

Analysis Of Investment Credit Demand In National Private Banks In West Java

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ABSTRACT

This study is analyzing on how the Investment Loan Interest Rates (ILIR) variable, Inflation (INF) variable, and Gross Regional Domestic Product (GRDP) variable will give impacts towards the demand in Investment Credit (IC) of National Private Banks in West Java whether jointly or partially, from 2003:I – 2011:IV period. Later, this research also finds out the most influential independent variable towards Investment Credit demand. The method used in this research is the secondary data analysis method by using literature study which is supported by quantitative analysis of multiple linear regression. The solution focused at growth of investment credit of demand in National Private Banks in West Java. From the result of the analysis, it is found that the three variables have a significant effect on the demand for investment credit in National Private Banks in West Java. Partially, investment loan interest rate variable gives significant and negative effect, inflation variable doesn't give any significant effect and regional gross domestic product variable gives positively significant effect towards the demand. The regional gross domestic product variable is the most influential variable which contributing in the increasing demand of credit investment in national private bank in West Java.

Keywords: Investment Loan Interest Rates, Inflation, Gross Regional Domestic Product, And Investment Loan Demand.

1. Introduction

1.1 Background

Indonesia is developing country which has ideological goal to create a fair and prosperous society based on Pancasila. To achieve the goal, Indonesia needs to focus on the economy development by working together between government and society. It can be achieved by using banking services and other financial institutions as the intermediation board.

The association between business affairs and banking institution cannot be separated. Bank will provide investment credit and capital needed by the business enterprises. Credit provision will be very helpful for the business enterprises especially if it constitutes productive credit. In fact the bank function is not fully achieved since the growth of long term investment credit is lower than consumption credit. Here is the data of credit disbursement of national private banks in West Java.

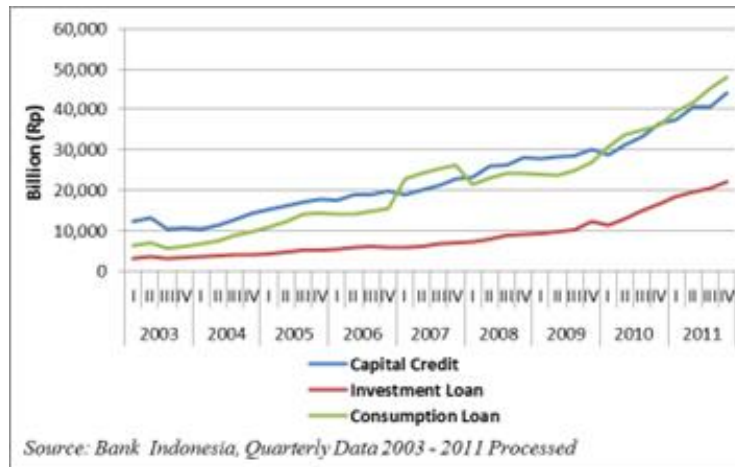


Figure 1. Graphic of Credit Disbursement

The low growth of investment credit compared with capital credit and consumption credit disbursed by national private banks in West Java reflects finance circulation in banking sectors that cannot be exploited optimally as the investment funding sources and production in the real sectors.

The condition is that the fund prepared during the period tends to increase along with the increase in people's savings and return received by the bank. Even though the growth of investment credit seems to increase from year to year but the amount is still below the capital credit and consumption credit. The fund for investment and production should be made as the main priority since they are important factors for the economy growth of a country.

Based on the explanation above, it was interesting to examine several variables influencing the Investment Credit (IC). The variables examined were Investment Loan Interest Rate (ILIR), Inflation (INF) and Gross Regional Domestic Product (GRDP). The title of the research was "Analysis of Investment Credit Demands in National Private Banks in West Java" in research period of 2003:I – 2011:IV.

1.2 Problem Identification

- Do ILIR, INF and GRDP jointly give significant effect on the demand of Investment Credit?
- Do ILIR, INF and GRDP partially give significant effect on the demand of Investment Credit?
- Which variable among ILIR, INF and GRDP is the most influential on the demand of Investment Credit?

1.3 Problem Limitation

There are a lot of variables which influence the demand of investment credit, such as: wage rate, tax rate, amount of business unit, national income, loan interest rate, inflation, gross domestic product and exchange rate. However, this study only focuses on the influence given by several variables such as: investment loan interest rate, inflation and gross domestic regional product, towards investment credit demand in national private banks in West Java of 2003:I – 2011:IV

period. Except the factors said beforehand, another factor is assumed giving constant influence towards investment credit demand in national private banks in West Java.

1.4 Research Purpose

- To know whether or not ILIR, INF and GRDP jointly give significant effect on the demand of Investment Credit.
- To know whether or not ILIR, INF and GRDP partially give significant effect on the demand of Investment Credit.
- To know which variable among ILIR, INF and GRDP is the most influential on the demand of Investment Credit.

1.5 Research Benefits

- For education purposes, this research is expected to be additional reference in developing knowledge insights and can be used as the basic theory for the next research.
- For the writer, this research can enlarge his insight and ability to apply the theories obtained in college and as one of the requirements of study completion at the Magister Management, Jenderal Soedirman University.
- For business enterprises especially bank and non-bank financial institutions, this research is expected to be reference in disbursing credit to be more efficient, effective and optimal since this institution is directly correlated to the real sectors.
- For government, this result can also be used as reference especially Bank Indonesia as the monetary agent in making monetary policy.
- For people, this research is expected to provide information to increase investment loan especially for the entrepreneurs.

1.6 Framework

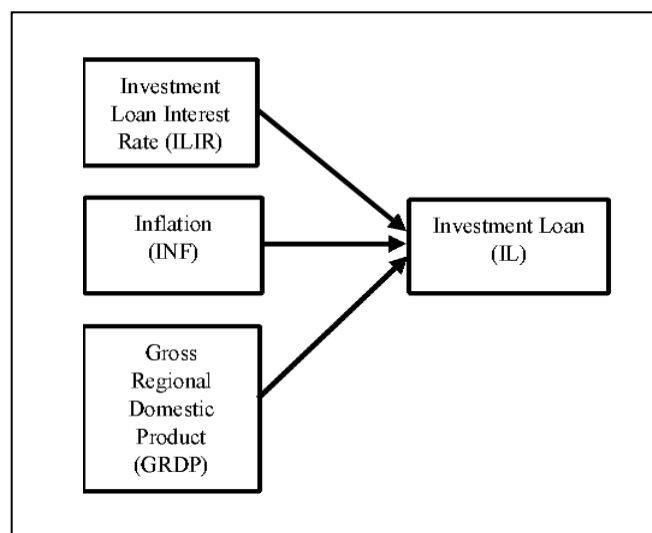


Figure 2. Framework

1.7 Hypothesis

- ILIR, INF and GRDP jointly give significant effect on the demand of Investment Credit in national private banks in West Java.
- ILIR, INF and GRDP partially give significant effect on the demand of Investment Credit in national private banks in West Java.
- ILIR is the most influential variable on the demand of Investment Credit in national private banks in West Java.

2. Research Method and Data Analysis Technique

2.1 Research Method

- Location and scope of research
This study conducted in Indonesia in West Java regional scope and it uses micro and monetary science within.
- Object of research
Object of the study us the development of investment credit which is conducted by national private banks in West Java by using Go-Public national private banks which give Investment Credit (IL) and the determining factors, such as Investment Loan Interest Rate (ILIR), Inflation (INF) and Gross Regional Domestic Product (GRDP) during 2003:I – 2011:IV period.
- Period of Research
This study was done by using the quarterly data which have been processed and were issued by Bank Indonesia and Badan Pusat Statistik (BPS) during 2003:I – 2011:IV period in national private banks in West Java scope.
- Data Collecting Method
The method used for this study is the secondary data analysis method by using literature study and it is supported by quantitative analysis of multiple linear regression. The purpose of the analysis is to see the impact of the independent variables towards the dependent variable.
- Sources of Data
The data used for this study come from literature source, the yearly report which has been collected, issued and published by Bank Indonesia and Badan Pusat Statistik (BPS) for the society, and many journals reports.
- Types of Data
The type of data used in this study is time series secondary data during 2003:I – 2011:IV period. Time series data is the data tabulated from time to time (daily, monthly, yearly). Its characteristics are stationary and non-stationary. Stationary time series data is the data variance tends to be similar from time to time, while non-stationary data has different variance. Time series data is data collected based on the chronological order during a certain time (Widarjono, 2007). Below is the required data for this study, such as:
 - Outstanding investment credit demand in national private banks in West Java during 2003:I – 2011:IV period in billion rupiah(s).
 - Investment loan interest rate in national private banks in West Java during 2003:I – 2011:IV period. In percentage.

- Inflation rate in West Java during 2003:I – 2011:IV period. Inflation rate (yoy) in percentage.
- Gross regional domestic product in national private banks in West Java during 2003:I – 2011:IV period in billion rupiah(s).
- In this study, gross regional domestic product data is only provided yearly and in order to get the quarterly data, it is calculated by linear interpolation so the data will be quarterly data (Insukindro. 1993) with the following formula:

$$Y_{1t} = \frac{1}{4} \left[Y_t - \frac{4,5}{12} (Y_t - Y_{t-1}) \right] \quad (1)$$

$$Y_{2t} = \frac{1}{4} \left[Y_t - \frac{1,5}{12} (Y_t - Y_{t-1}) \right] \quad (2)$$

$$Y_{3t} = \frac{1}{4} \left[Y_t + \frac{1,5}{12} (Y_t - Y_{t-1}) \right] \quad (3)$$

$$Y_{4t} = \frac{1}{4} \left[Y_t + \frac{4,5}{12} (Y_t - Y_{t-1}) \right] \quad (4)$$

Explanation:

Yt : Data from year t period

Yt-1 : Data from the previous year

Y1t Y2t Y3t Y4t : Data from Q1, Q2, Q3, and Q4 in year t period

2.2 Data Analysis Technique

- Multiple Linear Regressions

To know the effect of ILIR, INF and GRDP on the demand of investment loan, the researcher used multiple linear regressions equation as follow:

$$IL = a + b_1ILIR + b_2INF + b_3GRDP + e$$

Where:

IL = Demand of Investment Loan

a = Constant

b = Structural Coefficient (parameter)

ILIR = Investment Loan Interest Rate

INF = Inflation

GRDP = Gross Regional Domestic Product

e = error term.

- Data Standardization

The imbalance problem of a measure of each variable was the obstacle of the research. Therefore, to facilitate the regressions of the variables Investment Credit demand (IC), Investment Loan Interest Rate (ILIR), Inflation (INF) and Gross Regional Domestic

Product (GRDP), the researcher made the calculation unit the same i.e. natural logarithm (ln). Systematically, the regression equation can be written as follow:

$$\ln IL = + b_1 \ln SBKI + b_2 \ln INF + b_3 \ln PDRB + e \quad (5)$$

- **Classical Assumption Test**

- **Autocorrelation Test**

This research employed Breusch-Godfrey (B-G Test) method to test the symptom of autocorrelation (Suliyanto, 2011). This test assumes that the confounding factor U_t is reduced by following path order autoregressive scheme.

In this study, autocorrelation test uses Breusch-Godfrey (B-G Test) method, which is used to examine the problem of high-level autocorrelation. This test assumes that the U_t user factor is derived by following path order autoregressive scheme. In this method, the value of R^2 will be used as the basis to calculate the value of X^2 calculation with formulation of $X^2 = (n-p) \cdot R^2$. If the value of X^2 calculation will be lower than X^2 table, it shows that there is no autocorrelation problem.

- **Heteroscedasticity Test**

This research used Glejser method to test the symptom of heteroscedasticity. If the probability value is higher than the alpha (sig. $> \alpha$), the model does not contain heteroscedasticity symptom (Suliyanto, 2011).

- **Multicollinearity Test**

Multicollinearity test can be performed by looking at TOL (Tolerance) value and Variance Inflation Factor (VIF). If TOL is less than 1 or VIF is not more than 10, multicollinearity does not occur in the model (Suliyanto, 2011).

- **Statistical Test**

- **Determination Coefficient Analysis (R^2)**

Determination coefficient analysis (R^2) was used to measure the ability of the model in clarifying the variation of dependent variables. The higher the determination coefficient value (R^2), the more appropriate the model can explain the variation of the dependent variable (Gujarati, 1995).

- **F test**

According to Gujarati (1995), to know the effect of independent variables jointly on the dependent variable, F test can be employed.

- **t test**

t test is used to know the effect of independent variable partially on the dependent variable (Gujarati, 1995).

- **Elasticity Test**

Elasticity test is used to know the most influential independent variable on the dependent variable. If the data is in the form of natural logarithm, the value of elasticity can be seen in the regression coefficient by ignoring the positive and negative sign (Sritua, 1993)

3. Result Analysis and Discussion

3.1 Classical Assumption Test

- **Autocorrelation Test**

Based on the calculation result of autocorrelation test using Breusch-Godfrey (B-G Test) method, χ^2 statistic was 4,556 and χ^2 table with df (2 ; 0,05) was 5,991. Thus, χ^2 statistic < χ^2 table (4,556 < 5,991), it meant the regression equation model did not have autocorrelation problem. For complete result, it can be seen in the following Table 1.

Table 1. Autocorrelation Test

<i>Model</i>	<i>R Square</i>
1	.134

Data source: Output Analysis SPSS 17

- **Heteroscedasticity**

Heteroscedasticity test was performed by the calculation of the value of each independent variable with absolute residual value and the further result can be seen in the following Table 2.

Table 2. Heteroscedasticity Test

No	Variable	t	Sig.
1	ILIR	-0,273	0,787
2	INF	-0,649	0,521
3	GRDP	0,971	0,339

Data source: Output Analysis SPSS 17

As clearly seen in Table 2, it can be concluded that the probability value of the variable of investment loan interest rate, inflation and gross domestic regional product was bigger than its alpha ($\alpha=0,05$). It means that there was no heteroscedasticity symptom in the model of the research.

- **Multicollinearity**

Multicollinearity detection was performed by noticing the regression coefficient partially. The test was conducted by looking at the value in the column variance inflation factor (VIF), as attached in Table 3. A variable is said to have multicollinearity if VIF is higher than 10. Based on the criteria, from the VIF value, it can be said that there was no multicollinearity among the independent variables, so that the independent variables used as the predictor in this research were truly independent.

Table 3. Value of VIF for multicollinearity Test

No.	Variable	VIF
1	ILIR	1,838
2	INF	1,252
3	GRDP	2,137

Data Source: Output Analysis SPSS 17

3.2 Multiple Linear Regression Analysis

To know the effect of investment loan interest rate, inflation and gross regional domestic product on the demand of investment credit in national private bank in West Java, the researcher used

multiple linear regression analysis by using SPSS 17 for windows. Based on the calculation of multiple linear regression analysis, the following equation was obtained:

$$\ln IC = -20.858 - 0.587 \ln ILIR - 0.006 \ln INF + 3.441 \ln GRDP$$

tstat = (-12.591)	(-4.889)	(-0.212)	(27.276)
n = 36	R ² = 0.984		
Adj R ² = 0.983	ttable = 1.692		
Fstat = 666.562	Ftable = 2.892		

3.3 Statistical Test

- **Determination Coefficient Test (Adjusted R Square – R²)**
Based on the calculation result of multiple linear regression analysis, the determination coefficient value (Adjusted R Square – R²) was 0,983 and it means that 98,30 percent of variation change of demand for investment credit in national private banks in West Java was influenced by the variation of the change of investment loan interest rate, inflation and gross regional domestic product. And the residual 0, 017 or 1,70 percent was explained by other variable beyond the regression model of this research.
- **F test**
To know the effect of the Investment Loan Interest Rate (ILIR), Inflation (INF), and Gross Regional Domestic Product (GRDP) variables jointly towards Investment Credit (IC) demand in national private banks in West Java, it uses F test calculation. Based on the previous F test which listed in the previous table, it results F statistic in the amount of 666.562 by using confidence level of 95% ($\alpha=0.05$) and df (k-1)(n-k) and F table itself is 2.892.
So, F stat (666.562) is greater than F table (2.892), which concludes that Ho is rejected. The rejection of Ho means that there is a significant effect from investment loan interest rates (ILIR) variable, inflation (INF) variable, and Gross Regional Domestic Product (GRDP) variable jointly towards the demand in Investment Credit (IC) of national private banks in West Java, so the first hypothesis is accepted. As for the depiction of the Ho rejection from F test can be seen in Figure 3

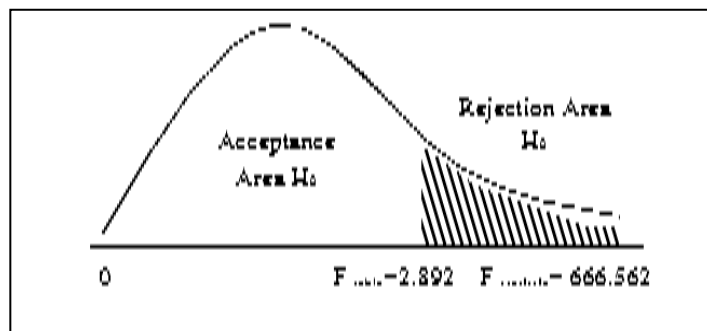


Figure 3. F test curve of the effect of ILIR, Inflation and GRDP jointly on the demand for investment credit

- t test

To know the effect of the variable of investment loan interest rate, inflation, and gross regional domestic product partially on the demand for investment credit in national private banks in West Java, the researcher used t test calculation. By using the significance level 95% ($\alpha = 0,05$) and df (n-k), the t table obtained was (\pm) 1,692, meanwhile from the calculation result, the t statistic of the variable of investment loan interest rate (tX1) was -4,889. Thus, -t statistic < -t table which meant that there was significant effect of the loan interest rate on the demand of investment credit in national private bank in West Java. Therefore, the hypothesis which states that investment loan interest rate had significant effect on the demand for investment credit in national private banks in West Java was accepted.

Based on the calculation, the t statistic of inflation variable (tX2) was -0,212, and the t table (\pm) was 1,692. Thus, -t statistic > -t table which means that inflation had insignificant effect on the demand for investment credit in national private banks in West Java. Therefore, the hypothesis which states that inflation had significant effect on the demand for investment credit in national private banks in West Java was rejected.

From the calculation, it was obtained that the value of t table was (\pm) 1,692 and that of t statistic of GRDP (tX3) was 27,276. Thus, t statistic > t table which meant that partially the variable of gross regional domestic product had significant effect on the demand for investment credit in national private banks in West Java. In other words, the higher the gross regional domestic product, the higher the demand for investment credit. Thus, the hypothesis which states that Gross Regional Domestic Product (GRDP) had positive effect on the demand for investment credit in national private banks in West Java was accepted.

The curve of t test rejection can be seen in the following Figure 4.

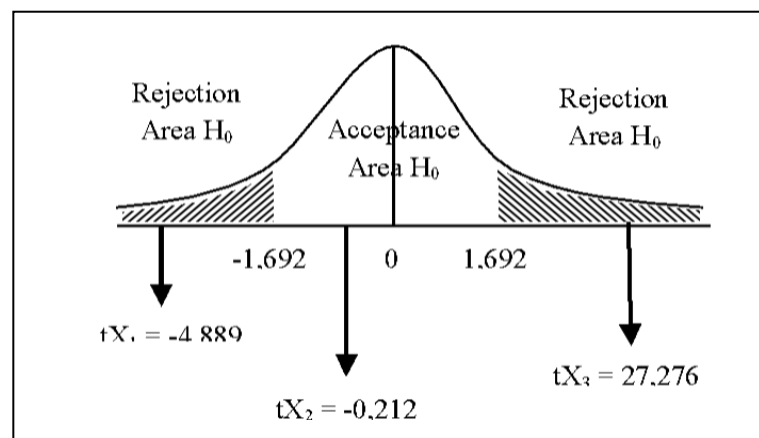


Figure 4. t test Curve of the effect of ILIR, Inflation and GRDP partially on the demand for Investment Credit

3.4 Elasticity Test

To know the variable which gave the biggest effect among loan investment interest rate, inflation and Gross Regional Domestic Product (GRDP) on the demand for investment credit in national private banks in West Java, the researcher used the comparison on regression coefficient value of

each variable. Based on the regression calculation, it was obtained that the regression coefficient value of the variable of loan investment interest rate was -0,587; the regression coefficient of inflation variable was -0,006; and that of the gross regional domestic product was 3,441. From those three regression coefficient value, the variable of gross regional domestic product contributed the biggest regression coefficient value.

It showed that the gross regional domestic product gave significant effect on the demand for investment credit in national private bank in West Java compared with the variable of investment loan interest rate and inflation. Thus, the hypothesis which states that the most influential variable was investment loan interest rate on the demand for investment credit in National Private Bank in West Java was rejected.

3.5 Economic Analysis

- The effect of investment loan interest rate on the demand for investment credit in national private bank in West Java

The research result depicted that the investment loan interest rate had significant negative effect on the demand for investment credit. From the regression result, the coefficient of investment loan interest rate was -0,587. The negative effect meant that every increase at one percent of the change of investment loan interest rate would make the number of demand for investment credit decreased at 0,587 percent. The higher the loan interest rate caused the decrease in the demand for the investment credit. In contrast, the lower the investment loan interest rate caused the increase in the demand for the investment credit in national private banks in West Java.

- The effect of inflation on the demand for investment credit in National Private Banks in West Java

The research result illustrated that the inflation did not have significant effect on the demand for investment credit. Despite the fluctuating inflation movement, the increase in inflation did not decrease the people's interest in proposing investment credit.

- The effect of GRDP on the demand for investment credit in National Private Banks in West Java

This research result showed that GRDP had significant positive effect on the demand for investment credit. From the regression result, the coefficient of GRDP was 3,441. This positive effect meant that every increase at one percent from the change of GRDP would make the number of demand for investment credit increased at 3,441 percent. The higher GRDP illustrated that West Java was the potential place to develop business and investment

4. Conclusion and Implication

4.1 Conclusion

- Based on the research result, it was obtained that the variables of investment loan interest rate, inflation and gross regional domestic product jointly gave positive and significant effect on the demand for investment credit in the national private banks in West Java.
- The investment loan interest rate had significant negative effect on the demand for investment credit. The higher the investment loan interest rate caused the decrease in the investors' interest in obtaining investment credit in the national private banks in West Java.

- Inflation did not have significant effect on the demand for investment credit. The higher the inflation did not give effect on the people's interest in proposing investment credit in the national private banks in West Java.
- Gross regional domestic product had significant positive effect on the demand for investment credit. The higher the gross regional domestic product caused the increase in the demand for investment credit in the national private banks in West Java.
- The most influential and significant variable on the demand for the investment credit in the national private banks in West Java was gross regional domestic product.

4.2 Implication

- To increase the demand for investment credit in the national private banks in West Java, the local government as the policy controller should notice the independent variables used in this research. By increasing the variable of gross regional domestic product and maintaining investment interest rate to be always low, the demand for investment credit in the national private banks in West Java will increase. Here the explanation of the reason for each independent variable:
 - The growth of gross regional domestic product in West Java from year to year should be noticed either the quantity or the quality. In this case, the local government's role is very important to make it run well. One of the ways is by creating security and stable political condition.
 - The growth of investment loan interest rate in the national private banks in West Java should be noticed. Therefore, Bank Indonesia as the policymaker should work together with the banking institutions especially national private banks in maintaining the investment loan interest rate to be always low. Thus, the investment credit will be able to be reached and run well. In addition, the intermediation function of banking will get better.
- The national private banks in West Java should use the momentum of the increase in the gross regional domestic product to escalate the demand for investment credit in order to make the banking function as intermediation institution can be assessed well.

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