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The Impact of Minimum Wages on Investment and Employment in Indonesia

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The Impact of Minimum Wages on Investment and Employment in Indonesia

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ABSTRACT

The labor market in Indonesia cannot absorb all of the labor force available, which allows employers to have greater bargaining power over employees. To protect and to increase labor welfare, the government issued minimum wages regulation. Although the purposes of the minimum wage policy were widely accepted, there is great disagreement about whether the minimum wage is effective in achieving its objectives.

We found that the minimum wage policy in Indonesia has a positive impact on the average wage. 1 percent of the increase of the minimum wage will increase the average wage by 0.71-0.98 percent. The minimum wage has a negative impact on employment to the working age population ratio. 1 percent of the increase of the minimum wage will decrease the employment to population ratio by 0.62–0.76 percent. The minimum wage only affects total investment. Total investment will decrease 0.09% if the minimum wage increases by 1%.

Keyword: average wage; employment; investment; labor; minimum wage.

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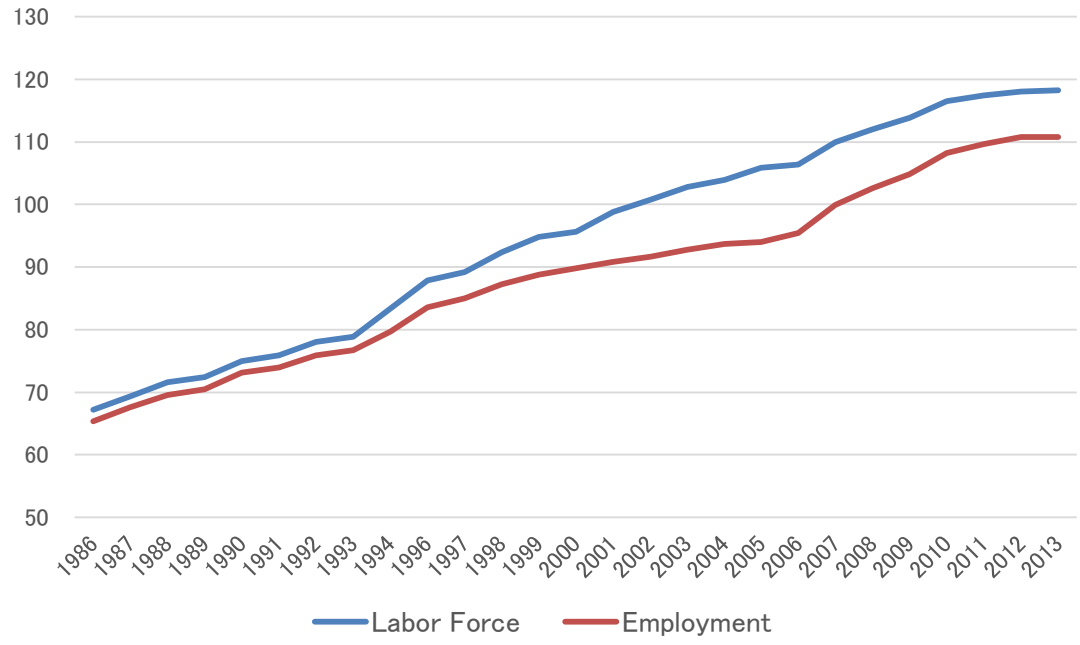
1. INTRODUCTION

In Indonesia, the number of people who want to have jobs exceeds the ability of the labor market to hire them, it allows employers to have greater bargaining power over employees. Employers tend to give lower salaries, because they want to minimize their costs and maximize their profits. Although they offer low wages to employees, employees have no power to refuse them.

Figure 1. Number of Labor Force, Labor in Indonesia(Millions)



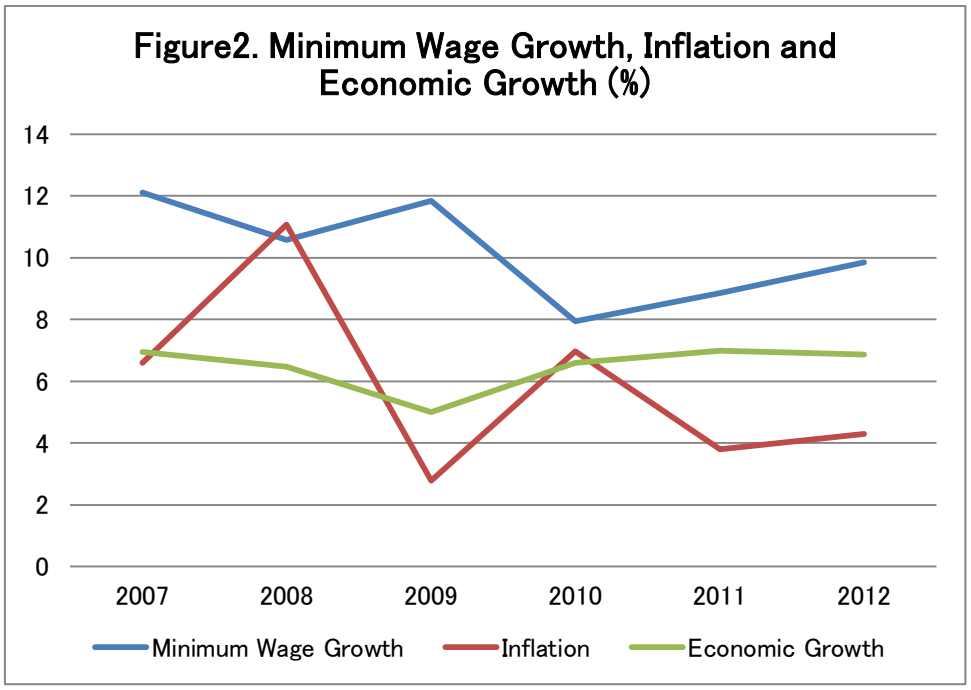
Source : Statistics Indonesia (modified)

Actually, lower wages can serve as a country's competitive advantage, because they can attract investment, in addition to natural resources, and other factors. Countries which have lower wages tend to be favored by investors.

To protect and increase labor welfare, Indonesian government issue regulations concerning minimum wages. In Indonesia, the minimum wage is the lowest monthly wage consisting of basic salary and fixed allowances, set by the governor as a safety net (Manpower and Transmigration Ministry Regulation, No. 7, 2013). The determination of the minimum wage is based on the need of a decent life. It is a standard requirement for a

single worker/laborer to life physically for one month. Employers should pay their employees equal to or more than the minimum wage set by the government.

The levels of regional and provincial minimum wages have increased year by year. The highest increase was in Jakarta province in 2013. The increase of the minimum wage was around 40 percent. In 2012, the increase of minimum wage in Jakarta province was only around 18 percent. The growth of the minimum wage is usually higher than inflation and economic growth (figure 2).



The increase of the minimum wage becomes a hot political issue every year. The opponents of the minimum wage argue that the increasing of minimum wages may hurt Indonesia's investment climate. For new investors (particularly foreign investors), such a minimum wage increase can become a reason not to invest in Indonesia, as they prefer low production cost through cheap labor. It can also make established investors decide to move to other emerging countries where labor is cheaper. The supporters of increasing the minimum wages reply that Indonesia still remains an attractive destination for foreign companies, due to the solid pace of its economic growth.

Despite decades of the implementation of minimum wages, the debate about its costs and benefits continue to this day. Although the purposes of the minimum wage policy were widely accepted, there is great disagreement about whether the minimum

wage is effective in achieving its objectives. To gain more understanding about the impact of that policy the paper proposes the following questions:

- Do minimum wages have any significant impact on wage earnings and the employment rate of urban, rural, male and female workers?
- Is there any significant impact of minimum wages on investment in Indonesia?
- What kind of policy implications can the government apply according to the results of the current analysis?

These research questions address key issues related to the impact of minimum wage policy and how to evaluate the regulations that have been or should be implemented by the government. Although this is not the first empirical study which explores the relationship of the minimum wage and the average wage, or employment and investment, we focus on both rural and urban areas, and both male and female employment.

This study consists of five parts; Introduction introduces the background of this study. It explains why this study is important, what the objectives of the study are, and what questions should be answered. It also describes the scope of this study and how it will estimate and analyze the data. Literature review contains a comprehensive literature review, and explores the nature of minimum wage policy, involving several theoretical approaches, models and their findings. Methodology outlines the sources of data and the research methodology. Result and Discussion introduces the results of the estimation and the discussion of those results. The last part presents the conclusions and proposes policy recommendation that should be taken, based on the results of the study.

2. LITERATURE REVIEW

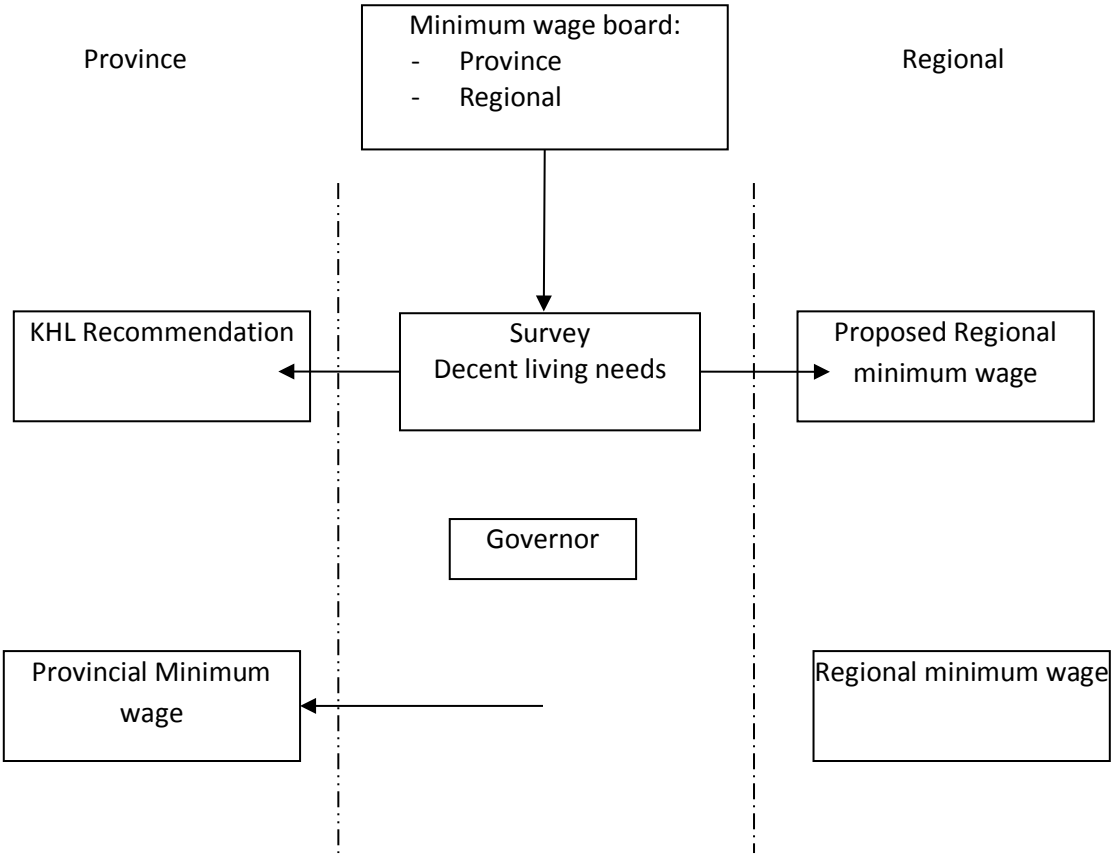
The minimum wage has been regulated since 1969. The objectives of minimum wages are to give protection to employees, to lift up the purchasing power of employees, and to increase their welfare and those of their families. A minimum wage setting, based on decent living needs, or Kebutuhan Hidup Layak (KHL) is the main objective. KHL is a standard requirement for a single worker/laborer to live physically for 1 (one) month

2.1 Mechanism of minimum wage setting

The governor sets a minimum wage, based on the proposal of the board, with respect to: the decent living needs, the consumer price index, economic growth, labor market conditions, and so on. There are two types of minimum wage - the provincial minimum wage and the regional/city minimum wage. The minimum wage setting mechanism is as figure 3.

Figure 3

Mechanism of minimum wage setting

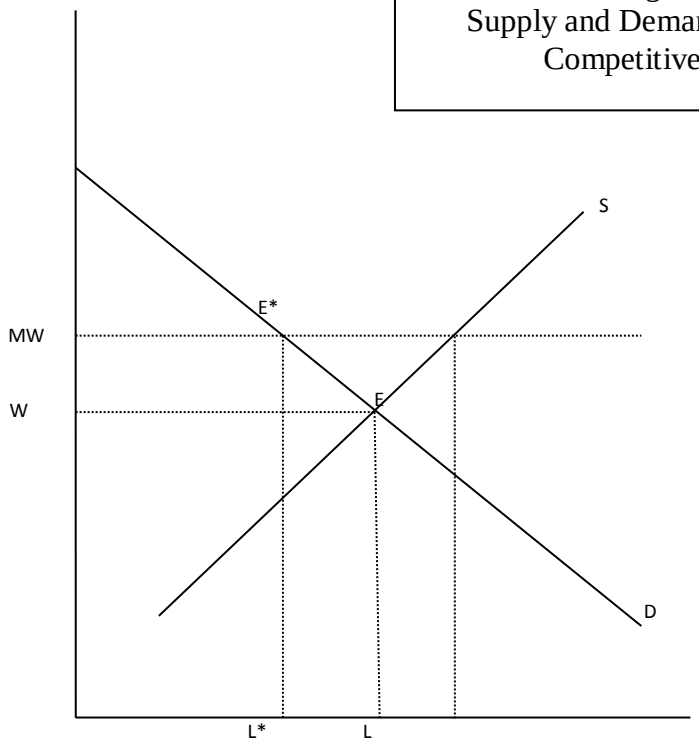


2.2 Economic theory of the impact of minimum wages.

Two labor market models in the literature explain the nature of the labor market: they are the Competitive model and the monopsony model. In a competitive market, wages are determined by the supply and demand of labor. The demand curve (D) is a downward-sloping curve. The supply curve (S) is an upward-sloping curve. The price of labor (wage) adjusts until the quantity of supply is equal to the quantity demanded. The

equilibrium point (E) of the wage rate, and labor, is demonstrated by the point where the supply and demand curves intersect. If the minimum wage is lower than equilibrium, it has no effect, because all workers have higher wage than minimum. If a minimum wage setting is higher than W, the equilibrium will shift from E to E*. Employment will decrease from L to L*.

Figure 4
Supply and Demand of Labor in Competitive Market

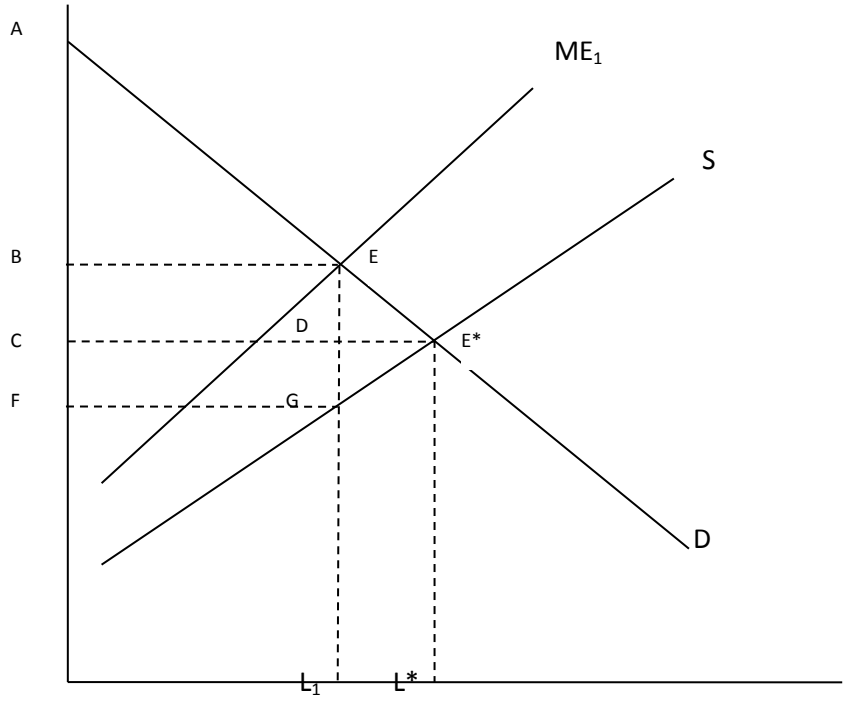


Monopsony market

The monopsony model assumes that only one company dominates the labor market. The company owner has the power to set the wage rate in order to maximize the profit. If a firm faces a positively sloped supply curve for labor (S), it will base its decisions on the marginal expense of additional hiring (ME_l). Because S is positively sloped, the ME_l curve lies above S. The curve S can be thought of as an "average cost of labor curve," and the ME_l curve is marginal to S. At l_1, the equilibrium condition $ME_l = MRP_l$ holds, and this quantity will be hired at a market wage rate of C. Notice that the monopsonist buys less labor than would be bought if the labor market were perfectly competitive (l*) (Snyder and Nicholson, 2008).

Figure 5.

Supply and Demand of Labor in Monopsony Market



2.3 Previous Studies

In reviewing the international evidence on the effects of minimum wages, it is useful to distinguish between industrial countries, where enforcement capabilities are high, and developing countries, where non-compliance is widespread. In the industrial countries, most of the studies published until the early 1990s indicate a negative impact of minimum wages on employment (Martin, 2001).

Newmark and Wascher (1992) reevaluate existing evidence on the effect of the minimum wage on employment, using panel data. Their estimates indicate that a 10 percent increase in the minimum wage causes a decline of 1-2 percent in employment among teenagers and a decline of 1.5-2 percent in employment for young adults. The authors also find evidence that youth subminimum wage provisions enacted by state legislatures moderate the unemployment effects of minimum wages on teenagers.

Gindling and Terrel (2006) investigate the effects of the legal minimum wage on employment, and hours worked among workers covered by minimum wage legislation, as well as those for whom it does not apply (the uncovered sector) in Costa Rica. Using

1988-2000 micro data, they find that a 10% increase in minimum wages lowers employment in the covered sector by 1.09 percent, and decreases the average number of hours worked, of those who remain in the covered sector, by about 0.6 percent. They do not find a significant impact on hours worked in the uncovered sector. Finally, they show that despite the wide range of minimum wages, the largest impact on the employment of covered sector workers is in the lower half of the skill distribution.

Alaniz, Gindling and Terrel (2011) use an individual and household panel data set to study the impact of changes in legal minimum wages, on the host of labor market outcomes, which include: a) wage and employment, b) transition of workers across jobs (in the covered and uncovered sectors) and employment status (unemployment and out of the labor force), and c) transition into and out of poverty. They find that changes in the legal minimum wage affect only those workers whose initial wage (before the change in minimum wage) is close to the minimum The estimates from the employment transition equations suggest that the decrease in covered private sector employment is due to a combination of layoffs, and reductions in hiring. Most workers who lose their jobs in the covered private sector, as a result of higher legal minimum wages, leave the labor force or go into unpaid family work; a smaller proportion find work in the public sector. We find no evidence that these workers become unemployed.

Martin (2001) analyzed data from a 1993 labor force survey, to evaluate the effects of this hike on wage earnings and wage employment. The results suggest that the minimum wage hike had a modest impact on Indonesian labor market outcomes, increasing average wages by 5-15 percent, and decreasing urban wage employment by 0-5 percent. The employment effects, however, varied substantially by firm size: small firms apparently experienced substantial decreases in employment, whereas some large firms actually saw their employment increase. Workers in those large firms, the author concludes, are the winners from a minimum wage hike. This paper is the main reference of the paper.

3. RESEARCH METHODOLOGY

To estimate the impact of the minimum wage, this study will use fixed effect model which estimates panel data from 31 provinces in Indonesia, from 2007-2012. All the estimations use the minimum wage as an explanation variable and number of

industrial zone and dummy crises 2008 as control variables, in order to satisfy the least square assumption. We use the industrial zone number, because industrial zones are part of an infrastructure that can attract investors, and absorb many workers. We use crisis 2008 as our dummy variable, because the 2008 crisis was in the period 2007– 2012. This crisis had a big impact on the Indonesia economy. By using this dummy, we want to determine the impact of that crisis compare to other years.

3.1. The impact on the Growth of Wages:

Individual data on the earning of laborers and employees can be used to evaluate whether minimum wages are binding. These data provide information on how many wage earners make less than the corresponding minimum. Such clustering of individual earnings would indicate an effective enforcement of minimum wages (Rama, 2001).

The equation below estimates the impact of the minimum wage on the average wage; it is a log-log model. The equation to be estimated is therefore:

$$Log^{j}W_{it} = a_1 + a_2\, Log\, MW_{it} + a_3 Nizone_{it} + a_4 Dcrises_t + \varepsilon_{it} \qquad (1)$$

j	= male, female, urban, rural
i	= 1,2,3……, 31
t	= 2007,……..,2012
W_{it}	= The average wages in province i and year t
MW_{it}	= Provincial Minimum wage in province i and year t
$Nizone_i$	= Number of industrial zone in province i and year t
$Dcrises_t$	= dummy crises in year t
ε_{it}	= stochastic disturbance.

The dependent variable in this econometric analysis is the log of average wages. This variable estimates separately, between male and female, and urban and rural areas. The data are obtained from statistics Indonesia. The criteria for urban areas are specific requirements in terms of population density, the percentage of farm households, and the presence/access to urban facilities. These criteria have been ruled by the head of statistics regulation no. 37/2010, which determines urban and rural classification in Indonesia.

An independent variable or explanatory variable for the estimation is the log of the minimum wage at provincial level. We expect that the impact of the minimum wage on the average wage will be positive.

The industrial zone in Indonesia may affect both explained and explanatory variables. In order to check the impact of industrial zone, we use this control variable in the equation. Economic crises in 2008 have big impact to Indonesia economy, to clarify we also put it in the equation. We cannot neglect this impact by using crisis 2008 as a dummy variable. Number industrial zone to be expected has positive expected sign and crisis in 2008 has negative expected sign

3.2.The impact on employment

The dependent variable in this analysis is the level of employment, relative to the number of working age in each province. Leon (1981) said that the best known of these is the unemployment rate, which is probably followed by the level of employment. However, another useful - although less widely used measure of economic performance - is the employment-population ratio. It addresses the question, "What proportion of the working-age population is employed?". Moreover, the unemployment rate provides a simple yardstick for measuring the overall state of the economy: large increases significantly bad times, declines indicate recovery and expansion. But the employment-population ratio can be similarly used to show how well the economy is performing.

This study use two definitions of population (N), the working age population and the labor forces. So, instead of the employment to working age population, this study also estimates the employment to labor force ratio. The main reason for this is to check the robustness of the variable. For instance, the estimation coefficient b_2 could be negative when using one of the employment indicators, but significantly positive when using another indicator. The equation is shown below:

$$\frac{{}^{j}L_{it}}{N_{it}} = b_1 + b_2\left(\frac{MW_{it}}{R_{it}}\right) + b_3 Nizone_{it} + b_4 Dcrises_t + \varepsilon_{it} \quad (2)$$

j = Male, Female, Urban, Rural

i = 1,2,3……, 31

t = 2007,……..,2012

$\frac{{}^{j}L_{it}}{N_{it}}$ = Ratio of employment (exclude Agriculture sector) to population

in province i and year t.

$\frac{MW_{it}}{R_{it}}$ = Ratio of Minimum wage to GRDP over total employment (R_{it}) in province i and year t.

$Nizone_{it}$ = Number of industrial zone in province i and year t

$Dcrises_t$ = Dummy crises in year t

ε_{it} = Stochastic disturbance.

The independent variable is the minimum wage, relative to GRDP over total employment (labor productivity). The notation of the explained variable is. Each province has a different GRDP over total employment. Ratio of Minimum wage to GRDP over total employment draws the condition of the minimum wage in each province, relative to the contribution of worker to make produce output. The expected sign for the impact of minimum wage on employment is negative. It means that if the minimum wage is increasing, employment will decrease.

This equation also uses industrial zones and crises 2008 as control variables, as mentioned in the second paragraph of this chapter. The number of industrial zone is as control variable for capturing the impact of industrial zones, and financial crises 2008 is a dummy variable. The number of industrial zones has positive expected sign and crisis in 2008 has negative expected sign similar to the first equation.

3.3 The Impact on Investment

A vital question, when launching a minimum wage, is whether it will increase investment. This issue can be addressed by the following equation:

$$\frac{^{k}I_{it}}{Y_{it}} = d_1 + d_2\left(\frac{MW_{it}}{R_{it}}\right) + d_3 Nizone_{it} + d_4 Dcrises_t + \varepsilon_{it} \quad (3)$$

k = Total investment and FDI

i = 1,2,3……, 31

t = 2007,……..,2012

$\frac{I_{it}}{Y_{it}}$ = Ratio of investment (Gross Capital Formation) to output in province i and year t.

$\frac{MW_{it}}{R_{it}}$ = Ratio of minimum wage to GRDP over total employment in province i and year t

$Nizone_{it}$ = Number of industrial zone in province I and year t

$Dcrises_t$ = Dummy crises

ε_{it} = Stochastic disturbance.

The dependent variable in this analysis is the level of investment relative to the economic output in each province. The ratio investment to output is described by**.** Investment in this analysis can be measured in two different ways. They are gross capital formation (total investment), and foreign direct investment. We can collect total investment data and foreign investment data, but some foreign investment data are missing.

The dependent variable is the same as the second equation, which estimates the impact of the minimum wage on employment. The independent variable is the minimum wage, relative to GRDP over total employment (labor productivity). The notation of the explanatory variable is.

As mentioned in the second paragraph of this chapter, this study uses the number of industrial zones and financial crises 2008 as control variables. Number industrial zone to be expected has positive expected sign and crisis in 2008 has negative expected sign.

4. DATA ANALYSIS AND RESULT

4.1. Impact on Average Wage

The results for the impact of the minimum wage on the average wage are reported in Table 1. We can conclude that the minimum wage has a positive, statistically significant impact, on the average wage in all estimation. These results imply that increasing 1% of the minimum wage led 0.86% increase in the average wage of urban employees, 0.71% increase in rural employees, 0.9 % increase in male employees and 0.98 increase the average wage in male employees. Actually, these results are in line with the expected result. We can say that minimum wage policy successfully increasing the welfare of worker in Indonesia.

The impact of minimum wage on average wage in urban is greater than in rural. The characteristics of industries in urban area are capital intensive. Most of them are big and medium industries which fulfill international market (export oriented), skillfull or

educated employees and highly wage. These characteristic led minimum wage policies can implement well. Labor unions in big and medium companies also are stronger than small companies. They push managements to give salary equal to minimum wages that have been set by government.

Male employees are less affected by minimum wages policy than female employees. For female employees, there is gender discrimination, especially with regard to wages. According to ILO–Jakarta (2013), the gender gap is still very distinct in Indonesia. "The gender gap is still very strong in Indonesia, where women have a poor outcome in a number of indicators, including formality, vulnerability, wages, and labor force participation. Some gender differences in results can be caused by the level of education, work, and working time, while some of the differences in the results are related to gender discrimination. Minimum wage policy makes female employees get their right to have same level of salary as a male.

Table 1.
The Result of Estimation
The Impact of Minimum Wage on Average Wage

Area/Gender	URBAN	RURAL	MALE	FEMALE
Explanatory Variables	Fixed Effect Model			
C	1.047*** (5.751)	1.610** (2.183)	0.758*** (4.653)	0.165 (0.917)
LogMW	0.861*** (27.53)	0.715*** (5.640)	0.899*** (32.14)	0.983*** (31.68)
Nizone	0.008 (0.627)	0.084 (1.642)	0.023** (1.977)	0.026** (2.048)
Dcrises	-0.021*** (-3.731)	-0.004 (-0.163)	-0.015*** (-3.056)	-0.012** (-2.104)
Adjusted R-squared	0.932	0.553	0.958	0.954
F-statistic	79.062	7.938	130.9	118.06
Durbin-Watson stat	1.479	2.026	1.496	1.622
Observation	186	180	186	186

The results show that the number of industrial zones have an insignificant result in urban and rural; yet the industrial zone was believed to be a trigger for developing areas. These zones were built to strengthen Indonesian infrastructure, and, in turn, attract more investment. Based on HKI (Industrial Park Association) data as of June 2012, the total industrial land in Indonesia reached 27320.6ha. According to regulations, developers can build the industrial area up to 70% of the total available land. The 30% is for the development of infrastructure, and green open spaces. The total of the available land that can be built is 19124.4 hectares, and 58.6 percent, or 11212.48 hectares, has been occupied. Therefore, the total land available is 7911.98 hectares. HKI consists of 61 industrial parks with 7211 companies as the tenants. Industrial zones can expect to increase the income of workers, but unfortunately we cannot say that they effect an average wage increase, because of an insignificant result.

Even its have insignificant result in area but minimum wage have significant impact on gender. Minimum wages have significant impact on average wage in male and female employees, but coefficients of female are little higher than male.

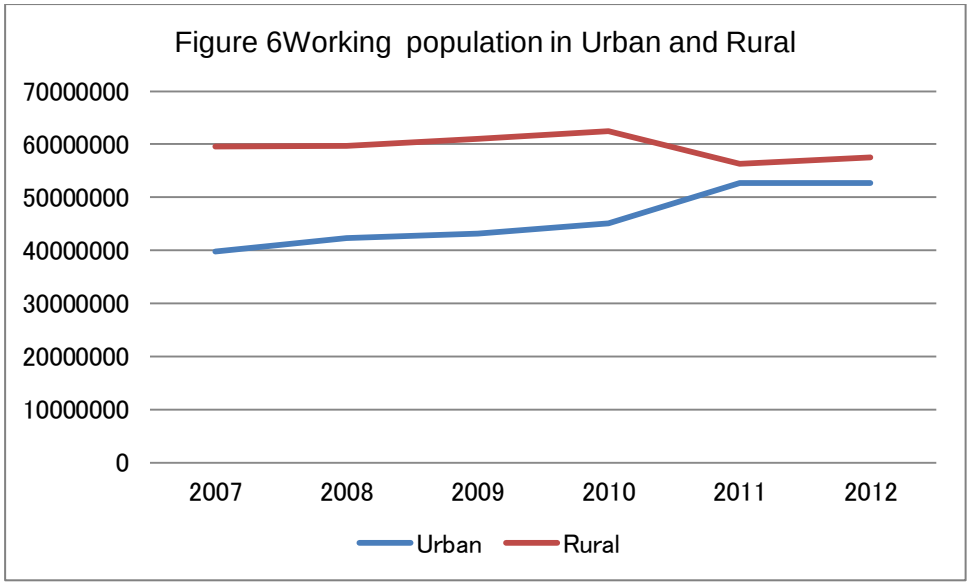
The result shows that the 2008 crisis was significant on urban, male and female employees. It means that only in rural areas we cannot distinguish different impact 2008 crises with other years. The financial crisis started in the United States in 2007, and affected financial institutions in many OECD countries. It was only when the crisis turned into a global economic recession, that developing and emerging market economies were affected, mainly through disrupted trade channels, and in some cases, through workers' falling remittances. In many developing countries, the economic consequences of these indirect effects were as severe as the direct effects were on developed countries. The worldwide recession, the first since the Second World War, led to a reduction of world gross domestic product (GDP) by 0.6 percent in 2009 (UNCTAD, 2010).

4.2 Impact on Employment

Two different definitions of employment are used in this study. One of them is employment, relative to the working age population ratio, while the other is employment relative to the labor force. The primary estimation is employment in the working age population; the second definition is only to strengthen the result of primary estimation or to check the robustness.

Table 2 The Result of Estimation The Impact of Minimum Wage on Employment (Part I)				
AREA	URBAN		RURAL	
Dependent Variables	Employment/ Population	Employment/ Labor Force	Employment/ Population	Employment/ Labor force
Explanatory Variables	Fixed Effect Model			
C	***195 (5.181)	0.777*** (7.034)	0.178*** (12.64)	0.379*** (10.79)
MWPERR	-0.883 (-1.122)	-1.811 (-0.785)	-0.623** (-2.110)	-2.773*** (-3.762)
Nizone	0.024 (1.543)	0.036 (0.776)	-0.007 (-1.239)	0.03** (2.070)
Dcrises	-0.013** (-2.053)	0.0009 (0.046)	-0.013*** (-5.307)	-.033*** (-5.379)
Adjusted R-squared	0.917	0.065	0.885	0.914
F-statistic	63.35	1.388	44.35	60.55
Durbin-Watson stat	2.191	2.359	1.27	1.858
Observation	186	186	180	180

We found that minimum wages have a negative impact on the employment to working age population ratio in rural areas, but we cannot come to the same conclusion in urban areas, because of insignificant results (see Table 2). This finding is strengthened by the result of the employment to labor force, which shows similar information that the minimum wage has a significant negative effect on employment to labor force. So, we can conclude that if the minimum wage increased by 1 percent, the employment to working age population ratio decreases by 0.6 percent in a rural area.



We cannot conclude, though, that minimum wages affect employment in urban area. We can see from the picture above that working population trend in urban area are increasing, while working population in rural areas are opposite. Because of good infrastructure, good economic growth and good investment climate in urban, job opportunities are greater than in rural.

In male and female employees, we found that minimum wages have a negative impact on the employment to population ratio (see Table 3). These results are supported by the estimation of the impact of minimum wages on employment to labor force that have the same sign. We can conclude that if the minimum wage increases by 1% the employment to population ratio will decrease 0.69% in male employees, and 0.76% in female employees.

The results show that the number of industrial zones has a significant and positive result only in male employees, but the opposite results have been found for urban, rural and female employees. We can conclude that increasing 1 industrial zone will increase employment to population ratio by 0.02. Industrial zone have insignificant impact on employment to population ratio in urban, rural and female employment.

The dummy crises of 2008 show negative results, so we can conclude that crises have a different impact on the estimation, compared to other years. The effect of the 2008 crisis was observed by many researchers, because this crisis not only affected developing countries, but also developed countries. The result is similar to what have been happened in China, where the 2008 crisis had a negative impact on employment. Laike Yang and Cornelius Huizenga (2010) analyze how China has coped with the global financial and

economic crisis: the situation affected China's economy rather than its financial system. It caused a dramatic fall in China's foreign trade and foreign direct investment inflows, and higher unemployment rates and strong price fluctuations.

Table 3
The Result of Estimation
The Impact of Minimum Wage on Employment (Part II)

GENDER	MALE		FEMALE	
Dependent Variables	Employment /Population	Employment /Labor force	Employment /Population	Employment /Labor force
Explanatory Variables	Fxed Effect Model			
C				
MWPERR	-0.692** (-2.045)	-2.375*** (-3.028)	-0.763** (-2.071)	-3.574*** (-2.826)
Nizone	0.024*** (3.666)	0.067*** (4.311)	0.005 (0.719)	0.040 (1.609)
Dcrises	-0.016*** (-5.801)	-0.026*** (-4.019)	-0.014*** (-4.519)	-0.042*** (-3.957)
Adjusted R-squared	0.945	0.946	0.869	0.88
F-statistic	97.37	99.14	38.16	42.34
Durbin-Watson stat	1.432	1.957	2.257	2.171
Observation	186	186	186	186

4.3 Impact on Investment

Two different explained variables are used in this study. One of them is foreign direct investment, and the other is total investment. Minimum wages have a negative impact only on the total investment to output ratio. We can conclude that increasing 1 percent of the minimum wage will decrease the investment to GRDP ratio by about 0.09% percent.

We cannot say that minimum wages affect FDI because the result is insignificant. For the foreign investor, the rise in minimum wages will not threaten FDI to Indonesia. The country is still attractive to foreign investors. With a large internal market, a growing middle class, abundant natural resources, and a strategic location within Southeast Asia, Indonesia has a natural appeal to foreign investors who want to put their money into the country. Years of reforms in a vast range of policy areas are now being rewarded: table growth, enhanced investor confidence, particularly among foreign investors, and a renewed rise in foreign direct investment (FDI) inflows (Otsuka, Thomsen and Goldstein, 2011).

Table 4
The Result of Estimation
The Impact of Minimum Wage on Investment

Dependent Variables	GROSS CAPITAL FORMATION		FDI	
Explanatory Variables	Fixed		Fixed	
	Coefficient	T Statistic	Coefficient	T Statistic
C	7.074***	50.86	11.66***	13.051
MWPERR	-9.96***	-3.426	8.411	0.477
Nizone	0.207***	3.582	0.106	0.342
Dcrises	-0.109***	-4.548	-0.337**	-2.281
R-squared	0.965		0.533	
F-statistic	156.55		7.279	
Durbin-Watson stat	0.975		1.649	
Observation	186		144	

We can say that the industrial zones were affected by total investment but we cannot say minimum industrial zone affect FDI because insignificant result. The number of industrial may be too small. It is only centered on Java Island, and only 12 provinces

over 34 provinces. According to data from BKPM, there are 61 industrial zones, with a total of 7211 companies. This is small compared to the number of middle sized and large companies, of which there are 23,257. The 2008 crisis had significant impact on total investment. We could identify any difference between the 2008 crisis and other years.

5. CONCLUSION AND POLICY IMPLICATIONS

5.1. Conclusion

After making some estimations, we found that the minimum wage policy in Indonesia has a positive impact on the average wage. 1 percent of the increase of the minimum wage will increase the average wage by less than 0.71-0.98 percent.

We found that the minimum wage has a negative impact on employment to the working age population ratio in except in urban are. It is in line with the previous studies that minimum wages have negative impact on employment. 1 percent of the increase of the minimum wage will decrease the employment to population ratio by 0.62–0.76 percent.

The minimum wage only affects total investment. Unfortunately, we cannot come to any conclusion about foreign direct investment, because, again, we have an insignificant result. We can see from Table 6 that total investment will decrease 0.09% if the minimum wage increases by 1%.

The industrial zones have significantly positive impact but only on average wage in male and female, on employment in male and on investment in total investment. The 2008 crises has different impact than other years. The 2008 crises has negative significant impact in almost all estimations.

5.2. Policy Implication

From these results, we can give some policy implications to Indonesian Government:

- The increase of the minimum wage can decrease employment and investment. To overcome this negative effects, the government should have a program to attract investor to come to in Indonesia, such as simplicity of investment regulation, tax incentive, built an infrastructure, promotion etc. Infrastructure that should build by government are deep sea port, airport, road etc.

- The number of industrial zones is few in number, and they have a statistically significant impact, but only on urban and male employment. If the number of industrial zones is large, investors will be attracted, and, in turn, employment will increase. Therefore, the government should increase the number of industrial zones.

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