

## The Influence of Inflation and Interest Rates on MSME Turnover in Makassar City

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### ABSTRACT

This study aims to determine the effect of inflation and interest rates on MSME turnover in Makassar City. The type of data used is secondary data from library research, both quantitative and qualitative. The population in this study is all reports on inflation and interest rates as well as reports on the turnover of the Makassar City MSME Service. The sample is data from the last eleven years (2002 -2012) using data collection techniques, namely documentation. The technique of data analysis used is multiple linear regression analysis, f-test, and t-test. Simultaneously the comparison between F-count and F-table which shows that  $F\text{-count} > F\text{-table}$ , indicating that the independent variables together have a significant effect on the dependent variable, so that the variables of Inflation Rate ( $x_1$ ) and Interest Rates ( $x_2$ ) together have a significant effect on MSME Turnover in Makassar City at a significant level of 5%. Partially based on the results of the t-test analysis that has been carried out, it can be seen that: For the  $X_1$  variable (Inflation Rate)  $t\text{-count} < t\text{-table}$  so that the hypothesis is rejected where the inflation rate has no significant effect but has a positive effect on MSME turnover, while for the  $X_2$  variable ( Interest Rate)  $t\text{-count} > t\text{-table}$  so that the hypothesis is accepted where interest rates have a significant but negative effect on MSME turnover. The magnitude of the correlation between inflation rates and interest rates on MSME turnover is 0.655 where the relationship is classified as very strong or 65.

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## 1. INTRODUCTION

Economic development is very important in a country, especially in increasing economic income and improving the welfare of its people. Indonesia has enjoyed economic growth over a long period

of time, until the exchange rate crisis escalated into a multidimensional crisis that began at the end of 1997. When the 1998 economic crisis occurred, only the MSME sector survived the economic collapse, while the larger sectors fell by the wayside. This crisis has resulted in a change in the position of actors in the economic sector.

Therefore, the government's policy to control the inflation rate is very important. One of them is by determining interest rates in the financial market. Interest rates can be used as a monetary tool in order to control the supply and demand for money circulating in an economic system. When the demand for money is too high, the circulation of money in society is too large, the government can raise interest rates, so that the supply of money increases and the demand for money falls. On the other hand, the government can lower interest rates to provide support and accelerate growth in the economic and industrial sectors, thereby encouraging or increasing production to be higher. The impact of inflation on the economy as a whole, for example, the prospect of long-term economic development will worsen, Inflation disrupts economic stability by undermining the long-term plans of economic actors. If inflation is not handled quickly, it will be difficult to control, inflation tends to accelerate. So that it can be concluded that the impact of inflation on the national economy, among others.

- a) Reduced investment
- b) Boost interest rate
- c) Encouraging speculative investment
- d) Leads to failure of development implementation
- e) Creates uncertainty about future economic conditions
- f) Creates uncertainty about future economic conditions
- g) Creating a balance of payments deficit
- h) Increase the number of unemployed

The purpose of this study is to determine the magnitude of the simultaneous influence of inflation and interest rates on MSMEs in Makassar City and to determine the magnitude of the partial effect of inflation and interest rates on MSMEs in Makassar City.

## **2. RESEARCH METHOD**

### **2.1 The scope of research**

The scope of this research includes the factors that influence the turnover of MSMEs in Makassar City, especially the influence of inflation and interest rates.

### **2.2 Research sites**

The research location was carried out in Makassar City

### **2.3 Data Types and Sources**

The type and source of research data is an important factor that becomes a consideration in determining the method of data collection. The data used in this study are divided into two types based on the grouping, namely:

#### **a. Primary data**

Primary data is a source of research data obtained directly from the original source (not through an intermediary). Primary data is specifically collected by researchers to answer research questions. In this study, data were taken based on questionnaires interviewed to respondents.

#### **b. Secondary Data**

Secondary data is a source of research data obtained by researchers indirectly through intermediary media or obtained and recorded by other parties.

### **2.4 Method of collecting data**

#### **a. Field Research**

Namely taking in the area / research location with data collection techniques as follows:

- 1) First, observation, namely data collection techniques carried out by observing the object.
- 2) Second, interviews, namely data collection techniques by holding questions and answers orally to respondents.
- 3) Library Research

That is research through several reading books, literature or scientific information to obtain the underlying theories in analyzing the data obtained from the research location.

## 2.5 Population and Sample

### a. Population

Population is the total number of units or objects of analysis whose characteristics are to be estimated. The population in this study is data on inflation and interest rates as well as financial statements of MSME profit and loss in Makassar City.

### b. Sample

The sample is part of the population to be investigated. The sample in this study is data on inflation, interest rates, and MSME turnover in 2002-2012.

## 2.6 Data analysis technique

### a. Multiple Linear Regression Analysis

Multiple linear regression model is a regression analysis technique that explains the relationship between two or more independent variables and the dependent variable. Data analysis was carried out with the help of SPSS 17 for windows program. The equation of the multiple regression model according to the following:

$$Y = a_0 + b_1X_1 + b_2X_2$$

Information:

Y = MSME Turnover (Rp)

a = Constant

X1 = Inflation (%)

X2 = Interest Rate (%)

b<sub>1</sub>, b<sub>2</sub> = Regression coefficient

## 2.7 Hypothesis test

Hypothesis testing in this study includes simultaneous testing (f-test), individual testing (t-test), and estimation determination test (R<sup>2</sup>), classic 37 assumption test which includes multicollinearity, heteroscedasticity, autocorrelation and normality.

### a. Classic assumption test

#### 1) Multicollinearity Test

Multicollinearity is a condition where there is a strong correlation between the independent variables (X) which are included in the formation of the linear regression model. To detect multicollinearity using Eviews-7.0 can be done by looking at the correlation between independent variables (Correlation Matrix).

#### 2) Heteroscedasticity Test

This test aims to test whether in the regression model there is an inequality of variance from the residuals of one observation to another observation. Heteroscedasticity occurs when the disturbance variable does not have the same variance for all observations. Due to heteroscedasticity, the OLS estimator is unbiased but inefficient. The way to detect the presence or absence of heteroscedasticity can be done by using white heteroscedasticity which is available in the Eviews 7.0 program.

#### 3) Normality test

The normality test is to see whether the residual value is normally distributed or not. A good regression model is to have a normally distributed residual value. So the normality test is not carried out on each variable but on the residual value. There is often a common error, namely that the normality test is carried out on each variable.

### b. Statistic test

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

The coefficient of determination refers to the ability of the independent variable (X) in explaining the dependent variable (Y). The coefficient of determination is used to calculate how much the variance and the dependent variable can be explained by the variation of the independent variables. The largest R<sup>2</sup> value is 1 and the smallest is 0 (0 < R<sup>2</sup> < 1). If R<sup>2</sup> is equal to 0 then the regression line cannot be used to make predictions on the dependent variable, because the variables included in the regression equation have no effect on the dependent variable variance is 0. There is no definite measure of how large R<sup>2</sup> is to say that a choice of variables it's right. If R<sup>2</sup> is greater or closer to 1,

then the model is more accurate to the data. For service data which means it is cross section, data obtained from many respondents at the same time,

2) Simultaneous Significant Testing (Statistical f-test test)

This test is used to determine the effect of the independent variable significantly on the dependent variable. Where if  $f_{count} < f_{table}$ , then  $H_0$  is accepted or the independent variables together have no effect on the dependent variable (not significant), in other words changes that occur in the dependent variable cannot be explained by changes in the independent variable, where the level of significance used is 5%. Analysis of the coefficient of determination is used to measure how much influence the independent variables (inflation and interest rates) have on the dependent variable (MSME turnover).

3) Individual Parameter Significance Test (Statistical t-test)

To examine the effect of independent variables on the dependent individually, the following hypotheses can be seen:  $H_1 : 1 = 0 \rightarrow$  no effect,  $H_1 : 1 > 0 \rightarrow$  positive effect,  $H_1 : 1 < 0 \rightarrow$  negative effect. Where 1 is the coefficient of the 1st independent variable, namely the value of the hypothesis parameter. Usually the value of is considered zero, meaning that there is no effect of the X1 variable on Y. If  $t_{count} < t_{table}$  then  $H_0$  is accepted (not significant). The t test is used to make a decision whether the hypothesis is proven or not, where the significant level used is 5%.

## 2.8 Operational Definition of Research Variables

The operational variables in this study are divided into two, namely the dependent variable (Y) and independent (X) where the independent variables are divided into inflation (X1) and interest rates (X2) as explained below:

- a) Inflation (X1) is the inflation rate that occurred in Makassar City in the period 2002-2012 which is calculated by percentage (%).
- b) Interest rate (X2) is the interest rate that occurred in 2002-2012 which is calculated as a percentage (%).
- c) MSME turnover (Y) is the income volume of MSMEs (Micro, Small and Medium Enterprises) during the period 2002-2012 in Makassar City.

## 3. RESULTS AND DISCUSSION

### 3.1 Descriptive Analysis

#### a. Descriptive Research Object

Makassar City is the Capital City of South Sulawesi Province, which is located in the southern part of Sulawesi Island, formerly known as Ujung Pandang, which is located between 119:18'38" to 119:32'31" East Longitude and between 5:30'30" to 5:14'49" South latitude, which borders Maros Regency to the north, Maros Regency to the east, Gowa Regency to the south and Makassar Strait to the west. The area of Makassar City is recorded at 175.77 km<sup>2</sup>. The sea area is calculated from 12 miles from the mainland by 29.9 Km<sup>2</sup>, with a topographic elevation with a slope of 0: to 9. There are 12 small islands, 11 of which have been named and 1 island that has not been named. Makassar City has a coastline of approximately 100 km which is crossed by two rivers, namely the Tallo River and the Jeneberang River.

#### b. Description of Factors Affecting MSME turnover in Makassar City

##### 1) Inflation Rate

Makassar City has an inflation rate that fluctuates from year to year. The highest inflation rate occurred in 2005 and 2008 namely the inflation rate reached 15.20% and 11.79% while the lowest inflation rate occurred in 2011 which was only 2.87% this shows the government's role in suppressing the inflation rate successfully although in 2012 it rose again to 4.03%. The developments that occur fluctuate every year, a significant development occurred from 2005 which was 8.73 and the lowest occurred in 2009 which was (-8.55). This indicates that the inflation rate from year to year has decreased significantly.

##### 2) Interest Rate

The interest rate fluctuated from 2002-2012, but the highest interest rate occurred in 2002 at 18.04% while the lowest interest rate occurred in 2012 at 11.08%. This is in line with the inflation rate

which in 2011 and 2012 also tended to fall. The highest interest rate development occurred in 2008 at 1.8 and the lowest occurred in 2006 at (-2.86).

### 3) MSME Turnover Development

Turnover which continues to increase from year to year, this can be seen from the growth of turnover in the form of percentages from 2002-2005, turnover did not experience much increase, but starting from 2006-2012 it continued to experience a significant increase even though in 2007-2008 the percentage continued to increase. growth decreased from 3.51 to 2.74 so the difference was 0.77%. There was a drastic increase in the percentage in 2009-2010, namely 5.12 to 18.23, the difference was 13.11%. This shows that the turnover achieved was quite large. The same thing can also be seen in 2011-2012, which was 20.95 to 40.16. reach 19,

## 3.2 Inferential Analysis

### a) Prerequisite Test Analysis (Classic Assumption Test)

#### 1) Data Multicollinearity Test

To determine the multicollinearity between the independent variables, it can be seen through the VIF (variance inflation factor) of each independent variable on the dependent variable. If the VIF value is not more than 5, it means that there is no multicollinearity in the model. the amount of VIF (variance inflation factor) and Tolerance, the guidelines for a regression model that are free of multicollinearity are:

- a) Have a VIF value around the number 1
- b) Have a TOLERANCE number close to 1

**Table 1**  
Multicollinearity Test Results of Independent Variables

Independent Variable		Tolerance	VIF	Decision on Multicollinearity Assumption
Inflation Rate	(X1)	0.582	1,719	fulfilled
Interest rate	(X2)	0.582	1,719	fulfilled

In the table above, it can be seen that the two independent variables have a VIF value around number 1 (Inflation rate = 1.719 and interest rate = 1.719), the magnitude of the Tolerance number is all close to 1 (Inflation rate = 0.582 and Interest rate = 0.582), so it can be concluded that concluded that there is no multicollinearity between the two independent variables and the regression model is feasible to use.

#### 2) Heteroscedasticity Test

The purpose of this test is to test whether in a regression model, there is an inequality of variance from the residuals from one observation to another. If the variance of the residuals from one observation to another observation remains, it is called Homoscedasticity, and if the variance is different, it is called Heteroscedasticity. A good regression model is that there is no heteroscedasticity.

#### 3) Data Normality Test

Normality testing is used to test whether in a regression model, the dependent variable, the independent variable or both have a normal distribution or not. A good regression model is a normal or close to normal data distribution.

#### 4) Data Linearity Test

In the Normal P-Plot of Regression Stand graph above, it can be seen that the points (data) are around a straight line and tend to form a straight line (linear), so it can be said that the linearity requirements have been met. Thus, because the linearity requirements have been met, the regression model is feasible to use to predict turnover based on the independent variables.

- a) Hypothesis Testing The influence of factors that affect the turnover of MSMEs in Makassar City  
Regression analysis was conducted to determine the level of influence between the independent variables on the dependent variable, either simultaneously or partially, and to test the research hypotheses that had been previously determined. In this study, the analysis was conducted to determine the effect of price and distribution on customer satisfaction. The test results are presented in the following recapitulation of the results of the Multiple Regression analysis:

**Table 2**  
Recapitulation of Multiple Linear Regression Analysis Results

Variable	Regression Coefficient (B)	t-count	t-table	Sig
Inflation Rate (X1)	0.303	1,113	1,859	0.298
Interest Rate (X2)	-0.972	-3,569	1,859	

Constant = 23,759  
R = 0.809  
R square = 0.655  
Adjusted R Square = 0.569  
F count = 7.596  
F table = 4.46  
Significance F = 0.014

Based on the results of the regression coefficient (B) above, the following regression equation is obtained:

$$Y = 23.759 + 0.303 X1 - 0.972 X2$$

#### b) Regression Coefficient

Calculations performed to measure the proportion or percentage of the total variation of the dependent variable that can be explained by the regression model. From the results of the above regression obtained R of 0.809. This shows a very strong positive correlation and a close relationship between the Y variable and the X variable.

#### c) R Squared Test (R<sup>2</sup>)

Calculations performed to measure the proportion or percentage of the total variation of the dependent variable that can be explained by the regression model. From the regression results above, the value of R squared (R<sup>2</sup>) is 0.655, this means that 65.5% of the variation of changes in the MSME Turnover variable can be explained simultaneously by variations in the Inflation Rate and Interest Rate variables, the remaining 34.5% is determined by the variable or other factors outside the model.

### 3.3 Testing the Hypothesis of Factors That Affect the Turnover of MSMEs in Makassar City Simultaneously

The F-statistical test was used to determine the relationship between the independent variables together on the dependent variable (simultaneously). F-statistics testing is done by comparing the Fcount with the F-table. If F-table < F-count means Ho is rejected or the independent variables jointly have a significant effect on the independent variable, but if F-table > F-count means Ho is accepted or the independent variables together have no effect on the dependent variable. The hypothesis used is: Ho : 1 = 2 = 0, meaning that the independent variable as a whole has no effect on the independent variable. Ha : One b 0, means that the independent variable as a whole has an effect on the independent variable. The calculation results obtained are F-count 7.596 while F-table = 4.46, so that F-count > F-table (7.596 > 4.46). The comparison between F-count and F-table which shows that F-count > F-table, indicates that the independent variables together have a significant effect on the dependent variable, so that the Inflation Rate (x1) and Interest Rate (x2) variables together -the same has a significant effect on MSME turnover in Makassar City at a significant level of 5%.

## 4. CONCLUSION

Based on the results of research on the effect of inflation and interest rates on MSME turnover in Makassar City, it can be concluded as follows:

- Simultaneously the comparison between F-count and F-table which shows that F-count > F-table, indicates that the independent variables together have a significant effect on the dependent variable, so that the Inflation Rate (x1) and Interest Rate (x2) variables jointly have a significant effect on the turnover of MSMEs in Makassar City at a significant level of 5%.
- Partially based on the results of the t-test analysis that has been carried out, it can be seen that: For the X1 variable (inflation rate) t-count < t-table so that the hypothesis is rejected where the inflation rate has no significant effect but has a positive effect on MSME turnover, while for the X2

variable ( interest rate)  $t\text{-count} > t\text{-table}$  so that the hypothesis is accepted where interest rates have a significant but negative effect on MSME turnover.

- c. The magnitude of the correlation between the inflation rate and interest rates on MSME turnover is 0.655 where the relationship is classified as very strong or 65.5%. The effect on MSME turnover means that the effect of inflation and interest rates on MSME turnover is 65.5% while the remaining 34.5 percent is influenced by other factors not examined in this study.

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