The Impact of Provincial Minimum Wage Policy on Employment in Aceh Province

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Abstract

This study is conducted to address the prevalent issue regarding the responsiveness of real provincial minimum wage in performing the adjustment when employment shock happened in Aceh province, and its impact on employment in the various economic sector. To analyze the issue, secondary data in the form of panel data for the period of 1997-2016 is used, and this is classified based on economics sectors, i.e. agricultural sector, industrial sector and the service sector. The method used in this research is descriptive quantitative data analysis, with Error Correction Model (ECM) and Fixed Effects Model (FEM). The research found that the rigidity level of provincial minimum wage in performing the adjustment when employment shock happened in Aceh province is significant, and is different among sectors, in which the manufacturing sector takes a long time to make the adjustments. Then the dynamic response of the real provincial minimum wage in employment shock in each sector achieve long-term equilibrium. In addition, the real provincial minimum wage and labor productivity sector responded positively and significantly to employment in all sectors, and the estimation result obtained by the impact of labor productivity is greater than the impact of real provincial minimum wage.Therefore, the productivity of the labor sector should be considered as one of the minimum wage policy basis, in addition to the need for reasonable living and the inflation rate.

Keyword: Provincial Minimum Wage Policy, Employment

1. Introduction

In a competitive labor market, assumed that wage rates are flexible, so then the wage rates will always be able to adjust demand and supply of labor (Mankiw, 2004; Kaufman and Julie, 2006)). It means in a competitive market is predicted that the change in the wage rate will lead to the changes in the employment. The facts reveal that during 1997-2016 in Aceh province, average labor force amounted to 1,852,574 people with an increase of 1.55% per year, while the employment only 1,690,181 people with an increase of 1.47% per year (Central Statistics Agency of Aceh Province, 2016). This fact indicates that the demand for labor is not in accordance with the labor supply, which means the wage level in Aceh is not flexible or rigid.

The effect of labor wage rigidity in Aceh caused by the government interference in the wage system, such as the implementation of Provincial Minimum Wage (PMW) policies as stated in the Act of RI. No. 13 of 2003. Employers are required to pay the lowest wages equal to minimum wage or prohibited to paid wages lower than the minimum wage. Means employers do not have the freedom to set wages lower than the minimum wage. The considerations of the government sets the PMW based on the need for decent living by taking into account productivity and economic growth (the Act RI. No. 13 of 2003). The aim is (1) to ensure a decent life for workers by raising the income of workers through wage increases (2) as an incentive to encourage increased labor productivity for the company, and (3) to achieve economic growth.

To achieve the goal of PMW, the government is seeking a wage increase of workers by considering (1) the Living Needs (2) the rate of inflation, and (3) economic growth. As a consequence of the calculation of PMW in Aceh province, the nominal wages have been increased on average annually by 16.74% and in real terms by 4.90% over the period 1997-2016. The same policy was also adopted by some other countries such as Latin American, Caribbean and Japan, that tend to increase the minimum wage (Groisman, 2014; Kambayashi et.al.,2013).

In addition, formal employment based on PMW in the province of Aceh over the period 1997-2016 on average annually increased by 4.53% in the agricultural sector, 8.11% in the manufacturing sector, and of 2.67% in the services sector (Central Statistics Agency of Indonesian, 2016).

The above facts reveal that (1) on the side of employers, PMW considered as rigidity (2) The policy of PMW sought by the government to raise those wages each year (3) the increase of PMW will effect the increasing of formal employment in varies sectors of economy. As a result, predicted that higher PMW set by the government, more rigid the wages, and longer the adjustment process when shocks employment, and thus predictable conditions vary across economic sectors in the Aceh province.

In addition, these facts reveal that in the Aceh province, predicted that the increase in PMW will have a positive impact on formal employment. This fact contradicts with the theory of competitive labor market, and contrary to some previous research, among others Bossler and Hans-Dieter (2016), Christl et.al. (2016), as well as Long and Jin (2016). Conversely in line with the findings of Baek and WooRam (2016), Hohberg and Lay (2015), Sorkin (2015), Daniel et.al. (2013), Brown et.al. (2014), Mitsis (2015), Sun et.al. (2015), Meer and Jeremy (2016), Addison et.al. (2013).

The contradiction between theory and fact in the Aceh province and the controversy of several research findings of the impact of PMW on employment, is predicted because no consideration of sectoral labor productivity as independent variables in capturing the business cycle in the economy. Therefore, in this study these variables predicted as control variables of

the business cycle, besides real PMW will impact positive/negatively on employment, particularly in the Aceh province.

2. Methodology

This study used secondary data, sourced from the Central Statistics Agency of Aceh Province, and General Directorate of Industrial Relations, Labor, and Social Security (Indonesian). The data in the form of panel data, time series from 1997-2016 and unit cross-section of economic sectors grouped into agricultural sector, industrial sector and service sector. The method used in this research is descriptive quantitative data analysis, which data analysis models used are: (1). Error Correction Model (ECM), this model is intended to estimate and test the significance of PMW in Aceh province in adjustment shocks employment and analyze the degree of rigidity of wages in each sector of economy. The steps required are the unit root test, test the degree of integration, long-term equation estimation, cointegration test, short-term equation estimation and testing of assumptions Classic. The assumption that accompany the model in this study that the influence of economic variables are included in the changes affecting employment in the minimum wage province. Based on these assumptions, ECM model estimated as follows: (Banerjee et.al, 1993 and De Boef, 2000) are as follows:

$$\Delta RPMW_{i,t} = \delta_1 \Delta E_{i,t} + \gamma(RPMW_{i,t-1} - \beta_0 - \beta_1 E_{i,t-1}) + \varepsilon_{i,t}$$

Where $\Delta RPMW_{i,t}$: changes in the real provincial minimum wage; $\Delta E_{i,t}$: change in employment; $RPMW_{i,t}$: provincial minimum wage sector *i* in year *t*; $RPMW_{i,t-1}$: the provincial minimum wage sector *i* in year *t-1*; $E_{i,t}$: the formal employment sector *i* in year ***t;*** $E_{i,t-1}$: formal employment sector *i* in year *t-1*; δ_1: short-term parameters; γ: parameter error correction; β_0, β_1: long-term parameters, and $\varepsilon_{i,t}$: error term. (2). Impulse Response Function (IRF), the model is intended to analyze and identify the stability and dynamics of the provincial minimum wage to get the balance of the long term due to shocks employment opportunities in each sector of the economy. The results of this analysis are presented in graphical form. (3) Fixed Effect Model (FEM), this regression models were used to estimate and test the significantof employment response as a result of the provincial minimum wage and labor productivity sector, and the impact of the characteristics of the economic sector on employment. The regression model to be estimated (Gujarati, 2003) are as follows:

$$E_{i,t} = \alpha_o + \alpha_1 RPMW_{i,t} + \alpha_2 LP_{i,t} + \alpha_1 D_m + \alpha_2 D_s + \mu_{i,t}$$

Where $E_{i,t}$: employment in sector *i* in year *t*; $RPMW_{i,t}$: real provincial minimum wage in sector *i* in year *t*; $LP_{i,t}$: labor productivityin sector *i* in year *t*; D_m: dummy variable of manufacturing sector; D_s: dummy variable of service sector; $\mu_{i,t}$: error term insector *i* year *t.* To analyze the response of employment opportunities as a result of the provincial minimum wage in each sector , the elasticity of labor demand was used (Kaufman and Julie, 2006), with the formulation:

$$ED_i = \frac{\Delta E_i}{\Delta RPMW} \cdot \frac{\overline{RPMW}}{\overline{E_i}}$$

Where ED_i: the elasticity of labor demand in sector *i*; ΔE_i: changes in employment in the sector *i*; $\Delta RPMW$: changes in real provincial minimum wage; $\overline{RPMW}$; average of real provincial minimum wage; and $\overline{E_i}$: the average of employment in the sector *i*.

3. Results and Discussion

3.1 *Adjustment and Rigidity of PMW*

The estimation results indicate that the coefficient Error Correction Model differs between agriculture, manufacturing, and services sectors:

Table 1. Coefficient and ECM Probability Values, as well as the RPMW Adjustment Period of Agriculture, Manufacturing, and Services sectors in Aceh Province During 1997-2016.

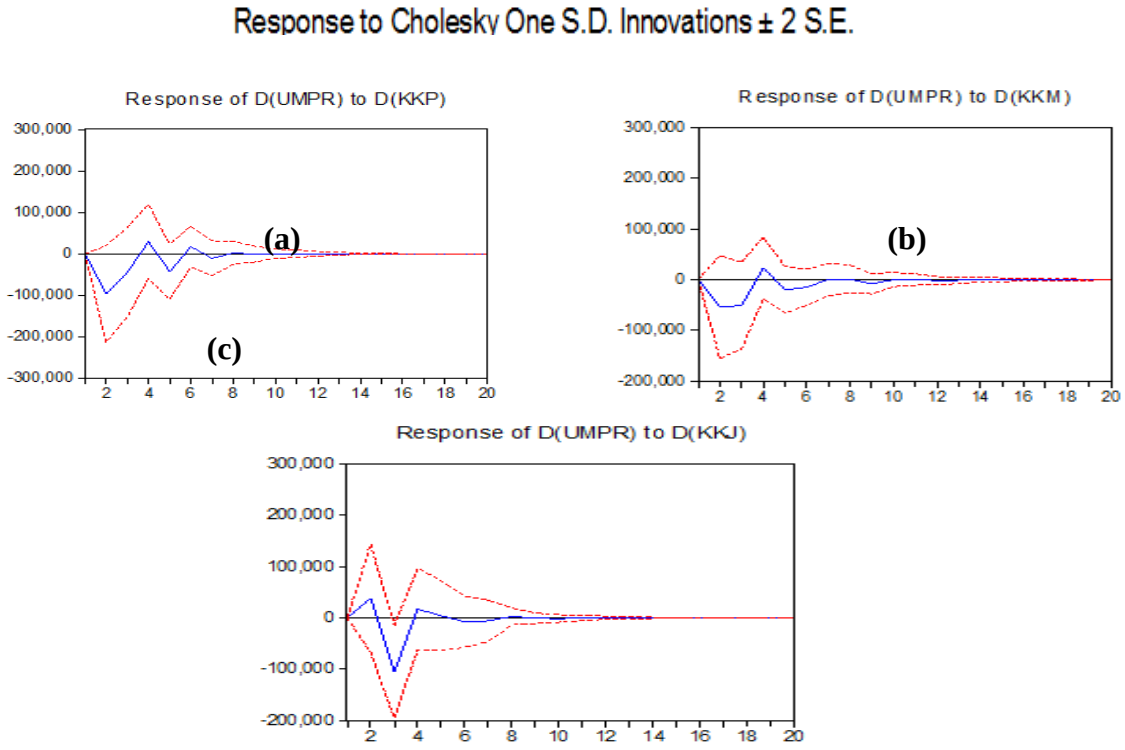
Economic Sectors	Error Corection Model		Adjustment Period	
	Coefficient	Probability	Year	Month
Agriculture	- 0,4807	0,0048 *)	2	0,72
Manufacturing	- 0,4084	0,0088 *)	2	5,64
Service	- 0,4371	0,0061*)	2	3,48

*) Signifikan pada $\propto = 0{,}01$

In the agricultural sector, ECM coefficient as - 0.4857 and significant at $\alpha = 0.01$. it means that 48.57% deviation corrected to return to its equilibrium position within a period of one year, so that agricultural sector need 2,06 years adjustment period to return back a position of equilibrium when shocks employment. Then in the manufacturing sector amounted ECM coefficient - 0.4084 and significant at $\alpha = 0.01$. it means of 40.84% deviation corrected to return to its equilibrium position within a period of one year, and the period of adjustment required by the manufacturing sector to return to a position of equilibrium when shocks employment is 2.47 year. Furthermore, the services sector gained ECM coefficient of - 0.4371 and significant at $\alpha = 0.01$. it means 43.71% deviation corrected to return to its equilibrium position within a period of one year, so that the period of adjustment required by the manufacturing sector to return to a position of equilibrium when shocks employment is 2.29 year.

3.2 Stability and the Dynamics of the Provincial Minimum Wage

The results of Impulse Response Function (IRF) are presented in graphical form shows that the real provincial minimum wage are stable to reach long term equilibrium due to shocks employment in agriculture, manufacturing, and services, but with a different time period. The time required to achieve long-term stability when the shock employment in the agricultural sector in the year to 9, the manufacturing sector in the year to 10, and the service sector in the year to 8. In addition, the standard error on the agricultural sector is 2.2961, for the manufacturing sector is 2.4890 and the service sector amounted to 0.9935. It means the real minimum wage dynamics in service sector towards its long-term equilibrium is the most stable, followed by the agricultural sector and the manufacturing sector, the third sector is significant.



Picture: (a) The dynamic response of UMPR on the agricultural sector employment.
(b) The dynamic response of UMPR on the manufacturing sector employment.
(c) The dynamic response of UMPR on the services sector employment.

3.3 Employment Response

From two independent variables used in this study, namely the RPMW as the primary independent variable and sectoral labor productivity as the variable controller in capturing the business cycle the economy in the province of Aceh. Fixed Effects Model estimation results as presented in Table 2 below:

Table 2 Results of Estimation Model Fixed Effect of RPMW and LP of Formal Sector Employment Toward Agriculture, Manufacturing, and Services in Aceh Province During the Years 1997-2016.

Model	Coefficient	Std. Error	t-statistic	Significant
Konstanta	-5436,751	19630,686	-,277	,783
D_m	- 45065,929	20401,450	-2,209	,031
D_s	253416,861	14498,865	17,478	,000
RPMW	,090	,014	6,466	,000
LP	,142	,069	2,059	,044
R-square	,900			
Adjusted R-square	,893			
F-statistic	123,544			
Prob F-statistic	,000[b]			

Sumber*: Estimasi Fixed Effect*

Table 2 shows that the coefficient of RPMW obtained by 0.0902 with a significance level α = 0.0000, means PMW policy is applied to the Aceh provincial government during the period from 1997 to 2016 had a positive impact on employment, that any increase in the RPMW of 1% will push up employment for 0.0902% and findings this significant at α = 0.01, which is very reassuring. Thus the RPMW will be responded by significant employment in the province of Aceh, and the response of employment is in-elastic, because the elasticity of labor demand of these three sectors is still smaller than 1 (one).

Table 3 Elasticity of Labor Demand In the Agricultural Sector, Manufacturing, and Services in Aceh Province During the Years 1997-2016.

Sektor	Koesien FEM	Avarage RPMW	Avarage E	Elasticity of labor demand
	$(\Delta E_i/\Delta RPMW)$	$\overline{(RPMW)}$	$\overline{(E)}$	(ED_i)
Agriculture	0,0902	938400	100877,7	0,8391 *)
Manufacturing	0,0902	938400	85569,85	0,9892 *)
Service	0,0902	938400	357778,3	0,2366 *)

$*)$ $ED_{,i} < 1\ (in - elastis)$

Then the coefficient obtained sector labor productivity amounted to 0.1421 with a significance level α = 0.0442. Means labor productivity sectors in Aceh province during the period 1997-2016 positive effect on employment, where the increase in labor productivity by 1% sector will have an impact on the increase employment of 0.1421% and a positive relationship is significant at α = 0, 05 and convincing. In line with the findings of Bhorat et.al. (2016), to assess the impact of minimum wages on employment, finding a statistically significant decrease but small in youth work in Agriculture. For other sectors, we have found no effect. There is a positive wage effects for young people in four of the six sectors is estimated.

3.4 The Impact of the Economic Sector

known that the constant value agricultural sector (α_0) = -5,436.751 with greater significance level of α = 0.05. Constant value of the manufacturing sector ($\alpha_0 + \alpha_1$) = -50,502.68 with a smaller significance level of α = 0.05. Then the constant value the services sector ($\alpha_0 + \alpha_2$) = 247,980.11 with a smaller significance level of α = 0.05. Means there is a significant influence on the characteristics of the manufacturing sector and the service sector on employment in the province of Aceh. While the agricultural sector does not have a significant effect, because the formal labor sector employed only reached 11.93% of the total employment in the sector, with an increase rate of positive in every year. Nonetheless informal workers more involved in this sector, as more than 88% as informal workers, where the system is not set minimum wage policy, as well as labor productivity sector is lower than the manufacturing sector and the service sector.

4. Conclusion

From the above findings, it was significant in the PMW adjustment when shocks employment in agriculture, manufacturing, and services. Then the PMW rate rigidity real terms in each different sector, where the manufacturing sector has a more rigid PMW. Period achievement of the fastest and most stable is the service sector, followed by agriculture, and manufacturing

sectors. The PMW and inelastic positive response by employment significantly. Likewise, the labor productivity of sectoral used as a controller of the business cycle the economy of the province, turned out to have a positive impact on employment and convincing, with a greater impact than the provincial minimum wage real impact. Then there is a significant influence on the characteristics of the manufacturing sector and the service sector on employment in the province of Aceh. While the agricultural sector does not have a significant effect, because in this sector informal workers more involved, where the system pengupahannya not set a minimum wage policy.

5. Recommendation

In connection with these findings recommended to the provincial government of Aceh (1) labor productivity sector should be used as a basis in setting the minimum wage, in addition to the need for decent living and the inflation rate (2) should the application of the minimum wage policy provinces so that there is conformity of those wages with wages actual imposed by businesses for workers (3) wage sectoral minimum Province need to be established and implemented in Aceh province to encourage the increase of labor productivity sectors.

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