

ANALYSIS OF FACTORS AFFECTING THE INVESTMENT IN NORTH SUMATERA

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Abstract

This article focused on analyze, effect of the income, interest rates, government expenditure, and inflation to investment in North Sumatera. Data used time series of 1982 - 2012. This article use analyzer model equation with method of Two Stage Least Squared (TSLS). The result of research concludes that the income have a significant and positive impact on the investment, interest rates have significant and negatively impact on the investment, government expenditure significantly and positive on the investment, while inflation is not significant and negative effect on the investment in North Sumatera. If income increases, the investment will also increase. If interest rates increases, the investment will decreases, and If government expenditure increases, the investment will increases.

Keywords : *income, interest rates, goverment expenditure, inflation, and investment*

A. Introduction

Investment is an important factor for economic growth in the long term, because the investment is intended for the purchase of capital goods that can help entrepreneurs to keep their activities. Mankiw (2007: 447) says that the expenditures on investment goods aimed at improving standard of living for several years forward. Investments can be determined by the size. Besides, other factors that may affect the investment activities namely interest rates. Interest rates are too high will affect the present value of cash flows of the company, so that investment opportunities will not be as attractive anymore. High interest rates also will increase the cost of capital that must be borne by the company. Low interest rates will increase investor because bank loans are still favorable for investment. When interest rates are low, investment will increase. This means showing that with high interest rates can decrease the interest of individuals to invest. In other words, there is a negative relationship between interest rates and investment. Increased government expenditure to raise aggregate demand directly, tax cuts create more used to do expenditure and raise aggregate demand by increasing consumer expenditure (Mishkin, 2008: 253). It means that government expenditure will affect the amount of investment through increased aggregate demand. In the event of an increase in aggregate demand then this will bring a new spirit for producers to produce more goods and services that will ultimately increase the amount of investment. Inflation is also a factor that can affect investment, whereby if the price level has increased so manufacturers will also minimize the amount of production. It's happened because when the price increases the purchasing power of the community will

also be on the wane. Hence, the investment is important to boost the region's economy and the national economy, it is deemed the need for government regulation to set the course of the economy both fiscal policy and monetary policy through monetary control variables that influence.

Table 1 shows the development of the investment period in 2002-2012, development of the investment has fluctuated in generally, with the lowest investment growth occurred in 2008, amounting to - 41.31% or (Rp.2.003,12 billion) that impact on the development of 6 , 92% to 6.39% or by Rp.6.380,09 billion. In 2003, investment has increased very dramatically in the amount of 205.62% or Rp.971,66 billion. While it experienced a drastic decline anyway, that is. -33.58% or (Rp.39.835,29 Billion) .Next highest growth occurred in 2007, namely 6.92% or Rp. 6462.16 billion while investment declined from the previous year of 69.55% or (Rp.2.003,12 billion).

Table 1
The Developments of Investments, Incomes,
Government Expenditures, Interest Rates, and
Infaltion in North Sumatera
From 2002-2012

Years	Investments (Billion Rp)	Develop ments (%)	Incomes (Billion Rp)	Deve lopm ents (%)
2002	472.54	-	118.640,90	-
2003	1.444,20	205.62	78.805,61	- 33.58
2004	1.279,61	-11.40	83.382,95	5.81
2005	1.091,15	-14.73	87.897,79	5,41
2006	2.859,55	162.07	93.330,11	6.18
2007	4.848,48	69.55	99.792,27	6.92
2008	2.845,36	-41.31	106.172,36	6.39
2009	2.732,34	-3.97	111.559,22	5.07

2010	4.131,93	51.22	118.640,90	6.35
2011	6.664,23	61.29	126.450,62	6.58
2012	8.745,18	31.23	134.460,62	6,33

Government Expenditures (Billion Rp)	Developments (%)	Interest Rates (%)	Developments (%)	Inflations (%)	Developments (%)
1.021,3	-	12,93	-	10,03	-
1.352,0	32,38	8,31	-35,73	5,06	-49,55
1.501,5	11,06	7,43	-10,59	6,40	26,48
1.830,6	21,92	12,75	71,60	17,11	167,34
2.184,7	19,34	9,75	-23,53	6,60	-61,43
2.560,7	17,21	8,00	-17,95	6,59	-0,15
2.967,3	15,88	10,85	35,63	11,06	67,83
3.444,6	16,09	6,46	-40,47	2,78	74,86
3.833,2	11,28	6,64	2,75	6,96	150,20
4.677,9	22,04	6,00	-9,64	3,79	-45,55
7.677,9	64,13	5,75	-4,17	4,30	13,46

Source: Central Bureau of Statistics and Indonesia Bank

In addition there are several other factors that may affect investment in terms of both fiscal and monetary policies. Table 1 also shows the development of interest rates fluctuated during the period 2002 - 2012. In 2004 interest rates have declined by -10.59% or by (0.88%) which impact on investment also declined by -11.40% or Rp 164.59 billion. The same thing can also be seen in 2009, interest rates fell by -40.47% or by (4.39%) while investments also decreased -3.97% or (Rp 113.02 billion). While the development of government expenditures from year to year tend to increase. Developments in government expenditures were highest in 2003 in the amount of 32.38% or Rp.330,7 billion, it is followed by a rise in investment growth in the amount of 205.62% or 971.66 billion, while it decreased dramatically, reaching -33, 58% or (Rp. 39835.29 billion).

In 2011, government expenditures continued to increase to 22.04% or Rp 844.7 billion, while investment also increased by 61.29% or Rp 2532.3 billion. The factors affecting other investment is inflation. Inflation is rising of prices of goods continuously. Inflation has a negative relationship with the investment. It can be seen in Table 1 the development of inflation in 2010, inflation increased by 150.20% or by 4.18% while investment also increased by 51.22% or Rp 1399.59 billion. This is contrary to the ideal state

Thus, it can be seen that between, government expenditures, interest rates and inflations may affect investment areas of North Sumatra. So authors interested in conducting research entitled "Analysis of Factors Affecting Investment in North Sumatera".

B. Methods of Research

1. Factors that Influencing the Investment

a. Effect of Incomes on Investment.

According to Salim (2008: 37) says that Investment based on the effect is an investment that is based on factors that influence or not on investment activity. Investments based on the effect is divided into two kinds, namely as follows:

- 1) Autonomous investment (stand-alone) is an investment that is not influenced by levels, speculative. For example, the purchase of securities.
- 2) Induced investment (influence-causing) is an investment that influenced the increase in demand for goods and services and levels. For example, transitory income, i.e. income earned in addition to working, such as flowers and so on. This theory was developed by Milton Friedman.

b. Effect of Interest Rate on Investment

According Prathama (2008: 279) which most determines the level of investment cost is the interest rate of the loan, if interest rates is higher, so the cost of the investment is more expensive. As a result, interest in investing declines. The amount of goods items further capital requirements depend on the interest rate that measures the cost of funds used to finance investment

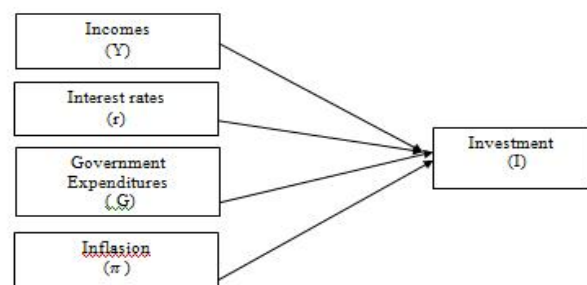
c. Effect of Government Expenditures on Investment

Furthermore, Dornbusch (1997: 30) says that the interest rates are not changed. The level of higher government expenditures will push the level of aggregate demand. To meet the demand for goods increases, the output should be increased.

d. Effect of Inflation on Investment

High inflation is the inflation variable. I.e. countries with average high inflation tend to have a big change inflation rates from year to year. The implication is if you decide to apply the monetary policy, the inflation is high. A State likely to accept variable inflation, variable inflation increases uncertainty for creditors and debtors by making them subject to the redistribution of wealth arbiter in large numbers (Mankiw, 2007: 98)

By elaborating the theories above it can be described as the following frameworks:



Picture 1: The Conceptual Framework of Factors Analyzing which Affect the Investment in North Sumatera

Based on the framework above, and the data used is then the time series data before estimating the model first performed the following tests:

1. Stationary Test

Table 2 describes each stationary variable at certain levels 1st difference. From the table it can be known that the investment variable, interest rates, government expenditure, and inflation has a small probability value of $= 0.05$ in 1st difference, therefore these variables are stationary at 1st difference.

Table 2
Stationary Test Result of Each Variable

Variable Name	Degree	Probab ility Value
Investment (I)	1 st difference	0.0000
(Y)	1 st difference	0.0002
Interest Rates (R)	1 st difference	0.0002
Government Expenditures (G)	1 st difference	0.0092
Inflasion ()	1 st difference	0.0001

Source: Data Processing Result by Eviews, $n = 31$ $= 0,05$

2. Cointegration Test

Tabel 3
Cointegration Test Result

Description	Coefficient	Std. Error	t-Statistic	Probability
RESIDUAL1 (-1)	-0,957997	0,205307	-4,666175	0,0001

Source: Data Progressing Result by Eviews, $n = 31$ $= 0,05$

From Table 3, it can be seen that the equation RESIDUAL1 (-1) small probability of $= 0.05$. Therefore the equation in this study is cointegrated or explains each other. In other words, even all of the variables in each equation in this study stationary but all of the variables in the equation have a relationship or long-term balance between these variables. Thus the equation no longer contains spurious regression problem (spurious regression).

C. Result and Discussion

RESULT

Investment Model

From the estimates that have been made, the investment equation model is obtained in this study are as follows:

$$\text{Log (I)} = 3,914 + 1.362 \log(\text{Y}) - 0,255 \text{ R} + 0,0006 \text{ G} - 0,006 \log(\text{ })$$

Investment Estimation Model (I) North Sumatra is affected by (Y), the interest rate (R), government spending (G), and inflation (). The estimation results of the investment equation are processed using eviews can be shown in Table 6:

Table 4

The Investment Estimation Result Equation

Dependent Variable: LOG(I)

Method: Two-Stage Least Squares

Date: 06/18/16 Time: 16:40

Sample: 1982 2012

Included observations: 31

Instrument list: R-1 INF-1 MS G T-2

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.914637	4.760821	0.822261	0.4184
LOG(Y)	1.361934	0.377137	3.611245	0.0013
R-1	-0.254969	0.098405	-2.591014	0.0123
INF-1	-0.005702	0.019333	-0.294939	0.7704
G	0.000577	0.000246	2.346326	0.0073
R-squared	0.651683	Mean dependent var	13.17666	
Adjusted R-squared	0.436558	S.D. dependent var	1.872013	
S.E. of regression	1.405185	Sum squared resid	51.33818	
F-statistic	6.873254	Durbin-Watson stat	1.745017	
Prob(F-statistic)	0.000649			

The Eviews Progressing Result

DISCUSSION

Influence Incomes, interest rate, government expenditures, and inflation Against North Sumatra Regional Investment

Incomes, Interest rates, government expenditure, and inflation together have a significant effect on the investment areas of North Sumatra. Partially, the positive and significant effects impacts on the investment areas of North Sumatra. This is evident from a smaller probability value of $= 0.05$ or at 0.0013. This shows that there are positive and significant correlation between the investment and this indicates that the investment area of North Sumatra is determined by the direction of the same. If the number has increased, then investment will also increase. Vice versa, if it declines, the investment will also be decreased. If society had increased, partly amount to be invested will increase as well. As we know that it is a function of consumption and saving. When increasing the amount of consumption will not change (constant) and this will impact on increasing the amount of savings or investments. This is in line with Salim's statement (2008: 37), he states that

the induced investment (influence-causing) is an investment that influenced the increase in demand for goods and services and levels. For example, transitory income, i.e. income earned in addition to working, such as flowers and so on. This result is in line with research conducted by Alpon Satrianto (2011) who states that the positive and significant effect on the investment areas of North Sumatra.

Interest rates have a negative and significant effect on the investment areas of North Sumatra. This is evident from a smaller probability value of $t = 0.05$ or at 0.0123. This is in line with Prathama (2008: 279) who states that most determines the level of investment cost is the interest rate of the loan, the higher the interest rate, the cost of the investment is more costly. As a result, interest in investing decline. The results of this study are also in line with the opinion of Mishkin saying that when interest rates are high, some investment in physical capital will provide greater results than the interest cost of the loan, so the planned investment spending low. When interest rates are low, a lot of investment in physical capital will produce more than the interest cost of the loan funds. Thus, when interest rates are lower, the business enterprises are most likely to invest in physical capital and investment expenditures are planned to be higher (Mishkin, 2009: 233). This is in line with the results of the study Hadi Sasana (2008) who said that interest rates and a significant negative effect on private investment in Central Java.

Furthermore, government expenditure has a positive and significant impact on investment. This suggests that an increase in government expenditure will lead to an increase of investments. Vice versa, when government expenditure has decreased the amount of investment will be reduced. This happens because when the government will make improvements to its expenditure (building highways, bridges, markets and public goods more) then this will continue to be followed by the entrepreneurs to create business opportunities, with easy access to transport and other infrastructure, the production will be more effective and efficient. This is in line with the opinion of Dornbusch (1997: 30) says that the interest rate is not changed. the level of higher government expenditure will push the level of aggregate demand. To meet the demand for goods increases, the output should be increased. The results of this study are consistent with research conducted by Alpon Satrianto (2011) and Dewi Ernita (2013) which states that there is a significant relationship between government expenditure on investment. Research Hadi Sasana (2008) also stated that government spending positive effect on private investment in Central Java.

Furthermore, inflation does not have a significant effect on the investment areas of North Sumatra. No significant effect of inflation on the

investment of North Sumatra indicate that, if there was an increase or decrease of the inflation rate will not necessarily increase or decrease the investment areas of North Sumatra. An increase in inflation will cause a decrease in the amount of investment. This is not in accordance with the opinion of Mankiw (2007: 98) states that if it decides monetary policy inflation is high, variable inflation increases uncertainty for creditors and debtors by making them subject to the redistribution of wealth arbiter in large numbers. This shows that by increasing the inflation rate will lead to between creditors and debtors are trying to save themselves from the conditions that will lead their companies into bankruptcy. In other words, there is the opposite relationship between inflation and investment.

This is probably because in 2009 the inflation rate decreased to 2.78 percent, with the development of -74.86 percent. Supposedly this will be followed by the increase in the amount of investment, but in fact the amount of investment also declined by Rp. 2732.34 Billion or with the development of -3.97 percent. A similar thing happened in 2010 where the rate of inflation increases by 6.96 percent or 150.20 percent growth while the number of investments also increased by Rp.4.131,93 billion or 51.22 percent. Additionally Demand Pull Inflation can also be a contributing factor to the inflation does not affect. Given the excess demand for goods and services that exceed the amount that can be produced by the economy, the rise in prices will occur. But even if the price of goods and services to rise, employers will still try to produce goods as much as possible, so that this situation does not discourage investors to stay invested, so that inflation does not really affect the investment. These results are also similar to Hadi Sasana's results of research (2008) who said that inflation is not a significant negative effect to private investment in Central Java.

E. Closing

Incomes, Interest rates, government expenditure and inflation together - equally has significant effect on the investment of North Sumatra. Meanwhile, they have positive and significant impact on the investment areas of North Sumatra partially. Income have a significant and positive impact on the investment, Interest rates have a significant and negative effect on the investment of North Sumatra. Government expenditure has positive and significant impact on the investment of North Sumatra. Furthermore, inflation does not have a significant and negative effect on the investment areas of North Sumatra.

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