Analysis and Prospect of Economic Growth and Income Inequality in West Sumatra Province

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Abstract

This paper is aimed at analyzing and determining the prospect of economic growth and income inequality by looking at panel data starting from 2011 to 2015 in all regencies and cities in West Sumatera. The data analysis used was simultaneous equation with ILS (Indirect Least Square) method. The results show that labor and Human Development Index (HDI) are the factors that affect Economic Growth, whereas labor, HDI and agricultural sector development are the factors that affect income inequality in West Sumatera.

Keywords: economic growth, income inequality, investment, labor, hdi, agricultural sector development

Introduction

Economic growth and income inequality are the indicators to decide the success of economic development in a region. Economic growth indicates the extent to which economic activity will generate additional income for a given period of time. Incomeinequality indicates the extent to which the welfare or prosperity of a region. According to Kuznets in Jhingan (2004), Economic growth is a long-term increase in the ability of a country to provide more types of economic goods for its inhabitants. Besides, Law no. 25, 2004 (The government of Indonesia, 2004) states that on National Development Planning System, Economic Development is directed to the stabilization of national economic system to push the nation progress. Sjafrizal (2014) says that Regional Economic Growth is an increase in real production activities (excluding price increases), both in the form of goods and services, within a certain period.

The economy is considered to be growing if all real service income on the use of production factors in a given year is greater than the real income of the community in the previous year. The indicator used to measure economic Growth in Indonesia at a certain period is the growth rate of Gross Domestic Product (GDP).

In Indonesia, economic growth had been slowing from 2011 to 2015. It can be seen in Figure 1 which shows that Indonesia's Economic Growth Rate went slow down or declined.
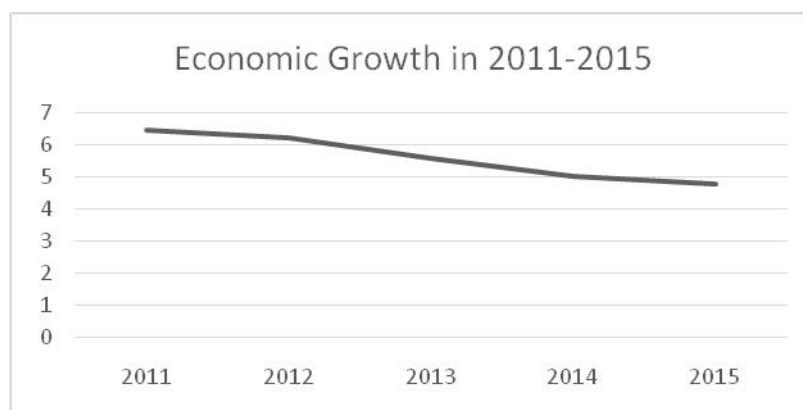

Figure 1 Indonesia's Economic Growth Rate 2011-2015 at Constant Price
Source: Bps Center (2016)

The decline of economic growth that occurred in Indonesia can not be separated from the contribution of the provinces in Indonesia. One of the provinces experiencing a slowdown in Economic Growth is West Sumatra. The indicator used to measure the economic growth of a region in a certain period is the growth rate of Gross Regional Domestic Product (GRDP).

The decline of economic growth in West Sumatera can be seen in Figure 2 which shows that from 2011 to 2015, Economic Growth of West Sumatera had kept going slowdown or declined.
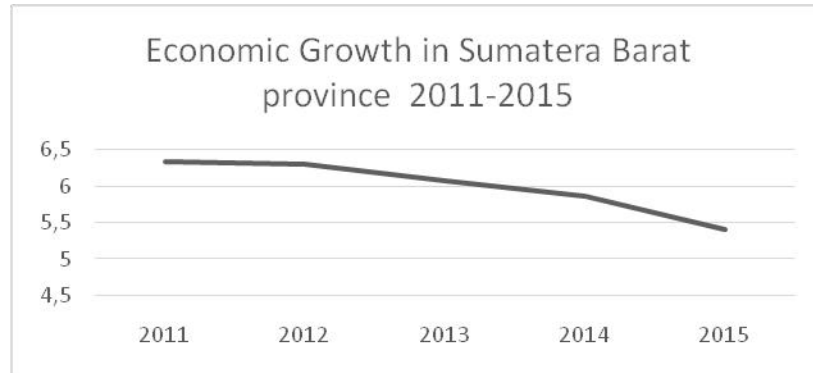

Figure 2 Economic Growth Rate of West Sumatera Province 2011-2015 at Constant Price
Source: BPS West Sumatera Province (2016)

With the decline of Economic Growth in West Sumatra, the author is interested in finding out the factors that may cause it.

Table 1 Economic Growth Rate, GFCF (Gross Fixed Capital Formation), LFPR (Labor Force Participation Rate), HDI (Human Development Index), and Gini Rasio
West Sumatera Province 2011-2015

Year	Economic growth	Investment (GFCF)	Labor (LFPR)	HDI	Income inequality (*Gini Ratio*)
2011	6,34	34.097.669	65,33	67,81	0,33
2012	6,31	36.280.810	64,42	68,36	0,35
2013	6,08	37.957.416	62,92	68,91	0,34
2014	5,88	39.883.150	65,19	69,36	0,32
2015	5,52	41.608.187	64,56	69,98	0,34

Source: BPS West Sumatera Province (2016)

There are several factors assumed that affect economic growth in West Sumatera. The first factor is investment. According to Todaro (2003), Economic Growth is the function of Investment. From Table 1, it can be seen that investment in West Sumatera from 2011 to 2015 went up, while Economic Growth went down.

The second factor islabor. Mankiw (2006) says that the supply of goods in the Solow model is based on the production function which states that output depends on the capital stock and the labor. From Table 1, it can be seen that Labor in West Sumatera from 2011 to 2015 was experiencing instability (ups and downs), while Economic Growth continued to decline.

The third one is the Human Development Index (HDI). Becker (1992), in the theory of Human Capital, states that man is not just a resource but a capital (capital). From Table 1, it can be seen that HDI in West Sumatera from 2011 to 2015 continued to increase, while Economic Growth continued to decline.

The fourth factor isincome inequality. According to Todaro (2003), fairer equity in developing countries is a condition to support economic growth. From Table 1, it can be seen that the income inequality from 2011 to 2015 in West Sumatrawas experiencing instability (ups and downs), while Economic Growth continued to decline.

Development aims to create justice and prosperity. They will be created if there is even distribution in development. But what happens in the development process is the inequality of economic development among regions.

The inequality of large economic development among regions brings negative impacts of economic, social and political aspects. Economically, according to Sjafrizal (2014), it causes less efficient use of available resources and encourages inequality in income. It is called income inequality.

According to Tambunan (2001), Indonesia as a developing country is also experiencing the problem of income inequality. The inequality occurs between high income and low income groups and poverty levels or the number of people below the poverty line. According to Glaeser EL (2006), incomeinequality is a condition where the income received by society is unevenly determined by the level of development, ethnic heterogeneity, and associated with dictatorships and governments that fail to respect property rights. M. P. Todaro (2003) states that income inequality is the difference of income generated by society so that there is a significant difference of income in society. Michael P. Todaro & Smith (2006) argue that extreme income inequality will cause various impacts, such as economic inefficiency, weakening of social stability and solidarity and is considered unfair.

The income inequality in Indonesia can be seen from the Gini Ratio figure. Figure 3 shows that Indonesia's incomeinequality from 2011 to 2015 is experiencing instability (ups and downs).
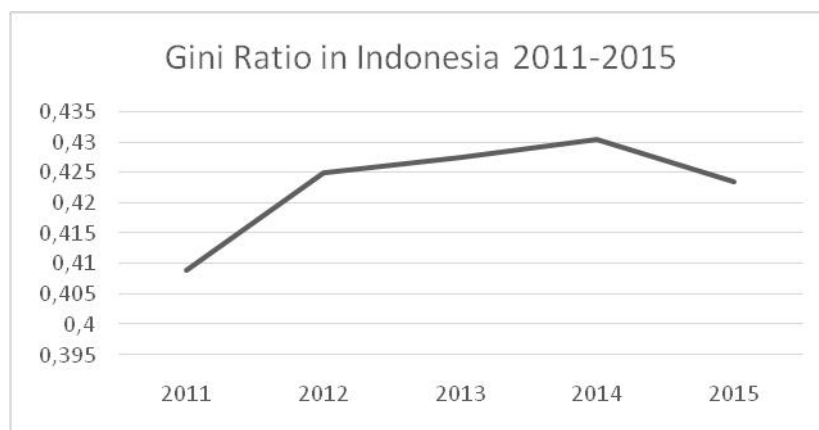

Figure 3 income inequality (Gini Ratio) of Indonesia 2011-2015
Source: BPS Centre (20l6)

The instability of income inequality in Indonesia cannot be separated from the contribution of the provinces in Indonesia. One of the provinces that is also experiencing it is West Sumatera.

In Figure 4, it shows that income inequality has increased from 2011 to 2012, then decreased from 2012 to 2014. In 2014 to 2015, it increased again by 0.34. It means that the income inequality in West Sumatera was experiencing instability. This instability must be alerted by policymakers.
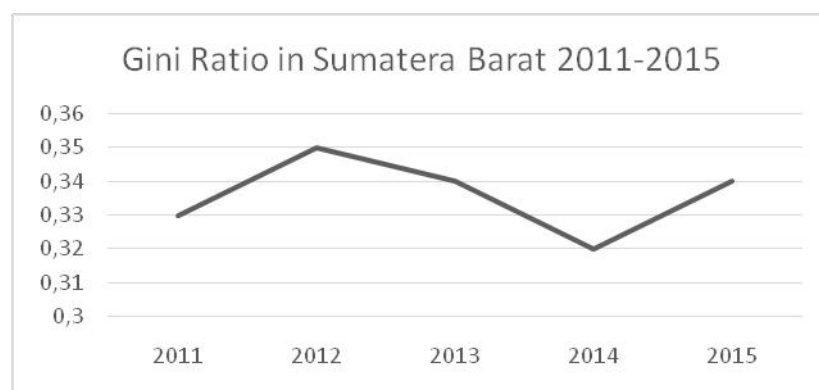

Figure 4 income inequality (Gini Ratio) of West Sumatera in 2011-2015
Source: BPS of West Sumatera Province (2016)

Since the unstable income inequality among the regencies and cities in West Sumatra, the author is interested in finding out the factors that might cause it.

Table 2 Gini Ratio, Economic Growth Rate, LFPR (Labor Force Participation Rate), HDI (Human Development Index), and GDP of Agricultural Sector in West Sumatera 2011-2015

Year	Income inequality (*Gini Rasio*)	Economic growth	labor (LFPR)	HDI	Development of agricultural sector
2011	0,33	6,34	65,33	67,81	28.535.019,88
2012	0,35	6,31	64,42	68,36	29.284.904,64
2013	0,34	6,08	62,92	68,91	30.372.990,97
2014	0,32	5,88	65,19	69,36	32.151.489,71
2015	0,34	5,52	64,56	69,98	33.551.976,41

Source : BPS of West Sumatera(2016)

There are several factors that increaseincome inequality in West Sumatera. The first factor is Economic Growth. According to Todaro (2003), the increase of Economic Growth will increase the income inequality and vice versa. From Table 2, it can be seen that Economic Growth from 2011 to 2015 continues to decline, whereas income inequalityis experiencing instability.

The second factor is labor. Fajar Apriesa (2013) says that labor has a negative and significant relationship on income inequality of regencies and cities in Central Java Province. From Table 2, it can be seen that labor from 2011 to 2015 has instability and income also experiencesthe same. When labor increases, so does inequality income. It means that labor and income inequality have a positive relationship.

The third factor is the Human Development Index (HDI). According to Becker (1992), human capital development is believed to not only increase productivity and growth, but also play a central role affecting the distribution of income in an economy. From Table 2, it can be seen that HDI in West Sumatera from 2011 to 2015 continues to increase, while Income Inequality is experiencing instability.

The fourth factor is Agricultural Sector Development. Hasan (2016) says that Gross Domestic Product of Agricultural Sector has a positive effect on income inequality. From Table 2, it can be seen that Agricultural Sector Development in West Sumatera from 2011 to 2015 continues to increase, while income inequality is experiencing instability.

Methods

1. The Methods and Analysis

This study used panel data, the combination of time series and cross section data (Gujarati, 2010), in which the data were taken from the regencies and cities in West Sumatera 2011 to 2015. The model in this study was the simultaneous equation (Gujarati, 2006). The simultaneous equation model is a model that has more than one related equation. The system of simultaneous equations has characteristics consisting of several equations. In addition, mathematically and phenomenon, there are inter-relationship equations (Hill, R.C., Griffiths, W.E., Lim, G.C., Berenson, 2011).

$$Y_{1it} = \alpha_0 + \alpha_1 X_{1it} + \alpha_2 X_{2it} + \alpha_3 X_{3it} + \alpha_4 Y_{2it} + Ut_1 \qquad (1)$$

$$Y_{2it} = \beta_0 + \beta_1 Y_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + Ut_2 \qquad (2)$$

Y1   : Economic Growth.

Y2   : Income inequality.

X1   : Investment

X2   : Labor

X3   : Human Development Index (HDI)

X4   : Development of agriculture sector.

Identification Test

According to Widarjono (2009), before going to the stage of simultaneous analysis, the stage we must do is to identify the simultaneous equation. There are three possibilities for simultaneous equation models: unidentified, identified, and overidentified.

$Y_{1it} = \alpha_0 + \alpha_1 X_{1it} + \alpha_2 X_{2it} + \alpha_3 X_{3it} + \alpha_4 Y_{2it} + Ut_1$

$Y_{2it} = \beta_0 + \beta_1 Y_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + Ut_2$

Equation 1:	$K-k_1$	m_1-1		
	$4-3$	$2-1$		
		$1=1$	$\longrightarrow$	*ExactlyIdentified*
Equation 2:	$K-k_2$	m_2-1		
	$4-3$	$2-1$		
		$1=1$	$\longrightarrow$	*Exactly Identified*

To be able to produce the exact simultaneous equation parameter value, Indirect Least Squares (ILS) was used (Gujarati, 2006).

Reduced Form

The substitution of equation (1) into equation (2), becomes: Equation of Economic Growth

- $Y_{1it} = \alpha_0 + \alpha_1 X_{1it} + \alpha_2 X_{2it} + \alpha_3 X_{3it} + \alpha_4(\beta_0 + \beta_1 Y_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + Ut_2) + Ut_1$
- $Y_{1it}(1 - \alpha_4\beta_1) = (\alpha_0 + \alpha_4\beta_0) + \alpha_1 X_{1it} + (\alpha_2 X_{2it} + \alpha_4 \beta_2 X_{2it}) + (\alpha_3 X_{3it} + \alpha_4 \beta_3 X_{3it}) + \alpha_4 \beta_4 X_{4it} + (\alpha_4 Ut_2 + Ut_1)$
- $Y_{1it} = \dfrac{(a0 + a4\beta0)}{(1 - a4\beta1)} + \dfrac{a1X1it}{(1 - a4\beta1)} + \dfrac{(a2X2it + a4 \beta2X2it)}{(1 - a4\beta1)} + \dfrac{(a3X3it + a4 \beta3X3it)}{(1 - a4\beta1)} + \dfrac{a4 \beta4X4it}{(1 - a4\beta1)} + \dfrac{(a4 Ut2 + Ut1)}{(1 - a4\beta1)}$

Equation of Economic Growth After Reduced Form**:**

$Y_{1it} = \pi_0 + \pi_1 X_{1it} + \pi_2 X_{2it} + \pi_3 X_{3it} + \pi_1 X_{4t} + V_{1t}$

Substitution of equation (2) into equation (1), becomes: Equation of Income Inequality

- $Y_{2it} = \beta_0 + \beta_1(\alpha_0 + \alpha_1 X_{1it} + \alpha_2 X_{2it} + \alpha_3 X_{3it} + \alpha_4 Y_{2it} + Ut_1) + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + Ut_2$
- $Y_{2it}(1 - \beta_1\alpha_4) = \beta_0 + \beta_1(\alpha_0 + \alpha_1 X_{1it} + \alpha_2 X_{2it} + \alpha_3 X_{3it} + \alpha_4 Y_{2it} + Ut_1) + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + Ut_2$
- $Y_{2it} = \dfrac{(\beta0 + \beta1a0)}{(1 - \beta1a4)} + \dfrac{\beta1a1X1it}{(1 - \beta1a4)} + \dfrac{(\beta1a2X2it + \beta2X2it)}{(1 - \beta1a4)} + \dfrac{(\beta1a3X3it + \beta3X3it)}{(1 - \beta1a4)} + \dfrac{\beta4X4it}{(1 - \beta1a4)} + \dfrac{(\beta1Ut1 + Ut2)}{(1 - \beta1a4)}$

Equation of income inequality after reduced form:

$Y_{2it} = \mu_0 + \mu_1 X_{1it} + \mu_2 X_{2it} + \mu_3 X_{3it} + \mu_1 X_{4t} + V_{2t}$

Thus, the equation of economic growth and incomeinequality after reduced form, into equation (1) and equation (2), and the economic growth equation and income inequality before reduced form become equation (3) and equation (4), and must pass the Test classical assumptions (normality, multicollinearity and heterokedastisity)

$Y_{1it} = \pi_0 + \pi_1 X_{1it} + \pi_2 X_{2it} + \pi_3 X_{3it} + \pi_1 X_{4t} + V_{1t}$	(1)
$Y_{2it} = \mu_0 + \mu_1 X_{1it} + \mu_2 X_{2it} + \mu_3 X_{3it} + \mu_1 X_{4t} + V_{2t}$	(2)
$Y_{1it} = \alpha_0 + \alpha_1 X_{1it} + \alpha_2 X_{2it} + \alpha_3 X_{3it} + \alpha_4 Y_{2it} + Ut_1$	(3)
$Y_{2it} = \beta_0 + \beta_1 Y_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + Ut_2$	(4)

Regression estimation with OLS reduced form equation

$Y_{1it} = \pi_0 + \pi_1 X_{1it} + \pi_2 X_{2it} + \pi_3 X_{3it} + \pi_1 X_{4t} + V_{1t}$	(1)
$Y_{2it} = \mu_0 + \mu_1 X_{1it} + \mu_2 X_{2it} + \mu_3 X_{3it} + \mu_1 X_{4t} + V_{2t}$	(2)

Estimated value of economic growth and income inequality:

$Y_{1it} = \pi_0 + \pi_1 X_{1it} + \pi_2 X_{2it} + \pi_3 X_{3it} + \pi_1 X_{4t} + V_{1t}$

$Y_{2it} = \mu_0 + \mu_1 X_{1it} + \mu_2 X_{2it} + \mu_3 X_{3it} + \mu_1 X_{4t} + V_{2t}$

Estimation of simultaneous equations regression of economic growth and income inequality.

Economic growth   : $Y_{1it} = \alpha_0 + \alpha_1 X_{1it} + \alpha_2 X_{2it} + \alpha_3 X_{3it} + \alpha_4 Y_{2it} + Ut_1$

Income inequality   : $Y_{2it} = \beta_0 + \beta_1 Y_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + Ut_2$

Thus, the regression model values above are simultaneous models of economic growth and income inequality.

Results

Table 3. Coefficient of Economic Growth Equation

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	3,251	0,127		25,501	0,000
Log_Investment (Log X1)	0,049	0,011	0,090	4,462	0,000
Labor (X2)	0,001	0,001	-0,008	-0,384	0,702
HDI (X3)	0,036	0,001	0,974	41,537	0,000
Income Inequality (Y2)	0,044	0,111	0,009	0,398	0,692

SPSS 22

Table 4. Coefficient of Income Inequality Equation

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	0,056	0,030		1,850	0,068
Economic Growth (Y1)	0,002	0,002	-0,038	-0,897	0,372
Labor (X2)	0,002	0,000	0,373	8,699	0,000
HDI (X3)	0,003	0,000	0,801	14,937	0,000
LogAgricultural Sector Development (Log X4)	-0,010	0,001	-0,323	-7,094	0,000

SPSS 22

Economic Growth

Y1 = 3,251 + 0,049LogX1 + 0,001X2 + 0,036X3 + 0,044Y2

Models are simultaneously acceptable since Prob (F-Statistics) is less than 0.05. The value of R-Squared could be interpreted. The R-Squared value of the economic growth equation was 0.992579 or 99.3%. Itshows that the contribution of investment, labor, HDI and income inequality variables was 99.3%, while the rest of 0.7% was influenced by other variables not included in the model.

Investment had no significant effect on economic growth which could be seen from Prob value which was greater than 0.05 (Prob of Investment: 0.6679). It was contrary to the theory stated by Todaro (2003) which states that the greater the Investment is, the greater the level of economic growth to be achieved. It was also contrary to the theory said by Jhingan (2004), in accordance with Harrod Domar's growth theory, that investment has a key role in economic growth that is creating income and enlarging the production capacity of the economy by increasing stocks of capital. The results of the analysis were not in accordance with the research conducted by Ni Luh Putu & I Ketut (2013), Pambudi & Miyasto (2013), and Putri et al. (2015), who found that investment had a positive and significant impact on economic growth. The results of the analysis were also not in accordance with research conducted by Su & Liu (2016) who found that Foreign Direct Investment (FDI) is positively correlated with Growth rate and Li & Liu (2005) who found that Foreign Direct Investment (FDI) did not only directly encourage economic growth, but also indirectly through interaction.

Labor negatively and significantly affected economic growth which could be seen from Prob value less than 0.05 (Prob Labor: 0.0008). The coefficient of estimation is -0.001489, meaning that if Labor increased by one unit then economic growth would decrease by 0,001489 one unit with assumption

that another variable was considered constant (*cateris paribus*). It was contrary to the theory put forward by Mankiw (2006) who states that output depends on capital stock and labor force and by Robert Solow and Trevor Swan in Boediono (2009), who state that economic growth depends on Population, Labor and Capital Accumulation . The results of the analysis found did not match with the research conducted by Pambudi & Miyasto (2013), Ni Luh Putu & I Ketut (2013), and Apriesa & Miyasto (2013) who found that Labor had a positive and significant impact on economic growth.

Human Development Index (HDI) positively and significantly influenced on economic growth which could be seen from Prob value less than 0.05 (Prob HDM: 0.0000). Coefficient estimation of 0.034961, meaning that if the HDI increased by one unit then Economic Growth would increase by 0.034961 one unit with the assumption that another variable was considered constant (cateris paribus). It was in accordance with the theory put forward by Becker (1992) who states that humans are not just resources but are capital that generate return. The results of the analysis obtained in accordance with research conducted by Su & Liu (2016) found that Human Capital was positively correlated with the growth rate. Besides, thestudy conducted by Whalley & Zhao (2010) found that Human Capital plays a far more important role in China's Economic Growth than previous literature. And it was in accordance with research conducted in Indonesia by Pradnyadewi & Putu Purbadharmaja (2015) who found that HDI had a direct and significant impact on economic growth in Bali.

Income inequality had no significant effect on economic growth which could be seen from Prob value greater than 0,05 (Prob of income inequality: 0,3290). The results of the analysis obtained were not in accordance with Alesina and Rodrik (1994) stating that income inequality would hamper growth. And it was also not in accordance with the theory put forward by Todaro (2003) who states that fairer equity in developing countries was a condition that supports economic growth. The results of the analysis were also not in accordance with Sudarlan (2015) who found that income inequality had a positive and significant impact on economic growth in Indonesia. It means that the greater the income inequality is, the greater the economic growth will be. In line with Dabla-Norris, Kochlar, Suphaphiphat, Ricka, & Tsounta (2015) who argue that the income inequality was important for growth and sustainability.

Prospects for Economic Growth

From the analysis of economic growth, the prospects for economic growth in West Sumatera could increase if the HDI (Human Development Index) and Labor were concerned.
Labor had a negative and significant influence on economic growth, whereas HDI had a positive and significant impact on economic growth. To increase Economic Growth, it was necessary to pay particular attention to variable of Labor and HDI.

High HDI would allow many people to have and create jobs. One side of HDI could increase economic growth. On the other hand, the increase in labor could decrease economic growth. Thus, it was necessary to learn specifically how HDI and labor did not have a negative effect on economic growth in West Sumatera. So that stability in the economy could be achieved and ultimately could create justice and prosperity.

In this study, labor used the value of LFPR (Labor Force Participation Rate) which was the percentage of population aged 15 years and above that was the Labor Force indicating the percentage of the working age population that was economically active in a country / region. The higher the LFPR indicated that the higher the available labor supply to produce goods and services in an economy.

Increasing HDI would improve Economic Growth. It happenned if HDI was formed by 3 basic dimensions: health dimension (long life and healthy life), education dimension (Knowledge), economic dimension (decent standard of living). If all dimensions increased, then productivity would increase, people's income would increase so that consumption would also increase and eventually Economic Growth would also increase.

An Analysis of Income Inequality

Y2 = 0,056 +0,002Y1 + 0,002X2 + 0,003X3 – 0,010LogX4

Model wassimultaneously acceptable since Prob (F-Statistics) is less than 0.05. The value of R-Squared could be interpreted. The R-Squared value of the Growth Equation was 0.998248 or 99.8%. Itshows that the contribution of economic growth, Labor, HDI and Agricultural Sector Development variables was99.8%, while the rest of 0.2% was influenced by other variables not included in the Model.

Economic Growth had no significant effect on income inequality which could be seen from Prob value greater than 0,05 (Prob Economic Growth: 0,6285). It was not in line with the theory put forward by Todaro P Michael (2004) that in the short run, the increase in economic growth would be followed by the increase of income inequality and in the long run economic growth was negatively correlated to income inequality. The results of the analysis were also not in accordance with research conducted by Putri et al. (2015), Pradnyadewi & Putu Purbadharmaja (2015), Ni Luh Putu & I Ketut (2013), Wijayanto et al. (2016), Sudarlan (2015),Lestari (2016) who found that economic growth positively and significantly affected the income inequality.

Labor had a positive and significant impact on income inequality which could be seen from Prob value less than 0.05 (Prob Labor: 0.0000). Coefficient of estimation was 0.000732, meaning that if Labor increased by one unit then income inequality would increase by 0.000732 one unit with assumption another variable was considered constant (*cateris paribus*). It was in accordance with research conducted by Putri et al. (2015), Ni Luh Putu & I Ketut (2013) who found that labor had a positive and significant relation to income inequality. However, it was not in accordance with research conducted by Apriesa & Miyasto (2013) who found that labor had a negative and significant relationship to income inequality.

HDI (Human Development Index) positively and significantly influences the income inequality which can be seen from Prob value less than 0.05 (Prob HDI: 0,0000). The coefficient of estimation is 0,001596, meaning that if HDI increases by one unit, then Income Inequality will increase by 0,001596 one unit with assumption that another variable is considered constant (*cateris paribus*). It is not in accordance with the theory stated by Becker in Tarmizi (2012) who states that HDI has a negative effect on Income Inequality. The results of the analysis are in accordance with research conducted by Putri et al. (2015), who found that HDI has a positive and significant impact on Inequality Income. However, it is not in accordance with research conducted by Hartini (2015) who found that the HDI has a negative effect on Income Inequality. The results of analysis also do not match with research conducted by Castelló-Climent & Doménech (2014) who found that countries that have experienced a decline in human capital inequality also experienced decreased incomeinequality.

Agricultural Sector Development had a negative and significant effect on the inequality ratio which could be seen from Prob value less than 0.05 (Agricultural Sector Development: 0,0000). The estimated coefficient was -1.73x10-8, meaning that if the Agricultural Sector Development increased by one unit, then the income inequality would decrease by 1.73x10-8 one unit with the assumption that other variables were considered constant (*cateris paribus*). It was consistent with Otsuka's (2012) theory which suggests that agriculture in Asian countries significantly reduces income problems. The results of the analysis were also in accordance with research conducted by Yasrizal & Isaac (2016) who found that the increase in GDP in the Agricultural Sector in Indonesia led to an increase in the value of Gini Ratio. While Yamin (2007) in his research found that PRDB Sector Agriculture had no significant effect on Revenue Distribution in South Sumatera Province.

Prospect of Income Inequality

From the analysis of income inequality, the prospect of income inequality in West Sumatera could be stable and decrease if the Policy on labor and HDI needed attention and Agricultural Sector Development was improved.

The relationship of HDI with economic growth and income inequality explained that there was a trade off. It means that a condition if one variable increases would have a negative impact on the increase. The expectation of a region was to increase economic growth and to decrease income

inequality. HDI was positively associated with economic growth and income inequality. If HDI increased, then Economic Growth and Income Gap would also increase.

Therefore, the government of West Sumatera should be able to make no big *trade off*. economic growth should be noted but income inequality should also be given attention. Policies concerning HDI had to be taken into account.

Conclusion

Economic growth in West Sumatera is significantly affected by HDI and labor. HDI affects positively, while labor affects negatively. Investment and income inequality do not significantly influence economic growth in West Sumatera

Income inequality in West Sumatera is significantly affected by HDI, labor and Agricultural Sector Development. Labor and HDI affect positively, while Agricultural Sector Development affects negatively. Economic growth has no significant effect on income inequality in West Sumatera.

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