

ANALYSIS OF SOME FACTORS AFFECTING FOREIGN INVESTMENT IN THE MANUFACTURING INDUSTRY EAST JAVA

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Abstract. The industrial sector is a sector that plays a vital role in economic development because it can increase economic growth. The industrial sector also plays a role as a factor productive in maximizing the development of the industrial sector marked only by the volume of production but by an increase in various products produced. This study aims to determine the factors that influence investment mode; results in the East Java manufacturing industry. This research method uses secondary data collected from the Central Statistics Agency of East Java Province. The population in the study is data on foreign investment, manufacturing business units, foreign exchange rates, and inflation, and the data used as a sample is annual data (time series). Data collection techniques using documentation and library studies. The data analysis technique used in this research is multiple linear regression. The survey results show that manufacturing industries, foreign exchange rates, and inflation significantly affect the foreign investment variable simultaneously. In contrast, partially, manufacturing industries and inflation have no significant positive impact on foreign investment. In contrast, the foreign exchange rate has a significantly positive effect on foreign investment.

Keywords: foreign investment; manufacturing industries; foreign exchange rates; inflation.

INTRODUCTION

The industrial sector is a sector that plays a role in economic development because it can increase economic growth. The industrial sector also acts as a productive factor in maximizing the development of industrial sector development not only characterized by the volume of production but with the increasing variety of products produced ([Haraguchi et al., 2017](#)).

The manufacturing industry consists of the excellent metal industry, food industry, and textile industry. Foreign investment in the manufacturing industry in Indonesia has increased from year to year ([Koehler, 1972](#)).

Foreign investment is found in article 1 of the law of 1967 on foreign investment. While according to article number 3 of law number 25 of 2007 on investment, Foreign investment was only covering foreign capital directly conducted according to or based on the provisions of the law and used to show business in Indonesia.

According to ([Sukma & Anwar, 2021](#)), foreign investment (PMA) is capital flow activities obtained from outside parties that move to the field of foreign investment. United Nations Conference on Trade and development (UNCTAD) defines foreign investments carried out by companies in the country against companies in other countries to manage operations companies in the country ([Ferdowsi, 2010](#)).

According to ([Ilgamo 2015](#)), Foreign Direct Investment (PMA) occurs when a company from a country invests its capital over a long period in a company in another country. The country of origin of the

capital-investing company is called the host country, while the country where the investment is intended is called the home country.

From the above description, it can be concluded, Foreign investment is the transfer of capital in tangible or intangible form from one country to another with the aim of its use in the country of investment purpose, to bring profit under total control or part of the owner of capital. From this understanding, foreign investment (PMA) means transferring money from home to investment destination. His death aims to earn a profit ([Santi, 2016](#)).

To meet the needs of the capital used in carrying out the development, the government with various related parties find a way to carry out the development strategy. Efforts can attract investors by providing facilities and facilities behind bars to attract investors to invest in Indonesia, especially in East Java.

The development of the manufacturing industry in east Java can not be separated from the many projects financed by foreign investment. The investment climate manufacturing industry in East Java, especially Foreign Investment (PMA), currently stands many factories and industrial places, which can provide input for local governments to improve the welfare of citizens. The manufacturing industry sector is believed to be a sector that can progress other sectors in an economy ([Suwarno, 2012](#)).

Foreign investment in the manufacturing industry in Indonesia, especially in East Java, has been up and down from year to year. In 2010 as 742,671 units with an investment value of 59,801

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billion rupiahs, in 2011 as 783,955 units with an investment value of 62,933 billion rupiahs, in 2012 with the number of manufacturing industries as 795,410 units with an investment value of 63,856 billion rupiahs, in 2013 with the number of manufacturing industries as 803,453 units with an investment value of 66,836 billion rupiahs, in 2014 with the number of manufacturing industries 807,478 units with an investment value of 67,271 billion rupiahs, in 2015 the number of manufacturing industries amounted to 811,273 units with an investment value of 67,702 billion rupiahs, in 2016 the number

of manufacturing industries amounted to 813,140 units with an investment value of 67,993 billion rupiahs, in 2017 with the number of manufacturing industries as much as 814,848 units. With an investment amount of 68,272 billion rupiahs in 2018, the number of manufacturing industries amounted to 816,804 units with an investment amount of 68,571 billion rupiahs, in 2019 with the number of manufacturing industries as much as 817,096 units and the amount of investment of 68,872 billion rupiahs.

Table 1. Realization of Foreign Investment in the Manufacturing Industry in 2017-2019

Realization of Foreign Investment Per Business Sector in 2020				
no	Bisnis Field	Project	Investment (Trillion)	Labor (People)
1	Food Industry	737	4.04	1.721
2	Textile Industri	68	0,05	1.243
3	Leather goods and footwear industry	118	0,11	1.996
4	Wood industry	58	0,93	1.971
5	Paper and printing industry	58	0,47	644
6	The chemical and pharmaceutical industry	487	8,92	3.915

7	Rubber and plastic industry	147	0,79	629
8	Non-metal Millennial industry	138	1,46	553
9	Basic metal industry non-metal goods machinery and equipment.	211	0,91	1.829
10	Industry of electronic machinery, medical instruments, electrical equipment, precision, optics, and clocks,	120	0,98	2.150
11	Industry of motorized vehicles and other transportations equipment	58	0,72	3.227
12	Other industries	145	1,40	5.086
		1.622	2,07	7.178

Source: Investment and One-Stop Service (DMPTSP) Office of Jawa Province, Report 2021.

The difference between this study and previous research lies in the population and its independent variables. Based on the background described above, the authors are interested in researching these problems with the title "*Analysis of some factors affecting foreign investment in east java manufacturing industry.*"

The author chose the title of this research because he wants to know, test, and learn whether Manufacturing Industries, Foreign Exchange Rates,

Inflation, can affect or not affect Foreign Investment.

METHODS

This study uses a quantitative approach, namely an analytical research approach that focuses more on numerical data processed by a statistical system in an associative form with a research design that examines how the influence of the number of manufacturing industries, foreign investment in the manufacturing industry sector in east Java in 2005-2019.

Data Sources

This study used secondary data in the form of annual financial reports of manufacturing companies at the Badan Pusat Statistik (BPS) ([Annual Financial Reports of Manufacturing Companies](#), 2019)

Population & Sample

The sample in this study is foreign investment in East Java registered with the Central Statistics Agency for 2005-2019. The population used in this study is several manufacturing industries registered with the Central Statistics Agency of East Java province in 2005-2019, which was taken using the documentation method and literature study.

Definitions of operational and Measurement of Variables
Table 2. Operational Definitions and Measure of Variable

Type of Variables	Definition of	Indikator	Scale
(Y)	Foreign investment	The definition of foreign capital (PMA) or foreign investment is the activity of capital flows obtained from outside parties engaged in foreign investment. The United Nations Conference on Trade and Development (UNCTAD) defines Foreign Investment as an investment carried out by companies in a country against companies in other countries to manage the company's operations in that country (Riski, 2018).	Billion (Rp)
(X1)	Number of manufacturing industries	The definition of the manufacturing industry, according to experts, is an industry whose activities its primary purpose is to convert raw materials, components, or other parts into finished goods that meet the standard specifications—the manufacturing industry is generally capable of producing on a large scale. The manufacturing industry is the Processing industry, a business that processes or converts raw materials into finished goods or semi-finished goods with value addition, which is done mechanically with a machine, or without using devices (<i>Annual Financial Reports of Manufacturing Companies</i> , 2019).	Units
(X2)	Foreign exchange rate	The rupiah exchange rate is an agreement known as currency exchange rate against current or future payments days between each country or region (Firdaus & Stiadi, 2017).	Currency Exchange Rate (USD against RP)
(X3)	Inflation	A brief definition of inflation is the tendency of prices to rise continuously, In (Fahlevi et al., 2020)	Percentage

Research Model**Classis assumption test result****The Autocorrelation test**

The run test is part of non-parametric statistics can also be used to test whether there is a high correlation between

residuals. If there is no correlation between the residuals, it is said that the residuals are random. The run test is used to see whether residual data occurs randomly or not (systematically). The Run test is done by making the primary hypothesis, namely:
 H0: Residuals (res₁) Random
 Ha: Residuals (res₁) are not random.

With the hypothesis above, then the basis for making a statistical test decision with a run tes is (Indarto & Ghozali, 2016)

1. if the Asymp value. Sig (2-tailed) is less than 0.05, then H0 is rejected, and Ha is accepted. This means that the residual data occurs not randomly (systematically).
2. If the value of Asymp. Sig (2-tailed) is more than 0.05, then H0 is accepted, and Ha is rejected. This means the residual data occurs randomly.

The Multicolliniarity test

The multicollinearity test aims to test whether there is a correlation between the independent variables in the regression model. A good regression model should not correlate with independent variables. The existence of multicollinearity can be seen from the tolerance or variance value is more than 10%, or VIF is less than 10%. It is said that there is no multicollinearity. In (Ghozali, 2006)

The heteroscedasticity test

The heteroscedasticity test tests whether the variance inequality from one observer to another remains constant in the regression model. A good regression model is a homoscedasticity regression

model, or there is no heteroscedasticity because this data collects representative data as a measure. (Ghozali, 2006)

Simultaneous Hypothesis Testing (F test)

A simultaneous test of F is used to determine whether there is a joint influence between the independent variable (X) on the dependent variable (Y). The F test can be done by comparing f arithmetic with f table with the following criteria :

H0 is acceptance if Fcount < F table and significant >0,05.

H1 is acceptance if Fcount > F table and significant < 0,05.

Partial Hypothesis Testing (T-test)

A partial test or t-test is used to show how far the influence of one independent variable is individually in explaining the dependent variable. The criteria as guidelines for the T-test are as follow:

H0 is accepted if Tcount < T Table and significant >0,05

H1is accepted if Tcount > T table and significant < 0,05

RESULT AND DISCUSSION

Research Result

Tabel 3. Normality Test

One-Sample Kolmogorov-Smirnov Test	
	Unstand ardized Residual
N	15
Mean	.0000000

Normal Parameters	Std. Deviation	.7276912
	Mean	7
Most Extreme Differences	Absolute	.286
	Positive	.126
	Negative	-.286
Test Statistic		.286
Asymp. Sig. (2-tailed)		.002
Exact Sig. (2-tailed)		.141
Point Probability		.000
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		

Source: SPSS output result version 23

To find out whether the data is standard or not, average data can be considered to present the population (>0,05) seen from the output above it can be seen that the exact value is 0,141, it is

said to be significant because > from 0,05 (0,141>0,05) then the residual value is usually distributed.

Tabel 4. Autocorrelation Test

Runs Test	
	Unstandardized Residual
Test Value ^a	.04442
Cases < test value	7
Cases > = test value	8
Total cases	15
Number of runs	10
Z	.556
Asymp. Sig. (2-tailed)	.578
a. median	

Source: SPSS output result version 23

The results of the autocorrelation test with the run test showed that the Asymp. sig (2 tailed) value was 0,578>

0,05. Thus, it can be concluded that there are no autocorrelation symptoms.

Tabel 5. Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
Manufacturing Industry	.352	2.843
Foreigh Exchange rate	.505	1.979
Inflation	.557	1.794

a. Dependent Variable: Y = Foreign Investment

Source: SPSS output result version 23

From the data in the table, it can be concluded that there is no symptom of multicollinearity between each independent variable (manufacturing industry, foreign exchange rates, and inflation) as seen from the tolerance value greater than 10% and the VIV value less than 10%.

Tabel 6. Heterokedastistas Test

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.948	.000		.955	.360
X1 Manufacturing Industry	.003	.003	1.216	.894	.391
X2foreign exchange rate	.000	.000	-1.344	-.874	.401
X3 Inflation	.143	.058	.982	2.487	.030

a. Dependent Variable: ABS_RES1

Source: SPSS output result version 23

The heteroscedasticity test results show that the manufacturing industry's significance value is 0,391 for the foreign exchange rate of 0,41 for inflation of 0,030. It can be concluded that there is no symptom of heteroscedasticity.

Multiple Linear Regression Model

For this study, a multiple linear regression model was used. Regression analysis is an analytical tool that determines whether an independent variable influences the dependent variable. The form of the model is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

1. Multiple linear regression analysis results

This study used multiple linear regression analysis to process the exiting data with the SPPS 23.0 version. Based on the result of the analysis, the multiple linear regression equation was obtained as follow :

$$Y = 1.451 + 0.003X_1 + 0.000X_2 - 0.017X_3$$

Based on the above equation, it can be explained through the following

explanation:

β_0 = Constanta value 1,451 indicates if the number of manufacturing industries (X1), Foreign Exchange Rates (X2), Inflation (X3) is considered constant, then the value of foreign investment (Y) will increase by Rp1,451.

β_1 = constant value of 0,003 indicates that the number of manufacturing industries (x1) positively affects foreign investment (Y). it can be interpreted that if the number of manufacturing industries increases by 1 unit. Then the value of foreign investment will rise by Rp. 0,003.

β_2 = Content value of 0,00, indicating that the foreign exchange rate (X2) positively affects foreign investment (Y). it can be interpreted if the number of foreign exchange rates has increased Rp 0,00

β_3 =value 0,143 indicates that inflation (X3) has no positive effect on foreign investment (Y), which means that if inflation increases by 1, foreign investment will increase Rp 0,017.

2. Coefficient Determinasi

Table 7. Coefficient Determinasi

Model Summary b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.994a	.989	.985	.989383

a. Predictors: (Constant), X3 = Inflasi, X2 = foreign exchange rate, X1= Manufacturing Industry

b. Dependent Variable: Y= PMA

Source: SPSS output result version 23

From the results of the SPSS output above, it can be seen that the R square value is 0.989 and the Adjusted R Square is 0.985, which shows that the ability of the independent variable (Foreign Investment) in explaining the number of manufacturing industries, foreign exchange rates, and inflation) in this study amounted to 0,989 Or 98,9% and there were 98,5% wick explained other dependent variables outside this research model.

3. Simultaneous Hypothesis Testing (F Test)

Table 8. Simultaneous Hypothesis Testing (F Test)

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regres	2.741	3	.914	7.843	.004 ^b
Residual	1.281	1	.116		
Tota	4.022	1			

1	4
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a. Dependent Variable: Y= Penanaman Modal Asing

b. Predictors: (Constant), Inflasi, Kurs Valuta asing, Jumlah Industri Manufaktur

In the ANOVA table, the calculated Fis 7.843 with a significant level of 0,04, while the F table value (a=0,05) with a degree of freedom (DFL) 4 (number of independent variable /k) and 15 (n-k) is obtained from a F table of 3,59. From these results, it can be seen that the value of Fount 7,843 > F table 3,59.

1. Partial Hypothesis Testing (T-test)

Partial hypothesis testing can be seen in variables in the equation. The basis for the decision is if the p-value > 0,05, then H1 is rejected. And if the p-value < 0,05 then H1 is accepted. Then the result of the partial test output can be seen in the following table.

Table 9. Partial Hypothesis Testing (T-test)

Coefficients a			
Model	t	Sig.	Conclusion
1 (Constant)	.827	.426	
Manufacturing industry	.799	.441	H1 Is reject
Foreign exchange rate	-3.880	.003	H2 Acceptance
Inflation	.460	.655	H3 Is reject

a. Dependent Variable: Y : Penanaman Modal Asing

The result of the t-test indicates that the manufacturing industry (X1) with significant result F-table (a2=0,025) with a degree of freedom (df)15 (nk-1)

obtained value T-table of 2.200 from these result it is known that the value of t-count is $0,779 < 2,200$ so it can be concluded that H_0 is accepted, H_1 is rejected. The manufacturing industries (X1) have no significant positive effect on the foreign investment variable (Y).

The foresight exchange rate against the second variable (X2)) with a significant result or p-value -3.380 is more excellent than $0,025$ the H_1 is accepted and H_0 is rejected so that partially the foreign exchange rate has a significant negative effect on foreign investment in the manufacturing industry sector in east Java.

The third variable is inflations (X3) with the significant result or t-count of $0,460$ while the value of T-table value 2.200 from these results it is known that t-count $0,460 < 2,200$ so that it can be concluded that H_0 is accepted. It can be supposed that partially inflation does not have a significant positive effect on foreign investment.

Discussion of research result

1. Number of manufacturing industries on foreign investment

Based on the analysis, the result shows that the variable number of manufacturing industries does not significantly affect foreign investment (PMA).

The result of this study is in line with research conducted by Aprilianti (2013), which obtained the impact that the number of manufacturing industries did not significantly affect foreign investment in the manufacturing

industry sector in east Java (Y). this is because the presence of foreign investors in Indonesia contributed more to increasing capital-intensive industries. The state must improve the quality of its workforce and continue to drive investment into sector sectors.

2. The Effect of Foreign Exchange rates on foreign investment

The analysis shows that the foresight exchange rate variable has a significant influence on foreign direct investment. The result is in line with

the research conducted by (Suwarno, 2012) from economics and business, which examines the analysis of several factors that influence foreign investment in the manufacturing industry in Surabaya using the method of multiple linear analysis. Partial or individual testing of foreign investment (Y) it is known that the partial calculation result t-count $-3,380 > t_{table}$ 2.200, then H_0 is rejected and H_1 level significant so that partially (X2) has a significantly positive effect on investment (Y), this is because the stability of the rupiah against the united states dollar will affect the increase in private investment, this is due to the responsiveness of the government in talking monetary policy.

3. The effect of inflation on foreign investment

Based on the results of the study, the t count value is 0.460 with the T table value of 2.200 because the tcount $>$ T table value, then H_0 is rejected, which means that there is a partial effect of inflation (X3) has a significantly positive impact on foreign investment.

This is because the high rate of inflation reduces public consumption due to the declining ability of the people to buy goods due to too high prices.

According to (Putong, 2014), inflation is an increase in commodity prices in general caused by a lack of synchrony between commodity procurement system programs (Production, Pricing, Money printing, and so on) with the level of income they have by society.

The results of this study are in line with (Victory, 2010), which shows that inflation (X3) has a significantly positive and significant effect on foreign investment (Y).

REFERENCES

- Alam, M. Z., & Rahman, M. A. (2012). Modeling volatility of the BDT/USD exchange rate with the GARCH model. *International Journal of Economics and Finance*, 4(11), 193–204.
- Ferdowsi, M. A. (2010). UNCTAD–United Nations Conference On Trade And Development. In *A Concise Encyclopedia of the United Nations* (pp. 698–705). Brill Nijhoff.
- Haraguchi, N., Cheng, C. F. C., & Smeets, E. (2017). The importance of manufacturing in economic development: Has this changed? *World Development*, 93, 293–315.
- Igamo, A. M. (2015). PEffect of Economic Risk on Foreign Investment in Asean Countries (Comparative Case Study Between Countries Indonesia, Malaysia, Singapura, Thailand, Filippina, Brunei dan Myanmar). *Jurnal Ekonomi Pembangunan*, 13(2), 75–85.
- Ismail, V., & Astuti, H. (2016). An Analysis of Factors Affecting the Capital Structure and Return on Shares with Family Ownership as a Moderating Variable (An Empirical Study of Companies Listed in the Indonesia Stock Exchange). *OIDA International Journal of Sustainable Development*, 9(12), 33–54.
- Koehler, K. G. (1972). Wood processing in East Kalimantan: A case study of industrialization and foreign investment in Indonesia. *Bulletin of Indonesian Economic Studies*, 8(3), 93–129.
- Puspaningrum, D., & Agustina, T. (2018). Prospects and Strategies for Development of Medium Altitude Specialty Arabica Coffee in Jember Regency. *JSEP (Journal of Social and Agricultural Economics)*, 9(3), 56–66.
- Putong, I. (2014). Interdependence of Financial Fundamental Information on Company Share Prices (Data Analysis on Public Insurance Companies Year 2008-2012). *Binus Business Review*, 5(1), 166–175.
- Rangkuti, F. (2015). *Personal SWOT analysis*. Gramedia Pustaka Utama.
- Sanjaya, P. K. A., Wimba, I. G. A., & Kawiana, I. G. P. (2019). Analysis of Several Factors Influencing Foreign Investment in Bali Province: Partial Adjustment Model Analysis. *KRISNA: Kumpulan Riset Akuntansi*, 10(2), 131–138.
- Santi, F. (2016). The impact of the flow of international tourism investment and goods/services on demand for Indonesian tourism. *Jurnal Bisnis Darmajaya*, 2(2), 105–133.
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- Sari, A. D. (2015). Analysis of the Influence of the Development of Domestic Investment (Pmdn) and Foreign Investment (Pma) on Labor Absorption in Central Java Province (Period 1985-2014). *Admisi Dan Bisnis*, 16(2), 105–112.
- Sukirno, S. (2011). Introduction to Macroeconomic Theory. *Jakarta: PT. King Grafindo Persada*.
- Sukma, I., & Anwar, K. (2021). The Effect Of Foreign Investment, Government External Debt, And Government Expenditure On Gross Domestic Product In Indonesia. *Journal of Malikussaleh Public Economics*, 4(1), 20–29.
- Suudi, A (2021). *The Influence of the Number of Industries and Manpower in the Manufacturing Sector on Economic Growth in Banten Province*. UIN SMH BANTEN.
- Suwarno, S. (2012). Analysis of Several Factors Affecting Foreign Investment in the Manufacturing Industry in East Java. *Jurnal Riset Ekonomi Dan Bisnis*, 8(1), 50–57.
- Yani, A., Mangkunegara, A. A. A. P., Revisi, P. K. E., & Aditama, R. (n.d.). *Sugiyono. 2011. Qualitative Quantitative Research Methods and R&D. Bandung: Alfabeta*.



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