
Briefing Paper

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EMPLOYMENT AND THE MINIMUM WAGE

Evidence from Recent State Labor Market Trends

by Jeff Chapman

Congress, a number of states, and even some cities will raise or consider raising minimum wages this year. Meanwhile, the economy is suffering what may prove to be the fourth consecutive year of a geographically widespread labor market slump, with most states facing uncertain economic situations. In this environment, the minimum wage becomes more important than ever, as a weaker labor market is unlikely to provide low-wage workers the bargaining power required to negotiate fair wages for their labor.

Despite the necessity of a minimum wage that allows low-wage workers to meet basic needs, there is still strong opposition to minimum wage increases, especially from those who don't view the weak labor market as an imperative to raise minimum wages, but rather as a reason to oppose them. In particular, opponents of state-level minimum wage increases claim that these increases are the *cause* of weak labor markets, especially in the form of high unemployment rates.

That argument, however, rests on the simplistic observation that some of the states with high minimum wages also have high unemployment rates. Without more examination, this observation is as useful in understanding state job markets as noting that joblessness has been on the rise in New York since the last time the Yankees won the World Series. It might be true, but it doesn't mean one is causing the other.

The argument that state minimum wages have had a substantially negative effect on a state's labor market is an extreme repackaging of the perennial claim that minimum wages do more harm than good because they cause many low-wage workers to lose their jobs. While this argument was once more prevalent among economists, recent studies with improved methodologies have reached the opposite conclusion. In general, there is no valid, research-based rationale for believing that state minimum wages cause measurable job losses. Making the extreme case that the job losses are severe enough to show up in a noticeably elevated state unemployment rate is a wild extension of a largely unfounded theory. A more careful look at state labor markets reveals that minimum wages are clearly not the cause of labor market pain in the states. Much more dominant forces, especially the unrelated decline in manufacturing employment, better explain state economic circumstances.

Three states in focus

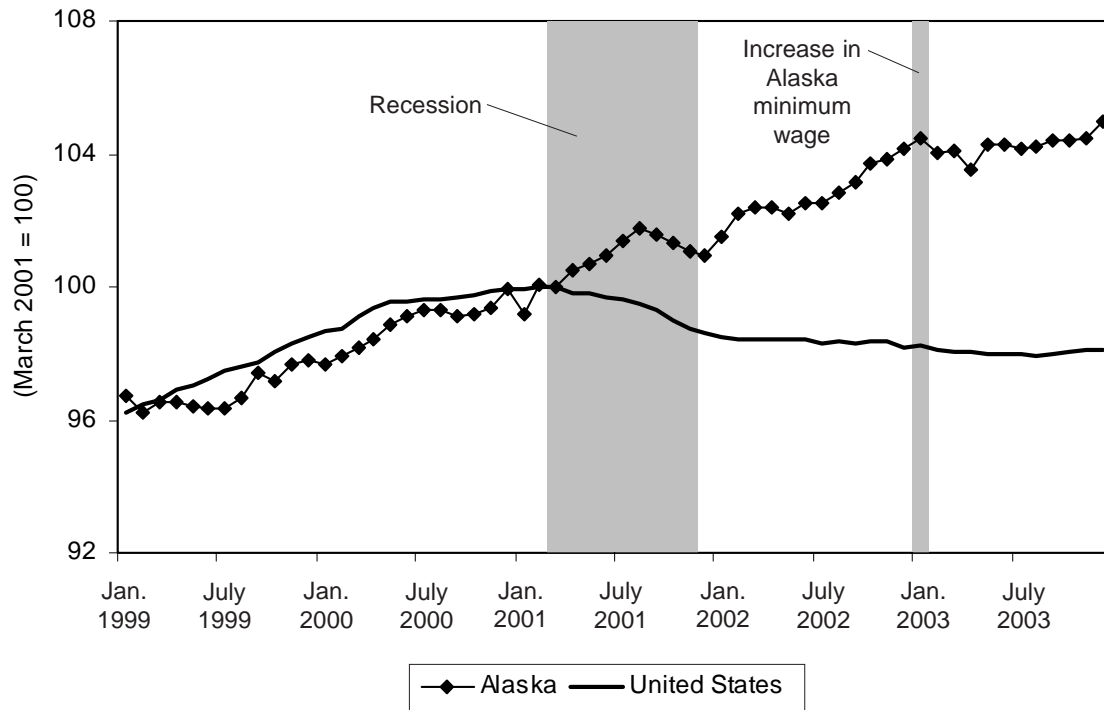
Three states have been the primary focus of claims that high minimum wages cause weak labor markets: Alaska, Washington, and Oregon. For example, in newspapers in all three states, Craig Garthwaite, research director at the Employment Policies Institute (EmPI), claimed, "it is perhaps no coincidence that the three states with the highest minimum wages in the nation—Oregon, Washington, and Alaska—are among the five states with the highest unemployment rates in the nation."¹

Contrary to Garthwaite's oversimplification of the employment picture in Alaska, Washington, and Oregon, some key facts about these states show that a number of factors unrelated to minimum wage increases are actually responsible for high unemployment rates:

- Alaska's job growth has been among the strongest in the country since the recession hit. Persistently high unemployment in Alaska is the result of growth in the labor force, not layoffs of minimum wage workers.
- Weakness in Washington's labor market has primarily been caused by the severe decline in manufacturing employment (19.7% from 2000 to 2003), a relatively high-paying industry largely unaffected by the minimum wage.
- In Oregon, minimum wage increases have not coincided with increases in the unemployment rate. The large uptick in Oregon joblessness occurred in 2001, although the state minimum wage had not increased since 1999.

Alaska

In recognition of its high cost of living, for decades Alaska set its minimum wage to be 50 cents above the federal rate.² In 2002, the Alaska legislature passed a minimum wage increase. As a result, on January 1, 2003 the Alaskan minimum wage went to \$7.15, two dollars above the federal rate—an immediate bump of \$1.50 per hour. This increase seems to have had no impact on the state's unemployment rate, which has remained constant since the summer of 2002.

FIGURE 1**Job growth in Alaska and nation, 1999-2003**

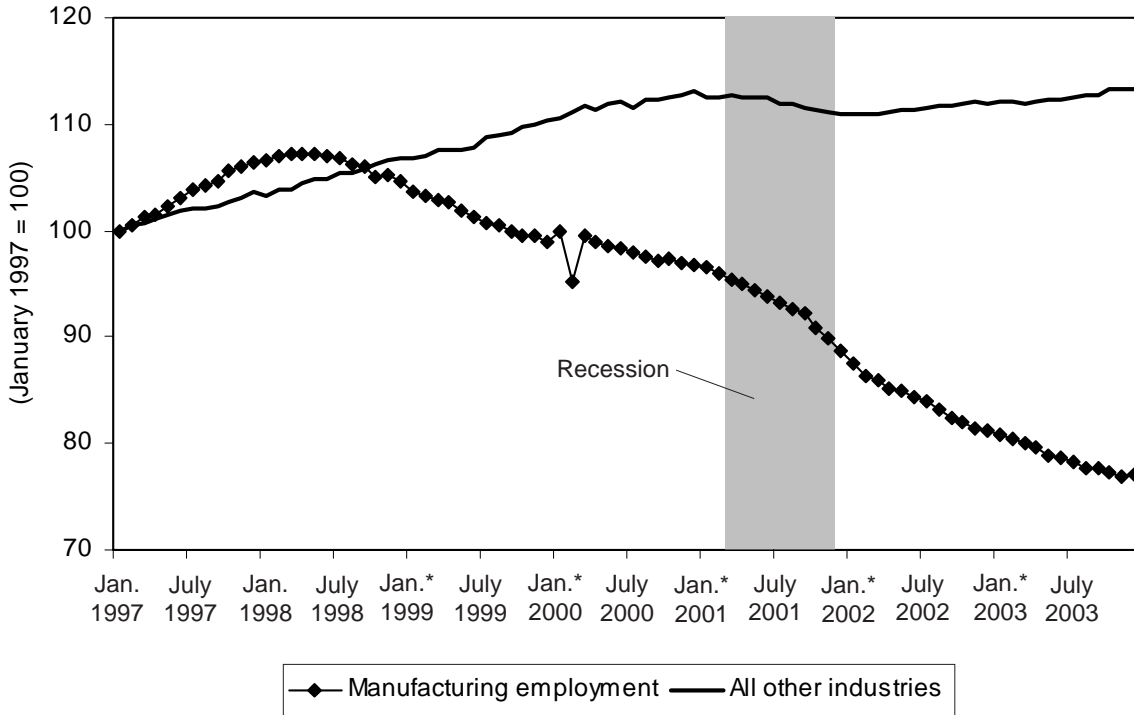
Source: EPI analysis of seasonally adjusted Bureau of Labor Statistics data.

Other evidence further refutes the notion that Alaska's minimum wage is hurting the state's economy. Despite a persistently high unemployment rate, Alaska has experienced some of the strongest job growth in the country over the last few years. Prior to the recession that started in March 2001, job growth in Alaska was similar to the nation as a whole, even with the minimum wage set above most of the rest of the states. But while the nation has lost 1.8% of its jobs since the start of the recession, employment in Alaska has *grown* by more than 6% (see **Figure 1**). The \$1.50 increase in the minimum wage in January 2003 does not appear to have had an effect on job growth, which has continued to be strong relative to the other states.³ As a result of continued job growth, Alaskans have experienced a smaller increase in joblessness than 33 of the 50 states.

Despite currently having the strongest job growth in the country, Alaska's unemployment rate remains high because the state's labor force has grown even faster than its jobs. Between 2000 and 2003, the Alaska labor force has grown faster than the national labor force, a combination of population growth along with growth in the share of the population seeking work. Additional factors affecting the state's unemployment include geographic remoteness (the unemployment rate in Northern Alaska was 14.3% in 2003) and the seasonal nature of employment in Alaska (there are 14% to 18% more jobs in August than there are in January).⁴ It is the combination of these factors that cause Alaska's persistently high unemployment rate, not lower employment levels that some would attribute to the minimum wage.

FIGURE 2

Job growth in Washington state, manufacturing and all other industries, 1997-2003



* Minimum wage increases occurred in January of each year from 1999 to 2003.

Source: EPI analysis of seasonally adjusted Bureau of Labor Statistics data.

Washington

In 1998, voters in Washington state overwhelmingly approved a ballot initiative to raise the minimum wage from \$5.15 to \$6.50 in two steps.⁵ Washington also became the first state in the nation to pass a law indexing the minimum wage to inflation, ensuring that the purchasing power of a minimum wage paycheck is not eroded in years that government fails to pass legislation raising the minimum wage.

In the month the initiative was passed, the Washington unemployment rate was very close to the national average.⁶ The state had benefited from an economic boom during the years immediately prior to the minimum wage increase—between 1995 and 1997, Washington experienced faster job growth than all but six states. During the same period, the number of aerospace manufacturing jobs in the state grew by nearly 40%, adding jobs for 26 months straight. Then, in 1998, the fortunes of Washington’s labor market began to reverse. By the end of 2000, the state unemployment rate was consistently at least a point above the nation, where it has stayed since.

Unlike in Alaska, the rising unemployment rate in Washington has been accompanied by job losses. These losses have primarily been in the manufacturing sector. While other sectors saw a dip in employment near the time of the national recession followed by weak job growth or small job loss, the losses in manufacturing started in advance of the recession and continue to be significant to this day (see **Figure 2**). Since

May 1998, Washington has lost manufacturing jobs in nearly every month. By December 2003, the state had lost 28% of its manufacturing jobs—more than 100,000 jobs. Manufacturing employment fell from 14% of employment to less than 10% of employment from May 1998 to December 2003.

While the manufacturing industry has been hit hard across the nation, Washington has suffered more than many states, reflecting in part the problems of Washington's aerospace industry. After losing 23% of its jobs between 1998 and 1999, employment in this industry remained fairly steady for two years. Following the terrorist attacks on September 11, however, the industry went back into tailspin, losing another 11,000 jobs over the following two years.

While the devastation of Washington's manufacturing industry is timed closely to the rise of the state minimum wage, there is no relationship between the minimum wage increase and manufacturing's decline. Because manufacturing has wages that are much higher than average, significantly fewer manufacturing workers are affected by an increase in the minimum wage than workers in other industries. For example, restaurants, an industry much more likely to be affected by a minimum wage hike, added about 2,500 jobs between 2000 and 2003 despite the recession. (During this same period manufacturing lost 65,000 jobs and all industries combined lost 49,000 jobs.) If the minimum wage were the cause of job loss in Washington, one would expect losses to be concentrated in industries more affected by the minimum wage. The fact that the contrary is true is evidence that job losses in Washington are not due to the rise in the minimum wage.

Clearly, more powerful forces—including trade imbalances, the overvalued dollar, a national recession, the Asian financial crisis, and a terrorist attack that deeply affected the aerospace industry—have been the primary causes of Washington's job losses. It is implausible that the minimum wage contributed to manufacturing's woes and the contraction of the Washington labor market.

Oregon

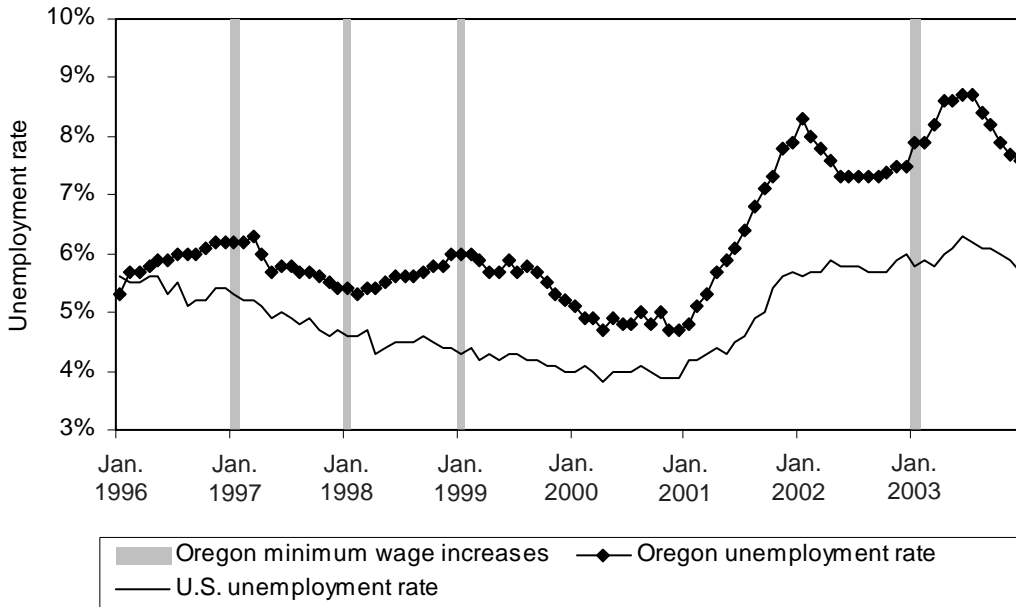
The Oregon minimum wage has been amended twice in the last eight years by ballot initiatives.⁷ The first ballot initiative passed in 1996, during a time when Oregon had one of the fastest growing economies in the nation. The initiative mandated increases in 1997, 1998, and 1999. The timing of the minimum wage increases coincided temporally with a slowing of job growth in Oregon, but that does not mean that the minimum wage was the cause of this slowing.

Job growth in Oregon over this period simply followed the same trend as many other Western states, demonstrating a strong regional trend that had nothing to do with the Oregon minimum wage. From 1993 to 1997, the states with the fastest job growth were Nevada, Arizona, Utah, Colorado, Oregon, and Idaho. These states were also experiencing robust population growth—Oregon ranked 12th among the states in population growth, with Nevada, Arizona, Utah, Colorado, and Idaho growing the fastest. Around the same time that Oregon passed the minimum wage increase, population growth in these Western states slowed, and job growth did as well.⁸ For example, Nevada employment had been growing at an average rate of 7.3% but slowed to 4.9% between 1997 and 2000 as its population growth slowed.

Additionally, the industries affected most by the slowing of job growth in Oregon were not industries likely to be affected much by the minimum wage increase. The industry that slowed the most was

FIGURE 3

Change in Oregon unemployment rate compared to national rate, 2000-2003



Source: EPI analysis of seasonally adjusted Bureau of Labor Statistics data.

construction, which accounted for one in eight new jobs in Oregon from 1993 to 1997.⁹ Construction jobs were added at an annual rate of 10.6% from 1993 to 1997 but slowed to less than 1% annually from 1997 to 2000. In 1998, when the state minimum wage went up to \$6.00, only 2.5% of workers in the construction industry earned less than \$0.50 above the minimum wage (compared to 12.4% of workers in all other industries), suggesting that the impact on construction was minimal.

Another industry that slowed considerably was what the North American Industry Classification System calls “business and professional services,” an assorted mix of some of the highest paying firms and some of the lowest paying firms. This sector made up 9.4% of Oregon employment in 1993, but accounted for 20% of the job growth in Oregon from 1993 to 1997. Job growth in the “business and professional services” sector then slowed from 1997 to early 1999. Job growth in the subsectors most likely to be affected by the minimum wage (including firms such as janitorial services, temporary agencies, telephone call centers, waste collection, and administrative support) actually fared somewhat better than the firms working in areas very unlikely to be affected by the minimum wage (such as law, public relations, computer systems design, management consulting, accounting, and interior design).¹⁰

Finally, the timing of these minimum wage increases in Oregon did not coincide with increasing joblessness. As **Figure 3** shows, the wage boosts in 1997 and 1999 were actually harbingers of falling unemployment.

As in Washington, Oregon's manufacturing employment was affected during this period by the Asian financial crisis and other macroeconomic trends, but Oregon's manufacturing industry proved to be somewhat more resilient. The real hit to Oregon manufacturing came in 2001. One key industry that has been particularly affected is manufacturers of semiconductors and other electronic components. After adding 20,800 jobs between January 1993 and January 2001 (more than doubling payrolls), 28.8% of those jobs were lost in the following three years.

The year 2001 proved to be a dreadful year for the Oregon labor market by any standard. The state lost 46,000 jobs between January 2001 and January 2002, while the unemployment rate jumped from 4.8% to 8.3%, the biggest increase in the nation. It is very difficult to lay the blame for that year's travails on the minimum wage because this meteoric rise in joblessness not only coincided with the start of the national recession, but also started at a time when the state minimum wage had not changed in two years (**Figure 3**).

Consequently, in 2002 when Oregon voters again approved an increase in their minimum wage after four years of stagnancy, the labor market was quite different than in 1996. The minimum wage went up by 40 cents in January 2003 as a result of the initiative, but more importantly, Oregon followed Washington's example by enacting regular annual increases linked to the rate of inflation.

The Oregon unemployment rate rose in the months directly following the 40-cent increase, but again there is no reason to blame the minimum wage. Employment in leisure and hospitality, which had fallen by an annual average rate of 1.5% from 2000 to 2002 when the minimum wage was constant, bounced back in 2003, adding 1,300 jobs (see **Figure 4**). In other words, the industry that employs the largest share of minimum wage workers added jobs during a year when the state as a whole lost 10,500 jobs.

The Oregon labor market took another blow in 2003 that was also unrelated to the minimum wage. While most other industries started to recover between 2002 and 2003 (either adding jobs or losing them at a slower rate), a severe budget crisis led to the loss of 5,900 state and local government jobs (**Figure 4**).

The national perspective

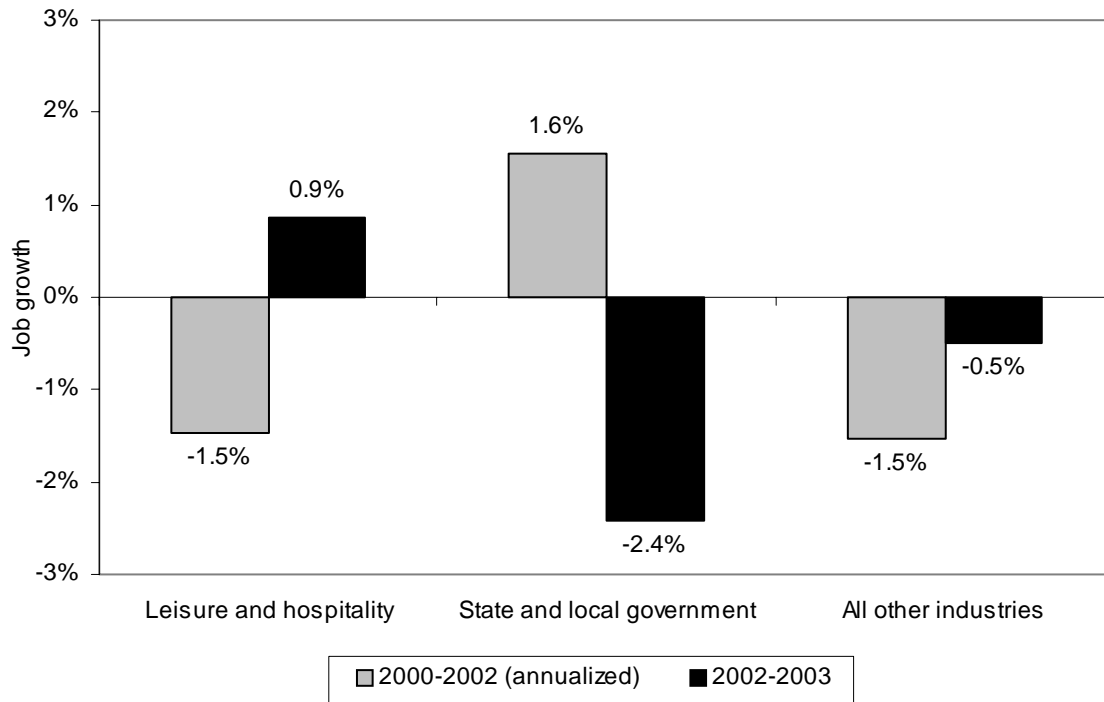
The connection between minimum wages and unemployment looks even weaker when all 12 states with minimum wages above the federal level are considered (see **Table 1**):

- Many states without minimum wages set above the federal level (including Michigan, Illinois, South Carolina, and Texas) also had high unemployment rates in December 2003.
- Hawaii, Delaware, and Vermont, three states with higher minimum wages, were among the 15 states with unemployment rates less than 5% (the national average was 5.7%).¹¹
- Of the 12 states with higher minimum wages, eight saw a smaller increase in unemployment between 2000 and 2003 than the national average.

In other words, high state minimum wages fail to correlate to poor labor market outcomes, let alone have a causal relationship. Similarly, the pattern in job growth by state shows little relation to

FIGURE 4

Job growth in Oregon by industry, 2000-2003



Source: EPI analysis of seasonally adjusted Bureau of Labor Statistics data.

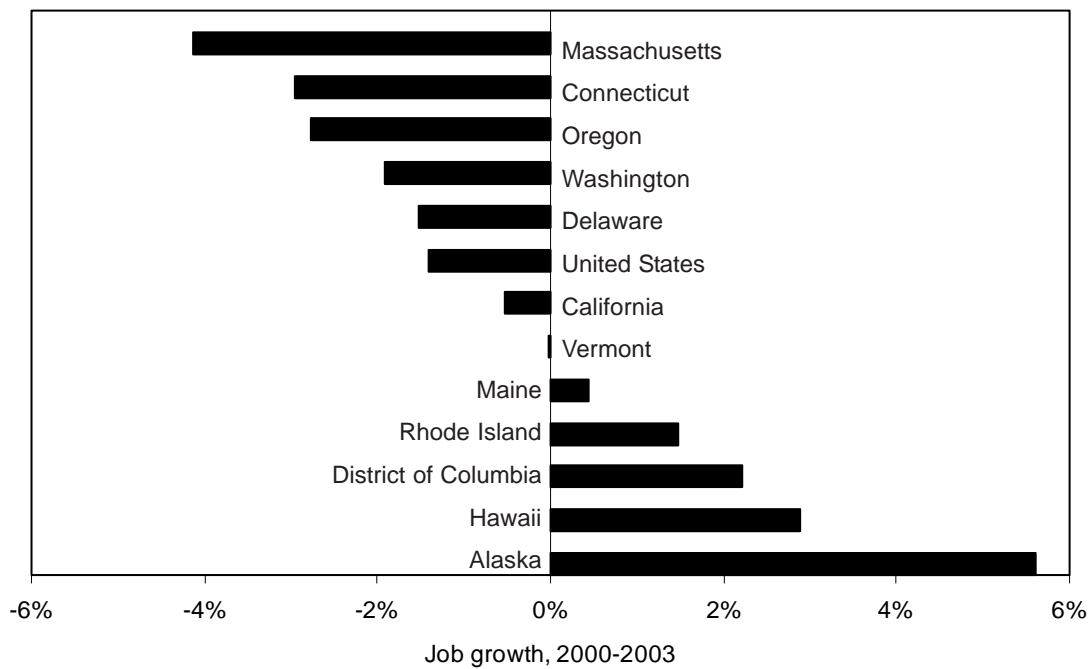
TABLE 1
States with minimum wages above the federal level, 2004

| | | |
|----------------------|--------|---------------------------------------|
| Washington | \$7.16 | (Annually adjusted for inflation) |
| Alaska | \$7.15 | |
| Connecticut | \$7.10 | |
| Oregon | \$7.05 | (Annually adjusted for inflation) |
| California | \$6.75 | |
| Massachusetts | \$6.75 | |
| Rhode Island | \$6.75 | |
| Vermont | \$6.75 | (Scheduled to rise to \$7.00 in 2005) |
| Hawaii | \$6.25 | |
| Maine | \$6.25 | |
| District of Columbia | \$6.15 | (Set at \$1.00 above federal rate) |
| Delaware | \$6.15 | |
| Illinois | \$5.50 | (Scheduled to rise to \$6.50 in 2005) |

Source: U.S. Department of Labor.

FIGURE 5

Job growth in states with minimum wages above federal rate, 2000-2003



Source: EPI analysis of seasonally adjusted Bureau of Labor Statistics data.

whether a state has a minimum wage. As shown in **Figure 5**, five states with minimum wages above the federal rate have seen job growth while the nation is still in the hole. An additional two states, California and Vermont, have seen job loss, but less severely than the nation as a whole.

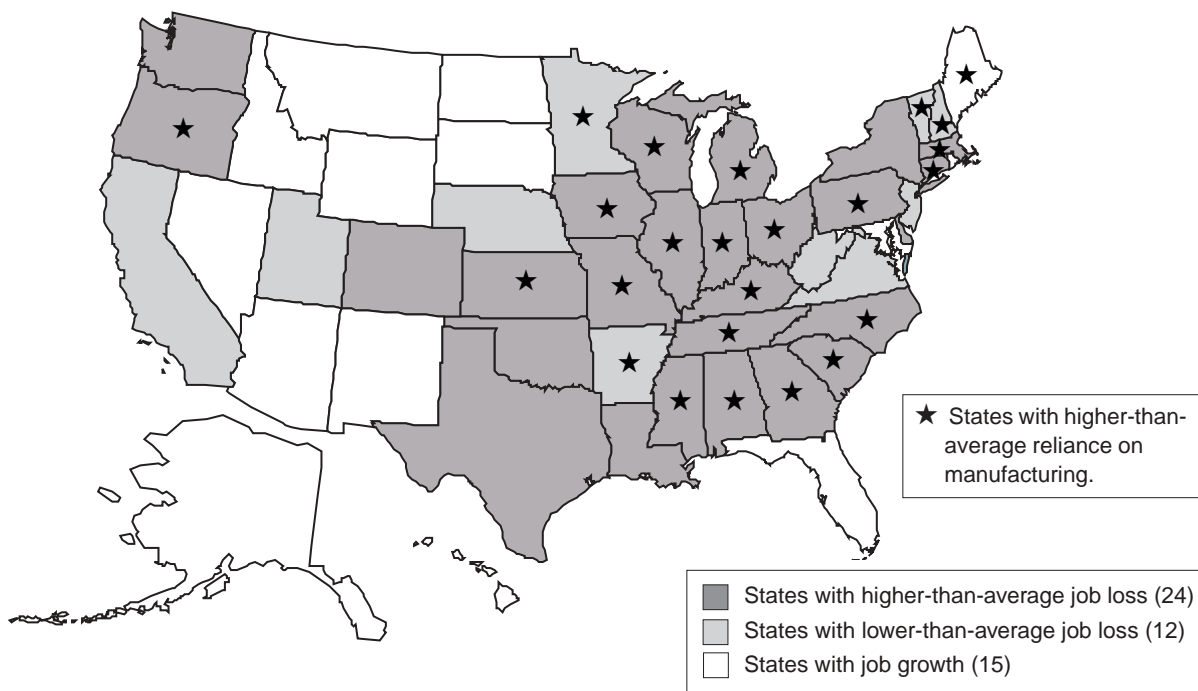
One commonality shared by Massachusetts, Connecticut, Oregon, and Washington other than high minimum wages and severe job losses is that they have all been hit hard by the recent decline in manufacturing employment. Given both the depth of the manufacturing crisis and its prominence in the national employment picture, it would make sense that labor market reliance on the manufacturing industry might be an apt predictor of labor market distress.¹² In fact, this proves to be the case.

As shown in **Figure 6**, 18 of the 24 states that experienced job loss at a higher rate than the nation between 2000 and 2003 were also states where manufacturing employment in 2000 was a larger share of total employment than in the nation as a whole. Of the six states with above-average job loss but lower-than-average manufacturing reliance, five (Colorado, Massachusetts, New York, Oklahoma, and Washington) had manufacturing sectors that were hit severely—each losing more than 18% of their manufacturing jobs between 2000 and 2003 (compared to 15.9% for the nation).

Figure 7 shows that the linear relationship between dependence on manufacturing (measured prior to the slump of that industry) and labor market deterioration is fairly strong. The 50 states and Washington, D.C. are plotted according to their reliance on manufacturing in 2000 and job growth from 2000 to

FIGURE 6

Job loss by state (2000-2003) compared to reliance on manufacturing employment in 2000



Source: EPI analysis of seasonally adjusted Bureau of Labor Statistics data.

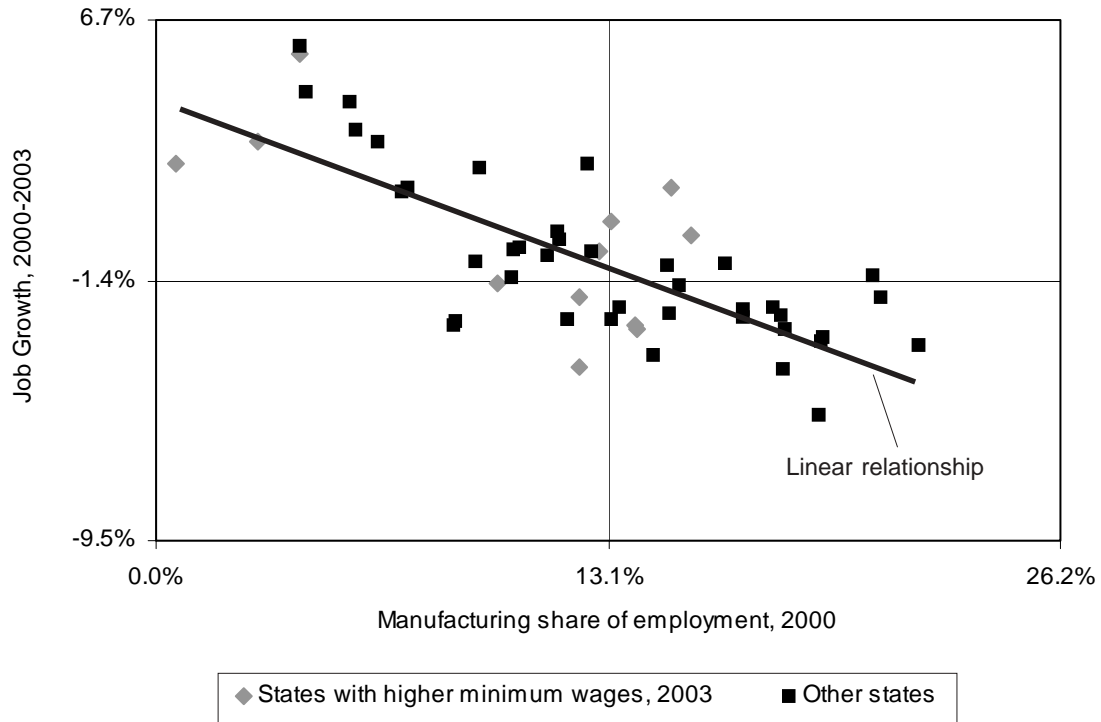
2003. The gray diamonds represent states with minimum wages set above the federal; the black squares are all other states. The gridlines represent the national average. States in the upper left quadrant, including Hawaii, Wyoming, and Alaska, are states that had a lower-than-average reliance on manufacturing and stronger-than-average job growth from 2000 to 2003. States in the lower right quadrant, including Indiana, North Carolina, and Wisconsin, experienced greater-than-average job losses and relied more heavily on manufacturing. States follow the general trend suggested by the slanting line, which indicates that states that relied more on manufacturing before jobs began to plummet have been hit the hardest by the recession and subsequent jobless recovery.

Measuring the impact of the minimum wage

Regression analysis allows further testing of whether minimum wages that affect a relatively large share of the workforce may be inversely correlated with job growth in recent years. The first column in **Table 2** shows the results of regressing state-level job growth between 2000 and 2003 on the share earning near the prevailing minimum in each state in 2003.¹³ A negative and significant coefficient on the minimum wage variable would suggest that high minimum wages are associated with more severe job loss. As shown in Table 2, the coefficient is actually positive and statistically *insignificant*. Clearly, understand-

FIGURE 7

Job loss by state (2000-2003) compared to reliance on manufacturing employment in 2000



Source: EPI analysis of seasonally adjusted Bureau of Labor Statistics data.

TABLE 2

Regression estimates of impact of state minimum wages and manufacturing employment on job growth, 2000-2003

| | Equation | | |
|--|------------------|------------------|------------------|
| | (1) | (2) | (3) |
| Constant | -0.01 (0.01)* | +0.04 (0.01)* | +0.04 (0.01)* |
| Share of workforce earning near minimum wage, 2003 | +0.04 (0.10) | - | -0.01 -0.07 |
| Manufacturing share of employment, 2000 | - | -0.39 (0.05)* | -0.39 (0.05)* |
| Observations | 51 | 51 | 51 |
| Adjusted R ² | -0.02 | +0.56 | +0.55 |

Note: Standard error in parentheses.

* Statistically significant, 1% level.

Source: EPI analysis of seasonally adjusted Bureau of Labor Statistics data.

ing variation in state labor markets requires more careful analysis than simply noting which states have higher minimum wages.

The second column of Table 2 tests the theory that there is a relationship between a state's manufacturing reliance and job growth in that state between 2000 and 2003. The coefficient on manufacturing employment share is negative and highly significant, proving that states with larger shares of employment in manufacturing were more likely to suffer job losses.

When the share of employment in manufacturing is added to the first equation, which solely considered the state's minimum wage, the model (the third column in Table 1) goes from explaining less than 1% of the variation in state's labor market experience to over half.¹⁴ The minimum wage continues to show no relationship while the reliance on manufacturing employment is a powerful predictor of recent labor market ills.

Of course, this is not to say that the solution to the states' labor market distress is to reduce reliance on manufacturing, an industry with high pay that benefits working families as well as the U.S. economy. Instead, it shows how central the decline of this industry, largely unaffected by the minimum wage, has been to the recent economic troubles.

Conflicting theories of the effect of minimum wage increases

Looking at the descriptive statistics, there is no reason to believe that minimum wage increases are the cause of labor market distress in the Northwest, or elsewhere. But should we expect them to be?

The claim that higher minimum wages are the reason for labor market problems in the Northwest is an extreme version of a particular economic theory, namely that mandatory minimum wages cause employers to reduce the number of employees they hire. This assertion is based on an overly simple model that assumes that wages are set in the marketplace the same way as the price for tee-shirts or bananas.¹⁵ When applied to the real world of low-wage work, this model makes several unrealistic assumptions, including:

- Workers and employers have many options available to choose from.
- Employers do not incur cost when hiring and firing.
- Workers can enter the job market, leave the job market, change jobs, or get fired without incurring loss.
- All employers have perfect knowledge of the productivity and ability of all workers.
- All workers have perfect knowledge of the options available and the tastes and needs of all employers.
- Each worker's productivity is identical and all workers work to their full potential without the need for guidance or supervision.

From the standpoint of an economist, this can be a useful way to simplify thinking about labor markets. However, it is far less useful for policy makers weighing a minimum wage increase. While the “competitive model” may be an apt descriptor of the job market faced by some workers under some conditions, it fails to account for realistic situations. As Alan Manning, an economist from the London School of Economics puts it:

What happens if an employer cuts wages by one cent? Much of labor economics is built on the assumption that all the workers will quit immediately (Manning 2003, p. 3).

Clearly, Manning’s scenario is not likely to happen. An alternative, more realistic model of the low-wage labor market states that:

- Employers have power to set wages because workers incur substantial personal cost during unemployment.
- Employers exercise that power by paying their employees less than what they would earn in a truly competitive market.
- By paying lower wages, employers may cause higher turnover and incur higher costs to recruit, train, and supervise their workers.

While these assumptions may seem like common sense to the average worker, economists have only recently begun to incorporate them into analyses of low-wage labor markets. Using these assumptions, an increase in the minimum wage may not have a substantial impact on employment (and may even increase employment over some ranges) because workers are being paid less than what they are really worth economically to the firm. Rather than cause job loss, minimum wage increases would therefore correct a market imbalance by forcing employers to pay a fair wage. And by decreasing recruitment, training, and supervisions costs, increases to the minimum wage may not have a substantial impact on the cost of doing business for employers.¹⁶

The New Jersey/Pennsylvania minimum wage studies

Numerous studies have tested the competitive model by examining the impact of minimum wages on employment. Most of these studies have used broad aggregate data such as the employment rates of teenagers or adults without high school diplomas. While earlier studies tended to find significant employment effects, more recent studies using improved econometric methods have found small, insignificant, or immeasurable employment effects.

The most famous studies regarding the impact of the minimum wage on employment are a set of three studies that analyzed the impact of the New Jersey minimum wage increase in 1992. The 1992 increase in the New Jersey minimum wage created fecund ground for economic research for a number of reasons. First, the increase occurred during a stagnant labor market, making it unlikely that the disemployment effects of the increase were swamped by a growing economy. Second, there was a natural

experimental situation because the economy of New Jersey is closely linked to the economy of eastern Pennsylvania, where the minimum wage did not increase. Finally, a series of political events lessened the probability that employers were preparing for the minimum wage increase ahead of time (Card and Krueger 1994, p. 773).

These studies of New Jersey and Pennsylvania are particularly important because instead of using broad aggregate data, they use data collected at the firm level. In addition, these are the studies most frequently cited in the public policy debate. Taken as a whole, the evidence from these studies clearly shows that the minimum wage increase in New Jersey did not yield the negative effects predicted by some. Yet opponents of minimum wage increases continue to focus on the one study that did claim to find a negative impact, despite the fact that highly questionable data render such a claim fatally flawed. The studies reaching the opposite conclusion, however, are based on data of much higher quality.

The first study of the New Jersey minimum wage increase was published in 1994 in the *American Economic Review*, a well-regarded economics journal, and was written by David Card and Alan Krueger, two economists from Princeton University (Card and Krueger 1994). They followed a relatively straightforward methodology, performing a phone survey of a sample of over 400 fast-food restaurants in New Jersey and Pennsylvania both before and after the increase went into effect, gathering information on the number of employees working at each restaurant. (Fast-food restaurants were chosen because they are in an industry with a pay scale that is significantly affected by changes in the minimum wage.) They then compared the changes in employment in New Jersey to the changes in employment in Pennsylvania. Card and Krueger found that the increase in the New Jersey minimum wage did not lead to any measurable impact on employment (Card and Krueger 1994, p. 792).

The Card and Krueger study received wide attention not only within economics circles but also among policy makers and activists. It received almost immediate criticism from the Employment Policies Institute (EmPI), an organization funded in large part by low-wage employers, including restaurants. The primary criticism was the use of a phone survey for data collection, which sparked concern that responses given over the phone might not be wholly accurate.¹⁷ A better source, according to EmPI, would be payroll records collected directly from restaurants. EmPI collected payroll data from 71 fast-food restaurants (a far smaller sample than that used in the Card and Krueger study). Based on these data, EmPI concluded that the Card and Krueger study was “worse than flawed” (Berman 1995).

Two economists, David Neumark and William Wascher, received access to the EmPI data. To this, they added additional data and reevaluated the Card and Krueger results. In the final version of their study, also published in the *American Economic Review*, Neumark and Wascher state the opposite conclusion to Card and Krueger—that the minimum wage increase in New Jersey probably did reduce employment in New Jersey relative to Pennsylvania (Neumark and Wascher 2000, p. 1,390).

It is not uncommon to hear the Card and Krueger results dismissed by opponents of the minimum wage as having been disproved by the Neumark and Wascher study. However, an objective review of all the material from both sets of authors leads to the conclusion that the New Jersey minimum wage increase had no measurable impact on employment in fast-food restaurants. As discussed on the following pages, a number of factors support the Card and Krueger findings and call into question the results of

the Neumark and Wascher study: 1) the questionable data collection methods used by Neumark and Wascher; 2) a reexamination of the Card and Krueger study using unbiased government records; and 3) the carefully worded conclusions in the final version of the Neumark and Wascher paper.

Questionable data collection methods

Opponents of minimum wage increases frequently comment on the use of “payroll records” in the Neumark and Wascher study as being superior to the phone survey in Card and Krueger. In fact, the data used by Neumark and Wascher are of a highly questionable pedigree for the reasons noted below:

- All of the data used by Neumark and Wascher were collected after the results of the Card and Krueger study had been widely publicized (and criticized by restaurant industry groups and EmPI). In fact, the researchers acknowledge that most restaurant owners knew about the study and “were familiar with the debate” (Neumark and Wascher 2000, p. 1,392).
- The data collected by EmPI are especially questionable as they seem to have been collected informally and rely heavily on personal contacts.¹⁸
- The data collected by Neumark and Wascher were gathered using a letter explaining that they were working with EmPI, “a restaurant-supported lobbying and research organization” and that the data would be used to “reexamine the New Jersey-Pennsylvania minimum wage study” (Neumark and Wascher 2000, p. 1,395). This information could very well have influenced whether or not a restaurant responded to the survey. In statistics, this is known as “self-selection bias.”¹⁹

When Card and Krueger reviewed the data used by EmPI/Neumark and Wascher, they found that only the data collected originally by EmPI (arguably the most questionable data) indicate a significant decline in employment in New Jersey relative to Pennsylvania (Card and Krueger 1994, p. 1,413). Moreover, Card and Krueger suggest that the Neumark and Wascher results are driven by data supplied to EmPI by a single franchisee in Pennsylvania (Card and Krueger 1994, p. 1,414).

Reexamination using government records

The best data for looking at the impact of the minimum wage on restaurant employment are ES-202 data, which are routinely collected by state governments for the unemployment compensation program. These data are likely more accurate than the phone survey originally performed by Card and Krueger and would not be subject to the same biases as the EmPI/Neumark and Wascher data. For confidentiality reasons, ES-202 data is generally not available to the public except in the form of broad aggregate data. Card and Krueger, however, received access to establishment-level data, which allowed them to reevaluate their original study using an accurate and unbiased source.

The results of this study were published in the *American Economic Review* alongside the results of Neumark and Wascher (Card and Krueger 2000). The updated conclusion of Card and Krueger was identical to their first study: that the “increase in New Jersey’s minimum wage probably had no effect on total employment in New Jersey’s fast-food industry and possibly had a small positive effect” (Card and Krueger 2000, p. 1,419).

Neumark's and Wascher's own conclusions

Based solely on their own research—using highly questionable data—Neumark and Wascher concluded that the minimum wage had a negative impact on employment. They did, however, acknowledge that many of their results are not statistically significant. Even more telling, after reviewing the results of the second Card and Krueger study that used government data and combining that with their own findings, Neumark and Wascher hedge by saying that they can only decisively conclude that “New Jersey’s minimum wage increase did not *raise* fast-food employment in that state” (Neumark and Wascher 2000, p. 1,391). From the point of view of a voter or policy maker, this is not an indictment of increased state minimum wages because the rationale for raising the minimum wage is improving the lives of minimum wage workers, not increasing employment at fast-food establishments.

Ultimately, the difference between the final Neumark and Wascher conclusion and that of Card and Krueger may be of interest to labor economists and statisticians, but not to low-wage workers and policy makers. Even if, based on Neumark’s and Wascher’s research, the suggestion of “a small positive effect” is removed from Card and Krueger’s findings, the evidence still suggests that states can raise minimum wages without hurting employment in fast-food restaurants. That being the case, it is even more difficult to believe that a state’s minimum wage can be the cause of statewide labor market distress in industries far less affected by minimum wages than the fast-food industry.

Conclusion

Despite very strong evidence to the contrary, those opposed to minimum wage hikes continue to claim that such policies have and will eliminate jobs. Nonetheless, the number of states with minimum wages above the federal rate has more than doubled since the last time the federal government raised the minimum wage in 1997. This year, legislators will be voting on state minimum wage boosts in states such as New York and Minnesota. A governor’s task force made up of business, labor, legislative, and education leaders recently recommended raising the Wisconsin minimum wage by \$1.35, and voters may be asked to vote on a minimum wage increase at the ballot this fall in Florida and Nevada.

The question of whether moderate minimum wage increases have an insignificantly positive or insignificantly negative impact on particular segments of the labor market will continue to be fruitful work for economists. In the meantime, policy makers should be aware that the facts clearly show that the benefits of such increases outweigh any potential costs.

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Endnotes

1. See Garthwaite, Craig. 2003a. Minimum wage hike hurts Oregon's vulnerable workers. *Oregonian*, December 29., Garthwaite, Craig. 2003b. High minimum wage equals high unemployment. *Seattle Post-Intelligencer*, December 26., and *Juneau Empire*. 2003. Institute faults state's high minimum wage. December 21.
2. In 1979, the 50-cent premium put the Alaskan minimum wage 17.2% above the federal rate. By 2002, however, it was only 9.7% above the federal rate.
3. Total payroll employment rose by 1.6% in Alaska between 2002 and 2003. The nation's payrolls fell by 0.3% over the same period.
4. Employment in Alaska always peaks in the summer and is lowest in the winter. Employment in the nation peaks twice—in the summer and near the end of the year. Over the last two decades, the average difference in the number of jobs in the month with the lowest employment in each year and the month with the highest employment in each year was 4% in the nation and 17% in Alaska. The unemployment rate in Alaska fluctuated by 3.4 percentage points on average, compared to 1.3 percentage points for the nation.
5. For more information on Washington's experience with the minimum wage, see Smith (2003) and Watkins (2004).
6. The Washington unemployment rate was 4.8%, compared to 4.4% in the nation.
7. For more information on Oregon's experience with the minimum wage, see Thompson (2003a). For more detailed information on recent Oregon labor market trends, see Thompson (2003b).
8. Each state continued to add jobs, but at a slower rate.
9. Construction employment went from 4.2% of total employment in 1993 to 5.3% in 1997.
10. From 1996 to 1999, employment in the high-paying "professional, scientific, and technical services" rose by 2.2% and employment in the low-paying "administrative and support and waste management and remediation services" rose by 4.1%.
11. The Illinois legislature passed a minimum wage increase that went into effect on January 1, 2004.
12. For more information on the manufacturing crisis, see Bivens (2004).
13. Simply using the dollar amount of the minimum wage rate in each state fails to account for varying wage distributions between states. For example, a minimum wage of \$5.15 is lower in a high-wage state such as Minnesota than in a low-wage state such as Mississippi. For this reason, the share of the workforce earning at least the prevailing minimum wage but less than 120% of the minimum wage is used as a measure of how high the minimum wage is in each state. If dollar amounts are used, the coefficient on the minimum wage is still positive and insignificant.
14. As shown in Table 1, the adjusted R² goes from -0.02 to 0.55.
15. The description of the "competitive model" is adapted from Bernstein and Schmitt (1998).
16. Evidence from a substantial minimum wage covering workers in the San Francisco Airport suggests that this was the case. See Reich (2003).
17. Card and Krueger point out that this concern is only relevant if either the error is of such a magnitude that the employment variable is completely meaningless or the errors associated with a phone survey are different in New Jersey than in Pennsylvania (1994, p. 1,413).
18. Card and Krueger asked David Neumark for the form EmPI used to gather data. His reply was "To the best of my knowledge there was no form; this was all solicited by phone" (Card and Krueger 2000, p. 1,408).
19. The results would be biased if, for example, New Jersey restaurants were more likely to respond if they cut their workforce while Pennsylvania restaurants were more likely to respond if they increased their workforce.

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