

# U.S. State Minimum Wage Policies and Employment Performance Improvement

Dae Hyun Kim\*

**Abstract:** Federal, state and local departments of labor are managing the minimum wage levels. U.S. state minimum wage increases are positively associated with GRDP growth rates and education expenditure rates. Minimum wage increases are positively associated with economic capacities and human capital improvements. And U.S. state minimum wage increases are negatively associated with state citizen ideology scores. Thus, relatively conservative citizens are supporting the minimum wage increase and U.S. state governments/governors are reflecting these conservative citizen ideologies regardless of state governments' and state governors' ideologies. These are the strong evidences of state policy congruence in case of minimum wage policy. And politicians and public administrators should respect the evidence-based policy approaches. Specialist opinions, evaluation reports and experiences are excellent sources of evidence-based policy. Public policy decisions should be based on these evidence-based policy approaches. Especially, politicians and public administrators should manage the relationships between minimum wage policy and employment performances cautiously by using public performance measures and statistical research methods. And minimum wage policy should be harmonized with labor productivity improvement.

**Keywords:** minimum wage policy and employment performance improvement

## INTRODUCTION

As a means of recovering from the financial crisis, the U.S. federal government has relied on an expansionary monetary policy/fiscal policy mix, an approach that have been successful in spurring GDP growth. In the wake of economic recovery, some U.S. states have increased their minimum wages, a move actively opposed by leaders in other states. Minimum wage increase supporters argue that minimum wage increases

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do not harm employment and that they help decrease inequality. They also argue that minimum wage increases boosts consumption, which in turn creates more jobs. Minimum wage increase opponents argue to the contrary that minimum wage increases interfere with job growth because if employers have to pay each worker more money, they will eliminate jobs to manage their costs.

This article compares U.S. state policy and offers an analysis of how state minimum wage policies have affected employment performance. First, I analyze the main drivers of U.S. state minimum wage increase—political factors, economic capacity factors, and budgeting factors—by using cross-sectional regression analyses. Second, I use the 2010-11 panel datasets to analyze the relationship between U.S. state minimum wage policies and employment performance.

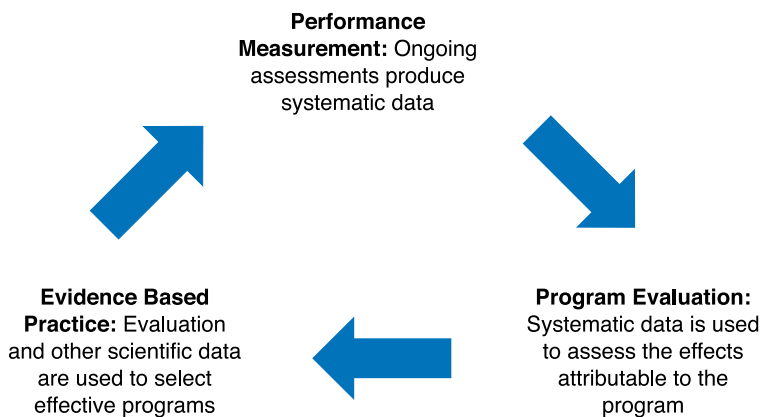
## MINIMUM WAGE POLICY AND THEORETICAL FRAMEWORK

### Evidence-Based Policy

Policy makers should design institutional frameworks carefully, given the impact that policy can have, relying on evidence-based sources such as evaluation reports, journal articles, specialist opinions, experimental research findings, and experience (Jennings and Hall, 2011). Politicians and public administrators should consider these factors, and their decisions should be based on them.

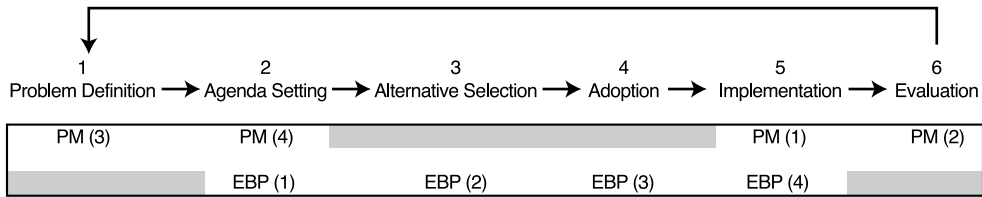
In addition, evidence-based policy should be harmonized with the policy process

**Figure 1.** Evidence-Based Practice, Performance Measurement, and Program Evaluation



Source: Hall (2013)

**Figure 2.** Evidence-Based Practice, Performance Management, and Policy Process



Source: Hall (2013)

and the performance management framework, informing agenda setting, alternative selection, policy adoption, and implementation (Hall, 2013), and evidence-based policy, performance measurements, and program evaluation should be interrelated so as to improve employment performance.

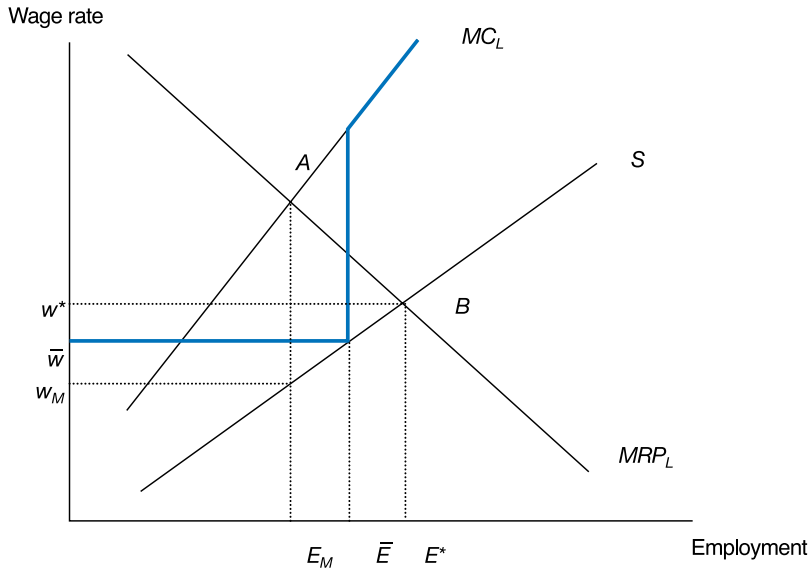
### Labor-Demand Monopoly Model and Neoclassical Labor-Supply/Demand Model

Minimum wage supporters appeal to the labor demand monopoly model, while minimum wage opponents draw on the neoclassical labor supply/demand model (Korean Department of Labor, 2009).

#### Labor Demand Monopoly Model

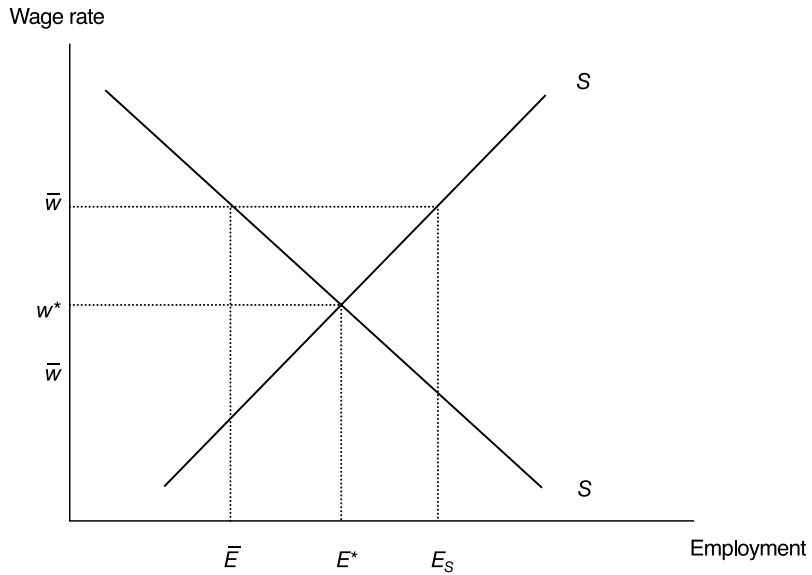
According to the labor demand monopoly model, the market equilibrium employment level is determined by the MC (marginal cost) and MRP (marginal revenue product) curves. Labor-demand monopoly companies want to maximize their profits at this point, and the equilibrium wage level is  $W_m$ . If the government sets the minimum wage at  $W$ , the MC curve will be the blue line and equilibrium employment level will be  $E$ . Thus, a minimum wage increase will lead to employment increase if  $E$  is more than  $E_m$  and less than  $E^*$ . There are various labor demand monopoly factors such as efficiency wage theory, monopolistic competition, and so on. Minimum wage supporters maintain that an increase in the minimum wage increase increases employment and decreases inequality.

**Figure 3.** Labor Demand Monopoly Model



Source: Korean Department of Labor (2009)

**Figure 4.** Neoclassical Labor Supply and Demand Model



Source: Korean Department of Labor (2009)

### Neoclassical Labor Supply and Demand Model

According to the neoclassical labor supply and demand model, market equilibrium wage and employment levels are determined by labor supply and labor demand curves. If the government sets the minimum wage at  $W_1$  (lower than  $W^*$ ), it has no effect. If government sets the minimum wage at  $W_2$  (higher than  $W^*$ ), it will decrease the labor demand and increase the unemployment rate. Thus, minimum wage increases have no positive effect according to the neoclassical labor supply and demand model.

## LITERATURE REVIEW AND POLICY IMPLICATIONS

Table 1 offers a summary of articles that compare U.S. state policies and that explore the affect of public opinion on state policy.

**Table 1.** State Policy Comparisons and Affect of Public Opinion on State Policy Literature Overview

Authors	Summary and Policy Implications
James M. Poterba (1995)	Using 1962 state nonhighway capital spending datasets and relevant variables, the author found that state nonhighway capital spending is positively associated with capital budgeting institutions and negatively associated with pay-as-you-go financing institutions.
W. Steven Barnett et al. (2008)	Using regression discontinuity analyses methods, the authors gauged the effectiveness of Michigan's, New Jersey's, Oklahoma's, South Carolina's, and West Virginia's prekindergarten programs, finding they did improve the educational performance of young children.
Robert Erikson et al. (1989)	Analyzing the relationships among political parties, public opinions, and state policies in the United States by using path analyses and correlation analyses methods, the authors concluded that public opinions and state policies are closely interrelated because politicians want to be reelected, and they seek to ensure that they are reelected by improving their responsiveness.
Jeffrey R. Lax and Justin H. Phillips (2012)	Using logistic regression analyses methods, the authors analyzed 39 state policies, finding that majority-friendly policies are adopted only half the time. According to the authors, the main factors to consider in assessing this "democratic deficit" are legislative professionalism, issue salience and term limits.

Table 2 provides a short overview of articles on the relationship between minimum wage policy and employment performance improvement:

**Table 2.** Minimum Wage Policy and Employment Performance Improvement Literature Overview

Authors	Summary and Policy Implications
Marianne E. Page et al. (2005)	Using U.S. state datasets (1983-1996) and panel regression analyses methods, the authors found that weighted log welfare caseloads are positively associated with log minimum wage (coefficients: 0.1-0.2)
Daniel Aaronson et al. (2009)	Analyzing the relationships among spending response, debt response, and minimum wage increases by using consumer expenditure survey datasets (1982-2005) and panel regression analyses methods, the authors concluded that automobile spending increases more than income among households impacted by minimum wage increases.
Alan B. Krueger and David Card (1994)	Assessing the relationships between minimum wage increase and employment by using 1992 New Jersey and Pennsylvania survey results from employees at 410 fast food restaurants along with mean difference analyses and regression analyses methods, the authors found that there is no statistically significant relationship between minimum wage increase and reduced employment.
Richard V. Burkhauser and T. Aldrich Finegan (1989)	Evaluating the possible consequences of the 1988 Kennedy-Hawkins bill, the authors concluded that the distributional effects of the proposed legislation should be carefully considered, as, according to the authors, if the bill became law, people living in poverty would get about 11% of total gains, while low-wage workers of relatively high-income families would get about 40% of total gains.
Edward L. Glaeser (2014)	Effective education policy and labor-incentive policies are necessary for employment performance improvement.

Table 3 summarizes several articles on evidence-based policy.

**Table 3.** Evidence-Based Policy Literature Overview

Authors	Conclusions and Policy Implications
Edward T. Jennings Jr. and Jeremy L. Hall (2011)	The authors interviewed 600 agency directors of 12 functional agencies (50 states) using survey methods, finding that internal agency staff, comparable agencies in other states, evaluation reports, professional associations, federal government, consultants, local government officials, think tanks, and news media are the main sources of public policy evidences. The final response rate was 36.2%. ANOVA and correlation coefficients were used to analyze evidence-based policies.

Authors	Conclusions and Policy Implications
Jeremy L. Hall (2013)	Using qualitative methods, the author concluded that evidence-based practice, performance measurement, and program evaluation should be interrelated to improve the performance of public policy. According to his framework, program evaluation results can be used for evidence-based policy and evidence-based policy can be linked to performance measurements because policy evidence can be used for public policy planning. Evidence-based policy and performance management are likewise linked to agenda setting, alternative selection, policy adoption and implementation because policy evidence can be used for these public policy processes.
Rebecca A. Maynard (2006)	Various research methods, contexts, and descriptive analyses should be considered for the better evidence-based practice.

## **DATA AND METHOD**

### **Minimum Wage Policy, Internal Determinants, and Employment Performance**

The articles summarized in tables 1-3 did not use recent U.S. state datasets to analyze state minimum wage policy trends and minimum wage increase drivers. I address that limitation here by analyzing these trends using 2011 U.S. state datasets (datasets that reflect minimum wage increases between 2007 and 2011 and that include independent variables) to test several hypotheses. I analyze 41 U.S. states because some states use minimum wage ranges instead of minimum wage values. In addition, I analyze the relationships between U.S. state minimum wage policies and employment performance using 2010-2011 panel datasets based on 82 observations. I use cross-sectional regression analysis methods to assess minimum wage policy. The hypotheses are as follows. First, states with a high GDP growth rate and a high number of establishments to population ratio have a greater economic capacity to support minimum wage increases. Thus, these two variables should be positively associated with minimum wage increases. Second, states with a high education expenditure rate and high welfare expenditure rate tend to pay close attention to human capital, labor income, and welfare policy. Thus, these two variables should be positively associated with minimum wage increases. Third, states with left-leaning state citizen ideology state government ideology scores and states with Democratic state governors should be positively associated with minimum wage increases because minimum wage increases tend to be positively associated with progressive political ideologies. Fourth, minimum wage increases should be positively associated with the rate of increase in neighboring states rate because of interstate economic competition. Fifth, minimum

wage increase is positively associated with employment performance improvement according to the labor demand monopoly model. Thus, minimum wage increases should be positively associated with a higher private employment rate. States with high GDP growth rate and a high new establishment to population ratio have a greater economic ability to support an increase in the private employment rate. Thus, these two variables should be positively associated with private employment rate increases. Finally, states with a high education expenditure rate and a high welfare expenditure rate tend to take a deeper interest human capital and domestic consumption than states with low education and welfare expenditure rates. Thus, these two variables should be positively associated with increases in the private employment rate.

**Table 4.** Variables and Data Sources

Variables	Formulae	Data Sources
minimum wage increases	2011 minimum wage levels 2007 minimum wage levels 2010, 2011 minimum wage levels	Department of Labor (2014)
GRDP growth rates	2010 GRDP-2011 GRDP)/2010 GRDP (2009 GRDP-2010 GRDP)/2009 GRDP	Department of Labor (2014)
private employment rates	private employment / population	U.S. Census (2014)
education expenditure rates	2010, 2011 education expenditures / 2010, 2011 total budget	U.S. Census (2014)
Welfare expenditure rates	2010, 2011 welfare expenditures / 2010, 2011 total budget	U.S. Census (2014)
number of establishments to population ratios	2010, 2011 number of establishments / 2010, 2011 population	U.S. Census (2014)
state citizen ideology	2010 state citizen ideology points	Professor Richard C. Fording website (2014)
state government ideology	2010 state government ideology points	Professor Richard C. Fording website (2014)
state governor	2011 Democratic state governor = 1 2011 Republican state governor = 0	U.S. Census (2014)
neighboring states' rates	2011 minimum wage increases in neighboring states / 2011 total neighboring states	Department of Labor (2014)



**Table 5.** Minimum Wage Increases and Internal Determinants (2011)

Variables	Model 1	Model 2	Model 3	Model 4
GRDP growth rates	15.47010 (t: 1.88719)	15.42792 (t: 1.91003)	15.89660 (t: 1.99962)	15.18531 (t: 1.81883)
Education expenditure rates	6.12519 (t: 1.32595)	5.78451 (t: 1.33818)	5.87663 (t: 1.37465)	8.44588 (t: 1.95680)
Welfare expenditure rates	4.16100 (t: 0.71441)	3.83370 (t: 0.68782)	4.42146 (t: 0.81659)	-0.40132 (t: -0.07740)
number of establishments to population ratio	-10.52856 (t: -0.26096)	-11.93590 (t: -0.30354)	-9.38781 (t: -0.24290)	-25.21138 (t: -0.63206)
state citizen ideology	-0.02674 (t: -1.92468)	-0.02583 (t: -1.96420)	-0.02743 (t: -2.16072)	–
state government ideology	0.00509 (0.77115)	0.00454 (t: 0.74620)	0.00310 (t: 0.57003)	-0.00292 (t: -0.59504)
state governor	-0.19221 (t: -0.54071)	-0.19317 (t: -0.55141)	–	–
neighboring states	-0.14320 (t: -0.23492)	–	–	–
R <sup>2</sup>	33.366%	33.252%	32.637%	23.387%
N	41	41	41	41

### GRDP Growth Rates

According to model 3, the minimum wage will increase by \$15.89660 once the GRDP growth rate has increased by 1% ( $p < 0.05$ ). This means that the GRDP growth rate is positively associated with an increase in the minimum wage. States with high GRDP growth rate have the economic wherewithal to support minimum wage increases. Minimum wage and wage increases encourage domestic consumption, and an increase in domestic consumption is linked to an increase in domestic investment. Thus, increases in the minimum wage increase and wages generally contribute to the revitalization of the domestic market revitalization and to an increase in demand. Also, government taxes such as sales tax, income tax, and corporate taxes will increase even though tax rates remain the same. The public sector will use these taxes to improve public services and public goods. Politicians and public administrators should manage this reinvestment using logic models, performance measures, and performance reporting frameworks. Path analyses methods and structural equations models will be helpful for these analyses.

### **Education Expenditure Rates**

According to model 4, minimum wage will increase by \$8.44588 once the education expenditure rate has increased by 1% ( $p < 0.05$ ). This means that the education expenditure rate is positively associated with a minimum wage increase. A high education expenditure rate indicates an investment in human capital and labor income. Nowadays, many public policy scholars and economists are arguing that human capital is critical to sustainable economic growth and better quality of life. U.S. state governments seeking to develop human capital and increase labor incomes will increase the minimum wage in line with this analyses.

### **Welfare Expenditure Rates**

According to models 1, 2, 3, and 4, the relationship between an increase in the minimum wage and welfare expenditure rates is not statistically significant. Thus, the relationship between minimum wage policy and public welfare policy is not statistically significant.

### **Number of Establishments to Population Ratios**

According to models 1, 2, 3, and 4, the relationship between an increase in the minimum wage increase and the number of establishments to population ratio is not statistically significant. Thus, the relationship between minimum wage policy and the number of establishments to population ratio is not statistically significant.

### **State Citizen Ideology**

According to model 3, minimum wage will increase by \$0.02743 once the state citizen ideology score has decreased by 1 point ( $p < 0.05$ ). This means that the state citizen ideology score is negatively associated with an increase in the minimum wage .

### **State Government Ideology**

According to the models 1, 2, 3 and 4, the relationship between an increase in the minimum wage and the state government ideology score is not statistically significant. Thus, the relationship between minimum wage policy and state government ideology is not statistically significant. These results provide strong evidence of state policy congruence in case of minimum wage policy. Politicians and public administrators

seek to decrease inequality and improve employment opportunities. The minimum wage institution is an employment-friendly welfare policy tool that helps poor people improve their welfare levels. U.S. welfare policy programs such as TANF, EITC, public housing programs, food stamp programs, and so on likewise seek improve employment opportunities and decrease inequality.

**State Governor**

According to model 2, the relationship between an increase in the minimum wage and the state governor score is not statistically significant. Thus, the relationship between minimum wage policy and the state governor score is not statistically significant. These results likewise offer strong evidence of state policy congruence in case of minimum wage policy.

**Neighboring States**

According to model 1, the relationship between an increase in the minimum and the rate of increase in neighboring states is not statistically significant. Thus, the relationship between minimum wage policy and neighboring states’ minimum wage levels is not statistically significant.

**Table 6.** U.S. State Employment (%) and Internal Determinants (2010-2011)

Variables	Private Employment (%) (>500): Model 1	Private Employment (%) (500+): Model 2
minimum wage	0.00488 (t: 1.98714)	0.00623 (t: 1.31572)
GRDP growth rates	0.29811 (t: 3.72608)	0.07627 (t: 0.49454)
Education expenditure rates	0.10513 (t: 2.15582)	0.10171 (t: 1.08204)
Welfare expenditure rates	0.10936 (t: 2.30186)	-0.01345 (t: -0.14688)
number of establishments to population ratios	6.19209 (t: 15.88640)	2.61204 (t: 3.47656)
R <sup>2</sup>	79.481%	16.990%
N	82	82

### **Minimum Wage**

According to model 1, private employment rate (>500) will increase by 0.00488% when the minimum wage increases by 1 dollar ( $p < 0.05$ ). This means that minimum wage increase is positively associated with the private employment improvement. Minimum wage increase is not harmful and helpful for the private employment improvement according to the above analysis. This result supports the labor demand monopoly and supply model.

### **GRDP Growth Rates**

According to the model 1, the private employment rate (>500) will increase by 0.29811% once the GRDP growth rate has increased by 1% ( $p < 0.05$ ). This means that the GRDP growth rate is positively associated with a growth in private employment. States with a high GRDP growth rate have the economic capacity necessary to support an increase in private employment.

### **Education Expenditure Rates**

According to model 1, the private employment rate (>500) will increase by 0.10513% once the education expenditure rate has increased by 1% ( $p < 0.05$ ). This means that the education expenditure rate is positively associated with an increase in private employment. Human capital improvement, which is implied by a high education expenditure rate, contributes to increasing the private employment according to this analysis.

### **Welfare Expenditure Rates**

According to model 1, the private employment rate (>500) will increase by 0.10936% once the welfare expenditure rate has increased by 1% ( $p < 0.05$ ). This means that the welfare expenditure rate is positively associated with a growth in private employment. Welfare expenditures lead to an increase in consumption, and consumption increase is linked to more jobs. Thus, welfare expenditures aid in job creation according to this analysis.

## Number of Establishments to Population Ratios

According to models 1 and 2, private employment rate (>500, 500+) will increase by 6.19209% and 2.61204% once the number of establishments to population ratio has increased by 1% ( $p < 0.05$ ). This means that the number of establishments to population ratio is positively associated with the private employment improvement. New establishments aid job creation, and job creation is linked to an increase in private employment

## CONCLUSION

U.S. state minimum wage increases are positively associated with GRDP growth rates and education expenditure rates. Minimum wage increases are positively associated with greater economic capacity and human capital improvements and are negatively associated with state citizen ideology scores, supplying strong evidence of state policy congruence. Politicians and public administrators should respect evidence-based policy approaches and should make public policy decisions using these approaches. In particular, politicians and public administrators should assess the relationship between minimum wage policy and employment performance by using performance measures and statistical research methods, seeking to harmonize minimum wage policy with labor productivity improvement.

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