergence of dependent variables. The data that are independent variables in this study are inflation and exchange rates. Dependent variables are often referred to as output variables, criteria, consequences. The dependent variable is the variable that is influenced and the dependent variable in this study is stock price. The population used is the financial report of Bank Central Asia (BCA) which is listed on the Indonesia stock exchange. The sample used in this study is the stock price of Bank Central Asia which is listed on the Indonesia stock exchange (IDX). The number of samples from this study is 40 out of 90 data taken in the Bank Central Asia stock price data period from January 2021 to October 2024.

Descriptive statistics are used to analyze data by describing or depicting the collected data as it is without intending to make conclusions that apply to the public or generalization (Sugiyono 2013). The analysis presented in descriptive statistics includes the frequency distribution of variables in this study, maximum, minimum, average (mean) values, and standard deviations.

The classical assumption test is a test tool commonly used in statistics that uses the Ordinary Least Square (OLS) linear regression model. OLS linear regression is a linear regression model with the least squares calculation method which in English is called ordinary least square. Classical assumption test Normality test, Multicollinearity test, Multicollinearity test is carried out to ensure that there is no multicollinearity in the regression model created, so that the results of the regression analysis obtained are accurate Heteroscedasticity test, Auto Correlation test as follows:

Table 1. Autocorrelation Test

No	H0	Decision	If
1	No Positive Autocorrelation	Rejected	$0 < d < dL$
2	No Positive Autocorrelation	No decision	$dL \leq d \leq dU$
3	No Negative Autocorrelation	Rejected	$4 - dL < d < 4$
4	No Negative Autocorrelation	No decision	$4 - dU \leq d \leq 4 - dL$
5	No Positive/Negative Autocorrelation	Rejected	$dU < d < 4 - dU$

Source: Processed by the author

Multiple Regression Analysis

This analysis increases the understanding of how much influence the independent variable has on the dependent variable. The regression coefficient can be written in the following mathematical equation:

$$Y = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 \dots + \beta_p X_p$$

Hypothesis Test Analysis

T-test (Partial regression test), F-test (Simultaneous regression coefficient test), Determination Coefficient Test (R²)

3. RESULTS AND DISCUSSION

Based on secondary data obtained through the official Bank Indonesia website www.investing.com as follows:

Inflation

Inflation is a continuous increase in the prices of general goods consisting of goods and services. As in table 1.

Table 2. Inflation (IN %)

NO	MONTH	2021	2022	2023	2024
1	January	0.26%	0.56%	0.34%	0.04%
2	February	0.01%	-0.02%	0.16%	0.37%
3	March	0.08%	0.66%	0.18%	0.52%
4	April	0.13%	0.95%	0.33%	0.25%

5	May	0.32%	0.04%	0.09%	-0.03%
6	June	-0.16%	0.61%	0.14%	-0.08%
7	July	0.08%	0.64%	0.21%	-0.18%
8	Augustus	0.03%	-0.21%	-0.02%	-0.03%
9	September	-0.04%	1.17%	0.19%	-0.12%
10	October	0.12%	-0.11%	0.17%	0.08%
11	November	0.37%	0.09%	0.38%	-
12	December	0.57%	0.66%	0.41%	-

Source: www.investing.com, Data 2024.

Fluctuations as presented in table 2 above

IDR exchange rate

Table 3. Exchange Rates (IDR)

NO	MONTH	2021	2022	2023	2024
1	January	14020	14380	14985	15755
2	February	14240	14365	15245	15710
3	March	14520	14368	14990	15850
4	April	14440	14495	14665	16255
5	May	14275	14580	14985	16245
6	June	14495	14895	14990	16370
7	July	14460	14830	15075	16255
8	Augustus	14265	14840	15225	15450
9	September	14310	15225	15450	15135
10	October	14165	15595	15880	15690
11	November	14320	15730	15505	-
12	December	14250	15565	15395	-

Source : www.investing.com, Data 2024.

The exchange rate can be seen in table 3 above

Stock price

Table 4. Stock Prices (IDR)

NO	MONTH	2021	2022	2023	2024
1	January	6,760	7.625	8.475	9,550
2	February	6,710	8,050	8,750	9.875
3	March	6.215	7.975	8,750	10,075
4	April	6.405	8.125	9,050	9,800
5	May	6.375	7,750	9,050	9.250
6	June	6.025	7,250	9.150	9.925
7	July	5,970	7,350	9.125	10.275
8	Augustus	6,550	8,200	9.175	10,325
9	September	7,000	8,550	8.825	10,325
10	October	7.475	8,800	8,750	10,250
11	November	7.275	9,300	8.975	-
12	December	7,300	8,550	9,400	-

Source : www.investing.com, 2024 Data

Based on table 4 above, it can be seen that in 2021 the lowest stock price occurred in July 5,970. And the highest stock price occurred in October 7,475. So in 2022 the stock price showed an increase compared to 2021. So the highest stock price occurred in November 9,300 and the lowest stock price in June 7,250.

Descriptive Statistical Analysis

Table 5. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Inflation	46	0	1	.22	.298
IDR Exchange Rate	46	14020	16370	15037.67	657,533

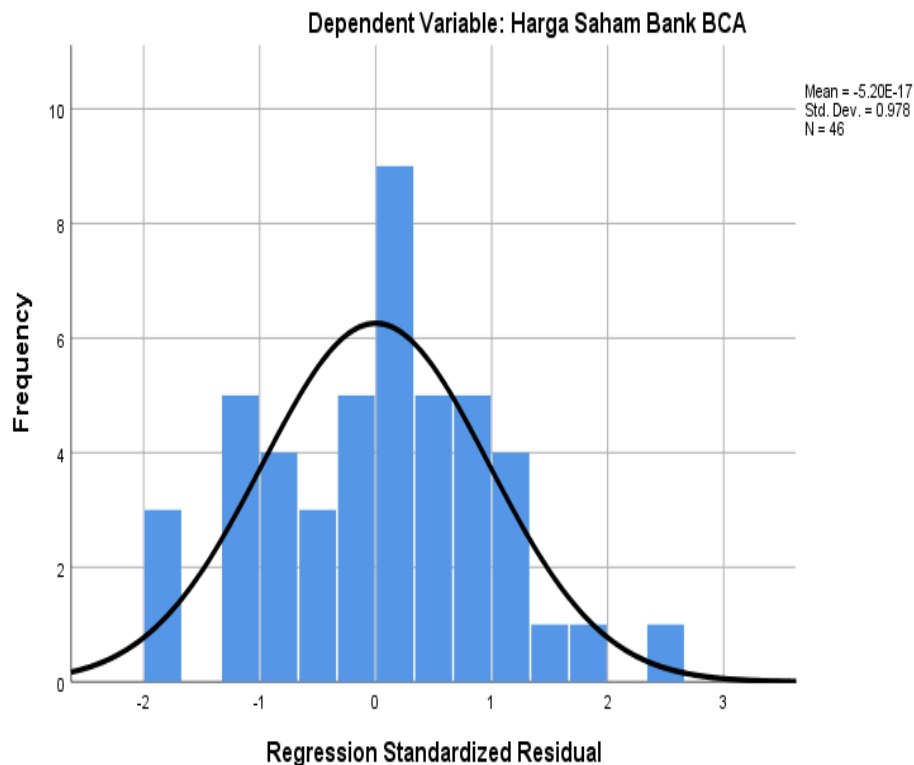
BCA Bank Stock Price	46	5970	10325	8363.26	1278,532
Valid N (listwise)	46				

Source: SPSS Version 20 Data Processing Results.

The lowest IDR exchange rate was in January 2021 with a value of IDR 14,020 per USD, while the highest value occurred in June 2024 with a value of IDR 16,370 per USD. So the average IDR exchange rate during the research period was IDR 15,037.6739 per USD with a standard deviation of IDR 657.53260. This shows that the IDR exchange rate has changed (fluctuated) by an average of IDR 657.53260 per USD from an average of IDR 15,037.6739.

Regression Assumption Test / Classical

Figure 2. Normality Test Histogram Test



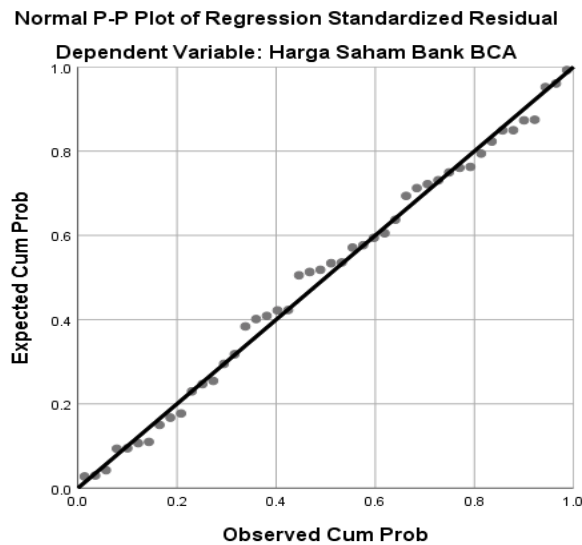
Source: SPSS Version 20 Data Processing Results.

In the image above, there is histogram data which concludes that the residuals are normally distributed because the shape of the histogram peaks at around a value equal to 0 (zero).

Table 6. Results of One Sample KS Normality Test
One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		46
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	742.66082008
Most Extreme Differences	Absolute	.071
	Positive	.055
	Negative	-.071
Test Statistics		.071
Asymp. Sig. (2-tailed)		.200 ^{c,d}
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

Source: SPSS Data Processing Results Version 20



Source: SPSS Version 20 Data Processing Results.

Figure 3. Results of the PP Plot Normality Test

Multicollinearity Test

Table 7. Multicollinearity Test Results

Coefficient Correlations				
Model		IDR Exchange Rate		
1	Correlations	IDR Exchange Rate	1,000	Inflation
		Inflation	.142	1,000
	Covariance	IDR Exchange Rate	.030	9,498
		Inflation	9,498	147022.386

a. Dependent Variable: BCA Bank Stock Price

Source: SPSS Data Processing Results Version 20

Based on table 7 of the results of the multicollinearity test above, it can be seen that the very low correlation value of 0.142 indicates that there is no significant multicollinearity between the IDR Exchange Rate and Inflation. And covariance only describes the direction of the relationship between variables. To assess the strength of the relationship, correlation is more relevant.

Heteroscedasticity Test

Based on the results of the Scantter-plot graph above, it shows that the points are spread randomly and are spread both above and below the number 0 on the Y sub-item. This means that there is no heteroscedasticity in the regression so that the regression model is suitable for use. However, the results of this study are strengthened by conducting heteroscedasticity testing using the Gleser Test method, where decisions are based on the significance value of each variable. If the significance value is greater than 0.05 (greater than 0.05), then there is no heteroscedasticity. The results of the Gleser Test with SPSS produce the following output:

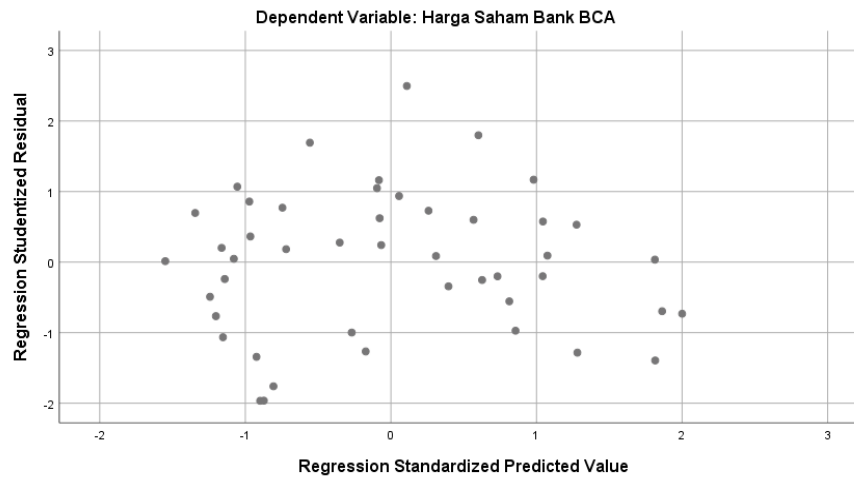
Table 8. Heteroscedasticity Test Results Gleser Test

Coefficients					
Unstandardized Coefficients			Standardized Coefficients		
Model	B	Std. Error	Beta	T	Sig.
1					
(Constant)	-15567.008	2632.617		-5.913	.000
Inflation	119,722	383,435	.028	.312	.756

IDR Exchange Rate	1,590	.174	.818	9.135	.000
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a. Dependent Variable: BCA Bank Stock Price

Source: SPSS Data Processing Results Version 20



Source: SPSS Data Processing Results Version 20

Figure 4. Heteroscedasticity Results Sscantter-plot Graph

Based on the table above, it can be seen that the significance value of the Inflation variable is 0.756, the IDR exchange Rate is 0.000. The significance value of the variable is greater than 0.05 (> 0.05) meaning that the data used in this study does not show symptoms of heteroscedasticity.

Auto Correlation Test

Table 9. Autocorrelation Test

No	H0	Decision	If
1	No Positive Autocorrelation	Rejected	$0 < d < dL$
2	No Positive Autocorrelation	No decision	$dL \leq d \leq dU$
3	No Negative Autocorrelation	Rejected	$4 - dL < d < 4$
4	No Negative Autocorrelation	No decision	$4 - dU \leq d \leq 4 - dL$
5	No Positive/Negative Autocorrelation	Rejected	$dU < d < 4 - dU$

Source: Processed by the author

The results of the Durbin-Watson test using SPSS produced the following output:

Table 10. Autocorrelation Results

Model Summaryb					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.814a	.663	.647	759,736	.611
a. Predictors: (Constant), IDR Exchange Rate, Inflation					
b. Dependent Variable: BCA Bank Stock Price					

Source: SPSS Data Processing Results Version 20

Table 11. Results of Multiple Regression Analysis

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-15567.008	2632.617		-5.913	.000
Inflation	119,722	383,435	.028	.312	.756

IDR Exchange Rate	1,590	.174	.818	9.135	.000
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a. Dependent Variable: BCA Bank Stock Price

Source: SPSS Data Processing Results Version 20

Based on the table above the multiple linear regression equation obtained is as follows:

$$Y = -15,567,008 + 119,722(X_1) + 1,590(X_2)$$

$$Y = -15,567,008 + 119,722(0.08) - 1,590(15,690) = 9,389.68 \text{ Per sheet}$$

For the results of the Stock Price value in October 2024, it is around Rp10,250 per share. So the difference is approximately 9,389.68 which is called a disturbance error.

T-test (Partial regression test)

Table 12. T-Test Results

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-15567.008	2632.617		-5.913	.000
	Inflation	119,722	383,435	.028	.312	.756
	IDR Exchange Rate	1,590	.174	.818	9.135	.000

a. Dependent Variable: BCA Bank Stock Price

Source: SPSS Data Processing Results Version 20

Based on the table above, Inflation has a t-test statistic = 0.312 which occurs at a p-value (sig.) = 0.756, which is greater than the real level, = 0.05. Thus, the test results accept H_0 states that there is no partial influence of IDR inflation on the share Price of PT Bank Central Asia Tbk.

The IDR exchange rate has a t-test statistic of 9.135 which occurs at a p-value (sig.) of 0.00, which is smaller than the real level $\alpha = 0.05$. Thus, the test results reject H_0 states that there is no partial influence of the IDR exchange rate on the share price of PT Bank Central Asia Tbk.

F test (Simultaneous regression coefficient test)

The F test is conducted to test the research hypothesis on how the independent variable and the dependent variable have a simultaneous impact. The significance value determines the decision in testing the hypothesis simultaneously. The significance value of H_0 is rejected and H_1 is accepted if it is less than 0.05 (> 0.05). Conversely, if the significance value is greater than 0.05 (< 0.05), H_0 is accepted and H_01 is rejected. The results of the F test conducted with SPSS produce the following output.

Table 13. F Test Results

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	48739481.654	2	24369740.827	42,221	.000b
	Residual	24819529.216	43	577198.354		
	Total	73559010.870	45			

a. Dependent Variable: BCA Bank Stock Price

b. Predictors: (Constant), IDR Exchange Rate, Inflation

Source: SPSS Data Processing Results Version 20

In the table above, the F Test statistic = 42.221 occurs at p-value (sig.) = 0.000, smaller than the real level, = 0.05. Thus, the test results reject H_01 which states that there is no influence of Inflation and the IDR Exchange rate, simultaneously on stock prices α PT Bank Central Asia Tbk, or in other words, inflation and the IDR exchange rate are proven to simultaneously have a significant influence on stock prices. PT Bank Central Asia Tbk

Table 14. Results of the Determination Coefficient Test

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.814a	.663	.647	759,736

a. Predictors: (Constant), IDR Exchange Rate, Inflation

b. Dependent Variable: BCA Bank Stock Price

Source: SPSS Data Processing Results Version 20

From the results of the analysis of the table above, it can be seen that the correlation coefficient, R, is 0.814, indicating a very strong relationship between stock prices and Inflation and the IDR exchange Rate. Meanwhile, the adjusted determination coefficient (Adjusted R-square) is 0.647, meaning 64.7%. The dependent variable, namely stock prices, can be explained by its independent variables, namely inflation and the IDR exchange rate, while the remainder is 759,736.

4. CONCLUSION

Based on the findings from the discussion, the following conclusions can be drawn; partially, inflation has shown a significant influence on the share price of PT Bank Central Asia Tbk., and simultaneously inflation and IDR exchange rate. This is proven by the results of the H01 hypothesis state that there is no influence of inflation and the IDR exchange rate simultaneously on stock prices. PT Bank Central Asia Tbk, or in other words, inflation and the IDR exchange rate are proven to simultaneously have a significant influence on stock prices. PT Bank Central Asia Tbk

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