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## The New Minimum Wage Research

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Dale Belman and Paul J. Wolfson

# The New Minimum Wage Research

*This article highlights some of the research in the authors' forthcoming book, What Does the Minimum Wage Do?, which will be available in June. To preorder the book, visit [www.upjohninstitute.org/Publications/Titles/WhatDoesTheMinimumWageDo](http://www.upjohninstitute.org/Publications/Titles/WhatDoesTheMinimumWageDo).*

**W**hat is now known as the *new minimum wage research* got its start at a conference at Cornell University in 1991. In the 10 years leading up to the conference, the number of articles studying the minimum wage as a share of all articles in economics had risen by 28 percent; in the subsequent 10 years, that increase was 81 percent. How did this conference stimulate the phenomenal growth of research on the minimum wage? By showing that minimum wage research could both ride and reinforce several new trends in economics regarding types of data analyzed, analytic approaches, and theories for understanding the data. Most empirical research prior to the conference had relied on data aggregated to the national level not only because of issues of data availability and low computational power, but also because the federal minimum wage was the effective minimum wage in almost every state. The paucity of increases in the federal minimum wage during the decade before the conference had led to greater variation in state minimum wages, and the rapid increase in computational power meant that it was no longer especially burdensome to analyze data that incorporated state-level variation.

In the wake of these developments, Neumark and Wascher (1992) used the conference to introduce national state-level panels into research on the employment impact of the minimum wage, extending their analysis in later work to relate the employment consequences to other economic decisions, such as school enrollment

(Neumark and Wascher 1995a,b; 1996). Pursuing a different tack, Card (1992a,b) and Katz and Krueger (1992) recognized that minimum wage policy was a good arena for developing the natural or quasi-experiment framework. Card and Krueger (1994) extended their analyses of the employment response in what came to be seen as the exemplar of this framework (Meyer 1995), in both its design and its reliance on cutting-edge models to explain results at variance with the well-known supply and demand framework. In this case, the cutting edge was search models, which were then in a phase of early and rapid development for understanding the labor market, and later

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were the basis for the 2010 Nobel Prize in Economics. No longer a backwater, the minimum wage was hot!

Our forthcoming book, *What Does the Minimum Wage Do?*, surveys much of the work that emerged from this conference, with special emphasis on work that has been conducted in the current century. We consider more than 70 articles that focus on some aspect of the effect of the minimum wage on employment and find results that range between large, statistically significant negative effects to small, statistically significant positive effects. In some instances, qualitative results vary within an article as researchers apply a variety of methods to different data, time periods, and definitions of the minimum wage.

Neumark and Wascher and Card and Krueger dominated the first period of the new minimum wage research, which concluded with an exchange between the two pairs of authors at the end of 2000. In this exchange, Neumark and Wascher (2000) presented results flatly contradicting Card and Krueger's (1994), using data that they had in part collected and argued were more reliable. Card and Krueger (2000) responded by picking apart Neumark and Wascher's (2000) data and performing an analysis similar to their earlier one but substituting confidential government tax data for the data that they had earlier collected. They concluded that "the increase in the New Jersey minimum wage in April 1992 had little or no systematic effect on total fast-food employment in the state," largely, although not entirely, in agreement with their earlier results. It is widely believed that Card and Krueger had the better of this exchange.

There have been many developments over the subsequent years. One of the biggest is the recognition that the statistical inference in both lines of work—Neumark and Wascher's, which consider national panels of states, and Card and Krueger's quasi-experiments—is flawed because of problems with the standard errors and associated test statistics. Two other serious criticisms, one for each set of authors, have also been raised: 1) against the quasi-experiment framework of Card and Krueger (1994, 2000), that the focus is too local to be robustly generalized; and 2) against the sparsely specified equations that Neumark and Wascher used to analyze national panels, that control for confounding variables are inadequate so that the effects of other factors are falsely attributed to the minimum wage. Over the last decade, beginning with Yuen (2003) and continuing most recently through Allegeretto, Dube, and Reich (2011), several researchers have developed approaches that combine the best elements of each—national scope and careful design—to precisely identify the consequences of minimum wage policy.

In addition to sifting through these findings to provide a qualitative synthesis of the state of the research, we performed

a meta-analysis to generate a transparent statistical summary and assessment of the effect of the minimum wage across studies. These metaregressions draw on the approach of Stanley and Doucouliagos (2012) to obtain estimates of the average elasticity of employment and hours with respect to the minimum wage, controlling for the effects of techniques (a conventional regression model or a quasi-experiment), differences between outcomes for employment and for hours of employment, the reliability of the standard errors, and dependence between estimates from the same study. In some models we distinguish the effects on young workers and those at eating and drinking places, and also distinguish between studies of the United States and other countries. We are able to obtain estimates of minimum wage elasticities and their standard error from only 23 of the more than 70 studies that address employment, hours, or both. These studies provide 439 distinct estimates of the elasticities. We can see from Figure 1 that they range from about -1.5 to 1.5, with most in the interval between -0.7 and -0.6. The distribution exhibits a rough and ready symmetry about the median of -0.05.

Using a variety of specifications, we generate a large number of meta-estimates of the employment elasticity. We began by benchmarking our estimates against the conclusion of Brown, Gilroy, and Kohen (1982) that the teen elasticity ranged from -0.1 to -0.3, and Brown's (1999) later conclusion that the work in the 1980s found the range moving down toward zero. Our initial estimates, which do not include many of the controls we have discussed, range from -0.018 to -0.06, with about half toward the top of the range and half near the bottom.

Applying a one-tailed 0.05 standard of significance to our more complete models, we find some evidence that increases in the minimum wage result in very small reductions in employment. Considering estimates that reflect the effect on both employment and hours and on employment alone, a 10 percent increase in the minimum wage is associated with a reduction in employment of between 0.0 and -2.6 percent. Somewhat less than half of the estimates are statistically significant, and more than half of those indicate an employment decline near the bottom of a range of -0.1 and -0.03 percent. Not allowing for the difference between

studies of the United States and other countries, somewhat more than half of our meta-estimates indicate a small, statistically significant negative effect on employment or employment and hours.

The United States, however, faces a far more favorable situation. Considering the 16 means of meta-estimates (across the fixed effect, random effect, and random coefficient models) that include a control for whether the estimate is based on U.S. data, the implied employment declines following a 10 percent increase in the minimum wage are very small—between -0.03 and -0.6 percent—and statistically insignificant. Bearing in mind that the estimates for the United States reflect a historic experience of moderate increases in the minimum wage, it appears that if negative effects on employment are present, they are too small to be statistically detectable. Such effects would be too modest to have meaningful consequences in the dynamically changing labor markets of the United States.

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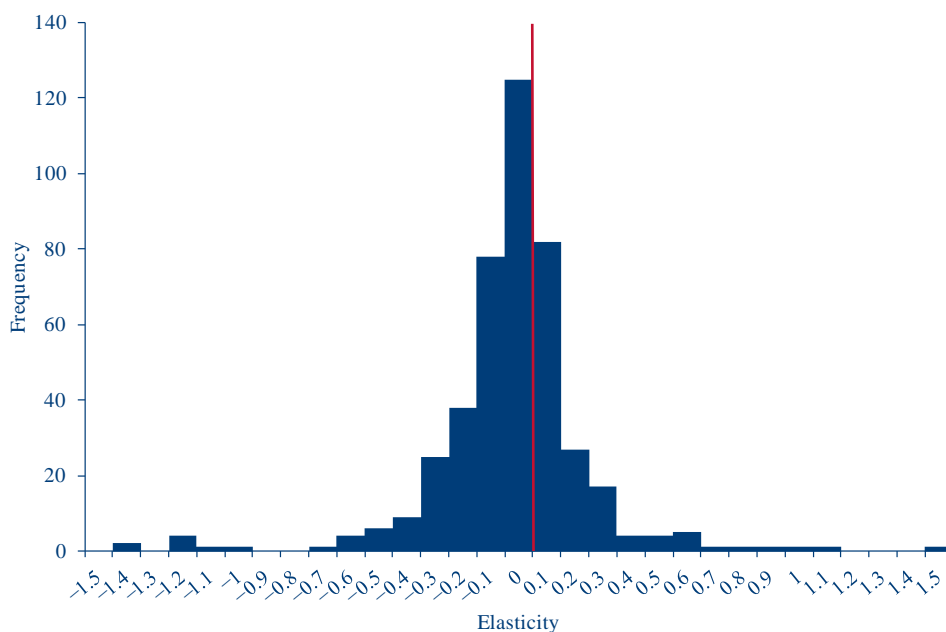
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**Figure 1 Distribution of Employment and Hours Elasticities for the Meta-Regression**



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The Upjohn Institute announces the winners of the 2014 Early Career Research Awards. These grants are intended to provide resources for junior faculty (untenured and within six years of having earned a PhD) to carry out policy-related research on labor market issues.

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- **Colleen Chrisinger**, *University of Oregon* “Veterans in Workforce Development: Participation and Labor Market Outcomes”
- **Rajeev Darolia**, *University of Missouri* “Income-tested College Financial Aid and Labor Disincentives”
- **Rafael Dix-Carniero**, *Duke University* and **Brian Novak**, *Carnegie Mellon University* “The Dynamics of Trade Adjustment: Evidence from 25 Years of Brazilian Matched Employer-Employee Data”
- **Seth Gershenson**, *American University* “The Effect of High-Stakes Accountability Policies on Teacher Absences”
- **Bradley Hardy**, *American University* “The Effect of the District of Columbia Supplemental EITC on Poverty, Employment, and Income Growth”
- **Alexandra Killewald**, *Harvard University* “Moms at Work: The Dynamics of Maternal Employment”
- **Mingwei Liu**, *Rutgers University* “The Effects of Chinese Trade Unions on Workers”
- **Nikolas Mittag**, *CERGE-EI/Charles University* “Income Support during the Great Recession: New Evidence from Linked Survey and Administrative Data”
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- **Nathan Wozny**, *U.S. Air Force Academy* “Military Personnel Retention, Bonuses, and Civilian Labor Market Conditions”
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