Foreign Investment Analysis Of Direct Agricultural Sector In Indonesia

Eko Setiobudi, Dian Wahyuningsih, Anita Novialumi, Yulianto, Soimah

Abstract: In the context of Indonesia, certainly still strong in our memory how in the era of 1970 until the mid-1980s agriculture sector became the mainstay of the Indonesian economy. The purpose of this study is to determine what factors affect foreign direct investment (FDI) in the agricultural sector in Indonesia and to know the extent to which these factors affect foreign direct investment (FDI) in the sector agriculture in Indonesia, and analyzing these factors. This research uses Co-integration regression analysis and Granger Causality analysis. The method of data testing is done by econometric model and will be done by Root Unit Testing, Co-integration Testing and Granger Causality Test. The results of the research, the development of foreign direct investment in Indonesia, both total investment and foreign direct investment in the agricultural sector are both experiencing ups and downs.

Index Terms: Analysis; Foreign Investment; Agriculture

1. INTRODUCTION

The idea of importing foreign capital for a country’s economic development is not new anymore. Even in some developed countries though, in the early stages of development much depends on foreign capital. Capital accumulation (capital stock) including those from foreign capital is one of the available resources in the economy that will affect the economic growth of a country. The accumulated capital stock will determine the capacity of the economy to produce goods and services. Investment is in addition to capital accumulation (capital stock). This means that investment becomes very important in the context of generating capital stocks and economic capacity which in turn will enhance a country’s economic growth [7]. Prior to the monetary crisis and economic crisis, foreign direct investment (FDI) inflows to Indonesia tended to increase, but since the crisis of foreign direct investment flows (FDI) declined and had a tendency to be negative [16]. A similar phenomenon also occurs in foreign direct investment (FDI) in the agricultural sector in Indonesia. For comparison, in the productivity of developing countries, especially in the agricultural sector, has a tendency to run stagnant. Growth in GNP growth is largely contributed by the manufacturing sector and general trade, so that the share of agriculture to GNP as a whole continues to decline [23]. Thus, direct investment (FDI) remains an important factor to encourage the productivity of the agricultural sector, especially for third world countries. In the context of Indonesia, certainly still strong in our memory how in the era of 1970 until the mid-1980s agriculture sector became the mainstay of the Indonesian economy. The national economy is able to grow by 7% per year, due to the strong base of agriculture and natural resources. Employment opportunities are increasing rapidly and the ability of the economic sectors to absorb new labor growth is also enormous. But the conclusive conditions had to end tragically in the late 1980s and early 1990s, where the agricultural sector had to experience a deconstructive and low-growth phase of about 3.4% due to massive protection of the industrial sector, let alone through a conglomerate process which embraces the foundations of the Indonesian economy. During the monetary crisis of 1997 the agricultural sector inevitably had to accept the abundance of labor from industrial sectors who were forced to stop working due to layoffs. It must be admitted that the period 1998-2000 the agricultural sector had become the savior of the Indonesian economy, and even then because of the surge in the surge in US dollar exchange rates enjoyed by agricultural export commodities, especially plantations and fisheries. But when the main base to build the quality of growth in the agricultural sector is simply forgotten, the agricultural sector is only able to grow about 1.9% per year. Such a growth rate is certainly not able to create jobs, especially if it has to absorb the growth of new labor, especially in rural areas [2].

Indonesia experienced negative capital flows since 1998 [24]. What is interesting from this report is why the decline in foreign direct investment (FDI) that occurred in Indonesia did not occur in other Asian countries that also experienced the same economic crisis [16]. This difference is a strong reason to believe that there are factors that are a problem for foreign investors in Indonesia that are not available in other Asian countries. It is necessary to conduct in-depth study that analyzes what factors affect foreign direct investment (FDI) especially in agriculture sector in Indonesia. Thus, the purpose of this study was to determine what factors influenced foreign direct investment (FDI) in the agricultural sector in Indonesia and to know the extent to which these factors affect foreign direct investment (FDI) in the agricultural sector in Indonesia, and analyzing these factors, so it is known how the patterns of these factors affect foreign direct investment (FDI) in the agricultural sector in Indonesia.

2. METHODS

Factors that need to be considered in choosing the location of investment abroad are economic and non-economic factors. Economic factors to consider include the value of exports, real income, inflation, foreign exchange rates, interest rates, credit availability, customer payment habits and the same rate of return (RO) of investments [4]. While the non-economic factors

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3933

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that include the political and legal factors, socio-cultural factors and competitiveness factors. The drivers of investment include two things; namely: first, closest factors, including increased land and labor costs in these countries, leading to many of their operations becoming less competitive, currency values and wage rates. Second, the government policy of the country of origin of the investor [13]. The factors are tariff policy, historical ties (colonial), relative distance, natural resources, host countries, recycled products [8]. Several factors are the ups and downs of the debt-equity ratio, the approach is to use the analysis of the intensity of trade on investment flows [15]. Based on the above literature, this research uses analysis:

- Co-Integration regression analysis, where the cointegration regression equation used in this study is:
  
  \[ FDIFt = b0 + b1EXIFt + b2RGDPt + b3ERUST + b4DINRt + b5FINRt + b6CINPt + b7DT + t \]

  Where: FDIFt = Foreign direct investment in agriculture sector (in million US $); EXIFt = Value of Indonesian agricultural exports (million US $); RGDPt = Real income in the form of constant GDP, 2000 (trillion rupiah); ERUST = The rupiah exchange rate against the US dollar (in thousands); DINRt = The domestic interest rate for investment credit (in %); FINRt = Foreign interest rate for investment credit (in %); CINPt = Consumer price index, 2000 = 100 (in hundreds); Dt = Dummy variable for Indonesia investment climate, score 1 for crisis period 1997: Q-3 - 2000: Q-1, and score 0 for pre-crisis period; t = Time (year) = Pitfalls; b0, b1, b2, b3, b4, b5, b6 and b7 = constants

- Granger Causality Analysis

  Econometric theory has proposed this causality testing procedure. In this research used the form of causality testing with Granger method [13], the following mentioned method of causality testing. Two linear time-series data devices associated with variables X and Y are formulated in the following two regression model forms:

  \[ X_t = \lambda_1 + \sum_{i=1}^{p} \alpha_i X_{t-i} + \lambda_t + \sum_{j=1}^{q} \beta_j Y_{t-j} + u_t \]

  \[ Y_t = \lambda_1 + \sum_{i=1}^{p} \alpha_i Y_{t-i} + \lambda_t + \sum_{j=1}^{q} \beta_j X_{t-j} + v_t \]

  Where 1 is constant terms, bj and dj are parameters, ut and vt are error terms that are assumed to not contain serial correlation and p = q = r = s.

  The method of data analysis is done with econometric model and will be done by:

- Unit Root Testing

  The stability of a time-series model has significant stationary properties. For example, in the time-series model the following:

  \[ Y_t = \beta Y_{t-1} + \mu_t; \mu_t \sim NID(0, \sigma^2) \]

  NID(0, \sigma^2) shows normal distribution with mean = 0, fixed variance = 2 and covariance = 0. The stationary condition in equation model \[ | \beta | < 1 \]. In this case a null hypothesis \[ \beta = 1 \] against the alternative hypothesis regarding the existence of the root unit.

  Fuller (1976) and Dickey and Fuller (1979) have developed this unit root testing procedure. This test procedure can be explained as follows:

  \[ Y_t = b_1 Y_{t-1} + e_{1t} \]

  \[ Y_t = a_2 + b_2 Y_{t-1} + e_{2t} \]

  \[ Y_t = a_3 + b_3 Y_{t-1} + e_{3t} \]

  If the absolute value \[ | \beta | < 1 \] in the equation model 1, then the bi values of each equation regression model (2) to (4) are estimated to be normal and the t-statistic distribution becomes \[ t_k = (b_k - \beta)/ se(b_k) \] which will be close to \[ t_{0.025} \] where \[ k = 1, 2 \] or 3 depending on the regression model used. If \[ \beta = 1 \] and model equation (1) is the actual model, then the empirical distribution of t-statistics is \[ t \] and not \[ t_{0.025} \]. For example, the regression results of model equation (2) have been obtained and the sample size is 25 and 100 observations. By comparing the t-statistics shown in the Dickey-Fuller table and calculated by respective regression, it can be concluded about the existence of the root unit. For this there are three t-statistical distributions in the Dickey-Fuller table, respectively for the regression model with intercept and time trend. Each t-statistic is expressed by symbols \[ \bar{t}, \bar{t}, \bar{t} \] in the Dickey-Fuller table.

  We will reject the null hypothesis which states the presence of stationary properties in model (3) if the t-statistical value obtained with regression coefficients of this model is less than -3.00 at the real level \[ \alpha = 0.05 \].

  For regression models containing higher order autoregressive processes, stationary testing can be performed with the extended Dickey-Fuller test (Augmented Dickey-Fuller Test) and Philip-Perron Test. Testing is done by comparing the value of ADF t-statistic with the critical value of MacKinnon. If the ADF t-statistic is greater than its critical value then the variable is stationary [14; 5].

- Co-Integration Testing

  Co-integration theory has been developed by [10; 22; 20]. The cointegration test concerns the residual elements of a regression model. For example, in the following regression model:

  \[ X_t = \alpha + \beta Y_t + \mu_t \]

  Through the Dickey-Fuller test, it can be found that Xt and Yt are the random walk variables, but \[ \Delta X_t \] and \[ \Delta Y_t \] are stationary. Thus, the equation model (2) called the cointegration regression model can be estimated by the \[ \mu_t \] procedure being stationary. This residual element \[ \mu_t \] will not be stationary when \[ X_t \] and \[ Y_t \] are not co-integrated and while linear combinations do not exhibit stationary properties.

  In this case, testing whether \[ \mu_t \] is non-stationary or in other words hypothesis testing is the absence of co-integration between \[ X_t \] and \[ Y_t \]. This test can be done in two ways. The first way is by using Dickey-Fuller test system and second way by using Durbin-Watson statistics obtained.

  The Dickey-Fuller test method, by Durbin-Watson statistics, \[ t \] is considered to contain the random walk if the expected value \[ (e_{1t} - e_{0t}) \] is zero so that Durbin-Watson statistics is close to zero. Therefore, the test is performed on the hypothesis that the Durbin-Watson statistics = 0. If the Durbin Watson statistics value is greater than zero, then the hypothesis that there is no co-integration between \[ X_t \] and \[ Y_t \] can be rejected [14]. With the escape of an equation of the cointegration test, the result of the regression is useful. The free and non-free variables in the cointegration regression equation have a long-run relationship.

- Granger Causality Test

3934
Regression results of both forms of linear regression model in Granger causality analysis will yield four possibilities regarding the value of regression coefficients respectively:

if \( \sum_{j=1}^{n} b_j \neq 0 \) and \( \sum_{j=1}^{n} d_j = 0 \), there is one-way causality from Y to X;

if \( \sum_{j=1}^{n} b_j = 0 \) and \( \sum_{j=1}^{n} d_j \neq 0 \), there is a one-way causality from X to Y;

if \( \sum_{j=1}^{n} b_j = 0 \) and \( \sum_{j=1}^{n} d_j = 0 \), X and Y are independent of one another;

if \( \sum_{j=1}^{n} b_j \neq 0 \) and \( \sum_{j=1}^{n} d_j \neq 0 \), there is a two-way causality between Y and X.

To strengthen the indication of the existence of various forms of causality mentioned above, F-test for each regression model is performed. Sources of data and information required in this analysis are publications relating to the development of foreign direct investment derived from the Indonesian Investment Coordinating Board data that is based on data of approval of foreign direct investment in the agriculture sector in Indonesia based on Indonesian permanent business license, export and investment and macro-economic variable values (such as interest rates, exchange rates, inflation) obtained by various Statistics Indonesia and Bank Indonesia.

3. RESULTS & DISCUSSION

3.1. Factors Affecting Foreign Direct Investment / FDI

Factors affecting foreign direct investment (FDI) are very complex and diverse. To analyze these factors, we will find many obstacles when we sort them out by sector, since the variables that affect foreign direct investment (FDI) tend to be universal or in other words they affect foreign direct investment (FDI) on all or various investment sectors, whether marine, agriculture, industry and others. This means to analyze the factors that affect foreign direct investment (FDI) researchers will not focus on the agricultural sector alone, given the sectoral side, the factors that affect tend to be partial, such as the content of agricultural resources. Several factors that influence investors in taking investment decisions, among others:

- **Political Risks**
  - Political risk as the application of all government policies of destination countries that impede the business operations of foreign investment [21]. He subdivided risk into three main categories, namely: (1) Risk transfer, risks associated with capital payments; (2) Operational risk, which threatens local sources; (3) Ownership control risk, possibility of expropriation or seizure. Political risk can be defined as the risk of strategy, finance or loss of personnel caused by non-market factors such as macroeconomic and social policies (fiscal, monetary, trade, investment, industry, income, labor and development) or events related to political instability (terrorism, riots, civil war and insurrection) [17].

- **Currency Exchange**
  - Currency exchange rate volatility is usually used as a measure of exchange rate dispersion over several periods.

Value volatility has a strong effect on growth in various aspects including investment and trade. Interest in the condition of an erratic currency value compared to the standard value of the investment world resulted in the introduction of option pricing theory theory [1].

- **Inflation**
  - The inflation rate can be very volatile from year to year in some countries, even in developing countries can reach 200% in a given year. If this happens of course it will greatly affect the cash flow of the project.

- **Economic Growth**
  - Based on the theory of economic growth, one of the factors affecting the output of economic growth is FDI [6]. There is much research done to see the relationship between FDI and economic growth. But in general the research that discusses the relationship between FDI and economic growth can we distinguish into four categories: (1) Increasing FDI to a country, contributing to technology transfer, capital formation and realizing employment opportunities, increasing revenue of receiving countries FDI; (2) Investors will choose the location of foreign direct investment (FDI) in a country that has sufficient purchasing power for the product to be produced by the investor company; (3) Multinational companies investing overseas will have a positive impact on the destination country. One of them is the rising incomes of the country's population which ultimately can increase people's purchasing power and so will be the trigger of the country's economic growth improvement; (4) Is a causality test.

- **Investment Climate In Indonesia**
  - To analyze the investment climate in Indonesia, it will be analyzed through two important related aspects, namely investment policy and institutional aspect.

3.2. Foreign Investment Policy

The provisions of foreign investment in Indonesia are based on the Foreign Investment Law no. 1/1967 with some adjustments. These provisions apply to all companies whose domestic capital is less than 100%. In line with the economic crisis in mid 1997, the government looks more serious to re-make the economic recovery that had slumped. Various policies in order to encourage the presence of foreign investment continue to be done from the era of the administration of President Megawati, the government of President (Susilo Bambang Ydhoyono) including the era of President Jokowi's administration. Various policies are made still require a synchronization with other policies issued by other ministries / agencies or related agencies. An example is a policy issued by the Indonesian government, the Investment Climate Policy Package dated August 31, 2005, the Incentive Package of October 1, 2005 which is an integral part and implementation and follow up of the August 31, 2005 Policy Pack. The coverage of this October Package is the Fiscal Incentive Package. Regulatory reform in the trade sector, regulatory reform in the transportation sector, Rice Inpres and Direct Cash Subsidies (SLT). These policies, according to investors, have not been able to encourage the presence of foreign investment in Indonesia. So that is needed in order to encourage the presence of foreign investment in Indonesia is the existence of supporting policies issued by the relevant ministries. As an analysis is the agricultural sector of FDI development program issued by the Ministry of Agriculture. Among others include; development of investment incentives,
development of financial institutions and agricultural capital, enhancement of appropriate technology support and appropriate absorption, improving the quality of human resources, enhancing institutional institutional support, enhancing commodity support support and legality support. In this context, the Presidential Regulation No. 97 of 2014 on the Implementation of One Stop Integrated Service (PTSP), which mandates the establishment of PTSP to the regional level in order to promote the improvement of the investment climate. Various licensing services related to various fields through this policy are done in one door service, such as licensing in the field of industry, agriculture and food security, kehtanan, land, education, housing and so forth. In addition, in the era of President Jokowi-JK's administration also made significant policies for improving the investment climate in Indonesia, which is widely known as the Economic Policy Package from Volume I to Volume XVI. The low realization of world investment to Indonesia (1.97%) with average per year (2012-2016) amounted to US$ 1,417.58 billion. Where one of the important points regarding this Economic Policy Package is regarding the PTSP licensing service standard that includes eligible business actors to obtain permits, requirements, procedures and settlement period. Then the cost of issuing licenses (PNBP or Regional Tax / Retribution), the obligation of PTSP to grant licenses if all requirements are complete and correct. Thus through this policy is expected achievement target of investment ratio of 32.7% (2012-2016).

3.3. Institutional Aspects
Another thing that we can see from the presence of Law no. 11/1970 which was followed by the issuance of Presidential Decree No. 20 and No. 21 is officially the establishment of the Investment Coordinating Board (BKPM) which means to reinforce the institutional aspect of the investment itself. BKPM is based on Law no. 11/1970 and the two presidential decisions have the same function as technical teams, and its expanded authority covers all investments except those in the oil and gas, banking and insurance sectors. However, the most important thing besides administrative changes is the presence of restrictive BKPM policies, such as the closure of some sectors for investment, such as textile spinning which is more oriented to meet the local market. Nevertheless, the presence of BKPM in technical areas is often regarded as an obstacle to investment, given the lack of synchronization of development policies or inter-ministerial investment with BKPM itself. As an example is the licensing and regulatory system. Licensing and regulatory systems often use the main tool of the government, which starts from the central government to the lower levels of government. This will further extend the bureaucratic path for investors to invest. For many multinational companies, BKPM is often the main objective considering its duties as a technical team. But in terms of licensing, investors still have to get permission from the relevant ministries [15]. Bureaucratic reforms that must be done by the government in order to encourage the presence of a conducive business and investment climate include simplification of system and licensing, reduction of various overlapping fees, and transparency of licensing fees. This is in line with the Global Competitiveness Report 2012-2013 report, inefficient government bureaucracy in Indonesia is highest in business competitiveness. Its weight, 15.4% greater than the problem of corruption (14.2%) and infrastructure (8.7%). As a result, Indonesia only occupies the 50th position from 144 countries in 2013, while Malaysia is in 25th place, Thailand 38th, 29th China, Japan 10th, and Singapore 2nd [19]. Therefore, the issuance of Presidential Decree No. 97 of 2014 on the Implementation of One Stop Integrated Service (PTSP) as well as marking the bureaucratic reform in the context of institutional investment in Indonesia. Although the one door integrated service (PTSP) is not something new in Indonesia. This policy has been initiated since the time of President Susilo Bambang Yudhoyono in 2005 and developed after Law No. 25/2009 on Public Services was established. Where through the PTSP, the applicant of the licensee no longer need to take care of various letters and documents in different offices with different office locations. Thus, through the formation of PTSP in the regions it is expected that all regional heads / heads of the department want to delegate their authority to the head of PTSP. Although the journey did not go smoothly. The BKPM report in 2013 noted that only 41% of local governments have delegated their authority to the head of PTSP. The reason is that some licenses related to specific agencies, such as health and the environment, are deemed necessary by the relevant agencies' recommendations. And still there are technical obstacles in the field, such as limited human resources. Ideally PTSP has technical staff, such as AMDAL, health, civil, and transport assessment experts. However, the number of such staff generally resides in the agency / institution of origin and not in the PTSP. And PTSP institutional issues, namely on status issues. There are PTSPs in the form of agencies, offices, and offices, with different implications.

3.4. Development of Foreign Direct Investment (FDI) of Agriculture Sector
In the period of 1980-1985, the value of FDI in the agricultural sector increased relatively, although the figure is still below 100 million US dollars. In the period 1986-1990, the value of agricultural sector FDI continued to increase and reached the figure in the range of 100 million US dollars, although in 1988, again dropped dramatically, one of which is due to the rapid growth of the industrial sector in Indonesia. The next period continued to increase, which peaked in 1996, where the value of agricultural sector FDI reached the highest value, which is 1521.6 million US dollars. Then in line with the economic crisis that occurred in Indonesia in mid 1997, FDI tended to decrease significantly. The ups and downs of FDI in the agricultural sector certainly affect FDI's contribution to the total agricultural sector FDI. The 1980-1987 period of agricultural sector FDI contribution to the total average FDI was 3.33%. In the period 1988-1996 the average FDI contribution of the agricultural sector to total FDI was 1.95%. While in the period 1997-2015, the average of 3.62%.

3.5. Data Analysis Results
From the test results at a significance level of 99% it can be shown that in the level form, the test generally can not reject the null hypothesis of the root unit in all variables which means that all variables are non-stationary at a 99% significance level. Meanwhile, in the form of first difference, the test results reject the null hypothesis of the root unit in all variables so that all variables are stationary. From these results it can be concluded that all variables in the system have the degree of integration 1, (Tables 1 and 2).
Table 1-Test Results Stationarity Data Level

<table>
<thead>
<tr>
<th>Notation</th>
<th>ADF-Test (Constant)</th>
<th>ADF-Test (Constant &amp; Linier Trend)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LFDI</td>
<td>-5.774991*</td>
<td>-5.806270*</td>
</tr>
<tr>
<td>LEXAC</td>
<td>-4.852498*</td>
<td>-4.729461*</td>
</tr>
<tr>
<td>LRGDP</td>
<td>-4.403542*</td>
<td>-4.329114*</td>
</tr>
<tr>
<td>LERUS</td>
<td>-5.641754*</td>
<td>-5.494817*</td>
</tr>
<tr>
<td>DINR</td>
<td>-4.391818*</td>
<td>-4.686117*</td>
</tr>
<tr>
<td>FINR</td>
<td>-4.453874*</td>
<td>-4.453638*</td>
</tr>
<tr>
<td>LCINP</td>
<td>-3.969822*</td>
<td>-3.908406*</td>
</tr>
</tbody>
</table>

Note: * stationary at α (1%), ** stationary at α (5%), *** stationary at α (10%)

Table 2-Station Difference Test Results First Difference Data

<table>
<thead>
<tr>
<th>Notation</th>
<th>ADF-Test (Constant)</th>
<th>ADF-Test (Constant &amp; Linier Trend)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LFDI</td>
<td>-1.773900</td>
<td>-2.654683</td>
</tr>
<tr>
<td>LEXAC</td>
<td>-1.220511</td>
<td>1.041938</td>
</tr>
<tr>
<td>LRGDP</td>
<td>-1.409464</td>
<td>-2.848232</td>
</tr>
<tr>
<td>LERUS</td>
<td>-1.370137</td>
<td>-2.797189</td>
</tr>
<tr>
<td>DINR</td>
<td>-2.652575***</td>
<td>-2.355928</td>
</tr>
<tr>
<td>FINR</td>
<td>-3.252084***</td>
<td>-3.411979***</td>
</tr>
<tr>
<td>LCINP</td>
<td>-2.442668</td>
<td>-2.395266</td>
</tr>
</tbody>
</table>

Note: * stationary at α (1%), ** stationary at α (5%), *** stationary at α (10%)

This cointegration test uses Johansen’s cointegration test methodology using a benchmark based on Trace Statistics criteria, and Maximal Eigenvalue. Based on Maximal Eigenvalue, the null hypothesis that the sum of cointegration relations is at most 3 is rejected, which means that there are 4 cointegration relationships between the variables in the system for the 5% level, while using the 1% level there are 2 cointegrations. Based on Trace Statistics, the null hypothesis that the number of cointegration connections is at most 3 is declined, which means that there are 4 or more cointegration relationships among the variables in the system, for the 5% level, whereas with 1% there are 3 cointegrations (Table 3).

Table 3-Testing Johansen’s Cointegration Test

<table>
<thead>
<tr>
<th>Hypothesized</th>
<th>Trace</th>
<th>5%</th>
<th>1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of CE(s)</td>
<td>Eigenvalue</td>
<td>Statistic</td>
<td>Critical Value</td>
</tr>
<tr>
<td>None **</td>
<td>0.975111</td>
<td>232.9488</td>
<td>124.24</td>
</tr>
<tr>
<td>At most 1 **</td>
<td>0.925582</td>
<td>148.0023</td>
<td>94.15</td>
</tr>
<tr>
<td>At most 2 **</td>
<td>0.779711</td>
<td>88.24701</td>
<td>68.52</td>
</tr>
<tr>
<td>At most 3 *</td>
<td>0.735332</td>
<td>53.63948</td>
<td>47.21</td>
</tr>
<tr>
<td>At most 4</td>
<td>0.389575</td>
<td>23.06608</td>
<td>29.68</td>
</tr>
<tr>
<td>At most 5</td>
<td>0.333795</td>
<td>11.71327</td>
<td>15.41</td>
</tr>
<tr>
<td>At most 6</td>
<td>0.097976</td>
<td>2.371638</td>
<td>3.76</td>
</tr>
</tbody>
</table>

Note: * the null hypothesis is denied the existence of the root unit on α 1 %, ** the null hypothesis is denied the existence of the root unit on α 5%, *** the null hypothesis is denied the existence of the root unit on α 10%

Table 4-Normalization Results Johansen’s Cointegration Test

<table>
<thead>
<tr>
<th>Variabel</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistik</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEXAC</td>
<td>2.2497467</td>
<td>0.9785</td>
<td>2.552342</td>
</tr>
<tr>
<td>LRGDP</td>
<td>6.564689</td>
<td>0.43624</td>
<td>15.04834</td>
</tr>
<tr>
<td>LERUS</td>
<td>-7.27492</td>
<td>0.333226</td>
<td>-21.8296</td>
</tr>
<tr>
<td>DINR</td>
<td>0.432257</td>
<td>0.039051</td>
<td>11.06932</td>
</tr>
<tr>
<td>FINR</td>
<td>-0.86027</td>
<td>0.09376</td>
<td>-9.17522</td>
</tr>
<tr>
<td>LCINP</td>
<td>12.02808</td>
<td>0.55289</td>
<td>21.75492</td>
</tr>
</tbody>
</table>

Based on the above equation, all variables are statistically significant at significance level, d.k 5% and degree of freedom, d.f 23 (25-1-1) on FDI formation. And it is known that t table is 2.069. While seen from the direction of the parameters all variables have the same direction with the hypothesis in the long run, except LCINP. In the long run the behavior of FDI formation is influenced how big LEXAC, LRGDP, LERUS, DINR, FINR and LCINP. A requirement required to show that among the variables studied is cointegrated by looking at the residual behavior of the regression equation in which the residual must be stationary. The stationary result or unit root test of the regression residual is as follows (see Table 5):

Table 5-Unit Root Test Results on Residual Regression Equations

<table>
<thead>
<tr>
<th>Variabel</th>
<th>ADF-test Konstanta</th>
<th>ADF-test Konstanta, Linier Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resid_LFDI</td>
<td>-5.416436</td>
<td>-4.647683</td>
</tr>
</tbody>
</table>

Note: * the null hypothesis is denied the existence of the root unit on α 1 %, ** the null hypothesis is denied the existence of the root unit on α 5%, *** the null hypothesis is denied the existence of the root unit on α 10%
From the table it can be seen that the residuals of the LFDI equation successfully reject the null hypothesis that the residual is not stationary, this can be seen from the value of ADF-test is absolutely greater than the critical value (CV) both the level of trust = 10 %, = 5 %, and = 1 %. The result can be interpreted that the residual of LFDI equation regression is stationary. Thus the result of stationary test to residual reinforce the results of Johansen’s cointegration test method that among the cobbledated variables there is cointegration. How are the conditions of foreign direct investment in the agricultural sector and its contributing factors can be seen as follows in summary of Table 6.

**Table 6- Summary of Estimated Results**

<table>
<thead>
<tr>
<th>Cointegration</th>
<th>Estimated Result Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>None **</td>
<td>LEXAC 2.497467*</td>
</tr>
<tr>
<td>At most 1</td>
<td>LRGDP 6.564689*</td>
</tr>
<tr>
<td>At most 2</td>
<td>LERUS -7.27492*</td>
</tr>
<tr>
<td>At most 3</td>
<td>DINR 0.432257*</td>
</tr>
<tr>
<td>At most 4</td>
<td>FINR -0.86027*</td>
</tr>
<tr>
<td>At most 5</td>
<td>LCINP 12.02808*</td>
</tr>
</tbody>
</table>

Note: *stationary at α (1%), ** stationary at α (5%), *** stationary at α (10%)

By using a cointegration test in which there is more than one cause variable, it can not use the Engel-Granger cointegration analysis but must be done by the Johansen test cointegration test. The estimation results of OLS Equation Long-run cointegration like the table above shows that the result of BLUE estimation (Best, Linear, Unbiased Estimation). This means that the validity of the equation does not occur Multicollinearity, Heteroscedasticity, and Autocorrelation. From the test results as summarized in the above table we can see that the factors causing foreign direct investment in the agricultural sector are the amount of agricultural sector exports, gross domestic product, exchange rate, domestic interest rate for investment credit, foreign interest rate for investment credit and domestic price. The value of the influence of each factor to the amount of foreign direct investment of agricultural sector can be seen from the parameter value of each explanatory variables. In the long term if there is an increase of 1% export of agricultural sector will result in an increase of foreign direct investment of agricultural sector by 2.49%. Gross domestic product shows the amount of output that can be generated in an economy that is nothing but the economic growth rate of an economy. The increase in economic growth in the long run will have an impact on the increase of foreign direct investment around 6.5%. Indirect exchange rate depreciation will have an impact on increasing production costs, if all production materials are imported and exchange rate depreciation will also affect the weakening of competitiveness of agricultural products. In the long term, the 1% exchange rate depreciation will impact the decrease of foreign direct investment reaching 7.44%. The domestic interest rate for investment credit shows an overview of the investment cost or can also indicate the rate of return on investment returns. A 1% increase in lending rates will result in an increase in foreign direct investment in the agricultural sector by 0.4%, of course with the note that lending rates are not too high and burdening businesses. While the foreign interest rate for investment credit will have the opposite effect, if the interest rate of foreign credit for investment increases, it will affect the decrease of foreign direct investment. An increase in foreign interest rate for a 1% investment would result in a 0.8% drop in foreign direct investment in the agricultural sector. Inflationary relationship with investment is negative meaning if the higher inflation will affect the decrease of investment that form. For this research, it was found that the price increase had a positive impact on the amount of foreign direct investment in the agricultural sector. This result does not reflect the condition that is in accordance with the conditions in general, it is possible that in the long term, despite the rise in prices but still much smaller than the increase in income levels or in the sense of price rising conditions prevailing in Indonesia is still perceived to be anticipated with an increase income so it does not so worsen the purchasing power of its people. The magnitude of the effect of 1% price increase on the increase of foreign direct investment of agricultural sector reached 12%. This means that in the long run, the price increase will affect the increase of foreign direct investment.

5 CONCLUSION

From the description in advance which contains the discussion and analysis, the final result of this study can be summarized as follows:

- The development of foreign direct investment in Indonesia, both total investment and foreign direct investment in the agricultural sector are both experiencing ups and downs. During the period of 1980-1996, the flow of FDI to Indonesia tended to increase significantly and in line with the condition of Indonesia’s economic crisis, FDI began to decline significantly. The same is true of agricultural sector FDI, in the 1980-1996 FDI agricultural sector has a tendency to continue to increase. But in line with the economic crisis that occurred in Indonesia in mid 1997, FDI tended to decrease significantly.

- The contribution of agricultural sector FDI to total FDI also tends to fluctuate. The 1980-1987 period averaged 3.33%. The period 1988-1996 averaged 1.95%. Periodal year 1997-2015, agricultural sector FDI contribution to total FDI average equal to 3.62%.

- Foreign investors investing in agriculture sector in Indonesia are more likely to invest their capital in plantation sub-sector, then Food and Horticulture (TPH), and then farms.

- Based on a descriptive analysis of the development of foreign investment in Indonesia, conducted an analysis of the investment climate.

- Data analysis on factors affecting foreign direct investment, on Stasioneritas test, it is found that stationary data at degree one for constant and constrative consideration with trend at 1% level of significance. Meanwhile, based on Cointegration Test of Cointegration, Johansen Cointegration test showed that there is cointegration for the eight variables used. In the long run, the seven exogenous variables significantly affect the amount of foreign direct investment of agricultural sector.

- The implications and policy recommendations that should be done by the government are; maintaining stable economic growth, strengthening the exchange rate, encouraging export activities of the agricultural sector, keeping the domestic interest rate for investment credit not
too high not to cause burdening the business world, paying attention to foreign interest rates for investment credit by maintaining its spread, keeping the existence of price levels that are not too high so as not to disrupt the purchasing power of the people.

REFERENCES