

Dual Labor Markets: How Minimum Wage Policies Reshape Indonesia's Employment Landscape

Ariani¹, Devanto Shasta Pratomo², Marlina Ekawaty³, David Kaluge⁴

^{1,2,3,4}Economic Doctoral Program, Faculty of Economy and Business, University of Brawijaya, Malang, Indonesia

Abstract

Indonesia's minimum wage policy has been a contentious issue in employment discourse, particularly regarding its impact on the dual labor market structure consisting of formal and informal sectors. The segmented nature of Indonesia's labor market, where minimum wage regulations primarily apply to the formal sector while leaving the informal sector largely uncovered, creates complex spillover effects that differ from those observed in developed countries. This study aims to examine the comprehensive impact of minimum wage policies on employment across Indonesia's formal sector, informal sector, and unemployment rates, addressing the interdependence between these sectors that previous research has largely overlooked. Using panel data from 34 provinces across Indonesia for the period 2017-2021, this study employs Ordinary Least Squares (OLS) regression analysis to estimate three separate models examining the relationship between minimum wage and employment outcomes in formal, informal, and unemployment sectors. Control variables include productive age population, education levels, and Gross Domestic Product (GDP). The findings reveal that minimum wage increases significantly reduce formal sector employment while simultaneously increasing informal sector employment and unemployment rates. These results support the dual labor market theory, demonstrating that workers displaced from the formal sector migrate to the informal sector or become unemployed rather than exiting the labor force entirely. The study provides crucial insights for policymakers regarding the unintended consequences of minimum wage policies in developing countries with segmented labor markets. The results suggest that while minimum wage policies aim to improve worker welfare, they may inadvertently increase informal employment and unemployment, potentially undermining the policy's redistributive objectives. These findings emphasize the need for comprehensive labor market policies that consider the interconnected nature of formal and informal sectors in developing economies.

Keywords: minimum wage policy, dual labor market, formal, informal sector employment, unemployment, panel data analysis

INTRODUCTION

The minimum Wage Policy has become an important policy in employment issues in many developed and developing countries. This minimum wage policy aims to meet the minimum living needs of workers and their families. Thus, the minimum wage policy aims to (a) ensure that workers' incomes are not lower than a certain level, (b) increase worker productivity, and (c) develop and improve enterprises with more efficient production methods (Sumarsono. S, 2003). Indonesia has a minimum standard used in the payroll system for workers in the work environment, which is regulated in Law no. 13 of 2003. The minimum wage policy in Indonesia has a long history. This began with the minimum wage policy, which was first introduced in the early 1970s (Comola & De Mello, 2011). The minimum wage policy in Indonesia is regulated based on Law Number 13 of 2003 concerning Manpower which is explicitly spelt out in Government Regulation no. 78 of 2015 concerning wages. Based on the Regulations set by the government, the minimum wage is the lowest monthly wage earned by workers. Then, PP No. 36 of 2021 was issued regarding wages which is a derivative of Law No. 11 of 2020 concerning Job Creation which contains the Provincial Minimum Wage (UMP), Regency/City Minimum Wage (UMK), and the determination of minimum wages based on economic and labour conditions.

Employment is a fundamental aspect of human life because it includes social and economic dimensions. Economic development is based on opening up opportunities in the labour market to balance the growth of the labour force, which is faster than the growth of job opportunities. The imbalance between labour force growth and job creation will increase the unemployment rate (D. T. Mortensen & Pissarides, 1999). This increase in the unemployment rate will impact wasting resources, becoming a major source of poverty and increasing social unrest, as well as hampering economic development. Unemployment conditions in Indonesia continue to increase; in 2012, it was at 5.7%. The number is increasing and had high volatility in 2020 by 7.07%, which is 2020. Countries around the world were shocked by the Covid-19 pandemic. The pandemic did not escape attack Indonesia, so the impact of the increase in the percentage of unemployment (Castells-Quintana, 2012). Research on the effectiveness of the minimum wage as a policy tool, which is redistributive, is still quite controversial among policymakers and economists, where there are mixed effects. The effect of the minimum wage on the workforce has been the main focus of many types of research on the labour market. The effect of the minimum wage on the labour market is quite complex, especially in developing countries, where the labour market is segmented between the formal and informal sectors (Pratomo, 2016). The effect of the minimum wage on the development of the formal and informal sectors is quite controversial. For example, an increase in the minimum wage affects increasing the number of workers in the informal sector, which impacts increasing employment in the informal sector (Hohberg & Lay, 2015). In Indonesia, the minimum wage significantly positively affects the formal sector, while the informal sector has no effect (Ham, 2018). Honduras shows that higher minimum wages reduce employment in the formal sector and increase employment in the informal sector (Ham, 2018). The minimum wage has a significant negative effect on the informal sector and a significant positive effect on the formal sector (Holtemöller & Pohle, 2020). The decline in formal sector employment in the labour market and the level of labour participation depends on the minimum wage rate prevailing in the European labour market (Maarek & Moiteaux, 2021). Research on the impact of the minimum wage on employment in the labour market in Indonesia is important for several reasons. First, research on the impact of minimum wages on employment in the formal and informal sectors is interesting to re-examine because there is a decentralization of minimum wage from the central government to the provincial government. This is unlike the prediction of the dual labour market model introduced by Welch, which states that the minimum wage will cause a decrease in the absorption of formal sector workers and increase the labour absorbed in the informal sector. Welch introduced a dual labour market model to capture the spillover effect on the informal sector. According to Welch, the minimum wage will reduce the formal sector workforce and increase the informal sector because there is a shift in labour from the formal sector. Indonesia is a developing country where the minimum wage policy cannot be implemented in full (incomplete coverage) because there is an informal sector labour market that needs to be covered by the minimum wage policy (Welch, 1974). This makes the impact of the minimum wage on employment slightly different from that of developed countries because the impact is not only in the sector covered by the minimum wage (formal), but there is also a spillover effect on the sector that is not covered (informal). The absorption of labour in the labour market in Indonesian, the phenomenon of minimum wages cannot be separated from the phenomenon of absorption of labour in the labour market where the influence of minimum wages on employment in the formal and informal sector labour market needs to be a concern, as well as the condition of the effect of the minimum wage on unemployment. The contribution of this research is twofold, namely: first, this research can be used by the government as a reference in implementing the minimum wage policy, which increases every year, so that it can be useful in the employment sector it can improve welfare and not hurt some workers covered by the policy. The minimum wage is in the formal sector. Second, this study simultaneously estimates the impact of the minimum wage on employment in the formal, informal, and unemployment sectors. In contrast, previous empirical studies for Indonesia and other developing countries have partially estimated the effect of the minimum wage on employment. Previous research ignores the interdependence between the minimum wage on employment in the

labour market in the formal and informal sectors and unemployment. Therefore, this study describes the estimated interdependence of the minimum wage on employment in Indonesia's formal, informal and unemployment sectors.

LITERATUR REVIEW

Previous studies say that an increase in the minimum wage in the formal sector using micro-analysis found a decrease in labour absorption (Del Carpio et al., 2015), and there are also different results where the minimum wage has led to an increase in labour absorption capacity using macro analysis (Hohberg & Lay, 2015). Variations in the data between districts within the province, using panel data, found the impact of a reduction in employment in the formal sector due to an increase in the minimum wage. The relative value of the minimum wage has shifted workers from the unemployed who are "queuing up" to the open unemployment population or the informal sector (Comola & De Mello, 2011). Evidence supports the dual sector minimum wage model showing that a change in the composition of the workforce, i.e. 10% increase in the minimum wage, reduces employment opportunities by 8% and a 5% increase in the informal sector. In particular, employment in the formal sector decreased while the informal sector increased (Ham, 2018). In addition, a study looks at the impact of minimum wage policies on the labour market in Chile, showing that employment in the private sector has increased relatively compared to the public sector (Navarro & Tejada, 2022). Studies on the impact of minimum wages on employment by considering the spatial dependence of the labour market with IFLS (Indonesian Family Life Survey) and Industrial Company Annual Surveys (SI) data, as well as statistical analysis of spatial differences (Magruder, 2013). A lower minimum wage hurts employment in the informal sector and positively affects employment in the formal sector. It differs from the spatial equilibrium model, where an increase in the minimum wage positively affects the labour market, as seen from the increasing demand for housing rentals (Yamagishi, 2021). Research on the impact of minimum wages on employment in developing countries is limited. The conventional theoretical framework is a dual economy or a two-sector economy, where the formal sector operates as in the neoclassical model (for example, minimum wage increases in the labour market), and minimum wage provisions do not apply in the informal sector (Menon & Rodgers, 2018). Thus, an increase in the minimum wage reduces the labour market in the formal sector and increases the informal sector, where workers from the formal sector are concentrated in the informal sector. The impact of the labour market depends on the elasticity of the labour supply (since workers are more likely to leave the labour force than seek employment in the informal sector) and on the demand and size of the informal sector. LIC shows a negative regulatory effect on the formal sector and a positive compensation effect on the informal sector. The effect on aggregate employment and unemployment needs to be clarified/ambiguous (Nataraj et al., 2014). The increase in the relative value of the minimum wage in Indonesia is associated with a weakening of the informal sector, which is in line with previous empirical evidence. The most interesting result is that an increase in the minimum wage affects an increase in the number of workers in the informal sector, which impacts increasing employment in the informal sector (Comola & De Mello, 2011). Evidence from studies of the impact of minimum wages on employment in developing countries is contradictory. One explanation is that there needs to be clear evidence of the impact of unemployment in developing countries. In contrast, this study finds evidence that heterogeneity is systematic, with predictive effects often more negative in relatively feature-rich studies where other factors are present. Institutional and competitive models more strongly predict negative effects (Neumark & Munguía Corella, 2021). A study estimating the effect of the minimum wage on the German labour market using panel data regression at the level of industrialized countries found a strong positive-negative effect of the minimum wage on the informal sector and a strong positive effect on workers in the formal sector (Holtemöller & Pohle, 2020). The results showed an overall negative effect in terms of the number of jobs. The effect of decreasing the proportion of formal workers in the labour market and the level of participation depends on the minimum wage level in the local European labour market. The labour market is becoming increasingly polarised as the formal

sector workforce decreases. In the flexible US labour market, this has a limited impact on the labour market as strong labour market growth in the informal sector and low wages make it impossible for workers to move into the high-wage formal sector. OLS and IV estimates suggest polarization hurts employment and participation rates in countries with only high minimum wages (Maarek & Moiteaux, 2021). The legal minimum wage significantly positively affects workers' wages in the covered sector (formal sector). However, it does not affect workers' wages in the uncovered sector (informal sector). A 10% increase in the legal minimum wage would increase the average wage in the covered sector by about 1%. The legal minimum wage has a significant negative effect where an increase in the minimum wage causes reduced employment opportunities in the covered sector. It is estimated that a 10 per cent increase in the minimum wage would reduce employment opportunities by 1.09 per cent. The minimum wage hurts another dimension of the covered sector, namely, hours worked, where a 10 per cent increase in the real minimum wage causes a 0.62 per cent decrease in the average number of hours worked, (4) the impact of the minimum wage on employment, wages and hours employment of workers in various skill areas shows that the minimum wage has the greatest impact on workers with the lowest income distribution (2nd to fifth deciles) of the distribution of workers by skill (Gindling, 2004). An increase in the minimum wage reduces the likelihood of youth working in the covered (formal) sector, i.e. paid work in the covered sector and increases the likelihood of youth working in the unreached (informal) sector, including self-employment, unpaid family workers and paid work in the informal sector (Pratomo, 2016).

MATERIAL AND METHOD

This study uses all provinces in Indonesia, which amount to 34 provinces. This research was conducted using panel data. Observations start from 2017 to 2021, and cross-sectional data consists of 34 provinces, thus presenting panel data by combining times series data (2017 to 2021 = 5 years) with cross-sectional data (34 provinces). This study uses the Ordinary Least Square (OLS) method to determine whether the minimum wage influences the formal, informal and unemployment sectors in Indonesia. To be able to determine the effect of the minimum wage on the formal, informal and unemployment sectors in Indonesia, the authors use three models to be able to answer research questions. The specifications of the research model are explained as follows:

Model 1

$$\text{formal}_{it} = \alpha_{it} + \beta_1 \text{Minimum Wage}_{it} + \beta_2 \text{Productive age}_{it} + \beta_3 \text{Education}_{it} + \beta_2 \text{GDP}_{it} + \varepsilon_{it}$$

Model 2

$$\text{Informal}_{it} = \alpha_{it} + \beta_1 \text{Minimum Wage}_{it} + \beta_2 \text{Productive age}_{it} + \beta_3 \text{Education}_{it} + \beta_2 \text{GDP}_{it} + \varepsilon_{it}$$

Model 3

$$\text{Unemploy}_{it} = \alpha_{it} + \beta_1 \text{Minimum Wage}_{it} + \beta_2 \text{Productive age}_{it} + \beta_3 \text{Education}_{it} + \beta_2 \text{GDP}_{it} + \varepsilon_{it}$$

Data Collection

In this study, the type of data used is secondary data obtained from several data providers that have been published. The data used in this study are the minimum wage, the formal sector, the informal sector, unemployment, the workforce pursuing higher education, Gross Regional Domestic Product and productive age.

RESULT AND DISCUSSION

This study uses three variables: the formal, informal, and party sectors. The independent variable used in this study is the minimum wage, and the rest is the control variable. The description variables used are as follows:

Tabel 1. Description of Research Variables

Variable	Description Variable
Dependent Variable	
Formal	Percentage of the formal sector workforce
Informal	Percentage of informal sector workers
Unemployment	Unemployment percentage
Independent Variable	
Minimum Wage	The minimum wage for each province in Indonesia
Control Variable	
Productive Age	Number of the labour force
Education	Number of labour force pursuing higher education
GDP	Gross Regional Domestic Product

Sources: Data processed on Stata, 2022

Tabel 2. Description of Statistics

Variable	Obs	Mean	Std.dev	Min	Max
Formal	170	41.23	10.58	19.53	71.55
Informal	170	58.77	10.59	28.45	80.47
Unemployment	170	5.23	1.83	1.4	10.95
Minimum Wage	170	14.68	0.23	14.11	15.30
Productive Age	170	14.58	1.02	12.70	17.02
Education	170	12.32	0.98	10.02	14.63
GDP	170	10.48	0.54	9.38	12.07

Sources: Data processed on Stata, 2022

Table 2 describes the statistical description of each variable. The minimum wage variable used as the independent variable explains the mean of 14.68 with a min value of 14.11 and a max of 15.30. In contrast, the other dependent variables and controls are described in the table above. The study results are described in table 3, where using the Ordinary Least Square (OLS) method explains that the minimum wage strongly influences the formal, informal, and unemployment sectors in Indonesia. Table 3 explains that an increase in wages can lead to a decrease in the formal sector and an increase in the informal sector and unemployment. This is because when there is a decrease in the workforce, it will cause a shift to the informal sector and unemployment so that it can increase both things.

The results of this study are by previous research conducted by Comola and De Mello (2011) Thomas Gindling and Katherine Terrell (2004); Yustiana Dwirainaningsih (2017); Rini Sulistiawati (2012) and Muh Nurhadi and Diah Widyawati (2019).

Tabel 3. Research Result

	Formal	Informal	Unemployment
Ln_minimunwage	-8.033*** (3.027)	6.404** (3.011)	2.012*** (0.672)
Ln_productiveage	-3.415** (1.555)	2.850* (1.547)	-0.272 (0.345)
Ln_education	3.455** (1.591)	-2.937* (1.582)	0.973*** (0.353)

Ln_gdp	15.454*** (1.214)	-15.386*** (1.208)	0.705*** (0.270)
Constant	4.449 (43.466)	120.612*** (43.230)	-39.739*** (9.649)
Observations	170	170	170
R ²	0.552	0.557	0.268
Adj. R-sq	0.541	0.547	0.250

Sources: Data processed on Stata, 2022

Note: The control variables included in the study include the Labor Force, Education, and GDP. The value in parentheses is the standard error. (*) (**) (***) describes the level of significance (10)(5)(1) percent

CONCLUSION

This study aims to determine the effect of the minimum wage on the absorption of formal, informal, and notification workers. The research explains that the minimum wage significantly influences employment in the formal, informal, and movement sectors. The minimum wage has a significant positive effect on the informal sector and a negative effect, while the formal sector has a significant negative effect. An increase in the minimum wage can cause a decrease in the formal sector and an increase in the informal sector. With the assumption that employment in the formal sector will be absorbed in the informal sector and groups, there is a difference between employment due to an increase or decrease in the minimum wage.

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