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Effect of economic growth on income inequality, labor absorption, and welfare

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Abstract

This research aims to analyze the effect of economic growth on income inequality, labor absorption and economic welfare in Indonesian provinces. A 165 observations of panel data was analyzed using path analysis. The result showed that the economic growth has significant negative effect on income inequality in Indonesian provinces but it has no significant effect on both labor absorption and economic welfare. The labor absorption has significant positive effect on income inequality even though it has no significant effect on economic welfare. In addition, the economic welfare is not significantly influenced by the income inequality.

Abstrak

Penelitian ini bertujuan untuk menganalisis pengaruh pertumbuhan ekonomi terhadap ketimpangan pendapatan, penyerapan tenaga kerja dan kesejahteraan masyarakat provinsi-provinsi di Indonesia. Ada 165 observasi data panel yang kemudian dianalisis dengan menggunakan analisis jalur. Hasil penelitian menunjukkan bahwa pertumbuhan ekonomi berpengaruh signifikan terhadap ketimpangan pendapatan di provinsi-provinsi di Indonesia namun tidak berpengaruh signifikan terhadap penyerapan tenaga kerja dan kesejahteraan ekonomi. Sementara itu penyerapan tenaga kerja memiliki pengaruh positif signifikan terhadap ketimpangan pendapatan meskipun itu tidak berpengaruh signifikan terhadap kesejahteraan ekonomi. Selain itu kesejahteraan ekonomi juga tidak dipengaruhi secara signifikan oleh ketimpangan pendapatan.

Introduction

Economic growth is a macro indicator of successful development so that all countries strive to achieve high economic growth in order to create the public welfare, especially for developing countries. In fact, the rapid economic growth turned out to be followed by the widening of income inequality, both among household income and regions due to the absence of trickledown effect. Inequality of development among regions is caused by several things such as differences in potential, demographic conditions and employment, social and cultural conditions, and infrastructure (Armstrong & Taylor, 2000). These differences raise the classification of developed and underdeveloped regions. The quite large differences in economic growth between regions in the early stages of development have resulted in inequality in income distribution among regions. In the long run, since the factors of production in the regions are getting optimized in the development period, the difference in the rate of growth of outputs between regions will tend to decline. It is marked by the increasing of average per capita income (Kuznets, 1955); Williamson, 1965).

The results of those studies are not consistent with studies from Bhanumurthy & Mitra (2004) in India and Panizza (2002) in America who found that the higher rate of economic growth is more often associated with lower income inequality. Inequality is a necessary condition to get economic grows faster since the beginning of development is to boost the rate of growth that concentrated in one or several areas. Increased employment indicates that economic growth has been able to create jobs either in terms of number, productivity and efficiency. Creation of high employment opportunities will have an impact on increasing people's purchasing power and ultimately the welfare of society will increase. Classical economists such as Adam Smith, David Ricardo, and Thomas Robert Malthus argued that when people get

a job they will be able to improve the welfare of people, but if they do not get a job it means they will be unemployed and would depress into lower living standards. According to Okun (1975) economic growth and unemployment have close negative relationship. It means that when economic growth increases, the unemployment will be reduced.

The success of economic development is a prerequisite for improving the quality of life (Sen, 2005). The success of economic development can be seen from the three basic values of development that are life-sustenance (the ability to provide basic needs), self-esteem (needs to be appreciated), and freedom (freedom to choose). The increasing of human development quality indicates an increase in social welfare (Romer, 1994).

Economic growth is successful if it can reduce income inequality, increase labor absorption and improve social welfare. Indonesia's economic growth is likely to increase year by year, but it does not automatically guarantee the increasing of prosperity and economic welfare in all provinces. Based on the description, the purposes of this study are to examine and to analyze the effect of economic growth on income inequality, labor absorption and economic welfare in Indonesian provinces. This study is relevant to be done due to the difference of characteristics in each province of Indonesia.

Economic growth is the long term increase in production capacity of a country to provide a variety of economic goods to its citizens. Economic growth can be driven by several factors. Kuznets (1955) said economic growth is associated with the blend effects of high productivity and large population. Growth in productivity is the most important, as explained by Adam Smith, this productivity growth brings in an increase in living standards. Economic growth depends on the availability of the supply of production factors (population, labor and capital accumulation) and the rate of technological progress (Solow, 1997), while according to Romer (1994) factors that affect the process of economic growth are coming from inside (endogenous) as technology advances and investment in science. Technology and science are two decisive factors of fast or slow pace of the economy of a country. Investment in human capital will improve the productivity of the capital. Economic growth according to Perroux does not appear at the same time and only occurs in a few places that are the center (pole) of growth with different intensities. The more basic activity the more opportunity to the area to spur faster growth. Meanwhile, according to Rosenstein-Rodan (1943) rapid industrialization is indispensable for the continuity of sustainable economic growth, and the strategy to build a variety of industries concurrently should be used to create a more equitable distribution of income.

The imbalanced economic growth among regions will cause income inequality, a condition in which there are the differences in the level of per capita income between regions and between people. The extreme inequality of income would lead to economic inefficiency and increase the number of poverty. Income inequality among regions should receive attention in development since extreme income inequality can lead to economic inefficiency. At any level of average income, the higher inequality will lead to narrower the population that is eligible to earn a loan or other credit sources. Moreover, the extreme income inequality would undermine social stability and solidarity as well as an represents injustice to society.

The pattern of development and the level of inequality in development found in some countries are not similar. According to Grossman & Helpman (1989) inequality between regions both in terms of revenue and growth is caused by rapid population growth and migration from rural to urban areas, the flow of trade, capital and people that moved from the underdeveloped region to more developed region. Meanwhile, differences in the development achieved by a region are also causing development gaps.

The differences in the progress of economic development between regions will pose a backwash effect that dominates the spread effect, and regional economic growth is a process that is not equilibrium. Backwash effect is the negative impact perceived by a region for the economic expansion of other more developed regions, while the spread effect is the beneficial effect on the region for the economic expansion of some other areas. If the difference between the two regions narrow, it means there is a good outcome for the trickling down effect. Meanwhile if the difference between the two regions get further away it means there is a process of polarization (polarization effect).

Economic growth and equality in income distribution is often a trade off and not easy to achieve correspondingly. Kuznets argued that at the early stages of growth, income distribution tends to deteriorate, but at the later stage it will be improved. This observation is widely known as the concept of Kuznets Inverted U Curve (Kuznets, 1955). Different circumstances occured in advanced countries where the environmental conditions are generally in better in terms of infrastructure and facilities and the quality of human resources. Furthermore socio-cultural barriers in the development process is almost nonexistent.

Under these conditions every chance and development opportunitiy can be exploited in a more evenly distributed among regions. As a result, the process of development in the advanced countries will tend to reduce the inequality of development among regions. This Neo Classical theory is then empirically tested for accuracy by Williamson (1965) through the study of the development gaps among regions in the developed countries and the developing countries.

According to Okun's law, of any 2.2 percent economic growth rate, labor absorption increased by one percent (Barro & Sala-I-Martin, 2004). A minimal unemployment rate (4% per year) will be achieved if all of the production capacity (full employment) are used so it is very important to maintain the economy to be in a state of full employment. In line with the economic development in general, employment opportunities will evolve from the primary sector (agriculture and mining) to the secondary sector (manufacturing industry), while the services sector has a relatively small growth.

Indonesia with its large population tends to have the excess of labor, where the majority of Indonesian population is in rural areas and absorbed in the agricultural sector. The excess of workers in one sector will contribute to the growth of output and the supply of workers in other sectors. The absorbtion of the excess labor in the industrial sector (the modern sector) by the informal sector will lead to the increasing of wage levels in rural areas gradually and this will reduce the income disparity between rural and urban areas, so that the excess supply of workers does not cause problems on economic growth. Instead the excess labor is precisely the capital to accumulate income, assuming the movement of labor from the traditional sector to the modern sector runs smoothly and never becomes too much. The interaction between the two sectors is initiating and accelerating development (Ranis, Stewart, & Ramirez, 2000).

The growth of population and labor force is regarded as one of the positive factors that spur economic growth. The impact depends entirely on the ability of the economic system to absorb and productively use the extra workers. This ability is further influenced by the rate of capital accumulation and the availability of support inputs such as managerial and administrative skills. The dominant factors affecting the expansion of employment opportunities are namely demography, geographical position and natural resources, economic conditions, social and cultural conditions and political factors. Investments also determine the number of employment. The greater the investment and its labor intensive, the higher the jobs are created. The higher elasticity of employment indicates that any economic growth is capable of creating greater employment opportunities and it can be used as an indicator to analyze whether economic activity is capital intensive or labor intensive. Economic growth is said to be successful if it can improve the welfare of the society. Public welfare of a country cannot be achieved simply by increasing economic growth, but it must be followed by improvement in the standard of living, the ability to cope with subsistence, improvement of quality of life and human development (Sen, 2005). Welfare relates positively to income per capita, but negatively associated with poverty and inequality, which means that enhancement of per capita income will increase prosperity, while enhancement of income inequality and poverty will decrease the welfare of society. Human Development Index (HDI) is one of the indicators used by the United Nations to measure the welfare of the society on the development of consumption, health, and education.

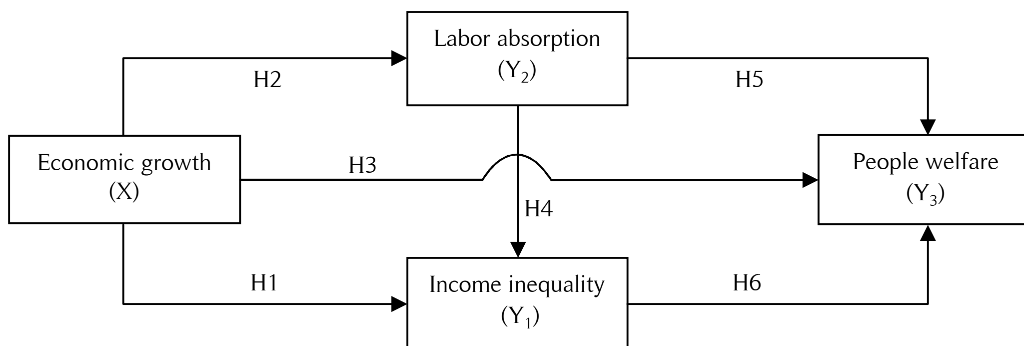
Research Method

The variables in this study include exogenous variables that is economic growth (X) as well as endogenous variables, namely income inequality (Y1), labor absorption (Y2) and people welfare (Y3). Economic Growth (X) is the change in the value of Gross Domestic Regional Product (GDRP) per year at constant prices in 2000 generated by each province of Indonesia that is expressed in percent. The economic growth at constant prices data is used with a reason to get a more accurate picture and to avoid misleading results because of the effects of inflation. Income Inequality (Y1) is the difference in GDRP per capita at constant prices in 2000 among provinces expressed in Williamson index in each province. Labor Absorption (Y_2) is the total labor force working in each sector in each province of Indonesia during the research period, expressed in units of people. People Welfare (Y_3) is a decent condition that exhibits the state of a society that can be seen from the living standards of the people and is expressed in units of index that is the Human Development Index (HDI).

This study uses secondary data from 33 provinces in Indonesia, and does not include the North Kalimantan province considering the newly formed province in 2012. The study is conducted by census with time series data from 2006 (considering there is newly formed province in 2004, namely West

Sulawesi) to 2010 (five years) combined with a cross section data consists of 33 provinces, thus becoming the data panel of 165 observations.

Based on the theoretical studies and the empirical results that show the relationship between variables, the conceptual framework of the study is developed as shown in Figure 1 and the research hypothesis as follows:



Source : writer design

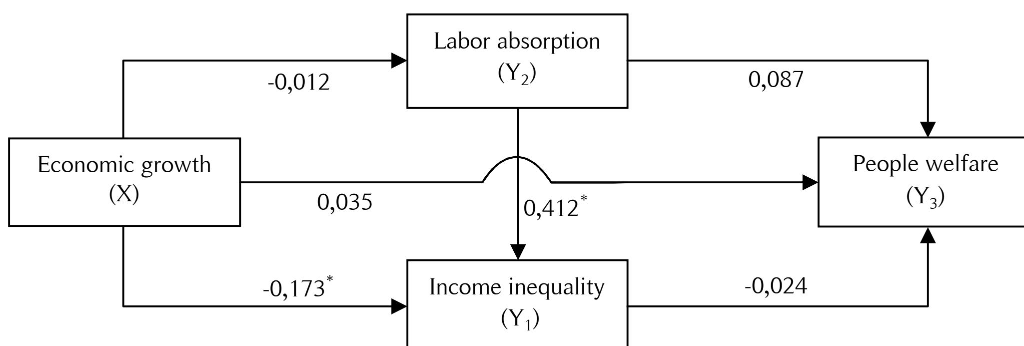
Figure 1. Conceptual framework of the study

Hypothesis 1 (H1) : Economic growth significantly influences income inequality
Hypothesis 2 (H2) : Economic growth signifantly influences labor absorption
Hypothesis 3 (H3) : Economic growth signifantly influences people welfare
Hypothesis 4 (H4) : Labor absorption significantly influences income inequality
Hypothesis 5 (H5) : Labor absorption significantly influences people welfare
Hypothesis 6 (H6) : Income inequality significantly influences people welfare

All hypotheses are tested by using path analysis developed as a model for studying the direct or indirect effect of exogenous variables on endogenous variables. This analysis is one option in order to study the dependence in the model and is an excellent method to explain if there is a large set of data to be analyzed and to seek causal. Path analysis is used to examine the relationship between a causal model that has been formulated based on theoretical considerations and specific knowledge.

Results and Discussion

In the first path analysis is required a test of the data that will be incorporated into the model. Because the data used in this study is secondary data and panel data, therefore it is not necessary to test the data. After processing the data, then of the three models can be expressed in graph of path analysis as shown in Figure 2.



Source: Processed primary data
Where : * = Significant on α = 0.05

Figure 2. The effect of exogenous variable on endogenous variable

The coefficient of path parameter can be seen from the result for inner weights. To assess the significance of the hypothesized structural path can be seen from the T-statistic which is greater than or equal to 1.96. The test results are shown in Table 1.

Table 1. The test results of path coefficient

Variable	Path coefficient	t	Sig	Test results
Economic growth (X) on income inequality (Y1)	-0,173	0,471	0,015	Significant
Economic growth (X) on labor absorption (Y2)	-0,012	-0,152	0,879	Not Significant
Economic growth (X) on people welfare (Y3)	0,035	0,438	0,662	Not Significant
Labor absorption (Y2) on income inequality (Y1)	0,412	5,874	0,000	Significant
Labor absorption (Y2) on people welfare (Y3)	0,087	1,005	0,316	Not significant
Income inequality (Y1) on people welfare (Y3)	-0,024	-0,270	0,788	Not significant

Source: Processed primary pata

The estimation of coefficient parameter of effects between two variables shows that there are two significant paths, with a negative coefficient parameter that is the effect of economic growth on income inequality, and with a positive coefficient parameter that is the effect of labor absorption on income inequality, so the hypothesis in the model can be accepted. While the 'not significant' paths are the effect of economic growth on labor absorption, the effect of economic growth on people welfare, the effect of labor absorption on people welfare, and income inequality on people welfare.

Hypothesis one, economic growth has negative and significant effect on income inequality. This means that increasing economic growth will cause a decline in income inequality. This is due to the higher economic growth will boost production capacity so that the per capita income will also be increased which indicates the improvement of people's income so that the income inequality has narrowed. This study found that there is no trade off between economic growth and income inequality. The economic growth in fact has managed to reduce income inequality year by year, yet the level of income inequality itself is actually categorized quite high. Another finding is that despite the income inequality in some areas belongs to low category or in other words the income distribution is relatively even, nevertheless this evenness occurs at a low rate of per capita income; where it also reflects the low welfare of society. The results of this study reject Kuznets (1955) and Williamson (1965).

The study found that the economic growth achieved is able to increase the output and income per capita as well as further to reduce the number of income inequality in each province. In other words the income distribution has improved. Factors that cause the economic growth to have a significant effect on reducing income inequality can be assessed through the contribution of sectoral economic growth. Nationally, economic growth of Indonesia proved to be the contribution of the secondary sector amounted to 20,98 percent and the tertiary sector for 33,9 per cent, a sector that grows faster and higher, while the contribution of the primary sector to the economic growth of only 6,19 percent.

The empirical findings of this study support the study by Van Der Eng (2009), where in the 1970s Indonesia showed an increase in inequality and it further diminished until 1997. The Indonesia's case shows that rapid economic growth does not necessarily lead to a significant increase in income inequality. In addition the result of this study is confirmed by the study by Barro (2000), Panizza (2002), (Papanek & Kyn, 1986), and Bhanumurthy & Mitra (2004) who found that high growth will reduce income inequality.

Hypothesis two, economic growth has a negative and not significant effect on labor absorption. This finding means that the higher the economic growth, the lower the labor absorption but the effect was not significant. This is due to several factors. First, an indication of the poor quality of economic growth can be seen from the labor absorption rate which is relatively low and slow to increase. Second, the increasing economic growth tends to be driven by increased consumption and not followed by increased investment thus job creations are very slow and too little labor absorbed. Third, most of labor absorption occurs in the primary sector with low productivity. Fourth, the primary sector which absorbs more labor has the smallest elasticity. Fourth, the disparity between sectoral economic growth and the sectoral labor absorption. The primary sector which is labor-intensive and has a major contribution to GDP, grows slowly and were below GDP growth. Instead the secondary and tertiary sectors always showed higher growth than GDP growth but little labor absorption because it used capital-intensive technology.

The empirical findings suggest that the economic growth has negative and not significant effect on labor absorption. Nationally, an indication of the poor quality of economic growth can be seen from the employment rate which is relatively low and slow to increase. Another factor is the main source of economic growth that occurs is not supported by the investment but is supported by the amount of household consumption expenditure, in the amount of 55,46 percent, where consumption expenditure can not create jobs directly, while investment is only amounted to 22,00 percent. The lack of contribution and growth of the investment component made labor absorption low compared to the number of labor force.

Economic growth's insignificant effect on labor absorption is also caused by the majority of labor absorption occurs in the primary sector with low productivity. Subsequently, the causes of economic growth's insignificant effect on labor absorption can be seen by the elasticity of workers. Based on the three main sectors namely the primary sector, the secondary sector and the tertiary sector, the primary sector has the smallest elasticity with values of 0,06% and followed by 0,63% of the secondary sector and tesier sector with the greatest elasticity of 1,02%. This means that every 1% increase in the value added of industrial sector will increase elabor absorption by 1,02%. This shows the effectiveness of industrial sector in absorbing labor force in line with its increase in sectoral output, despite only a few region in Indonesia whose economy relies on the industrial sector, the majority of them are supported by the agricultural sector. Another factor that leads to economic growth insignificant effect on labor absorption can also be seen from the Labor Force Participation Rate (LFPR). Developing countries like Indonesia are likely to encounter faster labor force growth than the growth of employment opportunity.

Hypothesis three, economic growth has positive and not significant effect on people welfare. This finding means that the increase in economic growth is followed by the increase in the welfare of society although the effect is not significant. This is due to the economic growth is supported by low productivity sectors. Sectoral differences in labor absorption will then affect the level of per capita income and affect the purchasing power. Furthermore, this will affect the value of HDI as a proxy for prosperity. Another factor that causes the effect of economic growth is not significant to the people welfare is a difference in terms of acceleration of changes of each indicator in the Human Development Index (HDI). The most volatile indicator is real spending per capita, while the indicator of life expectancy, literacy rates and years of schooling require a longer time to increase its value.

Hypothesis four, labor absorption has positive and significant effect on income inequality. This finding means that the increase in labor absorption actually increases income inequality among provinces in Indonesia. This is due to the majority of absorbed workers has low productivity so the income level is low and it affects the level of income per capita. Provinces whose GDRP is dominated by secondary and tertiary sectors have higher per capita income than the regions whose economy is dominated by agriculture, so that it contributes to income inequality.

The study found that economic growth has positive but not significant effect on people welfare. The insignificant effect of economic growth on people welfare is due to the economic growth which is supported by sectors with low productivity. Nationally, economic growth in Indonesia proved to be the contribution of the secondary sector (20.98 percent) and tertiary sector by 33,9 percent where these sectors grow faster and higher, while the contribution of the primary sector to the economic growth is only 6,19 percent in which this sector grows slower and lower.

Sectoral differences in labor absorption will then affect the level of income per capita in each province. The provinces with a dominant role of secondary and tertiary sectors tend to have higher per capita incomes and this will affect people's purchasing power as one of the indicators of HDI. Conversely due to the labor absorption of most provinces in Indonesia is in the primary sector, the income is improved but still lower than the secondary and tertiary sectors. Furthermore, this will affect the purchasing power as one of the indicators of HDI. Low purchasing power or real spending per capita will affect the fulfillment of people needs for education and health, which will influence the achievement of HDI.

Another factor that causes the effect of economic growth is not significant on people welfare is a difference in terms of acceleration of changes of each HDI indicator. The most volatile indicator is real spending per capita, The most volatile indicator is real spending per capita, while the indicator of life expectancy, literacy rates and years of schooling require a longer time to increase its value. This means that though economic growth continues to increase nationally and provincially, but it is not always followed by the improvement of people welfare (high HDI). This is due to differences in the acceleration of changes of HDI indicators in each province. Furthermore, if economic growth is compared with the increase in HDI, it is known that the increase of HDI is very little, less than one percent compared to the rate of economic growth. HDI value generally have a tendency to slow down after reaching a relatively high value.

Nationally, the sector with the lowest labor productivity is the primary sector which is equal to 0,54 whereas the primary sector, especially agriculture, was the sector with the most labor-intensive, especially in rural areas. This is due to the agricultural sector is dominated by low-educated labor force and does not require special skills of its workforce. While the highest labor productivity is secondary sector that is equal to 1,82. As this sector is capital-intensive, so workers of this sector are required to have certain education and skills.

Accordingly, although the secondary and tertiary sectors have a lower labor absorption than the primary sector, but labor productivity in these two sectors are very high because the sectors are capital-intensive and technology-intensive so that they produce much more output and also earn higher income. This means that there will be inequality among provinces with different sectoral role either in the primary, secondary and tersier sector. Provinces whose GDRP is dominated by secondary or tertiary sectors have much higher per capita income than the regions whose economy is dominated by agriculture, so this affects income inequality among regions, especially within the same region (within disparity).

Hypothesis five, labor absorption has positive but not significant effect on people welfare. This finding means that the increased labor absorption tends to improve the people welfare but the effect is not significant. This is due to the disparity between sectoral labor absorption with sectoral productivity and income. The primary sector absorbs most labor but its labor productivity is low so income is also low. The provinces with dominant role of secondary and tertiary sectors tend to have higher per capita incomes and this will affect people's purchasing power as one of the indicators of HDI. Low purchasing power or real spending per capita will affect the fulfillment of people needs for education and health, and it will further affect the people welfare.

Another factor that causes the insignificant effect of labor absorption on people welfare is the differences in sectoral income. The primary sector income is lower due to lower labor productivity. Unlike the secondary and tertiary sectors, the productivity is much higher so that the income generated by these sectors is also better. These sectors are generally capital-intensive and technology-intensive, it is usually concentrated in the city and the labor absorption is very low. This sectoral difference in elabor absorption will affect the level of income per capita in each province.

Hypothesis six, income inequality has negative but not significant effect on people welfare. This finding means that the lower the income inequality has the potential to improve people's welfare of provinces in Indonesia although the effect is not significant. Reduction of income inequality indicates the relative improvement in income distribution so that more and more people who have the purchasing power. Another finding is that despite there are low income inequality in some areas or in other words the income distribution is relatively even, but the evenness occurs at the low level of per capita income; where it also reflects the low welfare of society. The other factor that causes not significant effect is the difference in terms of acceleration of changes of each HDI indicator.

The empirical finding suggests that income inequality has negative but not significant effect on people welfare. The insignificant effect of income inequality on the welfare is caused by differences in sectoral contributions. Provinces whose GDRP is dominated by secondary or tertiary sectors have much higher per capita income than the regions whose economy is dominated by agriculture.

Another factor that causes the insignificant effect of income inequality on people welfare is caused by differences in sectoral productivity. The revenue of primary sector is lower because its labor productivity is low. Unlike the secondary and tertiary sectors, the productivity is much higher so that the revenue generated by these sectors is also better. These sectors are generally capital-intensive and technology-intensive, usually concentrated in the city and the labor intensive is very low. These sectoral differences in labor absorption will affect the level of income per capita in each province.

The insignificant effect of income inequality on the people welfare appears in some provinces with high income inequality yet they encounter improvement of people's welfare above the national average. The provinces with the primary sector economy tend to have lower per capita income than the provinces with secondary and tertiary sectors. Furthermore, these conditions will affect the achievement of HDI value of each province. The insignificant effect is due to different pattern which occured in some provinces. This indicates that the development among the provinces in Indonesia has not been evenly distributed and neither do the public welfare conditions.

Conclusion

The overall results of this study indicate that economic growth significantly affects income inequality, but insignificantly affects labor absorption and people welfare. Labor absorption significantly affects income inequality but insignificantly affects people welfare. Income inequality also insignificantly affects people welfare. The results of this study prove that despite increased economic growth can reduce income inequality, but this economic growth is not optimal in terms of labor absorption and does not automatically improve people welfare. This study also finds that there is no trade off between economic growth and income inequality.

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