How Does Foreign Direct Investment (FDI) Reduce Poverty? Application of the Triangular Hypothesis for the Indonesian Case

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ABSTRACT
An increase in economic growth is not always accompanied by a decrease in the poverty rate, this depends on the level of income distribution of a country or region. This paper analyzes the relationship of FDI to poverty by involving its interaction with economic growth and income inequality simultaneously. This study used two models, namely multiple regression and moderation regression models. This model includes several other explanatory variables, namely domestic investment, economic openness, average length of schooling and the workforce. Moderate Regression analyzes economic growth and the interaction between economic growth and income inequality and poverty. The regression model is a cross section of provinces in Indonesia for the 2012 and 2016 periods. The results showed that FDI had a significant positive effect on economic growth. Economic growth is estimated to have a significant effect on poverty alleviation. And the interaction between economic growth and income inequality has a significantly stronger effect on poverty reduction. The results showed consistency between 2012 and 2016. The most important conclusion from this study is that economic growth coupled with a reduction in income inequality will reduce poverty more significantly.

Keywords: FDI, Poverty, Triangle Hypothesis, Indonesia

1. INTRODUCTION
Poverty is a topic that is always interesting to discuss, especially in developing countries. Poverty has consequences in the form of a moral responsibility for everyone to pay attention to the lives of people who live in poverty. The size of the problem of poverty can not only be seen from the statistics, but in the problems of the people whose lives are at risk. Where there is poverty, there are communities especially children who face problems of hunger, malnutrition, and even their health is threatened. It can be ascertained that there are still many children from poor families who are unable to enjoy the education they are entitled to. From a human rights point of view, poverty is an environmental responsibility, both the cause and the solution. Therefore, various studies and efforts to reduce poverty are not only still actual, but also needed (Ishartono, 2016).

How important poverty alleviation is in Indonesia, the government through Presidential Regulation of the Republic of Indonesia Number 15 of 2010 concerning the Acceleration of Poverty Reduction has formed the National Team for the Acceleration of Poverty Reduction (TNP2K). This team is chaired by the Vice President. Even in the global development agenda, poverty is still an important and main issue. The global goals called Sustainable Development Goals (SDGs) declared by the world's 193 countries are a worldwide response that is a universal call for action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. There are 17 global goals in the SDGs, which end all forms of poverty as the first goal.

Statistically, the number of poor people in Indonesia shows a declining trend. In 2000 the number of poor people reached 38.74 million. The number and percentage
continues to decline. However, in 2006 the number of poor people in Indonesia increased again to 39.3 million. In 2013, the absolute number of poor people in Indonesia was still massive at 28.55 million people. In 2016 the percentage of poverty continued to decline to 10.78%, but in absolute terms 27.9 million people or nearly 30 million people were still in poverty. Therefore, even though the poverty rate continues to decline, poverty reduction remains a development priority because it involves the living standards of nearly 30 million Indonesians.

Economic growth is a motor of poverty alleviation, but it seems that the effect of economic growth on poverty varies from one region to another. These variations support the view that growth is necessary, but not sufficient for poverty alleviation, Hanim (2011). FDI as a vehicle for promoting economic growth also has the potential to affect the quality of growth and as an important element in poverty alleviation, Klein Michael et al (2013). Therefore, FDI can be seen as having an important role in reducing a country's poverty.

Theoretically, the source of economic growth is capital injection (investment). One way that this can be done is by attracting foreign investment (FDI). Although it is widely believed that the main determinants of economic growth are technological advances and new inventions, in fact in some countries, especially developing countries, new products are not yet fully developed and the skills needed to develop and implement new inventions in the production process is still lacking. Therefore, with the flow of foreign investment (FDI), according to Lee Chen Weng and Agus Fernando (2021) is one of the most important factors in a country's economic growth, producers in the host country must benefit from the diffusion of new technologies. From another country, namely the flow of technology from developed countries to developing countries Bengoa Marta (2003). Based on

Increasing economic growth does not necessarily reduce poverty Thorbecke (2012). Regarding the effect of FDI on economic growth, it shows that FDI has a positive effect on economic growth. Al Zaidy (2017), Taiwo (2016), Ceyhun (2016), Bengoa (2003). However, the effect of FDI on poverty is ambiguous, depending on the nature of the distribution of income, equitable or uneven.

Bourguignon (2004) states that FDI affects poverty through two different channels, namely through its contribution to growth, in turn affecting the level of poverty and through the impact of FDI on income distribution and subsequently affecting poverty levels. In turn, growth and income distribution interact dynamically over time to produce a growth-inequality-poverty triangle relationship called the triangle hypothesis.

Studies on the effect of FDI on economic growth show that FDI has a positive effect on economic growth. Al Zaidy (2017), Taiwo (2016), Ceyhun (2016), Bengoa (2003). Increased economic growth does not necessarily reduce poverty, depending on the distribution of income. FDI cannot help reduce poverty if increased economic growth due to increased FDI is not accompanied by equal distribution of income. An increase in average income will reduce poverty and an increase in income inequality will increase poverty (Kakwani (1993), Ravallion (1997).

Many studies have discussed the role of FDI on economic growth, income inequality and poverty, however the studies that have been conducted by previous researchers tend to be separate. Studies related to the role of FDI in economic growth were carried out by Lee Cheng Wen and Agus Fernando (2021), Hoque ME (2018), Pandya (2017), Haydaroglu (2016), Ould (2015), Taiwo (2015), Louzi (2011), Zaman (2011), and Bengoa (2002). All of these studies produce the same conclusion, that FDI has a positive impact on economic growth. Even Ould (2015) conducted research related to the impact of Foreign Direct Investment (FDI) on Mauritian economic growth from
1976 to 1995. Concluding that FDI not only has a positive impact on economic growth, but also the trend of increasing FDI also increases the country's GDP.

Several studies on the effect of FDI on poverty reduction (Arabyat, 2017; Fauzel, 2016; Gohou, 2012; Long Tsai, 2007; Hemmer, 2002) provide mixed results and use multiple indicators of poverty as well. Hemmer (2002) in his research concluded that FDI makes a significant contribution to economic growth and economic growth is a factor affecting poverty alleviation in the country. However, the direct impact of FDI on poverty is insignificant. Fauzel (2017), Ahmad (2013), and Gohou (2012) in their research use welfare indicators, namely the human development index as an indicator of poverty, in conclusion FDI makes a positive contribution to increasing poverty alleviation factors. Arabyat (2017) in his research results also obtained different results,

Almost all studies on the effect of FDI on economic growth produce the same conclusion that there is a positive influence between FDI on economic growth, however studies on the effect of FDI on poverty reduction produce mixed conclusions. In addition, in general, research related to this topic is carried out separately. The point is the study of the effect of FDI on growth alone or poverty reduction alone. Therefore, the authors conducted a study of FDI related to the impact of poverty by involving its interaction with economic growth and income inequality simultaneously.

2. LITERATURE REVIEW

2.1 The Effect of FDI on Poverty Rates

Theoretically, there is no literature that explains the direct effect of FDI on poverty. The closest theories that can provide arguments for the relationship between FDI and poverty are endogenous, neoclassical, modernization, and dependency theories. According to the theory, FDI indirectly affects poverty through the economic growth path. Increased economic growth is expected to increase employment and investment, all of which have an impact on poverty alleviation (Tsaurai, 2018).

In contrast to Tsaurai (2018), according to Fauzel (2016) foreign direct investment has the potential to reduce poverty through various channels. First, FDI has a positive influence on economic growth, job creation, technology improvement and knowledge transfer from host countries as well as human resource development through knowledge and skills. Second, FDI increases government revenue through the payment of corporate taxes.

Increasing FDI through a multiplier process will increase the economic capacity of a country. However, increasing economic capacity does not necessarily eradicate poverty. This is because both are still the main problems in developing countries. Even Agarwal Manmohan et al, (2017) stated that basically FDI flows also cannot help reduce poverty, for several reasons. First, FDI flows in certain sectors can reduce the demand for unskilled or unskilled labor which leads to increased unemployment and exacerbates income inequality and increases poverty. Furthermore, an increase in FDI means an increase in Trans-National Corporations (TNCs) which may result in the closure of several small and medium enterprises because they are unable to compete with foreign companies.

The impact of FDI on poverty reduction varies depending on many factors, both the quantity and quality of investment. There are differences in the impact of reducing FDI on poverty alleviation in labor-intensive and capital-intensive investments. There is very little capital-intensive investment in providing low-skilled employment so as not to reduce unemployment. This means that it does not reduce poverty. Meanwhile, labor-intensive FDI is more effective in reducing poverty because it can reduce unemployment.
However, while employment growth makes a positive contribution to poverty reduction, it does depend on the level of wages. If investors pay wages above the poverty line it will have an impact on poverty alleviation, but if investors pay wages below the poverty line, then FDI unable to reduce poverty, Ucal (2014).

Usually FDI inflows are directed from developed to developing countries. The factors that determine FDI inflows are determined by the abundant supply of cheap labor (often a major consideration), the growth rate of the host economy, the solvency of the country, trade openness, the size of the host market, corruption, inflation, the rate of industrial development, the fiscal deficit, exchange rates and investment barriers and bureaucracy. FDI inflows have the potential to influence poverty alleviation by encouraging higher economic growth through capital accumulation or increasing employment to pull people out of poverty. Agarwal Manmohan et al (2017).

Several studies have been conducted to examine the effect of FDI on poverty reduction. Assadzadeh (2013) examined 21 members of MENA countries in the 2000-2009 period. This study uses the human development index as an indicator of poverty. Research shows that foreign investment has a positive and significant effect on poverty reduction. Attracting foreign direct investment, especially in the production sector, leads to increased employment and middle income.

Tsaurai (2018) conducted a study on the effect of FDI on poverty by exploring whether the complementarity between FDI and the availability of natural resources in reducing poverty in southern and western African countries using panel data analysis (fixed effect, random effect, combined dynamic OLS and GMM) with data from 2002-2012. He considered that countries receiving FDI tend to have abundant natural resources. Based on the results of the analysis, the result is similar findings that the interaction between FDI and natural resources reduces the level of poverty in the African countries studied. Therefore, southern African countries are urged to implement policies to increase FDI that attract foreign investors into the natural resource extraction sector.

Agarwal et al (2017) tested empirically by comparing the effect of FDI on poverty in India and SAARC countries. The use of ARDL with time series data from 1981 to 2011 shows that FDI has a negative effect on poverty in India. Meanwhile, studies in SAARC countries gave different results, using panel data from 1981 to 2011. The regression results for FDI reduce poverty in Sri Lanka and Nepal but increase poverty rates in Pakistan and Bangladesh.

Findings from empirical studies suggest conflicting and conflicting conclusions. It is clear from empirical research on the impact of FDI on poverty alleviation that these issues are inconclusive. Even Tambunan (2016) in his paper said that FDI is not a panacea in poverty reduction but has a positive impact on poverty reduction in developing countries. Mogambye (2017) states that the effect of FDI on poverty in the host country is not a simple relationship, but varies depending on a number of factors, the policies and institutions of the host country, the quality of investment, the nature of the regulatory framework, the flexibility of the workforce is a factor affecting poverty alleviation.

2.2 The Relationship Between Poverty, Economic Growth and Inequality

Economic globalization encourages economic growth and reduces poverty levels in each country (Salvatore, 2004). Economic growth has an important role in reducing poverty. Skare (2016) views that economic growth and poverty are not separate phenomena. Although economic growth has had a positive impact on poverty alleviation, it is not certain. The same economic growth between countries will have different impacts on poverty reduction. With the same economic growth, a country has a higher level of inequality, poverty will decline more slowly than a country that has lower inequality,
Ravalion (2007). This means that poverty in a country can be reduced more quickly if there is higher average income growth.

The relationship between economic growth, income inequality and poverty can be explained through the triangle hypothesis. This hypothesis describes the interaction between economic growth, income inequality and poverty. The interaction of these three variables provides a basis for diagnosing the extent to which income growth or reduction in inequality affects poverty reduction. Poverty and income inequality are inherently linked (Khan (2014). Poverty reduction in a country is entirely determined by the growth rate of average population income and the income distribution of Bougoin (2004). Poverty in a country can be reduced more rapidly if there is growth in average income, higher rates, lower inequality, and a combination of income growth and reduced inequality.

Grammy Abbas and Djeto Assane (2006) conducted a study on the relationship of poverty, growth and inequality which showed that income distribution is very important for poverty alleviation. Poverty reduction will occur whenever there is economic growth accompanied by an increase in income distribution, even if added to a set of control variables in order to reduce poverty. Improving income distribution remains a key factor in poverty reduction.

Likewise, Guiga (2012) states that poverty is closely related to economic growth. Economic growth is linked to inequality. The theoretical and empirical findings that discuss the relationship between growth and inequality suggest that inequality is an element that minimizes the role of economic growth in the poverty reduction process. In line with Guiga, research conducted by Amini Chiara and Silvia Dal Bianco (2016) said that first, economic growth helps alleviate poverty while high inequality increases the number of poor people. Second, poverty is more reactive to economic growth in the initial conditions of development. Third, the impact of growth on poverty alleviation is highly dependent on the distribution of income.

The relationship between economic growth and poverty reduction can be measured by the income elasticity equation and the growth elasticity equation. If elasticity is high, anti-poverty public policies based on economic growth will be more efficient. However, if the elasticity is low, poverty reduction strategies should include a combination of economic growth and some kind of income redistribution. Araujo (2017).

3. Methodology

3.1 Data

The data used in this paper is a cross section, namely data from all provinces in Indonesia, amounting to 33 provinces in 2012 and 33 provinces in 2016. The variables used in this study include economic growth proxied by Gross Regional Domestic Product at constant prices, income inequality uses the Williamson Index (IW), and poverty uses the Headcount Index or P0, Total Labor Force (LF), Education uses the mean years schooling (MYS) per year, Opennes is calculated based on the ratio of total exports plus imports to GDRP, foreign investment (FDI) and Domestic Investment (DI) in currency units. Variables such as LF, GRDP, FDI, DI are applied in data processing using Normal Log.

All data comes from secondary sources at the regional (provincial) level in Indonesia obtained from various 2012 and 2016 Indonesian Statistical Reports. FDI data is obtained from the Foreign Investment Statistics published by the Investment Coordinating Board (BKPM).
3.2 Model

Data processing was performed by cross section regression. The author uses two different periods, in 2012 and 2016. This is used to see the consistency of the influence of the independent variable on the dependent variable in the two periods.

This study analyzes the relationship between FDI and the control variable on the economy (GDRP), income inequality (INEQ) and poverty (POV). The relationship between variables can be described as follows. First, the relationship between independent variables and economic growth. Second, analysis of the effect of economic growth on poverty and income inequality. As stated in the theoretical framework, economic growth has an impact on poverty reduction when accompanied by low income inequality. Based on the relationship between the variables analyzed, it can be explained in the following diagram:

![Figure 2. Relationship between GDRP, INEQ and POV](image)

Based on this diagram, it can be arranged in the following formulation

1. Multiple Linear Regression Model

   To analyze the relationship between the independent variable and the dependent variable, multiple regression analysis was used. Several authors use this model in their writings, including Alzaidy Ghaith et al (2017), Assadzadeh Ahmad and Javad Pourqoly (2013), Louzi Basem Mohammed & Abeer Abadi (2011), Bengoa Marta & Blanca Sanchez-Robles (2003). The author formulates this research model as follows:

   \[ GDRP = \beta_0 + \beta_1 FDI + \beta_2 DI + \beta_3 LF + \beta_4 MYS + \beta_5 Openness + e \]

   The regression analysis used is a cross section. Classic assumptions that must be met are heteroscedasticity and multicollinearity, Gujarati (2009).

2. MODERATED REGRESSION ANALYSIS (MRA)

   Moderated Regression Analysis (MRA) or interaction test is a special application of multiple linear regression where the regression equation contains interaction elements (multiplication of two or more independent variables). The INEQ variable acts as a moderating variable, namely a variable that can strengthen or weaken the direct relationship between the GRT variable and the POV variable. Moderating variables are variables that have an influence on the nature or direction of the relationship between variables. The nature or direction of the relationship between the independent variable and the dependent variable is likely positive or negative depending on the moderating variable. Therefore, the moderating variable is also called the contingency variable.
Lieana Lie (2009). The Moderated Regression Analysis (MRA) model in this study is formulated as follows:

\[
POV = \alpha_0 + \alpha_1 \text{ESTGDRP} + \alpha_3 \text{ESTGDRP INEQ}
\]

The multiplication variable between GRT and INEQ is also called a moderate variable because it describes the effect of the moderating variable INEQ on the relationship between GDRP and POV. While the GDRP and INEQ variables are a direct effect of the GDRP and INEQ variables on POV. The INEQ GDRP variable is considered a moderate variable because:

\[
\frac{d(POV)}{d(GDRP)} = \alpha_1 + \alpha_3 \text{INEQ}
\]

If the INEQ variable is a moderating variable, then the coefficient \( \alpha_3 \) must be significant at the specified level of significance.

4. FINDINGS AND DISCUSSION

In general, Moderated Regression Analysis (MRA) creates problems, namely high multicollinearity between independent variables, for example between GDRP and moderate variables (GDRPINEQ). In fact, in this study multicollinearity did not occur. Researchers include other explanatory variables that affect regional income, namely openness, domestic investment (DI), average length of schooling (MYS) and workforce (LN LF). The regression results show that all independent variables are positive and significant. Higher FDI, domestic investment, labor force and education are associated with faster GRDP growth.

This finding supports the results of Erum's study (2016) for cross-border data belonging to SAARC countries such as FDI growth rates, employment growth rates, and capital growth rates. In his research, the relationship between FDI and significant positive economic growth was 5%. Bengoa (2003) conducted a study in Latin America using panel data analysis which showed that education and FDI had a positive effect on economic growth. Haydaroğlu (2016) conducted a study on Brazil, Russia, India, China and South Africa (BRICS) to produce the same conclusions as previous researchers.

The effect of FDI on poverty uses the Triangle Hypothesis, the relationship between economic growth, income inequality and poverty. The economic growth used is the estimate of economic growth (EST GDRP). FDI has a positive effect on Regional Income (Ln GDRP). The results of the 2016 regression resulted in a greater coefficient and a higher level of significance than the 2012 data. In addition, the estimated FDI has a positive relationship with GRDP in Indonesia and is significant at the 5% level in 2012 and 1% in 2016. This means that an increase FDI of 1% will lead to a more proportional increase in economic growth.

Estimated GRDP (EST GDRP) integrated with income inequality (INEQ) shows a positive and significant relationship, meaning that if economic growth is accompanied by high inequality it will increase the poor. Therefore, this study strengthens the triangle hypothesis which states that economic growth will reduce poverty if economic growth is accompanied by equal income distribution.

FDI has a positive and significant effect on income (Ln GDRP) (see Table 1). This means that an increase in FDI will increase the regional economy. These findings are in accordance with the results of previous studies conducted by Bengoa (2002), Zaman (2011), Ould (2015), Erum (2016), Hoque (2018), Pandya (2017) in his research produced...
a different conclusion, namely that there was no significant effect between FDI on economic growth.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Dependent variable</th>
<th>2012</th>
<th>2016</th>
<th>2012</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td></td>
<td>0.104</td>
<td>0.259</td>
<td></td>
<td></td>
</tr>
<tr>
<td>t test</td>
<td></td>
<td>(2,208)**</td>
<td>(5,068)***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IN</td>
<td></td>
<td>0.100</td>
<td>0.142</td>
<td></td>
<td></td>
</tr>
<tr>
<td>t test</td>
<td></td>
<td>(2,268)***</td>
<td>(3,337)***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td></td>
<td>0.274</td>
<td>0.142</td>
<td></td>
<td></td>
</tr>
<tr>
<td>t test</td>
<td></td>
<td>(3,062)***</td>
<td>(1,756) *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LNLF</td>
<td></td>
<td>0.89</td>
<td>0.604</td>
<td></td>
<td></td>
</tr>
<tr>
<td>t test</td>
<td></td>
<td>(9,191)***</td>
<td>(6,201)***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPEN</td>
<td></td>
<td>0.331</td>
<td>0.243</td>
<td></td>
<td></td>
</tr>
<tr>
<td>t test</td>
<td></td>
<td>(2,051)***</td>
<td>(1,586)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td>-6,329</td>
<td>6,034</td>
<td>36,692</td>
<td>44,600</td>
</tr>
<tr>
<td>t test</td>
<td></td>
<td>(4,230)***</td>
<td>(4,483)***</td>
<td>(3,978)***</td>
<td>(5,922)***</td>
</tr>
<tr>
<td>ESTGDRP</td>
<td></td>
<td>-2,310</td>
<td>-3,687</td>
<td>-1,875</td>
<td>-3,245</td>
</tr>
<tr>
<td>t test</td>
<td></td>
<td>(-2,626)***</td>
<td>(-4,823)***</td>
<td>(-2,015)***</td>
<td>(-4,131)***</td>
</tr>
<tr>
<td>ESTGDRP * INEQ</td>
<td></td>
<td>1,104</td>
<td>0.619</td>
<td></td>
<td></td>
</tr>
<tr>
<td>t test</td>
<td></td>
<td>(4,394)***</td>
<td>(4,624)***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjust R2</td>
<td></td>
<td>0.910</td>
<td>0.886</td>
<td>0.156</td>
<td>0.469</td>
</tr>
<tr>
<td>F-test</td>
<td></td>
<td>(65,830)***</td>
<td>(52,082)***</td>
<td>(6,898)***</td>
<td>(15,142)***</td>
</tr>
<tr>
<td>DW</td>
<td></td>
<td>2.216</td>
<td>1.805</td>
<td>1.295</td>
<td>1.635</td>
</tr>
<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td>Note: *: Significant at 10%, **: Significant at 5%, ***: Significant at 1%</td>
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</tr>
</tbody>
</table>

The author tries to perform a regression between GRDP and income inequality on poverty. The GDRP used is the initial GDRP data and the estimated GDRP (ESTGDRP). The regression results show that the GDRP and ESTGDRP produce a negative and significant coefficient of 1%. This shows that GRDP or an increase in economic growth will reduce poverty. Likewise, income inequality has a positive effect on the poverty level, which is a significant positive effect of 1%. So, if inequality is higher, it will increase the poverty rate (Table 2).

The regression results presented in Table 1 and Table 2 indicate that growth is urgently needed in poverty reduction efforts. However, to strengthen the effect of economic growth on poverty reduction must be accompanied by equal distribution of income.
Table 3. GDRP and INEQ Regression on POV

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>2012</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>37,353</td>
<td>59,072</td>
</tr>
<tr>
<td></td>
<td>(5,172)</td>
<td>(4,262)</td>
</tr>
<tr>
<td></td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>t test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESTGDRP</td>
<td>-2,968</td>
<td>-2,878</td>
</tr>
<tr>
<td></td>
<td>(-4,217)</td>
<td>(-4,087)</td>
</tr>
<tr>
<td></td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>GDRP</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-2,878</td>
<td>-2,878</td>
</tr>
<tr>
<td></td>
<td>(-4,087)</td>
<td>(-4,087)</td>
</tr>
<tr>
<td></td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>t test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INEQ</td>
<td>11,236</td>
<td>11,509</td>
</tr>
<tr>
<td></td>
<td>(4,535)</td>
<td>(4,671)</td>
</tr>
<tr>
<td></td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjust R2</td>
<td>0.482</td>
<td>0.446</td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F test</td>
<td>(15,911)</td>
<td>(14,259)</td>
</tr>
<tr>
<td></td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DW</td>
<td>1,602</td>
<td>1,662</td>
</tr>
</tbody>
</table>

Note: *: Significant at 10%, **: Significant at 5%, ***: Significant at 1%

5. CONCLUSION

The study of the implementation of the triangle hypothesis by the authors shows that there is a relationship between economic growth, income inequality and poverty reduction. By using cross section data for 2012 and 2016, there is an interaction between the relationship between economic growth, income inequality and poverty reduction. Faster reduction of poverty requires a combination of pro-poor growth and success in reducing inequality so as not to limit the accessibility of the poor to participate in accessing productive resources.

Therefore, development strategies to reduce poverty are determined by the interaction between income distribution and economic growth, and not on the relationship between poverty and growth on the one hand and poverty and income inequality on the other. Worsening income distribution tends to increase poverty, Bougon (2004). Poverty reduction, especially for the poorest people, can be improved through distribution policies. All the evidence confirms that distribution is very important for fighting poverty. A more equitable distribution of income and assets can promote growth, while high inequality can slow it down. Thus, reducing inequality can be twice as beneficial for the poor, Khan (2014).

FDI can help reduce income disparities between regions when capital is invested in sectors that employ unskilled, low-income workers. On the other hand, FDI can worsen income distribution because multinational companies tend to pay higher wages to foreign workers than wages to their local counterparts Nam Hoai Trinh (2016).

In addition, government spending on education will have a major impact on poverty. Although this study does not analyze the impact of government spending on education, the significant positive coefficient of average length of schooling on poverty reduction suggests that greater government spending on education will encourage the poor to access higher education. Improved education for the poor will provide greater opportunities for better employment and higher wages, which in turn will reduce poverty.
REFERENCES


[27] Long Tsai. Pan & Chao-Hsi Huang, (2007), Openness, Growth And Poverty: The Case Of Taiwan, World Development, 23 (3), 469-483
[34] Škare Marinko & Romina Pržiklas Družeta, (2016), Poverty and economic growth: an overview, Technological Development and Economic Economics, 22 (1), 156–175
[37] Tsai Pan-Long & Chao-Hsi Huang, 2007, Openness, Growth and Poverty: The Case of Taiwan, World Development, 35 (11), 1858–1871
[38] Ucal Meltem Şengün, (2014), Panel Data Analysis of Foreign Direct Investment and Poverty from the Perspective of Developing Countries, Procedia - Social and Behavioral Sciences, 109, 1101 - 1105
[40] Zaman Khalid, (2012), Macroeconomic factors that determine the impact of FDI on Pakistan's growth, South Asian Journal of Global Business Research 1 (1), 79-95