

The Influence of Exchange Rate and Inflation on the Economic Growth in Bengkalis Regency

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Abstract. This study aims to analyze the effect of inflation and exchange rates on economic growth in Bengkalis Regency. This study uses a Quantitative method, and the type of data used is secondary data, which means that the data that has been finished or published is taken from BPS (Central Statistics Agency) Indonesia data and also Bengkalis in numbers with period 19 years (2003-2021). Data processing used the IBM SPSS version 25 application with multiple linier regression analysis testing which included T-test, F-test, and the Coefficient Determination (R^2). The results of this study indicate that: 1) Exchange Rate has a positive and significant effect on economic growth in Bengkalis Regency, 2) Inflation has a negative and significant effect on economic growth in Bengkalis Regency. Therefore, if the Exchange Rate increases, it will have a positive impact on economic growth, as well as inflation, if it increases, it will have a negative effect on economic growth in Bengkalis Regency, 3) the coefficient of determination (R^2) is 0.931. This means that exchange rate and inflation affect economic growth in Bengkalis regency by 93.1% while the remaining 6.9% is influenced by other variables not examined in this study.

Keywords: Exchange Rate, Inflation and Economy Growth.

1. INTRODUCTION

In general, every country has economic problems. Developing countries generally have economic problems such as high inflation rates and slow economic growth. Inflation is an important economic indicator, the growth rate is always kept low and stable so as not to cause macroeconomic diseases which will later have an impact on instability in the economy (Salim et al, 2021).

Economic growth is a benchmark for assessing a country's economic development. Where economic growth describes a real impact of the development policies implemented. To measure economic growth in a country, it can be seen from the level of the country's Gross Domestic Product (GDP). (Hakim, 2023). Economic growth in Indonesia is related to the welfare of its people. If people in that country do not receive prosperity, then it can be concluded that the economy in that country can be said to have not improved or the economy is weakening (Pratama, 2022). Indonesia is currently transforming from a developing country to a more advanced country. The large population makes Indonesia experience difficulties in dealing with the economic problems that occur.

Inflation is an economic condition where prices generally increase over a long period of time. Temporary price increases, such as price increases during the Eid period, are not considered inflation, because after the Eid period, prices can fall again. Inflation generally occurs because the amount of money in circulation is more than needed. Inflation is an economic phenomenon that can never be completely eliminated. Efforts made are usually limited to reduction and control. (Fihri, 2021).

The exchange rate is the price of a country's currency measured or expressed in another currency. Exchange rate play an important role in spending decisions, because they allow us to translate prices in different countries into one common language. Other things being equal, a depreciation of a country's currency relative to other currencies (an increase in the price of that country's foreign currency) makes its exports cheaper and its imports more expensive. Meanwhile, appreciation (a decrease in the foreign exchange price of the country concerned) makes exports more expensive and imports cheaper. (Fihri, 2021).

One of the regions with a large GRDP contribution to Indonesia is Riau Province, which has a GRDP contribution that is included in the 10 largest contributing provinces. Riau Province itself consists of 10 districts and 2 cities. Of these 12 districts/cities, the district with the highest GRDP is Bengkalis Regency, (Susanti et al, 2022) The rate of economic growth in Bengkalis Regency can be seen based on the increase in GRDP every year. The following is GDP data based on current prices from 2003 – 2021:

Table 1 GRDP of Bengkalis Regency

Years	Non-Oil and Gas GRDP (Billions) based on current prices
2021	73.398,5
2020	66.324,9
2019	64.292,9
2018	59.540,8
2017	57.663,2
2016	55.153,3
2015	50.679,0
2014	44.579,5
2013	36.612,6
2012	34.109,7
2011	18.371,4
2010	15.393,0
2009	12.984,4
2008	11.088,4
2007	9.066,1

2006	10.321,2
2005	8.771,6
2004	7.253,4
2003	5.711,9

Source: Bengkalis Regency Central Statistics Agency

Based on table 1, it can be seen that the economic growth of Bengkalis Regency (non-oil and gas) increases every year. Where the lowest non-oil and gas GRDP was in 2003, namely 5,711.9. And the highest GRDP (non-oil and gas) will be in 2021. The economic conditions reflected in economic growth are of course related to the exchange rate and also inflation. Based on the background above, the authors are interested in conducting research with the title The Influence of Exchange Rate and Inflation on the Economic Growth in Bengkalis Regency.

2. LITERATURE REVIEW

There are several general theories in this study, According to Arifin 2009 in Wiriani (2020) Exchange rate is the price of a currency against another currency. The exchange rate is the number of units or units of a particular currency needed to obtain or buy one unit or unit of another type of currency. According to Putong (2013) in Salim (2021) Inflation is the general increase in commodity prices caused by the unsynchronized between commodity procurement programmers (production, pricing, money printing, etc.) and the level of income owned by the community. Economic growth is the long-term increase in the capacity of a country to provide economic goods to its population. The factor considered in measuring economic growth is Gross Domestic Product (GDP). Gross Domestic Product (GDP) is the total production of goods and services produced at a given time in a particular country or region. Nominal GDP (also known as GDP at current prices) refers to the value of GDP without considering the effect of prices. Meanwhile, real GDP (also known as GDP at Constant Prices) corrects the nominal GDP figure by including the effect of prices, (Simanungkalit, 2020).

In this study, it cannot be sparated from the results of previous research that has been conducted as a comparison, including research conducted by Pratama et al. (2022) with the tittle the Analysis of the Effect of Money Supply, Inflation, Investment and the Rupiah Exchange Rate on Economic Growth in Indonesia. The results show that the money supply, investment and the rupiah exchange rate have a significant effect on economic growth, while inflation has no significant effect on economic growth in Indonesia in 2017-2021.

Furthermore, by Anzelia et al (2021) the research title The Influence of the Exchange Rate, Money Supply, and Inflation Rate on Economic Growth in Indonesia. The results show that the exchange rate and money supply have a significant positive impact on economic growth. Inflation has a significant negative impact on economic growth. It is hoped that this study can be used as an important consideration for the government and the Bank of Indonesia in determining better monetary policy in relation to the development of Indonesian economic growth.

3. RESEARCH METHODOLOGY

This research was conducted at Indonesia's Central Statistical Agency (BPS) and Bengkalis Central Statistical Agency (BPS bengkalis). The type of study is associative research. The data used in this study is quantitative. Source data of this study namely secondary data. According to Sugiyono (2013), secondary data are sources that do not directly provide data to data collectors, such as library books, theses, and journals that are relevant to the research variables. Data is a fact obtained from observations, data in the form of numbers or symbols, and can be used as information. Furthermore, in this research, will be taken from Central Statistics Agency (BPS).

Based on Sugiyono (2019), Data collection techniques are the most strategic step in research because the main purpose of research is to obtain data. Without knowing the data collection techniques, this research will not get data that meets the data standards that have been determined. This study uses a collection of techniques based on techniques, namely literature study.

The measurement scale used in this study is the Ratio Scale. According to Irianto (2015) the Ratio Scale is a measurement that has an absolute zero value and has the same distance. The Ratio Scale is the highest level of scale because it states an absolute quantity and the measurement results can be used for all analytical purposes in research using all statistical procedures.

The testing technique that is often used by researchers to test validity is using multiple correlations. This study uses IBM SPSS version 25. This study has two independent variables and one dependent variable. Therefore, just use the Normality Test, Multicollinearity Test, Heteroscedasticity Test, and Autocorrelation Test. The data analysis model used in this study is multiple linear regression. In this case, the researcher describes the typical hypothesis

(specific) of the theory to be tested empirically using the t-test, f-test, and coefficient of determination test.

Based on the Formulation of the problem, the authors formulate the following hypothesis:

- H1: Exchange Rate has a positive and significant influence on Economy Growth.
H2: Inflation has a Negative and significant influence on Economy Growth.
H3: Exchange Rate and Inflation has a positive and significant influence on Economy Growth.

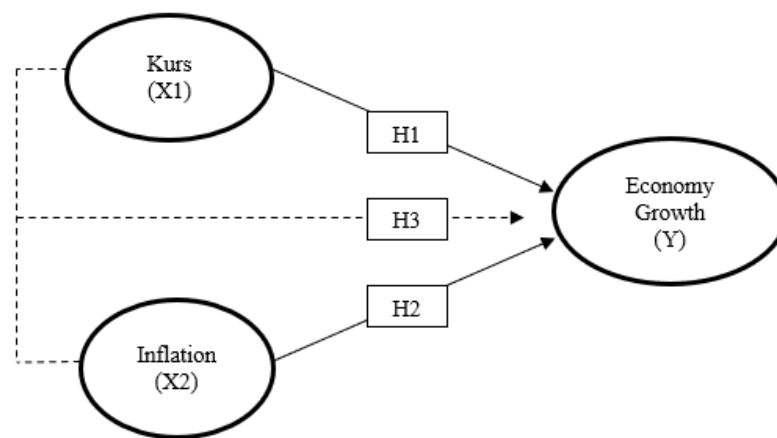


Figure 1 Research Model

Source: Processed Data, 2023

4. RESULTS AND DISCUSSION

1. Classic Assumption Test

a) Normality Test

Table 2 Normality Test Results

One-Sample Kolmogorov-Smirnov Test			
			Unstandardized Residual
N			19
Normal Parameters ^{a,b}	Mean		.0000000
	Std. Deviation		6328.02541077
Most Extreme Differences	Absolute		.119
	Positive		.119
	Negative		-.061
Test Statistic			.119

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: Processed Data 2023 of SPSS 25

The results of the normality test show that all research variables have a significance value greater than 0.05 ($0.200 > 0.05$), so it can be concluded that the research data is normally distributed.

b) Multicollinearity Test

To test whether or not a correlation was found between the independent variables, a multicollinearity test was conducted.

Table 3 Multicollinearity Test Results

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-61840.925	10231.218		-6.044	.000		
	Exchange Rate	9.115	.771	.850	11.825	.000	.833	1.201
	Inflation	-1447.418	460.613	-.226	-3.142	.006	.833	1.201
a. Dependent Variable: GRDP								

Source: Processed Data 2023 of SPSS 25

The results of the Multicollinearity Test above show that the Variance Inflation Factor (VIF) value for each variable is < 10 and the tolerance value for each variable is > 0.10 . This shows that there is no multicollinearity problem in the model.

c) Heteroscedasticity Test

Based on Figure 2 the results of the heteroscedasticity test show that all research variables have no symptoms of heteroscedasticity.

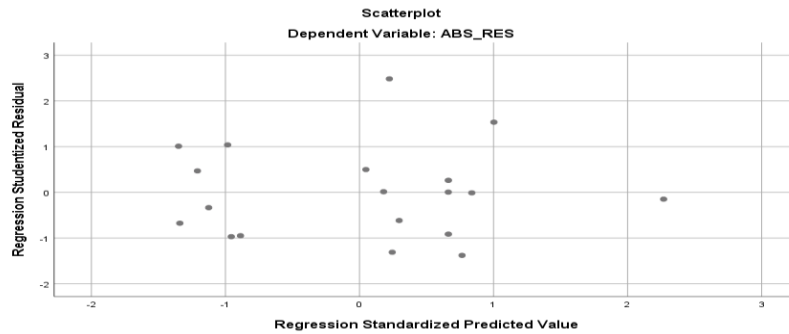


Figure 2 Heteroscedasticity Test Chart

Source: Processed Data 2023 of SPSS 25

From the results of the Heteroscedasticity test with the scatterplot graph presented in the figure, it also shows that the randomly distributed points do not form a clear pattern. So, it can be concluded that there are no symptoms of heteroscedasticity.

d) Autocorrelation Test

The results of the autocorrelation test through the Durbin-Watson test can be seen in Table 4 below:

Table 4 Autocorrelation Test Results

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.965 ^a	.931	.922	6711.88452	1.676
a. Predictors: (Constant), Inflation, Exchange Rate					
b. Dependent Variable: GRDP					

Source: Processed Data 2023 of SPSS 25

Based on table 4 above, it is known that the Durbin-Watson value is 1.676 and the upper limit value of the Durbin-Watson table can be explained as a DU value of 1.5355 and a DL of 1.0743. and this value can be seen from the Durbin-Watson table with $n = 19$ where $k = 2$ is the number of predictor variables. So, DU is based on the decisions making provisions of the autocorrelation test, the Durbin-Watson value of 1.676 is greater than the upper limit of the DU value of 1.5355 and the Durbin-Watson value of 1.676 is smaller than $(4 - DU) 4 - 1.5355 = 2.4645$ ($DW > DU$ and $DW < (4 - DU)$). So, it can be concluded that there are no symptoms of autocorrelation in the regression model in this study.

2. Multiple Linier Regression

Multiple linear regression analysis was performed by setting the equation $Y = a + b_1X_1 + b_2X_2 + e$. The results of the calculation of the value are as follows:

Table 5 Multiple Linier Regression Test Results

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-61840.925	10231.218		-6.044	.000		
	Exchange Rate	9.115	.771	.850	11.825	.000	.833	1.201
	Inflation	-1447.418	460.613	-.226	-3.142	.006	.833	1.201
a. Dependent Variable: GRDP								

Source: Processed Data 2023 of SPSS 25

$$Y = -61.840,925 + 9.115X_1 - 1.447,418X_2 + e$$

The regression equation above shows the relationship between the independent variable and the dependent variable partially, from the equation it can be concluded that:

1. The constant value is 61,840.925, meaning that if there is no change in the exchange rate and inflation variables (X_1 and X_2 values are 0) then the average Y value is 61840.925
2. The regression coefficient value of the Exchange Rate (X_1) is 9.115, meaning that if the Exchange Rate variable (X_1) increases by 1 unit, assuming the inflation variable (X_2) and the constant (a) are 0 (zero), then the Economic Growth of Bengkalis Regency will increase by 9,115 units. This shows that the Exchange Rate variable has a positive effect on the Economic Growth of Bengkalis Regency. The higher the exchange rate, the higher the economic growth of Bengkalis Regency.
3. The regression coefficient for Inflation (X_2) is 1,447.418, meaning that if the inflation variable (X_2) increases by 1 unit with the assumption that the Exchange Rate variable (X_1) and the constant (a) are 0 (zero), then the Economic Growth of Bengkalis Regency will decrease by 1,447,418 units. This shows that the inflation variable has a negative effect on the economic growth of Bengkalis Regency.

3. T Test Results

Table 6 T-Test Results of Exchange Rate Variables

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-61840.925	10231.218		-6.044	.000
	Exchange Rate	9.115	.771	.850	11.825	.000

a. Dependent Variable: GRDP

Source: Processed Data 2023 of SPSS 25

Based on Table 6 by observing the row, column t, and sig variable customer quality, it can be seen that the value of the influence of the service quality variable on customer loyalty (H1). The service quality variable (X1) has a positive and significant effect on customer loyalty. It can be seen that the service quality is significant (X1) $0.015 < 0.05$, and the value of $t_{table} = t(\alpha / 2; nk-1 = t(0.05 / 2; 100-2-1) = (0.025; 97)) 1.98472$. This means that the value of t count is greater than t_{table} ($2,478 > 1.98472$), however, H0 is rejected and H1 is accepted. So, the hypothesis which states that there is an effect of service quality on customer loyalty is partially accepted.

Table 7 T-Test Results of Inflation Variables

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-61840.925	10231.218		-6.044	.000
	Inflation	-1447.418	460.613	-.226	-3.142	.006

a. Dependent Variable: GRDP

Source: Processed Data 2023 of SPSS 25

Based on table 7, by paying attention to the row, column t, and sig of the inflation variable, it can be seen how much influence the inflation variable has on the economic growth of Bengkalis Regency. The Inflation Variable (X2) has a negative and significant effect on the Economic Growth of Bengkalis Regency. It can be seen that inflation (X2) is $0.006 < 0.05$ and the T_{table} value = $(\alpha / 2 ; nk-1 = t(0.05 / 2 ; 19-2-1) = (0.025 ; 16)) 2.119$. This means that the calculated t value is smaller than the T_{table} ($3.142 < 2.119$), but Ho is rejected and H1 is

accepted. The hypothesis which states that there is an influence of the exchange rate on the economic growth of Bengkalis Regency is partially accepted.

4. F Test Results

Table 8 F Test Results

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	9741074561.137	2	4870537280.568	108.115	.000 ^b
	Residual	720790300.787	16	45049393.799		
	Total	10461864861.924	18			
a. Dependent Variable: GRDP						
b. Predictors: (Constant), Inflation, Exchange Rate						

Source: Processed Data 2023 of SPSS 25

Based on the test results in the table above, it can be seen that the F_{count} value is 108.115 with an F_{table} value of 3.59 but $F_{\text{table}} > F_{\text{count}}$ or $108.115 > 3.59$ and a significant level of $0.000 < 0.05$ then H_0 is rejected H_a is accepted, it can be concluded that the variables Exchange Rate (X1) and Inflation (X2) simultaneously have a simultaneous effect on the Economic Growth of Bengkalis Regency (Y).

5. Coefficient of Determination Test

Table 9 Coefficient of Determination (R^2)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.965 ^a	.931	.922	6711.88452
a. Predictors: (Constant), Inflation, Exchange Rate				

Source: Processed Data 2023 of SPSS 25

Based on the influence of the Exchange Rate (X1) and Inflation (X2) variables on the Economic Growth of Bengkalis Regency (Y), it can be seen simultaneously from the magnitude of the relationship between the Exchange Rate and Inflation variables with the square (R Square) of the Bengkalis Regency Economic Growth variable. The coefficient of determination is defined as the square of the correlation coefficient squared then multiplied by 100%. Based on the results, the R Square value is 0.931, which means that the Exchange Rate and Inflation variables can influence the Economic Growth Variable of Bengkalis Regency by 93.1% and the remaining 6.9% is explained by other variables that influence the Economic Growth of Bengkalis Regency outside this research.

5. CONCLUSION AND SUGGESTIONS

From the results of variable testing carried out between the Exchange Rate and Economic Growth, it can be seen that the Exchange Rate has a positive and significant effect on Economic Growth of Bengkalis Regency. This is proven by the T test, namely the T_{count} value is greater than the T_{table} value, which is $(11.825 > 2.119)$ and the significance value is $0.000 < 0.05$ which means H_1 is accepted and H_0 is rejected. So, the exchange rate is very influential, the higher the exchange rate, the higher the economic growth value of Bengkalis Regency. From the test results between the variables of Inflation and Economy Growth, it can be seen that Inflation Partially has a negative and significant effect on Economy Growth of Bengkalis Regency. This is evidenced by the T test, namely the T_{count} value is greater than the T_{table} value, which is $(3,142) > (2,119)$, and a significance value of $0.006 < 0,05$, which means H_2 is accepted and H_0 is rejected. Inflation can affect economic growth, the higher the inflation value, the lower the economic growth value of Bengkalis Regency

Researchers provide several suggestions for further research, the elements of exchange rates and inflation have a major influence on economic growth. In this case, researchers suggest conducting research with a wider scope in order to get maximum results, and this study uses three independent variables, namely Exchange Rate and Inflation and one dependent variable, namely Economic Growth of Bengkalis Regency, for further research, other variables besides Exchange Rate, Inflation and Economic Growth can be proposed in accordance with the latest current issues or phenomena.

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