

## **ANALYSIS OF THE FACTORS INFLUENCING DOMESTIC INVESTMENT IN INDONESIA FROM 1990 TO 2019**

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### *Abstract*

*Domestic investment is essentially the first step in economic development activities, which is a very important component in contributing to domestic national income. This study aims to analyze the effect of inflation, credit interest rates, labor and the IDR/US\$ exchange rate on domestic investment in Indonesia. This study uses the ECM econometric analysis method to determine the factors that influence domestic investment in Indonesia. Econometric analysis shows that inflation, credit interest rates, the IDR/US\$ exchange rate, and labor are significant to domestic investment in Indonesia. The advice given in this research is that the government should provide the development of an integrated system such as education, skills training that is commensurate with the needs of the labor market. Since the availability of a number of qualified workers will further increase the fighting power in increasing production capacity which can further increase investor interest in investing in the country and the government should anticipate the low exchange rate with a revaluation policy, namely the policy of increasing the domestic exchange rate against foreign exchange rates.*

**Keywords:** *Credit Interest Rates, Exchange Rate, Indonesian Domestic Investment, Inflation, Labor*

### **1. INTRODUCTION**

Indonesia as a developing country is a destination for investment activities, both by foreign investors and by domestic investors. It is undeniable that currently Indonesia's new investment is to reduce the unemployment rate, which after the economic crisis hit this country got worse. The higher the unemployment rate, the higher the poverty rate, this results in lower public income and ultimately lowers national income (Kusumaningtyas, 2012).

According to its usage, investment is defined as the formation of domestic fixed capital. Investment is one of the important components of aggregate demand which is an important factor for the process of sustainable development. One of the success rates is a high level of national income or a high and stable growth rate of gross domestic product (GDP) (Tulus, 2001). Domestic investment is an important component of national income in addition to consumption and government spending. The unstable component of national income is caused by factors that affect its unstable nature, namely changes in confidence in doing business, regular technological advances and the durable nature of capital goods, besides the expected level of profit is an important consideration in making investment decisions (Nisa & Juliprijanto, 2022). Investment is essentially the first step in economic development activities. Investment dynamics affect the rate of economic growth and reflect the rampant sluggishness of development. In an effort to grow the economy, each country seeks to create a climate that can stimulate investment

(Febriananda, 2011).

The government's efforts to create an environment that can encourage investment include the implementation of various rules regarding investment, including Law No. 1 of 1967, No. 11 of 1970, concerning Foreign Investment (hereinafter refers to PMA) and Law No. 6 of 1968, No. 12 1970 concerning Domestic Investment (hereinafter referred to as PMDN). It is intended that the existence of Law No. 11 of 1970 in addition to bringing in funds, also brings with it production technology, management and access to world markets. Then to create a conducive investment climate, in 1984 debureaucratization and deregulation were carried out. Through this effort, investment performance shows positive developments (Sastrowardoyo, 1994). As specified in Government Regulation (PP) No. 30 of 1994, the government allows investment to be controlled by 95% of FDI. These efforts aim to improve the local business climate and thereby attract investment.

Increased investment can offset other economic factors. One of them contributes to the high rate of inflation. The most appropriate solution to overcome high inflation is to increase interest rates. However, the existence of high interest rates reduces the level of investment due to the high cost of capital (Prasetyantono, 1995). In some developing countries, empirical evidence shows that investment spending is generally inelastic with respect to interest rates. This fact shows that interest payments in developing countries are small compared to the total investment costs (Chatak, 1981). This fact is largely due to non-economic factors that affect the low level of investment performance. The relationship between inflation and investment is negative. High inflation causes the price of most goods in a country to increase. The increase in commodity prices makes investors reluctant to invest in the country because investors feel safer investing when the inflation rate is low and stable. However, the level of investment is not only influenced by inflation and interest rates. However, it will be influenced by many other macroeconomic quantities such as the number of workers, an increase in the number of workers will increase production capacity, an increase in production capacity will increase investment (Ansar, 2008). The appreciation of the local currency against foreign currencies can increase the enthusiasm of domestic investment. The reason is, the value of domestic raw materials increases after the exchange rate strengthens, so investors prefer to invest in the country in the hope of obtaining profits in the future.

**Table 1. The Development of Domestic Investment, Inflation, Credit Interest Rates, Labor and the IDR/US\$ Exchange Rate in Indonesia 1990-2020**

Year	Domestic Investment	Inflation	Credit Interest Rate	Exchange Rate	Labor
1990	48609,5	9,53	20,3	1901	113087806
1991	37703,07	9,52	20,87	1992	115144670
1992	48443,4	4,94	19,21	2062	117704445
1993	38936,3	9,77	17,06	2110	120301486
1994	50628,1	9,24	14,96	2200	124827173
1995	59852,9	8,64	15,75	2308	131375264
1996	105715,2	6,47	16,42	2383	134548441
1997	107813,8	11,05	17,34	4650	138003713
1998	60748,5	77,63	23,16	8025	141096417
1999	71914,2	2,01	22,93	7100	141170805
2000	104732,5	9,35	16,59	9595	144033873
2001	60177,2	12,55	17,9	10400	148729934
2002	100740,1	10,03	17,82	8940	151406298
2003	12247	5,06	15,68	8465	153923648
2004	15409,4	6,4	14,05	9290	158491396
2005	30724,2	17,11	15,66	9830	160811498
2006	20649	6,6	1,1	9020	164118323
2007	34878,7	7,36	13,01	9419	166641050
2008	20363,4	11,06	14,4	10950	169328208
2009	37799,8	2,78	12,96	9400	172070339
2010	60626,3	6,96	12,28	8960	173851717
2011	76000,7	3,79	12,04	9068	173851717
2012	92182	4,3	11,27	9670	179967361
2013	128150,6	8,38	11,82	12189	182992204
2014	156126,3	8,36	12,36	12440	186100917
2015	179465,9	3,35	12,12	13795	189096722
2016	216230,8	3,02	11,21	13436	192079416
2017	262350,5	3,61	10,56	13548	197911777
2018	328604,9	3,13	10,38	14481	198126553
2019	386498,4	2,72	9,9	13901	201185014

Source: Investment Coordinating Board (BKPM), Central Statistics Agency (BPS) & Bank Indonesia

Based on table 1 above, it can be seen that PMDN in Indonesia in 1990 – 2019 fluctuated from year to year for the past 30 years. Domestic investment reached the highest figure in 2019 of 386498.4 Billion Rupiah and was at its lowest point in 2003 of 12247 Billion Rupiah.

In the long term, the presence of foreign investment can have a negative impact on economic development. Because in the long run, foreign investment can eventually kill domestic national companies, cause unemployment and hinder development in various economic sectors. This tends to mean that foreign investment does not bring significant

revenue to the government. One way is to allow investment in Indonesia so that investment in Indonesia is not controlled by foreign investment. Because national investment is one of the determining factors for economic development and economic growth. In addition, domestic investment is a very important contributor to national income.

Based on the above background, this study aims to analyze the effect of inflation, credit interest rates, labor and the IDR/US\$ exchange rate on domestic investment in Indonesia. This study uses the ECM econometric analysis method to determine the factors that influence domestic investment in Indonesia

## **2. LITERATURE REVIEW**

### **2.1. Domestic Investment**

Economic theory defines investment as spending to buy the means of production and production equipment with the aim of replacing and complementing the means of economic production that will be used to produce goods and services in the future. In other words, investment in economic theory refers to expenditures made to increase the productive capacity of the economy (Sadono, 2000).

Investment is all forms of investment activities, both by domestic investors and foreign investors to conduct business in the territory of the Republic of Indonesia, while the definition of PMDN contained in Law No. 25 of 2007 concerning Investment is an investment activity for conducting business in the territory of the Republic of Indonesia carried out by domestic investors using domestic capital. Domestic investors are individuals who are Indonesian citizens, Indonesian business units, provinces of the Unitary State of the Republic of Indonesia or investment areas within the territory of the Unitary State of the Republic of Indonesia. Meanwhile, domestic capital is capital owned by the Unitary State of the Republic of Indonesia, individual Indonesian citizens, or business entities, both legal and non-legal entities. Investment can be made as a legal entity and as a legal entity, not as a legal entity or sole proprietorship, as required by law.

### **2.2. Inflation**

Inflation is a general and continuous upward trend in prices. An increase in the price of just one or two goods cannot be called inflation unless the increase covers most of the other goods. In an economy with an inflation rate of less than 10% per year, this inflation is classified as moderate inflation. Rates that vary between 10 and 30 percent per year are classified as moderate inflation. If the inflation rate is between 30 and 100 percent per year, it is classified as severe inflation. Inflation in an area can reach hundreds, even thousands of percent per year due to an economic recession or other causes classified as hyperinflation (Boediono, 1989). Based on the factors that cause it, inflation can be divided into two types (Sadono, 2000), namely:

- 1) Demand Pull Inflation
- 2) Cost Push Inflation

### **2.3. Credit Interest Rate**

Interest is the amount that the debtor pays to the lender (Sarungu, 2012). In investing, the higher the interest rate, the less willing to invest. The effect of interest on

investment can also be explained by classical economists, who consider investment as a function of interest rates. In investing, the higher the interest rate, the less willing to invest. This is because the investor increases the cost of his investment when the expected return on the investment is greater than the return he must pay on the mutual fund, i.e. the cost price. The lower the interest rate, the lower the cost of capital, the more motivated investors are to invest (Nopirin, 1992).

#### **2.4. Exchange rate**

The exchange rate is the price of one country's currency relative to the price of another country's currency. Exchange rate is the price of a country's currency measured and expressed in another currency (Krugman, 2000). An exchange rate can be defined as the relative price of one currency against another country's currency. Exchange rate movements in the market can be influenced by fundamental and non-fundamental factors. These fundamental factors are reflected in macroeconomic variables. There are several determinants that affect the movement of exchange rates (Madura, 1993) such as Fundamental factor, Technical factor, and Market Sentiment.

#### **2.5. Labor**

Human resources (HR) have two meanings: first, human resources include the meaning of work or services that can be provided in the production process. In this case, human capital reflects the nature of a person's efforts to produce goods and services within a certain period of time. Second, human resources refer to people who can work to provide services or businesses. Being able to work means being able to carry out activities that have economic value, namely the ability of these activities to produce goods or services that meet the needs of the community. Physically, work capacity is measured by age. In other words, the working age population is considered to have worked. The working age population group is called the labor force or the labor force. In short, the workforce is defined as the working age population (Payaman, 2001).

### **3. RESEARCH METHODS**

#### **3.1. Data Types and Sources**

This type of research is quantitative research, in which this research uses quantitative methods with a scientific approach to managerial and economic decisions. In this study, this type of research uses secondary research, using time series data sources from 1990 to 2019 on data from the Investment Coordinating Board (BKPM), Central Statistics Agency (BPS) & Bank Indonesia.

#### **3.2. Research Variable**

##### **1) Investation**

Investment is an expenditure made by investors who are expected to provide benefits in the future. Domestic Investment Data used in this study is the annual realized value of PMDN which consists of the realization of PMDN in all economic sectors in Indonesia whose value is expressed in billions of rupiah during the period 1990 - 2019. The PMDN data is obtained from the Investment Coordinating Board (BKPM).

2) Inflation

In general, inflation can be interpreted as a continuous tendency to increase the price of goods. The inflation rate data used in this study is data on the annual inflation rate in Indonesia which is expressed in percent for the period 1990 - 2019.

3) Credit Interest Rate

The investment loan interest rate is the medium or long term loan interest rate used for the purposes of rehabilitation, modernization, expansion, and the establishment of new projects. The loan interest rate data used in this study is the average annual rupiah investment credit interest rate at commercial banks in Indonesia expressed in percent during the period 1990 - 2019.

4) Labor

The workforce consists of the labor force and not the labor force. Labor is part of the total population that can potentially produce goods and services. In other words, labor is a very important factor of production. The labor data used in this study is seen from the annual labor data in Indonesia which is expressed in terms of souls during the period 1990 - 2019.

5) Exchange Rate

The exchange rate or exchange rate is the price of one country's currency against the price of another country's currency / the price of a currency of a country which is measured and expressed in another currency. The exchange rate used is the rupiah exchange rate against the dollar during the period 1990 – 2019 which is expressed in rupiah.

### 3.3. Analysis Tools

The analytical tool used in this research is the Engle-Granger Error Correction Model (EG-ECM). The error correction model is able to cover many variables in analyzing long-term economic phenomena and examines the consistency of the empirical model with economic theory.

### 3.4. Data analysis technique

#### 3.4.1. ECM Test

ECM testing is intended as a measure to correct imbalances in short-term and long-term investments. As the validity of the data in the ECM test, based on the Error Correction Term value, if it is significant then the ECM test can be justified. The basic systematic model in this test is:

$$Y = F(\text{Inf}_t, \text{CIR}_t, \text{ER}_t, \text{TK}_t)$$

Therefore, the long-run model equation is:

$$Y_t = \beta_0 + \beta_1 \text{Inf}_t + \beta_2 \text{CIR}_t + \beta_3 \text{ER}_t + \beta_4 \text{L}_t + \varepsilon_t$$

Information:

$Inf_t$  = Inflation per 1990 – 2019

$CIR_t$  = Credit Interest Rate per year 1990 – 2019

$ER_t$  = Rupiah exchange rate against US\$ per year for the period 1990 – 2019

$L_t$  = Number of labor per year for the period 1990 – 2019

$\epsilon_t$  = Error Term

$Y$  = Domestic Investment (PMDN) per year for the period 1990 – 2019

Short term equation:

$$D(Y_t) = \beta_0 + \beta_1 D(Inf_t) + \beta_2 D(CIR_t) + \beta_3 D(ER_t) + \beta_4 D(L_t) + \beta_5 ECT + \epsilon_t$$

Information :

$D(Inf_t)$  = Inflation from 1986-2019 differentiated on First Difference

$D(CIR_t)$  = Loan Interest Rates from 1990-2019 differentiated on First Difference

$D(ER_t)$  = US\$ currency exchange rate from 1990-2019 differentiated in First Difference

$D(L_t)$  = Number of Workers from 1990-2019 differentiated on First Difference

$D(Y_t)$  = Differentiated Domestic Investment (PMDN) from 1990-2019 on First Difference

ECT = Error Correction Term

t = Term Error

### 3.4.2. Classic Assumption Test

#### 1) Data Normality Test

This test aims to ensure that the data distribution is normal so that further tests can be carried out.

#### 2) Multicollinearity Test

This test is carried out with the aim of knowing the level of correlation between independent variables whether it has a high correlation or not.

#### 3) Heteroscedasticity Test

This test aims to find the presence of heteroscedasticity problems or not. This test requires the Breusch test. The standard value of  $R^2$  in this study is 5%, so if the value is below 5%, it can be said that there is no heteroscedasticity problem.

#### 4) Autocorrelation Test

Aims to determine the level of residual correlation between variables in the regression model. In this test assisted by the Durbin Watson Test.

## 4. RESULTS AND DISCUSSION

### 4.1. Research Results

This research was conducted using regression data analysis techniques and ECM (Error Correction Model) correction with the aim of knowing the long-term and short-term effects of foreign direct investment on inflation, loan interest rates, exchange rates, and labor. The following are the stages of testing in this study:

#### 4.1.1. Stationarity Test

This test is the main requirement for using the ECM method by testing unit roots with the aim of knowing data integration. If the value of t statistic is greater than the critical value, it can be said that the data is stationary. Stationary test results can be seen in the following table:

**Table 2. Level Unit Root Test Results**

Variable	ADF	Score Mc Kinnon Absolute Critical			Prob.	Note.
		1%	5%	10%		
PMDN	-1.121409	-3.679322	-2.967767	-2.622989	0.6935	Not stationary
Inflation	-5.392797	-3.679322	-2.967767	-2.622989	0.0001	stationary
CIR	-1.460050	-3.679322	-2.967767	-2.622989	0.5391	Not stationary
ER	-1.663815	-3.679322	-2.967767	-2.622989	0.4383	Not stationary
LABOR	-2.777461	-3.679322	-2.967767	-2.622989	0.0744	stationary

Source: Eviews 10 (data processed)

Based on table 2, it can be seen that the root test in this study used the Augment Dicky Fuller test. Comparison of absolute level between calculated values and table values with Mc Kinnon Absolute critical values. The calculation shows that the inflation and labor variables at the confidence level of 1%, 5%, and 10% are stationary at the level level. Then on PMDN, Credit Interest Rates, and Exchange Rates at the confidence level of 1%, 5%, and 10% are not stationary at the level level, so that further integration tests are carried out at the First Difference level in order to see if the data is stationary or not.

**Table 3. First Different Level Unit Root Test Results**

Variable	ADF	Score Mc Kinnon Absolute Critical			Prob.	Note.
		1%	5%	10%		
PMDN	-6.995798	-3.689194	-2.971853	-2.625121	0.0000	stationary
Inflation	-11.21608	-3.788030	-3.012363	-2.646119	0.0000	stationary
CIR	-5.373008	-3.699871	-2.976263	-2.627420	0.0002	stationary
ER	-4.136513	-3.689194	-2.971853	-2.625121	0.0034	stationary
Labor	-5.099020	-3.689194	-2.971853	-2.625121	0.0003	stationary

Source: Eviews 10 (data processed)

We can see that the test results at the first difference level above show that all variables, namely PMDN, inflation, credit interest rates, exchange rates and labor have passed and can be said to be stationary.

#### 4.1.2. Cointegration Test

This test was conducted to determine the residuals of the regression equation in the study. The calculation results obtained a long-term estimate for the equation model. Tests were carried out using Eviews 10 with the following results:

**Table 4 Residual Value Test Results (ECT) Result**

Variable	ADF	Mc Kinnon Absolute Critical Value			Prob.	Note.
		1%	5%	10%		
ECT	-6.787688	-3.689194	-2.971853	-2.625121	0.0000	stationary

Source: Eviews 10 (data processed)

From the test, it shows the probability of  $ECT < 0.05$  so it can be concluded that the data is stationary. Furthermore, the ECT statistic t value is negative, which is -3.689194. This situation can be interpreted that in all variables cointegration has occurred. In addition, the existence of cointegration implies that the variables of PMDN, inflation, credit interest rates, exchange rates, and official labor have a long-term relationship. In the long term, based on the data, the results are mutually sustainable, so cointegration testing and ECM testing can be carried out.

#### 4.1.3. Error Correction Model (ECM) Test

Imbalance in the short term can be measured using ECM (Error Correction Model). Econometric tests are also needed to show the long-run equation relationship to the dependent variable. The first test is to perform a cointegration test, then the second is to analyze the model on the long-term equation, and the last one is to analyze the parameters.

There is a deviation between the value of the dependent and independent variables in each observation time, which is indicated by the short-term equation. Further analysis of each equation is needed as well as a more in-depth econometric test, in order to know the relationship in the short term. In addition, it is also necessary to know the dynamics of the difference between the independent and dependent variables.

After several tests were carried out, the results of the estimation of the ECM test were obtained. Presented in the following table:

**Table 5 Long-Term ECM Estimation Results**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INF	0.000838	0.013170	0.063661	0.9497
CIR	0.129906	0.108283	1.199685	0.2415
EXCHANGE RATE	-1.525600	0.734680	-2.076550	0.0483
Labor	10.23557	4.250000	2.408370	0.0237
C	-170.4261	75.53695	-2.256195	0.0331
R-squared	0.329704	Mean dependent var		11.13400
Adjusted R-squared	0.222457	SD dependent var		0.871276
SE of regression	0.768277	Akaike info criterion		2.461679
Sum squared resid	14.75624	Schwarz criterion		2.695212
Likelihood logs	-31.92519	Hannan Quinn Criter.		2.536389
F-statistics	3.074239	Durbin-Watson stat		0.763190
Prob(F-statistic)	0.034492			

Source: Eviews 10 (data processed)

Based on the table, it is known that the prob value (F-statistic) is 0.034492, which means  $<$  the value of  $\alpha = 5\%$ , so it is interpreted as significant. Based on this, it shows that the variables of Inflation, Credit Interest Rates, Exchange Rates, and Labor

simultaneously affect the PMDN variable.

**Table 6. Short-Term ECM Estimation Results**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D1_INF	-0.002125	2.65E-18	-8.01E+14	0.0000
D1_CIR	-0.025282	2.28E-17	-1.11E+15	0.0000
D1_ER	-0.110961	2.82E-16	-3.93E+14	0.0000
D1_L	1.941084	3.76E-15	5.16E+14	0.0000
ECT	1.0000000	7.65E-17	1.31E+16	0.0000
C	0.030606	8.82E-17	3.47E+14	0.0000
R-squared	1.0000000	Mean dependent var	0.071379	
Adjusted R-squared	1.0000000	SD dependent var	0.541959	
SE of regression	2.17E-16	Sum squared resid	1.08E-30	
F-statistics	3.51E+31	Durbin-Watson stat	2.611603	
Prob(F-statistic)	0.000000			

Source: Eviews 10 (data processed)

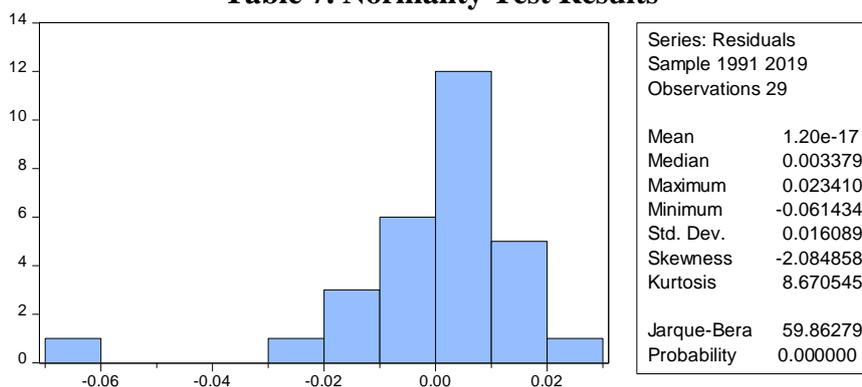
Based on table 6, the ECT coefficient number is 1.0000000. The ECT regression result of the ECT probability is 0.0000, meaning a significant variable with a significance level of  $\alpha = 1\%$ . So it can be concluded that the ECM model is suitable in this study. So the ECM test can be said to be valid.

Next, the prob value is known. F is 0.000000. It means that  $F < \text{value of } \alpha = 1\%$ , so it can be said to be significant. This means that Inflation, Credit Interest Rates, Exchange Rates, and Labor simultaneously affect the PMDN variable.

#### 4.1.4. Classic assumption test

##### 1) Normality test

**Table 7. Normality Test Results**



Source: Eviews 10 (data processed)

The normality test above shows that the Jarque-Bera prob is 59.86279, so that the prob.  $0.000000 < 0,05$  (5%) significance level, which means that this model is not normal. Although the results of the Normality test do not pass, this data is still used because it

uses the assumption of the classical linear regression model, where the use of 34 samples of data is already a large sample.

## 2) Autocorrelation Test

**Table 8. Autocorrelation Test Results**

F-statistics	0.874542	Prob. F (2.22)	0.4311
Obs*R-squared	2.135805	Prob. Chi-Square (2)	0.3437

Source: Eviews 10 (data processed)

In accordance with the autocorrelation test above, it can be said that the Chi-square probability value of 0.3437 is greater than  $\alpha = 0.05$ . so from these results it can be concluded if the non-autocorrelation assumption is fulfilled or in other languages the autocorrelation does not occur at a 5 percent significance level.

## 3) Heteroscedasticity Test

**Table 9. Heteroscedasticity Test Results**

F-statistics	0.047453	Prob. F (4.24)	0.9955
Obs*R-squared	0.227554	Prob. Chi-Square (4)	0.9940
Scaled explained SS	0.597734	Prob. Chi-Square (4)	0.9633

Source: Eviews 10 (data processed)

In accordance with the Heteroscedasticity test above using the Breusch-Pagan Godfrey test method, the Chi-square probability value is 0.9940, greater than the value of  $\alpha = 0.05$ . So, it can be concluded that the assumption of homoscedasticity can be fulfilled or in other words there is no heteroscedasticity at the 5 percent significance level.

## 4) Multicollinearity Test

The value of Variance Inflation Factor (VIF) is used to determine the presence of multicollinearity. A regression model can be said to be free from multicollinearity if it gets a VIF value that is smaller than 10. Based on the results of the calculation of the VIF value, the respective variable values are less than 10, namely 3.3, 3.2, and 0.09. Thus, it can be interpreted that the regression equation is free from multicollinearity.

## 4.2. Discussion

### 4.2.1. Investment Spread Patterns in Indonesia

The pattern of investment allocation in Indonesia during the period 1990-2019 is still a gap between one region and another. Inequality can arise from economic and non-economic factors. Economic factors such as the volatility of the rupee against the US dollar, inflation rates, interest rates, labor and other fiscal policies. Facilities and infrastructure as a means of supporting investment in social conditions and regional security that are affected by non-economic factors such as government regulations and policies in the field of investment, climate and business competition (Kusumaningtyas, 2012). In some regions, the distribution of investment models is still uneven, possibly due to the uneven distribution of facilities and infrastructure as investment facilities, the

unequal allocation of natural resources and labor as factors of production and an unfavorable investment environment. In addition, the regulations and policies issued by local governments related to investment more or less influence investors' decisions to invest or not.

#### **4.2.2. The Effect of Inflation on Investment in Indonesia**

Inflation is a tendency to increase the prices of goods in general and continues. This price increase will increase the cost of production factors which reduce the company's output. An increase in the price of people's fixed income goods will protect people's purchasing power, thereby reducing people's purchasing power, thereby reducing domestic demand (NH, 2004). The estimation results show that the inflation variable has a positive and significant effect on investment in the short term, but not in the long term. This is because changes in commodity prices do not necessarily require investors to make investment decisions. Investors decide to invest or not. Investors need to know whether price changes are temporary or permanent.

#### **4.2.3. The Effect of Credit Interest Rates on Investment in Indonesia**

The estimation results show that the loan ratio variable has a positive and significant effect on investment in the short term, but not in the long term. Changes in interest rates affect investors' decisions to invest or not to invest. When interest rates rise, investors tend to allocate their money to savings rather than capital. The increase in loan interest will also reduce the company's profits because profits are allocated to cover interest. The decline in corporate profits makes investors afraid to invest.

#### **4.2.4. The Effect of Exchange Rate (Rp/US\$) on Investment in Indonesia**

The estimation results show that the exchange rate variable (Rp/US\$) has a positive and significant effect on investment variables in the long and short term (Kusumaningtyas, 2012). Changes in exchange rates affect the cash flow generated in the company. A low exchange rate will reduce the real value of people's assets and thereby reduce domestic demand. A decrease in the company's domestic demand means a decrease in company profits. There is also a decrease in profits when firms use foreign capital. The decline in the company's revenue makes investors reluctant to invest. Changes in the exchange rate also affect the prices of the means of production, most of which come from imported goods. If the value of the rupiah weakens, the formation of fixed capital in the country will also decrease.

#### **4.2.5. The Effect of Labor on Investment in Indonesia**

The estimation results show that the business variable has a positive and significant effect on the investment variable in the long term and short term. Labor is an economically active population and is able to produce goods and services, so that labor is one of the important factors of production (Febriananda, 2011). An increase in the number of workers will increase production capacity. Increasing production capacity will also increase investment.

## 5. CONCLUSION

Investment is one of the important components of aggregate demand which is a crucial factor for a sustainable development process. Economic factors that can affect investment, such as the instability of the rupiah exchange rate against the US dollar, inflation rates, interest rates, labor. The inflation variable has a positive and significant effect on investment in the short term but has no effect on the long term. The loan interest rate variable has a positive and significant effect on investment in the short term but has no effect in the long term. Then the exchange rate variable (Rp/US\$) has a positive and significant effect in the long and short term on the investment variable.

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