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Economic Structure and Human Capital and the Role of Shadow Economy on Income Inequality in Indonesia

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ABSTRACT

Purpose of this study is to examine the impact of GRDP in the Agriculture Sector, GRDP in the Industrial Sector, GRDP in the Services Sector, human capital, and the informal sector on income inequality in Indonesia. This study uses panel data regression analysis. The period from 2016-to 2020 covers 34 provinces in Indonesia. The results showed that the GRDP of the Agricultural Sector has a direct result and positive impact on income inequality in all provinces in Indonesia. GRDP The industrial sector has a significant result and negative impact on income inequality in all provinces in Indonesia. GDP The service sector has a significant result and negative impact on income inequality in all provinces in Indonesia. Human capital has an insignificant and positive effect on income inequality in all provinces in Indonesia. The informal sector has a significant result and negative impact on income inequality between provinces in Indonesia.

Keywords: *Income inequality, GRDP the Agriculture sector, GRDP the industrial sector, GRDP the service sector, Human capital, Informal sector*

1. INTRODUCTION

According to Todaro [1] Income inequality is an imbalanced allocation of gross national income among different households in the state. In general, the cause of unequal income allocation in developing countries is population growth, which leads to lower per capita income.

In addition, it causes inflation because income to money increases but is not followed in proportion to the increase in the production of goods, inequality in development between regions, capital intensive so that the percentage of capital income from additional assets is greater than the percentage of income derived from work.

The World Bank [2] mentions that there are four factors driving inequality in Indonesia. First, is inequality of opportunity from birth. Children born to poor families often do not have a fair start in life, reducing their ability to succeed in the future. The second factor is labor market inequality. Individuals who are trapped in informal work usually have low incomes, because their productivity is low. The third-factor high concentration of wealth or concentration of wealth. The last factor is that the poor tend to be unprepared for economic shocks.

The Gini coefficient measures aggregate inequality using numeric values between zero and one. The criteria for income inequality based on the Gini coefficient according to Kuncoro[3] are coefficient values less than 0.3 are included in the low inequality category, values between 0.30 to 0.5 are in the moderate category, and greater than 0.5 are said to be are in high inequality.

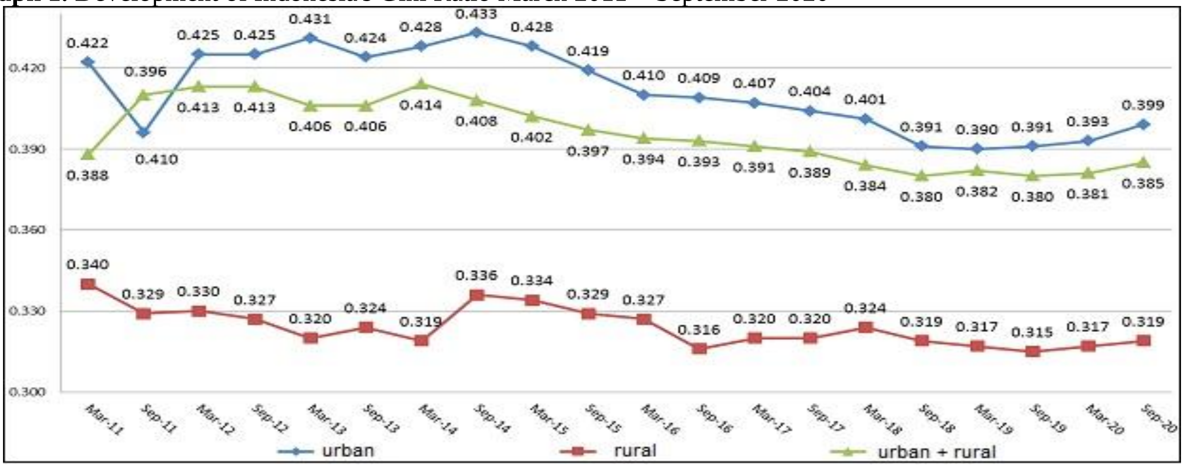
The shadow economy in Huynh & Nguyen [4] The shadow economic, we knew that the informal or informal economy or the black or an obscure underground economy, is an integral divided of the formal economy. In addition, the underground economy is also known by another called such as the underground economy, the general economy, the obscure economy or the black market economy.

Research by Huynh & Nguyen[4] shows that the shadow economy escalates income inequality. These findings contribute to the idea that shadow frugality isn't inescapably not good, pricipally for the beggary, because of its negatively impacts.

Meanwhile, research by Alvarado et al [5] Inequality underpins the fact that less state control leads to a larger informal workforce, leading to workforce participation in not regulation zeals. In many options, there's a bidirectional courting among the 2 variables and HIC in seventy-five countries. The causal courting among inequality and the shadow financial system is bidirectional. This end result manner that the shadow financial system creates inequality and vice versa. Human capital is one of the primary elements influencing the extent of income inequality. Human capital, as measured by a worker's education level, is a major determinant of a worker's income or continuity. Human capital refers to productive investment in people. It includes ideas, skills, health, knowledge, abilities, and location that are often generated from

spending on education, vocational training programs and health care [1].

Graph 1. Development of Indonesia's Gini Ratio March 2011 – September 2020



Source: BPS Indonesia, 2021

It can be seen in Graph 1 that since March 2014 The Gini coefficient showed a downward trend until September 2019. This condition shows that the distribution of spending in Indonesia improved during this period. However, due to the COVID-19 pandemic, the Gini coefficient value rose again in March 2020 and September 2020.

Research by Shahpari & Davoudi[6] reveals that the Additional human capital (average level of school work) can help with income distribution even in the long run. It is similar to Jong Wha Lee & Hanol Lee [7] that a fairer distribution of education has contributed significantly to reducing income inequality.

Indonesia consists of various regions that have diverse economic structures, these diverse economic structures result in uneven development in each region. One of the problems of development in a country is the inequality that occurs between regions and the absence of the ability of a region to manage the potential of the region.

Thus, appropriate strategies and policies are needed from the government and related parties to deal with existing economic development problems by adjusting policy directions in line with existing conditions in a region.

Human capital united of the most factors that have an effect on the position of financial gain inequality. Fixed capital, as measured by a worker's education level, is a major determinant of a worker's or continuing income. Mortal capital means productive investment in people, includes knowledge, chops, capacities, ideas, health and location that are often generated from spending on education, vocational training programs and health care [1].

The understanding of the economic structure is the share of the business field to the total GRDP both on the basis of prevailing prices and constant prices. By knowing the structure of the economy, we can assess the concentration of very dominant business fields in an area (Nangarumba, [8]). Based on the grouping carried out by Simon Kuznets, the profitable sector is divided into three sectors, videlicet the Primary Sector (husbandry), the Secondary Sector (assiduity), and the Tertiary Sector (services).

Nangarumba [8] economic structure, it was found that the prolific of the service area is the area that has the greatest influence from the agricultural and industrial sectors in reducing income inequality.

While the research of Cheong & Wu [9]also conducted a similar study to prove the existence of a link between the shift in economic structure and inequality between regions in China using the Gini Index analysis. The results showed that during the period 1997-2010 inequality in the eastern, central and northeastern regions of China tended to increase, while inequality in the western regions of China tended to decrease. The secondary sector gives the largest contribution to regional disparities in China caused by the unequal distribution of industrial value added.

There have been many macro and micro economic studies that discuss income inequality, but in Indonesia it is still rare to discuss issues related to economic structure, human decelopment and the role of the shadow economic. Even though it is very important to discuss because the characteristics of Indonesia with natural resources are different between provinces, but in Indonesia, the economy is lifted from the economic structure and human resources.

Therefore, this study aims to fill the current gap in analyzing income inequality by analyzing panel data based on several influencing factors, namely the shadow economy (informal sector), Economic Structure (covering GRDP in the Agriculture, Industry, and Services Sector), Human capital (mean length of schooling) in Indonesia. From the background and phenomena described above, the authors are interested in conducting research with the title "The Condition of Economic Structure and Human Capital and the Role of the Shadow Economy on Income Inequality in Indonesia".

According to Todaro [1], income inequality is a disproportionate allocation of overall country profits among rate households within a state. In different phrases, income inequality is the divergency in the quantity of earnings obtained via the organization, ensuing in bettter profits variations between assemblage in the network.

Human capital way efficient funding in human beings such as knowledge, skills, abilities, ideas, fitness and place which regularly outcomes from spending on education, on-the-task schooling applications and healthy care [1].

Economic structure shows the composition or arrangement of sectors in an economy. The economic structure of a country is reflected by the sectoral contribution in national income. The dominant sector has the top position in the structure and is a characteristic of an economy [10].

The shadow economy in Huynh & Nguyen [4] The shadow economic, we knew that general, informal, black or obscure economy, is an avoid area of the general economy. In addition, the shadow economic is we knew in another names like shadow economy, general economy, obscure economy or black market economic.

Rafael Alvarado, et al [5] performed a survey aimed toward assessing the effect of rents on herbal assets on inequality, along with the position of the shadow financial system and the human capital index. Cointegration outcomes display that there's a long-time period equilibrium among the 4 units of high-profits, low- and middle-profits countries, and low-profits countries.

Jong-Wha Lee & Hanol Lee [7], in their study, empirically examines how human capital, as measured by the level of education, is related to income distribution. The consequences confirmed that a extra even distribution of schooling contributed considerably to decreasing earnings inequality.

Research by Shahpari & Davoudi [6]. In this study, the average workforce education is used as human capital. concluded that increased human development and physic capital can reducing the Gini Index thereby making the distribution of income more equitable.

Suhendra [11], performed a examine to take a look at the impact of human capital and different financial variables, which includes non-public investment, financial growth, public investment, inflation and unemployment in Indonesian provinces. We practice a panel statistics version with constant performance estimates to statistics from 34 provinces from 2013 to 2019. We increase a brand new index for human capital the usage of an index-most effective approach. training number. The consequences display that human capital has a huge and negative impact on earnings inequality.

Nangarumba [8] The results of this study use the functional form of the semi-log model in panel data regression, where it is found that GRDP from the Agriculture Sector, GRDP from the Service Sector, Provincial Minimum Wage, Capital Expenditures, and Investment Credit are negatively related to the amount of income inequality. GRDP of the industrial sector is the only variable that is positively related to income inequality.

Wicaksono, et al [12], this study investigates the resource of income inequality on describing the gauge of inequality, namely the Gini index. The impacts showed that edification, sanity, and the grafter area are significantly contribute to income inequality in Indonesia.

2. METHOD

This study using panel data regression. A panel data analysis method or data pool that is a coherence of period data and section data using the eviews application. The time series data is from 2016-2020 while the cross section data is 34 provinces in Indonesia. The basic equation for panel data regression is as follows:

$$INQ_{it} = \alpha_0 + \alpha_1 PERT_{it} + \alpha_2 INDR_{it} + \alpha_3 JASA_{it} + \alpha_4 HC_{it} + \alpha_5 SE_{it} + U_{it} \quad (1)$$

Where :

INQit = income inequality
PERTit = GRDP the Agriculture Sector
INDRit = GRDP the Industrial Sector
JASAit = GRDP the Service Sector
HCit = Human Capital
SEit = Informal Sector
0 = Constant
1,2,3,4,5 = Coefficient
Uit = Error Term

3. RESULTS AND DISCUSSION

The regression analysis that has been carried out aims to determine the measurable relationship of each independent variable to the dependent variable. The following is a table that summarizes the relationship that occurs in the independent variable to the dependent variable.

Analysis of the Influence of Variables of GRDP in the Agriculture Sector, GRDP in the Industrial Sector, GRDP in the Services Sector, Human Capital, the informal sector on income inequality in Indonesia.

Tabel 1. Panel Data Regression Estimated Impacts

Variables	Coefficient	Std. Error	T Statistic	Prob.
C	0.842000	0.060700	13.87161	0.0000
log(PERT)	0.002262	0.000941	2.404080	0.0176
log(INDR)	-0.013255	0.003694	-3.588489	0.0005
log(JASA)	-0.038658	0.007966	-4.852903	0.0000
HC	0.002172	0.001747	1.243711	0.2158
SE	-0.000642	0.000188	-3.408706	0.0009

Sources: Data Processed, 2021

The impacts of data process uses the eviews program, obtained the panel regression equation as follows:

$$INQit = 0 + \alpha 1\ \log(PERT)it + \alpha 2\ \log(INDR)it + \alpha 3\ \log(JASA)it + \alpha 4HCit + \alpha 5SEit + Uit \quad (2)$$

$$INQ_{it} = 0.842000 + 0.002262PERT_{it} – 0.013255INDR_{it} – 0.038658JASA_{it} + 0.002172HC_{it} – 0.000642SE_{it} \quad (3)$$

Build upon the output of the study in table 1, its showed can that there is a positively and significantly influences between the GRDP of the agricultural sector and income inequality in Indonesia. This means that every increase in GRDP in the agricultural sector does not cause a decrease in income inequality. Here it can be indicated that GRDP of the agricultural sector reacts income inequality.

This is because the GRDP of the agriculture sectors will affect the level of inequality, where the agriculture sectors makes a major contribution to the economy as a sector with a high increase in GRDP. The agricultural sector also has a role in reducing income inequality between regions by absorbing labor at a moderate level, but currently the agricultural sector is less attractive to workers so that many agricultural lands have changed functions.

Based on the estimates in Table 1, it can be seen that the GRDP of the industrial sector has a negatively and significantly examines on income inequality in Indonesia. When there is an increases in the GRDP of the industrial sector in Indonesia, it will reduce income inequality.

when the industrial sector increases it will increase the number of workers, which has an impact on increasing the economy which leads to an increase in the economy in a region. So that it will make inequality between regions to be low when the regional economy tends to improve.

The estimated impacts in table 1 can be showed that the GRDP of the service sector has a negatively and significantly impact on income inequality in Indonesia. When there is an increases in the service sectors, it will reduce the level of income inequality.

when the service sector increases it will increase the number of workers, which has an impact on increasing the economy which leads to an increase in the economy in a region. So that it will make inequality between regions to be low when the regional economy tends to improve.

Based on the estimation results, it is showed that human capital has a absolute and insignificant react on income inequality in Indonesia. This means that every increases in human principal doesn’t cause a reduce in income inequality. Here it can be indicated that human capital does not always affect income inequality.

This is because education will affect a person's income, human capital which is measured from the length of school. where income can be measured by a person's education. People who get a higher education tend to get a high income too, but many people who graduate from college become unemployed.

Build upon the output value in table 1, it was showed that the informal sector has a negative and significant effect on income inequality in Indonesia. This means that when there is an increase in the number of informal sector workers in Indonesia, it will reduce income inequality.

The result is that when the informal sector increases, inequality will decrease which, the informal sector can increase the number of workers and reduce unemployment so that it can reduce poverty which has an impact on decreasing unemployment and the economy for the better which will make inequality low between other regions when the regional economy tends to improve.

4. CONCLUSIONS

From the research that has been done, the following conclusions are found:

The GRDP of Agricultural Sector has absolute and positively react on income inequality in all provinces in Indonesia. This means that every escalate in GRDP in the agricultural sector does not cause a decrease in income inequality.

This explains that higher GRDP of the agricultural sector would not escalate income inequality, because the agricultural sector workforce has an equitable most poverty value, which can exacerbate income inequality. It was reference to the government to disburse more solicitude to the agricultural sector and to make efforts to develop agriculture in every region in Indonesia which will reduce inequality.

GRDP The industrial sector has an absolute and negatively influence on income inequality in all provinces in Indonesia. This means that every increase that occurs in the GRDP of the industrial sector will cause a decrease in income inequality and vice versa. This explains that the higher GRDP of the industrial sector will reduce income inequality, because the GRDP of the industrial sector is a factor that can evenly distribute income inequality.

GRDP The service sector has an absolute and negatively impact on income inequality in all provinces in Indonesia. This means that every increase that occurs in the GDP of the service sector will lead to a decrease in income inequality and vice versa. It was prompt to the government to disburse more solicitude to the service sector in order to support the economy and create jobs so as to reduce unemployment, so as to reduce income inequality.

Human capital has an insignificant and positive leaven on income inequality in all provinces in Indonesia. This means that any increase in human capital does not conduct to a diminish in income inequality.

That explains showed a higher human capital does not necessarily reduce income inequality. It is recommended to the government to improve the quality of human capital and create jobs, because the quality of human capital and the availability of jobs are expected to reduce income inequality.

The informal sector has an absolutely and negatively react on income inequality in all provinces in Indonesia. This means that every increase that occurs in the informal sector will cause a mitigate in income inequality and vice versa. That was showed the higher the value of the informal sector will reduce income inequality, because the informal sector can reduce unemployment.

Together, the GRDP of Agriculture Sector, the GRDP of Industrial Sector, the GRDP of Service Sector, Human Capital, and the informal sector have significant react on income inequality in all provinces in Indonesia. This means that the GRDP of Agricultural Sector, the GRDP of Industrial Sector, the GRDP of Service Sector, Human Capital, and the informal sector together have an influence on income inequality in all provinces in Indonesia.

This research has limitations so that further research needs to be carried out by further research involving many variables that affect income inequality and outside the variables that the author has examined so that income inequality can be further reduced or the inequality rate is low.

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