Determinants Of Consumption Credit In North Sumatera

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Article Info	ABSTRACT
Keywords: Inflation, Interest Rate, Consumer Credit.	The purpose of this study was to examine the impact of interest rates and inflation on the demand for consumer loans at commercial banks in North Sumatra and provide a comprehensive understanding of how these economic variables affect consumer borrowing behavior. The data for this research is limited to the years 2015-2022, with observations taken quarterly (Quarter 1, Quarter 2, Quarter 3, and Quarter 4). The unit of analysis is the region of North Sumatera, resulting in a total of 32 samples.The regression model developed in this study reveals that interest rates have a negative impact on the demand for consumer credit in North Sumatera. Specifically, as interest rates increase, the cost of borrowing rises, leading to a decrease in consumer credit demand. Furthermore, the study finds that inflation also negatively influences the demand for consumer credit. An increase in inflation erodes the purchasing power of consumers, which in turn reduces their ability to take on additional debt.By understanding these relationships, the research provides valuable insights for policymakers and financial institutions. It highlights the importance of monitoring and managing interest rates and inflation to maintain a stable demand for consumer credit, which is crucial for the overall economic health of North Sumatera.
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INTRODUCTION

The banking financial system has a crucial position as an intermediary entity that supports the national economy. To improve the role and function of financial institutions in the context of the national economy, it is important to continue to improve banking regulations and take various steps to optimize the banking system. Based on Table 1, the phenomenon of consumer credit distribution by Commercial Banks in North Sumatra tends to increase every year except in 2020 which showed a decline in consumption credit distribution in North Sumatra. The reduction in distribution of consumer credit in 2020 was a result of the pandemic's effects in Indonesia, particularly in North Sumatra, where it significantly affected the demand for consumer credit during that year. This decrease in credit demand indicates that there is public concern regarding failure to pay consumption credit in the midst of a decline in economic conditions. Due to the pandemic, people are reluctant to request consumption credit from banks (Fitra, 2022). Consumption credit increased again from IDR 180,056 billion

rupiah in 2020 to IDR 228,564 billion rupiah in 2021 and to 256,065 in 2022. An increase in consumption has a very importantrole in driving the economy. In 2021 and 2022, household consumption will contribute 54% of total economic output or Gross Domestic Product (GDP) (Central Statistics Agency, 2022).

Determinants of Credit to Households: An Approach Using the Life-Cycle Model, states that the determinants of household consumption credit demand show that the value of household consumption credit depends on loan-deposit interest rates (positive and significant) meanwhile, research conducted by Hutahean (2022) with the title "Analysisof Factors Affecting Demand for Consumer Credit in Banks in North Sumatra" states that the GDP variable per Capita has a positive and significant influence on consumptioncredit in banks in North Sumatra and is statistically significant at $\alpha = 5\%$.

The interest rate variable is found to have a statistically significant negative impact on consumer credit at banks in North Sumatra at a 5% alpha level. Conversely, while the inflation variable also negatively affects consumer credit in these banks, it is not statistically significant at the same alpha level. Therefore, the data prompts further investigation into factors that can affect consumer credit demand at commercial banks. This study is focused on investigating. the effects of inflation and interest rates on consumer credit demand in North Sumatra from 2015 to 2022, with a specific focus on analyzing how interest rates and inflation influence this demand.

METHODS

This type of research is quantitative research by examining economic phenomenaexpressed in numbers and showing the relationship of each variable using mathematical models, theory and regression. In this research, the author took the objects of interest rates, inflation and the provision of consumer credit by Commercial Banks in North Sumatra as the scope and limitations of the research. The data in this study is limited to the years 2015-2022 (Quarter 1, Quarter 2, Quarter 3, and Quarter 4) with the unit of analysis being North Sumatra so that the total samples obtained were 32 samples. Beforecarrying out data analysis, the data is tested according to classical assumptions. If there is a deviation from the classical assumptions, non-parametric statistical testing is used, whereas classical assumptions are fulfilled if parametric statistics are used to get a good regression model.

Key principles for testing normality require the absence of multicollinearity and heteroscedasticity, with the data needing to be normally distributed. The VIF test and the tolerance value are employed to assess multicollinearity. As per Sumodiningrat, a correlation coefficient below 0.8 indicates no multicollinearity, whereas a coefficient above 0.8 may suggest its presence. For the heteroscedasticity test, a significance value over 0.05 suggests that heteroscedasticity is not present, with the Glejser test being a method for its detection. Regarding autocorrelation, if the Asymp. Sig. (2-tailed) value exceeds 0.05, the model is regarded free from autocorrelation issues.

Kolmogorov Smirnov is to compare the data distribution with the standard normal distribution. If the significance is above 5%, it can be concluded that the data is normally distributed. On the other hand, if the significance is below 5%, then there is a suspicion that

the data is not normally distributed. The research employs a multiple linear regression model tailored for time series data ranging from 2015 to 2022, covering all quarters from Q1 to Q4.The analytical method used in this research is inferential and descriptive analysis. In the first part, descriptive analysis will be shown to present a general picture of the conditionof interest rates and inflation in North Sumatra. In the next stage, Ordinary Least Square(OLS) as an inferential research method will be used in this research along with the SPSSversion 26 analysis tool to process the data. Inferential analysis will be used to explain the influence of interest rates and inflation on demand for consumer credit in North Sumatra. In this case, the regression model can be formulated as shown below:

$Y = \alpha + \beta 1\ X1 + \beta 2\ X2 + e$

Y = demand for consumer credit at commercial banks

α = constant

X1 = interest rate

X2 = inflation

$\beta 1, \beta 2$, = coefficients

e = error term

The t-test is utilized to determine whether the independent variable 't' sufficiently explains the dependent variable, conducted at a significance level of α = 5%. The criteria for hypothesis testing with the t-test are as follows: a) A Prob value less than 0.05 signifies a meaningful impact of the independent variable on the dependent variable. b) Conversely, a Prob value greater than 0.05 indicates that the independent variable has no significant effect on the dependent variable.. Hypothesis testing also employs the F distribution, with α = 5%. The testing criteria using the F Test are: a) If the probability value of Prob ≤ 0.05, it denotes a simultaneous influence of the independent variable on the dependent variable, indicating the model's usability. b) A Prob value of 0.05 or greater signifies that there is no significant effect, indicating that the independent variables do not have a significant collective impact on the dependent variable. An R^2 value that is low reflects the independent variables' limited explanatory power regarding the dependent variable. Conversely, an R^2 value nearing one indicates that the independent variables nearly fully account for the variation in the dependent variable.

Table 1 below displays the distribution of consumer loans disbursed by commercial banks in North Sumatra over the period 2015-2022. The data is presented on a quarterly basis, covering Quarter 1 (Q1), Quarter 2 (Q2), Quarter 3 (Q3) and Quarter 4 (Q4) of each year. This table aims to provide a clear picture of the fluctuations in consumer lending in the region over the period under study. Comprehending the shifts and trends in consumer credit demand is paramount, especially considering its correlation with various economic factors like interest rates and inflation.The distribution of consumer credit is measured in billion Rupiah and provides insight into how much credit commercial banks extend to consumers in North Sumatra each quarter. By analyzing this data, we can better understand the dynamics of the consumer credit market and the factors that influence credit demand in the region.

Table 1. Distribution of Consumer Credit to Commercial Banks (Billions of Rupiah)

Year	Credit to Commercial Banks (Billions of Rupiah)
2015	158.034
2016	161.765
2017	178.269
2018	203.439
2019	218.168
2020	180,056
2021	228.564
2022	256.065

Source: Bank Indonesia, 2022

In the picture below, due to current high interest rates more money will be loaned or used to buy bonds and therefore less money will be held as inactive balances. If the interest rate falls to Or', then a larger amount of money OM is held with speculative motives. With a further fall in the interest rate to Or', money held with speculative motives increases to OM. Thus, the higher the loan interest rate, the demand for credit will decrease.
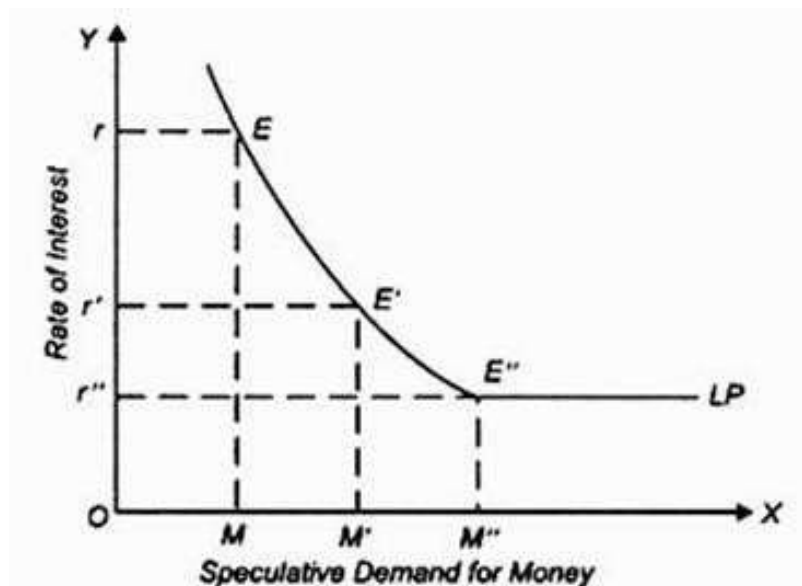
Picture 1. Money Demand Speculation Motive Curve

RESULTS AND DISCUSSION

A multiple linear regression model is utilized to analyze how interest rates and inflation impact the demand for consumer credit in North Sumatra.

Table 2. Multiple Linear Regression Model Calculation Results
Y = 124,669 -6,410 X1 –0,732X2 + 2,503X3

		Coefficients^a				
		Unstandardized Coefficients (UC)		Standardized Coefficients (SC)		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	124.669	3.350		37.217	.000
	X1_SUKUBUNGA	-6.410	.221	-.959	-28.949	.000
	X2_INFLASI	-.732	.448	-.057	-1.636	.013
a. Dependent Variable: y_KREDITKONSUMSI						

The model indicates a constant of 124.669, suggesting that if the coefficients of all independent variables are zero, indicating no influencing variables, the consumption credit demand value would be 124.669. The regression coefficient for the interest rate variable (X1) is -6.410, illustrating that in this model, interest rates negatively affect consumption credit demand in North Sumatra. Additionally, the regression coefficient for the inflation variable (X2) is -0.732, showing that inflation also has a negative effect on consumption credit demand in the regression model.

The regression analysis indicates that the coefficient for the interest rate variable is -6.410 with a significance level of 0.000. This implies that, holding inflation constant, a 1% rise in interest rates would result in a 6.410% decrease in demand for consumption credit in North Sumatra. The interest rates set by banks play a crucial role in influencing individuals' decisions to seek credit. These findings align with the research of Febrianti Hutahean and Syafii, both of whom found that interest rates have a significant and negative effect on credit demand. As interest rates go up, the cost of borrowing follows, leading to a drop in the public's demand for bank credit.

The regression coefficient for the inflation variable stands at -0.732, exhibiting significance at the 0.013 level. This suggests that assuming the interest rate variable has no impact on the demand for consumer credit in North Sumatra, a 1% rise in inflation would correspond to a decrease of 0.732% in the demand for consumer credit in the region. Hence, inflation significantly and adversely affects the demand for consumer credit in North Sumatra.. Hadi (2020) states that inflation can result in a decrease in demand for credit. This research is also relevant to research conducted by Rubaszek (2021) which states that inflation has a significant and negative effect on credit demand. An increase in inflation in North Sumatra will have an impact on reducing demand for consumer credit in North Sumatra because high inflation causes people to reduce consumption of goods and services as a result of which people will reduce demand for credit. On the other hand, if inflation decreases, it will have an impact on increasing demand for consumption credit.

Table 3. Multicollinearity Test Calculation Results

Coefficients[a]								
		Unstandardized Coefficients		Standardized Coefficients				Collinearity Statistics
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	124.669	3.350		37.217	.000		
	X1_SUKUBUNGA	-6.410	.221	-.959	-28.949	.000	.930	1.075
	X2_INFLASI	-.732	.448	-.057	-1.636	.113	.837	1.195

a. Dependent Variable: y_KREDITKONSUMSI

From Table 3, the outcomes of VIF statistical computations are evident. The VIF statistical figure for the independent variable, interest rate, is 1.075, which is below 10. Therefore, it can be inferred that there is no linear relationship between interest rates and inflation. Similarly, the VIF statistical value for the independent variable, inflation, is 1.195. Given that this value is also below 10, it can be concluded that there is no linear relationship between inflation and interest rates..

Table 4. Glejser Test Calculation Results

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	6.073	2.146		1.297	.009
	X1_SUKUBUNGA	-.286	.142	-.355	-.2.013	.054
	X2_INFLASI	.403	.287	.262	1.407	.170

a. Dependent Variable: Abs_RES

Source: Processed Results of IBM SPSS Statistics 26

Table 4 shows that the Glejser test significance values for each independent variable exceed 0.05%. Specifically, the interest rate variable has a significance of 0.054, and the inflation variable's significance level is 0.170. Hence, this study does not exhibit issues with heteroscedasticity.

Table 5. Autocorrelation Test Calculation Results

	Unstandardized Residual
Test Value[a]	.10439
Cases < Test Value	16
Cases >= Test Value	16
Total Cases	32
Number of Runs	12
Z	-1.617
Asymp. Sig. (2-tailed)	.106

a. Median

Source: Processed Results of IBM SPSS Statistics 26

Based on the run test carried out, it can be seen in Table 5, the Asymp.Sig.(2-tailed) value is 0.106 and greater than 5% (0.05). So, through the test results, it can beconcluded that the data used is quite random so there is no autocorrelation problem.

Table 6. Normality Test Calculation Results

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		32
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	1.48946701
Most Extreme Differences	Absolute	.155
	Positive	.155
	Negative	-.143
Test Statistic		.155
Asymp. Sig. (2-tailed)		.099[c]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.

Table 6 indicates that the Asymp. Sig. (2-tailed) value stands at 0.099, surpassing the common significance level of 5% (0.05). Consequently, the assumption can be made that the data follows a normal distribution, suggesting that there are no significant deviations from normality.

Table 7 Coefficient of Determination Test Results

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.986[a]	.971	.968	1.56723

a. Predictors: (Constant), X1_SUKUBUNGA, X2_INFLASI
b. Dependent Variable: y_KREDITKONSUMSI

According to the computed results, as depicted in Table 7, the Adjusted R^2 value stands at 0.968. This indicates that the regression model derived successfully elucidates approximately 96.8% of the variations in consumer credit demand, leaving a remaining 3.2% to be accounted for by other variables beyond the scope of the regression model.

Table 8 F Statistical Test Results

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2338.522	3	779.507	317.362	.000[b]
	Residual	68.774	28	2.456		
	Total	2407.296	31			

a. Dependent Variable: y_KREDITKONSUMSI
b. Predictors: (Constant), X3_PDRB, X1_SUKUBUNGA, X2_INFLASI

Table 8 reveals an F value of 317.362 obtained from the regression analysis with a significance level of 0.000, falling below the 5% (0.05) significance threshold. This indicates that the independent variables (interest rates and inflation) have a significant combined effect on the dependent variable (demand for consumption credit), affirming the suitability of the regression model for forecasting consumption credit demand in North Sumatra.

Tabel 9 Statistical Test Results t

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	124.669	3.350		37.217	.000
	X1_SUKUBUNGA	-6.410	.221	-.959	-28.949	.000
	X2_INFLASI	-.732	.448	-.057	-1.636	.013

Table 9 reveals that the t statistic for the interest rate variable is -28.949, with a significance level of 0.000, indicating a substantial partial effect of the interest rate on consumer credit demand in North Sumatra. On the other hand, the inflation variable's estimated results yield a t statistic of -1.636 and a significance level of 0.013. Given that this significance value exceeds the 5% mark, it can be deduced that inflation does not have a significant separate correlation with the demand for consumer credit.

CONCLUSION

The regression model obtained shows that interest rates have a negative influence on demand for consumer credit in North Sumatra. An increase in inflation in North Sumatra will have an impact on reducing demand for consumer credit in North Sumatra because high inflation causes people to reduce consumption of goods and services as a result of which people will reduce demand for credit. This research, which analyzes the Demand for Consumer Credit in Banking in North Sumatra, can be an illustration for stakeholders, especially the Government of North Sumatra, in formulating a series of appropriate policies regarding the provision of consumer credit in North Sumatra.

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