# THE EFFECT OF RUBBER PLANTATIONS INVESTMENT ON THE LABOR ABSORPTION IN SOUTH SUMATRA

*by* Muhammad Yusuf Se., M.si., Ph.d

# THE EFFECT OF RUBBER PLANTATIONS INVESTMENT ON THE LABOR ABSORPTION IN SOUTH SUMATRA

**Muhammad Yusuf[1]**
**Markoni Badri[2]**
**Yusnizal Firdaus[3]**
**Alhushori[4]**

[1]Lecturer Department of Business Administration State Polytechnic of Sriwijaya Palembang, South Sumatera Indonesia. (Email:habib_yosefa9@yahoo.com)

_____

*Abstract: Labor absorption in the rubber plantation sector in South Sumatra indicates a decrease in contribution along with the decline in the contribution of the rubber plantation sector to Gross Regional Domestic Product. However, in terms of the amount of labor absorption this sector is still included in the very large category i.e. 4.2 million workers. The main objective of this research was to find out the effect of the rubber plantation investment on the labor absorption in South Sumatera, Indonesia. The data used in this study were secondary data based on time series data of South Sumatera in 2014-2018 on the basis employment data. The data were analyzed by using regression analysis. The results of this research indicate that is a significant effect on the rubber plantation investment against labor absorption. This meant that the rubber plantation still had to be one of the priorities in the investment climate in South Sumatera.*

*Keywords: Rubber Plantation, Investment, Labor Absorption*

## Introduction

The economic growth in a region will be achieved if supported by investments that are able to increase production capacity through capital accumulation so as to be able to encourage output increase and drive sustainable economic growth (Blades et. al, 2006). It means that economic activity must concentrate on the economic potential of a region so that it will have a real impact on Gross Domestic Product.

South Sumatera is an area in Indonesia where more than 70 percent of the population depending on plantations sector (Central Bureau Statistics of Indonesia`s or BPS, 2018). However, the investment value of the plantations sector, especially rubber plantation in the latest period 2014 to 2018 is not included in the investment interested by investors. The investment value in the rubber plantation gets a very small proportion out of total investments both from domestic and abroad, which is only about 1 to 9 percent. Todaro & Smith (2014) argued that the agricultural

sector for a country where the majority of its population depending on agriculture is a prerequisite for the industrial sector and services development.

Based on data from the Planting Coordinating Board Republic of Indonesia (2018), it shows that the rubber plantation play a very important role in achieving economic targets in South Sumatera and have very fundamental functions, i.e. providing employment and strive for society, and as one of the country's foreign exchange earners. Based on data from the Central Bureau Statistics (BPS), the agricultural contribution to the producing gross regional domestic products in South Sumatera is around more than 45.02 percent in the year 2014 to 2018. Data from the Regional Development and Planning Bureau of South Sumatera (2018) shows that the rubber plantation ranks the first highest but if observed the value continues to decline from 2014 to 2018. The rubber plantation contribution in 2014 ranged from 19.6 percent and continues to decline, which in 2018 becomes to 16.58 percent. Employment of the rubber plantation sector based on data of year 2014 about 3.57 million and continues to decline, which in 2018 becomes to 4.2 million (BPS, 2018).

Based on the data and facts above, this study aimed to find out the impact of the rubber plantation investment to the labor absorption in South Sumatera, Indonesia.

## Literature Review

The theory of economy defines investment as the government expenditure to buy capital goods and production equipment with the aim to replace and especially to add capital goods that will be used to produce goods and services in the future (Dawson, 2006). Investment for one or more assets owned and usually long-term is expected to gain profits in the future. According to Thirwall & Penelope (2011), investment in economic growth includes adding capital stocks or goods in a country, such as production equipment building, and inventory items where investment is a step to sacrifice consumption for future benefits. Investment is an important component in economic growth. Investment has an important role in aggregate demand. First, investment expenditure is more unstable compared to consumption expenditure so that investment fluctuations can lead to recession. Second, investment is very important for economic growth and improvement in labor productivity. Economic growth is very dependent on labor and capital stock (John, 2007). Economic growth is shown by the growth rate of Gross Domestic Product at constant prices which represents the growth of goods and services produced by all sectors that play a role in economic activity (*Blades et.,al, 2006*)

According to Todaro & Smith (2014), for a country or region which its economic growth relies on agricultural products, if the country is eager to get smooth and sustainable development then the country must start from the agricultural sector. The essence contained in the poverty problem continues to expand; the increasing inequality of income distribution, the rapid pace of population growth, and the continuous increase in the unemployment rate initially are caused by stagnation and frequent decline of economic life in the agricultural sector. Historically from western countries, what is referred to as economic development is synonymous with rapid structural transformation of the economy, namely the economy which relies on agricultural activities into modern industries and more complex community services. Thus, the main role of agriculture is only considered as a source of labor and cheap foods for the industrial sectors development which have been named dynamic "leading sectors" in economic development strategy as a whole (Mankiw & Taylor, 2011).

According to Todaro & Smith (2014), economic development strategies should prioritize agriculture and employment. There are at least three basic complementary elements, namely:

1. Accelerating output growth through a series of technological, institutional, and price incentives that are specifically designed to increase the small farmers productivity.
2. Increasing domestic demand on agricultural output resulted from urban development strategies oriented on labor development efforts.
3. Diversification of labor-intensive regional development activities, namely non-agriculture, which directly and indirectly will support and be supported by the agricultural community.

The agricultural sector still plays an important role in the national economy for Indonesia that can be used as reasons: First, Indonesia is a developing country that is still relatively underdeveloped in the mastery of advanced science and technology and still faces capital constraints; it clearly has not yet had comparative advantage in the science and technology-based economic sector. Therefore Indonesia's economic development should be focused on economic sector development based on natural resources, labor intensive, and oriented to domestic market. In this case, the agricultural sector is the best to meet the requirements. Secondly, according to population projections carried out by the BPS (2018) it is estimated that there are around 228 -248 million people in 2013-2017. This condition is a serious challenge as well as a huge potential, both in terms of product supply and the product demand, especially labor absorption. According to stimpson et. al (2006), the availability of natural resources in the form of land with potential agro-climate conditions to be explored and developed as productive agricultural absorption, it is the main attraction for investors to invest their capital. Third, the agricultural sector remains one of the important sources of national output growth. Fourth, the agricultural sector has unique characteristics especially in terms of the resilience of this sector to the structural shock of the macro economy. Given the importance of the agricultural sector role in the national economy, the country`s policies such as fiscal policy, monetary policy, and trade policy should not neglect the agricultural sector potencies.

Some of research conducted relating to agricultural sector investment is a study conducted by Kalangi (2006) about the impact of investment in the agriculture and agro-industry sector in labor absorption and income distribution. Using the SAM (Social Accounting Matrix) analysis approach, the result of the study showed that investment for increasing agricultural sector output has a greater impact on labor production factors and increasing household income in Indonesia. The largest percentage of labor absorption for the agricultural sector is in the food crop sector. All agricultural and agro-industry sectors that influence households will pass non-agricultural labor and private and government capitals. Based on the scenario conducted by Kalangi (2006), injection of investment in the agricultural sector, agro-industry, and other production sectors, both domestic and foreign, has a positive impact on factorial, household, production sector and other production sectors.

A research conducted by Kibrom T. Sibhatu (2017), many of the world's food-security and undernourished small holders are farmers in developing countries, especially in Africa, there are urgent nutrition-sensitive systems for agriculture and food systems. African farms are known to consume the size of what they produce at home. Less is known about how much subsistence agriculture actually contributes to household diets, and how this contributes to changes seasonally. We use representative data from rural Ethiopia covering every month of one full year to address this knowledge gap. On average, subsistence production is consumed from foods to calorie consumption, that is, 42% of the calories. Some seasonal variation occurs. During the lean season, purchased foods account for more than half of all calories consumed. But even during the main harvest and post-harvest season, purchased foods contribute more than one-third to total calorie consumption. Even it is more important for dietary quality

markets. During all seasons, purchased foods play a much larger role for dietary diversity than subsistence production. These findings suggest that strengthening rural markets needs to be key elements in improving food security and dietary quality in the African small-farm sector. A retracted article by Yifang Liu (2011) about the ideology of sustainable development of the circular economy and the development mode based on the point of industrial chains expained that the ideology of sustainable development in the circular economy is adequately expounded in this paper, which is the second objective. Also two basic conditions are put forward to achieve sustainable development by the circular economy. These two conditions are the foundations of the further research, especially for quantitative analysis. In addition, the definitions of the circular economy given by Chinese scholars and the development principles of it are described fully in this study. They provide a valuable reference for other studies which have not been understood clearly. Finally, expected target of development of the circular economy in China in the next few years are given.

The conceptual framework of this study is about 70 percent of the people of South Sumatra depend their income on agriculture. The plantation sector, especially rubber plantation, contributes greatly to the Gross Regional Domestic Bruto (GRDP) of South Sumatra. The rubber plantation sector should get serious attention from the government by providing policies that support the development of this sector. Development of the rubber plantation sector can contribute to reducing unemployment and can increase economic growth in South Sumatra. In order for the growth rate of the rubber plantation sector to increase GRDP of South Sumatra, the acceleration through rubber plantation sector investment is very important for the economic development of the province of South Sumatra. Based on data and theory, the hypothesis of this research is rubber plantation investment had a positive effect on labor absorption.

The theoretical framework of this research as follows:

| The Effect of Rubber Plantation Investment (X) | → | Labor Absorption (Y) |

**Figure 1. The Effect of Rubber Plantation Investment on the Labor Absorption**

## Methodology

This research was conducted in Province of South Sumatera because of the fact that the investment in the rubber plantation is still important as a contributing sector to the economy of South Sumatera. The data used in this research were secondary data. The data used were the time series data in South Sumatera in 2014 to 2018 supported by data on employment data. Data analyzed with regression using SPSS. The data were obtained from the Central Bureau of South Sumatra Statistics or BPS Sumatera Selatan, Capital investment Coordinating Board Republic of Indonesia, and other relevant cooperation.

The focus of this research is rubber plantation investment (X) and labor absorption (Y). The analysis used was the regression analysis. The equation was as follows:

$$Y = a + \beta X + e$$

In the model above, labor absorption (Y) as dependent variable and have a direct or indirect effect on independent variable (X) i.e., rubber plantation investment. Independent variable also influenced by factors outside the model (including measurement error) denoted by "e".
Especially for the SPSS program regression analysis menu, the part coefficient is shown by output called "coefficient" which is declared as Standardized Coefficient known as Beta value. If there is a simple path diagram containing an element of the relationship between exogenous

variables and endogenous variables, then the part coefficient is the same as the simple r correlation coefficient (Salkind & Samuel, 2011).

The hypotheses of this research used to test the regression coefficients in this research, namely t test. The statistical test t test was used to test whether the independent variables individually had an effect on or not on the dependent variable in each equation. If the value of t count > t critical then $H_0$ was rejected or $H_a$ was accepted, if the value of t counts < t value critical then $H_0$ was accepted or $H_a$ was rejected

Determination Coefficient Test was done to find out the ability of all independent variables in the regression model in explaining changes in the dependent variable. In this case the adjusted R square was used to measure the independent variables. The greater the adjusted R square, the greater the influence of the independent variables on the dependent variable. Determination coefficient was done to get measurement results on the percentage of variance (variation) of independent variables (Gujarati, 2003). One indicator of a good model is the Goodness of Fit because the basic strength of regression analysis is to explain as much variation as possible in the endogenous variables caused by exogenous variables in the model. The model is considered good if the adjusted $R^2$ square is as high as possible (Gujarati, 2001). Thus $R^2$ is a standard measure used in regression, because it functions as a detection of whether or not a regression model is estimated.

## Funding and Discussion

Analysis in this study starts from regression analysis showed Table 1.

**Table 1. Variables of Regression Test Labor Absorption and Rubber Plantation Investment**

**Coefficients[a]**

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | $\beta$ | Std. Error | Beta | | |
| 1 (Constant) | 20.853 | 16.623 | | 1.254 | .216 |
| Labor Absorption | .098 | .178 | .074 | .552 | .583 |

a. Dependent Variable: Labor Absorption

From the table it could be obtained

$$Y = 20.853 + 0.098\ X_1$$

The equation means Constanta value obtained was 20,853 it indicated that without the existence of independent variables, the value of the dependent variable was 20,853. Coefficient $X_1$ ($\beta_1$) was 0.098 meant that if rubber plantation investment was increased, the labor absorption would increase 0.098 one unit.

Partial influence significant test (t test) is a test conducted to test significantly between independent variables on the dependent variable partially or individually. For more clearly the value in this partial test could be seen in the table as follows:

Testing the effects of the labor absorption variable (Y) on the rubber plantation investment variable (X), with partial test the probability value obtained was $0.040 < 0.05$ (probability value was smaller than 0.05), then Ha was accepted and Ho was rejected, thus it could be concluded that the hypothesis in this study showed that there was a significant effect of the rubber plantation investment variable (X) to the Labor Absorption (Y).

Correlation coefficient is an instrument used to find out how strong the relationship between independent variables it can be known by looking at the how high the correlation coefficient. Calculation of correlation coefficients and terminated coefficients could be seen in the table as follows:

**Table 2. Correlation Coefficient and Terminated Coefficient**

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .55[a] | .210 | .140 | 5.125 |

a. Predictors: (Constant): Labor absorption
b. Dependent Variable: Investment

Correlation Coefficient (R) was 0.55, it could be concluded that the rubber plantation investment variable (X) and labor absorption (Y) had a strong relationship on the rubber and palm plantations investment variable (Y) 0.55 or 55% and the rest 45% was explained and influenced by other factors. Terminated Coefficients ($R^2$) was 0.210, the determination coefficient showed how high the contribution of rubber plantation investment variable (X) in explaining the Labor Absorption variable (Y). In this research, the determination coefficient reflected the amount of contribution given by independent variables to the dependent variable. Adjusted R Square was 0.140. It was a correction of $R^2$ so that the calculation was closer to the quality of population model exploration. $R^2$ adjusted was 0.140, meaning that the situation was closer to the real equal to 0.140 changes in the variation of the dependent variable which could be explained by the independent variables.

The quantitative data processing supported by data from the Central Bureau of Indonesia`s Statistics of South Sumatra (2018) showed that the number of workers absorbed in the rubber plantation sector has decreased 15 percent from 2014 to 2018. This decline can continue if the investment in the rubber plantation sector is not increased.

**Conclusions and Implication**
Based on the funding and discussion in the previous chapter, it can be concluded that is a significant effect on the rubber plantation investment against labor absorption. If rubber plantation investment was increased, the labor absorption would increase 0.098 one unit.
The government and related agencies in South Sumatra Province continue still in focus to increase rubber plantation investment through promotion and provide explanations to investors regarding the prospect of the rubber plantation sector. In addition, the government of South Sumatra Province should make it easier for investors to invest, given that this sector will help the government reduce unemployment by labor absorption in the rubber plantation sector.

**References**

Badan Pusat Statistik. (2018). *Sumatera Selatan dalam Angka*. BPS Sumatera Selatan, Palembang.

Badan Koordinasi Penenaman Modal Republik Indonesia. (2018). *Laporan Perekonomian Indonesia*. Realisasi PMDM - PMA Januari – Desember 2017.

Badan Perencanaan dan Pembangunan Daerah Sumatera Selatan (2018). http://bappeda.sumselprov.go.id

*Blades, François Lequiller, Derek (2006). Understanding national accounts (Reprint. ed.). Paris: OECD. p. 112. ISBN 978-92-64-02566-0.*

*Dawson, Graham (2006). Economics and Economic Change. FT / Prentice Hall. p. 205. ISBN 0-273-69351-4.*

Gujarati, Damodar N. (2003). *Basic econometrics*. Fourth edition. Singapore: McGraw-Hill, Inc.

John C. Bogle. (2007). *Little Book of Common Sense Investing:The Only Way* to Guarantee Your Fair Share of Stock Market Returuns, Updated and Revised. 10th Anniversary Edition. Australia: John Wiley & Sons Publisher.

Kalangi, L.S. (2006). *Dampak Investasi Di Sektor Pertanian dan Agroindustri Dalam Penyerapan Tenaga Kerja dan Distribusi Pendapatan*. Bogor: Sekolah pascasarjana Institut Pertanian Bogor.

Kibrom T. Sibhatu & Matin Qaim. (2017). *Rural food security, subsistence agriculture,and seasonality*. Retrieved: https://doi.org/10.1371/journal.pone.0186406 October 19, 2017

Mankiw, N. G. & Taylor, M. P. (2011). Economics (2nd, revised ed.). Andover: Cengage Learning. ISBN 978-1-84480-870-0.

Mathijs, E., & Noev, N. (2004). *Subsistence farming in Central and Eastern Europe: empirical evidence from Albania, Bulgaria, Hungary, and Romanian*. *Eastern European Economics 42*(6), 72-89.

Nazara, Suahasil. (2005). *Analisis Input-Output*. Jakarta: Lembaga Penerbit FE UI.

Thirwall, AT. Antony & Penelope Pacheco Lovez. (2011). *Economics of Development: Theory and Evidence*. 9th edition. Palgrave MacMillan Publisher. United Kingdom.

Salkind, Neil J. & Samuel Green. (2011). *SPSS QuickStarts*. Britannia: London. Pearson Publisihing Ltd.

Stimpson, Robert J., Stough, Roger R., Roberts, Brian H. (2006). *Regional economic development: Analysis and Planning Strategy*. Berlin: German. Springer-Verlag Berlin Heidelberg.

Tarigan, Robinson. (2006). *Ekonomi Regional: Teori dan Aplikasi*. Jakarta: PT Bumi Aksara.

Todaro,Michael & Stephen C.Smith. (2014). Economic *Development*. 12th edition. UK: Trans-Atlantic Publication.

Yifang Liu. (2011). *Retracted Article: The ideology of sustainable development of the circular economy and the development mode based on the point of industrial chains*. Retrieved:https://www.researchgate.net/publication/252008717_RETRACTED_ARTIC LE_The_ideology_of_sustainable_development_of_the_circular_economy_and_the_dev elopment_mode_based_on_the_point_of_industrial_chains.

# THE EFFECT OF RUBBER PLANTATIONS INVESTMENT ON THE LABOR ABSORPTION IN SOUTH SUMATRA

PRIMARY SOURCES

| | | |
|---|---|---|
| **1** | Submitted to Politeknik Negeri Sriwijaya<br>Student Paper | **16**% |
| **2** | Liu, Yifang. "The ideology of sustainable development of the circular economy and the development mode based on the point of industrial chains", 2011 International Conference on E-Business and E-Government (ICEE), 2011.<br>Publication | **3**% |
| **3** | goedoc.uni-goettingen.de<br>Internet Source | **3**% |
| **4** | journals.plos.org<br>Internet Source | **2**% |
| **5** | Submitted to Universitas Diponegoro<br>Student Paper | **2**% |
| **6** | Submitted to School of Business and Management ITB<br>Student Paper | **1**% |

# THE EFFECT OF RUBBER PLANTATIONS INVESTMENT ON THE LABOR ABSORPTION IN SOUTH SUMATRA