

# Designing a Research Agenda to Move the Minimum Wage Forward

By Carter Price and Ben Zipperer July 2014

---

## Purpose

During the most recent push to raise the federal minimum wage in the United States, more than 600 economists signed a letter encouraging Congress to do so, including seven Nobel laureates.<sup>1</sup> This letter highlighted research that the minimum wage has little to no impact on the employment of minimum-wage workers and that a raise would provide a small stimulus effect on the economy. A few weeks later a letter opposing a rise in the minimum wage was released with the signatures of more than 500 economists, including three Nobel laureates.<sup>2</sup> The opposing letter focused on the increase in labor costs and pointed to a Congressional Budget Office analysis that finds an increase would reduce overall employment, although the 90 percent confidence interval included a zero effect.<sup>3</sup> These economists fundamentally disagree about the response of employment to minimum wage increases, contributing to the paralysis at the national level on the minimum wage, but both claim to point to “the research.”

We propose a series of research projects targeted at advancing the policy debate. In their February 2014 report the Congressional Budget Office highlighted several areas where they argued that there was not enough information or consensus to make strong assessments. We are reaching out to advocates and policymakers to better understand the questions about the minimum wage they want and need answered, with the intention of shaping a research agenda on the minimum wage that directly answers their questions.

Below we identify research questions that may be of interest to policymakers and advocates inspired by the existing academic research as well as the recent CBO paper. This discussion paper should be treated as the name implies—a jumping-off point for a conversation about a research agenda designed to move the policy process forward.

---

## Possible research questions raised by CBO report

The 2014 Congressional Budget Office report, “The Effects of a Minimum-Wage Increase on Employment and Family Income,” addressed the questions posed to them by Congress on the impact of an increase in the minimum wage, and relied on the most up-to-date academic research in doing so.<sup>4</sup>

Consequently, the CBO report had to adjudicate between a wide variety of studies on the minimum wage, not all of which pointed to the same conclusions. In many cases, the report splits the difference, such as when it cites “uncertainty about the responsiveness of employment to an increase in wages.”<sup>5</sup> Given these inconsistencies, a minimum wage research agenda that addressed the following questions could help clarify and focus the empirical evidence:

### **How does the minimum wage affect production?**

- How do outputs, profits, and prices change?
- Does a rise in the minimum change worker efficiency?
- Do increases affect low- and high-productivity firms differently?
- Are there changes to workforce composition or hours worked?

### **How does the minimum wage affect the overall wage distribution?**

- How large are “ripple effects” for workers who already earn more than the minimum wage?
- How much does the minimum wage change income inequality?

### **Does the minimum wage affect the macroeconomy?**

- How much less is spent on government benefits for low-income people?
- How do consumption patterns change from increased wages?

### **How does the structure of the minimum wage policy impact outcomes?**

- How do effects vary by the size of the minimum wage increase?
- Do minimum wage changes have different short- and long-run effects?

Many of these questions have been addressed directly or indirectly in the economics literature, but work will be needed to synthesize and effectively communicate the results in a way that allow for a more direct, effective response to CBO's analysis. Yet many of these topics are under-researched or rely on older data, suggesting a need for new research. This discussion paper explores several of these questions as a starting point for encouraging new research.

---

### How do employment effects vary by the size of the minimum wage increase?

While recent research suggests that modest increases in the minimum have strong effects on earnings and small effects on employment, little work exists on whether this pattern holds for larger raises. Economic theory suggests that the effects will vary by the “bite” of the minimum wage into the underlying wage or productivity distribution.<sup>67</sup> In a study of the 1996 and 1997 federal minimum wage changes, Economist Jeffrey P. Thompson—now at the Federal Reserve Board and previously a professor at the University of Massachusetts, Amherst, found that in 2009, counties with low average earnings (where the minimum’s “bite” was greater) had larger falls in employment after the wage change.<sup>8</sup> Offering an international perspective on the debate, economists Yi Huang, Prakash Loungani, and Gewei Wang estimated that after China strengthened minimum wage enforcement, firms with low profit margins reduced employment, but firms with high profit margins expanded.<sup>9</sup>

Seattle has just passed legislation to increase the city minimum wage from \$9.32 per hour today to \$15 by 2017-2021, depending on the type of employer. San Francisco is now considering following suit. Opponents of the minimum wage frequently respond by highlighting the arbitrariness of the levels proposed by legislators. Additional research could ground the levels in analysis and help policymakers identify the best targets.

---

### Do minimum wage changes have different short-run and long-run effects?

In his review of the research fifteen years ago, University of Michigan economist Charles Brown emphasized that understanding the long-run effects of the minimum wage remains “the largest and most important gap in the literature.”<sup>10</sup> Perhaps the research overall found no short-term employment effects because firms are unable to modify production in response to a minimum wage increase in the short-run, but in the medium- to long-run, they are less constrained in terms of hiring patterns and substituting capital for labor.

More recently, Texas A&M University economists Jonathan Meer and Jeremy West argued that the minimum wage primarily influences employment growth, rather than the employment level. Therefore, an increase in the minimum wage has a small effect on employment levels in the short-run, but a large effect in the long-run.<sup>11</sup> In contrast,

economists Arindrajit Dube at the University of Massachusetts, Amherst, T. William Lester at the University of North Carolina, Chapel Hill, and Michael Reich at the University of California, Berkeley, failed to find effects on employment levels up to four years after minimum wage increases.<sup>12</sup> Additional work must reconcile conflicting evidence on long-term effects of an increase in the minimum wage.

---

## How does the minimum wage affect production?

To respond to a minimum wage increase, employers and workers may choose a variety of “channels of adjustment,” such as raising prices or improving efficiency.<sup>13</sup> The most comprehensive evidence suggests that restaurants raise prices in response to a minimum wage increase, passing a portion of increased labor costs onto consumers. Unfortunately, the city-level data used in this analysis is almost two decades old, and has not been subjected to alternative specifications.<sup>14</sup> With more recent but less comprehensive data, economists Emek Basker and Muhammad Khan at the University of Missouri, Columbia, find similar price increases for two out of three restaurant items.<sup>15</sup> New research with better quality price data has a high probability of informing how much affected businesses raise prices after a minimum wage increase.

By improving worker and managerial efficiency, minimum wage increases may boost labor productivity. Productivity effects would be consistent with current research confirming that worker turnover falls sharply after a minimum wage increase, both in the United States and Canada.<sup>16</sup> In addition, restaurant managers’ survey responses suggest that minimum wage increases provide an opportunity to portray the “cost shock as ‘a challenge to the store’” in order “energize employees and to improve productivity,” according to a study by economists Barry Hirsch and Bruce Kaufman at Georgia State University.<sup>17</sup> Similarly, using plant-level data in the United Kingdom, economists at the National Bureau of Economic Research find that revenue-per-worker increases in response to a minimum wage rise, but the effect is statistically insignificant.<sup>18</sup>

Firms may also adjust production practices in the face of a minimum wage increase by hiring more highly skilled workers, or by reducing hours of the lower-skilled workforce. Existing high-quality studies do not generally find large effects on workforce composition and hours, but the estimates remain too statistically imprecise to rule out substantive effects. One recent study, for example, estimates that teen hours either fall somewhat or not much at all, depending on the specification.<sup>19</sup>

More recent but preliminary work suggests that relatively small employment-level impacts of the minimum wage may conceal large changes in the mix of firms.<sup>20</sup> The study finds that restaurants in three states that raised minimum wages during the 2000s experienced increases in employees’ hiring and departures from firms. New research must provide more comprehensive and precise evidence on how firm composition and output change in response to the minimum wage.

---

## How does the minimum wage affect the overall wage distribution?

By raising the wage floor, the minimum wage reduces inequality, but current research has not settled on the size of these effects. One study in 1999 estimated that the falling real value of the minimum wage accounted for the entire increase in wage inequality between the median wage and the 10th percentile wage during 1979-1989.<sup>21</sup> In contrast, a new study this year by economists David Autor and Christopher L. Smith at the Massachusetts Institute of Technology and Alan Manning at the London School of Economics finds that the falling real minimum wage accounted for about one-third of the inequality increase.<sup>22</sup> Better data quality and more recent empirical techniques can improve estimates of the minimum wage's impact on inequality.

In raising the minimum wage, workers just above the minimum wage will often see a wage increase. While many studies observe these “ripple effects” or wage spillovers, existing empirical work does not evaluate any underlying mechanisms. Do the spillovers occur within firms, as workers paid just above the minimum also demand raises? Or do they occur in the market, as firms are forced to raise wages to attract new workers? Or do they occur as employers attempt to maintain established wage structures (internal pay scales) within firms?

---

## What are the macroeconomic effects of the minimum wage?

By lifting workers out of poverty, the minimum wage may reduce fiscal spending on income support and welfare programs. Two economists at the Institute for Research on Labor and Employment, Rachel West and Michael Reich, find that the minimum reduces the use of food stamps as well as state-level expenditures on that program.<sup>23</sup> Additional empirical work could examine other needs-based programs and quantify state-level budget impacts.

Minimum wage raises likely translate into increased consumption, but little work exists on directly measuring these effects. One recent study finds a minimum wage change leads to large increases in consumption; these expenditures seem concentrated in automobile purchases partially financed by debt.<sup>24</sup> New research with high quality individual-level data will help to improve estimates of the consumption response to minimum wages.

A final related issue is whether minimum wage increases affect the economy differently during times of economic slack or expansion. One recent study finds that the minimum has large negative effects on employment when unemployment is high,<sup>25</sup> but another one finds no such evidence.<sup>26</sup> More work is needed to identify credible estimates of how the minimum wage interacts with the broader economy.

---

## References

Aaronson, Daniel, Sumit Agarwal, and Eric French. “The Spending and Debt Response to Minimum Wage Hikes.” *The American Economic Review* 102, no.7 (2012): 3111-3139.

Aaronson, Daniel, Eric French, and James MacDonald. “The Minimum Wage, Restaurant Prices, and Labor Market Structure.” *The Journal of Human Resources* 43, no.3 (2008): 688-720.

Aaronson, Daniel, Eric French, and Isaac Sorkin. *Firm Dynamics and the Minimum Wage: A Putty-Clay Approach*. Working Paper no. 2013-26. Federal Reserve Bank of Chicago, 2013.

Addison, John T., McKinley L. Blackburn, and Chad D. Cotti. 2013. “Minimum Wage Increases in a Recessionary Environment.” *Labour Economics* 23 ( 2013): 30-39.

Allegretto, Sylvia, Arindrajit Dube, and Michael Reich. “Do Minimum Wages Really Reduce Teen Employment?” *Industrial Relations* 50, no. 2 (2011): 205-240.

Autor, David, Alan Manning, and Christopher L. Smith. *The Contribution of the Minimum Wage to of U.S. Wage Inequality over Three Decades: A Reassessment*. Working Paper. MIT Department of Economics, 2014.

Basker, Emek and Muhammad Khan. “Does the Minimum Wage Bite into Fast-Food Prices?”

Unpublished paper, University of Missouri (2013).

Brochu, Pierre and David Green “The Impact of Minimum Wages on Labor Market Transitions” *The Economic Journal* 123, no. 573 (2013): 1203-1235.

Brown, Charles, “Minimum Wages, Employment, and the Distribution of Income,” in *Handbook of Labor Economics*, Vol. 3B, edited by Orley C. Ashenfelter and David Card, Working Paper No. 173. New York: Elsevier Science, 1999 2101-2163.

Burdett, Kenneth and Dale T. Mortensen. 1989. *Equilibrium Wage Differentials and Employer Size*. Discussion Paper no. 860. Center for Mathematical Studies in Economics and Management Science, Northwestern University, 1989.

Congressional Budget Office *The Effects of a Minimum-Wage Increase on Employment and Family Income*, no. 4856., Washington, DC, 2014. <http://www.cbo.gov/sites/default/files/cbofiles/attachments/44995-MinimumWage.pdf>

Draca, Mirko, Stephen Machin, and John Van Reenen. “Minimum Wages and Firm Profitability.” *American Economic Journal: Applied Economics* 3, no.1 (2011): 129-151.

Dube, Arindrajit, William T. Lester, and Michael Reich. “Minimum Wage Effects Across State Borders: Estimates Using Contiguous Counties.” *Review of Economics and Statistics* 92, no. 4 (2010): 945-964.

Dube, Arindrajit, William T. Lester, and Michael Reich. *Minimum Wage Shocks, Employment Flows, and Labor Market Frictions*. Working Paper no. 149-13. Institute for Research on Labor and Employment, 2013.

Hirsch, Barry T., Bruce E. Kaufman, and Tetyana Zelenska. *Minimum Wage Channels of Adjustment* Discussion Paper no. 6132. Institute for the Study of Labor, 2011.

Huang, Yi, Prakash Loungani, and Gewei Wang. *Minimum Wages and Firm Employment: Evidence from China*. Working Paper No. 173. Federal Reserve Bank of Dallas Globalization and Monetary Policy Institute, 2014.

Lee, David S. “Wage inequality in the United States during the 1980s: Rising Dispersion or Falling Minimum Wage?” *The Quarterly Journal of Economics* 114, no. 3 (1999): 977-1023.

Meer, Jonathan and Jeremy West. *Effects of the Minimum Wage on Employment Dynamics*. Working Paper No. 19262. National Bureau of Economic Research, 2013.

Schmitt, John. *Why Does the Minimum Wage Have No Discernible Effect on Employment?* Washington, DC: Center for Economic and Policy Research, 2013.

Stigler, George J.. “The Economics of Minimum Wage Legislation.” *The American Economic Review* 36, no. 3 (1946): 358–365.

Thompson, Jeffrey P. “Using Local Labor Market Data to Re-examine the Employment Effects of the Minimum Wage.” *Industrial and Labor Relations Review* 62, no.3 (2009): 343–366.

West, Rachel and Michael Reich. 2014. *The Effects of Minimum Wages on SNAP Enrollments and Expenditures*. Washington, DC: Center for American Progress, 2014.



## Endnotes

- 1 Economic Policy Institute. *Over 600 Economists Sign Letter In Support of \$10.10 Minimum Wage: Economist Statement on the Federal Minimum Wage*. Washington, DC, 2014. <http://www.epi.org/minimum-wage-statement/>
- 2 "A Statement to Federal Policy Makers" <http://economistletter.com/>
- 3 Congressional Budget Office. *The Effects of a Minimum-Wage Increase on Employment and Family Income*. Pub. No. 4856. Washington, DC, February, 2014.
- 4 Congressional Budget Office. *The Effects of a Minimum-Wage Increase on Employment and Family Income*, no. 4856., Washington, DC, 2014.
- 5 Ibid. p. 9
- 6 George J. Stigler, "The Economics of Minimum Wage Legislation." *The American Economic Review* 36 no. 3 (1946): 358-365.
- 7 Kenneth Burdett and Dale T. Mortensen *Equilibrium Wage Differentials and Employer Size*. Discussion Papers no. 860. Center for Mathematical Studies in Economics and Management Science (CMSEMS), Northwestern University, 1989.
- 8 Jeffrey P. Thompson "Using Local Labor Market Data to Re-examine the Employment Effects of the Minimum Wage." *Industrial and Labor Relations Review* 62 no. 3 (2009): 343-366.
- 9 Yi Huang, Prakash Loungani, and Gewei Wang. "Minimum Wages and Firm Employment: Evidence from China." Working Paper No. 173 Federal Reserve Bank of Dallas Globalization and Monetary Policy Institute, 2014.
- 10 Charles Brown, "Minimum Wages, Employment, and the Distribution of Income," in *Handbook of Labor Economics*, edited by Orley C. Ashenfelter and David Card, Vol. 3B (New York: Elsevier Science, 1999), 2101-2163.
- 11 Jonathan Meer and Jeremy West, *Effects of the Minimum Wage on Employment Dynamics*. Working Paper no. 19262. National Bureau of Economic Research, December, 2013.
- 12 Arindrajit Dube, William T. Lester, and Michael Reich, "Minimum Wage Effects Across State Borders: Estimates Using Contiguous Counties." *Review of Economics and Statistics* 92 no. 4 (2010): 945-964.
- 13 John Schmitt, *Why Does the Minimum Wage Have No Discernible Effect on Employment?* Washington, DC: Center for Economic and Policy Research, 2013.
- 14 Daniel Aaronson, Eric French, and James MacDonald. "The Minimum Wage, Restaurant Prices, and Labor Market Structure." *The Journal of Human Resources*, 43 (3) (2008): 688-720.
- 15 Emek Basker, and Muhammad Khan, "Does the Minimum Wage Bite into Fast-Food Prices?" Unpublished paper, University of Missouri, 2013.
- 16 Arindrajit Dube, William T. Lester, and Michael Reich, "Minimum Wage Effects Across State Borders: Estimates Using Contiguous Counties." *Review of Economics and Statistics* 92 no. 4 (2010): 945-964. See also, Pierre Brochu and David Green. "The Impact of Minimum Wages on Labor Market Transitions" *The Economic Journal* 123 no. 573 (2013): 1203-1235.
- 17 Barry T. Hirsch, Bruce E. Kaufman, and Tetyana Zelenska, *Minimum Wage Channels of Adjustment*. Discussion Paper no. 6132. Institute for the Study of Labor, 2011.
- 18 Mirko Draca, Stephen Machin, and John Van Reenen, "Minimum Wages and Firm Profitability." *American Economic Journal: Applied Economics* 3 no.1 (2011): 129-151.
- 19 Sylvia Allegretto, Arindrajit Dube, and Michael Reich, "Do Minimum Wages Really Reduce Teen Employment?" *Industrial Relations* 50, no. 2 (2011): 205-240.
- 20 Daniel Aaronson, Eric French, and Isaac Sorkin. *Firm Dynamics and the Minimum Wage: A Putty-Clay Approach*. Working Paper, No. 2013-26. Federal Reserve Bank of Chicago, 2013.
- 21 David S. Lee, "Wage inequality in the United States during the 1980s: Rising Dispersion or Falling Minimum Wage?" *The Quarterly Journal of Economics* 114, no. 3 (1999): 977-1023.
- 22 David Autor, Alan Manning, and Christopher L. Smith, "The Minimum Wage's Role in the Evolution of U.S. Wage Inequality over Three Decades: A Reassessment." Working Paper. Massachusetts Institute of Technology Department of Economics, February 2014.
- 23 Rachel West and Michael Reich, *The Effects of Minimum Wages on SNAP Enrollments and Expenditures*. Washington, DC: Center for American Progress, March 2014.
- 24 Daniel Aaronson, Sumit Agarwal, and Eric French, "The Spending and Debt Response to Minimum Wage Hikes." *The American Economic Review* 102 no. 7 (2012): 3111-3139.
- 25 John T. Addison, McKinley L. Blackburn, and Chad D. Cotti, "Minimum Wage Increases in a Recessionary Environment." *Labour Economics* 23 (August 2013): 30-39.
- 26 Sylvia Allegretto, Arindrajit Dube, and Michael Reich. "Do Minimum Wages Really Reduce Teen Employment?" *Industrial Relations*, 50 no. 2 (2011): 205-240.



---

---

## Our Mission

Accelerate cutting-edge analysis into whether and how structural changes in the U.S. economy, particularly related to economic inequality, affect economic growth.

---

---

Washington Center  
*for* Equitable Growth