# How Do Sectoral Foreign Direct Investments Impact Income Disparities? An Analysis in the Emerging Markets

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**ABSTRACT**

Foreign direct investments (FDIs) are an important determinant in the economic growth of a country. However, FDIs not only impact economic growth but also give side effects on income disparities. Further, the FDIs impacts on disparities depend on what sectors such FDIs are invested. This study analyzes how the FDIs impacts on the sectoral economies (primary and non-primary) of the income disparities in the emerging markets in 17 countries using the panel data from the period from 2003 until 2012. The results of the study indicated that the sectoral FDIs impact income disparities. Primary sector FDIs improve disparities of the countries that have low per capita but worsen the income disparities of the countries that have high per capita gross domestic product (GDP), whereas the non-primary sector FDIs improve income disparities of the countries that have high per capita but worsen income disparity in the countries that have low per capita GDP.

**Keywords:** Income Disparity, Primary and Non-primary Sector Foreign Direct Investment, Emerging Markets
**JEL Classifications**: O15, O11, F21

## 1. INTRODUCTION

Emerging markets are specifically attractive for the investors to select them as a location for their investments. Many investors interpret emerging markets as developing countries that are potential for a high economic growth with big potential risks that are highly significant for market volatility. Khanna (2010) added that emerging markets were not too different from other markets, and the only thing was that they started it from a lower level and will quickly follow other markets, particularly the developed countries. With such characteristics, the countries with emerging markets have a special bargaining position for the investors who are brave to face various risks to invest in such countries directly in the form of foreign direct investment (FDI), as well, as the indirect investment.

The increasing investments, particularly FDI, in the emerging markets can have positive, as well as, negative impacts for such countries. Compared to the high-income countries, the FDI impacts will be more strongly felt by the developing countries with emerging markets (Lessmann, 2013). Some of the FDI impacts are

increasing GDP per capita and accelerating growth. The Economist (2011) estimated that in 2017 the total GDP contributions of the emerging markets to the world GDP will reach 50.5%. The values are predicted to continue to increase. Sugandhi (in Deny, 2013) added that the contribution of the emerging markets is projected to increase to 63% to the GDP of the world in 2030.

The International Monetary Fund in Takushi (2013) stated that the growth in the emerging markets is predicted to reach two to three times faster than that in developed countries, such as the United States. In addition, the population of the middle class and the per capita incomes of the emerging markets will continue to increase significantly. These conditions become the attraction for global investors and multinational companies (MNCs) to invest in the emerging markets because such conditions reflect an ever-increasing attractiveness.

Azis (2014) added that increasing investments, particularly FDI, in a country not only can give the positive as well as negative impacts but also the side effects, such as the increasing disparities in the country. One of such negative examples of the incoming FDI to

the emerging markets, such as Indonesia, Mexico and China, is the increasing income disparity, particularly from 2003 to 2012, whereas for several other emerging markets, such as Argentina, Brazil, Chile, Colombia, Peru, Venezuela, Checks Republic, Hungary, Romania, Russia, Turkey, Malaysia and Thailand, the FDI can reduce the income disparity. This can be seen from the Gini Index that tended to increase for Indonesia from 0.32 in 2004 to 0.41 in 2012, whereas for China and Mexico, the Gini Index also tended to increase from 2004 to 2012, although the increased disparity was not as serious as Indonesia.

Figure 1 shows the pattern of the gini index and FDI of the primary sectors of the countries with the emerging markets. Figure 1a shows that the relation betw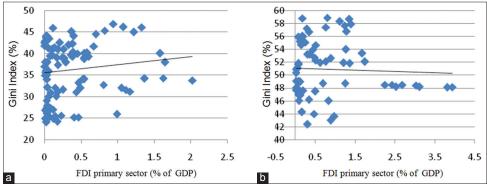een the gini index and FDI of the emerging markets that have small gini index (gini index <45%). In Figure 1a, it is seen that the increased FDI is followed by income disparity. As an illustration, the countries with the emerging markets that have the gini index <45% are Checks Republic, Hungary, Indonesia, Malaysia, Poland, Russia, Thailand and Venezuela.

Whereas, from Figure 1b, it may be seen that FDIs of the primary sectors that have a negative relation with the gini index >45%. For this group, FDIs can improve such income disparities. The countries with an emerging market that have the gini index >45% are Argentina, Brazil, Chile, China, Colombia, Mexico and Peru.

Unlike Figures 1 and 2 shows the pattern of the gini index and FDIs of the non-primary sectors of the countries with an emerging

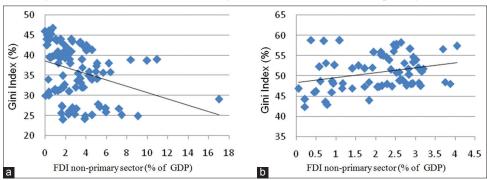**Figure 1:** Gini index and foreign direct investment of the primary sector. (a) Countries that have relatively small gini index (gini index <45%). (b) Countries with relatively big gini index (gini index >45%)
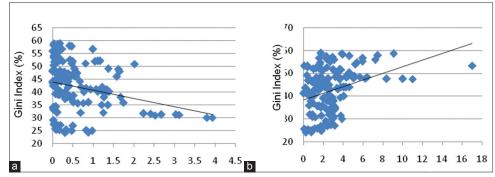


Source: World income inequality database 2013 and international trade center (reprocessed)

**Figure 2:** (a and b) Gini index and foreign direct investments of the non-primary sectors



Source: World income inequality database 2013 and international trade center (reprocessed)

**Figure 3:** (a and b) Gini index and foreign direct investment of 17 countries with an emerging market



Source: World income inequality database 2013 and international trade center (reprocessed)

market. Figure 2a shows the relation between the gini index and the non-primary sectors of the countries with an emerging market with the relatively small gini index (gini index <45%). From Figure 2a, it is seen that the FDI increase resulted in the improved income disparities, Whereas Figure 2b shows that the increased FDI results in the increasing disparities.

In general, Figure 3 indicates that for the 17 countries with an emerging market observed from 2003 until 2012, the increased FDIs of the primary sectors had the impacts on the improved income disparities, whereas the increased FDIs of the non-primary sectors, in fact, worsened the income disparities.

In fact, the non-primary sectors dominate the FDIs that enter countries with an emerging market. Each year, on average some 86% of the total FDIs enter the non-primary sectors. However, for 2009, 2010 and 2012, the FDI values of the non-primary sectors declined from 2.3% PDB to each of 2.1%, 2% and 1.7% of PDB.

The explanations of Figures 1-3 are in line with the explanations by Todaro and Smith (2009), saying that the development of the primary sectors would improve the income disparities but did not produce a high income growth, whereas the development of the non-primary sectors was able to increase the income growth but worsened the income disparities. Based on such arguments, it is expected that the impacts of the primary and non-primary sectors FDI on the income disparities would be different. Despite the fact that many studies discussed the FDI impacts on the income disparities in developed, as well as, developing countries have been conducted widely, the majority of such studies examined the FDI impacts in general (totally) on the income disparities in the developed countries (Mihaylova, 2015; Lessmann, 2013; Herzer and Nunnenkamp, 2011; Chintrakarn et al., 2011; Figini and Gorg, 2006) and the developing countries (Mansoor et al., 2014; Adams, 2008; Feenstra and Hanson, 1997; Basu and Guariglia, 2007; Halmos, 2011; Sumei and Soraja, 2005). However, of the many studies conducted on the FDI impacts on income disparities, no study has discussed the FDI impacts on each sector specifically on the income disparities in one or several countries.

## 2. REVIEW OF LITERATURE

### 2.1. FDI and Income Disparities
#### 2.1.1. Theoretical review
In general, there are two hypotheses on FDI, namely modernization hypothesis and dependency hypothesis. Both hypotheses have different views on FDI impacts on economic development in the FDI host countries. The modernization theory states that FDI is able to provide additional capital, promote a transfer of technology and modernize skills management and governance in the host countries. This certainly has the consequences on increasing productivity of the labor and accelerate economic growth (Markusen and Venables, 1999; Choi, 1998; Blomstrom and Kokko, 1996). This theory argues that FDI can reduce income disparity through the Kuznets effect where income disparity continues to increase on the initial phase in line with the increased per capita PDB and decline when the development has been achieved.

During the development phase, the economy begins to develop, which is marked by increased population in the economic sector with high incomes and the low-income sector that has the impacts on each sector (Tsai, 1995).

In the next phase, more outputs can be produced and labor transferred from the agricultural/traditional sector to the industrial sector, the labor surplus in the traditional sector will decrease, and thus the marginal products in the traditional sector will increase until they reach the level of the industrial sector. By the real increase of incomes of the labor, the economic growth will become optimum, which will impact on the evener income distribution (Tsai, 1995; Fei and Ranis, 1964; Lenski, 1996).

According to the modernization hypothesis, the presence of investments is considered very important. This indicates that capital both overseas and domestic can push economic growth and give profits for the economy as a whole. If FDIs are able to stimulate economic growth only in several main sectors and certain regions, then FDIs only benefit the skilled labor but in the end, the growth in the main sectors and in certain regions can contribute to the equal distribution of incomes of a country in the long term (Tsai, 1995). Many experts of the modernization theory consider that several types of the economic system and development strategy are the determinants that are crucial for the income distribution. Thus, FDIs are not the significant causes of income disparity (Tsai, 1995).

Unlike modernization hypothesis, dependency hypothesis acknowledges that FDIs have positive impacts on economic growth in the short term but in the long term negative impacts on FDI inflows and growth rate are as stated by Lheem and Guo (2004). Dependency hypothesis argues that FDI can increase income disparity in the developing countries as the host countries in various ways, namely: (1) FDI increases the relative incomes of skilled labor, (2) FDI is more capital intensive, which can push increase of the unskilled labor unemployment, (3) FDIs through MNCs give low salaries to labor in the labor-intensive sector to reduce the production cost (Barnet dan Cavanagh, 1994; Held et al., 1999), (4) FDIs create a new class of the "elite labor" in the main sector, where the "elite labor" has the incomes of four to ten times the normal salaries (Girling, 1973), and (5) usually developing countries as the host countries apply lower taxes on foreign investors that reduce the government revenues, and thus the government spending through the tax redistribution also declines, this causes the poor people to stumble.

FDIs can increase the demand for the relatively skilled labor against the unskilled labor through the MNCs. When the number of skilled labor is limited, this will become an excess demand for the relatively skilled labor and the MNC companies should pay bigger salaries to the relatively skilled labor against the relatively unskilled labor. If the FDIs through the MNCs continue to increase in a country, the incomes of the skilled labor will continue to increase relatively against the unskilled labor. The increased incomes of the relatively skilled labor against the unskilled labor will increase the income disparities (Lessmann, 2013; Mansoor et al., 2014).

Lessmann (2013) also stated that the FDI impacts on income disparities were because the FDIs tended towards the development of the MNCs that were more capital-intensive, and thus the absorption of the labor was very limited and tended to absorb the skilled labor. The statement of Lessmann (2013) was in line with the statement of Te Velde (2004) in his study stating that the FDIs inflows into the modern/non-primary sector were able to increase the demand for the relatively skilled labor against the unskilled labor that caused the income ratio between skilled labor and unskilled labor to become bigger, and thus this had impacts on the increased income disparity. On the contrary, the FDI inflows into the traditional/primary sector was able to increase the demand for unskilled labor, and thus the ratio between the skilled labor in the modern/non-primary sector and the unskilled labor in the traditional/primary sector became smaller and the income disparity continued to decline.

The concept of Lessmann (2013) followed the modernization hypothesis where FDIs increased the income disparity in the beginning phase of development and reduced them when the development phase had been achieved. In other words, the FDI impacts on income disparity depend on the development level of a country (per capita PDB). The statement of Lessman (2013) was strengthened by Shahbaz and Aamir (2008), stating that FDIs could increase incomes if they were allocated more on the modern (non-primary) sector that was more capital intensive and that they could improve income disparity if they were allocated in the sectors that were more labor intensive, namely the agricultural sector and the agriculture-based industries (primary).

According to Basu and Guariglia (2007), the relation between FDIs and income disparity (gini index) is derived from the Lorenz curve. Basu and Guariglia (2007) stated that FDIs in the modern (non-primary) sector can increase the human capital from the rich people who are more skilled. The increased human capital from the rich people increase the income disparity and the increasing human capital of the poor people (who work in the primary sector) will reduce income disparity. Basu and Guariglia (2007) stated that the relation between FDI and the value of income disparity depends on the amount of the human capital in the modern/ non-primary sector and the traditional/primary sector. The FDI inflows in each of the sectors (primary and non-primary) were able to increase the human capital in each of the sectors. If FDIs of the primary sector increase, the incomes of the unskilled labor in the sector increase further, which impact the increased human capital of the unskilled labor through educational investment, and this condition causes decreasing income disparity (gini index). Likewise, if the FDI of the non-primary sector increases, it will impact increasing human capital of the skilled labor, and thus it will increase income disparity.

### 2.1.2. Empirical review
#### 2.1.2.1. FDI reduces income disparity
Various empirical studies have been conducted to explain FDI impacts on income disparities in various countries. Mundell (1957) in his study stated that the increased FDI inflows from the developed countries into the developing countries played could increase the amount of capital in the developing countries as the host countries that are capable of increasing the marginal products of the labor and this is encouraging in the increased incomes,

including the nominal incomes and the real incomes. Thus, by the increased incomes, the disparity will decline.

The statement of Mundell (1957) ran contrary to the neoclassic economic theory on dependency. The theory states that economic dependency of developing countries on developed countries has poor impacts and social risks, particularly in the long term (Firebaugh and Beck, 1994; Stringer, 2006). Firebaugh and Beck (1994) argued that the FDI penetrating into the developing countries could hamper economic growth and increase income disparities. According to Stringer (2006), such impacts were caused because the FDI penetration could improve the welfare of the elite people as the skilled labor through the MNCs by neglecting the unskilled labor.

Herzer and Nunnenkamp (2011) in their study stated that FDIs could reduce the incomes in the European countries (EU) in the long term. The results were also obtained in the study of Chintrakarn et al. (2011) by using the co-integration panel in the United States stating that FDIs had the impacts in reducing income disparity during the period of 1977–2001. In addition, Figini and Gorg (2006) in their study explained that the income disparity continued to decline by the increasing FDIs in the developed countries. On the contrary, income disparity tended to increase in line with the increased FDIs in the developing countries, despite the fact that their impacts were diminishing.

Mansoor et al. (2014) analyzed the impacts of the FDI inflows against the income distribution in five SAARC countries, namely Bangladesh, India, Nepal, Pakistan and Sri Lanka, by using the panel data in the period from 1980 to 2011. Mansoor et al. used the panel data analysis of the fixed effect method to estimate the model. The study results of Mansoor et al. (2014) indicated that the inflows of the FDI capital reduced the income disparities. The results gave the implications that the FDI capital inflows could improve the income disparity level in the five selected countries. This was because the FDIs in the SAARC countries were allocated for the more productive sectors and were capable of absorbing the labor, including skilled labor as well as unskilled labor. According to Mansoor et al. (2014), FDIs were not the cause of the increasing income disparities in the SAARC countries but the increasing income disparities were caused by other factors, such as trade openness and per capita PDB.

Another study was conducted by Adams (2008) with the purpose of knowing the impacts of globalization (one of its projections was FDI) against the income disparities in 62 developing countries during the period from 1985 to 2001. The study results of Adams (2008) indicated that the FDI inflows reduced the level of income disparities, although their values were insignificant in terms of statistics. According to Adams (2008), the decreasing income disparities were due to the increased the FDI inflows caused in several developing countries, particularly in Asian countries, where the FDI inflows were more productive than other countries in the world, although, in several studies, the FDI inflows had impacts on the income disparities of a country.

#### 2.1.2.2. FDIs increase income disparities
Many empirical studies produced the argument stating that FDIs are associated with increasing income disparities in the developing

countries. One of them is the study conducted by Feenstra and Hanson (1997). Feenstra and Hanson (1997) stated that the capital inflows from developed countries into developing countries increased the demand for skilled labor in developing countries as the host countries that caused the increasing relative incomes of skilled labor. Thus, the FDI penetration improved the economy of skilled labor through the increasing incomes and caused unskilled labor to stumble (Lipsey and Sjoholm, 2004). Mah (2002) by using the cointegration test of Johansen in his study shows that the FDI inflows had the impacts on the increased income disparities in North Korea. The simulation results conducted by Nunnenkamp et al. (2007) indicated that trade-off occurred in Bolivia between economic growth and increasing income distribution disparities. Basu and Guariglia (2007) proved that the occurrence of trade-off where FDIs increased the economic growth and on another side, FDIs also increased the income disparities in 119 developing countries as the host countries in the period from 1970 to 1990.

Halmos (2011) in his study stated that the FDI stock increased the income disparities in the Eastern EU that had the middle incomes. Halmos (2011) used the pooled OLS panel data analysis method in the Eastern EU from 1991 to 2006. The study of Halmos (2011) was strengthened by the study conducted by Sumei and Soraja (2005), stating that the FDI inflows were one of the factors that caused the increasing income disparities in the developing countries, namely China. Sumei and Soraja (2005) analyzed the impacts of the FDI inflows on the income disparities in China by using the panel data method from 1978 to 2002. The other factors that impacted the income disparities in China, according to Sumei and Soraja (2005) were the levels of development, education, trade, transformation sector of agriculture and the level of domestic investments.

Mihaylova (2015) conducted a study on the FDI impacts on the income disparities in the Central and Eastern European (CEE) countries, and CEE by using the fixed effect panel data method in the period from 1990 to 2012. The study results of Mihaylova (2015) stated that FDIs increased the income disparities in the EU that had the per capita PDB of <US$ 9900 and the FDIs reduced the income disparities in the EU that had the per capita PDB of >US$ 9900.

Lessmann (2013) analyzed the FDI impacts on the regional income disparities in 55 countries, consisting of developed countries and developing countries in the period from 1980 to 2009. The study results of Lessmann (2013) indicated that FDIs had significant impacts on the increasing income disparities. The negative and significant coefficient interaction on the level of 1%, which meant that the FDI impacts on income disparities depending on the development level of a country. In the countries with low incomes, the FDI inflows could increase the income disparities, and on the contrary, in the developed countries the FDI inflows could reduce the income disparities.

Asteriou et al. (2014) investigated the relation between globalization (through the FDIs inflows) against the income disparities in the EU-27 in the period from 1995 to 2009. The study results of Asteriou et al. (2014) indicated that the FDI inflows impacted the income disparities in the EU-27 countries,

using the fixed effect method as well as the random effect method. However, the results obtained from the random effect method had the significant values in terms of statistics at the level of 5%.

Based on the previous theories and studies, the contributions of this study, namely combining several theories and results of the previous studies, by the methods developed. This study is conducted by using the model developed by Lessmann (2013) that was modified by the model developed by Asteriou et al. (2014), Mansoor et al. (2014) and Adams (2008). The differences from the study of Lessmann (2013), Asteriou et al. (2014), Mansoor et al. (2014) and Adams (2008), namely the FDI variables used in this study are the sectoral FDI (primary and non-primary). The use of the sectoral FDI variables is considered to be able to give different impacts between the primary sectoral FDI and the mon-primary for the income disparities in the countries with an emerging market. Another difference from the study of Lessman (2013), namely the addition of the variables of the government consumption spending variable and the human capital with the intermediate education level according to the model developed by Asteriou et al. (2014), Adams (2008) and Mansoor et al. (2014), and by adding the variable of interaction between the primary sectoral FDIs and the per capita PDB and the addition of the quadrate per capita PDB.

### 2.1.2.3.Conceptual way of thinking

The relation between the FDI in each sector and the income disparity according to Te Velde (2003) is that: Firstly, foreign companies tend to the capital-intensive. Secondly, if the FDIs cause relative expansion in the sectors that are capital-intensive of the skilled labor, then this will increase the relative position of the skilled labor and increase the wage disparities (Feenstra and Hanson, 1995). The skilled labor tends to be in stronger bargaining position than the unskilled labor and this can increase income disparities.

It is believed that in order to obtain the understanding of the FDI impacts on income disparity, it is necessary to conduct a sectoral approach to know whether the FDIs in each sector have different impacts on the income disparities. As we know, according to Te Velde (2003), it is the FDIs in the more capital-intensive that absorb more highly skilled labor can increase the gap between the incomes of the skilled labor and that of the unskilled labor because the wages received by the skilled labor are relatively bigger than the wages of the unskilled labor.
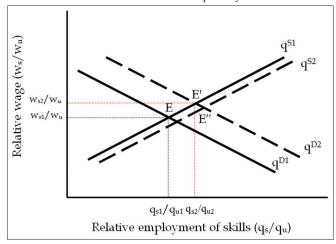
On the contrary, Te Velde (2003) also stated that if FDIs are invested in the more labor-intensive sectors in the developing countries, then they can reduce the income disparity between the skilled labor and the unskilled labor. That is because the demand for unskilled labor increases, which causes the incomes of the unskilled labor to increase, and cause the incomes of the unskilled labor to increase. So that the gap between the income of the skilled and unskilled labor becomes smaller.

The statement in the paragraph above may be explained in Figure 4. Moreover, Figure 4 explains that before the FDIs enter (modern/non-primary sector), the balance point is in point E. Following the inflow of the modern/non-primary sectoral FDIs,

the demand for skilled labor relatively increases against unskilled labor from $q_{s1}/q_{u1}$ to $q_{s2}/q_{u2}$, and thus the curve of demand for skilled labor moves to the right, which causes a new balance in point E'. Because the number of skilled labor in developing countries is limited and the possible occurrence of smaller opportunity costs than the reservation wages that occur in most of the skilled labor, then the curve of skilled labor changes, namely in point E.' In addition, the switch of the supply curve from $q^{S1}$ to $q^{S2}$ is because a small portion of the skilled labor that have bigger opportunity costs than the reservation wages, which cause the skilled labor that have bigger opportunity costs than the reservation wages, which cause the remaining skilled labor that still work in the non-primary sector, and thus the new balance point only swithes from E' to E." The change of the new balance point from E to E' or E" basically illustrates the increase incomes through the salaries of the skilled labor relatively against the unskilled labor, namely from $w_{s1}/w_{u1}$ to $w_{s2}/w_{u2}$. $w_s/w_u$ reflects the level of income disparities, the bigger tha value of of $w_s/w_u$ the bigger the value of the income disparities. The bigger the FDIs flows the bigger the value of the $w_s/w_u$, and thus the income disparities are bigger.

Figure 5 shows that before the inflow of the primary sectoral FDIs, the balance point is in point E and following the inflow of the primary sectoral FDIs the demand for unskilled labor increases, which causes the relative demand for skilled labor to decrease from qs1/qu1 to qs2/qu2, and thus the curve of demand for skilled labor switches to the left, which causes the occurrence of a new balance point in point E.' The inflow of the primary sectoral FDIs impact the increasing incomes/salaries of the unskilled labor (wu) relatively against the skilled labor, and thus the value of ws/wu declines, namely from point ws1/wu1 to ws2/wu2. The smaller the ws/wu value, the smaller the value of the income disparity between the skilled labor and the unskilled labor. The increased salaries of the unskilled labor (wu) cause more labor to work in the primary sector (opportunity costs to be bigger than the reservation wages), and thus the curve of supply of the skilled labor against the unskilled switches to the left, which causes the relative salaries of the skilled labor against the unskilled labor returns to the previous value, namely point ws1/wu1.

**Figure 4:** Curve of relative demand and supply of skilled labor after inflow of FDIs into the non-primary sector



Source: Te Velde (2004)

From the frames of the theory of Te Velde (2004) and the modernization theory above (impacts of FDIs on income disparities depend on the per capita PDB), it may be concluded that income disparity is affected by the sectoral FDIs and Per capita PDB (referring to the "U-upside down" curve of Kuznets), and the number of the labor in the agricultural and population sectors.

# 3. METHODOLOGY

This study uses the model that refers to the modernization theory and the empirical model of Lessmann (2013) with the adjustment in several variables, namely by replacing the total FDI variable with the sectoral FDI (primary and non-primary) referring to the typology of Fields (1987) and adding several quadrate PDB variables (referring to the Curve of Kuznets), interaction sectoral FDI and per capita PGB, trade openness (Mansoor et al, 2014) of the government spending and the human capital according to (Adams, 2008; Asteriou et al., 2014). The analysis method in this study uses the panel data analysis. The mathematical form of the model used in this study is as follows:

$$GINI_{it} = \beta_0 + \beta_1 FDIPRIMER_{it} + \beta_2 FDIPRIMER_{it} + \beta_3 GDPPC_{it} + \beta_4 GDPPCSQ_{it} + \beta_5 FDIPRIMERGDPPC_{it} + \beta_6 FDIPRIMERGDPPC_{it} + \beta_7 POPULATION_{it} + \beta_8 LPRIMER_{it} + \beta_9 TOPENNESS_{it} + \beta_{10} SECEDUCATION_{it} + \beta_{11} GOVEXPEND_{it} + e_{it}$$

Where:

$GINI_{it}$: Gini index of i in tear t;

$FDIPRIMER_{it}$: FDI inflows (% of PDB) primary sector in country i in year t;

$FDINPRIMER_{it}$: FDI inflows (% of PDB) non-primary sector in country i in year t;

$GDPPC_{it}$ : Real per capita PDB of country i in year t;

$GDPPCSQ_{it}$ : Real per capita PDB quadrate of country i in year t;

$FDIPRIMER_{it}GDPPC_{it}$: Interaction variable between FDI inflows of primary sector and real per capita PDB of country i in year t;

$FDINPRIMER_{it}GDPPC_{it}$: Interaction variable between FDI inflows of non-primary sector and real PDB per capita of country i in year t;

$POPULATION_{it}$: Population in country i in year t;

$LPRIMER_{it}$ : Labor of primary sector of country i in year t;

$TOPENNESS_{it}$: Trade openness in country i in year t;

$SECEDUCATION_{it}$: Human capital (intermediate schools) in country i in year t;

$GOVEXPEND_{it}$: Government consumption spending of country i in year t;

**Table 1: Data and data sources**

| Variables | Sources | Units |
|---|---|---|
| Gini coefficient of each country with an emerging market | World Income Inequality Database (WIID) 2013 and ACPMS 2013 | - |
| Sectoral FDI inflows (primary and non-primary) of each country with an emerging market | International trade center | Million US$ |
| Per capita PDB of each country with an emerging market | WDI, World BANK | US$ |
| Population of each country with an emerging market | WDI, World Bank | Person |
| Number of labor of primary/agricultural sector (% of total labor) in each country with an emerging market | WDI, World Bank | - |
| Export and import (% of PDB) as proxy of trade openness | WDI, World Bank | - |
| Government consumption spending (% PDB) of each country with an emerging market | WDI, World Bank | - |
| Human capital (intermediate schools) (% of gross) of each country with an emerging market | WDI, World Bank | - |

$e_{it}$ : Residual;

i: Countries with an emerging market (Argentina, Brazil, Chile, China, Columbia, Checks Republic, Hungary, Indonesia, Malaysia, Mexico, Peru, Poland, Russia, Rumania, Thailand, Turkey and Venezuela);

t: Year (2003, 2004,......., 2012);

This study uses the secondary data taken from several sources. The data and data sources are displayed in Table 1.

This study only deals with the sectoral FDI impacts (primary and non-primary) on the income disparities in the countries with an emerging market. Of the 24 countries with an existing emerging market, this study only includes 17 countries with an emerging market because of limited data availability. However, the FDI inflows in the 17 countries with an emerging market already surpass 80% of the total FDI inflows in 24 countries with an emerging market. This study uses the annual data in the period from 2003 to 2012 with the consideration that since 2003 nearly all the countries with an emerging market have had the declining values of income disparities (gini index).

## 4. RESULTS AND ANALYSES

### 4.1. The Primary Sectoral FDI Impacts on Income Disparities in the Countries with an Emerging Market

The estimated results in Table 2 indicate that the primary sectoral FDI impacts depend on the per capita PDB of a country. For the countries with the low per capita PDB (<US$ 8759.50), the primary sectoral FDI increase reduced the income disparities, whereas for the countries with the high per capita PDB (> US$ 8,759.50), the primary sectoral FDI increase in fact increased the income disparities (Appendix). Figure 6 shows that the primary sectoral FDI impacts on income disparities (Gini Index) depending on the development level (per capita PDB). The countries with an emerging market that have the average per capita PDB of <US$ 8759.50 are Argentina, Brazil, Chile, Colombia, China, Indonesia, Malaysia, Mexico, Peru, Rumania, Russia, Thailand, Turkey and Venezuela, whereas the countries with an emerging market that have the average per capita PDB of more than US$ 8759.50 are Checks Republic, Hungary and Poland.

**Figure 5:** Curve of relative demand and supply of skilled labor following the inflow of primary sectoral FDIs
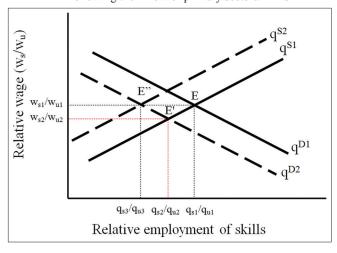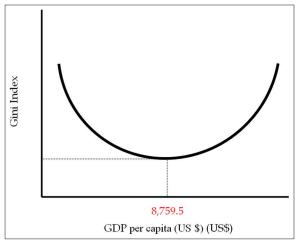


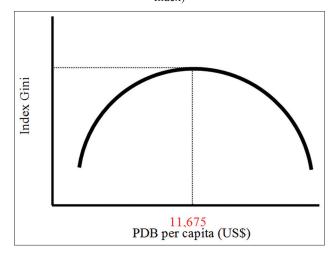**Figure 6:** Primary sectoral FDI impacts against income disparities (Gini Index)



The results of this study are in accordance with the hypothesis of Fields (1987), stating that enrichment in the primary sector reduces the level of income disparity, particularly in the developing countries. In addition to the hypothesis of Fields (1987), the results are also in accordance with the statement of Shahbaz and Aamir (2003), stating that the developing countries or emerging markets as the host countries can obtain profits from the FDIS if such FDIs

**Table 2: Estimated results with the fixed effect model**

| Variabel | Koefisien | t-statistik | Prob |
|---|---|---|---|
| FDIPRIMER? | −1.465898*** | −3.987378 | 0.0001 |
| FDINPRIMER? | 0.492759*** | 3.315551 | 0.0012 |
| GDPPC? | −2.447663*** | −5.823489 | 0.0000 |
| GDPPCSQ? | 0.084405*** | 4.149330 | 0.0001 |
| FDIPRIMERGDPPC? | 0.167350*** | 3.472425 | 0.0007 |
| FDINPRIMERGDPPC? | −0.042206*** | −3.216090 | 0.0016 |
| POPULATION? | 0.194567*** | 10.632830 | 0.0000 |
| LPRIMER? | 0.136320** | 2.464882 | 0.0149 |
| TOPENNESS? | 0.017305** | 2.092814 | 0.0381 |
| SECEDUCATION? | −0.050849* | −1.802022 | 0.0737 |
| GOVEXPEND? | −0.152391** | −2.061692 | 0.0411 |
| Constant | 28.164280*** | 7.601840 | 0.0000 |
| R-squared | 0.994202 | | |
| Adjusted R-squared | 0.993100 | | |
| S.E. of regression | 1.541560 | | |
| F-statistic | 901.8509 | | |
| Prob (F-statistic) | 0.000000 | | |

***significant at 1% ,**significant at 5% ,*significant at 10%

**Figure 7:** Non-primary sectoral FDIs against income disparities (Gini Index)



are also directed towards the agricultural and industrial sectors that are based on agriculture. It is because the FDIs through the MNCs can absorb skilled labor.

Whereas the primary sectoral FDIs in the more developed countries (per capita PDB >US$ 8759.50) in fact can income income disparities. This is because in the developed countries, the primary sectors are managed in a more modern manner by the skilled labor, and thus the FDI inflows into the primary sectors, in fact, can increase the incomes of the skilled labor, which increases the income disparities between the skilled labor and the unskilled labor, such as what happens in Checks Republic, Hungary and Poland.

Thus, in general, the primary sectoral FDIs reduce the income disparities caused by the primary sectoral FDIs of the more labor-intensive, and thus they can absorb more labor and increase the incomes of the unskilled labor. The increasing primary sectoral FDIs also can create equality of development distribution through the utilization of the primary sectoral land, such as the agricultural, forestry and fishery land that is sufficient in the countries with an

emerging market. The primary sectors in the countries with an emerging market are still the very important sectors in increasing the economic growth and reducing the level of income disparity and poverty (Te Velde, 2004).

## 4.2. Non-primary Sectoral FDI Impacts against Income Disparities in Countries with an Emerging Market

Referring to Table 2, the non-primary sectoral FDIs against income disparities also depend on the per capita PDB of a country. For the countries with the lower per capita PDB (< US$ 11,675), the non-primary sectoral FDIs worsen the the income disparities, whereas for the countries with the higher per capita PDB (>US$ 11,675), the increasing non-primary sectoral FDIs can improve the income disparities (Appendix).

Figure 7 shows that the non-primary sectoral FDI impacts against the income disparities (gini index) depend on the value of the per capita PDB of a country. The countries with an emerging market that have the average per capita PDB of >US$ 11.675, only checks republic and the remainders have the average per capita PDB of <US$ 11.675.

As we know, the non-primary sectoral FDIs consist of the FDIs of the manufacturing industrial sub-sectoral and services FDIs that are categorized as the modern sectors that are capital-intensive. With their nature as more capital-intensive, the FDIs inflows into the non-primary sectors through the MNCs only absorb the skilled labor, the number of which is limited, particularly in the countries with an emerging market.

This can cause the unskilled labor to stumble. Unlike this with the developed countries, where the non-primary sectoral FDIs, in fact, can reduce income disparities. This is because the numbers of the available skilled labor are so big, infrastructure that supports the distribution of development and industry is adequate, and the values of per capita PDB are big. In addition, the FDIs inflows into the non-primary sectors in the developed countries indirectly increase productivity in the primary sectors that are already modern. The production tools used in the primary sectors of the developed countries are produced from the non-primary/ manufacturing sectors in the developed countries themselves.

The more developed the sectors in the developed countries the more developed their primary sectors that increase labor productivity and incomes, and thus the income disparities between the labor in the non-primary sector and the labor in the primary sector can be reduced.

The non-primary sectoral FDIs are the activating machine in the production improvement to improve the quality of the goods with better methods. In order to produce better products, expertise and human capital are required (in this matter higher education level) that are owned by most rich people, and thus the rich people will work more easily in MNC companies than the poor people who are unskilled and with very low human capital, and this creates a widening gap between the rich people and he poor ones. From this matter, the non-primary sectoral FDIs become one of the sources of increasing income disparities in the host countries.

The results obtained from this study explain that the non-primary sectoral FDIs increase the income disparities in line with the studies conducted by Lessman (2013), Asteriou et al. (2014), Halmos (2011) and Sumei and Soraja (2005). Lessman (2013) stated that the total FDIs dominated more by the non-primary sectoral FDIs increased income disparities in 55 countries (developed and developing countries), and this was caused by the tendency of the inflows, and thus the bigger the FDIs inflows into the non-primary sector, the bigger the income disparities.

Halmos (2011) added that the total FDIs increased the income disparities in 15 Western EU during the period from 1991 to 2006 because the FDIs inflows through the MNCs gave higher salaries than the domestic companies. Some of the 15 Western EU are Hungary and Estonia. The provision of higher salaries by the MNCs for the workers was because the workers who worked for such companies were more skilled than the domestic companies.

Whereas, according to Sumei and Soraja (2013), FDIs increased the income disparities in China because in the same matter as explained by Halmos (2011), referring to the dependency theory stating that the FDIs inflows through the MNCs gave higher salaries to the skilled labor and more capital intensive, and thus the unemployment level in the traditional (primary) sector and the income disparities were increasing. In addition, according to Sumei and Soraja (2013), the increased income disparities were caused by the centralized FDIs inflows into the coastal areas or exactly in Eastern China.

## 5. CONCLUSION

This study discovered that the impacts of the primary and non-primary sectoral FDIs on the income disparities of a country at the development level as stated in the per capita gross domestic income (PDB) of such country. The primary sectoral FDIs improve the income disparities (gini index) in the country with an emerging market that had low per capita PDB (<US$ 8759.50) and worsened the income disparities for the country with higher per capita PDB (>US$ 8759.50), whereas the non-primary sectoral FDIs worsened the income disparities in the country with an emerging market that had low per capita PDB (<US$ 11.675) and improved the income disparities for the country that had high per capita PDB (>US$ 11.675).

With reference to this conclusion, a good strategy for Indonesia in relation to the FDIs inflows is as follows. As Indonesia's per capita PDB is still low, then in order to reduce the income disparities, Indonesia had better directs only the primary sectoral FDIs. Although the FDIs flows into the primary sector had better be prioritized and the investment in this sector can still be made in order to increase the economic growth by maintaining that the income disparities will not worsen.

This study has limitations because it still cannot explain which primary sector that has the highest contribution to improve income disparities. Further studies can be conducted by observing the sectors more specifically, such as agriculture, plantations, fisheries, manufacture and finance.

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# Appendix

The impact of primary sector FDI on income disparities shown by Equation 1. While the impact on non-primary sector FDI on income disparities given by Equation 2

$$\frac{\partial(\text{GINI})}{\partial(\text{FDIPRIMER})} = -1.465898 + 0.167350\text{GDPPC} \cdots \quad (1)$$

$$\frac{\partial(\text{GINI})}{\partial(\text{FDIPRIMER})} = 0$$

$$\text{GDPPC} = \frac{1.465898}{0.167350} = \text{US\$}\,8.7595\,\text{ribu}$$

0.167350GDPPC=1.465898 GDPPC=US\$ 8759.5

$$\frac{\partial(\text{GINI})}{\partial(\text{FDIPRIMER})} = -0.492759 + 0.042206\text{GDPPC} \cdots \quad (2)$$

$$\frac{\partial(\text{GINI})}{\partial(\text{FDIPRIMER})} = 0$$

0.042206GDPPC=0.492759

$$\text{GDPPC} = \frac{0.492759}{0.042206} = \text{US\$}11675$$