

The Effect of Provincial Minimum Wage on Wage Inequality in Java

Daniel Bastian Lubis*, Syamsul Hidayat Pasaribu, Muhammad Findi

Department of Economics, Faculty of Economics and Management, Bogor Agricultural University (FEM IPB),
Bogor Indonesia

ABSTRACT

The minimum wage setting policy as an effort to improve wage distribution and expected to reduce income inequality is still being a debate in the literatures. However, similar studies, especially those that examine the impact of establishing minimum wages on the conditions of wages for workers in different percentile groups, have not been widely practiced in Indonesia. This study aims to analyze the increase in effective minimum wages against the wage gap of workers in the period 2008-2017 in Java using the National Labor Force Survey (Sakernas) data. Through the OLS method, we find that the impact of minimum wages is not the same among percentile groups. The effective minimum wage has a negative impact on the wage 30th percentile group where an increase in effective wage will reduces the gap between the 30th percentile and the 50th percentile. We find different result on 60th percentile. On this percentile, the effective minimum wage will increases the gap between the 60th percentile and the 50th percentile, this result implies a spillover.

Keywords : Minimum Wage, Wage Inequality, Wage Percentile

I. INTRODUCTION

In the 1950s and 1960s, many of the third World countries succeeded in achieving sponsored economic growth, but failed to improve the living standards of the majority of the population, as poverty worsened, distribution imbalances continued to surge. This condition indicates that the trickle down effect principle is not successful. This experience encourages experts and policy makers to redefine economic development that no longer uses only the highest national currency but must be accompanied by savings funds, increased income, and broader work. Indonesia consists of many islands, not apart from this problem. Most countries are centered on Java which consists of 6 provinces. Gross Domestic Product (GDP) where Java contributes 58.59 percent of Constant GDP in 2017. Figure 1 shows the development of National

GDP with GDP at constant prices on Java. All provinces in Java in 2017 had economic growth that surpassed economic growth which reached 5.23 percent where D. I. Yogyakarta became the province with the lowest economic growth of 5.26 and DKI Jakarta became a province with economic growth of 6.22 percent. Kuncoro (2002) in his study found the center of Indonesian industrial concentration which is located on Java with a concentration that composes a two-pole pattern (bipolar pattern).

The rapid economy in Java is accompanied by the status of Java as the island with the highest population among the major islands in Indonesia with a population of projection in 2015 of 145 million people or 56.82 percent of the total projection of the Indonesian population. Residents play an important role in the economy both as producers, consumers, and

as source of labor inputs in production activities. The working population in Java in 2017 reached 69.48 million or 57.41 percent of the total working population in Indonesia.

The contribution of Java on the national economy is unfortunately still accompanied by a fairly high welfare gap on Java. The welfare gap indicator can be seen from the Gini index which describes income inequality that occurs in a region with a scale of 0-1. The province's Gini index in Java is still largely above the national Gini index. In 2017, the Gini index of the provinces of DKI Jakarta, West Java, D. I. Yogyakarta, and East Java were above the national Gini index of 0.39, while the other two provinces namely Central Java and Banten were below the national Gini index. Figure 2 shows the Gini index of each province in Java and Indonesia in 2008 and 2017. Like the national, the Gini index for each province also increased since 2008.

Inequality in income distribution is characterized by a group of rich people who constitute a small part of the whole society, dominating almost the entire economy. As a result, this group has easy access to economic activities, has high education, guaranteed health, skills and special skills so that the rich community can enjoy a better life by having these things. On the other hand, the poor who do not have the capital, sufficient skills, and high education will find it difficult to enter into economic activities and have a weak position in facing other groups (Djojohadikusumo 1994). Todaro and Smith (2006) state that income inequality will cause several things, namely economic inefficiencies, weakening social stability and solidarity, and issues of injustice.

Concerns about the distribution of income and wages have increased after the global financial crisis and economic setbacks generated in many countries. The study of the causes and consequences of inequality is often the background of debates in academics and policy making (Piketty 2014). International organizations also emphasize that distribution problems must be taken into account when designing economic policies (Dabla-Norris et al. 2015).

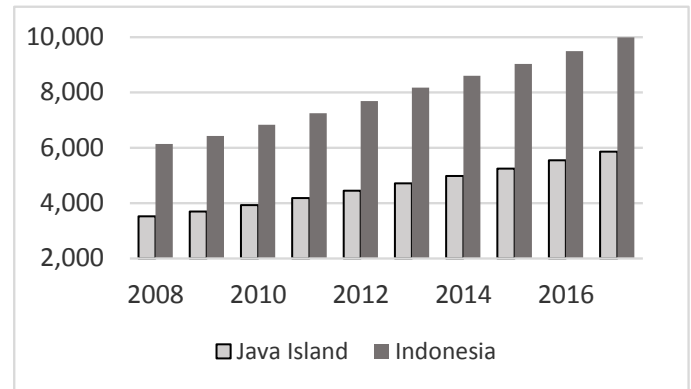


Figure 1 : Indonesian GDP and Java GRDP at Constant Prices (Million Rupiah), 2008-2017

Enforcement of minimum wages is one instrument that is considered capable of improving income distribution so as to reduce income inequality. Many countries use these instruments to increase the income of workers with low wages and to improve wage/income distribution (Rani and Ranjbar 2015). The minimum wage will have an impact on the wage distribution in two ways, namely the direct impact where there is an increase in wages from workers who get low wages (less than the minimum wage) to match the minimum wage. And the second is the indirect impact or impact of spillover where the minimum wage policy will increase the wages of workers whose income is greater than the minimum wage (Campolieti 2015).

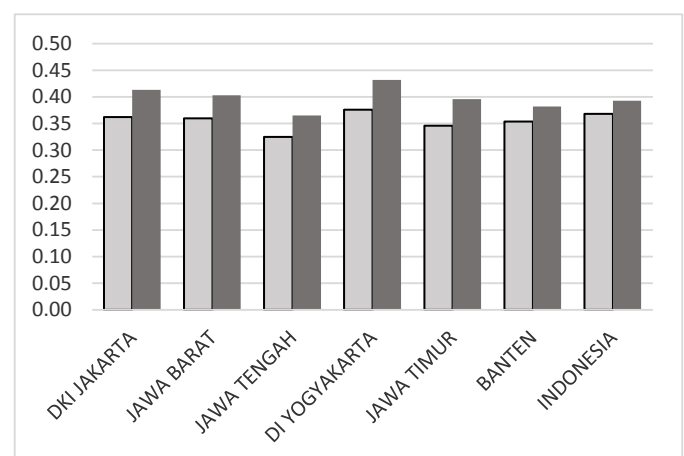


Figure 2 : Gini Income Index for each Province in Java and Indonesia, 2008 & 2017

The provincial minimum wage (PMW) of the provinces in Indonesia increases every year both in

nominal and real terms. PMW on Java also shows the similar trend. DKI Jakarta Province is the province with the fastest growing PMW. Massive demonstration of labor in 2012 was one of the important moments that pushed the big jump of the DKI Jakarta PMW so that in 2013 the DKI Jakarta PMW increased by 24.93 percent. The trend of increasing provincial real minimum wages in Java is also accompanied by an increase in the Gini income ratio in Indonesia.

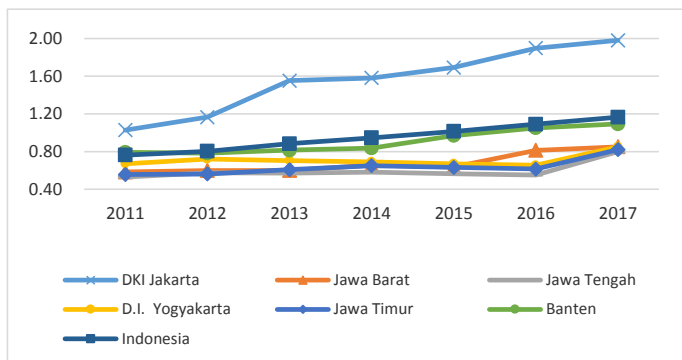


Figure 3 : Real PMW on Java and Average PMW in Indonesia (Million Rupiah), 2011-2017

Most analysis of the impact of minimum wages focused on the labor consequences that arise. The purpose of establishing minimum wages is certainly not to reduce work, but to distribute income to workers with low wages.

The redistributive effects of minimum wages depend on the labor market, income redistribution systems, and on their enforcement. On the one hand effective minimum wages will shift the wage distribution that benefits low-wage workers. On the other hand, the positioning of minimum wages can reduce the share of low-wage workers because they change jobs. There are no definite results, so the application of minimum wages is a risky policy but has the potential to be "profitable" in redistribution. Although there have been many studies on minimum wages and their role in the labor market, there is no consensus that minimum wages can reduce inequality (Neumark and Wascher 2008).

The minimum wage expected as one instrument that can improve wage distribution and ultimately reduce inequality has not yet demonstrated its role. Therefore, this study wants to analyze the relationship of the impact of rising minimum wages on wage inequality.

II. METHODS AND MATERIAL

This study uses panel data of 33 provinces in Indonesia from 2008-2017. The type of data in this study is secondary data from the Central Bureau of Statistics and the Indonesian Ministry of Manpower.

The variables are 10th to 90th percentiles of workers' real wages, provincial minimum wages, provincial economic growth, constant gross fixed capital formation (GFCF), share of workers with minimum diploma education, and share of workers in the formal sector.

The quantitative analysis adopted the method carried out by Lee (1999) and Autor et al. (2009) where the equation model built shows the impact of minimum wages on inequality between wage percentiles and median wages. The equation used is as follows:

$$w_{it}^q - w_{it}^{50} = \alpha_i + \beta_1^q (mw_{it} - w_{it}^{50}) + \beta_2^q (mw_{it} - w_{it}^{50})^2 + \beta_3^q \ln GFCF_{it} + \beta_4^q Formal_{it} + \beta_5^q Dipl_{it} + \beta_6^q Growth_{it} + u_{it}$$

where w^q is the log of real wages in the q^{th} percentile, w^{50} is the median log of wages, mw is the log of the real provincial minimum wage, $GFCF$ is the real log GFCF, $Formal$ is the share of workers in the formal sector, $Dipl$ is the share of the working population with a minimum diploma education level, $Growth$ is the rate of economic growth.

The log of the minimum wage difference with the median wage shows the effective minimum wage or

binding minimum wage. The impact of the minimum wage is shown by the square of the minimum wage difference log with the median wage. This quadratic form aims to capture the idea that changes in minimum wages will have a greater impact on changes in wage distribution when the value of the minimum wage approaches the median wage value. The wage log value will be centered in the middle of the distribution, so an increase of 1 log point minimum wage will affect the larger fraction of wages when the minimum wage is around the 50th percentile of the distribution compared to when the minimum wage is around the lowest percentile or top percentile.

III. RESULTS AND DISCUSSION

The average PMW growth in Java is largely below the average PMW growth rate throughout Indonesia during 2008-2017. Figure 4 shows the average PMW growth and the average wage Gini ratio in Java and Indonesia in 2008-2017. DKI Jakarta and East Java are provinces with an average of PMW growth above the national PMW growth rate with an average PMW growth of 9.50 percent and 6.81 percent respectively. Banten Province is the province with the lowest average of PMW growth on Java of 4.21 percent, while DKI Jakarta province which is directly adjacent to Banten province is the province with the highest PMW growth rate on Java.

DKI Jakarta is the province with the lowest average wage ratio for 2008-2017 among the provinces in Java with an average ratio of gini wages of 0.41. West Java Province is the province with the highest gini ratio on the island of Java at 0.45. The phenomenon of the DKI Jakarta province with the highest average PMW growth and the lowest average gini ratio on Java is inseparable from the status of the DKI Jakarta province as the national capital as well as the center of the national economy.

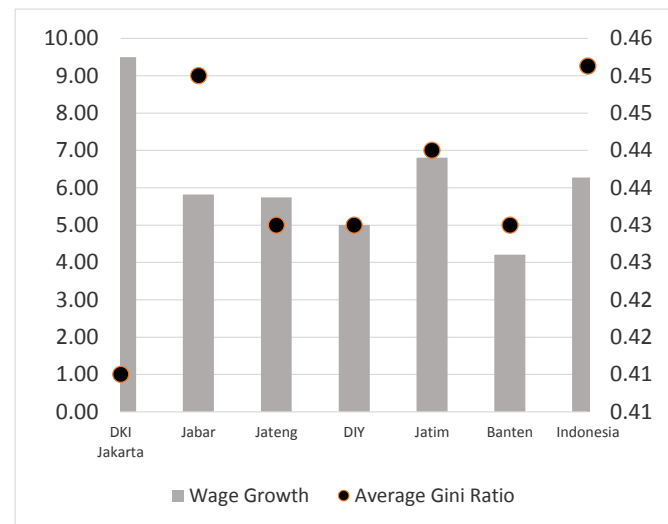


Figure 4: Average PMW Growth and Average Wage Gini Ratio on Java and Indonesia, 2008-2017

The estimation results show that the effective minimum wage is negatively related to the 30th percentile wage gap with the median wage with a coefficient value of -0.188 (Table 1a), it means that any 10 percent increase in effective minimum wage will also reduce the gap between the 30th wage percentile and the median wage of 1.88 percent *ceteris paribus*. The estimation results are in line with the empirical results obtained by Bosch and Manacorda (2010). In his research, Bosch and Manacorda (2010) built 4 different model specifications to measure the impact of minimum wages on the wage gap in Mexico.

Table 1b shows that the effective minimum wage is positively related to the 60th percentile wage gap with the median wage with a coefficient value of 0.159 (Table 1b), it means that every 10 percent increase in effective minimum wages will also increase the gap between the 60th percentile with median wage at 1.59 percent *ceteris paribus*. This condition shows the existence of spillover from the impact of the increase in provincial minimum wages on wages above the average.

Table 1a Results of the Estimation

VARIABLES	w ¹⁰ -w ⁵⁰	w ²⁰ -w ⁵⁰	w ³⁰ -w ⁵⁰	w ⁴⁰ -w ⁵⁰
mw-w ⁵⁰	0.242	-0.040	-0.188*	-0.142
(mw-w ⁵⁰) ²	0.397	-0.031	-0.381	-0.099
lnGFCF	-0.405	-0.324	0.360**	-0.208**
Formal	0.018	0.010	0.008**	0.005**
Dipl	0.008	0.007	0.011*	0.003
growth	0.058**	0.051**	0.035**	-0.020*
Constant	8.139	6.519	6.864**	3.934**

Table 1b Results of the Estimation

VARIABLES	w ⁶⁰ -w ⁵⁰	w ⁷⁰ -w ⁵⁰	w ⁸⁰ -w ⁵⁰	w ⁹⁰ -w ⁵⁰
mw-w ⁵⁰	0.159**	0.113	0.196	0.106
(mw-w ⁵⁰) ²	0.191	-0.177	-0.168	-0.608*
lnGFCF	-0.082	0.039	-0.166	-0.614***
Formal	0.005	0.002	0.005	0.007
Dipl	-0.011	-0.011	-0.008	0.006
growth	0.029**	0.030**	-0.043*	-0.021
Constant	0.159**	0.113	0.196	0.106

Note: *** sig. level 1%; ** sig. level 5%; * sig. level 10%

Investment (GFCF) is negatively related to the wage gap at the 30th, 40th and 90th percentiles with each coefficient -0.360, -0.208, and -0.614. This shows an increase in investment of 10 percent will reduce the 30th, 40th, and 90th percentile wage gap with the median wage of 3.6, 2.08 and 6.14 percent respectively.

The formal sector is positively related to the wage gap in the 30th percentile and 40th percentile with the median wage with coefficients of 0.008 and 0.005 respectively, it means that a 10 percent increase in formal sector workers will increase the gap between 30th and 40th wage percentile and the median wages of 0.08 percent and 0.05 percent respectively.

Economic growth is negatively related to the wage gap in all percentiles except the 90th percentile. This

shows that an increase in economic growth will reduce the wage gap in each percentile with the median wage except at the 90th percentile.

IV. CONCLUSION

Effective minimum wages have a significant effect on wage distribution at the 30th percentile and 60th percentile. An increase in effective minimum wages will reduce the wage gap in the 30th percentile and also increase the 60th percentile gap with the median wage. This indicates the existence of two different minimum wage impacts on the wage distribution.

Investment will reduce the wage gap in the 30th, 40th and 90th wage percentiles. Investment will improve labor absorption or increasing wages for workers, especially for low wage workers.

Economic growth is an effective indicator in reducing the overall wage gap because inequality between almost all wage percentiles and the median wage will be reduced due to economic growth. Therefore, economic growth is one of the important factors in improving wage distribution through a reduction in wage inequality.

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