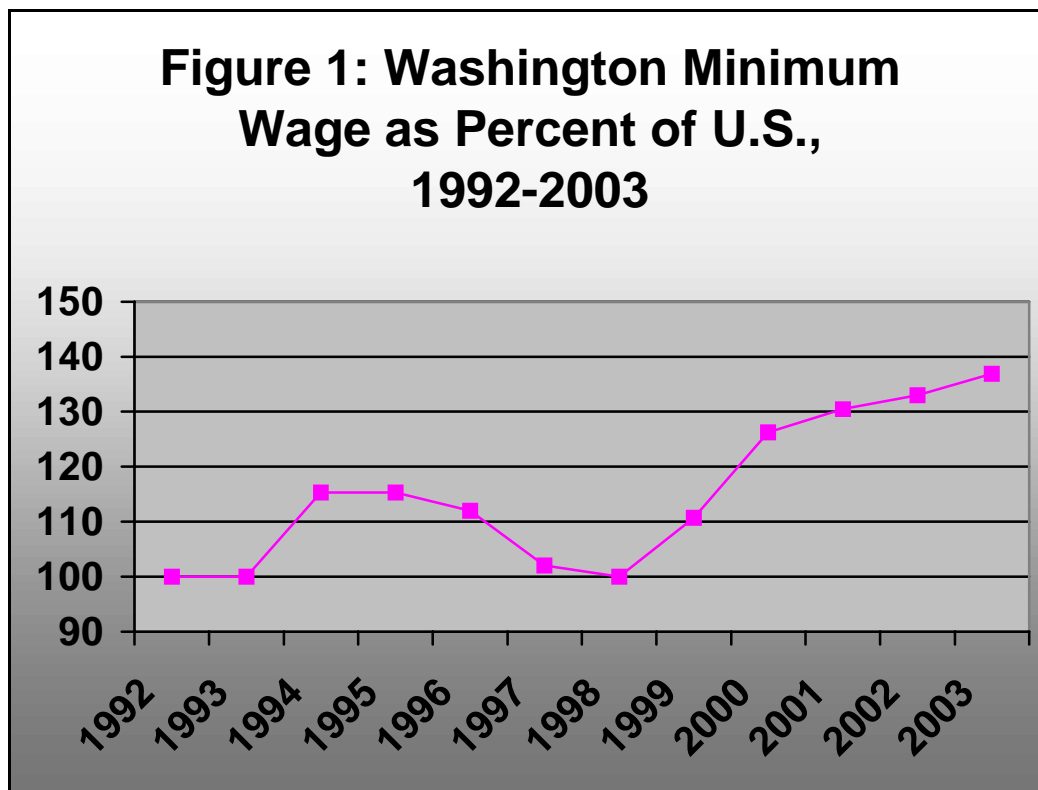


# The Economic Impact of Washington's Minimum Wage Law

By Richard Vedder and Lowell Gallaway  
Ohio University

## Introduction

On January 1, 1999, the minimum wage for workers in Washington rose as a result of a voter initiative. Subsequent increases have brought the Washington minimum wage to more than 36 percent higher than the national average. As Figure 1 shows, in much of modern history, the Washington state minimum wage was at, or relatively close to, that determined nationally via the Fair Labor Standards Act of 1938 as amended. The 1998 decision of the voters, however, has led to an unprecedentedly high minimum wage in Washington relative to national norms. Today, the Washington state minimum wage is the highest, relative to the national standard, at any time in history.



The increase in the minimum wage approved by the voters was presumably motivated by a desire to create income for lower income people. The hope was that it would reduce poverty. Yet the Law of Demand suggests that when the price of something rises, the quantity the people wish to purchase falls. Government mandated higher minimum wages mean the price of labor is being increased, which should induce some

reduction in the amount of workers who will be hired<sup>1</sup>. Thus the income-generating effect of higher wages might be offset by the income-destroying impact of falling employment opportunities arising from higher wages. The Nobel Prize winning economist Joseph Stiglitz, who was Chair of the Council of Economic Advisers under President Clinton, put it well: “a higher minimum wage does not seem to be a particularly useful way to help the poor. Most poor people earn more than the minimum wage when they are working; their problem is not low wages.”<sup>2</sup> Secondly, if a significant percentage of low paying jobs were held by persons from non-poor families, the minimum wage might be ineffective in achieving its objective even if the unemployment effects of higher wages are small.<sup>3</sup> Moreover, the longer term ability to increase worker income is closely tied to experience and training, and if the minimum wage hike were to lead to reduced training, and if unemployment lowered opportunities to gain experience, the longer term prospects of lower skilled workers would be further reduced.<sup>4</sup>

The first empirical question, then, is: have economic conditions for lower income citizens of Washington improved since the enactment of the high state minimum wage? Is, for example, the rate of poverty higher or lower? Does Washington’s poverty experience in recent years mirror that of the nation? If no, is it plausible to argue that the minimum wage law has played a role in the deterioration in the income position of relatively disadvantaged Washingtonians?

---

<sup>1</sup> The evidence in this respect is persuasive. A review of earlier studies is found in Charles Brown, Curtis Gilroy and Andrew Kohen, “The Effect of the Minimum Wage on Employment and Unemployment,” *Journal of Economic Literature* 46(1), October 1982, pp. 487-528. For a more recent review, see Charles Brown, “Minimum Wages, Employment and the Distribution of Income,” in Orley Ashenfelter and David Card, eds., *Handbook of Labor Economics*, 3B, 1999, pp. 2101-2163. On the impact of changes in the federal minimum wage instituted in 1990 and 1991, see Donald Deere, Kevin M. Murphy and Finis Welch, “Employment and the 1990-1991 Minimum Wage Hike,” *American Economic Review*, 85(2), May 1995, pp. 232-237. David Neumark and his colleagues have also performed much valuable recent research. See, for example, David Neumark and William Wascher, “A Cross-National Analysis of the Effects of Minimum Wages on Youth Employment, National Bureau of Economic Research (NBER) Working Paper No. 7299, August 1999, Neumark’s “The Employment Effects of Recent Minimum Wage Increases: Evidence from a Pre-Specified Research Design,” NBER Working Paper No. 7171, June 1999, and David Neumark, William Wascher and Mark Schweitzer, “The Effects of Minimum Wages Throughout the Wage Distribution,” NBER Working Paper No. 7519, February 2000. For the NBER studies, go to <http://www.nber.org>. See also Richard V. Burkhauser, Kenneth A. Couch and David C. Wittenburg, “Who Minimum Wages Bite: An Analysis Using Monthly Data,” *Southern Economic Journal* 67(1), 2000, pp. 16-40; David Macpherson, “The Effects of the Proposed California Minimum Wage Hike,” Employment Policies Institute, October 2000. The only major dissenting voice to the consensus that minimum wages cause unemployment comes from David Card and Alan Krueger, whose research are discussed below.

<sup>2</sup> See his *Economics* (New York: W.W. Norton, 1993), pp. 130-133.

<sup>3</sup> For statistics on work experience and earnings of poor and near-poor persons, see U.S. Department of Commerce, Bureau of the Census, Current Population Reports No. 219, *Poverty in the United States:2001* (Washington, D.C.: Government Printing Office, 2002), available at [www.census.gov/hhes/www/poverty.html](http://www.census.gov/hhes/www/poverty.html).

<sup>4</sup> Empirical evidence that minimum wages reduce training is provided in Masanori Hashimoto, “Minimum Wage Effects on Training on the Job,” *American Economic Review*, 72(5), December 1982, pp. 1070-1087. For a more recent affirmation of that evidence, see David Neumark and William Wascher, “Minimum Wages and Training Revisited,” NBER Working Paper, W6651 available at [www.nber.org](http://www.nber.org).

## Rising Poverty in Washington

Despite rising incomes in the late 1990s and into the new century, the poverty rate has gone up in the state of Washington. Table 1 looks at the poverty rate in 1998, the year prior to the beginning of the state's higher minimum wage, and 2001. Note that in Washington, the rate rose by 1.9 percentage points, going from 8.9 to 10.8 percent, implying an increase of the actual number of poor persons of substantially over 20 percent. By contrast, nationally, the poverty rate fell by a percentage point, and in the neighboring states of Idaho and Oregon the decline was even greater. Whereas in 1998, the poverty rate was dramatically lower in Washington than in Oregon (8.9 vs. 15.0 percent), by 2001, the rate was actually *higher* in Washington.

**Table 1**  
**Changes in the Poverty Rate, Washington and the Nation, 1998-2001**

State or Area	1998 Poverty Rate	2001 Poverty Rate	Change, Poverty Rate, 1998-2001
Washington	8.9%	10.8%	+1.9%
U.S.	12.7	11.7	-1.0
Oregon	15.0	10.6	-4.4
Idaho	13.0	11.2	-1.8

**Source: U.S. Bureau of the Census, authors' calculations.**

The use of single year poverty rate data is somewhat hazardous, however, because the samples on which poverty rates are calculated at the state level are rather small. To reduce that problem, the Bureau of the Census prefers to use averages of the poverty rate over two or more years. We can compare 1997 and 1998, the last two years prior to the implementation of the voter mandated minimum wage increase, with 2000 and 2001, after the law had been fully in effect. The results, presented in Table 2, are similar to those derived from the single year data. Poverty rates are falling elsewhere, but rising in Washington during the period following the implementation of the higher state minimum wage.

**Table2**  
**Changes in the Poverty Rate, Washington and the Nation, 1997-98 to 2000-01**

State or Area	1997-98 Poverty Rate	2000-01 Poverty Rate	Ch., Pov. Rate, 97-98, 2000-01
Washington	9.1%	10.8%	+1.7%
U.S.	13.0	11.5	-1.5
Oregon	13.3	11.3	-2.0
Idaho	13.8	12.0	-1.8

**U.S. Bureau of the Census, authors' calculation**

Moreover, Table 2 looks only at Washington, two bordering states, and the aggregate figure for all Americans. A detailed examination of changes in the two-year poverty rate from 1997-98 to 2000-2001 reveals that *the poverty rate rose far more in Washington than in any other state in the Union*. Indeed, only six of the 50 states had rising poverty rates during this period of general prosperity (despite the mild 2001

recession), and the second highest increase in the poverty rate, 1.1 percentage points in Oklahoma, was more than one-third smaller than in Washington.

It is at least conceivable that Washington's rise in poverty happened coincidentally with the introduction of sharply higher minimum wages. That possibility would be strengthened if the period in question was one of economic stagnation and decline in Washington. The evidence, however, does not support that possibility. Real per capita personal income rose 9.65 percent from 1997 to 2001, which, other things equal, should have led to some reduction in poverty. Moreover, the real income growth in Washington exceeded the national average for the same period. The median real per capita income growth for the 50 states and the District of Columbia was 7.96 percent, suggesting that Washington's real per head income growth was more than one-fifth larger than the typical state. In most of the rest of the U.S., poverty rates were falling as real income was rising – but not in Washington.

More sophisticated statistical analysis confirms the descriptive statistical evidence. We regressed the 2000-01 poverty rate for the 50 states plus the District of Columbia against the 1997-98 poverty rate and against the growth in real personal income per capita. As expected, there was a positive observed relationship between the recent poverty rate and the earlier rate, and a negative relationship observed between the 2000-01 poverty rate and the rate of economic growth. From the model, we can estimate what the 2000-01 poverty rate in the state of Washington would have been. The actual rate, 10.8 percent, was almost precisely one-third higher than the predicted rate of 8.14 percent. Why the big error (for a model that explained well over 82 percent of the interstate variations in the poverty rate)? The unique event in Washington was the sharp increase in the minimum wage, not observed in the typical other state.

Why would poverty rates rise in a state that had significantly rising income levels and a simultaneous increase in the state minimum wage? While several factors are no doubt at work, the minimum wage increase would only reduce poverty if the “income effect” on higher wages is greater than the “substitution effect” associated with reduced employment arising from higher wages. Elaborating, proponents of minimum wages would argue that increasing pay to relatively low paid workers often would increase their income sufficiently to raise them above the poverty level. This income effect, however, may be completely offset by the substitution effect that arises when the increased minimum wage leads to behavioral changes on the part of employers.

What are these behavioral changes? First, employers respond to the Law of Demand – when the price of something rises, people want to buy less of it. In the case of labor, workers are hired for the revenues that their efforts provide to the firm. If the extra cost to a firm of hiring another worker is less than the extra revenue that worker will provide, it is profitable to hire the worker, and employment will be increased. For example, suppose a worker's effort is expected to add \$6 per hour in revenue to the firm. If the wage is, say, the federal minimum wage of \$5.15 per hour, the firm will hire the worker because she or he is expected to enhance the firm's profitability. If, however, the wage is mandated under state law to be over \$7 (as is currently the case in Washington), the decision will be made not to employ the worker, as her addition to the payroll of the business would actually lower profits.

If the unemployment effects of the minimum wage are sufficiently large, than one would expect the reduction in poverty associated with some workers receiving a higher wage would be offset by the loss of income from reduced employment among lower skilled workers. Moreover, the employment decision is not simply a “yes” or “no” one where workers either work fulltime or are unemployed. There is considerable

evidence that increases in real minimum wages lead to reductions in hours worked. Consider a worker who works 40 hours a week at \$5.15 per hour for 50 weeks a year, providing him or her with \$10,300 income. Suppose the minimum wage goes up to \$6.25, but the employer, feeling cost pressures, reduces the hours of employment to 30 hours per week. Annual compensation of the worker would fall to \$9,375, or by nine percent, which might actually work to bring the worker into poverty from non-poverty status (that depends on the income of other members of his or her household).<sup>5</sup>

There are other ways in which increases in the mandated minimum wage could increase worker poverty. First, employers, to reduce costs, might eliminate certain fringe benefits, such as health insurance or company subsidized retirement plans. Second, the firm might cut back on worker training, reducing the probability of the worker gaining on the job skills that would increase earnings over the long run.

This brings us to two other problems with using minimum wages as a means of eliminating poverty, or more generally, to redistribute income. First, most poor persons (over 88 percent in 2001) do not work full-time, and a large percent (over 61 percent in 2001) do not work at all. The poverty rate among full-time workers is a paltry 2.6 percent.<sup>6</sup> Thus, most adult poor people have no wage income, so minimum wage laws can have but a marginal impact. Moreover, a significant percentage of persons working minimum wage jobs are second or third wage-earners in a household which often has income levels substantially above the poverty levels (e.g., teen-age children from two parent middle class families). Thus there is a significant targeting problem with the minimum wage as a poverty reduction strategy.

The second problem relates to income mobility. Today's poor are tomorrow's non-poor. There is a good deal of movement of persons up and down the income distribution. While there may be some long-term poor who have little opportunity to improve their lot because of various disabilities (a group for which minimum wages are largely irrelevant), most poor move out of the poverty condition as job opportunities present themselves.<sup>7</sup> If minimum wages deny individuals opportunities for initial employment, they retard the move up the job ladder that provides a means out of poverty for many.

We have previously estimated statistically the relationship between state minimum wages and poverty rates using data for the 50 states and the District of Columbia.<sup>8</sup> To summarize our findings, we consistently found *positive* relationships between the presence of state minimum wages above the federally mandated level and the rate of poverty. While the results were not always robust statistically, the opposite contention that state minimum wage laws help reduce poverty is completely rejected. This is consistent with several studies using federal data, including some by us, that show either no relationship between the minimum wage and poverty or even a positive one – higher minimum wages are associated with greater poverty.

---

<sup>5</sup> Consistent with this argument are the findings of David Neumark and William Wascher, "Do Minimum Wages Fight Poverty?" NBER Working Paper No. W6127, August 1997, available at [www.nber.org](http://www.nber.org). See also their paper with Mark Schweitzer, "Order from Chaos? The Effects of Early Labor Market Experiences on Adult Labor Market Outcomes," *Industrial and Labor Relations Review*, 51(2), January 1998, pp.299-322.

<sup>6</sup> This is for persons 16 years of age or over. The statistics are from the U.S. Census Bureau, Current Population Survey 2002, annual demographic supplement. Available on the Internet at [www.census.gov](http://www.census.gov).

<sup>7</sup> William Even and David Macpherson, *Rising Above the Minimum Wage* (Washington, D.C.: Employment Policies Institute, January 2000); web address: [www.epioline.org/even-macpherson.htm](http://www.epioline.org/even-macpherson.htm).

<sup>8</sup> Richard K. Vedder and Lowell E. Gallaway, *Does the Minimum Wage Reduce Poverty?* (Washington, D.C.: Employment Policies Institute, June 2001); see also our "The Minimum Wage and Poverty Among Full-Time Workers," *Journal of Labor Research* 23(1), Winter 2002, pp. 41-47.

In conclusion, the actual evidence of the past four years along with the findings for other states leads us to reject the major rationale for the Washington state minimum wage law, namely that it helps alleviate financial distress among the poorest members of the population. If anything, the evidence suggests that the state minimum wage law is a cruel albatross around the necks of Washington's poor, preventing them from participating in the market economy in a way that can alleviate their economic situation.

## Unemployment Effects

If it is true that the increase in the Washington minimum wage has not brought about its intended objective of improving conditions for low income persons, and indeed, likely had the opposite effect, then this is strong circumstantial evidence that the state's minimum wage is causing some unemployment and job loss. What is the actual unemployment experience in Washington in the years since the institution of the high minimum wage?

**Table 3**  
**Changing Unemployment Rates, Washington and 10 Other Western States, 1998-2001**

State or Area	1998 Unemp. Rate	2001 Unemp. Rate	Change, Unemp. Rate
<b>WASHINGTON</b>	<b>4.8%</b>	<b>6.4%</b>	<b>+ 1.6%</b>
<b>UNITED STATES</b>	<b>4.5</b>	<b>4.8</b>	<b>+ 0.3</b>
<b>Arizona</b>	<b>4.1</b>	<b>4.7</b>	<b>+ 0.6</b>
<b>California</b>	<b>5.9</b>	<b>5.3</b>	<b>- 0.6</b>
<b>Colorado</b>	<b>3.8</b>	<b>3.7</b>	<b>- 0.1</b>
<b>Idaho</b>	<b>5.0</b>	<b>5.0</b>	<b>0.0</b>
<b>Montana</b>	<b>5.6</b>	<b>4.6</b>	<b>- 1.0</b>
<b>Nevada</b>	<b>4.9</b>	<b>5.3</b>	<b>+ 0.4</b>
<b>New Mexico</b>	<b>6.2</b>	<b>4.8</b>	<b>- 1.4</b>
<b>Oregon</b>	<b>5.6</b>	<b>6.3</b>	<b>+ 0.7</b>
<b>Utah</b>	<b>3.8</b>	<b>4.4</b>	<b>+ 0.6</b>
<b>Wyoming</b>	<b>4.8</b>	<b>3.9</b>	<b>- 0.9</b>

**Source: U.S. Department of Labor, Bureau of Labor Statistics**

Table 3 shows that from 1998, the last year before the minimum wage increase, to 2001, unemployment showed little change in the nation as a whole or in the 10 other contiguous Western states. Nationally, the unemployment rate rose by a modest 0.3 percentage points, and in five of the other western states it rose, in four it fell, and in one it remained the same. No state had an increase in its state unemployment rate of over 0.7 percentage points – except Washington. The increase in the unemployment rate in Washington was more than double for any other state in the region. By 2001, Washington had the highest unemployment rate of any American state, whereas in 1998 its unemployment rate was exactly the median (middle) of the states in the region.

We asked ourselves: what would the Washington unemployment rate have been if it had followed the pattern, relative to the U.S. or its neighbors, that it did in the years prior to the adoption of the new Washington minimum wage? We estimated two regression equations, both using monthly data for the 84 months prior to the effective date of the new law (the years 1992 through 1998). In one, we estimated the Washington unemployment rate based on the national rate, and in the second, we estimated the Washington rate based on the average of its two bordering states, Oregon and Idaho. In both regressions, there was a

highly significant statistical relationship between the national or neighboring unemployment rate and that in Washington – Washington typically followed national and regional patterns.

We then took the estimated coefficients from the regression equations and forecast what the Washington unemployment rate should have been in September 2002, the last month for which data were available at the time of this analysis. That forecast implicitly assumes that the historic (1992-98) pattern of relationship between the Washington and national (or neighboring) unemployment rates still existed. The actual unemployment rate in September 2002 was 7.4 percent. The rate predicted from the model using national data was 6.04 percent, and with neighboring (Oregon and Idaho) data was 6.63 percent. Thus unemployment in Washington was 0.77 percent points higher than expected using neighboring states as the guide, and 1.36 percent points higher using national data to do the calculation.

Given the fact that the September 2002 labor force in the state of Washington was 2,979,000, the implied loss of jobs arising from Washington's unemployment rate exceeding what historical patterns would predict was 22,930 jobs using neighboring state data, and 40,499 using national data. Using a mid-range estimate, we would opine that the Washington unemployment rate is slightly over one percentage point above what might be expected, implying a loss of over 31,000 jobs.

It is true that this surge in Washington unemployment after 1998 may be caused by factors other than the increase in the Washington minimum wage, notwithstanding the fact that there are voluminous scholarly studies showing that minimum wages causes unemployment. One might note that the dot.com collapse in 2000 and beyond hit Washington hard, and that the slowdown in aviation since the recession began and especially after September 11, 2001, has reduced employment at Washington's largest employer, Boeing. According to this view, the rising unemployment was caused by these factors, not the minimum wage increase.

It should be pointed out, however, that the deterioration in Washington's unemployment situation began well before the September 11 tragedy – when the minimum wage hike was already operative. Indeed, the full impact of the rise in the minimum wage in Washington was probably felt by the summer of 2000. From December 1998 to September 2000, the unemployment rate fell by 0.5 percentage points nationally, and by 0.3 percentage points in Idaho and a rousing 1.1 percentage points in Oregon. Yet it *rose* by 0.4 percentage points in Washington. If Washington's rate had responded as it did nationally after December 1998, it would have been 0.9 percentage points lower in September 2000. If it had responded at the average of Washington's two neighbors, it would have been 1.1 percentage points lower. It would appear that the Washington unemployment rate in September 2000 was about one percentage point higher than what the 1999-2000 labor market situation would have predicted – *before the onset of the recession and fully a year before the September 11 tragedy*. This supports the notion that the minimum wage hike may have boosted the state's unemployment rate by about one percentage point, meaning the loss of roughly 30,000 jobs.

To learn more about the *immediate* impact of the increase in the minimum wage in January 1999, we did a comparison of employment growth rates in Washington and its two neighbors, Oregon and Idaho, in the periods immediately before and immediately after the minimum wage increase. Specifically, we looked at total nonagricultural job growth as well as that in eight specific employment categories for the six months April through October of 1998, the last six months before the voters approved the minimum wage increase in November 1998. Then we looked at job growth from December 1998 (the last month prior to the increase in the minimum wage) and June 1999. The results are shown in Table 4.

Looking at total job growth, it declined from 3.19 to 0.75 percent as Washington moved into the higher minimum wage era. By contrast, there was little change in growth in the neighboring states. If we take the average of Oregon and Idaho, employment growth in the 1998 period was 1.18 percent, compared with 1.22 percent in the 1999 period. Growth stayed the same, roughly, while it fell sharply in Washington. Whereas in 1998, before the minimum wage change, job growth was sharply higher in Washington than in either Idaho or Oregon (where it was almost nonexistent), in the post-minimum wage increase period growth was far higher in Idaho than in Washington, and almost 95 percent of the huge differential between Washington and Oregon had been eliminated.

**Table 4**  
**Percent Growth in Employment, Washington and Neighbors: 6 Months Before**  
**and 6 Months After the Implementation of the Minimum Wage Increase**

Sector	Before Minimum Wage Change:			After Minimum Wage Change:		
	Wash.	Oregon	Idaho	Wash.	Oregon	Idaho
<b>Total Emp.</b>	<b>3.19%</b>	<b>0.21%</b>	<b>2.15%</b>	<b>0.75%</b>	<b>0.60%</b>	<b>1.85%</b>
<b>Services</b>	<b>2.16</b>	<b>0.56</b>	<b>2.46</b>	<b>1.72</b>	<b>2.12</b>	<b>2.70</b>
<b>Manufact.</b>	<b>-0.99</b>	<b>-1.54</b>	<b>-0.13</b>	<b>-4.97</b>	<b>-0.32</b>	<b>0.66</b>
<b>Trade</b>	<b>1.18</b>	<b>-0.31</b>	<b>1.37</b>	<b>0.41</b>	<b>0.55</b>	<b>1.72</b>
<b>Government</b>	<b>0.95</b>	<b>2.34</b>	<b>2.08</b>	<b>0.64</b>	<b>-0.96</b>	<b>1.63</b>
<b>Finance</b>	<b>2.55</b>	<b>0.74</b>	<b>3.56</b>	<b>0.22</b>	<b>-0.63</b>	<b>-0.42</b>
<b>Transport.</b>	<b>0.44</b>	<b>-0.13</b>	<b>3.19</b>	<b>0.95</b>	<b>2.64</b>	<b>3.47</b>
<b>Construction</b>	<b>5.35</b>	<b>-0.61</b>	<b>3.15</b>	<b>3.91</b>	<b>1.84</b>	<b>4.20</b>
<b>Mining</b>	<b>0.00</b>	<b>0.00</b>	<b>-6.67</b>	<b>-9.09</b>	<b>0.00</b>	<b>-7.41</b>

Source: Authors' calculations from data from the U.S. Department of Labor, Bureau of Labor Statistics

Individual sectors show the same pattern. Excepting transportation, every single employment category had reduced growth in Washington after the minimum wage hike. For example, in trade (retail and wholesale), job growth had been 1.18 percent; it fell by nearly two-thirds to an anemic 0.41 percent. By contrast, in both Oregon and Idaho, a majority of sectors had higher growth in 1999 than in the 1998 period. *A sharp decline in employment growth coincides exactly with the implementation of the new state minimum wage law in Washington.*

## *A Tale of Two Cities*

Looking at interstate comparisons in unemployment may be questioned because geographic differences in economic conditions are often profound, and the observed results may therefore reflect factors other than the Washington minimum wage experience. Accordingly, an alternative approach is to compare communities geographically close to each other that have relatively similar economies.

Accordingly, an interesting dimension of much recent minimum wage research has been the use of the methodology of making before and after comparisons of employment and unemployment in comparable geographic areas where one of the locales has experienced a change in the minimum wage rate. This is especially applicable where state minimum wage rates are involved.

A highly publicized example of the use of such a technique is the Card-Krueger analysis of the impact of an increase in the New Jersey state minimum wage rate in 1991.<sup>9</sup> Their strategy was to contrast changes in employment in selected fast-food restaurants in central New Jersey with employment movements in a panel of selected fast-food outlets in Southeastern Pennsylvania, where the minimum wage had not changed. Unfortunately, their data collection techniques, which were based on telephone surveys, were fatally flawed, rendering their conclusion (denying an impact of minimum wages on unemployment) meaningless. Where their analysis was replicated using actual payroll record information, significant negative employment effects were observed in New Jersey fast-food restaurants.<sup>10</sup>

Despite the shortcomings of the initial Card-Krueger analysis, their methodology is quite useful for our purposes by providing a way of conducting an alternative assessment of the employment effects of the 1999 increase in minimum wage rates in Washington. Our choice of an area to analyze in this fashion is the Spokane, Washington-Coeur d'Alene, Idaho region.

Coeur d'Alene is the central city in Kootenai County Idaho, a county with well over 100,000 population and a per capita income level in 2000 of \$23,456, within 10 percent of that in Spokane County (per capita income \$25,550), a county with over 400,000 residents.<sup>11</sup> Thus these two counties, physically adjacent to each other, each have reasonably similar economies and relatively large population bases. The experience of Kootenai County will serve as a control for evaluating events that transpired in Spokane County in the wake of the 1999 minimum wage increase in Washington.

We begin by describing the unemployment experience in the Idaho area, Kootenai County. In 1998 (the year before the Washington minimum wage change went into effect), the unemployment rate was 7.7 percent. The rate remained stable thereafter, falling slightly by 2000 to 7.4 percent (and rising again to 7.6 percent in 2001). At the same time, a very different pattern of events was emerging in Spokane County. The 1998 unemployment rate (according to the Washington Employment Security Department) was 4.8 percent.

---

<sup>9</sup> David Card and Alan Krueger, "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania," *American Economic Review*, 84(4), September 1994, pp. 772-793, and "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania: Reply," *American Economic Review*, 90(5), December 2000, pp. 1397-1420.

<sup>10</sup> See David Neumark and William Wascher, "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania: Comment," *American Economic Review*, 90(5), December 2000, pp. 1362-1396.

<sup>11</sup> The income data in this section come from the Web site of the Bureau of Economic Analysis, U.S. Department of Commerce ([www.bea.gov](http://www.bea.gov)). The unemployment data are obtainable from the Web site of the Bureau of Labor Statistics, U.S. Department of Labor ([www.bls.gov](http://www.bls.gov)).

It rose consistently after the new minimum wage law took effect, going to 5.2 percent in 1999, 5.6 percent in 2000, and 6.3 percent in 2001. The combined effect of these changes was to dramatically reduce the gap between the unemployment rates in Kootenai and Spokane counties. In 1998, the unemployment differential was 2.9 percentage points; it was reduced by more than half (to 1.3 percentage points) by 2001.

Probably the primary difference between 1998 and 2001 in the labor market milieu facing the two counties was the Washington minimum wage increase. This suggests that the impact of increasing the state minimum wage was to increase the Spokane County unemployment rate by about 1.6 percentage points (assuming that in the absence of the minimum wage increase, Spokane would have followed the pattern prevailing in Coeur d'Alene). Given the labor force in Spokane County of about 200,000, this implies a loss of about 3,200 jobs in the county attributable to the upward movement in Washington's minimum wage rate. While that impact seems relatively small, if a proportionate impact were felt state-wide, it implies a job loss of nearly 48,000 jobs. Thus, this finding employing the Card-Krueger methodology is quite consistent with our other findings, and indeed suggests a somewhat greater unemployment impact.

### *The Simple Theory of Unemployment*

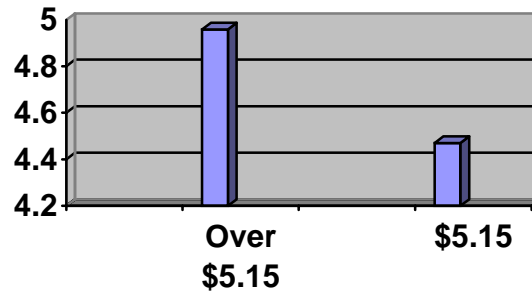
While the evidence appears strong that the 1999 minimum wage hike significantly impacted unemployment, it is circumstantial evidence. For the minimum wage hike to have unemployment effects, labor markets have to be impacted. In particular, if, as expected, the minimum wage increases heightened labor costs, this should have led to some reduction in the demand for labor, and probably also some modest increase in labor supply, both occurrences that would increase unemployment.

By definition, unemployment exists when the quantity of persons seeking jobs exceeds the number that employers wish to hire. Put differently, the quantity of labor supplied exceeds the quantity of labor demanded at the existing wage rate. Other things unchanged, an increase in wages mandated by governmental authority will reduce the quantity of labor demanded as some workers become unprofitable to hire, and increase the quantity of labor supplied, increasing unemployment. That is why economists generally believe minimum wage laws cause unemployment.

The extent to which this happens depends of the sensitivity of employers and workers to wages. While the precise response varies no doubt considerably, it is typical that when wages of workers rise by, say, one percent, the quantity of workers that employers wish to hire will also fall by almost 1 percent as well, say 0.90 percent... Economists would say that "the price elasticity of demand for labor is 0.90." By contrast, the empirical evidence suggests that the supply of labor is more inelastic – less sensitive to wage changes. Typically, a one percent increase in wages will increase the quantity of labor supplied by perhaps 0.15 percent. Thus a one percent increase in wages might well lead to a 0.90 percent decline in the number of workers employers wish to hire, but to a 0.15 increase in the number wanting to work. The combined effects would be to raise the rate of unemployment by about 1.05 percent.

A minimum wage increase obviously impacts mainly on occupations where it changes wages from what they otherwise would be, namely relatively lower skilled jobs. Restaurants, agriculture, and retail trade are three areas that employ large numbers of workers who would be impacted by mandated wage changes, whereas minimum wage laws should impact professional and managerial workers relatively little.

**Figure 2: Unemployment Rates- States at \$5.15 and States with Higher Wage**



Before turning to wage data specific to Washington, we would note that research that we previously performed provides empirical evidence that state minimum wage laws raise unemployment by raising wages. Figure 2 compares the 11 jurisdictions that throughout 2001 had minimum wage rates at the state level above the federal minimum, with the 40 states that either had no state minimum wage law or had rates at or lower than the federal standard of \$5.15. The average unemployment rates in the high minimum wage states was almost exactly one-half of one percentage point greater than that in the other states (4.96 vs. 4.47 percent). The four jurisdictions that had unemployment rates in excess of six percent all had minimum wages above the federal level – District of Columbia, Washington, Oregon and Alaska. By contrast, all five states with unemployment rates less than 3.5 percent (Maine, Iowa, Nebraska, North Dakota, South Dakota) had no minimum wage above the standard at the beginning of 2001.

The similar comparisons of unemployment rates, however, does not control for other factors that might cause unemployment. Using 1997 data, in an earlier study we observed a statistically significant (at the one percent level) positive relationship between the presence of state minimum wage laws above the federal level and the incidence of unemployment, controlling for several other possible causes of unemployment (e.g., immigration, unionization, government transfer payments). The results suggested that on average states with higher than federal minimum wage mandates had about one-third of one percentage point higher rates of unemployment. The study failed, however, to distinguish between states that had minimum wages only modestly in excess of the federal norm as opposed to states (such as contemporary Washington) where the minimum wage far outdistances the national standard. The same study also showed a positive relationship between state minimum wages (in excess of the federal mandate) and average annual pay of workers, suggesting, even using aggregate data, that state minimum wage laws raise labor costs.

The national data are supported in the Washington example. The Department of Labor data for “average annual pay” showed an unusually large upsurge in 1999, the year of the implementation of the new state minimum wage law. The average annual pay measure rose by 8.04 percent in Washington, more than double the national increase of 3.71 percent. A large part of that difference is explained by a productivity surge in Washington that outdistanced the national norm. But our estimate is that the productivity-adjusted real wage in Washington rose by 0.91 percent in 1999 – compared with a mere 0.22 percent nationally. We

have documented at great length that unemployment varies directly with the adjusted real wage.<sup>12</sup> The differential increase in the adjusted real wage in Washington alone can explain a 0.7 to 0.8 percentage point increase in the unemployment rate in Washington relative to the nation in that year. That is close to the suggested unemployment effects based on the national and regional labor market situation discussed above.

*Case Study: The Restaurant Industry*

The restaurant industry has been the focal point of much of the research dealing with the issue of the impact of minimum wage rates on employment. This stands to reason, because there are a disproportionately large number of employees in this industry earning wages at or very near the minimum wage level. Therefore, it is appropriate for us to analyze the effect on employment in this industry after the 1999 increase in the Washington minimum wage.

To set the stage for such an analysis, we collected data describing aggregate wage and salary employment and employment in eating and drinking establishments in Washington for the three years 1995, 1998, and 2001. They are shown in Table 5. The 1995-98 period is the last three years prior to the enactment of the new higher Washington state minimum wage, while the 1998-2001 period reflects activity after that mandated change.

The data displayed in Table 5 indicate that wage and salary employment in the aggregate grew much more rapidly between 1995 and 1998 – 9.51 percent – than it did from 1998 through 2001 – 3.83 percent. Not all of this decline in employment growth, however, represents the impact of the increase in the minimum wage. During that period, employment levels were adversely impacted by the national business cycle downturn. For example, if one were to assume a loss of 40,000 jobs in Washington because of the minimum wage hike, the number of those employed in 2001 in the state would have been 2,967.7 thousand, suggesting a percentage growth in jobs from 1998 and 2001 of 5.26 percent, still well below the growth in the earlier period, reflecting the business cycle downturn.

**Table 5**  
**Aggregate Wage and Salary Employment and Employment in Eating and Drinking Establishments, Washington, 1995, 1998, and 2001**

<b>Employment Category</b>	<b>1995</b>	<b>1998</b>	<b>2001</b>
<b>All Wage and Salary Employment (000s)</b>	<b>2,564.7</b>	<b>2,819.5</b>	<b>2,927.7</b>
<b>Eating and Drinking Establishments (000s)</b>	<b>172.8</b>	<b>187.2</b>	<b>192.7</b>

**Source: U.S. Department of Labor, Bureau of Labor Statistics**

<sup>12</sup> See Richard K. Vedder and Lowell E. Gallaway, *Out of Work: Unemployment and Government in Twentieth-Century America*, Updated Edition (New York: New York University Press, 1997).

Turning to restaurant employment (the eating and drinking establishment category in the table), there is evidence of an even greater impact on employment. Between 1995 and 1998, for every additional 100 wage and salary jobs created, 5.97 of them were in eating and drinking places. By contrast, over the interval 1998 through 2001, the incremental restaurant employment per 100 jobs statistic drops noticeably to 4.86 – a decline of about 19 percent. The difference of 1.11 may be considered a measure of the disparate impact of the increase in the minimum wage in Washington on restaurant employment. Given the actual aggregate wage and salary employment increase of 108,200, this factor accounts for a loss of employment in the restaurant sector of about 1,200 jobs.

In addition to this impact on restaurant employment, there also is a loss of jobs that is attributable to the overall slowing of employment growth induced by the minimum wage increase. In 1998, employment in eating and drinking places account for 6.64 percent of all wage and salary jobs. Assuming the total job loss from the minimum wage legislation is 40,000, as suggested above, this indicates a decline in restaurant employment of about 2,650 that can be explained by minimum wage-induced slower employment growth. Adding the two factors together gives a job loss of 3,850, which is proportionally about one-half larger than the average for other industries.

Yet this estimate of adverse employment effects is quite conservative. The data records only the number of jobs, not the number of hours worked. If, as national empirical evidence suggests is likely, the minimum wage change induced some reduction in hours for continuing employees, the total loss of hours of employment could be far greater than suggested by the two percent drop in the number of workers. In any case, the minimum wage law had a significant adverse impact on employment in the restaurant industry.

### *Agriculture*

Agricultural workers are typically paid far less than the average for non-agricultural workers, so this is a sector that is particularly vulnerable to laws mandating minimum wages. From 1998 to 2001, the growth in farm employment virtually stopped, falling 90 percent from 2.80 percent in the 1995-98 period, to 0.28 percent in the years after the institution of the new higher state minimum wage. Since proprietors in agriculture produce in international highly competitive markets and are “price takers” that have no control over the price of the goods sold, in the short run the minimum wage hike has a particularly egregious impact on their investment return. Accordingly, it is not surprising that there was a 2.80 percent decline in what the Bureau of Labor Statistics refers to as “farm proprietors” from 1998 to 2001, whereas from 1995-98 the number had increased substantially. Although circumstantial, the evidence strongly suggests that the cost squeeze imposed by the minimum wage may have been a major factor in a reversal in agricultural entrepreneurial activity after 1998.

## *Conclusions*

The passage of the referendum in 1998 that has dramatically raised the state minimum wage in Washington is a quintessential example of the Law of Unintended Consequences. The goal was to improve the lot of the disadvantaged in Washington, but the effect has been for poverty to rise, not fall, and rise far more than income trends would suggest should happen. The Washington minimum wage law created not eliminated poverty. It did it largely by creating unemployment and reduced hours for workers. While various estimates of job loss were calculated, the true figure likely is not less than 24,000 (0.8 percent of the labor force) and may be as high as 48,000 – after correcting for the impact of the business cycle turndown. The job losses were found in virtually every sector of the Washington economy. Some occupations relying heavily on relatively less skilled labor were particularly impacted. The restaurant industry suffered more job losses than most industries, and if the shortening of hours is taken into account, the employment effects may well be double or triple as severe as was typical of other industries. Agriculture, competing in highly competitive markets where farmers have no control over price, probably suffered not only from job loss, but from the profit squeeze that the minimum wage imposed, as evidenced by a noticeable drop in the number of farm proprietors (unlike in earlier periods, where the number had grown).

The Washington minimum wage, then, has failed in its primary objective. Rather than a relatively cheap way to alleviate poverty, the law has cruelly and capriciously brought about job and income loss to workers and small entrepreneurs. Had the voters known this would happen, it is difficult to believe they would have endorsed this well intended but truly economically destructive mandate.

## References

- Addison, John T. and McKinley L. Blackburn. "Minimum Wages and Poverty. Mimeographed, University of South Carolina. 1996.
- \_\_\_\_\_. "Minimum Wages and Poverty." *Industrial and Labor Relations Review*. 52(3), pp. 393-409. April 1999.
- Brown, Charles. "Minimum Wages, Employment and the Distribution of Income." In Orley Ashenfelter and David Card, eds., *Handbook of Labor Economics*, 3B, pp. 2101-2163. 1999.
- Brown, Charles, Curtis Gilroy and Andrew Kohen. "The Effect of the Minimum Wage on Employment and Unemployment." *Journal of Economic Literature*, 46(1), pp. 487-528. October 1982.
- Burkhauser, Richard V., Kenneth A. Couch and David C. Wittenburg. "Who Minimum Wages Bite: An Analysis Using Monthly Data. *Southern Economic Journal*, 67(1), pp. 16-40. 2000.
- Card, David and Alan Krueger. "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania." *American Economic Review*, 84(4), pp. 772-793. September 1994.
- \_\_\_\_\_. "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania: A Reply." *American Economic Review*, 90(5), pp. 1362-1420. December 2000.
- Deere, Donald, Kevin M. Murphy and Finis Welch. "Employment and the 1990-1991 Minimum Wage Hike." *American Economic Review* 85(2), pp. 232-237. May 1995.
- Even, William and David Macpherson. *Rising Above the Minimum Wage*. Washington, D.C.: Employment Policies Institute. January 2000.
- Hashimoto, Masanori. "Minimum Wage Effects on Training on the Job." *American Economic Review*, 72(5), pp. 1070-1087. December 1982.
- Macpherson, David. *The Effects of the Proposed California Minimum Wage Hike*. Washington, D.C. Employment Policies Institute. October 2000.
- Neumark, David. "The Employment Effects of Recent Minimum Wage Increases: Evidence from A Pre-Specified Research Design." Cambridge, MA: National Bureau of Economic Research Working Paper 7171. June 1999.

\_\_\_\_\_ and William Wascher. "Do Minimum Wages Fight Poverty?" Cambridge, MA: NBER Working Paper No. W6127. August 1997.

\_\_\_\_\_. "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania: Comment," *American Economic Review*, 90(5). December 2000, pp. 1362-1366.

\_\_\_\_\_. "Minimum Wages and Training Revisited. Cambridge, MA: NBER Working Paper No. W6651. July 1998.

\_\_\_\_\_. "A Cross-National Analysis of the Effects of Minimum Wages on Youth Employment." Cambridge, MA: NBER Working Paper No. W7171. June 1999.

\_\_\_\_\_ and Mark Schweitzer. "Order from Chaos? The Effects of Early Labor Market Experiences on Adult Labor Market Outcomes." *Industrial and Labor Relations Review* 51 (2), pp. 299-322. January 1998.

Stiglitz, Joseph E. *Economics*. New York. W.W. Norton. 1993.

U.S. Department of Commerce, Bureau of the Census. Current Population Reports P-60, No. 219. *Poverty in the United States: 2001*. Washington, D.C. U.S. Government Printing Office. 2002.

Vedder, Richard K. and Lowell E. Gallaway. *Does the Minimum Wage Reduce Poverty?* Washington, D.C.: Employment Policies Institute. June 2001.

\_\_\_\_\_. "The Minimum Wage and Poverty Among Full-Time Workers." *Journal of Labor Research* 23(1), Winter 2002.