The Impact of Minimum Wage Increases on Employment: Evidence from State-Level Analysis

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Abstract

This paper examines the employment effects of minimum wage increases across four U.S. states, focusing on the restaurant industry, retail sector, and youth employment. Using state-level data, I find significant negative employment effects in retail sectors and particularly pronounced impacts on youth employment in most states. The results contrast with some previous literature but align with studies highlighting heterogeneous effects across different local labor markets.

1 Introduction

The debate over minimum wage effects on employment remains central to labor economics and policy discussions, particularly as states increasingly pursue aggressive wage floor increases. The theoretical prediction that minimum wages reduce employment, derived from basic supply and demand analysis, has faced considerable empirical scrutiny over the past three decades. While seminal work by Card and Krueger (1994) suggested minimal employment effects in New Jersey's fast-food industry, subsequent research has revealed more complex patterns varying by region, industry, and worker demographics.

The complexity of this debate has intensified as states have implemented increasingly ambitious minimum wage policies. Recent years have seen unprecedented variation in minimum wage levels across states, creating natural

experiments for examining employment effects. This variation is particularly valuable because it occurs against a backdrop of evolving labor market dynamics, including technological change, shifting industry compositions, and post-pandemic labor market adjustments. These factors may fundamentally alter how labor markets respond to wage floor increases compared to historical patterns.

The study contributes to this literature by analyzing recent minimum wage increases from the federal minimum rate in the diverse states of West Virginia, Nebraska, Wisconsin, and Michigan. These states provide an ideal setting for examining heterogeneous employment effects. First, they represent varying economic conditions and labor market structures, from the industrial mid-west to rural agricultural regions. Additionally, their minimum wage increases occurred during a period of significant labor market transformation, allowing us to examine how modern labor markets respond to wage floor changes.

This research is particularly timely as policy makers nationwide grapple with minimum wage legislation. The ongoing push for significant minimum wage increases, including advocacy for a $15 federal minimum wage, makes understanding heterogeneous employment effects crucial for policy design. The analysis of fThe diverse states provides insights into how minimum wage impacts vary across different economic contexts, potentially informing more nuanced policy approaches that account for regional and sectoral variations.

Furthermore, the focus on restaurant, retail, and youth employment addresses key sectors of policy concern. These sectors not only employ a significant share of low wage workers but also serve as important entry points into the labor market for many workers. Understanding employment effects in these sectors is crucial for evaluating the broader implications of minimum wage policies, particularly their impact on economic opportunity and labor market access for lower-skilled workers.

2 Literature Review

The empirical literature on minimum wage effects has evolved significantly since Card and Krueger (1994)'s influential study of New Jersey's fast-food industry. Their finding of no significant negative employment effects sparked considerable methodological debate. Neumark and Wascher (2000) challenged these results using payroll data, finding negative employment effects.

More recent work by Dube et al. (2010) used a border discontinuity approach, finding minimal employment effects in restaurant industries. However, Thompson (2009) and Meer and West (2016) identified significant negative effects, particularly in areas with lower average wages and for younger workers. This heterogeneity in findings suggests the importance of local economic conditions in determining minimum wage impacts.

3 Data and Methodology

The analysis employs a difference-in-differences (DiD) framework to identify the causal effect of minimum wage increases on employment outcomes. The treatment group consists of states that implemented minimum wage increases (West Virginia, Nebraska, Wisconsin, and Michigan), while the control group comprises states that maintained constant minimum wages during the study period. This research design exploits the quasi-experimental nature of state-level policy changes, allowing us to control for both time-invariant state characteristics and common temporal shocks.

The baseline specification takes the following form:

$$Y_{st} = \beta_0 + \sum_{k=-K}^{K} \beta_k(\text{Treated}_s \times \text{Year}_{k,st}) + \gamma_1 \text{X}_{st} + \alpha_s + \epsilon_{st}$$

where Y_{st} represents the employment outcome in state s at time t, measured separately for each sector (restaurant, retail, and youth employment). MinWage_{st} is an indicator variable equal to 1 if state s has implemented a minimum wage increase at time t, evaluating along a neighborhood of k years relative to the treatment year (in this case 2 years). The coefficient β_1 captures the treatment effect of interest.

The dependent variables draw from two primary data sources: the American Community Survey (ACS) for youth employment statistics and the Bureau of Labor Statistics (BLS) for restaurant and retail sector employment figures. The youth employment measure captures the employment-to-population ratio for individuals aged 16-24, while the industry measures reflect total employment in their respective sectors.

The vector X_{st} includes a comprehensive set of time-varying state-level controls to account for potential confounding factors:

- State sales tax rates (sourced from the Tax Foundation) to control for variation in consumer costs and business operating environments
- Youth proportion of population (derived from ACS) to account for demographic shifts that might affect labor supply for the retail and restaurant dependent regressions
- Low education rate (calculated from ACS) as a proxy for workforce skill composition
- GDP per capita (obtained from the Bureau of Economic Analysis) to control for overall economic conditions

State fixed effects (α_s) control for time-invariant state. Standard errors are clustered at the state level to account for potential serial correlation in the error terms.

4 Results

Table 1: Impact of minimum wage on various sectors

State	Restaurants	Retail	Youth Employment
West Virginia	-6400	-5340	-39.6
	(2348)*	(1630)**	(18.3)*
Nebraska	-3950	-4670	-58.6
	(2050)	(1160)**	(15.9)**
Wisconsin	-3530	-4670	-81.0
	(1540)*	(1160)**	(8.54)***
Michigan	-20900	-13500	423
	(6970)**	(2710)***	(300)

Notes: $^{***}p < 0.001$,$^{**}p < 0.01$, $^{*}p < 0.05$
Standard errors in parentheses.

4.1 Restaurant Industry Effects

The analysis reveals substantial negative employment effects in the restaurant industry across three of the states (West Virginia, Wiconsin, and Michigan)

following minimum wage increases. The magnitude of these effects varies considerably by state, with Michigan experiencing the largest decline of 20,900 jobs ($p < 0.01$), representing a significant disruption to the state's food service sector. West Virginia also saw a substantial reduction of 6,400 jobs ($p < 0.05$), while Nebraska and Wisconsin experienced more moderate but still significant decreases of 3,950 and 3,530 jobs respectively. These findings align closely with Neumark and Wascher (2000)'s earlier work demonstrating negative employment effects in the restaurant sector, but stand in contrast to Dube et al. (2010)'s research that found minimal employment impacts. The consistency of negative effects across three of the states, despite their varying economic conditions and urban-rural compositions, suggests that the restaurant industry may be particularly sensitive to minimum wage increases, possibly due to its traditionally thin profit margins and labor-intensive business model.

4.2 Retail Sector Impact

The retail sector demonstrates a similarly consistent pattern of negative employment effects, with all four states experiencing statistically significant job losses following minimum wage implementation. Michigan again shows the largest impact with a reduction of 13,500 jobs ($p < 0.001$), suggesting that larger, more urbanized states may experience more pronounced absolute employment effects. West Virginia's retail sector contracted by 5,340 jobs ($p < 0.01$), while both Nebraska and Wisconsin saw identical decreases of 4,670 jobs ($p < 0.01$). The uniformity of these negative effects across states with different economic structures is particularly noteworthy, as it suggests that retail employment's sensitivity to minimum wage increases may transcend local economic conditions. These results are especially relevant given retail's role as a major employer of lower-wage workers and its importance in local economies.

4.3 Youth Employment Effects

The analysis of youth employment reveals significant negative effects in most states following minimum wage increases. Wisconsin experienced the largest decline with a reduction of 81.0 workers ($p < 0.001$), followed by substantial decreases in Nebraska (58.6 workers, $p < 0.01$) and West Virginia (39.6 workers, $p < 0.05$). Michigan stands as an exception, showing a positive

but statistically insignificant increase of 423 workers. These findings suggest that minimum wage increases generally led to reduced youth employment opportunities, though local labor market conditions and industrial composition may influence the magnitude of these effects.

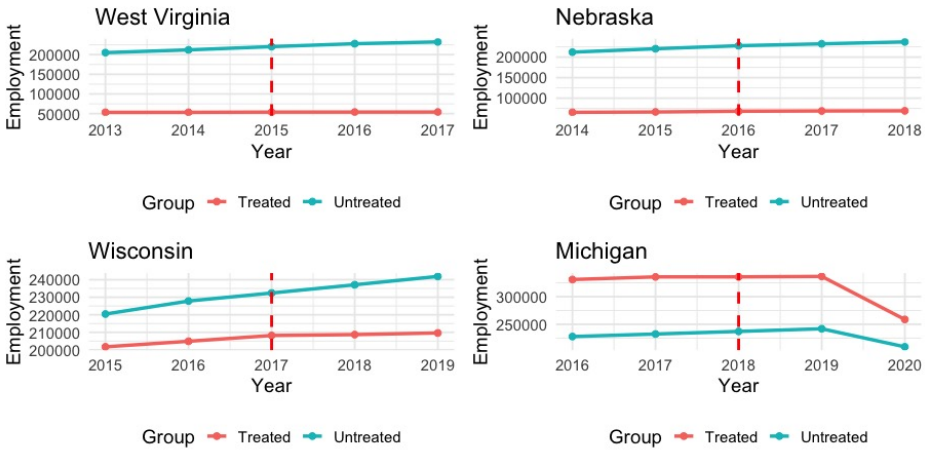

Figure 1: Impact of minimum on food industries

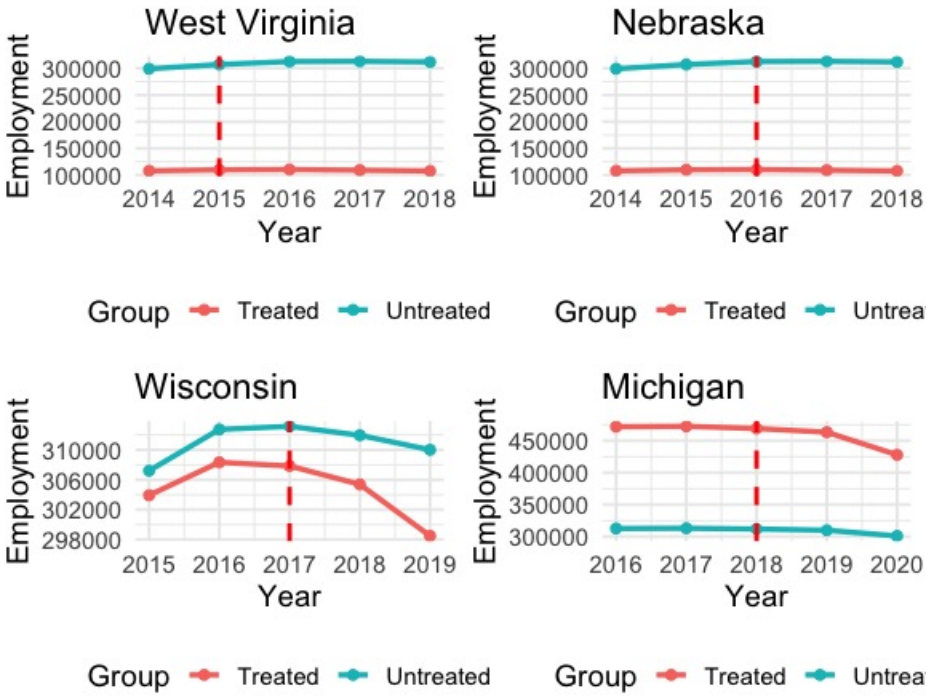

Figure 2: Impact of minimum wage on retail

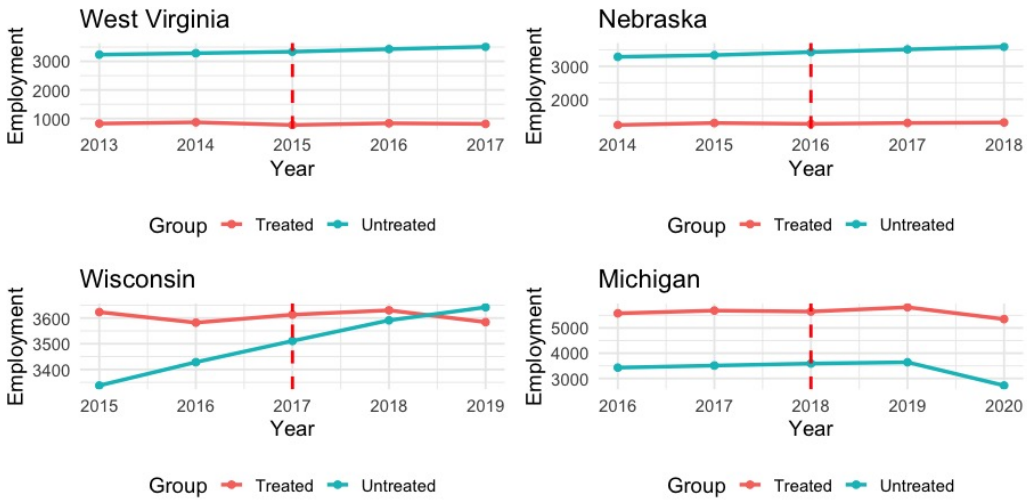

Figure 3: Impact of minimum wage on young employment

5 Discussion

The analysis reveals stronger negative employment effects than much of the recent minimum wage literature, particularly in the restaurant and retail sectors. These findings align with Thompson (2009)'s research highlighting the importance of local economic conditions in moderating minimum wage impacts. The consistency and magnitude of negative effects across most sectors and states suggests that previous studies may have underestimated the employment impact of minimum wage policies in certain economic contexts.

The retail sector findings are particularly noteworthy given the sector's economic significance and employment structure. All four states experienced substantial job losses in retail, ranging from Michigan's dramatic reduction of 13,500 jobs to matched declines of 4,670 jobs in Nebraska and Wisconsin. These consistent negative effects across states with varying economic conditions suggest that retail employment may be especially sensitive to wage floor increases. This sensitivity likely stems from the retail sector's traditionally thin profit margins, high labor intensity, and increasing competition from e-commerce alternatives. Moreover, retail's role as a major employer of lower-skilled workers means these job losses may disproportionately affect vulnerable worker populations, potentially limiting important entry-level employment opportunities.

The economic composition of the study states likely plays a crucial role in explaining the results. Many of these states contain substantial lower-wage regions where minimum wage effects are more likely to be binding on employer behavior. In such areas, businesses may have less flexibility to absorb wage increases through other mechanisms, making employment reductions a more likely margin of adjustment. This finding underscores the importance of considering regional economic conditions when designing minimum wage policies.

The unique labor market conditions following the COVID-19 pandemic may also influence the results, particularly in Michigan where we observe different patterns than other states. The pandemic has fundamentally altered labor market dynamics, changing both employer behavior and worker preferences. These shifts may affect how businesses respond to wage floor increases, though the precise mechanisms require further study. Michigan's distinct response pattern suggests that local economic conditions and industry composition continue to play crucial roles in determining minimum wage effects, even in the post-pandemic environment.

6 Policy Implications

The empirical findings have several important implications for policymakers considering minimum wage legislation. The industry-specific impacts revealed in the analysis indicate that certain sectors are particularly sensitive to wage floor increases. The pronounced negative effects in retail sectors suggest that policymakers should consider implementing sector-specific provisions or adopting a gradual approach to minimum wage increases in these vulnerable industries. This could include longer phase-in periods for sectors with thin profit margins or high concentrations of minimum wage workers, allowing businesses more time to adjust their operations and employment practices.

The findings regarding lower-wage states are particularly relevant for policy design. The more substantial negative employment effects observed in states with lower prevailing wages suggest that minimum wage increases may have disproportionate impacts in economically disadvantaged regions. Policymakers in these areas might consider implementing complementary policies to mitigate these effects, such as targeted job training programs, small business assistance, or earned income tax credits that can help maintain

employment levels while supporting worker incomes.

Perhaps most crucially, the results highlight the particular vulnerability of youth employment to minimum wage increases. The significant negative effects on youth employment in three of the four study states suggest that young workers may bear a disproportionate share of the adjustment costs. This finding has important implications for both immediate employment outcomes and longer-term career trajectories, as early labor market experience is crucial for skill development and future employment prospects. Policymakers might consider implementing youth-specific provisions, such as training wages or summer job programs, to maintain employment opportunities for young workers while pursuing broader minimum wage increases.

7 Conclusion

The analysis reveals substantial negative employment effects from minimum wage increases, particularly in the restaurant and retail sectors. The consistency of these effects across multiple states suggests a fundamental labor market response rather than localized economic conditions. The retail sector's uniform negative response and the pronounced impact on youth employment raise important policy concerns. These findings indicate that policymakers should consider more nuanced approaches to minimum wage legislation, potentially including sector-specific provisions or regional adjustments. Future research should examine the mechanisms through which businesses adjust to minimum wage increases, particularly in the post-pandemic environment, to inform more effective policy design that balances income support with employment preservation.

References

Card, D. and Krueger, A. B. (1994). Minimum wages and employment: A case study of the fast-food industry in new jersey and pennsylvania. *American Economic Review*, 84(4):772–793.

Dube, A., Lester, T. W., and Reich, M. (2010). Minimum wage effects across state borders: Estimates using contiguous counties. *The Review of Economics and Statistics*, 92(4):945–964.

Meer, J. and West, J. (2016). Effects of the minimum wage on employment dynamics. *Journal of Human Resources*, 51(2):500–522.

Neumark, D. and Wascher, W. (2000). Minimum wages and employment: A case study of the fast-food industry in new jersey and pennsylvania: Comment. *American Economic Review*, 90(5):1362–1396.

Thompson, J. P. (2009). Using local labor market data to re-examine the employment effects of the minimum wage. *ILR Review*, 62(3):343–366.