Statement by

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Hearing on

"Keeping up with a Changing Economy: Indexing the Minimum Wage,"

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Executive Summary

1) The minimum wage has failed to keep pace with productivity, while top pay and corporate profitability have grown rapidly.
   - A falling minimum wage has contributed to rising inequality, explaining around half of the rise in inequality in the bottom half of the pay distribution, and more so for women.
   - Raising and indexing the minimum wage would reduce the gap between those at the bottom and the rest of the workforce.
2) Minimum wages have not kept pace with cost of living.
   - Adjusted for inflation, the real minimum wage has fallen from a high of $10.60 in 1968 to $7.25 in today's dollars.
   - Harkin-Miller would bring minimum wages up to $9.38 in today's dollars.
   - Indexation makes the adjustment process much more predictable. Even some economists who are skeptical about minimum wage policies support indexation.
3) Minimum wages have also lost ground in comparison to median wages.
   - The minimum fell from a high of 55% of the median wage in 1968 to 37%.
   - Harkin-Miller would likely raise the minimum to 50% of the median wage—close to the average for other OECD countries, and the U.S. historical norm during the 1960s and 1970s.
4) For the range of minimum wage increases we have seen in the U.S. over the past two decades, recent evidence based on credible methodologies do not find job losses of any sizable magnitude.
   - The academic disagreements are over no job losses or small job losses for highly impacted groups.
   - While some studies continue to find negative effects, these are often artifacts of regional trends and other factors unrelated to minimum wage increases.
   - Studies comparing similar neighboring areas right across the border account for these problems and find no impact on jobs either for sectors like restaurant and retail, or groups like teens.
   - Employment effects do not seem to vary by the phase of the business cycle or whether the state indexes its minimum wage to inflation.
   - Most surveys and meta-analyses have also concluded that employment effects are small.
   - This is why more economists today tend to support increasing and indexing than oppose it—even though there is scholarly disagreement on the precise impact.
5) While employment may not fall from moderate increases in minimum wages, both separation and hires fall, lowering the turnover rate.
   - In the increasingly popular economic models with search frictions, lower quits and layoffs, along with increased search activity by the unemployed, can explain why employment response is small.
   - Lower turnover can also increase productivity.
   - Outside of the simple Econ 101 type environment, increasing workers' pay can improve the functioning of the low wage labor market.
6) Based on existing evidence, we can expect some increases in restaurant prices from a minimum wage increase. However, the overall price level is unlikely to change noticeably, and there is little risk of wage-price spirals from indexation.
7) The best evidence suggests that minimum wage increases lead to moderate reductions in the poverty rate, especially together with the Earned Income Tax Credit.
   - There are strong theoretical rationales—and empirical confirmation—that minimum wages and EITC are complementary policies when it comes to helping low-income families.
   - A high minimum wage prevents wage reductions that can result from an EITC.
   - Since the EITC is indexed to the CPI, minimum wage indexation will prevent erosion of EITC benefits for minimum wage workers.

Thank you Chairman Harkin, and the members of the Committee for the opportunity to speak here today.

My name of Arindrajit Dube, and I am an Assistant Professor of Economics at the University of Massachusetts Amherst. My area of expertise is on labor market policies, with an emphasis on low-wage workers. I have done extensive research on minimum wage laws over the past 8 years, as well as research on other types of employer mandates. I welcome this opportunity to share with you findings from both my own research as well as the sizeable body of evidence that economists have marshaled on the question of increasing minimum wages.

Today I want to highlight some of the key economic factors to consider when deciding on an appropriate adjustment to the minimum wage. I will discuss how the minimum wage adjustment process has worked in the context of the overall economy, keeping in mind movements in inequality and cost of living. I will specifically consider the role of indexation of the minimum wage to the consumer price index. And I will also share with you what we know about how the economy adjusts to such changes in minimum wages.

I. The Economic Context

A. Rising Inequality

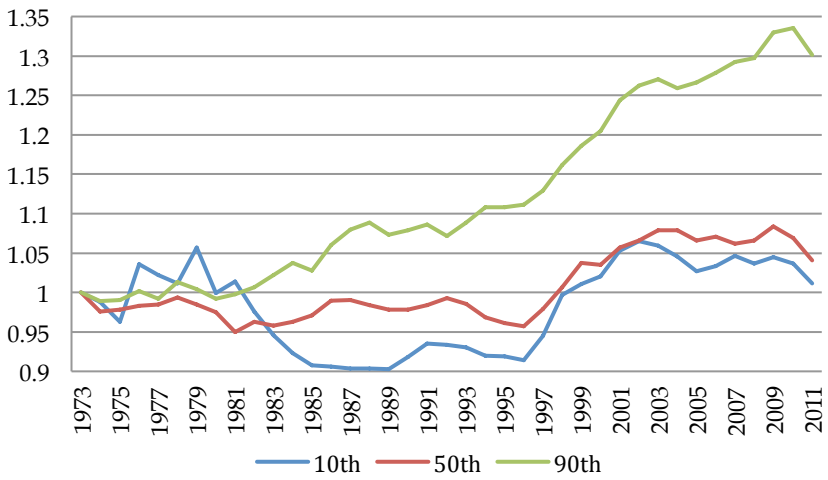
Summary: The minimum wage has failed to keep pace with productivity, while top pay and corporate profitability have grown rapidly.

- *A falling minimum wage has contributed to rising inequality, explaining around half the rise in inequality in the bottom half of the pay distribution, and more so for women.*
- *Raising and indexing the minimum wage would reduce the gap between those at the bottom and the rest of the workforce.*

For much of the past three decades, we have seen a sharp rise in income inequality—fueled by both a rising dispersion in wages, as well as a reduction in labor's share of income. The bottom of the labor market has failed to keep up with overall economic gains.

Wage inequality has grown substantially over the past 30 years, beginning around 1980. As shown in Figure 1, most of this increase has been in the top half of the wage distribution, especially since the 1990s. The only time we saw an increase in the wages of the lower half of the distribution was during the period of low unemployment in the late 1990s. As a result, the 90th percentile real wage grew by over 30 percent between 1973 and 2011, while the median and 10th percentile real wage grew by less than 5 percent over the same period (see Figure 1).

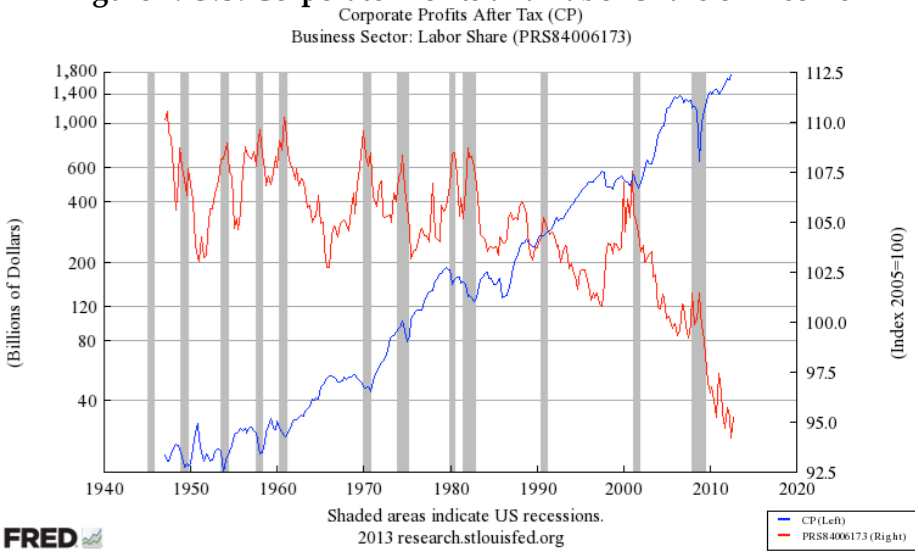
Figure 1: Wages in the U.S. by Percentiles (Index=1 for 1973)



Source: CPS Merged Outgoing Rotation Groups data as reported in State of Working American 2011.

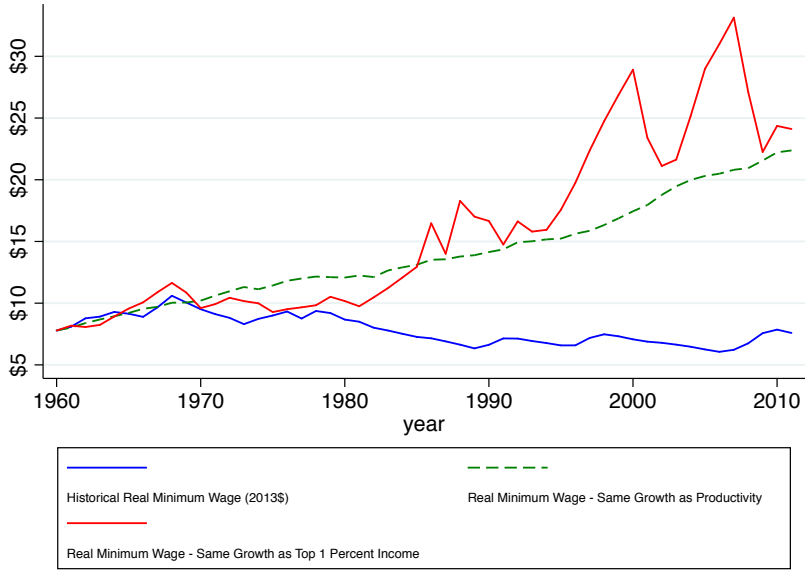
During the past three decades, we have also seen a general downward trend in labor's share of income—interrupted only by the late '90s boom. The shift towards capital income has shrunk the size of the pie going to workers as a whole. Today, the share of income going to labor as opposed to capital stands at a post-war near-low. Meanwhile, corporate profitability has been growing at a steady clip and has been restored during the current recovery. These two factors—increased wage inequality and a fall in labor's share—have kept those at the bottom end of the labor market from sharing in our economic progress.

Figure 2: U.S. Corporate Profits and Labor Share of Income



As a way to see how the gap between a minimum wage worker and others in our economy has grown, in Figure 3, I plot how the minimum wage would have changed over the past 30 years had it grown at the same rate as productivity. And how it would have evolved if it had kept pace with the income going to the top 1 percent of the income distribution. For comparison, I also show the actual inflation-adjusted minimum wage (using the CPI-W).

Figure 3: Real Minimum Wages Actual versus Counterfactual Using Productivity or Top 1 Percent Income Growth



It is quite remarkable that had the minimum wage kept up with overall productivity, it would have been $22 per hour in 2011. Had it kept up with the growth in income going to the top 1 percent, it would have been even higher, at $24 per hour; and the wage would have exceeded $33/hour at its peak in 2007.

This evidence does not suggest that the minimum wage should be increased to $22 or $24 per hour. Rather, the exercise demonstrates how different the growth rates have been for incomes going to those at the bottom of the labor market as compared to the economy as a whole, and to those at the top end of the distribution. Of course, there are many reasons behind this dramatic rise in inequality, including technological change, falling rates of unionization, de-industrialization, increased trade, deregulation and more. And we certainly cannot expect minimum wages alone to solve the challenge of growing inequality. However, there is also substantial evidence showing that a falling real minimum wage has contributed to this growth in inequality.

Lee (1999) was one of the first papers to take a comprehensive look at the effect of minimum wages on wage inequality. He found a sizeable spillover effect—whereby the fall in the minimum lowered wages of those higher up in the ladder. He argued that nearly all of the growth in inequality in the bottom half of the wage distribution during the 1980s could be explained by the erosion of minimum wage through inflation. Considering the 50/10 gap—the ratio of the median wage to the wage at the 10th percentile—Lee found that 70% the increase for men, and between 70 and 100% of the increase for women, could be explained by the decline in the value of the minimum wage.

A more recent paper by Autor Manning and Smith (2010) uses a more refined methodology, and finds somewhat smaller spillover effects. However, they too find that minimum wages played an important role in determining the 50/10 gap—which is a measure of wage

inequality in the bottom half of the distribution. Table 1 below reproduces their key findings, and shows that maintaining the minimum wage at the 1979 level in real terms would have staved off somewhere between half and three-quarters of the overall increase in the bottom-half wage inequality depending on the period in question. Moreover, the minimum wage has a larger effect on inequality for female workers, who tend to be lower paid.

Table 1: Effect of the Minimum Wage on Wage Inequality: the 50/10 Wage Ratio

	Actual	*Counterfactual with 1979 Minimum Wage (2SLS)*	*Difference*	*Proportion due to MW*
A. 1979 – 1991				
Female	22.40	9.65	12.75	56.9%
Male	11.20	9.5	1.70	15.2%
Pooled	*7.10*	*1.65*	*5.45*	*76.8%*
A. 1979 – 2009				
Female	25.20	10.98	14.23	56.4%
Male	5.30	5.43	-0.13	-2.4%
Pooled	*11.40*	*6.28*	*5.13*	*45.0%*

Notes: Calculated using Autor Manning and Smith (2010) Table 5. The Counterfactuals with 1979 use an average of the two 2SLS estimates reported by the authors.

Both Lee and Autor et al. use state-level variation in minimum wages over time, and a modeled counterfactual wage distribution, to reach their conclusion. A different approach using decomposition methods such as Dinardo Fortin and Lemieux (1996) and Chernozhukov Fernandez-Val and Melly (2013) tend to find even larger impacts of minimum wage on inequality. The latter set of authors, using cutting edge distributional decompositions find that the minimum wage can explain nearly all of the increase in the pooled 50/10 ratio between 1979 and around 1/3 of the increased standard deviation in log wages (a measure of overall inequality).

To sum up, while there is some scholarly disagreement about the exact magnitudes of the impact of minimum wages on inequality, we know that the decline in the real minimum has played an important role in increasing inequality in the bottom half of the wage distribution, especially for women.

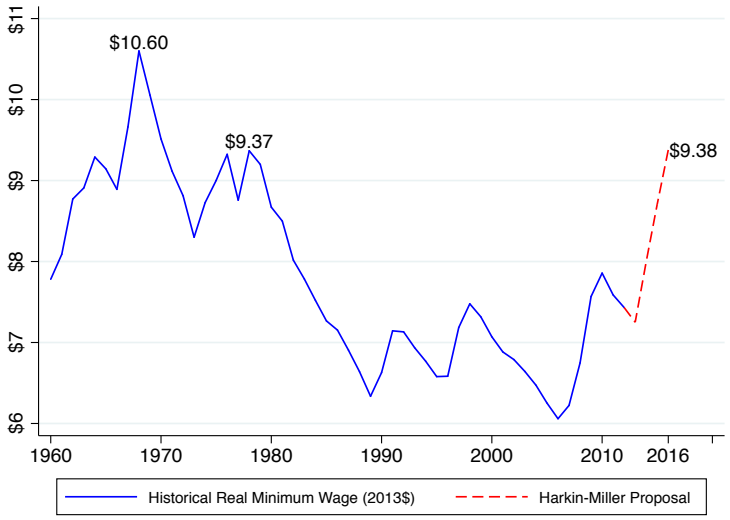
B. Minimum Wages Have Not Kept Up with Cost of Living

Summary: Minimum wages have not kept pace with cost of living.

- *Adjusted for inflation, the real minimum wage has fallen from a high of $10.60 in 1968 to $7.25 in today's dollars.*
- *Harkin-Miller would bring minimum wages up to $9.38 in today's dollars.*
- *Indexation makes the adjustment process much more predictable. Even some economists who are skeptical about minimum wage policies support indexation.*

Over the last three decades, the minimum wage has failed to keep up with cost of living. Figure 4 shows the value of the federal minimum wage in 2013 dollars spanning from 1960 to 2016—with projected values using the Harkin-Miller proposal. These projections are based on a passage of the bill in 2014, with the full phase in by 2016. I am using the CPI-W to adjust for inflation, and also assuming a 2.5% annual inflation rate over the next 3 years (roughly the average over the past 3 years). While the details of the discussion that follows will differ from using a different CPI, or different timing of passage, or different inflation assumptions, the main message would not change substantially.

Figure 4: Evolution of the Real Minimum Wage in the U.S. (2013 dollars)

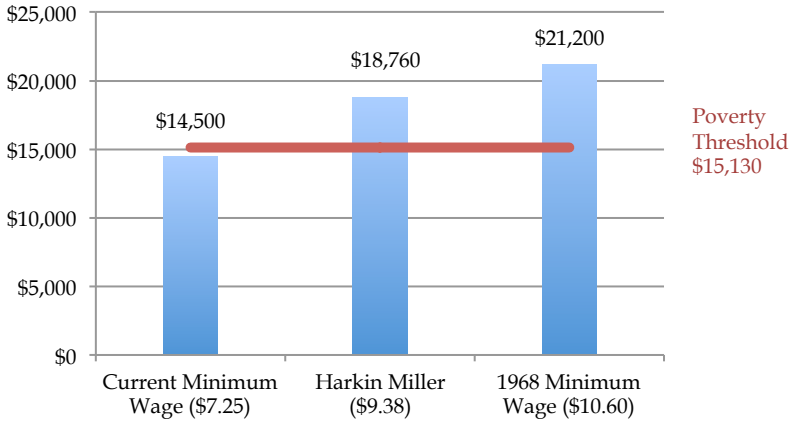


The high water mark for the minimum wage was in 1968, when it reached $10.60/hour in 2013 dollars. The next highest peak was in 1978, when the real minimum wage reached $9.37. During the 1980s the real minimum wage declined to below $7/hour, and over the past 20 years, the minimum wage has largely treaded water, reaching a historical low of $6.06/hour in 2006 prior to the last increase, which brought it to $7.25/hour in today's dollars.

Under Harkin-Miller, with the full adjustment by 2016, the minimum wage will likely reach $9.38/hour in today's dollars. This is a substantial increase, bringing it up to the level in 1978. However, it will still be somewhat lower than the high water mark in 1968.

The fall in the value of the minimum wage has not only increased relative deprivation (inequality), but also increased absolute deprivation. Today, a single parent with one child, working full time at the minimum wage, would earn $14,500 in pre-tax income—below the official poverty line in 2012 ($15,130). With Harkin-Miller phased in, in 2016 her earnings would rise to $18,760. At the 1968 level minimum wage, her pre-tax earnings would have been $21,200. (All these figures are in 2013 dollars.)

Figure 5: Pre-tax Income of Single Parent with One Child Under Alternative Minimum Wages



Finally, the sharp swings in the real minimum wage shows some of the inefficiencies of current practices, where the nominal minimum wage stagnates for years, only to be followed by sharp increases. Regardless of what level we set the real minimum wage, pegging it to the cost of living makes it a much more rational and predictable process, which has value to both workers and employers. This is why even some economists who are skeptical about minimum wage policies nonetheless support indexation.[1]

C. Minimum Wages Have fallen Behind Median Wages

Summary: Minimum wages have also lost ground in comparison to median wages.

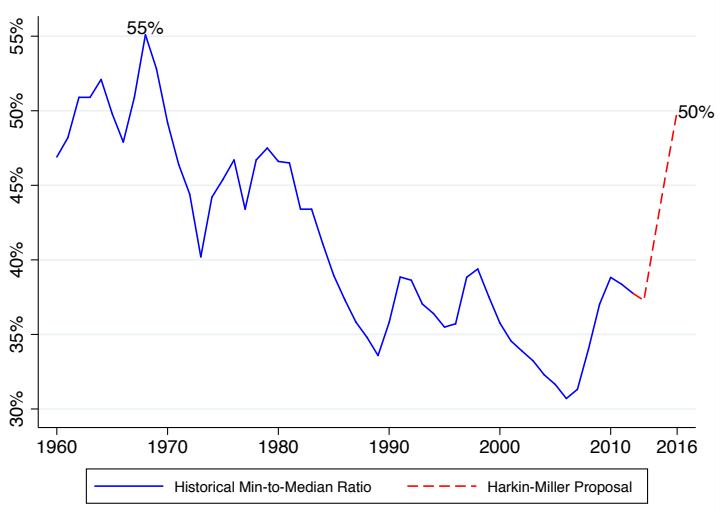
- *The minimum fell from a high of 55% of the median wage in 1968 to 37%.*
- *Harkin-Miller would likely raise the minimum to 50% of the median wage – close to the average for other OECD countries, and the U.S. historical norm during the 1960s and 1970s.*

When analyzing the strength of minimum wage policies, economists typically use the ratio of the minimum to the median wage, also known as the Kaitz index. There are three reasons to pay attention to this measure. First, a comparison of the minimum wage to the median offers us a guide to how binding a particular minimum wage increase is likely to be, and what type of wage the labor market can bear. Second, a comparison also provides us with a natural benchmark for judging how high or low a minimum wage is across time periods or across countries that vary in terms of their labor markets and wage distributions. Third, the median wage also provides a natural reference group for judging how reasonable a minimum wage level is: most people would not think fairness concerns dictate that the minimum wage should be set equal to the median wage, but they may find it objectionable if it is much lower (say a fourth or a fifth as large). Green and Harrison (2010) argue that voter preferences over minimum wages are likely to track the median wage as an indicator of a reference market wage.

[1] Well-known labor economist Daniel Hammermesh, for example, has supported indexation even though he is critical of minimum wages. http://www.utexas.edu/know/2012/02/09/daniel_hamermesh_minimum_wage_election/

A natural target is to set the minimum wage to half of the median wage. This target has important precedence historically here in the US. In the 1960s, this ratio was 51%, reaching a high of 55% in 1968. Averaged over the 1960-1979 period, the ratio stood at 48%.

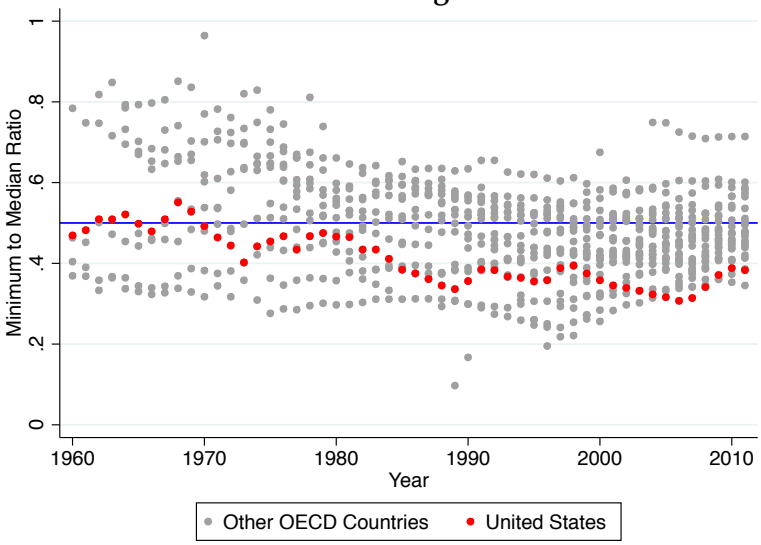
Figure 6: Evolution of the Minimum-to-Median Wage Ratio in the U.S.



Around half the median wage is also the norm among all OECD countries with a statutory minimum. For this group of countries, on average, the minimum wage in 2011 (latest data available) was equal to 49% of the median wage, while averaged over the entire sample between 1960 and 1991, the minimum stood at 48% of the median (see Figure 7). It is important to note that many countries such as France and New Zealand today have minimum wages at or close to 60% of the median.

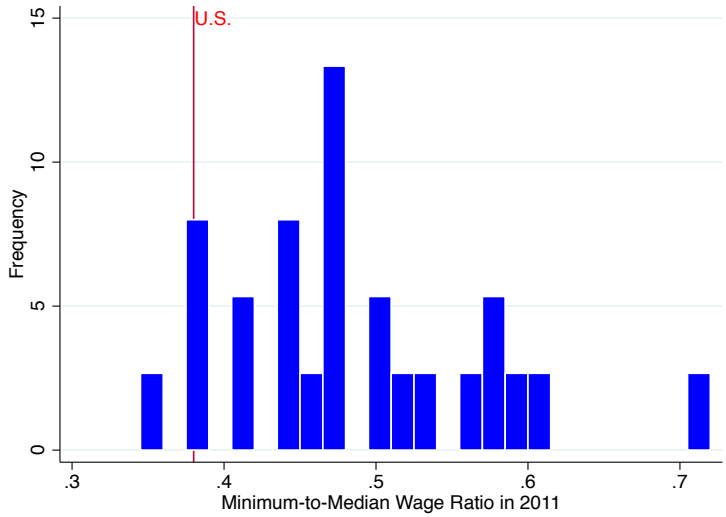
In contrast, today the US the minimum wage clocks at 37% of the median wage, and has the lowest minimum wage in relation to the median of all OECD countries save the Czech Republic (see Figure 8).

Figure 7: Evolution of Minimum-to-Median Wage Ratio in OECD Countries (1960-2011)



Source: OECD Statistics on Minimum and Median Wages

Figure 8: Distribution of Minimum-to-Median Wage Ratio in OECD Countries (2011)



Source: OECD Statistics on Minimum and Median Wages

What would be the impact of the proposed legislation on the minimum-to-median ratio? I estimate that under Harkin-Miller, after the 3 steps have been implemented by 2016, the minimum wage would stand at around 50% of the median wage, assuming nominal increases in the median wage at the same rate as the past 3 years. Such a change would bring the U.S. just above the OECD average and the historical norm prior the 1980.

A comparison to the median wage also clarifies why something around $10/hour is reasonable while $20/hour is not. The median wage today is around $20/hour. There are no known cases where the minimum wage was set equal to the median in a capitalist economy. However, there are many cases, including here in the United States, where it was set at or slightly above half the median wage.

II. How are Increases in the Minimum Wage Absorbed?

A. Employment Effects

Summary: For the range of minimum wage increases we have seen in the U.S. over the past two decades, recent evidence based on credible methodologies do not find job losses of any sizable magnitude.

- *The academic disagreements are over no job losses or small job losses for highly impacted groups.*
- *While some studies continue to find negative effects, these are often artifacts of regional trends and other factors unrelated to minimum wage increases.*
- *Studies comparing similar neighboring areas right across the border account for these problems and find no impact on jobs either for sectors like restaurant and retail or groups like teens.*
- *Employment effects do not seem to vary by the phase of the business cycle or whether the state indexes its minimum wage to inflation.*
- *Most surveys and meta-analyses have also concluded that employment effects are small.*
- *This is why more economists today support an increase than oppose it—even though there is scholarly disagreement on the precise impact.*

When it comes to the literature on minimum wages' impact on jobs, it is useful to think of several distinct phases. Until the early 1990's, economists largely relied on time series evidence—correlating changes in the national level unemployment rate for teens to changes in the federal minimum wage. This older generation literature was shown to have numerous problems, and economists today largely discount these findings today because there are many factors affecting the national unemployment rates for teens that have nothing to do with minimum wages.

Beginning in the early 1990's, a second generation of work (sometimes called the "new minimum wage" research) started exploiting the state-level variation in minimum wages that emerged in the 1980s and grew in the 1990s due to the stagnating federal minimum wage. The two leading approaches were the state panel approach pioneered by Neumark and Wascher (1992) and case study approach pioneered by Card and Krueger (1994). The state-panel approach used more data, but implicitly assumed "parallel trends" … that the low-wage employment trajectories in high minimum wage states like Massachusetts and Oregon were the same as low minimum wage states like Texas and Georgia. As it turns out, this is not a good assumption.

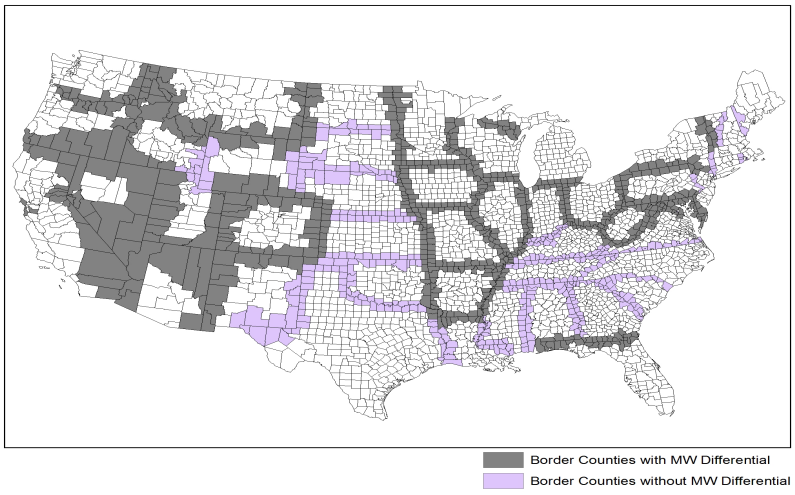
In contrast, the case study approach of Card and Krueger (1994, 2000), as well as Card (1992), focused on looking at individual cases with a focus on getting reliable control groups. In their highly celebrated work published in 1994, they found that an increase in the minimum wage in New Jersey did not reduce employment in fast food restaurants in that state as compared to a neighboring state, Pennsylvania. Although these results were questioned by Neumark and Wascher (2000)—who collected their own data—the core findings (lack of job loss) held up when Card and Krueger used official employment data

covering nearly the entire workforce using Unemployment Insurance rolls. However, the challenges with the case study approach are that: (1) it is difficult to draw firm inference from single cases, (2) they typically use only a short time horizon, and (3) results may be difficult to generalize.

Over the past 5 years, we have made a lot of progress in synthesizing the results using these two approaches. The local case study approach has the virtue of using similar controls groups: adjacent control counties are much more alike in terms of observed characteristics than non-adjacent ones (Allegretto, Dube, Reich, Zipperer, forthcoming). This is of particular concern given how regionally clustered high minimum wage states have been over the past 20 years.

In a series of papers with Michael Reich and T. William Lester, we combined the virtues of these two approaches by embedding the local comparisons within a long panels using detailed county level data. In a 2010 paper published in the *Review of Economics and Statistics*, Lester, Reich and I considered *all* adjacent counties straddling state borders for which data was available continuously for the full period between 1990 and 2006 – a total of 504 counties. The following figure shows the border counties in the U.S.

Figure 9: Map of Border Counties Used to Study Minimum Wage Policies



Of these, 337 counties in 288 pairs had some difference in minimum wags. Comparing across these neighboring counties, we showed that there was no evidence of job losses for high impact sectors such as restaurants and retail. This was true even considering four or more years after the minimum wage hike. In follow up work, we used the same cross-border methodology to study the effect on teens—a high impact demographic group (Dube Lester Reich 2012). Again, we found no discernible impact on employment. In yet another paper, we used a different dataset and less fine-grained regional controls and again replicated our findings that minimum wages did not reduce teen employment during the 1990s and 2000s. (Allegretto Dube Reich 2011).

Our studies also helped explain why researchers have sometimes found a negative effect on jobs from the policy. Over the past two decades, the variation in minimum wages has been highly regionally selective: the states that have seen greater increases in the minimum wage— typically in the northeast and the west—have tended to be those with lower

underlying growth in demand for low-wage workers. Failure to account for these factors will lead us to mistakenly attribute the low growth in employment to higher minimum wages, instead of the real cause (deindustrialization, technological change, bad weather, etc.) For example, we showed that the apparent job losses in the state panel models tend to occur *before* the minimum wage increase occurs, a telltale sign of a spurious effect.

In all, we have by now replicated these findings in 4 papers using 5 datasets and 6 different ways of accounting for comparability of areas. These are summarized in Table 2. For high impact groups such as restaurant workers and teens, we find that a 10% increase in minimum wage raises average wages or earnings by 1.5% to 2%. Employment changes are usually close to zero, never more negative than -0.5%, and sometimes positive in sign. In all cases, there is clear evidence that minimum wage increases raise total pay going to low-wage workers after factoring in both wage and employment changes.[2]

Table 2: Response to a 10% Increase in the Minimum Wage

Teens:	(1)	(2)	(3)	(4)
Earnings	1.5%*	1.5%*	1.6%*	
Employment	0.5%	1.3%	-0.4%	
Turnover Rate			-1.9%*	
Restaurant Workers:				
Earnings			2.1%*	2.0%*
Employment			-0.6%	0.6%
Turnover Rate			-2.6%*	
Data Sets:	CPS	ACS/Census	QWI	QCEW
Paper:	Allegretto Dube Reich (2011)	Allegretto Dube Reich (2009)	Dube Lester Reich (2012)	Dube Lester Reich (2010)

Notes: Column (1) controls for spatial heterogeneity using census divison-specific time effects and state-linear trends; column (2) uses commuting-zone specific time effects; columns (3) and (4) both use county-pair specific time effects. CPS stands for Current Population Survey; ACS stands for American Community Survey; QWI stands for Quarterly Workforce Indicators; QCEW stands for Quarterly Census of Employment and Wages.

Other researchers have also obtained similar results. In independently produced work, Addison Blackburn and Cotti (2009, 2012) found that once they accounted for trends in

[2] In a very recent paper, Neumark Salas and Wascher (2013), hereafter NSW, criticize our work and question the value of using local controls. By now there is a large body of research that shows why local controls and cross-border research design produce more reliable control groups—including many papers outside of the minimum wage literature. NSW seems to ignore this literature, and instead claim that an alternative technique called "synthetic control" picks controls that are not always nearby. However, as we show in a forthcoming paper, they misinterpret their own findings: control states that are within the same census division receive 4 times as large weights than states outside, confirming that nearby areas are indeed more similar (Allegretto Dube Reich and Zipperer, forthcoming). Moreover, using the synthetic control method, we show that a control state that is 100 miles away on average gets a weight that is 7 times as large as a state that is 2000 miles away – again validating our strategies. Finally, we show that when we use the synthetic control method to estimate the effect of minimum wages on teens using all usable state-level minimum wage changes between 1997 and 2007, we do not detect any evidence of job losses for teens, with an average employment elasticity close to zero. These findings show that NSW's claims are not borne out in the data, including when we apply their own preferred technique. We also show that the results from one synthetic control case study that found negative employment effect Burkhauser Sabia Hansen 2012, which studies the impact of New York's minimum wage) was an outlier.

sectoral employment, there is no evidence of job loss in the retail or restaurant sectors. And that failure to account for such trends generates misleading estimates suggesting job losses. Neither our work (Allegretto Dube Reich 2011), nor others (Addison Blackburn Cotti 2011) found evidence that minimum wages cause more job losses during economic downturns or periods of higher overall unemployment. This is relevant for the current discussion of raising the minimum wage during a time with an elevated unemployment rate.

Since there are 10 states that index their minimum wage to the CPI we can also test whether the employment effects are different in these states. In Allegretto Dube and Reich (2011) we did not find systematic differences in employment response by the states' indexation status.

Leaving the most recent evidence aside, a broader look at the literature also tends to go against the view of large job losses. A review by Charles Brown in 1999 for the *Handbook of Labor Economics* had concluded based on the first round of "New Minimum Wage Research" that employment effects of minimum wages were likely to be small, though the results varied depending on the methods. Similarly, a meta analysis by Doucouliagos and Stanley (2009) concluded that the even prior to the most recent work, the literature as a whole (between 1972 and 2007) did not show evidence of job loss. An up-to-date survey of the more recent evidence by Wolfson and Belman (forthcoming) corroborate this finding, and conclude that it was unlikely that the minimum wage increases under study led to statistically or economically meaningful job losses. And when we take into account the demonstrated failings of papers using the state-level approach, this conclusion is strengthened. [3]

While 20 or 30 years ago most economists believed that minimum wage increases invariably cause some job loss, as the data has come in, the profession has updated its beliefs. Recently, the IGM Forum panel of 41 leading economists organized by the Booth School of Business at the University of Chicago was asked their opinion about the desirability of raising the minimum wage to $9/hour as proposed by the President, and indexing it to inflation.[4] The IGM Forum panel is widely seen as representing the pulse of the profession.

Only 34% of the economists on the panel agreed with that proposition that the minimum wage hike "would make it noticeably harder for low-skilled workers to find employment." The rest disagreed or where uncertain. It is instructive to compare this with older evidence. Surveys of AEA members in 2000 found 46% agreeing with a similar proposition, while surveys concluded in 1992 and 1978 revealed 79% and 90% of economists agreeing with similar statements (Klein and Dompe 2007). While we should be cautious when comparing across different surveys, the belief that minimum wages necessarily cause job loss no longer appears to be a majority position within the profession.

Even more importantly, overall support for raising the wage and indexing it was strong among the panelists. 47% supported the policy, while only 14% opposed it, while the rest were uncertain. The IGM panel also reports the responses weighted by the confidence the

[3] One review to conclude there is evidence of job loss is Neumark and Wascher (2008). However, as I discuss in Dube (2010), this is a subjective reading of the evidence based on a selective set of papers, and excludes the evidence from the past 5 years. John Schmitt (2013) also provides a useful summary of the key articles, surveys and meta analyses, including many of the ones discussed here.

[4] http://www.igmchicago.org/igm-economic-experts-panel/poll-results?SurveyID=SV_br0IEq5a9E77NMV

panelists reported in their answers. Weighted by confidence, the proportion expressing support and opposition were 62% and 16%, respectively. The third of the panel that expected job losses were split on their support for the policy, while the third that were sure that there would not be job losses were unanimous in their support. (Those who were uncertain broke in favor of an increase.) Today, more economists appear to support a moderate increase in the minimum wage and indexation to cost of living than oppose it.

B. Turnover and job flows

Summary: While employment may not fall from moderate increases in minimum wages, both separation and hires fall, lowering the turnover rate.

- *In the increasingly popular economic models with search frictions, lower quits and layoffs, along with increased search activity by the unemployed, can explain why employment response is small.*
- *Lower turnover can also increase productivity.*
- *Outside of the simple Econ 101 type environment, increasing workers' pay can improve the functioning of the low wage labor market.*

In contrast to employment levels, there is growing evidence that increased minimum wages reduce employment flows—i.e, turnover. In Dube Lester Reich (2012), we used the same border county methodology to estimate the impact on separations, hires, and turnover rate (turnover rate is the average of the separation and hires rates). We found that for the low-wage groups we considered (teens, restaurant workers), there was a sharp reduction in both separations and hires, even though the number of jobs remained stable. As a result, the turnover rate fell substantially. As Table 2 reports, for a 10% increase in the minimum wage, the turnover rate falls by 1.9% for teens, and 2.1% for restaurant employees, which are substantial magnitudes. In an independent study using Canadian data, Brochu and Green (2012) also find substantial reductions in turnover following a minimum wage increase.

The reduction in separations and hires, concurrent with a steady employment level, offers some clues as to how minimum wages may be absorbed in the low-wage labor market. One explanation is that by reducing frictional wage inequality, an increased minimum wage reduces job-to-job transitions. Put simply, if McDonald's pays a better wage, fewer of its workers will leave to take better paying jobs—say at the higher wage chain In-and-Out Burgers. A higher statutory minimum reduces vacancies at McDonald's, and makes it more likely that the vacancy at the In-and-Out Burgers is filled from the ranks of the unemployed. These two factors tend to help with maintaining the employment level. Second, as Brochu and Green show, a higher minimum wage may also reduce employers' desire to lay off workers in some situations, pushing less people into unemployment.

Overall, even if a minimum wage increase somewhat reduces the number of desired jobs from the employer's perspective, reduced quits and layoffs can compensate and help keep the overall employment relatively stable. Models with search frictions in the labor market—which have become increasingly popular—can help explain this pattern of small effect on employment coupled with larger effect on turnover. Of course this cannot be true at all levels of the minimum wage—with a sufficiently large increase, employment levels will most likely fall as well.

Finally, there are other channels through which minimum wages may positively impact

employment. A higher minimum wage can spur those who are unemployed to search more intensely for jobs, as the value of a job rises. It can also bring in workers who previously were not searching because the wage was too low. In models with search friction, job creation is not simply determined by how many vacancies are posted; rather it is a function of both the number of vacancies as well as how many workers are searching for jobs, and how hard they are searching. Generally speaking, workers' bargaining power may be insufficiently low for the purposes of efficiency. By increasing workers' pay, a minimum wage policy can improve the functioning of the low wage labor market.

There are other implications from reduced turnover as well. Dube, Freeman and Reich (2010) finds that replacement costs are around 8% of annual salaries, and are sizable even for blue collar and service workers. Reduced turnover can, therefore, increase productivity through reducing recruitment and training expenses.

These additional channels of adjustment can help explain why moderate increases in minimum wage seem to have small employment effects.

C. Prices, Inflation and Indexation

Summary. Based on existing evidence, we can expect some increases in restaurant prices from a minimum wage increase. However, the overall price level is unlikely to change noticeably, and there is little risk of wage price spirals from indexation.

An additional channel for absorbing a minimum wage adjustment is through increases in the price of the product. The extent to which this occurs depends on how sensitive the demand for the product is to price. Lemos (2008) reviews this evidence, and argues that there is evidence of moderate increase in prices of high impact sectors like restaurants following a minimum wage increase. To date, the clearest evidence on price increase in the U.S. case comes from Aaronson French MacDonald (2008), who find that a 10% increase in minimum wage would raise restaurant prices by around 0.7%. These estimates would suggest that the proposed Harkin-Miller adjustment would increase restaurant prices by around 2.7%. (This is likely an over-estimate because the real minimum wage increase in Harkin-Miller is less than the nominal increase of 39% over 2 years.)

While restaurant prices will see likely some increases, the overall price level (e.g., the Consumer Price Index) is unlikely to be noticeably affected by minimum wage hikes. For example, Neumark and Wascher (2008, p. 248) points out: "Both because of the relatively small share of production costs accounted for by minimum wage labor and because of the limited spillovers from a minimum wage increase to wages of other workers, the effect of a minimum wage increase on the overall price level is likely to be small." (Neumark and Wascher 2008, p. 248.)

In a recent op-ed, Aaronson and French (2013) suggest that the overall price level increase from the President's proposal would be around 0.3%; analogous calculations would suggest that the Harkin-Miller proposal would increase the overall price by less than 0.5%.

The small impact on the overall price level has relevance for indexation. One concern sometimes raised by indexation is that it feeds a wage-price spiral. These concerns stem from the experience in the 1970s, when there was widespread use of escalator clauses in

union contracts. However, in the case of minimum wages, the relatively small number of affected workers and the small share of production costs from minimum wage workers limits the scope for feedback into prices. Therefore, worries about "wage price spirals" from an increased minimum wage are misplaced and not typically shared by researchers on the topic, regardless of their opinion about the desirability of the minimum wage.

III. The Minimum Wage, Poverty, and the EITC

Summary: The best evidence suggests that minimum wage increases lead to moderate reductions in the poverty rate, especially together with the Earned Income Tax Credit

- *There are strong theoretical rationales – and empirical confirmation – that minimum wages and EITC are complementary policies when it comes to helping low-income families.*
- *A high minimum wage prevents wage reductions that can result from an EITC.*
- *Since the EITC is indexed to the CPI, minimum wage indexation will prevent erosion of EITC benefits for minimum wage workers.*

Minimum wages tend to increase income going to working class and poor families. However, the anti-poverty aspect of minimum wage is limited by the fact that many families under the poverty line do not have substantial attachment to the labor force.

To date, there have been a handful of comprehensive studies of minimum wage on family income, and the evidence is mixed on the strength of the anti-poverty impact. There are some studies that find clear anti-poverty effects (Addison and Blackburn 1999) while others find more small and/or imprecise estimates (Burkhauser and Sabia 2007, Sabia and Burkhauser 2010). However, all of these studies are plagued by numerous methodological problems such as use of aggregate data, lack of sufficient controls, and short time horizons. Many of the estimates are imprecise.

The study with fewest problems is probably Neumark and Wascher (2011), who look specifically at the interaction of minimum wage and EITC on family incomes. Although they do not report an overall estimate for the impact of minimum wages on poverty, their findings show that a 10% increase in minimum wages would reduce poverty by around 3% for the widest group they studied (18-44 year old adults and family heads). They find even stronger reductions in the proportion of families with income less than half the poverty threshold.[5] While the impact may differ by particular subgroups, the indication is that minimum wages tends to decrease poverty moderately.

In new work, I find very similar results using a 22 year period and all individuals under 65 years of age. I, too, find that a 10% increase in minimum wages would reduce poverty by around 3% (Dube, forthcoming). To put this in perspective, this suggests that the Harkin-Miller bill would reduce the official poverty rate from by around 1.8 percentage points, from 15.1 percent to 13.3 percent--a moderate-sized reduction that would mostly reverse the increases in poverty we have seen since the onset of the 2007 recession.

[5] There is only one study that I am aware of that finds a poverty-increasing role of the minimum wage (Neumark Schweitzer and Wascher 2005). They use an unconventional methodology that has not been used before or since this paper, including by the authors. In contrast, Neumark and Wascher 2011 uses standard methodology to estimate impact on family incomes, and tends to find more beneficial results.

Critics of minimum wages often point to the Earned Income Tax Credit (EITC) as an alternative policy that is better able to aid the poor. However, this is a false dichotomy. The EITC is an important program that likely held the poverty rate down by as much as 1.6 percentage points in 2010.[6] However, a problem with the EITC is that while it encourages work (a good thing), tends to push down wages by increasing supply, passing on some of the taxpayer-funded benefits to employers. EITC tends to lower wages by pushing out labor supply, lowering wages.

Rothstein (2010) shows that after accounting for this leakage, beneficiaries get about 73 cents on the dollar. When we factor in the impact on non-beneficiaries, it suggests that the majority of the EITC expenditures are captured by employers. A minimum wage mitigates this leakage by limiting the wage reductions from an increase in labor supply. Lee and Saez (2012) show how in a wide range of situations, the optimal policy package includes a form of minimum wage and something like EITC. They conclude in that "our results imply that the minimum wage and subsidies for low-skilled workers are complementary policies."

Results from Neumark and Wascher (2011) also indicate that for families with kids (i.e., the primary beneficiaries of EITC) - minimum wage and EITC complement each other in reducing poverty.

Finally, an erosion of the real value of minimum wages reduces EITC benefits for minimum wage workers, since the EITC (unlike the minimum wage) is tied to inflation. The indexation of minimum wages will tend to better harmonize these complementary programs.[7]

[6] http://www.census.gov/prod/2007pubs/p60-232.pdf
[7] http://www.taxpolicycenter.org/UploadedPDF/311401_Minimum_Wage.pdf

References:

Aaronson, Daniel, Eric French and James MacDonald. 2008. "The minimum wage, restaurant prices, and labor market structure." The Journal of Human Resources, vol. 43, no. 3, pp. 688-719.

Aaronson, Daniel and Eric French. 2013. Spending, income, and debt responses to minimum-wage hikes." Vox. http://www.voxeu.org/article/spending-income-and-debt-responses-minimum-wage-hikes.

Addison, John T. and McKinley L. Blackburn. 1999. "Minimum wages and poverty." Industrial and labor relations review, vol. 52, no. 3, pp. 393-409.

Addison, John T., McKinley L. Blackburn, and Chad D. Cotti. 2009. "Do minimum wages raise employment? Evidence from the U.S. retail-trade sector." Labor Economics, vol. 16, no. 4, pp. 397-408.

———. 2011 "Minimum Wage Increases Under Straightened Circumstances." IZA Discussion Paper No. 6036. http://ssrn.com/abstract=1948032

———. 2012. "The Effects of Minimum Wages on Labor Market Outcomes: County-Level Estimates from the U.S. Restaurant and Bar Sector." British Journal of Industrial Relations, vol. 50, no. 3, pp. 412-435.

Allegretto, Sylvia A., Arindrajit Dube, and Michael Reich. 2009. "Spatial Heterogeneity and Minimum Wages: Employment Estimates for Teens Using Cross-State Commuting Zones." Berkeley, CA: Institute for Research on Labor and Employment. http://www.escholarship.org/uc/item/1x99m65f

———. 2011. "Do Minimum Wages Really Reduce Teen Employment? Accounting for Heterogeneity and Selectivity in State Panel Data." Industrial Relations, vol. 50, no. 2, pp. 205-240.

Allegretto, Sylvia, Arindrajit Dube, Michael Reich and Ben Zipperer. 2013. "Credible Research Designs for Minimum Wage Studies." Mimeo, forthcoming.

Autor, David H., Alan Manning, and Christopher L. Smith. 2010. "The Contribution of the Minimum Wage to U.S. Wage Inequality over Three Decades: A Reassessment." MIT Working Paper. Cambridge, MA: Massachusetts Institute of Technology. http://economics.mit.edu/files/3279.

Burkhauser, R.V., and Sabia, J.J. 2007. "The Effective- ness of Minimum Wage Increases in Reducing Poverty: Past, Present, and Future." Contemporary Economic Policy, vol. 25, no. 2, pp. 262-281.

Brown, Charles. 1999. "Minimum wages, employment, and the distribution of income." Handbook of Labor Economics, vol. 3, pt. B, pp 2101-2163

Card, David. 1992a. "Do Minimum Wages Reduce Employment? A Case Study of California, 1987-89." Industrial and Labor Relations Review, vol. 46, no. 1, pp. 38-54.

Card, David and Alan Krueger. 1994. "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania." American Economic Review, vol. 48, no. 4, pp. 772-793.

———. 2000. "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania: Reply." American Economic Review, vol. 90, no. 5, pp. 1397-1420.

DiNardo, John, Nicole M. Fortin, and Thomas Lemieux. 1996. "Labor Market Institutions and the Distribution of Wages, 1973-1992: A Semiparametric Approach." Econometrica, vol. 64, no. 5, pp. 1001-1044.

Doucouliagos, Hristos and T. D. Stanley. 2009. "Publication Selection Bias in Minimum-Wage Research? A Meta-Regression Analysis." British Journal of Industrial Relations, vol. 47, no. 2, pp. 406-428.

Dube, Arindrajit. 2013. "Minimum Wages and the Distribution of Family Incomes." Mimeo, forthcoming.

Dube, Arindrajit. 2011. "Review of Minimum Wages by David Neumark and William Wascher." Journal of Economic Literature, vol. 49, no. 3, pp. 762-766.

Dube, Arindrajit, Eric Freeman, Michael Reich. 2010. "Employee Replacement Costs." Berkeley, CA: Institute for Research on Labor and Employment. http://escholarship.org/uc/item/7kc29981

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

———. 2012. "Minimum Wage Shocks, Employment Flows and Labor Market Frictions." Berkeley, CA: Institute for Research on Labor and Employment. http://escholarship.org/uc/item/76p927ks

Green, David A, and Kathryn Harrision. 2010. "Minimum wage setting and standards of fairness." Institute for Fiscal Studies London. http://hdl.handle.net/10419/47492.

Hamermesh, Daniel. 2012. "The consequences of Romney's proposed minimum wage hike". Know. The University of Texas at Austin. http://www.utexas.edu/know/2012/02/09/

Klein, Daniel and Stewart Dompe. 2007. "Reasons for Supporting the Minimum Wage: Asking Signatories of the Raise the Minimum Wage Statement," Econ Journal Watch, vol. 4, no. 1, pp. 125-167.

Lee, David. S. 1999. "Wage Inequality in the United States During the 1980s: Rising Dispersion or Falling Minimum Wage?".The Quarterly Journal of Economics, vol. 114, no. 3, pp. 977-1023.

Lee, David, Emmanuel Saez. 2012. "Optimal minimum wage policy in competitive labor markets." Journal of Public Economics, vol. 96, issues 9-10, pp. 739-749.

Lemos, Sara. 2008. "A Survey of the Effects of the Minimum Wage on Prices." Journal of Economic Surveys, vol. 22, no. 1, pp. 187-212.

Neumark, David and William Wascher. 1992. "Employment Effects of Minimum and Subminimum Wages: Panel Data on State Minimum Wage Laws." Industrial & Labor Relations Review, vol. 46, no. 1, pp. 55-81.

———. 2000. "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania: Comment." American Economic Review, vol. 90, no. 5, pp. 1362-1396.

———. 2008. Minimum Wages. Cambridge, MA: The MIT Press

———. 2011. "Does a higher minimum wage enhance the effectiveness of the earned income tax credit?" Industrial and Labor Relations Review, vo. 64, no. 4, pp. 712-746.

Neumark, David, J. M. Ian Salas, and William Wascher. 2013. "Revisiting the Minimum Wage- Employment Debate: Throwing Out the Baby with the Bathwater?" National Bureau of Economic Research Working Paper No. 18681. Cambridge, MA: National Bureau of Economic Research. http://www.nber.org/papers/w18681

Neumark, David, Mark Schweitzer, William Wascher. 2005. "The Effects of Minimum Wages on the Distribution of Family Incomes: A Nonparametric Analysis." The Journal of Human Resources, vol. 40, no. 4, pp. 867-894

Rothstein, Jesse. 2010. "Is the EITC as Good as an NIT? Conditional Cash Transfers and Tax Incidence." American Economic Journal: Economic Policy, vol. 2 no. 1, pp. 177-208.

Sabia, J.J., and R.V. Burkauser. 2010. “Minimum Wages and Poverty: Will a $9.50 Federal Minimum Wage Really Help the Working Poor?” Southern Economic Journal, vol. 76, no. 3, pp. 592-623.

Sabia, Joseph J., Richard V. Burkhauser, and Benjamin Hansen. 2012. "Are the Effects of Minimum Wage Increases Always Small? New Evidence from a Case Study of New York State." Industrial and Labor Relations Review, vol. 65, no. 2, pp. 350-376.

Schmitt, John. 2013. "Why Does the Minimum Wage Have No Discernible Effect on Employment?" Washington, D.C. Center for Economic and Policy Research. http://www.cepr.net/documents/publications/min-wage-2013-02.pdf

Wolfson, Paul and Dale Belman. Forthcoming. What Does the Minimum Wage Do? Kalamazoo, MI: Upjohn Institute for Employment Research.