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Jeffrey Clemens
Melissa D. Gentry
Jonathan Meer

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ABSTRACT

We analyze the differential effects of minimum wage increases on individuals with disabilities using data from the American Community Survey and leveraging state-level minimum wage variation during the 2010s. We find that large minimum wage increases significantly reduce employment and labor force participation for individuals of all working ages with severe disabilities. These declines are accompanied by a downward shift in the wage distribution and an increase in public assistance receipt. By contrast, we find no employment effects for all but young individuals with either non-severe disabilities or no disabilities. Our findings highlight important heterogeneities in minimum wage impacts, raising concerns about labor market policies' unintended consequences for populations on the margins of the labor force.

Jeffrey Clemens
Department of Economics
University of California, San Diego
9500 Gilman Drive #0508
La Jolla, CA 92093
and NBER
jeffclemens@ucsd.edu

Jonathan Meer
Texas A&M University
Department of Economics
TAMU 4228
College Station, TX 77843
and NBER
jmeer@econmail.tamu.edu

Melissa D. Gentry
Texas A&M University
mdgentry@tamu.edu

Introduction

People with disabilities are more likely to be marginally attached to the labor force, with lower rates of both labor force participation and employment, as well as significantly lower incomes and average wages.[1] These disparities arise from, among other factors, the impact of a disability on productivity, barriers to employment like lack of transportation or training, costs associated with accommodations, discrimination in the labor market, and the possibility that health limitations might render work altogether infeasible. We focus on whether the unique challenges that shape the labor market experience of individuals with disabilities lead the minimum wage's positive and negative effects to differentially impact this group, which accounts for roughly 12 percent of the prime-age population.

A long literature has considered the effects of minimum wages on the industries and demographic groups that account for a plurality of minimum wage workers. But there is little evidence on the impact of minimum wages on individuals with disabilities. Indeed, concerns about the potential negative effects of minimum wages on this group's employment motivate the inclusion of disability as a source of minimum wage exemptions, though the use of such exemptions is uncommon (United States Government Accountability Office 2023).[2] Indeed, in December 2024 the U.S. Department of Labor proposed a rule to eliminate this exemption (U.S. Department of Labor 2024). Additionally, because individuals with disabilities are more likely to be beneficiaries of income support programs – the rate of public assistance receipt by the disabled is six times that of the non-disabled in our sample – changes in their employment and wages may have direct fiscal implications for both tax revenues and government spending.

We analyze the effects of minimum wages on the employment, labor force participation, and income-support program participation of individuals with severe and non-severe disabilities. Our analysis focuses on the 2010s, during which there was dramatic cross-state variation in minimum wage policy. As documented in a series of papers by Clemens and Strain (2017, 2021), several factors make this decade attractive for analyses of minimum wages. First, states' minimum wage policies were stable from 2010 through 2013, which provides a baseline that is suitable for assessing employment trends prior to the enactment of minimum wage increases. Second, states' policy regimes set out on substantially varying

[1] In 2023, for example, the labor force participation rate for disabled prime-age adults was nearly 40 percentage points lower than for non-disabled adults and the unemployment rate was nearly double (Bureau of Labor Statistics 2024).

[2] Recent work by Kim, Levere, and Magenheim (2024) examines the impact of the minimum wage on firms that contract with the government under a special program that allows for lower wages to be paid to disabled workers. Sun (2024) explores the impact of eliminating subminimum wages on employment for people with severe cognitive disabilities and finds that, relative to people without severe cognitive disabilities, employment decreases.

paths beginning in 2014. Third, while states' policies exhibit substantial variation, nearly half of the states kept their minimum wage floors in line with the federal minimum wage of $7.25 per hour. These states thus provide a control group relative to which other states can be compared. Taken together, this enables us to analyze the effects of historically large variations in minimum wage policy using both a basic difference-in-differences estimator and a modern event-study estimator.

Our analysis yields several findings. First, consistent with previous work, we find that the relatively large minimum wage changes of this time period had negative effects on employment among relatively young individuals (ages 16-21), but little detectable effect on the bulk of the working age population. In contrast, among individuals with severe disabilities, we find evidence of substantially more negative employment effects following large minimum wage increases among both the full working-age and the prime-age populations. This provides evidence for the supposition that individuals with relatively severe disabilities are indeed on the margins of employment. Individuals with non-severe disabilities, by contrast, experience changes in employment that are statistically indistinguishable from the changes experienced by individuals who report having no disabilities. For those with severe disabilities, we find that the estimated decline in employment is accompanied by a decline in labor force participation and a downward shift in their position in the wage distribution (defined to include zeroes for those who are not employed), which contrasts with the upward shifts experienced by those with no disabilities and non-severe disabilities. Finally, we find some evidence of an increase in the probability that individuals with severe disabilities report receiving public assistance.

We contribute to three literatures. First, we provide evidence on the determinants of labor force participation for people with disabilities. Both demand-side and supply-side factors may influence employment possibilities for people with disabilities. On the demand-side, employers may have concerns that workers with disabilities may have lower productivity than non-disabled workers (Jones 2006) or that mandated accommodations may be costly (Acemoglu and Angrist 2001). There is also evidence of hiring discrimination against disabled workers (Bellemare et al. 2023; Lippens, Vermeiren, and Baert 2023). People with disabilities also face other barriers to employment such as health limitations (Currie and Madrian 1999), lack of accessible or reliable transportation (Gentry 2025) or a lack of training (Baldwin and Johnson 1994, 2000; Lindsay 2011). Additionally, disability insurance programs may reduce labor force participation rates (Bound 1989; Maestas, Mullen, and Strand 2013) especially when replacement rates are high (Autor and Duggan 2003; Bound and Burkhauser 1999). We find that high minimum wages contribute to the low employment and labor force participation rates of prime-age individuals with severe disabilities, while having modest impacts on prime-age individuals with less severe disabilities.

Additionally, we note that our analysis is made possible by the use of a novel but straightforward approach to identifying individuals with severe disabilities in the ACS. Specifically, we estimate the relationship between the service-connected disability severity scores that are available for the veteran population and a combination of demographic covariates and indicators of disability type. We then use the resulting coefficients to predict the severity among members of the civilian population who report disabilities.

Second, by contrasting effects on individuals with and without disabilities, we add to the voluminous literature on the employment effects of minimum wages. Few papers have emphasized the effects of minimum wages on groups whose employment can, in principle, be eligible for exemptions aside from the temporary "training" wage that applies to teenagers. Indeed, an analysis by Kim, Levere, and Magenheim (2024) of employment by firms that participate in the federal AbilityOne program, which explicitly targets employment by individuals with disabilities, is the only other paper on the effects of minimum wages on employment among individuals with disabilities of which we are aware. Relative to Kim, Levere, and Magenheim (2024), who provide a novel analysis of non-profits whose objective functions may take the employment of individuals with disabilities as an input, we contribute by analyzing the effects of minimum wages on individuals with disabilities across the entirety of the working age population and by employers of all ownership structures.

Finally, our analysis of the effects of minimum wages on the receipt of public assistance contributes to the literature on the relationship between minimum wages and participation in a number of public programs. Past analyses have considered the effects of minimum wage increases on the overall cash welfare assistance caseload (Page, Spetz, and Millar 2005), on the receipt of Social Security Disability Income and Supplemental Security Income (Duggan and Goda 2020), on the claiming of retirement benefits (Hampton and Totty 2023) and on the receipt of food assistance or unemployment insurance in addition to the aforementioned list of programs (Clemens 2016). Our findings highlight important heterogeneities in the effects of minimum wages on public assistance receipt. The minimum wage has no impact on public assistance receipt among the young despite negative employment effects, but an economically substantial – though somewhat noisy – impact on both employment and public assistance receipt among prime-age individuals with severe disabilities.

In the next section we describe our data and methodology. The subsequent section presents our results, after which the final section provides a concluding discussion.

Data and Methodology

Our analysis uses Integrated Public Use Microdata Series (IPUMS) extracts of the American Community Survey (ACS) (Ruggles et al. 2024). The ACS includes questions related to

self care, independent living, ambulation, cognition, and vision/hearing limitations. These questions specifically exclude temporary difficulties so as to focus on long-term disabilities. For our analysis, a person who responds affirmatively to any of the different disability-related questions is considered to have a disability.

Disability is not a monolith – the term covers a broad range of conditions, and people with different types of disabilities may experience different outcomes when faced with the same event. To explore this heterogeneity, we construct a novel predicted disability severity measure using the Veteran's Affairs (VA) service-connected disability rating, which is available for veterans in the ACS. These ratings pertain to the severity of "an injury or illness that was incurred or aggravated during active military service" and are used to determine eligibility for benefits or other services (Texas Veterans Commission 2024). The VA assigns these ratings based on the "Schedule for Rating Disabilities," which lists various health limitations individuals might face and the range of possible ratings associated with that condition. The VA classifies disability on a scale from 0 to 100, in increments of 10, roughly corresponding to the predicted percent a person's functional life is impacted by their disability. For example, the amputation of a hand could result in a 60 or 70% rating, while the loss of a pinky finger might be associated with a disability rating of 10 or 20% (U.S. Department of Veterans Affairs 2024b). This schedule of ratings provides guidelines for every possible disability condition that a veteran may have. A rating of 0 is a "non-compensable disability" for which veterans may not receive direct compensation but may be eligible for other benefits (U.S. Department of Veterans Affairs 2024a).

In the ACS, the VA's disability scale is further binned. Veterans report a disability rating of 0, 10 or 20, 30 or 40, 50 or 60, or 70+. We consider veterans to have a severe disability if they reported a service-related disability rating in the highest ACS bin (70-100%), which accounts for roughly 30% of the sample.[3]

To extrapolate this measure to the broader population of individuals with disabilities, we use a logistic regression to regress this binary severity measure for veterans on age, race, gender, and disability type(s). We then use the resulting coefficients to predict the likelihood of a severe disability among those in the non-veteran disabled population. Disability type includes indicators for the combinations of disability type from the standard ACS questions (including those who report multiple types of disabilities). We classify individuals with a predicted severe disability likelihood greater than 65% as having a "severe" disability.[4]

Figures A1, A2, and A3 enable comparisons of employment rates among veterans with the various disability severity rankings, as well as for the non-veterans we identify as having

[3]6% of the sample is in the 0 bin; 32% in the 10 or 20 bin; 19% in the 30 or 40 bin, and 13% in the 50 or 60 bin.

[4]This threshold was chosen due to the distribution of the predicted severity measure. Our results are qualitatively robust to the selection of other thresholds ranging from 55% to 75%.

severe or non-severe disabilities. Figure A1 shows that employment rates are fairly similar for veterans with disabilities in the four lowest bins, but falls by 25 percentage points for those in the highest category. Figure A2 shows that employment rates across the life cycle are far lower for veterans with severe disabilities as compared to those with non-severe disabilities or no disability.[5] Figure A3 plots the same life-cycle patterns for our predicted measure, showing a similar pattern in which the employment rate of those whose predicted disability rating is "severe" is far lower than for those with a "non-severe" predicted rating, which is in turn lower than the non-disabled. We also provide summary statistics by disability status in Table 1, which further highlight the differences across these groups. To the extent that this predicted rating introduces measurement error, results for our comparisons of individuals with vs without severe disabilities will tend to be attenuated.

Our methodology closely follows that of Clemens and Strain (2017, 2018, 2021) and Meer and Tajali (2023). In a series of papers examining the impact of minimum wage changes on employment for various groups, Clemens and Strain follow an analysis plan to which they committed in Clemens and Strain (2017), which entailed running a set of difference-in-differences style analyses using several years of data that did not exist at the time of their project's initial study. This pre-committed analysis plan organized the states into four groups: (1) states with no change in minimum wage, (2) states that statutorily increase their minimum wage in step with inflation (indexers), (3) states that enacted relatively small minimum wage increases during the sample period, and (4) states that enacted large minimum wage increases during the sample period.[6] In addition to presenting pre-committed analyses, Clemens and Strain (2021) also present analyses using modern difference-in-differences estimators and discuss why the imputation estimator of Borusyak, Jaravel, and Spiess (2024) is attractive in this setting.

We follow Clemens and Strain (2021) with respect to their grouping of states and by presenting results from both a basic difference-in-differences style estimator and the imputation event study estimator. Our empirical approach is adapted from prior papers to allow us to compare effects on outcomes for individuals with disabilities to those for individuals without disabilities. This leads to a triple difference-in-difference style estimation strategy,

[5]Indeed, other researchers have found that veterans with higher severity ratings, and consequently higher VA benefits, also have lower labor force participation (Autor, Duggan, et al. 2016 and Rutledge, Sanzenbacher, and Crawford 2016).

[6]The Clemens and Strain analyses use two divisions of states, one based on minimum wage changes that were enacted at the time of their study's initial analyses, and one based on minimum wage changes enacted through the later years of their sample. Since our analysis does not have a pre-commitment component, we use the latter grouping. A full list of the states included in each group can be found in Table A1.

shown below:

$$
\begin{aligned}
Y_{ist} = {} & \alpha_s + \gamma_t + \beta_{1-3} MinWageGroup_s * Post_t + \beta_{4-5} DisabilityType_i \\
& + \beta_{6-11} MinWageGroup_s * DisabilityType_i + \beta_{12-13} Post_t * DisabilityType_i \\
& + \beta_{14-19} MinWageGroup_s * Post_t * DisabilityType_i + X_{st} + \epsilon_{ist},
\end{aligned} \tag{1}
$$

where Y_{ist} includes indicator variables for employment, labor force participation, receiving public assistance, and measures of wage income or federal tax liabilities.[7] α_s are state fixed effects and γ_t are year fixed effects. $MinWageGroup_s$ is a set of indicators for a state being an indexer, small change, or big change state. $DisabilityType_i$ is a person-level indicator for having a non-severe or severe disability. As in the "longer-run" analyses of Clemens and Strain, our sample excludes calendar years 2014 through 2018 so that estimates of Equation (1) can be loosely described as "long difference" estimates. Thus, $Post_t$ is an indicator for the post-period of 2019. X_{st} is a vector of state-level controls including the log of state-level per capita income from the Bureau of Economic Analysis, and a housing price index from the Federal Housing Finance Agency.

The coefficients of interest are β_{1-3}, which provide the causal effect of minimum wage changes on individuals without disabilities, and β_{14-19} which provide the causal effect for individuals with non-severe and severe disabilities, relative to non-disabled adults in states with similar policy regimes. The comparison of outcomes for the disabled relative to the non-disabled within the same state grouping centers the focus on the possibility of divergent paths between those groups, as well as reducing concerns about differential trends between states driving spurious correlation. We note that in addition to directly estimating differential effects on individuals with disabilities relative to non-disabled individuals, we can recover the net effect by summing the coefficient that captures the differential effect with the coefficient that estimates the main effect on individuals without disabilities. Our sample is restricted to individuals age 16 to 67, and we examine heterogeneous effects for different age groups. In particular, we consider the effects for young adults (16-21), prime-age adults (22-54), and older adults (55-67) separately.

As noted above, our basic difference-in-differences style analysis uses 2011-13 as the pre-period and 2019 as the lone post-period, such that our estimates can be loosely described as "long difference" estimates. Consequently, our estimation strategy avoids issues of staggered adoption that can be a source of bias in standard difference-in-differences designs (Goodman-

[7] We consider someone as receiving public assistance if they had any income from Social Security, Supplemental Security Insurance, or welfare programs such as Temporary Aid to Needy Families. Given data limitations, we cannot examine other potential margins of adjustment to minimum wage increases, like hours worked (Jardim et al. 2022), increases in expected effort (Obenauer and Nienburg 1915, Ku 2019, Coviello, Deserranno, and Persico 2022, Davies, Park, and Stansbury 2024), or changes in non-wage compensation (Clemens, Kahn, and Meer 2018).

Bacon 2021). Equation 1 similarly sidesteps some of the problems that can arise in examining the impacts of the minimum wage due to the potential for dynamic effects (Meer and West 2016). Additionally, because we conclude our analyses with data from 2019, we avoid the labor market turmoil associated with the COVID-19 pandemic.

We also conduct analysis using the Imputation DiD approach of Borusyak, Jaravel, and Spiess (2024). This approach is an efficient and robust method for dealing with staggered adoption designs with heterogeneous causal effects. The resulting event-study figures allow us to simultaneously track dynamic treatment effects and check for the potential relevance of divergent pre-existing trends.

Results

We begin by examining the impact of minimum wage changes on employment among individuals with disabilities in Table 2, which presents estimates of Equation (1). For brevity, this table only displays the coefficients on the interaction terms of primary interest; full results are in Table A3. We look first to estimates for individuals without disabilities, which can be usefully compared with estimates from other research on this decade's minimum wage increases and which serve as a baseline for comparison of the effects we estimate for individuals with non-severe and severe disabilities. Consistent with recent research focusing on populations with low levels of experience and or education (Clemens and Strain 2021), we observe a sizable and statistically significant reduction in employment for young workers following relatively large minimum wage increase (-0.028, s.e. = 0.009). Prime-age workers without disabilities experience an offsetting increase in employment (0.008, s.e. = 0.004), possibly reflecting substitution towards older and more experienced workers (Clemens, Kahn, and Meer 2021). Also consistent with earlier analyses, we observe that smaller minimum wage increases have modest impacts on employment among individuals of all age groups. Finally, we find that minimum wage increases are positively associated with employment among prime age and older individuals without disabilities in the small set of states with inflation-indexing provisions.

We now turn to our novel estimates of differential impacts on individuals with disabilities. For small minimum wage increases and inflation-indexed minimum wage increases, we observe no evidence of differential effects for individuals with either severe or non-severe disabilities relative to individuals without disabilities. Large minimum wage increases, by contrast, predict a 3.2 percentage point (s.e. = 1.6 percentage points) more negative impact of minimum wage increases on employment among prime-age individuals with severe disabilities relative to prime-age individuals without disabilities in those states.[8] Across

[8]The net effect on individuals with severe disabilities in states with large minimum wage changes is the

all working-age individuals with severe disabilities, the estimate is negative 2.1 percentage points (s.e. = 1.1pp). This differential decline amounts to 6 percent of this group's 35.5 percentage point employment rate at baseline.

Does this differential reduction in employment reflect exit from the labor force? Higher minimum wages might induce entry into the labor force or increased search effort (Acemoglu 2001, Flinn 2006, Adams, Meer, and Sloan 2018). It could also lead to labor force exit if workers are discouraged by a decline in employment opportunities or a worsening in the quality of available jobs (Clemens 2021).[9] In Panel A of Table 3, we examine impacts on labor force participation. The qualitative patterns are similar to those in Table 2, implying that employment declines tend to be accompanied by similarly-sized declines in labor force participation. Young workers' labor force participation falls irrespective of disability in the face of both smaller and larger minimum wage changes (see Table A4 for point estimates associated with small and inflation-indexed increases). The impacts of large minimum wage changes on the labor force participation of individuals with severe disabilities are quantitatively similar to the associated employment effects, but are less precisely estimated.

Do the observed effects of minimum wage increases on employment translate into changes in take-up of public assistance? In Panel B of Table 3, we see that large minimum wage changes lead to a 1.7 percentage point (s.e. = 0.9 pp) increase in the likelihood of receiving public assistance income for prime-age workers with severe disabilities relative to prime age workers without disabilities.[10] Across all working age individuals, the comparable estimate is a 1.4 percentage point increase (s.e. = 0.6 pp). There is a similar increase in public assistance take-up for prime-age individuals with severe disabilities in states that index their minimum wage increases for inflation (see Table A5), despite an absence of impacts on this group's employment. In line with the results on labor force participation, there is also a relative increase in public assistance take-up for older individuals with non-severe disabilities in indexing states, and a decrease for prime-age people with non-severe disabilities in states with small changes (again, see Table A5). Additionally, consistent with their tendency to be dependents rather than primary earners, the decline in employment among non-disabled young individuals in states that enacted large minimum wage increases is not associated with a rise in their use of public assistance.

sum of the positive main effect of 0.008 and the negative differential effect of -0.032, namely an employment decline of -0.024 (s.e. = 0.014), which is on the margins of being statistically differentiable from zero, with a p-value of 0.103.

[9] An interesting finding from the analysis in Kim, Levere, and Magenheim 2024, for example, is that declines in the provision of fringe benefits offset a substantial share of the wage gains for workers in federal AbilityOne program following the relatively large minimum wage increases in their sample.

[10] Because the estimated main effect on prime age individuals is -0.1 percentage points, the implied net effect is 1.6 percentage points (s.e. = 0.9 percentage points), which is statistically distinguishable from zero at the 10 percent level.

In Panel C of Table 3, we examine the impact of minimum wage increases on wage income. Due to the prevalence of zero values for wages, which are especially common among individuals with severe disabilities, we follow Delius and Sterck (2024), who argue that a quantile transformation is useful in that it considers the entire distribution of the variable (giving reduced weight to outliers) and has an intuitive interpretation (in percentile terms).[11] In practical terms, the quantile transformation transforms a variable such that each value falls between 0 and 1, where the median value of the untransformed variable would take a new value of 0.5.

Prior to making the quantile transformation, we winsorize the wage variable in order to remove the influence of changes among individuals with wages in the upper tail, whose wages are not plausibly affected by minimum wage changes.[12] Specifically, we top-code individual wages at $60,000 in 2019 dollars. Our overall pattern of results is robust to other thresholds.

In light of our employment results, it is unsurprising that we estimate that large minimum wage changes reduce the rank position of prime-age adults with severe disabilities by 1.8 percentage points (s.e. = 0.3 percentage points) relative to the estimated impact on prime-age individuals without disabilities. There are slight positive effects for non-disabled prime-age workers, reflecting the increase in employment and lifting of wage levels for that group, as well as the decline among those with disabilities.[13] Effects for small and inflation-indexed minimum wage increases are generally modest in magnitude (see Table A6).[14]

Panel D in Table 3 investigates the broader fiscal impacts of these minimum wage changes through their effects on federal tax liabilities (as measured by the quantile transformed sum of federal income and FICA tax liabilities).[15] Across most of our samples, federal tax liabilities

[11]This approach is not dissimilar to Chetty, Hendren, et al. 2014, Chetty and Hendren 2018, and Chetty, Friedman, et al. 2020, to name a few. These papers examine factors that influence economic mobility, as measured by an individual's "income rank", which is essentially quantile-transformed income. A common alternative approach is to use the inverse hyperbolic sine. However, recent evidence (Chen and Roth 2023, Mullahy and Norton 2024, McKenzie 2023) suggests that this approach suffers from a number of issues, including sensitivity to scale and a conflation of extensive and intensive margin effects.

[12]In analyses using unwinsorized wage and salary earnings, we estimate wage effects that are implausibly large. They imply far larger effects than can be attributed to the direct impact of minimum wage increases. Further, these excess wage gains are due to changes in the upper tail of the wage distribution at percentiles beyond those for which spillovers have been estimated in previous research. Rather than being a reflection of causal effects of minimum wage changes, these changes therefore must be driven by other developments in these states that were concurrent minimum wage changes. As evidenced by falsification checks in similar specifications in Clemens and Strain 2021, however, these movements in the upper tail of the wage distribution do not correspond with differential changes in employment.

[13]Because the estimated main effect on prime age individuals without disabilities is 0.9 percentage points, the implied net effect for prime age individuals with severe disabilities is -0.009 (s.e. = 0.005), which is statistically distinguishable from 0 at the 10 percent level.

[14]The qualitative pattern of results is similar when wage income is measured in levels, log of wage plus one, or the inverse hyperbolic sine of wage. Results for the non-quantile transformed censored wage outcome can be found in Table A7.

[15]Similar to our analysis for wage income, we also top code our federal tax liability variable. Since this

for non-disabled adults increase slightly in states with both small and large minimum wage changes (see Table A8 for estimates associated with small and inflation indexed minimum wage increases).[16] Effects for individuals with severe disabilities tend to be smaller than the estimated effects of individuals without disabilities, though none of the estimated differences are statistically significant. Importantly, while the coefficients for both sets of adults with disabilities are negative, the net effect is still an increase in federal taxes - however, it represents a smaller increase than observed among individuals without disabilities. This pattern of results, compared with our results for wages (Panel C), can be understood as a byproduct of the progressivity of the federal income tax system. Individuals who keep their jobs see their earnings increase, while earnings losses are concentrated among those who lost their jobs. Due to the progressivity of the US tax schedule, earnings losses will tend to be associated with lower average tax rates than earnings gains for individuals with similar earnings at baseline, resulting in the overall positive effects on household taxes shown here.

The analysis in Panel D does not reveal impacts on *total* tax collections. To the extent to which the cost of minimum wage increases fall on firm owners, reductions in tax revenues may accrue through declines in corporate income tax payments, reduced tax payments associated with dividends and capital gains, and declines in the personal income tax payments of small business owners, as analyzed found by Drucker, Mazirov, and Neumark (2021). If the effective tax rates on the forms of income through which costs are borne exceed the tax rates on minimum wage job keepers, total tax collections will tend to fall following minimum wage increases.

While Tables 2 and 3 present estimates of Equation (1), Figure 1 presents a set of event-study imputation DiD estimates. More specifically, the figure presents event studies for difference-in-differences style analyses restricted to all working age individuals with severe disabilities to focus on the direct effect on outcomes, rather than the relative effects explored in the tables.[17] In these figures, we include all years in the sample, 2010-2019, in order to explore how our outcomes evolved over time relative to the first year of a minimum wage change during our sample. Consistent with estimates from Table 2, the event study evidence reveals that large minimum wage changes have substantial negative effects on employment among working age individuals with severe disabilities. Additionally, these employment

measure is only available for households, or more precisely tax-filing units, we top code at the household level of aggregation and do so by assigning to all households with $90,000 or more in wage and salary earnings the average federal tax liability for all tax filing units with earnings above that level. We provide a more thorough description of this outcome measure in our data appendix.

[16]Results for the non-quantile transformed censored federal tax liability outcome can be found in Table A9.

[17]Put differently, the point estimates from the event study figures are directly comparable with the sum of the main effects on the non-disabled population and the differential effect on the severely disabled population as presented in Tables 2 and 3 and discussed above.

declines correspond with declines in labor force participation, as shown in Panel B.[18] While the estimated effects on public assistance receipt are positive, consistent with the estimates from Panel B of Table 3, they are smaller in magnitude and are not statistically differentiable from 0. Estimated effects on quantile transformed income and tax liabilities are, like the estimated effects on employment and labor force participation, quantitatively similar to the estimates from Table 3.

The event study evidence in Figure 1 has the benefit of providing visual evidence on the potential relevance of divergent pre-existing trends in our outcomes of interest. Reassuringly, the estimates on the pre-period coefficients are statistically indistinguishable from 0 for all 5 outcomes of interest. We thus see no evidence of potential violations of the parallel trends assumption that is necessary to lend credibility to our results.

Finally, Figure 2 allows for a more direct visual comparison of employment effects for individuals with severe disabilities relative to employment effects for individuals without disabilities when comparing states that enacted minimum wage increases to states that did not. All panels of this figure present estimates from imputation difference-in-differences specifications on samples that are restricted to include either a) only people with severe disabilities or b) those without disabilities. Panels (a) and (b) reveal steep declines in employment among individuals with severe disabilities in both the full working-age and prime-age samples in states that enact large minimum wage increases. By contrast, non-disabled prime age adults in states with large changes (as depicted by the green line) see virtually no change following the introduction of minimum wage increases. This figure's organization of the data highlights that among prime age adults and the full working age population, the differential decline in employment among individuals with severe disabilities in states that enacted large minimum wage increases stands out starkly in comparison with employment changes among non-disabled individuals, as well as in comparison with states that enacted small or inflation indexed minimum wage increases.

Discussion

While the effects of minimum wage changes on overall labor market outcomes have been well documented, remarkably little attention has been given to how these changes impact individuals with disabilities. Adults with severe disabilities face vastly different labor market hurdles compared with non-disabled adults, as evidenced by large baseline gaps in employment rates across the life cycle (Figures A2 and A3). It thus stands to reason that the effects

[18] Event studies that show effects of large minimum wage changes on non-severely disabled and non-disabled adults can be found in Figures A4 and A5, respectively. Similarly, plots that show the effects for small or indexed minimum wage changes can be found in Figures A6 through A8.

of minimum wages may vary when comparing individuals with vs without severe disabilities. Consistent with this prior, we find that large minimum wage changes have substantially more negative impacts on labor market outcomes for working age adults with severe disabilities than for working age adults with either non-severe disabilities or without disabilities.

Across the full set of outcomes we analyze, we observe evidence of reductions in employment and wage income, as well as an increase in public assistance receipt. Our analysis of tax liabilities, by contrast, yields no evidence of statistically differentiable impacts on individuals with vs. without disabilities. While our estimated effects on public assistance receipt can have implications for public finances, net impacts on government revenues and expenditures from and for individuals with disabilities appear to be modest. But they do inform the potential impact of sub-minimum wage exemptions for individuals with disabilities going forward (U.S. Department of Labor 2024). Beyond the direct fiscal implications of these results, social policy might further consider the implications of non-employment on overall well-being and social risk factors such as loneliness (Graham and Pinto 2020). These issues may have particularly high salience in the context of individuals with severe disabilities (Jones et al. 2018; Pagan 2022).

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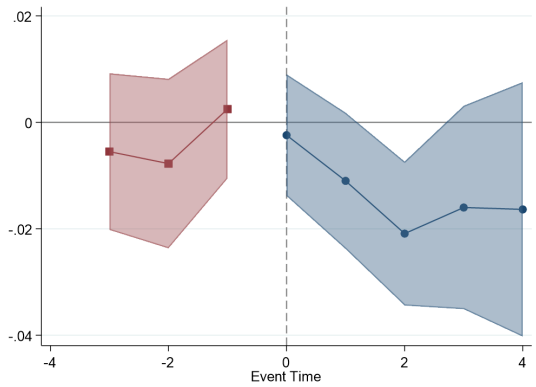
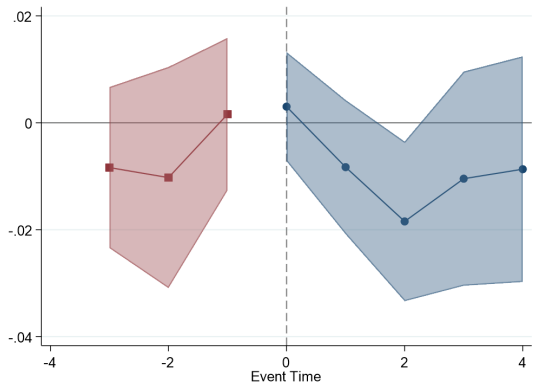
Tables and Figures

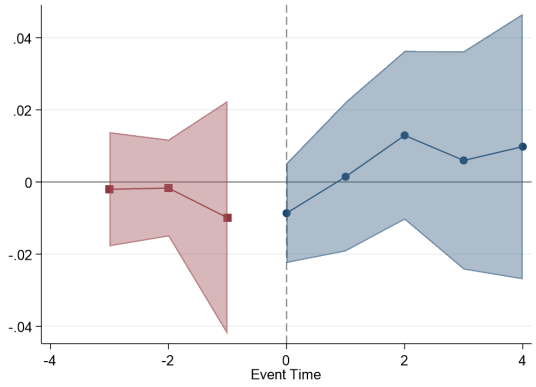
Figure 1: Event Studies - Severe Disability and Big Minimum Wage Changes



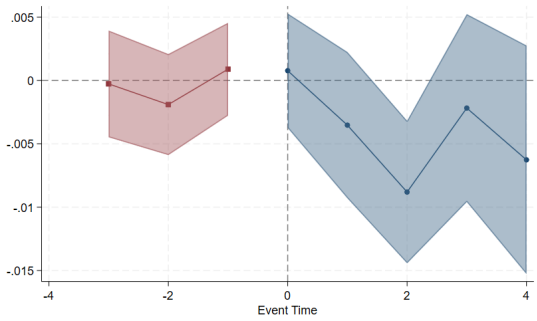
(a) Employment



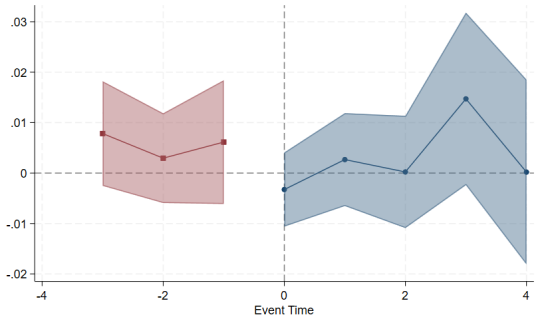
(b) Labor Force Participation



(c) Public Assistance



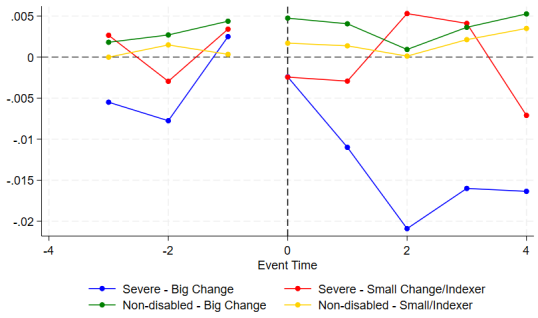
(d) Wage Quartiles



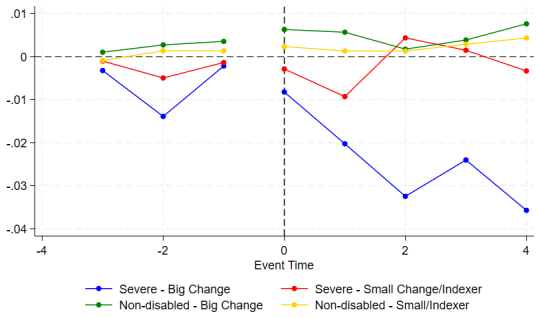
(e) Federal Tax Liabilities

Note: Figure presents event study estimates using an Imputation DiD procedure. The sample for the figure is restricted to only individuals with severe disabilities age 16-67. The coding of event time is such that time 0 corresponds with the year in which a given treatment state began to implement a sequence of newly legislated minimum wage changes that would exceed $2.50 (relative to any increases it was scheduled to implement at the beginning of our sample) in total by January 2018. Employment, labor force participation, and public assistance outcomes are binary measures whereas wage quantiles and federal tax liabilities are continuous measures.

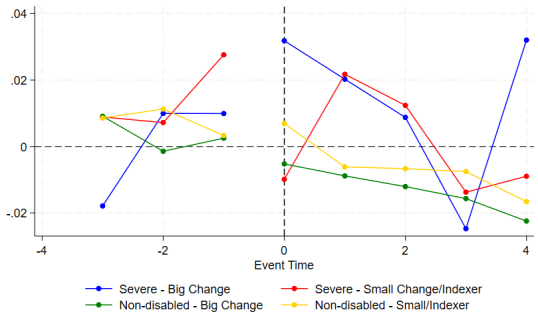
Figure 2: Event Studies - Employment Comparisons



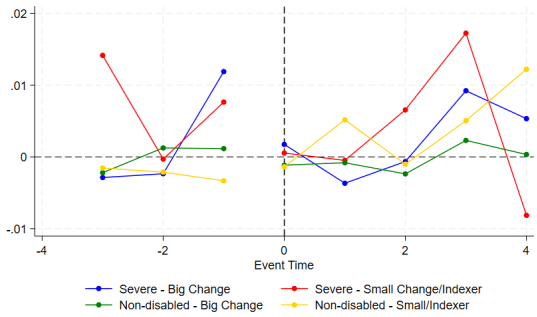
(a) Full Sample



(b) Prime Age



(c) Young Adult



(d) Older Adults

Note: Figure presents event study estimates using an Imputation DiD procedure. The coding of event time is such that time 0 corresponds with the year in which a given treatment state began to implement a sequence of newly legislated minimum wage changes. Employment is a binary outcome measure. Young Adults are individuals age 16 to 21, prime-age individuals are those age 22 to 54, older age individuals are those between 55 and 67 years old. Estimates provided are congruent to difference-in-differences estimates in which the coefficients for a given group (e.g. "Severe - Big Change") are estimated relative to changes for individuals of the same disability status in states that enacted no new minimum wage changes.

Table 1: Summary Statistics

	Non-Disabled	Non-Severe Disability	Severe Disability
Employment Rate	0.708	0.355	0.132
	(0.455)	(0.479)	(0.339)
Labor Force	0.776	0.430	0.188
	(0.417)	(0.495)	(0.391)
Age	40.12	49.15	42.80
	(14.45)	(13.77)	(14.81)
Less than High School	0.131	0.196	0.273
	(0.338)	(0.397)	(0.445)
Only High School	0.332	0.430	0.482
	(0.471)	(0.495)	(0.500)
Some College	0.250	0.237	0.169
	(0.433)	(0.425)	(0.375)
At least a College Degree	0.287	0.137	0.076
	(0.452)	(0.344)	(0.264)
Wage Income	31,888.24	12,978.56	3,034.22
	(47,616.02)	(29,196.66)	(12,639.80)
Quantile Wage Income	0.520	0.331	0.213
	(0.277)	(0.247)	(0.142)
Total Income	37,416.42	22,929.76	12,536.67
	(52,501.28)	(33,631.79)	(18,339.00)
Quantile Total Income	0.501	0.403	0.303
	(0.290)	(0.244)	(0.180)
Federal Tax Liabilities	13,857.46	6,394.27	4,806.60
	(23,629.13)	(14,630.88)	(12,516.01)
Public Assistance Receipt	0.078	0.434	0.649
	(0.268)	(0.496)	(0.477)
Cognitive Disability	0.000	0.281	1.000
	(0.000)	(0.449)	(0.000)
Self-Care Disability	0.000	0.139	0.379
	(0.000)	(0.346)	(0.485)
Independent Living Disability	0.000	0.226	0.949
	(0.000)	(0.418)	(0.219)
Ambulatory Disability	0.000	0.523	0.469
	(0.000)	(0.499)	(0.499)
Vision Disability	0.000	0.198	0.063
	(0.000)	(0.399)	(0.244)
Hearing Disability	0.000	0.245	0.055
	(0.000)	(0.430)	(0.228)
Number of Disabilities	0.000	1.612	2.917
	(0.000)	(1.044)	(0.874)
Observations	5,274,274	554,157	105,291

Note: Data source is the 2011-2013 American Community Survey for individuals between 16 and 67 years old. All variables except age,income, and tax liabilities are a binary equal to 1 if the person has that characteristic. Individuals are categorized as having any disability if they respond that they have either cognitive, ambulatory, independent living, self care, vision, or hearing difficulties. An individual's severity status is predicted using a logistic regression, extrapolated from the VA severity rating for veterans. Incomes are measured using a quantile transformation.

Table 2: Effects on Employment

VARIABLES	(1) Any	(2) Prime Age	(3) Young	(4) Older
Indexer x Post	0.008***	0.009**	0.001	0.013**
	(0.003)	(0.004)	(0.013)	(0.006)
Small Change x Post	0.001	0.003	-0.014	0.006
	(0.005)	(0.004)	(0.010)	(0.007)
Big Change x Post	0.005	0.008**	-0.028***	0.007
	(0.003)	(0.004)	(0.009)	(0.005)
Indexer x Post x Non-severe Disability	-0.005	0.003	0.011	-0.008
	(0.005)	(0.011)	(0.014)	(0.005)
Small Change x Post x Non-severe Disability	0.003	0.011	-0.010	-0.002
	(0.005)	(0.007)	(0.019)	(0.007)
Big Change x Post x Non-severe Disability	-0.007	-0.003	0.002	-0.006
	(0.007)	(0.009)	(0.018)	(0.006)
Indexer x Post x Severe Disability	-0.002	0.001	-0.004	-0.005
	(0.008)	(0.008)	(0.031)	(0.012)
Small Change x Post x Severe Disability	-0.004	-0.006	0.015	-0.005
	(0.010)	(0.012)	(0.027)	(0.012)
Big Change x Post x Severe Disability	-0.021*	-0.032*	0.014	0.001
	(0.011)	(0.016)	(0.014)	(0.007)
Observations	7,949,731	4,931,334	819,441	2,198,956
R^2	0.074	0.083	0.027	0.092
State and Year FE	Yes	Yes	Yes	Yes

Note: Data are from the American Community Survey using Equation 1. Pre-period is 2011-2013, post-period is 2019. Young Adults are individuals age 16 to 21, prime-age individuals are those age 22 to 54, older age individuals are those between 55 and 67 years old. Standard errors in parentheses are clustered at the state level. The outcome variable is an indicator that equals one if a person is employed and zero otherwise. The following variables are included in the model but not shown for brevity: log of state-level per capita personal income, house price index, indicators for disability type (severe or non-severe), interactions between disability type and minimum wage group, and interactions between disability type and post. See Table A3 for the full set of results. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

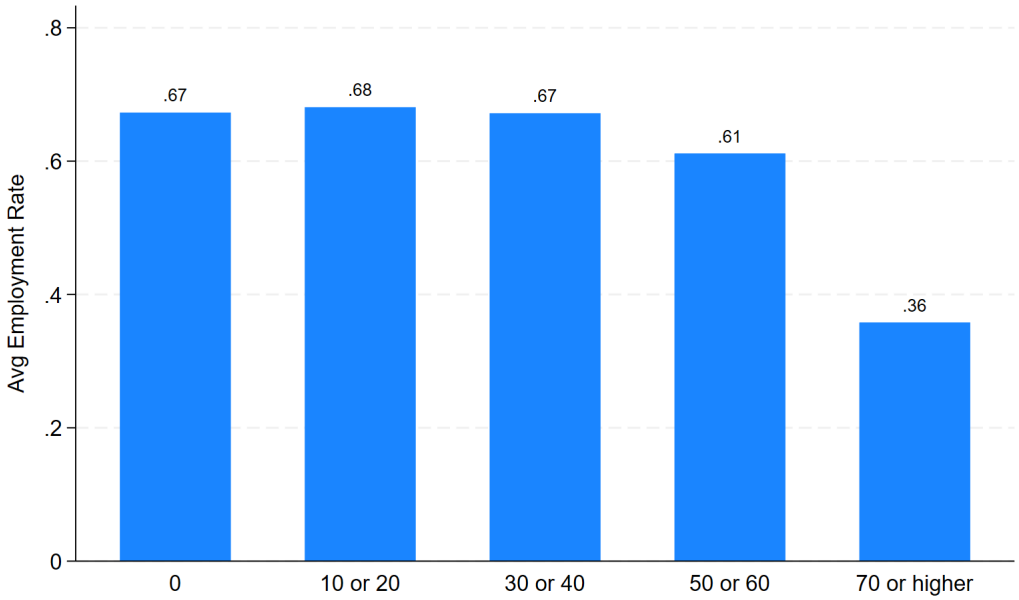
Table 3: Effects on Other Outcomes

	(1) Any	(2) Prime Age	(3) Young	(4) Older
A: Labor Force Participation				
Big Change x Post	0.004	0.006*	-0.027***	0.005
	(0.003)	(0.003)	(0.008)	(0.004)
Big Change x Post x Non-severe Disability	-0.001	0.003	0.033	-0.001
	(0.007)	(0.009)	(0.023)	(0.006)
Big Change x Post x Severe Disability	-0.014	-0.026	0.021	0.011
	(0.012)	(0.017)	(0.021)	(0.008)
B: Public Assistance Receipt				
Big Change x Post	0.001	-0.001	-0.001	0.001
	(0.001)	(0.002)	(0.002)	(0.004)
Big Change x Post x Non-severe Disability	-0.005	-0.010	0.002	0.000
	(0.007)	(0.009)	(0.013)	(0.006)
Big Change x Post x Severe Disability	0.014**	0.017*	0.009	0.009
	(0.006)	(0.009)	(0.017)	(0.012)
C: Quantile Transformed Wage Income				
Big Change x Post	0.009***	0.009**	-0.004	0.008***
	(0.003)	(0.003)	(0.003)	(0.002)
Big Change x Post x Non-severe Disability	-0.008**	-0.007	0.005	-0.004
	(0.004)	(0.004)	(0.006)	(0.003)
Big Change x Post x Severe Disability	-0.014***	-0.018***	-0.006	0.002
	(0.004)	(0.007)	(0.004)	(0.005)
D: Quantile Transformed Federal Tax Liabilities				
Big Change x Post	0.003	0.003	-0.003	0.004*
	(0.002)	(0.003)	(0.003)	(0.003)
Big Change x Post x Non-severe Disability	-0.006	-0.004	-0.013	-0.003
	(0.004)	(0.004)	(0.014)	(0.007)
Big Change x Post x Severe Disability	-0.005	-0.001	-0.017	-0.003
	(0.006)	(0.009)	(0.015)	(0.009)
Observations	7,949,731	4,931,334	819,441	2,198,956

Note: Data are from the American Community Survey using Equation 1. Pre-period is 2011-2013, post-period is 2019. Young Adults are individuals age 16 to 21, prime-age individuals are those age 22 to 54, older age individuals are those between 55 and 67 years old. Standard errors in parentheses are clustered at the state level. The outcome variable for labor force participation is an indicator that equals one if a person is in the labor force and zero otherwise, public assistance receipt is an indicator that equals one if a person is receives any income from welfare, supplemental security insurance, or social security and zero otherwise, quantile transformed wage income is equal to the quantile transformed wage income for an individual censored for individuals who earn more than $60,000 (in 2019 dollars), and federal tax liability is the sum of the federal income and FICA tax liabilities for an individual's tax filing unit censored for households with wages greater than $90,000 (in 2019 dollars). The following variables are included in the model but not shown for brevity: log of state-level per capita personal income, house price index, indicators for disability type (severe or non-severe), interactions between disability type and minimum wage group, interactions between disability type and post, and interactions for indexer or small change groups. See Tables A4 through A9 for the full set of results. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

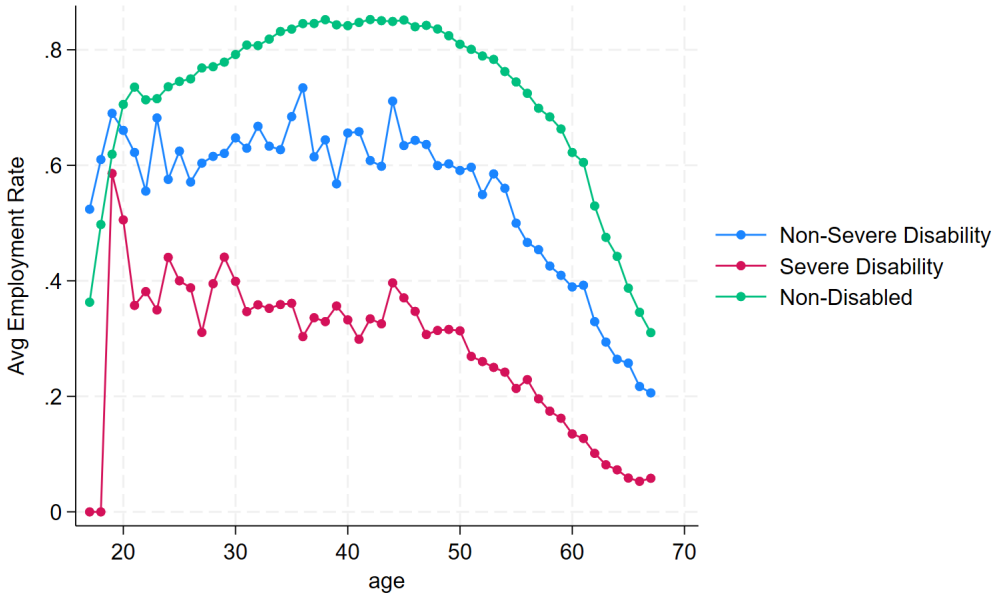
Online Appendix

Figure A1: Average Employment Rate by VA Service-Connected Disability Rating



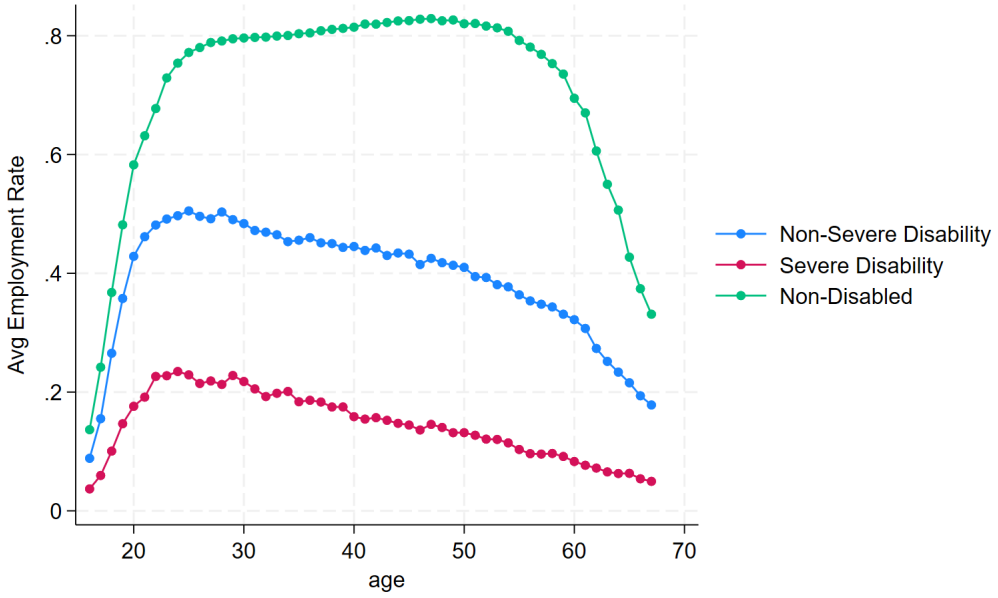
Note: Data are from the American Community Survey. VA Service-Connected Disability Rating is a discrete measure and is only available for veterans. Sample restricted to those age 16-67. Sample size for this figure is 253,965.

Figure A2: Average Employment Rate by VA Service-Connected Disability Rating (Binary)



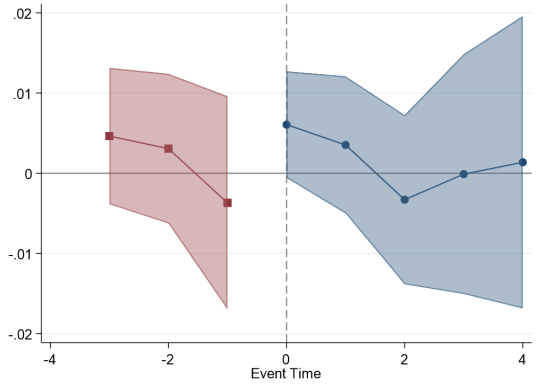
Note: Data are from the American Community Survey. VA Rating is only available for veterans. Sample restricted to those age 16-67. Sample size for non-disabled veteran group is 993,610; for veterans with non-severe disabilities, 49,527, for veterans with severe disabilities, 42,877.

Figure A3: Average Employment Rate by Predicted Disability Rating (Binary)

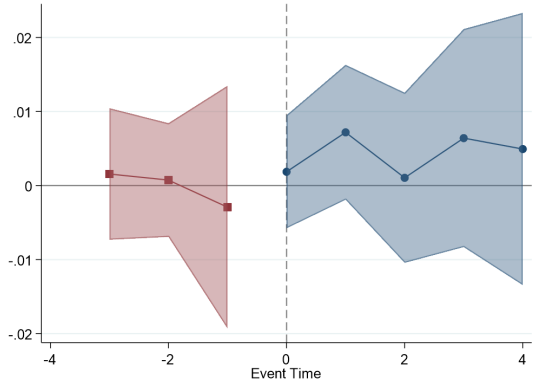


Note: Data are from the American Community Survey. VA Rating is only available for veterans. Severity scores for non-veterans were predicted via logistic regression. Sample restricted to those age 16-67. Sample size for non-disabled group is 16,744,781; for people with non-severe disabilities, 1,853,457, for people with severe disabilities, 416,292.

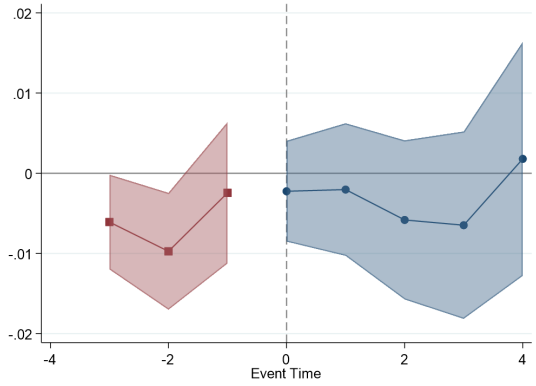
Figure A4: Event Studies - Non-Severe Disability and Big Minimum Wage Changes



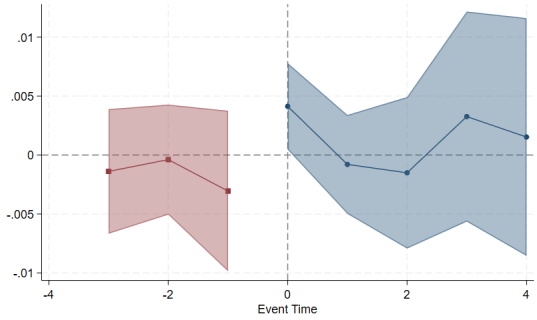
(a) Employment



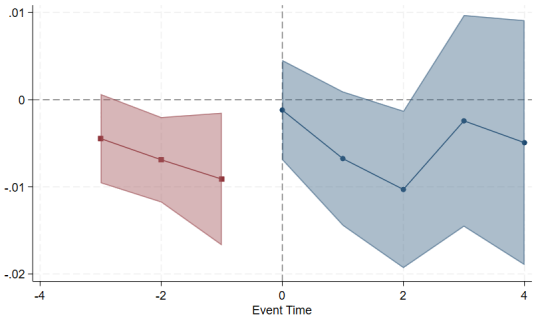
(b) Labor Force Participation



(c) Public Assistance



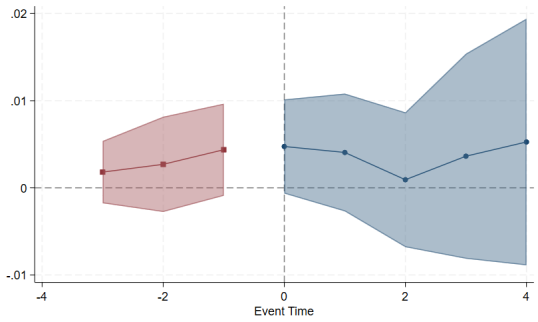
(d) Wage Quartiles



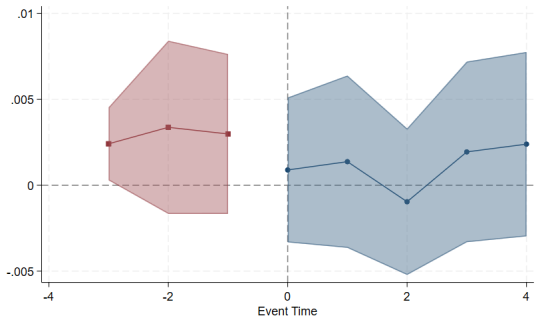
(e) Federal Tax Liabilities

Note: Figure presents event study estimates using an Imputation DiD procedure. The sample for the figure is restricted to only individuals with non-severe disabilities age 16-67. The coding of event time is such that time 0 corresponds with the year in which a given treatment state began to implement a sequence of newly legislated minimum wage changes that would exceed $2.50 (relative to any increases it was scheduled to implement at the beginning of our sample) in total by January 2018. Employment, labor force participation, and public assistance outcomes are binary measures whereas wage quantiles and federal tax liabilities are continuous measures.

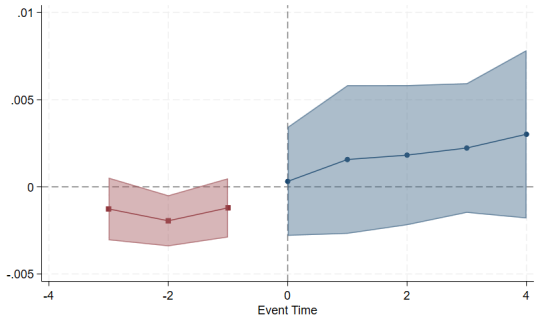
Figure A5: Event Studies - Non-disabled and Big Minimum Wage Changes



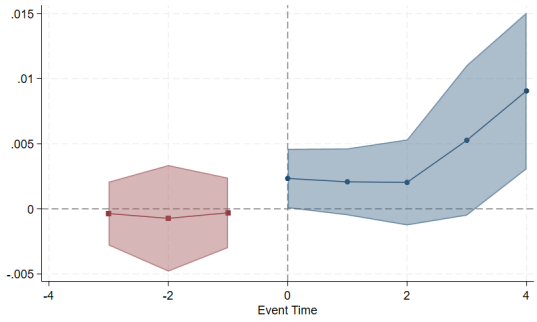
(a) Employment



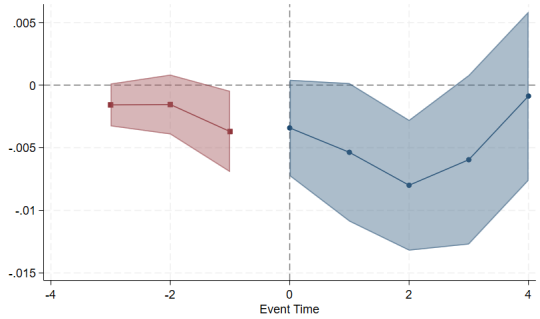
(b) Labor Force Participation



(c) Public Assistance



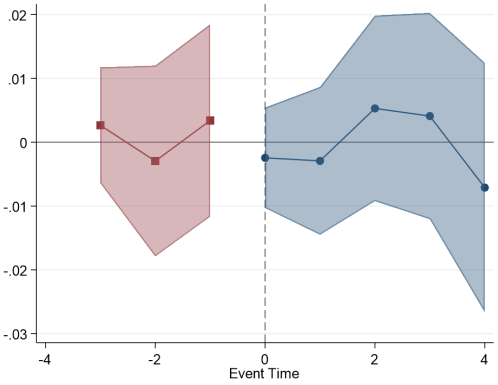
(d) Wage Quartiles



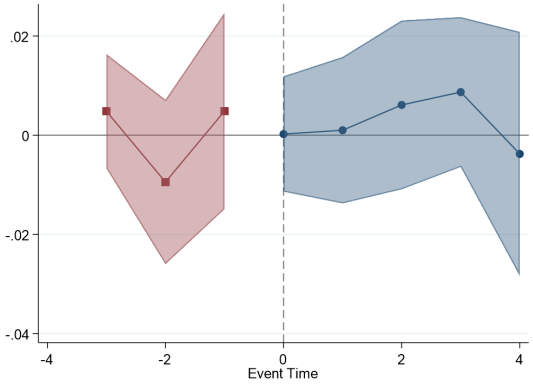
(e) Federal Tax Liabilities

Note: Figure presents event study estimates using an Imputation DiD procedure. The sample for the figure is restricted to only individuals without disabilities age 16-67. The coding of event time is such that time 0 corresponds with the year in which a given treatment state began to implement a sequence of newly legislated minimum wage changes that would exceed $2.50 (relative to any increases it was scheduled to implement at the beginning of our sample) in total by January 2018. Employment, labor force participation, and public assistance outcomes are binary measures whereas wage quantiles and federal tax liabilities are continuous measures.

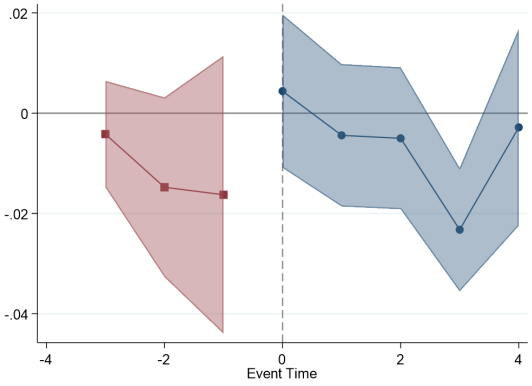
Figure A6: Event Studies - Severe Disability and Small or Indexed Minimum Wage Changes



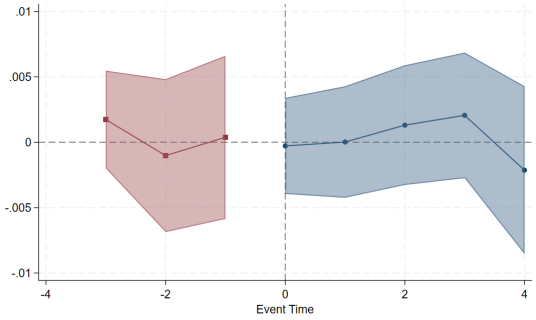
(a) Employment



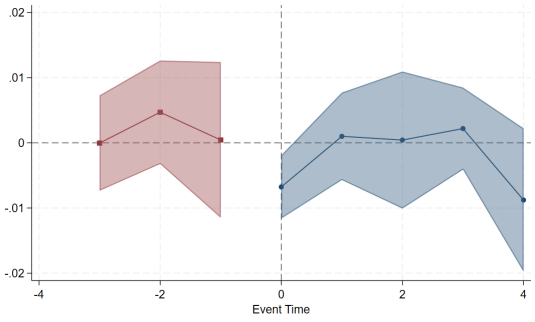
(b) Labor Force Participation



(c) Public Assistance



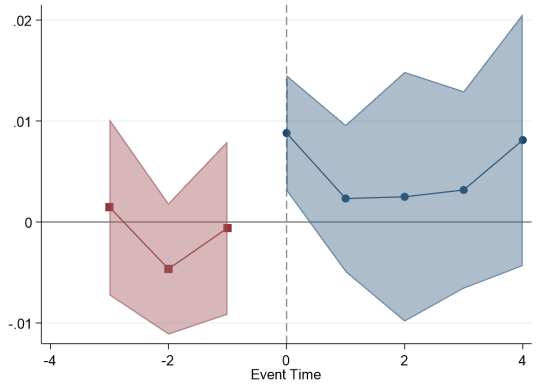
(d) Wage Quartiles



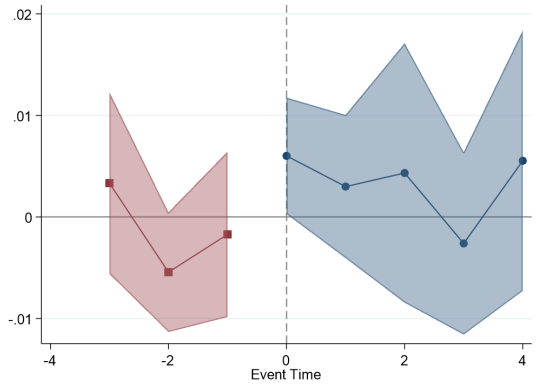
(e) Federal Tax Liabilities

Note: Figure presents event study estimates using an Imputation DiD procedure. The sample for the figure is restricted to only individuals with severe disabilities age 16-67. The coding of event time is such that time 0 corresponds with the year in which a given treatment state began to implement a sequence of newly legislated minimum wage changes that would not exceed $2.50 (relative to any increases it was scheduled to implement at the beginning of our sample) in total by January 2018 or were indexed to inflation at that time. Employment, labor force participation, and public assistance outcomes are binary measures whereas wage quantiles and federal tax liabilities are continuous measures.

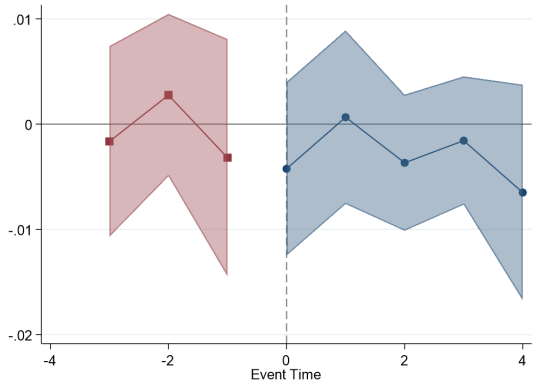
Figure A7: Event Studies - Non-Severe Disability and Small or Indexed Minimum Wage Changes



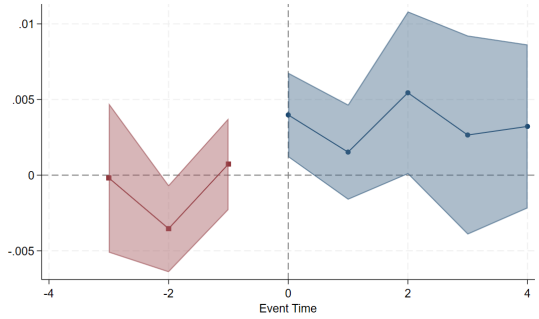
(a) Employment



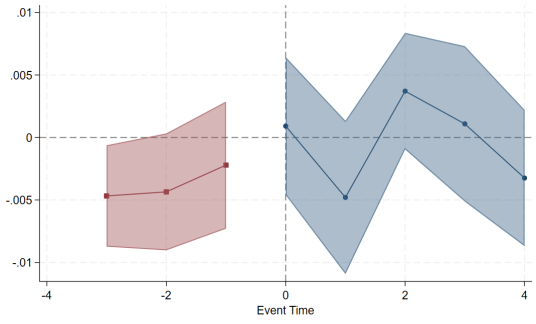
(b) Labor Force Participation



(c) Public Assistance



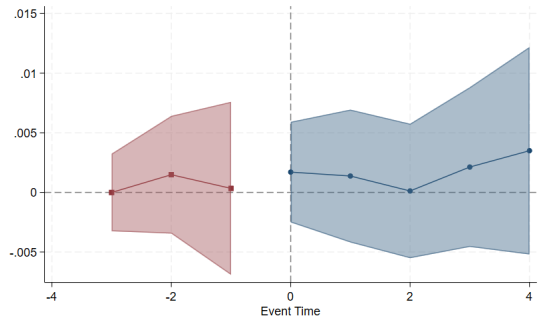
(d) Wage Quartiles



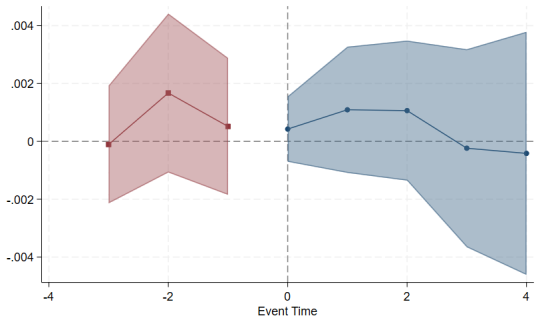
(e) Federal Tax Liabilities

Note: Figure presents event study estimates using an Imputation DiD procedure. The sample for the figure is restricted to only individuals with non-severe disabilities age 16-67. The coding of event time is such that time 0 corresponds with the year in which a given treatment state began to implement a sequence of newly legislated minimum wage changes that would not exceed \$2.50 (relative to any increases it was scheduled to implement at the beginning of our sample) in total by January 2018 or were indexed to inflation at that time. Employment, labor force participation, and public assistance outcomes are binary measures whereas wage quantiles and federal tax liabilities are continuous measures.

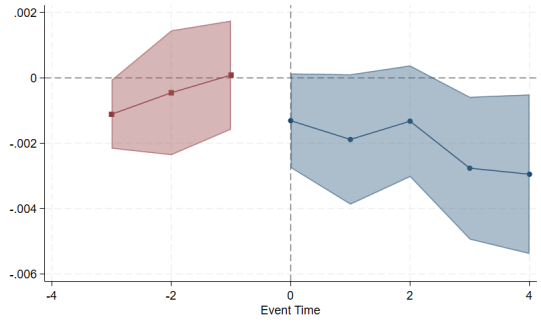
Figure A8: Event Studies - Non-disabled and Small or Indexed Minimum Wage Changes



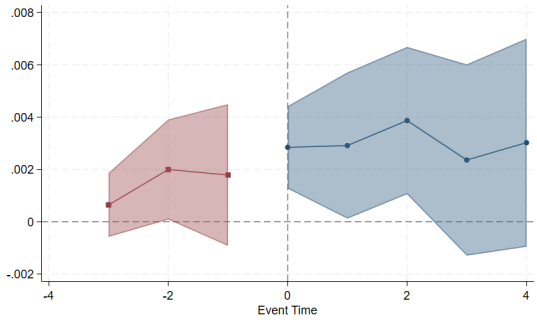
(a) Employment



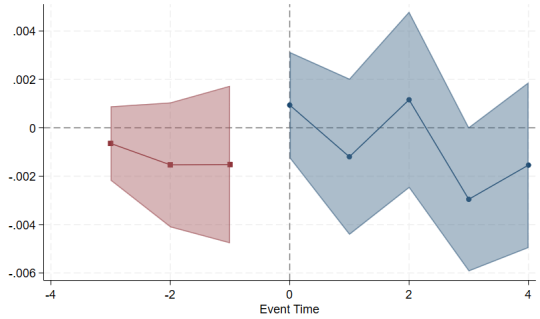
(b) Labor Force Participation



(c) Public Assistance



(d) Wage Quartiles



(e) Federal Tax Liabilities

Note: Figure presents event study estimates using an Imputation DiD procedure. The sample for the figure is restricted to only individuals without disabilities age 16-67. The coding of event time is such that time 0 corresponds with the year in which a given treatment state began to implement a sequence of newly legislated minimum wage changes that would not exceed $2.50 (relative to any increases it was scheduled to implement at the beginning of our sample) in total by January 2018 or were indexed to inflation at that time. Employment, labor force participation, and public assistance outcomes are binary measures whereas wage quantiles and federal tax liabilities are continuous measures.

Table A1: List of States with Minimum Wage Increases

Indexers	**Small Change ($<$ \$2.50)**
Florida	Alaska
Missouri	Arkansas
Montana	Colorado
Ohio	Connecticut
	Delaware
Big Change ($\geq$ \$2.50)	Maryland
Arizona	Michigan
California	Minnesota
District of Columbia	Nebraska
Hawaii	New Jersey
Maine	Oregon
Massachusetts	Rhode Island
New York	South Dakota
	Vermont
	Washington
	West Virginia

Note: List of states from Clemens and Strain 2021. The states listed as "Indexers" link annual updates to their effective minimum wage rates to a measure of inflation. States are counted as statutory increasers of under \$2.50 if the combined statutory increase in the minimum wage from January 1, 2013 through January 1, 2018 was under \$2.50. States are counted as statutory increasers of \$2.50 or more if the combined statutory increase in the minimum wage was \$2.50 or more.

Table A2: Summary Statistics - Prime Age

	Non-Disabled	Non-Severe Disability	Severe Disability
Employment Rate	0.790	0.429	0.160
	(0.407)	(0.495)	(0.367)
Labor Force	0.859	0.525	0.226
	(0.348)	(0.499)	(0.418)
Age	37.90	41.97	39.58
	(9.58)	(9.47)	(9.86)
Less than High School	0.091	0.177	0.230
	(0.287)	(0.382)	(0.421)
Only High School	0.325	0.443	0.527
	(0.468)	(0.497)	(0.499)
Some College	0.260	0.250	0.176
	(0.439)	(0.433)	(0.381)
At least a College Degree	0.324	0.130	0.066
	(0.468)	(0.336)	(0.249)
Wage Income	36,395.55	15,077.29	3,656.90
	(47,983.73)	(29,331.44)	(13,598.78)
Quantile Wage Income	0.570	0.365	0.225
	(0.263)	(0.254)	(0.153)
Total Income	40,090.21	21,475.59	11,991.18
	(51,517.96)	(31,522.91)	(17,335.97)
Quantile Total Income	0.536	0.389	0.298
	(0.277)	(0.243)	(0.172)
Federal Tax Liabilities	13,690.16	6,063.89	4,599.46
	(23,004.66)	(14,178.31)	(12,020.46)
Public Assistance Receipt	0.034	0.333	0.639
	(0.181)	(0.471)	(0.480)
Cognitive Disability	0.000	0.330	1.000
	(0.000)	(0.470)	(0.000)
Self-Care Disability	0.000	0.132	0.357
	(0.000)	(0.339)	(0.479)
Independent Living Disability	0.000	0.218	0.954
	(0.000)	(0.413)	(0.209)
Ambulatory Disability	0.000	0.465	0.442
	(0.000)	(0.499)	(0.497)
Vision Disability	0.000	0.212	0.065
	(0.000)	(0.409)	(0.247)
Hearing Disability	0.000	0.214	0.054
	(0.000)	(0.410)	(0.225)
Number of Disabilities	0.000	1.571	2.872
	(0.000)	(1.026)	(0.880)
Observations	3,395,061	255,329	62,019

Note: Data are from the American Community Survey. All variables except age, income, and tax liabilities are a binary set equal to 1 if the person has that characteristic. Summary statistics provide for 2011-2013 observations. Prime-age individuals are those age 22 to 54. Individuals are categorized as having any disability if they respond that they have either cognitive, ambulatory, independent living, self care, vision, or hearing difficulties.

Table A3: Effects on Employment

	(1) Any	(2) Prime Age	(3) Young	(4) Older
Indexer x Post	0.008***	0.009**	0.001	0.013**
	(0.003)	(0.004)	(0.013)	(0.006)
Small Change x Post	0.001	0.003	-0.014	0.006
	(0.005)	(0.004)	(0.010)	(0.007)
Big Change x Post	0.005	0.008**	-0.028***	0.007
	(0.003)	(0.004)	(0.009)	(0.005)
Non-severe Disability	-0.352***	-0.362***	-0.141***	-0.337***
	(0.008)	(0.011)	(0.009)	(0.004)
Severe Disability	-0.581***	-0.639***	-0.294***	-0.541***
	(0.004)	(0.005)	(0.008)	(0.006)
Indexer x Non-severe Disability	-0.016	-0.024	-0.035**	0.004
	(0.010)	(0.015)	(0.014)	(0.007)
Small Change x Non-severe Disability	0.008	0.007	0.003	0.012*
	(0.012)	(0.018)	(0.011)	(0.007)
Big Change x Non-severe Disability	0.009	0.010	0.030**	-0.003
	(0.013)	(0.017)	(0.012)	(0.009)
Indexer x Post x Non-severe Disability	-0.005	0.003	0.011	-0.008
	(0.005)	(0.011)	(0.014)	(0.005)
Small Change x Post x Non-severe Disability	0.003	0.011	-0.010	-0.002
	(0.005)	(0.007)	(0.019)	(0.007)
Big Change x Post x Non-severe Disability	-0.007	-0.003	0.002	-0.006
	(0.007)	(0.009)	(0.018)	(0.006)
Non-Severe Disability x Post	0.014***	0.044***	0.041***	-0.006
	(0.004)	(0.004)	(0.012)	(0.004)
Indexer x Severe Disability	0.004	0.002	-0.011	0.016
	(0.008)	(0.013)	(0.015)	(0.014)
Small Change x Severe Disability	0.019***	0.030***	-0.021*	0.012
	(0.006)	(0.009)	(0.012)	(0.014)
Big Change x Severe Disability	0.014	0.020**	0.034	-0.001
	(0.009)	(0.008)	(0.021)	(0.012)
Indexer x Post x Severe Disability	-0.002	0.001	-0.004	-0.005
	(0.008)	(0.008)	(0.031)	(0.012)
Small Change x Post x Severe Disability	-0.004	-0.006	0.015	-0.005
	(0.010)	(0.012)	(0.027)	(0.012)
Big Change x Post x Severe Disability	-0.021*	-0.032*	0.014	0.001
	(0.011)	(0.016)	(0.014)	(0.007)
Severe Disability x Post	-0.002	0.010*	-0.019	-0.026***
	(0.005)	(0.006)	(0.013)	(0.005)
Log of Per Capita Personal Income	0.207***	0.182***	0.492***	0.187***
	(0.033)	(0.039)	(0.086)	(0.044)
House Price Index	-0.000	-0.000	-0.000*	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	7,949,731	4,931,334	819,441	2,198,956
R^2	0.074	0.083	0.027	0.092
State and Year FE	Yes	Yes	Yes	Yes

Note: Data are from the American Community Survey using Equation 1. Pre-period is 2011-2013, post-period is 2019. Young Adults are individuals age 16 to 21, prime-age individuals are those age 22 to 54, older age individuals are those between 55 and 67 years old. Standard errors in parentheses are clustered at the state level. The outcome variable is an indicator that equals one if a person is employed and zero otherwise. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A4: Effects on Labor Force Participation

VARIABLES	(1) Any	(2) Prime Age	(3) Young	(4) Older
Indexer x Post	0.002	0.001	-0.007	0.010*
	(0.002)	(0.001)	(0.012)	(0.005)
Small Change x Post	0.000	0.002	-0.016**	0.004
	(0.002)	(0.002)	(0.007)	(0.005)
Big Change x Post	0.004	0.006*	-0.027***	0.005
	(0.003)	(0.003)	(0.008)	(0.004)
Non-severe Disability	-0.346***	-0.334***	-0.084***	-0.338***
	(0.009)	(0.012)	(0.011)	(0.004)
Severe Disability	-0.590***	-0.639***	-0.321***	-0.553***
	(0.004)	(0.006)	(0.009)	(0.006)
Indexer x Non-severe Disability	-0.015	-0.022	-0.034***	0.006
	(0.010)	(0.014)	(0.012)	(0.006)
Small Change x Non-severe Disability	0.011	0.011	-0.003	0.013*
	(0.015)	(0.020)	(0.015)	(0.008)
Big Change x Non-severe Disability	0.006	0.008	0.008	-0.008
	(0.013)	(0.017)	(0.013)	(0.009)
Indexer x Post x Non-severe Disability	-0.008**	-0.000	0.025	-0.014***
	(0.003)	(0.011)	(0.015)	(0.005)
Small Change x Post x Non-severe Disability	0.005	0.014**	0.008	-0.001
	(0.006)	(0.007)	(0.023)	(0.007)
Big Change x Post x Non-severe Disability	-0.001	0.003	0.033	-0.001
	(0.007)	(0.009)	(0.023)	(0.006)
Non-Severe Disability x Post	0.015***	0.039***	0.007	-0.003
	(0.003)	(0.005)	(0.015)	(0.004)
Indexer x Severe Disability	-0.000	0.001	-0.030**	0.009
	(0.009)	(0.014)	(0.012)	(0.010)
Small Change x Severe Disability	0.016**	0.027*	-0.026*	0.006
	(0.008)	(0.014)	(0.015)	(0.013)
Big Change x Severe Disability	0.005	0.012	0.028**	-0.014
	(0.006)	(0.008)	(0.012)	(0.012)
Indexer x Post x Severe Disability	0.002	0.000	0.026	0.000
	(0.009)	(0.010)	(0.033)	(0.010)
Small Change x Post x Severe Disability	0.002	0.001	0.026	-0.003
	(0.010)	(0.012)	(0.026)	(0.011)
Big Change x Post x Severe Disability	-0.014	-0.026	0.021	0.011
	(0.012)	(0.017)	(0.021)	(0.008)
Severe Disability x Post	0.019***	0.030***	0.016	-0.014***
	(0.004)	(0.006)	(0.012)	(0.005)
Log of Per Capita Personal Income	0.081***	0.053**	0.282***	0.115***
	(0.022)	(0.024)	(0.077)	(0.042)
House Price Index	-0.000	-0.000	-0.000	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	7,949,731	4,931,334	819,441	2,198,956
R^2	0.079	0.091	0.020	0.095
State and Year FE	Yes	Yes	Yes	Yes

Note: Data are from the American Community Survey using Equation 1. Pre-period is 2011-2013, post-period is 2019. Young Adults are individuals age 16 to 21, prime-age individuals are those age 22 to 54, older age individuals are those between 55 and 67 years old. Standard errors in parentheses are clustered at the state level. The outcome variable is an indicator that equals one if a person is in the labor force and zero otherwise. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A5: Effects on Public Assistance

VARIABLES	(1) Any	(2) Prime Age	(3) Young	(4) Older
Indexer x Post	-0.000	0.000	-0.002	-0.002
	(0.001)	(0.001)	(0.001)	(0.006)
Small Change x Post	-0.002	-0.002	-0.000	-0.002
	(0.001)	(0.001)	(0.001)	(0.004)
Big Change x Post	0.001	-0.001	-0.001	0.001
	(0.001)	(0.002)	(0.002)	(0.004)
Non-severe Disability	0.351***	0.290***	0.152***	0.322***
	(0.007)	(0.010)	(0.007)	(0.003)
Severe Disability	0.563***	0.595***	0.448***	0.481***
	(0.005)	(0.008)	(0.010)	(0.007)
Indexer x Non-severe Disability	0.009	0.018	0.012	-0.005
	(0.007)	(0.012)	(0.009)	(0.003)
Small Change x Non-severe Disability	0.001	0.014	-0.010	0.001
	(0.012)	(0.016)	(0.010)	(0.006)
Big Change x Non-severe Disability	0.007	0.018	0.002	0.010
	(0.014)	(0.022)	(0.012)	(0.006)
Indexer x Post x Non-severe Disability	0.007	-0.006	0.009	0.012**
	(0.004)	(0.009)	(0.018)	(0.006)
Small Change x Post x Non-severe Disability	-0.010*	-0.020**	0.008	-0.006
	(0.005)	(0.008)	(0.014)	(0.007)
Big Change x Post x Non-severe Disability	-0.005	-0.010	0.002	0.000
	(0.007)	(0.009)	(0.013)	(0.006)
Non-Severe Disability x Post	-0.044***	-0.066***	-0.057***	-0.012***
	(0.004)	(0.007)	(0.010)	(0.004)
Indexer x Severe Disability	-0.001	0.006	0.010	-0.023
	(0.007)	(0.010)	(0.016)	(0.014)
Small Change x Severe Disability	0.016*	0.025**	-0.008	0.023
	(0.008)	(0.012)	(0.021)	(0.015)
Big Change x Severe Disability	0.012	0.016	-0.034**	0.030**
	(0.010)	(0.015)	(0.013)	(0.013)
Indexer x Post x Severe Disability	0.019**	0.021*	0.022	0.015
	(0.008)	(0.012)	(0.024)	(0.012)
Small Change x Post x Severe Disability	-0.005	-0.009	-0.029	0.015
	(0.010)	(0.012)	(0.024)	(0.013)
Big Change x Post x Severe Disability	0.014**	0.017*	0.009	0.009
	(0.006)	(0.009)	(0.017)	(0.012)
Severe Disability x Post	-0.091***	-0.100***	-0.111***	-0.033***
	(0.004)	(0.007)	(0.014)	(0.008)
Log of Per Capita Personal Income	-0.030**	-0.026**	0.000	-0.099**
	(0.012)	(0.011)	(0.023)	(0.042)
House Price Index	-0.000**	-0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	7,949,731	4,931,334	819,441	2,198,956
R^2	0.141	0.181	0.092	0.093
State and Year FE	Yes	Yes	Yes	Yes

Note: Data are from the American Community Survey using Equation 1. Pre-period is 2011-2013, post-period is 2019. Young Adults are individuals age 16 to 21, prime-age individuals are those age 22 to 54, older age individuals are those between 55 and 67 years old. Standard errors in parentheses are clustered at the state level. The outcome variable is an indicator that equals one if a person is receives any income from welfare, supplemental security insurance, or social security and zero otherwise. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A6: Effects on Quantile-transformed Wages - Censored at $60,000 (2019 $)

VARIABLES	(1) Any	(2) Prime Age	(3) Young	(4) Older
Indexer x Post	0.001	-0.001	0.002	0.005***
	(0.003)	(0.003)	(0.004)	(0.002)
Small Change x Post	0.005**	0.005*	-0.003	0.008**
	(0.002)	(0.003)	(0.003)	(0.003)
Big Change x Post	0.009***	0.009**	-0.004	0.008***
	(0.003)	(0.003)	(0.003)	(0.002)
Non-severe Disability	-0.185***	-0.200***	-0.039***	-0.189***
	(0.005)	(0.006)	(0.002)	(0.002)
Severe Disability	-0.303***	-0.342***	-0.093***	-0.293***
	(0.003)	(0.004)	(0.003)	(0.004)
Indexer x Non-severe Disability	-0.004	-0.009	-0.007	0.007
	(0.007)	(0.011)	(0.005)	(0.005)
Small Change x Non-severe Disability	-0.004	-0.006	0.000	0.000
	(0.006)	(0.008)	(0.003)	(0.005)
Big Change x Non-severe Disability	-0.001	0.000	0.007*	-0.005
	(0.010)	(0.012)	(0.004)	(0.007)
Indexer x Post x Non-severe Disability	-0.002	0.002	-0.003	-0.004
	(0.002)	(0.002)	(0.006)	(0.003)
Small Change x Post x Non-severe Disability	-0.000	0.004	-0.006	-0.003
	(0.003)	(0.004)	(0.006)	(0.003)
Big Change x Post x Non-severe Disability	-0.008**	-0.007	0.005	-0.004
	(0.004)	(0.004)	(0.006)	(0.003)
Non-Severe Disability x Post	0.007***	0.019***	0.014***	-0.002
	(0.002)	(0.002)	(0.004)	(0.002)
Indexer x Severe Disability	0.005	0.003	-0.001	0.012
	(0.006)	(0.006)	(0.004)	(0.011)
Small Change x Severe Disability	-0.009	-0.008	-0.009**	-0.007
	(0.007)	(0.006)	(0.004)	(0.012)
Big Change x Severe Disability	-0.002	-0.000	0.012*	-0.006
	(0.010)	(0.009)	(0.007)	(0.011)
Indexer x Post x Severe Disability	0.001	0.004	0.003	-0.003
	(0.002)	(0.003)	(0.008)	(0.005)
Small Change x Post x Severe Disability	-0.005	-0.003	0.005	-0.010
	(0.003)	(0.004)	(0.006)	(0.006)
Big Change x Post x Severe Disability	-0.014***	-0.018***	-0.006	0.002
	(0.004)	(0.007)	(0.004)	(0.005)
Severe Disability x Post	0.001	0.004	0.007**	-0.007**
	(0.002)	(0.003)	(0.003)	(0.003)
Log of Per Capita Personal Income	0.127***	0.135***	0.165***	0.112***
	(0.024)	(0.029)	(0.028)	(0.021)
House Price Index	-0.000	-0.000	-0.000	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	7,949,731	4,931,334	819,441	2,198,956
R^2	0.062	0.068	0.026	0.081
State and Year FE	Yes	Yes	Yes	Yes

Note: Data are from the American Community Survey using Equation 1. Pre-period is 2011-2013, post-period is 2019. Young Adults are individuals age 16 to 21, prime-age individuals are those age 22 to 54, older age individuals are those between 55 and 67 years old. Standard errors in parentheses are clustered at the state level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A7: Effects on Untransformed Wages - Censored at $60,000 (2019 $)

VARIABLES	(1) Any	(2) Prime Age	(3) Young	(4) Older
Indexer x Post	-20.019	-119.864	135.940	214.422
	(315.832)	(395.382)	(307.416)	(128.376)
Small Change x Post	584.107***	583.935**	-58.944	763.960***
	(201.542)	(256.032)	(194.484)	(215.468)
Big Change x Post	692.908**	675.333*	-391.132*	655.940***
	(265.198)	(338.452)	(203.521)	(170.477)
Non-severe Disability	-12,200.891***	-13,773.715***	-1,544.472***	-12,875.291***
	(302.034)	(409.630)	(82.281)	(162.605)
Severe Disability	-19,860.817***	-22,934.763***	-3,232.148***	-19,580.747***
	(270.486)	(328.774)	(107.229)	(295.394)
Indexer x Non-severe Disability	-135.555	-464.006	-234.768*	637.100*
	(535.385)	(810.630)	(127.468)	(375.444)
Small Change x Non-severe Disability	-472.362	-628.394	100.309	-123.893
	(389.258)	(535.604)	(176.946)	(391.360)
Big Change x Non-severe Disability	-248.359	-80.138	245.136	-427.240
	(743.941)	(916.263)	(157.255)	(525.344)
Indexer x Post x Non-severe Disability	-250.785	-20.774	-90.327	-243.200
	(279.948)	(272.035)	(310.093)	(285.290)
Small Change x Post x Non-severe Disability	-110.176	212.038	-552.086	-264.394
	(262.325)	(390.414)	(372.267)	(295.368)
Big Change x Post x Non-severe Disability	-636.509*	-470.463	479.473	-334.316
	(364.568)	(443.787)	(386.273)	(336.755)
Non-Severe Disability x Post	-1,809.215***	-1,073.570***	279.754	-2,290.223***
	(199.425)	(207.673)	(266.746)	(216.065)
Indexer x Severe Disability	393.879	267.888	-16.213	924.740
	(639.339)	(694.932)	(151.540)	(806.785)
Small Change x Severe Disability	-1,011.870	-1,053.115*	-354.900*	-699.619
	(647.348)	(598.262)	(185.031)	(926.494)
Big Change x Severe Disability	-328.406	-187.924	311.593	-543.230
	(817.084)	(835.424)	(189.977)	(807.392)
Indexer x Post x Severe Disability	35.837	262.378	-23.052	-203.658
	(212.646)	(355.592)	(375.267)	(279.717)
Small Change x Post x Severe Disability	-510.461*	-302.546	95.604	-994.789**
	(282.252)	(356.803)	(322.532)	(488.072)
Big Change x Post x Severe Disability	-957.240***	-1,205.221**	4.752	70.904
	(301.943)	(500.376)	(235.937)	(387.809)
Severe Disability x Post	-3,882.314***	-4,175.060***	-1,033.228***	-3,916.536***
	(174.186)	(214.652)	(176.109)	(242.055)
Log of Per Capita Personal Income	8,478.664***	10,212.803***	6,856.937***	6,641.634***
	(2,312.956)	(2,799.768)	(1,657.691)	(1,844.330)
House Price Index	-0.730	-1.497	-0.435	-3.520**
	(2.039)	(2.480)	(1.623)	(1.420)
Observations	7,949,731	4,931,334	819,441	2,198,956
R^2	0.062	0.072	0.022	0.080
State and Year FE	Yes	Yes	Yes	Yes

Note: Data are from the American Community Survey using Equation 1. Pre-period is 2011-2013, post-period is 2019. Young Adults are individuals age 16 to 21, prime-age individuals are those age 22 to 54, older age individuals are those between 55 and 67 years old. Standard errors in parentheses are clustered at the state level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A8: Effects on Quantile-transformed Federal Tax Liabilities - Censored for HHs that make $\geq$ \$90,000 in wage income

VARIABLES	(1) Any	(2) Prime Age	(3) Young	(4) Older
Indexer x Post	-0.007**	-0.008***	-0.006	-0.001
	(0.003)	(0.003)	(0.006)	(0.002)
Small Change x Post	-0.001	-0.001	-0.010**	0.005
	(0.002)	(0.002)	(0.004)	(0.003)
Big Change x Post	0.003	0.003	-0.003	0.004*
	(0.002)	(0.003)	(0.003)	(0.003)
Non-severe Disability	-0.141***	-0.147***	-0.084***	-0.176***
	(0.005)	(0.006)	(0.005)	(0.002)
Severe Disability	-0.185***	-0.190***	-0.067***	-0.241***
	(0.007)	(0.008)	(0.005)	(0.004)
Indexer x Non-severe Disability	-0.002	-0.004	-0.009	0.010
	(0.013)	(0.016)	(0.008)	(0.008)
Small Change x Non-severe Disability	-0.009	-0.013	0.001	0.001
	(0.006)	(0.008)	(0.007)	(0.002)
Big Change x Non-severe Disability	0.001	-0.005	0.015	0.000
	(0.013)	(0.013)	(0.010)	(0.006)
Indexer x Post x Non-severe Disability	0.001	0.005	-0.021**	-0.002
	(0.003)	(0.003)	(0.009)	(0.005)
Small Change x Post x Non-severe Disability	0.002	0.009**	-0.009	-0.007
	(0.003)	(0.004)	(0.013)	(0.005)
Big Change x Post x Non-severe Disability	-0.006	-0.004	-0.013	-0.003
	(0.004)	(0.004)	(0.014)	(0.007)
Non-Severe Disability x Post	-0.000	0.012***	0.022***	-0.002
	(0.002)	(0.002)	(0.006)	(0.003)
Indexer x Severe Disability	-0.001	-0.002	0.004	0.012
	(0.017)	(0.020)	(0.008)	(0.013)
Small Change x Severe Disability	-0.012	-0.014	0.011	-0.012
	(0.008)	(0.010)	(0.012)	(0.009)
Big Change x Severe Disability	-0.003	-0.005	0.017	-0.012
	(0.015)	(0.017)	(0.018)	(0.009)
Indexer x Post x Severe Disability	-0.004	-0.003	-0.004	-0.008
	(0.003)	(0.004)	(0.018)	(0.006)
Small Change x Post x Severe Disability	-0.006	-0.006	-0.007	-0.008
	(0.007)	(0.010)	(0.017)	(0.009)
Big Change x Post x Severe Disability	-0.005	-0.001	-0.017	-0.003
	(0.006)	(0.009)	(0.015)	(0.009)
Severe Disability x Post	0.007***	0.012***	0.012	-0.001
	(0.002)	(0.003)	(0.008)	(0.005)
Log of Per Capita Personal Income	0.154***	0.167***	0.183***	0.117***
	(0.023)	(0.027)	(0.033)	(0.028)
House Price Index	0.000***	0.000**	0.000*	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	7,949,731	4,931,334	819,441	2,198,956
R^2	0.046	0.044	0.022	0.087
State and Year FE	Yes	Yes	Yes	Yes

Note: Data are from the American Community Survey using Equation 1. -period is 2011-2013, post-period is 2019. Censored for HHs that make $\geq$ \$90,000 (\$2019) in wage income. Young Adults are individuals age 16 to 21, prime-age individuals are those age 22 to 54, older age individuals are those between 55 and 67 years old. Standard errors in parentheses are clustered at the state level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A9: Effects on Untransformed Federal Tax Liabilities - Censored for HHs that make $\geq$ \$90,000 in wage income

VARIABLES	(1) Any	(2) Prime Age	(3) Young	(4) Older
Indexer x Post	-204.769***	-222.636***	-211.762	-107.611
	(62.128)	(47.002)	(143.372)	(108.120)
Small Change x Post	61.677	55.092	-139.475	209.765**
	(56.932)	(61.928)	(110.634)	(83.113)
Big Change x Post	100.843	104.574	-13.782	31.990
	(63.826)	(70.855)	(104.498)	(104.427)
Non-severe Disability	-3,112.488***	-3,184.320***	-1,929.345***	-4,408.512***
	(111.879)	(133.198)	(122.411)	(50.820)
Severe Disability	-4,065.647***	-4,024.019***	-1,527.266***	-5,784.015***
	(146.892)	(176.616)	(124.680)	(121.299)
Indexer x Non-severe Disability	-70.829	-107.746	-190.401	204.663**
	(281.672)	(363.880)	(213.702)	(90.798)
Small Change x Non-severe Disability	-199.110	-307.488*	84.922	64.646
	(139.218)	(168.571)	(170.682)	(104.091)
Big Change x Non-severe Disability	-14.243	-121.788	404.897	-273.352*
	(297.249)	(276.183)	(297.315)	(162.335)
Indexer x Post x Non-severe Disability	130.713	150.657	-226.785	105.873
	(127.004)	(102.236)	(375.825)	(302.486)
Small Change x Post x Non-severe Disability	-0.143	196.957	19.393	-324.629*
	(105.736)	(140.224)	(471.159)	(186.006)
Big Change x Post x Non-severe Disability	30.632	89.779	-327.286	133.121
	(139.514)	(128.039)	(393.333)	(225.187)
Non-Severe Disability x Post	-406.015***	-166.794**	187.323	-509.856***
	(62.452)	(81.071)	(202.553)	(126.345)
Indexer x Severe Disability	-45.741	-20.513	106.735	133.317
	(357.291)	(460.024)	(187.912)	(209.294)
Small Change x Severe Disability	-257.667	-221.465	128.369	-315.373
	(204.792)	(265.896)	(229.248)	(277.089)
Big Change x Severe Disability	-73.933	22.977	506.171	-724.870***
	(326.079)	(356.063)	(387.494)	(250.346)
Indexer x Post x Severe Disability	41.889	-8.469	28.640	124.703
	(153.481)	(197.961)	(488.057)	(239.420)
Small Change x Post x Severe Disability	-41.869	-113.994	385.743	-137.423
	(187.366)	(284.435)	(480.943)	(213.055)
Big Change x Post x Severe Disability	-39.930	-48.496	-231.970	229.582
	(193.080)	(220.392)	(527.270)	(310.362)
Severe Disability x Post	-390.766***	-182.085	23.455	-882.003***
	(76.863)	(131.840)	(214.419)	(182.780)
Log of Per Capita Personal Income	3,781.415***	4,024.950***	4,509.688***	3,142.082**
	(823.858)	(871.519)	(1,113.775)	(1,201.989)
House Price Index	1.455**	1.424**	1.058	1.182
	(0.635)	(0.704)	(0.838)	(0.762)
Observations	7,949,731	4,931,334	819,441	2,198,956
R^2	0.034	0.038	0.025	0.039
State and Year FE	Yes	Yes	Yes	Yes

Note: Data are from the American Community Survey using Equation 1. Pre-period is 2011-2013, post-period is 2019. Young Adults are individuals age 16 to 21, prime-age individuals are those age 22 to 54, older age individuals are those between 55 and 67 years old. The outcome is federal tax liabilities censored for households that make more than \$90,000 in 2019 dollars. Standard errors in parentheses are clustered at the state level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Data Appendix

Our federal tax liability variables are taken directly from IPUMs. The Census Bureau does not directly ask about a household's tax filing status or tax obligations so in order to provide this information, IPUMs uses NBER's TAXSIM to predict tax variables for each tax filing unit. Our measure of federal tax liabilities sums together the unit's total federal tax liability after tax credits (including capital gains rates, surtaxes, AMT and refundable and non-refundable credits) as well as the total Federal Social Security payroll deductions (which includes estimates of employee and employer contributions). This variable is at the household level however our analysis depends on an individual's disability status so we conduct our analysis at the individual-level. In order to be consistent with our wage outcome, we both censor and quantile-transform this measure. The quantile transformation process is the same as the procedure described in the text for wages. The censoring occurs a bit differently since this is a household-level variable. To construct our censored measure, we first take the average federal tax liabilities for households with wage and salary earnings between \$85,000 and \$95,000 (in 2019 dollars) in each year. From there, we assign all households with wage and salary earnings greater than \$90,000 (2019\$) to be top coded at this average liability measure.