IJAMESC, Vol. 3 No. 4, August 2025
DOI: https://doi.org/10.61990/ijamesc.v3i4.559 e-ISSN 2986-8645

THE IMPACT OF MINIMUM WAGE, GRDP, INFLATION, AND EDUCATION ON UNEMPLOYMENT RATE IN LAMPUNG PROVINCE

I Dewa Gede Sukadwipa
University of Lampung, Indonesia
*Corresponding Author:
28.dwi3p4@gmail.com

Abstract
This study investigates the impact of regional minimum wages (UMK) on the open unemployment rate (TPT) in Lampung Province from 2017 to 2023. Employing Panel EGLS (Random Effects) modeling using data from 15 regencies/cities, the study incorporates Gross Regional Domestic Product (GRDP), current inflation (INF), lagged inflation (INF-1), and average years of schooling (RLS) as control variables. The findings show that MSEs do not significantly influence TPT, while PDRB and RLS positively affect unemployment, and lagged inflation negatively affects unemployment. The results imply structural mismatches in the labor market and highlight the need for synchronized education and labor policies to enhance employment in Lampung.

Keywords: Education, Inflation, Minimum Wage, GRDP, Unemployment Rate

1. Introduction

Unemployment is one of the important indicators that describes the state of economic welfare in a region. The high unemployment rate shows that the use of labor in economic activities has not been maximized, which has an impact on people's low income and purchasing power and has the potential to cause social problems. Thus, efforts to reduce unemployment are the main agenda in national and regional development, including in Lampung Province.

According to the 2025-2045 RPJPN, the vision of Lampung Province is proclaimed as "Together with Lampung Towards a Golden Indonesia 2045". This vision is aimed at encouraging economic growth that is inclusive, creating quality jobs, as well as increasing the competitiveness of human resources. In this context, one indicator that needs to be observed is the Open Unemployment Rate (TPT). However, data from the Central Statistics Agency (BPS) shows that TPT in Lampung between 2017–2023 experienced fluctuations and has not yet shown a stable decrease. This shows that the economic growth that occurs has not been able to fully create jobs, or in other words, there is a phenomenon of growth without jobs, as expressed by Islam and Nazara (2000), that not all economic growth can absorb jobs proportionally.

One of the policies that is considered to have an effect on the dynamics of unemployment is the minimum wage. Within the framework of neoclassical labor market theory, as stated by Stigler (1946), an increase in the minimum wage above the equilibrium level would lead to a labor surplus and result in unemployment. On the other hand, research by Card and Krueger (1994) shows that in some job markets, particularly in the service sector, an increase in the minimum wage does not significantly reduce employment opportunities and can even increase worker productivity.

In addition to the minimum wage, the Gross Regional Domestic Product (GDP) functions as the main indicator of a region's economic capabilities. Okun's Law states that there is a negative relationship between output growth and unemployment (Okun, 1962).

However, according to Aghion and Howitt (1998), the structure of the dominant sector that is capital-intensive or high-tech can hinder the creation of jobs at large.

Inflation also plays an important role in unemployment, especially in the short term. The Phillips curve (Phillips, 1958) describes the trade-off between inflation and unemployment, where moderate inflation can support growth and absorb labor. However, Friedman (1977) states that for the long term, the relationship is neutral because the price expectation will adjust.

On the other hand, education is often linked to upskilling and reducing unemployment. The theory of human capital developed by Becker (1964) explains that investment in education will increase individual productivity. However, McGuinness (2006) notes that the mismatch between education and the needs of the job market leads to high unemployment among the educated, especially in areas with economic structures that are not able to absorb skilled labor optimally.

Taking into account these various factors—minimum wage, GDP, inflation, and education—this study aims to empirically analyze how it affects the unemployment rate in Lampung Province during the 2017–2023 period. It is hoped that the results of this research can contribute to formulating employment policies and regional economic development that are more inclusive and evidence-based.

2. Theoretical Background

2.1 Relationship between Minimum Wage and Unemployment Rate

The relationship between the minimum wage and the unemployment rate is theoretically explained by the neoclassical labor market model, which claims that an increase in wages above the equilibrium level will result in an oversupply of labor, leading to an increase in the unemployment rate (Stigler, 1946). Research by Neumark and Wascher (2008), Clemens and Wither (2014), and Lemos (2009) supports this view by finding that minimum wage increases negatively impact job creation, especially among young and unskilled workers. However, the research of Card and Krueger (1994), Dube, Lester, and Reich (2010), as well as Allegretto et al. (2017), shows conflicting results, indicating that an increase in the minimum wage does not significantly affect unemployment and may even slightly increase labor force participation. This signals the need to examine the impact of the minimum wage in a local context such as Lampung Province, where the workforce structure and key sectors differ from other regions.

2.2 Relationship between Economic Growth and Unemployment Rate (Okun's Law)

Furthermore, the relationship between economic growth, measured through Gross Regional Domestic Product (GRDP), and the unemployment rate is described in Okun's law, which states that output growth has an inverse relationship with unemployment (Okun, 1962). Research by Blanchard and Katz (1997) and Mankiw (2015) suggests that increasing GDP can encourage job creation, thereby reducing the unemployment rate. However, some studies in developing countries have found the phenomenon of jobless growth, where economic growth is not accompanied by an increase in employment opportunities, as seen in studies by Islam and Nazara (2000), Gordon and Dew-Becker (2008), and Aghion and Howitt (1998). These different outcomes may be due to a shift in the production sector from labor-intensive to more capital-intensive or high-tech-based processes, which often do not absorb much labor.

DOI: https://doi.org/10.61990/ijamesc.v3i4.559 e-ISSN 2986-8645

2.3 Inflation and Unemployment Rate (Phillips Curve)

Inflation is also an important factor in unemployment analysis, especially in the short term, as outlined by the Phillips curve. This curve shows a negative relationship between inflation and unemployment, where high inflation in the short term can reduce unemployment due to an increase in aggregate demand (Phillips, 1958; Samuelson and Solow, 1960). Empirical research by Berument et al. (2014), Gali (2011), and Ball and Mankiw (2002) found that inflation has a negative effect on the unemployment rate, particularly in developing countries. However, research by Friedman (1977), Lucas (1976), and Sargent (1973) indicates that in the long term, inflation does not affect unemployment because societal expectations adjust to the conditions. Therefore, this study uses two time-based approaches: current-year inflation and previous-year inflation to capture both the immediate effect and the lagged effect.

2.4 Education Variables and Unemployment Rate (Human Capital Theory)

Education variables, measured through the average years of schooling, are also an important factor in determining the unemployment rate. Human capital theory (Becker, 1964) argues that education increases individual productivity and the likelihood of obtaining employment. Research by Psacharopoulos (1994), Hanushek and Woessmann (2008), and Heckman et al. (2006) supports this view, finding that higher education levels are associated with a decrease in unemployment. However, studies by McGuinness (2006), Green and Zhu (2010), and Di Pietro and Urwin (2006) show that an increase in education does not always correspond to a decrease in unemployment, especially when there is a mismatch between education and labor market needs. In the context of Lampung, unemployment among educated individuals is an important issue to study because increased access to education is not always accompanied by the availability of jobs that meet qualifications.

3. Methods

This study uses a quantitative approach with the data panel method. The estimation model used is the EGLS Panel with random effect based on the results of the chow and hausman tests. The selection of random effects is based on the characteristics of data that have variations between districts/cities which are considered random and do not correlate with independent variables.

The analysis was carried out using the E-Views application13. The data used are secondary data from BPS and other official sources with coverage of 15 districts/cities in Lampung Province during the period 2017–2023 (7 years), resulting in 105 observations.

Table 1. Variables in Research

Variable	Notation	Unit	Data Source
Open Unemployment Rate (TPT)	TPT	Percentage	BPS
Minimum Wage for Districts/Cities	MSEs	Million Rupiah	BPS
Gross Regional Domestic Product on the basis of prevailing prices	GDP	Billion Rupiah	BPS
Inflation for the Current Year	INF	Percentage	BPS
Inflation One Year Previous	INF(t-1)	Percentage	BPS
Average School Length (RLS)	RLS	Percentage	BPS

DOI: https://doi.org/10.61990/ijamesc.v3i4.559 e-ISSN 2986-8645

The econometric model in this study is:

$$TPT_{it} = \beta_0 + \beta_1 UMK_{it} + \beta_2 PDRB_{it} + \beta_3 INF_{it} + \beta_4 INF_{it-1} + \beta_5 RLS_{it} + \varepsilon_{it}$$

The description of the variables in the model above is as follows. TPT_it refers to the Open Unemployment Rate for district/city i in year t. UMK_it is the Minimum Wage of Regency/City for regency/city i in year t. PDRB_it represents the Gross Regional Domestic Product for regency/city i in year t. The variable INF_it denotes the Inflation Rate of the current year for district/city i in year t, while INF_it-1 is the Inflation Rate of the previous year (t-1) for the same district/city i in year t. Furthermore, RLS_it captures the Average Length of School (Education Level) for district/city i in year t. The model also includes β_0 as the constant, β_1, β_2, β_3, β_4, and β_5 as the regression coefficients for each independent variable, and ε_it as the error term.

In panel data analysis, it is necessary to select the model through several specification tests. These include the Chow test to compare the Common Effect Model (CEM) and the Fixed Effect Model (FEM), as well as the Hausman test to decide the choice between the FEM and the Random Effect Model (REM) (Baltagi, 2005; Gujarati & Porter, 2009). Then, the data and models will be carried out classic assumption tests, namely normality tests, heteroskedasticity tests, autocorrelation tests and multicollinearity tests. As a result, the model and data of this study meet the classical assumption test. The feasibility of a model that has met classical assumptions indicates that parameter estimation is unbiased and efficient, and valid for use in policy conclusion making (Gujarati & Porter, 2009; Wooldridge, 2016). Tests were carried out on the statistical significance of coefficients, R-squared values, and coefficient interpretations based on economic theory.

4. Results and Discussion

Before estimating, MSE and GDP data are transformed into natural logarithms (ln), because data such as MSE and GDP have distributions that tend to be skewed to the right and a very large range of values. This can lead to problems in classical linear regression analysis, such as heteroscedasticity (non-constant error variance), which violates the basic assumption of OLS (Ordinary Least Square) and can result in inefficient coefficient estimation. Logarithmic transformations can help tidy up the distribution of data, make it closer to normal distributions, and reduce heteroscedasticity issues.

4.1 Results

The model and data have passed the classical assumption test, with the following results:

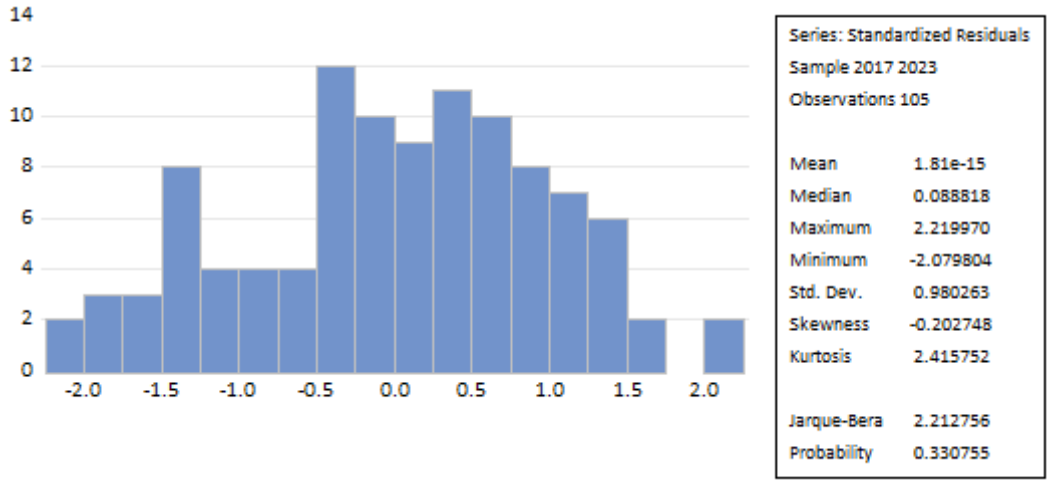

Figure 1. Normality Test Result

Normality tests are performed to evaluate whether the residues from the regression model are distributed in a normal manner. This test uses the Jarque-Bera method and is also supported by a standardized visualization of histograms of residues. The statistical value of Jarque-Bera was recorded at 2.2128 with a probability (p-value) of 0.3308. Since this p-value is greater than the general significance level ($\alpha = 0.05$), the residue can be declared to be normally distributed. This strengthens the validity of regression models in producing BLUE (Best Linear Unbiased Estimator) parameter estimates as required in classical assumptions (Gujarati & Porter, 2009; Wooldridge, 2016).

Table 2. Heteroscedasticity Test

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	0.034464	7.107371	0.005	0.9961
UMK	0.778188	0.048651	16.000	0.0000
PDRB	0.103092	0.114203	0.903	0.3666
INF_t	0.007088	0.049123	0.144	0.8854
INF_t-1	0.032162	0.040923	0.786	0.4320
RLS	-0.133928	0.017738	-7.551	0.0000
Note: Dependent Variable: TPT (Open Unemployment Rate). Estimation Method: Swamy and Arora estimator of component variances.				

Source: processed data (2025)

A heteroscedasticity test was conducted to determine whether the variance of the residuals in the regression model is constant (homoscedastic). In this study, the Breusch-Pagan-Godfrey test was employed. The results indicate that all independent variables have probability values greater than 0.05—specifically, UMK ($p = 0.1253$), PDRB ($p = 0.3291$), and RLS ($p = 0.7262$). Since no variable is statistically significant in explaining the variance of the errors, it is concluded that the model does not suffer from heteroscedasticity. Therefore, the classical assumption of homoscedasticity is fulfilled (Gujarati & Porter, 2009).

Table 3. Multicollinearity test result

	MSEs	GDP	INF	INF1	RLS
MSEs	1.000000	0.144129	0.163175	0.359192	0.215551
GDP	0.144129	1.000000	0.031280	0.032908	0.039784
INF	0.163175	0.031280	1.000000	-0.090580	0.053844
INF1	0.359192	0.032908	-0.090580	1.000000	0.055130
RLS	0.215551	0.039784	0.053844	0.055130	1.000000

Source: processed data (2025)

The multicollinearity test is performed to detect whether there is a strong linear relationship between independent variables in the regression model, which can cause the estimated coefficient to be unstable. From the results of the correlation matrix between variables, all correlation values were below 0.80, such as between MSEs and GDP (0.1441), and between INF and RLS (0.0538), indicating that there was no high correlation between these variables. Therefore, it can be concluded that this regression model is free from the problem of multicollinearity, so that parameter estimation can be considered statistically valid (Gujarati & Porter, 2009).

DOI: https://doi.org/10.61990/ijamesc.v3i4.559 e-ISSN 2986-8645

Table 4. Autocorrelation test result

Test Method	Test Statistic Value	Critical Value	Conclusion
Durbin-Watson	1.5602	≈ 2 (no autocorrelation)	No evidence of positive or negative autocorrelation detected. The model is free from autocorrelation.
Note: A Durbin-Watson statistic value between 1.5 and 2.5 generally indicates no significant autocorrelation.			

Source: processed data (2025)

The autocorrelation test aims to detect the presence of relationships between residuals at different periods in the regression model, which can lead to violations of classical assumptions and interfere with the efficiency of estimation. In this study, the Durbin-Watson (DW) value was recorded at 1.5602; which is close to number 2, indicating that the model does not contain either positive or negative autocorrelations. According to Gujarati and Porter (2009), DW values that range from 1.5 to 2.5 generally indicate that there is no significant autocorrelation. Thus, the applied regression model fulfills the assumption of the absence of autocorrelation and is feasible for use in drawing statistical conclusions

Meanwhile, in the selection of the model, a Chow test and a Hausman test have been carried out to find the most appropriate model in this study.

Table 5. Chow test and Hausman test result

Test Type	Null Hypothesis (H_0)	Statistic	p-value	Conclusion
Chow Test	Pooled OLS is appropriate	F = 11.553	0.0000	Reject H_0. Fixed Effects model is superior.
Hausman	Random Effects model is appropriate	Chi-sq = 0.000	1.0000	Fail to reject H_0. Random Effects model is preferred.

Source: processed data (2025)

The result of the Chow test shows an F-statistic of 11.5529 with a probability of 0.0000, which is significant at the 1% level. This indicates that the Fixed Effects Model (FEM) is more appropriate than the Common Effect Model (CEM) or Pooled OLS. Furthermore, the Hausman test result shows a Chi-Square statistic of 0.0000 with a p-value of 1.0000, which is not significant. This suggests that there is no correlation between the individual-specific effects and the independent variables. Therefore, the Random Effects Model (REM) is more suitable for use in this context due to its greater efficiency (Gujarati & Porter, 2009; Wooldridge, 2010). Consequently, based on both tests, the Random Effects Model (REM) is selected for the regression analysis.

Based on the results of regression estimation using the Random Effect (REM) model Data Panel method using panel data from 15 districts/cities in Lampung Province in 2017–2023, the following results were obtained:

Table 6. Estimated Results of Research Model

Dependent Variable: TPT Method: Panel EGLS (Cross-section random effects) Date: 06/15/25 Time: 12:40 Sample: 2017 2023 Periods included: 7 Cross-sections included: 15 Total panel (balanced) observations: 105 Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-10.94245	9.446700	-1.158336	0.2495
MSEs	0.185479	0.700673	0.264716	0.7918
GDP	0.689522	0.291939	2.361868	0.0201
INF(-1)	-0.140806	0.062657	-2.247267	0.0268
INF	-0.096056	0.059533	-1.613488	0.1098
RLS	0.815852	0.188210	4.334794	0.0000
	Effects Specification			
			S.D.	Rho
Cross-section random			0.866496	0.6501
Idiosyncratic random			0.635698	0.3499
	Weighted Statistics			
R-squared	0.259937	Mean dependent var		1.096368
Adjusted R-squared	0.222560	S.D. dependent var		0.715100
S.E. of regression	0.630523	Sum squared resid		39.35831
F-statistic	6.954463	Durbin-Watson stat		1.560226
Prob(F-statistic)	0.000013			
	Unweighted Statistics			
R-squared	0.579624	Mean dependent var		4.103048
Sum squared resid	99.93513	Durbin-Watson stat		0.614477

Source: processed data (2025)

Based on the results of the estimation using the EGLS (Random Effect) Panel approach, it was obtained that the Regency/City Minimum Wage (UMK) variable has a coefficient of 0.0185 with a significance level of 0.7918, which indicates that it is not statistically significant in influencing the Open Unemployment Rate (TPT). Furthermore, the Gross Regional Domestic Product (GDP) variable shows a coefficient of 0.6895 and is significant at the level of 5% with a probability value of 0.0201. For the inflation variable of the previous year (INF(-1)), the estimation results show a coefficient of -0.1408 with a significance level of 0.0268, which means that it has a negative and significant effect on the TPT. Meanwhile, inflation for the current year (INF) has a coefficient of -0.0960 with a probability of 0.1098, which means it is insignificant. The educational variable (RLS), measured from the average length of schooling, gave

DOI: https://doi.org/10.61990/ijamesc.v3i4.559 e-ISSN 2986-8645

significant results at the 1% level with a coefficient of 0.8158 and a probability value of 0.0000. Thus, the mathematical equation of the research based on the results of the estimation is:

$$TPT_{it} = -10{,}94 + 0{,}18UMK_{it} + 0{,}69PDRB_{it} - 0{,}096INF_{it} - 0{,}14INF_{it-1} + 0{,}81RLS_{it} + \varepsilon_{it}$$

4.2 Discussion

The results of the estimate show that the MSE variable does not have a significant impact on the unemployment rate in Lampung Province. These findings are in line with research conducted by Card and Krueger (1994) and Dube et al. (2010), which revealed that minimum wage policies do not directly affect changes in the unemployment rate. This can be understood because of the high proportion of the informal sector in the area which often does not implement MSE policies properly. The informal economic structure, business flexibility, and weak supervision in the implementation of MSEs are factors that explain why this relationship is not significant (Belman and Wolfson, 2014). However, these results contradict the research of Neumark and Wascher (2008) which showed that increases in the minimum wage can reduce employment opportunities, especially for young workers and those without skills.

The results of estimates that show a positive and significant GDP reflect the phenomenon of unemployed growth, as described in the studies of Islam and Nazara (2000) and Gordon and Dew-Becker (2008). Despite the increase in GDP, this does not automatically reduce the unemployment rate because economic growth usually occurs in capital-intensive sectors, which are not able to absorb much labor. This finding also contradicts Okun's law which states that economic growth should result in a decrease in unemployment.

For the INF(-1) variable, the negative and significant results provide support to the short-term version of the Phillips curve, where inflation is able to reduce unemployment due to an increase in aggregate demand. These findings are in line with the research of Berument et al. (2014) and Gali (2011). However, the insignificance of current year inflation (INF) can indicate a delay in the implementation of price policies or tensions in the wage system that cause inflation not to have a direct impact on the labor market, as expressed by Friedman (1977) and Lucas (1976).

Meanwhile, significant positive results from the education variable (RLS) showed that the increase in the average length of school was actually related to the increase in the unemployment rate. This phenomenon shows that there is a mismatch between graduates and the needs in the job market. These findings support the research of McGuinness (2006) and Di Pietro and Urwin (2006), which identified that overeducation and lack of skills matching to industrial needs are the main causes of unemployment among educated people, particularly in areas with limited formal employment sectors.

Overall, the results of the estimate show that economic and employment policies in Lampung Province need to consider structural aspects such as the quality of education, the structure of the business sector, and the alignment between economic growth and job creation. Therefore, the empirical models interpreted in this study not only describe the statistical relationships between variables, but also reflect complex real conditions on the ground, which require a comprehensive policy approach.

Weaknesses and Limitations of Research is:

1) This study has several weaknesses and limitations that need to be observed in the interpretation of the results and policy implications. First, this study has not conducted a stationary test on the panel data used. In fact, stationary tests are important,

especially in time series panel data to ensure that the analyzed variables do not contain time trends that can cause spurious regression relationships. The unstationary of independent and dependent variables has the potential to cause bias in parameter estimation and reduce the validity of causality inferences between variables. Therefore, going forward, it is important to test the stationary characteristics of the data with approaches such as the Levin-Lin-Chu (LLC) or Im-Pesaran-Shin (IPS) test so that the estimation model used is truly robust.

2) Second, the R-squared value in the Random Effect estimation model shows a relatively low figure of 0.2599 (adjusted $R^2 = 0.2225$), which means that only about 22–26 percent of the variation in the open unemployment rate (TPT) can be explained by the five variables used in the model. Ideally, in an empirical study of socio-economic policy, the R-squared value is expected to be above 0.80 in order to provide a strong level of explanation for the dependent variable. This low R-squared value indicates the possibility that there are other important variables that have not been included in the model, such as the participation rate of the labor force, the structure of the informal sector, regional investment, and indicators of social inequality.

These two limitations are important considerations in interpreting results and formulating policies. For further research development, it is recommended to formally incorporate stationariness testing and consider alternative econometric model approaches such as the Dynamic Panel GMM or panel cointegration model, if the long-term relationship is to be explored in more depth.

5. Conclusion

Based on the results of the research that has been conducted, it can be concluded that of the five independent variables analyzed on the open unemployment rate (TPT) in Lampung Province, three of them showed a significant relationship. The variables of GDP and average length of school (RLS) have a positive and significant influence on TPT, while inflation of the previous year (INF(-1)) shows a significant negative influence. Meanwhile, MSEs and inflation for the current year do not have a significant impact on TPT during the 2017–2023 period.

These findings show that there is a mismatch between economic growth and job creation, as well as a mismatch between the quality of education and the needs of the world of work. This reflects the need to reformulate employment development and education strategies in the regions. The policy implications of this study include:

1) The formulation of MSE policies is based on productivity and sectoral characteristics, not only based on inflation or economic growth. The government needs to develop an MSE scheme that is able to encourage the small and medium business sector to continue to grow but still be fair to workers. Furthermore, it is necessary to strengthen the quality of economic growth through labor-intensive sectors, such as the agro-industry-based agricultural sector and tourism, in order to absorb more workers and avoid the trap of jobless growth.
2) Synchronization of education and employment policies by strengthening link and match programs between educational institutions and the business/industry world, as well as expanding vocational education based on the real needs of the local job market.
3) Adaptive and dynamic monitoring and evaluation of inflation, especially in assessing its short- and long-term effects on the labor market, so that monetary and employment policies can be more synchronized.

By paying attention to the results of this study, it is hoped that the Lampung Provincial Government can formulate a more targeted, sustainable, and competitive employment development policy towards a Golden Indonesia 2045.

References

Aghion, P., & Howitt, P. (1998). Endogenous growth theory. MIT Press.

Allegretto, S. A., Dube, A., Reich, M., & Zipperer, B. (2017). Credible research designs for minimum wage studies: A response to Neumark, Salas, and Wascher. ILR Review, 70(3), 559–592. https://doi.org/10.1177/0019793917697758

Ball, L., & Mankiw, N. G. (2002). The NAIRU in theory and practice. Journal of Economic Perspectives, 16(4), 115–136. https://doi.org/10.1257/089533002760278712

Becker, G. S. (1964). Human capital: A theoretical and empirical analysis, with special reference to education. University of Chicago Press.

Belman, D., & Wolfson, P. J. (2014). What does the minimum wage do? W.E. Upjohn Institute. https://doi.org/10.17848/9780880994560

Berument, H., Dogan, N., & Tansel, A. (2014). Economic performance and unemployment: Evidence from Turkey. Economic Modelling, 42, 373–383. https://doi.org/10.1016/j.econmod.2014.06.010

Blanchard, O., & Katz, L. F. (1997). What we know and do not know about the natural rate of unemployment. Journal of Economic Perspectives, 11(1), 51–72. https://doi.org/10.1257/jep.11.1.51

Card, D., & Krueger, A. B. (1994). Minimum wages and employment: A case study of the fast-food industry in New Jersey and Pennsylvania. American Economic Review, 84(4), 772–793.

Clemens, J., & Wither, M. (2014). The minimum wage and the Great Recession: Evidence of effects on the employment and income trajectories of low-skilled workers. https://doi.org/10.3386/w20724

Di Pietro, G., & Urwin, P. (2006). Education and skills mismatch in the Italian graduate labour market. Applied Economics, 38(1), 79–93. https://doi.org/10.1080/00036840500367951

Dube, A., Lester, T. W., & Reich, M. (2010). Minimum wage effects across state borders: Estimates using contiguous counties. The Review of Economics and Statistics, 92(4), 945–964. https://doi.org/10.1162/REST_a_00039

Friedman, M. (1977). Nobel lecture: Inflation and unemployment. Journal of Political Economy, 85(3), 451–472. https://doi.org/10.1086/260579

Gali, J. (2011). Monetary policy and unemployment. NBER Macroeconomics Annual, 26(1), 329–360. https://doi.org/10.1086/664923

Gordon, R. J., & Dew-Becker, I. (2008). Controversies about the rise of American inequality: A survey (NBER Working Paper No. 13982). https://doi.org/10.3386/w13982

Green, F., & Zhu, Y. (2010). Overqualification, job dissatisfaction, and increasing dispersion in the returns to graduate education. Oxford Economic Papers, 62(4), 740–763. https://doi.org/10.1093/oep/gpp014

Gujarati, D. N., & Porter, D. C. (2009). Basic econometrics (5th ed.). McGraw-Hill/Irwin.

Hanushek, E. A., & Woessmann, L. (2008). The role of cognitive skills in economic development. Journal of Economic Literature, 46(3), 607–668. https://doi.org/10.1257/jel.46.3.607

Heckman, J. J., Lochner, L. J., & Todd, P. E. (2006). Earnings functions, rates of return and treatment effects: The Mincer equation and beyond. In E. A. Hanushek & F. Welch (Eds.), Handbook of the Economics of Education (Vol. 1, pp. 307–458). Elsevier. https://doi.org/10.1016/S1574-0692(06)01007-5

Islam, I., & Nazara, S. (2000). Towards a job-rich growth strategy for Indonesia. ILO.

Lemos, S. (2009). Minimum wage effects in a developing country. Labour Economics, 16(2), 224–237. https://doi.org/10.1016/j.labeco.2008.09.002

Lucas, R. E. (1976). Econometric policy evaluation: A critique. In K. Brunner & A. H. Meltzer (Eds.), The Phillips Curve and Labor Markets (pp. 19–46). https://doi.org/10.3386/w0133

Mankiw, N. G. (2015). Macroeconomics (9th ed.). Worth Publishers.

McGuinness, S. (2006). Overeducation in the labour market. Journal of Economic Surveys, 20(3), 387–418. https://doi.org/10.1111/j.0950-0804.2006.00284.x

Neumark, D., & Wascher, W. (2008). Minimum wages. MIT Press.

Okun, A. M. (1962). Potential GNP: Its measurement and significance. Proceedings of the Business and Economic Statistics Section of the American Statistical Association, 98–103.

Phillips, A. W. (1958). The relationship between unemployment and the rate of change of money wage rates in the United Kingdom, 1861–1957. Economica, 25(100), 283–299. https://doi.org/10.2307/2550759

Psacharopoulos, G. (1994). Returns to investment in education: A global update. World Development, 22(9), 1325–1343. https://doi.org/10.1016/0305-750X(94)90007-8

Samuelson, P. A., & Solow, R. M. (1960). Analytical aspects of anti-inflation policy. American Economic Review, 50(2), 177–194.

Sargent, T. J. (1973). Rational expectations, the real rate of interest, and the natural rate of unemployment. Brookings Papers on Economic Activity, 1973(2), 429–480. https://doi.org/10.2307/2534094

Stigler, G. J. (1946). The economics of minimum wage legislation. American Economic Review, 36(3), 358–365.