

ANALYSIS OF FACTORS AFFECTING FOREIGN DIRECT INVESTMENT MINERAL MINING SECTOR IN INDONESIA PERIOD 2009-2012

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Abstract

Indonesia is a country with plenty of natural resource and recently Indonesia needs investment in the mining sector reached IDR 830 trillion by 2014 in the context of the Master Plan for the Acceleration and Expansion of Indonesia's Economic Development (MP3EI). In order to reach target, the researcher analyzing the effect of export mining sector, exchange rate, interest rate on foreign direct investment mining sector in Indonesia during 2009 - 2012. This research using quantitative analysis with secondary data. Quantitative analysis consists of classical assumption test, multiple regression analysis, hypothesis testing by T test and F test, and determination coefficient (R^2) analysis. Hypothesis test using T test shows that partially exchange rate have significant influence on FDI mining sector in Indonesia, but export mining sector and interest rates not significant on FDI mining sector in Indonesia, with $\alpha = 5\%$. Export mining sector has a positive effect while exchange rate and interest rates have a negative effect to FDI mining sector in Indonesia. F test showed that all independent variable are adequate to test dependent variable, means that independent variable have a significant effect into dependent variable with F score is 7.844. Adjusted R^2 is 0.323 shows that 32.3% can be explained by the independent variables (Export mining sector, Exchange rates, and Interest Rates), and the other 67.7% is explained by other causes outside the model.

Keywords: Foreign direct investment mining sector, Export mining sector, Exchange rate, Interest rate

1. INTRODUCTION

Indonesia is a potential country and has a contribution for the world's natural resources. Particularly concerning to mining sector, various kinds of mineral resources spread across Indonesia from Miangan to Rote Island including nickel, gold, coal, copper, coal, etc. And another mineral resources has in large number are silver, oil and gas, bauxite. Currently Indonesia produces a wide range of mineral that are useful for domestic and international markets. Investors who invest in mining sector could increase the state income, open new job field, creation of output, and contribute to the fiscal. Indonesia should be a proud with all of natural resources. Mining also support to another sector such as transportation, industry, trade, finance sector, and others. Investment in exploration in Indonesia (1.5% or approximately U.S. \$ 57 million) is relatively small compared to the scale of global exploration in 2004 amounted to U.S. \$ 3.8 billion, for example, Latin America (21.9%), Canada (19.6 %), Africa (16.1%), and Australia (14.7%). In 2006, investment in Indonesia has risen to U.S. \$ 157 million from the average during the year 1996-2000 of U.S. \$ 109 million and the year 2001-2005 amounted to U.S. \$ 57 million per year (W.Soelistijo, 2012)

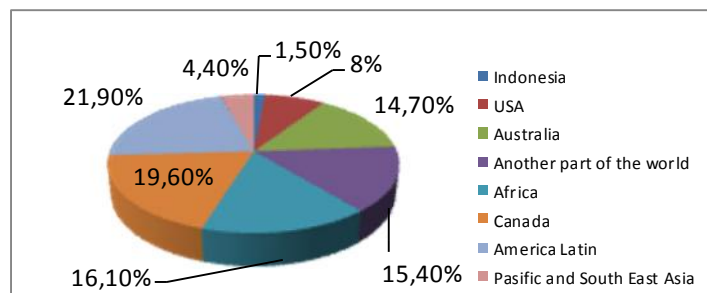


Figure 1.1 Global Exploration Share

Source: Indonesia Mining Association, 2004

As a country has high potential of natural resources but still a small number of exploration, Indonesia requires substantial funds to implement exploitation. Indonesia government able to seeking funding through government savings but the state has limited funds to carry out mining development, government expect to get funding from international private sector. Investing is an activity to transform the resource potential into real economic strength. Natural resources in each region is processed and used to improve the prosperity of all people fairly and equally. However, the use of natural resources and the need to balance preservation of the environment for development. The role of investment in Indonesia tends to increase along with the amount of funds needed to continue national development. Investment is a crucial factor for the sustainability of the economic development process, or long-term economic growth. Economic development involves the activities of production in all sectors of the economy. According to Economists (INDEF) Eny Sri Hartati said direct investment in Indonesia more sectors into the capital-intensive industry. "Especially the manufacturing, automotive and the chemical's most capital-intensive" She expects the government directs foreign and domestic investment into the industrial sector downstream oil and mining commodities. Eny said commodity processing industry development will create new jobs at a time can sustain the mining and plantation sectors are able to absorb more labor. (Gosta, 2012). Indonesia still needs investment in the mining sector reached Rp830 trillion by 2014 in the context of the Master Plan for the Acceleration and Expansion of Indonesia's Economic Development (MP3EI). Deputy for Energy, Mineral and Forest Resources Coordinating Ministry for Economic Affairs Wimpy S Tjetjep said the need for investment in the mining sector is still very high and expected state and the private sector could participate more. "Until 2014 we need Rp830 trillion, it's huge. Almost all seem a lot more private and state-owned enterprises. The government just help and guide investor , because it's a great investment. (Pradipta, 2011). President Director of PT Antam Alwinsky Lubis said, Indonesia has the potential for considerable mineral reserves. But the problem is how to manage these reserves degan well. And Lubis said "The potential is certainly necessary governance and provide added value., And i think the trend in recent years the contribution of the mining to the state increased. But it is not enough because it is not exhibited significantly," To that end, he said, the contribution of this sector needs to be improved. And of course there is the challenge. Moreover, he said, Indonesia's position in the the mining sector investment is still quite low. And this is contrary to Indonesia's mining potential is quite large (Asmadi, 2012). The development of investment in the mining sector in Indonesia has fluctuating. In 2009, foreign direct investment in mining sector worth US\$173.086.200 and has increased the following year to US\$ 2.200.548.100.

Table 1.1 FDI Mining Sector in Indonesia Period 2009 -2012(Q3)

Year	Total Project	FDI Mining Sector (US\$-Thousand)
2009	36	173,086.2
2010	227	2,200,548.1
2011	320	3,619,218.2
2012-Q3	337	3,156,809.100

Source: Indonesia Investment Coordinating Board 2012

There are several factors that able affect number of Foreign Direct Investment Mining Sector in Indonesia such as export mining sector, exchange rates, and interest rates (Sarwedi, 2002). The total value of exports continued to rise is believed to be followed by a rise in the number of foreign direct investment into the economy of the country, because the total value of exports has a positive and significant impact on foreign direct investment as well as can be inferred to have a complementary relationship foreign direct investment.

In the beginning of of 2009 Export in mining sector was US\$ 746,800,000 and increased to US\$ 2,251,200,000 by the end of 2009. The highest point in July 2011 was US\$ 3,315,700,000 (Campa, 1993), however, puts forward a different argument for the relationship between exchange rate level and FDI. In his model, the firm's decision whether or not to invest abroad depends on the expectations of future profitability. In such a case, the higher the level of the exchange rate (measured in units of foreign currency per host currency) and the more it is rising, the higher will be expectations of future profits from entering a foreign market. Therefore, Campa's model predicts that an appreciation of the host currency will increase FDI into the host country. Nominal and real exchange rates have fluctuated significantly since the early 1970s following the collapse of the Bretton Woods System. (David Greenaway, 2009).

Exchange rates in Indonesia towards US\$ in the beginning of 2009 is IDR 11,980.00. And appreciation in lowest point at IDR 8,508.00 (2011) or decreasing IDR 3,472.00. In addition to the export mining sector and exchange rates, the interest rates of a country is also believed to have an influence on the amount of foreign direct investment mining sector (Sukirno, Makroekonomi Modern, 2000) states that the investment will have to consider the interest rate, if the interest rate is higher than the return on capital, the planned investment is not profitable, therefore the company plans to invest will be canceled. The interest rate in Indonesia refers to the interest rate of Bank Indonesia Certificates called SBI is now called the BI Rate. In determining the BI Rate, Bank Indonesia as the government agencies in determining monetary policies always pay attention to the state of the economy is happening, because of the large BI Rate will be responded by the interest rate at which commercial banks affect the economy. In the beginning of 2009 interest rates in Indonesia was 8.75% and decreased 2,25% to 6.5% by the first of 2010. In February until August 2012 interest rates in Indonesia was getting lower to 5.75%. This research conducted in order to explore:

1. Is there any influence between mining export towards FDI mining sector in Indonesia?
2. Is there any influence between exchange rates towards FDI mining sector in Indonesia?
3. Is there any influence between interest rates towards FDI mining sector in Indonesia?
4. What variables of mining export, exchange rates, interest rates that mostly influence FDI mining sector?

2. LITERATURE REVIEW AND PREVIOUS RESEARCH

Foreign Direct Investment

From six types of investment in Gitman & Joehnk book which already explained before, this research will discuss deeply about foreign investment. According to Ministry of law and human right (Rights, 2007), Foreign investment means an investing activity to do business in the territory of the state of the Republic of Indonesia that is carried out by a foreign investor both by use of all of foreign capital and by engagement in a joint venture with a domestic investor. Flows of foreign direct investment in Indonesia comes from several countries are; Singapore, Japan, United States, South Korea, UK etc. Foreign direct investment occurs when a firm invests directly to foreign country and start the business or producing goods. Another definition also defined by (Krugman, 1995), Foreign direct investment is formally defined as ownership of assets in one country by residents of another for purposes of controlling the use of those assets (Mudrajad Kuncoro, 2009) as cited (Mudara, 2012) in his book wrote that in order to show the performance and potential of a country to FDI by looking at a variety of indicators, one of which is the macroeconomic indicators, the United Nations Conference on Trade and Development (UNCTAD) since 1998 to create a matrix that is divided into four parts are (1) front runner, is country with performance and high FDI potential, (2) above potential, is countries with low FDI potential but has a high FDI performance, (3) below potential, is countries with FDI potential high but has a low FDI performance, (4) under performers, is countries with FDI potential and performance levels. In the period 2004-2006, Indonesia was the weakest in the management of the PMA, while the position of Brunei Darussalam, Malaysia, Singapore, Thailand and Vietnam are the front runners category.

Mining

Indonesia is famous as a country with plenty of mining material. Mineral deposits in Indonesia are found on land and at sea. To obtain and process these minerals required a lot of capital, expertise, and high technology. The government collects all of this from within and from abroad. Mining means a part or all of stages of research, management and business of minerals and coal, which include general surveys, explorations, feasibility studies, construction, mines, processing and refining/smelting, transportation and sale as well as post mining activities (Indonesia, 2009). In support of sustainable national development, management of mineral and coal shall aim the following:

- a. To ensure effectiveness of the conduct and control of efficient, effective and competitive mining business activities;
- b. To ensure the benefit of sustainable and environmentally-sound mineral and coal Mining;
- c. To ensure the supply of mineral and coal as raw materials and/or as energy sources for domestic needs;
- d. To support and develop the national capability in order to better compete in national, regional, and international levels;

- e. To improve the income of the local community, regions, and state as well as to create job opportunities in the greatest prosperity of the people;
- f. To assure legal certainty in the conduct of mineral and coal business activities

Large-scale mining in Indonesia with modern appliances, newly implemented for mining and energy-producing minerals metals. Mining venture held by the government and partly by private companies. The result is mostly exported. Nonmetallic mineral mining and rock performed by residents or local businesses, usually on a small scale and with simple equipment. Production has not been regularly and used only for domestic purposes. The procurement and utilization of mining resources in an efficient will have an impact on the improvement of the welfare of society in a whole, either directly or indirectly. Efforts to improve the welfare of the people in energy sector, for example; construction of power plants as a source of energy and household lighting, can directly improve the quality of people's lives. The mining sector are concerned with the environment will directly affect community livelihood. In order to improve the welfare of people who are not directly from the mining sector will be through state revenue in the form of tax, non-tax revenues, regional income are (Law 4 of 2009 concerning mineral and coal mining).

Export

Export supply is affected by foreign investment (PMA). Increased foreign investment will indirectly enhance industrialization. As a result, the number of goods produced will increase. This positive relationship is still being debated by some observers. This is due to the possibility of foreign investment is highly dependent and influenced by the policies of the recipient country or the host country. (Sarwedi, 2002). The total value of exports continued to rise is believed to be followed by a rise in the number of foreign direct investment into the economy of the country, because the total value of exports has a positive and significant impact on foreign direct investment as well as can be inferred to have a complementary relationship foreign direct investment (Sarwedi, 2002). Graham, 1996) in case studies for the USA and Japan using the approach model of gravity (gravity models approach) concluded that there is a relationship complementary between exports and FDI in these countries. while Brenton and Di (Mauro, 1999) in his study in European countries (France, UK and Germany) states that there is a statistically significant positive relationship between FDI and export so that it can be concluded that there is a complementary relationship strong between the two variables. As cited (Sarwedi, 2002)

Exchange Rate

Exchange rate can be regarded rate at which one currency may be converted into another currency. There are four types of exchange rate regime that a country can adopt: fully fixed, floating, managed floating and semi fixed;

- a. A fully fixed exchange rate regime is where a government sets and maintains the official exchange rate. A set price is determined against a major world currency
- b. A floating exchange rate regime is where a country exchange rate is determined by the private market through supply and demand
- c. A managed floating exchange rate is where the value of a currency is determined by market demand for and supply of the currency with no predetermined target set for the exchange rate by the government. Host countries' government at one time or another "manage" the value of their currency through changes in interest rates and other controls
- d. A semi fixed exchange rate is where the value of a country's currency is set by its government to move between permitted bands of fluctuation, and its central bank intervenes to ensure that exchange rate stays within those bands. (Froot, 1991)

Firstly the level of the real exchange rate affects FDI in various ways depending on the destination of the goods produced. If the investor aims at serving the local market, FDI and trade then become substitutes, and various mechanism then can be considered. It is expected that an appreciation of the local currency increases FDI inflows (Domar, 1997). (Campa, 1993), in his model, the firm's decision whether or not to invest abroad depends on the expectations of future profitability. In such a case, the higher the level of the exchange rate (measured in units of foreign currency per host currency) and the more it is rising, the higher will be expectations of future profits from entering a foreign market. Therefore, Campa's model predicts that an appreciation of the host currency will increase FDI into the host country.

Interest Rates

Investment is the component of expenditure that is probably most sensitive to the real interest rates. Recall that part of investment is the purchase of new equipment or a new factory by a business firm. Many firms must borrow funds to pay for such investment. Higher real interest rates make such borrowing more costly. The additional profits the firm might expect to earn from purchasing trucks, heavy equipment are more likely to be lower than the interest costs on the loan if the real interest rate is high. Hence, businesses that are thinking about buying a new machine and need to borrow funds will be less inclined to purchase such an investment good if real interest rates are higher, and so higher real interest rates reduce investment spending by business (Taylor, 2007). At the macro level, the interest rate consists of nominal and real interest rates. Nominal interest rate is the rate that can be observed in the market, the rate of interest paid by the bank and does not account for inflation, while the real interest rate is real interest rate equals the stated, or nominal, interest rate minus the inflation rate. In other words and according to The Fisher Effect states that a country's "nominal" interest rate (i) is the sum of the required "real" rate of interest (r) and the expected rate of inflation over the period for which the funds are to be lent (I) and the formula is ($i = r + I$). The influence of interest rates on investment is explained by the idea classical economists stating that the investment is a function of the interest rate. If the interest rate is high, the willingness to invest is also small. An investor will increase investment spending when the expected benefits of the investment is greater than the interest rate. The lower the interest rate, then investors will be more motivated to invest, because the cost of capital is also getting smaller.

Previous Research

- a. Sarwedi (2002) in his study entitled *"Foreign Direct Investment in Indonesia and Factors Affecting"* aims to analyze the factors that affect the amount of foreign direct investment into Indonesia. This study concludes that the factor of GDP, economic growth, and exports showed a positive and significant to explain the factors influencing FDI in Indonesia. Labor cost and political stability as measured by the number of indicators riots or strikes that occurred in Indonesia during the study period showed a negative and significant results.
- b. I Made yogatama pande mudara (2011) in his research *"The effect of gross domestic product, interest rate, labor cost, and the total exports of foreign direct investment in Indonesia(1990-2009)"* The aim of this research is for analyzing the effect of GDP, interest rate, labor cost, and total value exports on foreign direct investment in Indonesia during 1990-2009. This research using the secondary data and multiple linear regression models with ordinary least squares method. From the results of the research show that interest rate have no significant influence on foreign direct investment in Indonesia, but GDP, labor cost, and total value exports has a significant effect on foreign direct investment in Indonesia, with $\geq 5\%$. GDP and total value of exports has a positive effect while interest rates and labor cost have a negative effect to foreign direct investment in Indonesia.
- c. Jason Kiat (2008) in his study *"The effect of exchange rate and inflation on foreign direct investment and its relationship with economic growth in South Africa"* determine the relationship between FDI inflow, economic growth, exchange rate and inflation. Experts in the field of macroeconomics were interviewed to gain a better understanding of these relationships and apply them in a South African context. This research found that FDI follows economic growth, but the reverse is inconclusive. Inflation has a negative impact, while the effect of exchange rate was debated. The reason for portfolio flows into South Africa was identified in the literature review, and it suggested that the success of South Africa created the preference toward portfolio flows.
- d. Jinping Yu, Yao Cheng (2010) in her study *"An Empirical Study of the Effects of RMB Exchange Rate on China's Inflows of FDI"* analyzes the level and volatility effects of RMB real effective exchange rate on the inflow of FDI with the process of Chinese exchange rate regime adjustment. In particular, it also examines different effects of exchange rate on resource-seeking FDI and market-seeking FDI. It concludes that (1) the expected appreciation and temporary volatility of exchange rate of RMB can stimulate the inflow of FDI in a short term, but the effect is ambiguous in the long run; (2) appreciation of exchange rate will reduce the inflow of resource-seeking FDI while increase that of market-seeking FDI; (3) increasing exchange rate volatility in China will reduce the inflow of FDI in the future; (4) appreciation of RMB real effective exchange rate intends to increase capital intensity per contract of resource-seeking FDI but to decrease that of market-seeking FDI.
- e. Isa Salim (2006) in his study *"Analysis of Factors Affecting Investment In Agriculture Sector In Indonesia Period 1984-2004"* analyzes the effect of economic growth, the price index of agricultural products, interest rates and inflation rates are related to the sale of agricultural products abroad,

foreign currency exchange rates are an important factor in determining the level of public investment is a good investment (domestic) and foreign investors (FDI). Based on the results obtained Growth of Gross Domestic Production, the rupiah against the U.S. dollar, agricultural product price index, interest rates and inflation simultaneously affect the amount of investment in the agricultural sector. While the variables of the rupiah against the U.S. dollar has contributed negatively affect the value of Investment in Agriculture Sector.

- f. Gery Perdana Putra Pasambe (2010) in his study “*Economic analysis of influence factors of Foreign Direct Investment in Indonesia*” analyze the economic factors which most influence on foreign investment (PMA). The analysis used is quantitative analysis, the analysis describes the nature of the description or in the form of sentences and secondary data which the authors used data obtained from the books published by the institution or agency concerned. The results showed after a statistical test to determine the effect of the independent variables simultaneously Inflation (X_1), Interest Rates (X_2), Foreign Exchange (X_3) and the Composite Stock Price Index (X_4) to the Foreign Investment dependent variable (Y), which means that overall factors simultaneously influence the independent variables and the real impact on foreign investment.

3. RESEARCH DESIGN AND METHODOLOGY

3.1. Conceptual Framework

Theoretical framework of the research:

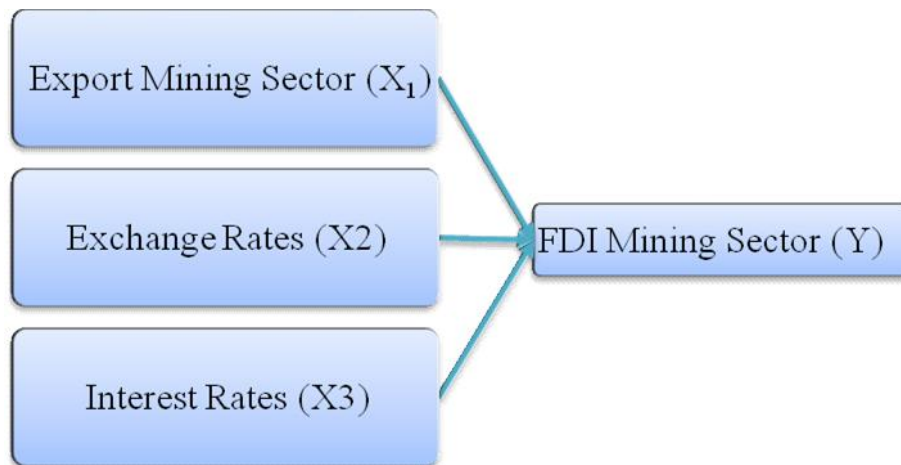


Figure 1.2 Conceptual Framework

Source: Constructed by Researcher

3.2. Assumption and Hypothesis

In this research, the writer assumes that mining export, exchange rates and interest rates are important factor compare to other macroeconomic factors. Some hypotheses want to be tested by the research:

H_0 : There is no significant influence between (mining export, exchange rates, interest rates) towards FDI mining sector

H_a : There is a significant influence between (mining export, exchange rates, interest rates) towards FDI mining sector

3.3. Multiple Regression Analysis

Multiple regression analysis is a statistical technique to predict the variance in the dependent variable by regressing the independent variable against it. Multiple regression analysis used in situation where more two or more independent variables are hypothesized to affect one dependent variable. Multiple regression analysis provides a means of objectively assessing the degree and the character of the relationship between independent variables and dependent variables. The regression coefficients later used to indicate the relative importance of each of the independent variables in the prediction of the dependent variable (Bougie, 2009).

Then the model equation used in this research can be explain as follows:

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

3.4. Testing Hypothesis

Correlation coefficient (R)

The correlation coefficient (also known as Pearson's correlation coefficient) is used to describe the strength and direction of the linear relationship between two variables depending on the level of measurement of variables. According to (Sugiyono, Metode Penelitian Bisnis, 2007) regardless of whether parametric or nonparametric correlation coefficient is used, it typically ranges between 0.0 and 1.0 or between 0.0 and -1.0. the plus or minus sign in front of correlation coefficient indicates whether the correlation is positive or negative (inverse). Having a minus sign does not mean that the correlation is weaker. It only shows that the variables are inversely related.

Coefficient of multiple determination (R^2)

Coefficient of multiple determination in multiple regression is define as the proportion variation in the dependent variable that is explained or accounted for the covariation in the independent variables (Gilbert A. Churchill, 2009). From the calculation of R, we can see the relationship between independent variable (X_1, X_2, X_3) and dependent variable (Y) is positive or negative relationship.

F test

Significant testing in order to know whether the independent variables have significant influence into dependent variable simultaneously, then the equation can be described as follow (Sugiyono, Metode Penelitian Bisnis, 2007).

T test

Significant testing in order to know whether the independent variables is partially have significant influence into dependent variable simultaneously or not, then the equation can be described as follow:

4. RESULT AND DISCUSSION

Multiple Regression Analysis

Base on multiple regression analysis tests, the following results are obtained: regression coefficient, t counted value, and level of significance as shown from table below:

Table 1.2 Multiple Regression Analysis Result -
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	1053761728.208	480414182.643		2.193	.034
Export_Mining_Sector	.036	.050	.142	.721	.475
Exchange_Rates	-92139.813	40607.371	-.464	-2.269	.029
Interest_Rates	-10923488.605	42317757.803	-.043	-.258	.798

a. Dependent Variable: FDI_Mining_Sector

Source: Primary Data, Processed by SPSS V.20

This study used a standardized regression test results due to match the size of the independent variables (Export Mining Sector, Exchange Rates, and Interest Rates) which have different measurement. The advantage of using a standardized regression results are able to eliminate the differences in units of measurement in the independent variable. Besides the standardized regression test results are used because researcher wants to see the level of priority. According to the result of multiple regression analysis test that has been done, formed the following regression equation:

$$Y = 1053761728.208 + 0.036X_1 - 92139.813X_2 - 10923488.605X_3$$

Coefficient correlation (R)

Coefficient correlation is used to measure to depict the strength and direction of the linear relationship between two variables depending on the level of measurement of variables. If R values are close to 1, it means that it have strong relationship and can predict perfect correlations between variable X and Y.

Table 1.3. Coefficient Correlation (R) and Determination (R^2) Test Result
Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.609 ^a	.370	.323	128290898.710

a. Predictors: (Constant), Interest_Rates, Export_Mining_Sector, Exchange_Rates

b. Dependent Variable: FDI_Mining_Sector

Source: Primary Data, Processed by SPSS V.20

From the table above, we can see that the R value is 0.609. It means that the independent variable (Export Mining, Exchange rates, Interest Rate) have moderate correlation towards its dependent variable (Foreign Direct Investment Mining Sector). Also, it means that every increase in one variable, there is a corresponding increase in other variable.

Coefficient determination (R^2)

Coefficient of determination (R^2) is used to measure how far the model's ability to explain variation in the dependent variable (Ghozali, 2005). R^2 values are getting close to 1, meaning the independent variables provide almost all the information needed to predict the variation in the independent variable. The coefficient of determination being used is the value of adjusted R Square because it is more reliable in evaluating the regression model. Adjusted R Square value can go up or down when the independent variable is added to the model. In contrast to the value of R^2 which would have increased an additional independent variable, regardless of whether these variables significantly influence the dependent variable. From the table 4.10 above, it shows that the value of *Adjusted R Square* is 0.323 it means that the change of dependent variable, Foreign Direct Investment Mining Sector 32.3 % can be explained by the independent variables (Export Mining, Exchange rates, Interest Rate). And the other 67.7 % is explained by other causes outside the model. *Standard Error of the Estimate* (SEE) in the table above 128,290,898.710, which have value smaller than the standard deviation which is 155,939,137.462. Smaller value of SEE will make regression equation more precise in predicting the dependent variable.

F-test

F test shows whether all the independent variables included in the model have an influence together on the dependent variable (Ghozali, 2005). This test is done by comparing the value of F calculated by the value of F table using a significant level of 5%. If the count value of F is greater than F table then simultaneously all the independent variables affect the dependent variable. In addition, you can also see the value of probability. If the probability value less than 0.05 (for a significance level = 5%), the independent variables simultaneously affect the dependent variable. Meanwhile, if the probability is greater than 0.05 then the independent variables simultaneously has no effect on the dependent variable.

Table 1.4. F-Test Result
ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	387289439805547390.000	3	129096479935182464.000	7.844	.000 ^b
Residual	658342187670370690.000	40	16458554691759268.000		
Total	1045631627475918080.000	43			

a. Dependent Variable: FDI_Mining_Sector

b. Predictors: (Constant), Interest_Rates, Export_Mining_Sector, Exchange_Rates

Source: Primary Data, Processed by SPSS V.20

According to ANOVA test or F-Test Above, the result shows F value of 7.844 with probability of 0.000. Because F count > F Table which is 3.23, or the significant value is less than 0.05, then the regression model can be used to predict the dependent variable (FDI Mining Sector) and all the independent variable which are Export Mining, Exchange rates and Interest Rate simultaneously affect the dependent variable.

T-test

T test is used to see whether independent variables (Export Mining, Exchange rates and Interest Rate) individually affect FDI Mining Sector dependent variable or not. T table value in this study is 1.68385 (Based on T-Table with significance level of 0,05).

Table 1.5. T-Test Result
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	1053761728.208	480414182.643		2.193	.034
Export_Mining_Sector	.036	.050	.142	.721	.475
Exchange_Rates	-92139.813	40607.371	-.464	-2.269	.029
Interest_Rates	-10923488.605	42317757.803	-.043	-.258	.798

a. Dependent Variable: FDI_Mining_Sector

Source: Primary Data, Processed by SPSS V.20

Results Interpretation

This part will present the discussion about the results of the analysis that has been done before. The results are described as follows:

a. The Influence of Export Mining Sector towards FDI Mining Sector

Statement of the first hypothesis (H_a) which states that “higher export Mining Sector will results in higher FDI Mining Sector rejected because the variable, Export mining sector, have positive effect and not significant to the FDI Mining Sector with regression coefficient of **0.036** which means that each increases of 1 unit of Export mining sector, while the other variable is constant, it will cause an increase of FDI Mining Sector by **0.036**. The total value of exports continued to rise is believed to be followed by a rise in the number of foreign direct investment into the economy of the country, because the total value of exports has a positive and significant impact on foreign direct investment as well as can be inferred to have a complementary relationship foreign direct investment (Sarwedi, 2002). From Sarwedi statement in above export and FDI has positive effect same like as in this research result, export mining sector has positive effect on FDI mining sector. If export mining export in Indonesia increasing, FDI mining sector will also increasing. As we can compare between figure 4.1 (FDI mining sector) and figure 4.2 (Export mining sector) . FDI mining sector in 2009 until 2012 has a bullish trend eventhough in the end of 2010 and 2011 get a chance decreasing. Same like as export mining sector, in 2009 until 2012 has a bullish trend. In 2009 export mining sector increasing and increasing also by following year. In October 2010 export mining sector get a chance to decreasing from US\$ 2.2 billion to US\$ 1.5 billion and rebound to US\$ 2.8 billion by following month and still climb in 2011. Thus its matched with Sarwedi theory export and FDI has a positive effect.

b. The Influence of Exchange Rate towards FDI Mining Sector

Statement of the hypothesis (H_a) which states that “lower exchange rate will results in higher FDI mining sector can be accepted because the variable, Exchange Rate, have negative and significant effect to the FDI mining sector return with regression coefficient of -92,139.813 which means that each increases of 1 unit of Exchange rate, while the other variable is constant, it will cause an decrease of FDI mining sector by 92,139.813. (Campa, 1993) theory, in his model, the firm’s decision whether or not to invest abroad depends on the expectations of future profitability. In such a case, the higher the level of the exchange rate (measured in units of foreign currency per host currency) and the more it is rising, the higher will be expectations of future profits from entering a foreign market, and Campa predicts that an appreciation of the host currency will increase FDI into the host country. As FDI mining sector and exchange rate, since 2009 until 2012 FDI mining sector has a rising trend, contrast to exchange rate has a bearish trend. In the beginning 2009 exchange rates around IDR 11,500 and the middle of 2012 is IDR 9,480, in other word exchange rates is appreciation from 2009 to 2012. Thus, it matches with Campa theory, Campa predicts that an appreciation of the host currency will increase FDI into the host country.

c. The Influence of Interest Rates towards FDI Mining Sector

Statement of hypothesis (H_a) which states that “Higher interest rates will results in lower FDI Mining Sector” rejected because the variable, interest rates, have negative effect and not significant to the FDI mining sector with regression coefficient of $-10,923,488.605$ which means that each increases of 1 unit of interest rates, while the other variable is constant, it will cause a decrease of FDI mining sector by 10,923,488.605. According to Keynes in The General Theory book which explains that the investment will be made by the investor if the rate of return on capital is greater than or equal to the interest rate. If the interest rate is greater than the rate of return on the capital investment will not be made by the investor. As people see in figure 4.1, FDI mining sector has a raise trend from 2009 until 2012. FDI mining sector climb little bit harder because in the end of 2010 and 2009 decreasing rapidly, but still increasing year by year. Contrast to figure 4.4 (interest rates), starts from 2009 until 2012 interest rates has a down trend. In the beginning 2009 interest rates is 8.75 % and the beginning of 2012 is 5.75% or decreasing 3%. Thus, it matches with Keynes in The General Theory that an increasing interest rates will decreasing FDI, and vice versa.

d. The Influence of Export Mining Sector, Exchange Rates, and Interest Rates towards FDI Mining Sector

The results of this research show that FDI Mining Sector be affected by Export mining sector, Exchange rates, and Interest Rates. This is proved with the F Test that had been done before, with the score of 7.844. It means that all the independent variable which is Export mining sector, Exchange rates, and Interest Rates affects to dependent variable. If the independent variables show the change, it will affect the FDI Mining Sector.

5. CONCLUSIONS

This study was made to determine how much Export mining sector, Exchange rates, and Interest Rates influenced the FDI Mining Sector in order to make foreign investor aware about the variabel that can be used to predict future expectations. Based on the analysis and discussion that has been done in previous chapter, it can be concluded as follows:

- Export Mining is an independent variable which have positive influence to FDI mining sector with T value is less than t table and significance level more than significance probability 0.05. Its mean that export mining has positive effect and not significant towards FDI Mining Sector.
- Exchange rates is an independent variable which have negative influence to FDI mining sector with T value is less than t table and significance level less than significance probability 0.05. Its mean that exchange rates has negative effect and significant towards FDI Mining Sector.
- Interest rates is an independent variable which have negative influence to FDI mining sector with T value is less than t table and significance level more than significance probability 0.05. Its mean that interest rates has negative effect and not significant towards FDI Mining Sector.
- From total the independent variables (Export mining sector, Exchange rates, and Interest Rates), Exchange rates is most dominant variables are influence on FDI mining sector in Indonesia with T value more than t table and significance level less than significance probability 0.05. Its mean that exchange rates has negative effect and significant towards FDI Mining Sector. If compare with other independent variabel, Export mining sector and interest rates variable not significant, those significant value more than significance probability = 0.05.

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