Differential Effects of Minimum and Subminimum Wages for People with Disabilities

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Motivation

- People with disabilities, compared to those without, were
  - 64% more likely to work at or below Federal minimum wage 2010 - 2023.
- Minimum wage changes may particularly impact people with disabilities.
  - Employment obstacles (low edu, discrimination, etc.) (Ameri et al. 2018; Baert et al. 2018, Lippens et al. 2023)
  - Earn less. (Kruse et al. 2018; US BLS 2024)
  - Experience poverty. (Mehta 2022; Statista 2024)
- Employers may pay people with disabilities less than minimum wage.
  - Fair Labor Standards Act 14(c) certificates.
  - Push towards Competitive Integrated Employment; states terminating sub MW.

This Paper

- Effects of minimum wage changes on labor outcomes of pwd.
- Effects of subminimum wage laws on labor outcomes of pwd.
  - Employment and LFP could
    - increase due to higher reservation wage
    - decrease due to employer productivity concerns
  - Some evidence that increases in MW reduce emp, LFP, wages for people with severe disabilities. (Clemens et al. 2025)
  - Mixed evidence on sub MW termination. (Yin et al. 2025; Kakara et al. 2024; Sun 2024).
  - We revisit these questions using more states, looking by disability type and severity, and using different methods.

Data

- American Community Survey Data 2010 - 2023 People 18 - 64 years-old
- Employed, Labor Force Participant, Unemployed
  - Employee, self-employed, weeks worked, hours worked, earnings
- Disability status and type of disability
  - Cognitive, Mobility, Dressing/Bathing, Outside, Visual, Hearing
- Disability Severity: Veterans Administration (Clemens et al. 2025)
- Focus on those with no more than a HS Degree.

Background

Subminimum Wage

- Fair Labor Standards Act 14(c) certificates: employers may pay people with disabilities less than min wage.
  - "disabilities that impair their productivity for the work they perform." (DOL)
  - 2010: 296,000 people working below the minimum wage (GAO)
  - 2022: 67,000 people working below the minimum wage (GAO)
  - Since 2019: most 14(c) workers earn less than $3.50 /hr (GAO)
- As of 2024, 17 states have begun terminating the subminimum wage.
  - 6 states are considering.
  - Some phase-out over several years; we use enactment year.
- Employment First training programs.

Methods

Stacked DD, 5-yr windows around min wage change ≥ 25¢ or submin wage termination

Minimum Wage

- Cohort X: designated by year of state min wage change (≥ 25¢)
  - Treated: states with min wage change in year X, no change 2 years before
  - Control: not-yet-treated states with no min wage change (≥ 25¢) in five year period around year X

Subminimum Wage

- Cohort Y: designated by year of subminimum wage termination
  - Treated: states that began terminating subminimum wage in year Y
  - Control: not-yet-treated states that don't terminate in five year period around year Y

States Used in Analysis

Minimum Wage

- 31 states changed their minimum wage ≥ 25¢ at least once 2012 - 2021.

Cohort	States
2012	AZ, CO, FL, MT, OH, OR, VT, WA
2013	RI
2014	CA, CT, DE, MI, MN, NJ, NY, DC
2015	AK, AR, HI, MD, MA, NE, SD, VT, WV
2016	CA, MI, OR
2017	AZ, CO, ME, WA
2018	CA, DC, MD, OR, RI
2019	AK, AR, CT, DE, FL, IL, MA, MO, MT, NJ, NM, SD
2020	NV
2021	CA, CO, FL, MD, MA, MO, NJ, NM, NY, VT, VA

Subminimum Wage

- 11 states began their phase-out 2012 - 2021. 16 states used in our analysis.
- NH, MD, AK, OR, TX, WA, ME, CA, CO, DE, HI, SC (nyt), RI (nyt), TN (nyt), VA (nyt), IL (nyt)

Methods

$$Y_{istd} = \alpha_{c,t,d} + y_{c,s,d} + B_0 + B_1 Treated_{st} * Disab_{ist} + B_3 X_{ist} + B_4 X_{ist} * Disab_{ist} + P_{ist}$$

- Y_{istd} = 1 if employed, in LF, unemployed
- $\alpha_{c,t,d}$, $y_{c,s,d}$ = cohort-year-disab, cohort-state-disab FE
- $Treated_{st}$ = 1 if min wage (MW) change ≥ 25¢
  or = MW in yr t – MW in yr prior to MW change (natural log)
  or = 1 if subminimum wage termination enacted
- $Disab_{ist}$ = 1 if person i has a disability (cognitive, mobility, outside)
  or = measure of disability severity
- X_{ist} = gender, age, education, race/ethnicity, living alone
- Sub MW: Callaway and Sant'Anna (2021) Event Study, Synthetic DD

Summary Statistics – Minimum Wage Changes

Table 1: Minimum Wage Summary Statistics

	Not-yet treated	Treated
Any disability	0.10	0.10
Female	0.50	0.50
Age 18-34	0.37	0.37
Age 35-49	0.31	0.31
Age 50-64	0.32	0.31
No HS Degree	0.10	0.12
HS Degree	0.27	0.25
Some college/AA	0.33	0.31
Bachelor's	0.19	0.21
Graduate degree	0.11	0.12
White non-Hispsnic	0.68	0.53
Black non-Hispanic	0.12	0.10
Hispanic	0.12	0.24
Other race/multiracial	0.07	0.12
Live alone	0.10	0.07
Employed	0.72	0.71
Labor force participant	0.77	0.76
Unemployed	0.01	0.02
MW Change	0.01	0.09
Observations	11,488,890	14,338,003

	No Disab	Disab
Any disability	0.00	1.00
Female	0.50	0.49
Age 18-34	0.39	0.24
Age 35-49	0.32	0.26
Age 50-64	0.30	0.51
No HS Degree	0.10	0.20
HS Degree	0.25	0.34
Some college/AA	0.32	0.32
Bachelor's	0.21	0.10
Graduate degree	0.12	0.05
White non-Hispsnic	0.60	0.62
Black non-Hispanic	0.11	0.15
Hispanic	0.19	0.15
Other race/multiracial	0.11	0.08
Live alone	0.08	0.13
Employed	0.76	0.36
Labor force participant	0.80	0.42
Unemployed	0.01	0.02
MW Change	0.06	0.06
Observations	23,005,592	2,821,301

Minimum Wage Results

Table 2: MW Effects by Disability Status

	Employed (1)	LFP (2)	Unemployed (3)
MW Change (= 1)	0.002**	0.001*	-0.001
	(0.001)	(0.000)	(0.001)
MW Change (= 1) * Disab	0.003	0.005	0.002
	(0.004)	(0.003)	(0.001)
MW Change (cont.)	0.001	0.002	0.002
	(0.007)	(0.003)	(0.006)
MW Change (cont.) * Disab	0.022	0.032	0.010
	(0.024)	(0.021)	(0.007)
Observations	25,826,893	25,826,893	25,826,893
Cohort-Year-Disab FE	Y	Y	Y
Cohort-Stste-Disab FE	Y	Y	Y
Controls	Y	Y	Y

Minimum Wage Results

Table 3: MW Effects by Disability Type, HS Degree Only

	Sample: HS Degree Only		
	Employed (1)	LFP (2)	Unemployed (3)
Mobility or No Disab: 8,449,859 Obs			
MW Change (cont.)	-0.000 (0.014)	0.004 (0.009)	0.004 (0.009)
MW Change (cont.) * Mobility	0.040* (0.021)	0.052*** (0.018)	0.013 (0.009)
Cohort-Year-Disab FE	Y	Y	Y
Cohort-Stste-Disab FE	Y	Y	Y
Contrrols	Y	Y	Y

Minimum Wage Results

Table 4: MW Effects by Disability Severity, HS Degree Only

	Sample: HS Degree Only		
	Employed (1)	LFP (2)	Unemployed (3)
MW Change (cont.)	-0.025 (0.022)	-0.038 (0.027)	-0.013 (0.004)
* Disability 25th-50th pctile	-0.098*** (0.032)	-0.065*** (0.025)	0.033** (0.017)
* Disability 50th-75th pctile	0.075 (0.060)	0.111** (0.049)	0.037 (0.025)
* Disability 75th-90th pctile	0.008 (0.058)	0.018 (0.057)	0.009 (0.016)
* Disability 90th-95th pctile	-0.172 (0.143)	-0.112 (0.141)	0.061*** (0.016)
* Disability >95th pctile	0.071** (0.030)	0.101*** (0.032)	0.031 (0.019)
Observations	9,237,627	9,237,627	9,237,627
Cohort-Year-Disab FE	Y	Y	Y
Cohort-Stste-Disab FE	Y	Y	Y
Contrrols	Y	Y	Y

Summary Statistics – Subminimum Wage Laws

Table 5: Subminimum Wage Summary Statistics

	Not-yet treated	Treated
Any disability	0.10	0.10
Female	0.50	0.50
Age 18-34	0.37	0.38
Age 35-49	0.32	0.32
Age 50-64	0.31	0.29
No HS Degree	0.10	0.12
HS Degree	0.26	0.24
Some college/AA	0.30	0.31
Bachelor's	0.22	0.21
Graduate degree	0.12	0.12
White non-Hispsnic	0.59	0.45
Black non-Hispanic	0.15	0.09
Hispanic	0.17	0.32
Other race/multiracial	0.09	0.15
Live alone	0.05	0.04
Employed	0.73	0.72
Labor force participant	0.77	0.76
Unemployed	0.01	0.02
Observations	11,937,537	2,748,788

	No Disab	Disab
Any disability	0.00	1.00
Female	0.50	0.50
Age 18-34	0.39	0.26
Age 35-49	0.32	0.25
Age 50-64	0.29	0.49
No HS Degree	0.09	0.18
HS Degree	0.24	0.34
Some college/AA	0.30	0.32
Bachelor's	0.23	0.11
Graduate degree	0.13	0.05
White non-Hispsnic	0.56	0.58
Black non-Hispanic	0.13	0.19
Hispanic	0.20	0.15
Other race/multiracial	0.11	0.08
Live alone	0.04	0.07
Employed	0.77	0.39
Labor force participant	0.81	0.45
Unemployed	0.01	0.02
Observations	13,132,475	1,553,850

Results - Minimum Wage

Table 6: Sub MW Effects by Disability Status

	Employed (1)	LFP (2)	Unemployed (3)
Sub MW Terminated	-0.001	0.001	0.002**
	(0.001)	(0.001)	(0.001)
Sub MW Terminated * Disab	0.006	0.005	0.000
	(0.004)	(0.004)	(0.001)
Observations	14,686,325	14,686,325	14,686,325
Cohort-Year-Disab FE	Y	Y	Y
Cohort-Stste-Disab FE	Y	Y	Y
Contrrols	Y	Y	Y

Results - Subminimum Wage

Table 7: Sub MW Effects by Disability Type, HS Degree Only

	Sample: HS Degree Only		
	Employed (1)	LFP (2)	Unemployed (3)
Cognitive and Outside or No Disab: 4,792,812 Obs.			
Sub MW Terminated	0.004**	0.007***	0.003**
	(0.002)	(0.001)	(0.001)
Sub MW Terminated * Cognitive	0.012***	0.007	-0.005
	(0.003)	(0.005)	(0.001)
Cognitive and Outside or No Disab: 4,616,738 Obs.			
Sub MW Terminated	0.004**	0.007***	0.003***
	(0.002)	(0.001)	(0.001)
Sub MW Terminated * Cognitive-Outside	0.020***	0.009	-0.012*
	(0.005)	(0.006)	(0.006)
Cohort-Year-Disab FE	Y	Y	Y
Cohort-Stste-Disab FE	Y	Y	Y
Controls	Y	Y	Y

Minimum Wage Results

Table 8: Sub MW Effects by Disability Severity, HS Degree Only

	Sample: HS Degree Only		
	Employed (1)	LFP (2)	Unemployed (3)
Sub MW Terminated	-0.001	0.002	0.003
	(0.009)	(0.008)	(0.002)
* Disability 25th-50th pctile	-0.012	-0.015	-0.003
	(0.015)	(0.014)	(0.003)
* Disability 50th-75th pctile	-0.011	-0.009	0.002
	(0.015)	(0.015)	(0.002)
* Disability 75th-90th pctile	-0.008	-0.005	0.003
	(0.011)	(0.011)	(0.003)
* Disability 90th-95th pctile	0.009	0.006	-0.003
	(0.014)	(0.013)	(0.003)
* Disability >95th pctile	0.023**	0.021**	-0.002
	(0.009)	(0.008)	(0.004)
Observations	5,205,206	5,205,206	5,205,206
Cohort-Year-Disab FE	Y	Y	Y
Cohort-Stste-Disab FE	Y	Y	Y
Contrrols	Y	Y	Y

Other Results

- Effects of MW changes do not vary by sub MW law status.
- Results are similar when we exclude 2020 onward.
- CS method finds some negative effects of sub MW termination on pwd and no effect on those with severe disabilities.
- Min and sub MW changes are more positively related to employee status (vs self-employment).

Conclusion

- Don't find negative effects of minimum wage changes for pwd.
  - Some positive effects on emp and LFP
  - Mobility, HS degree.
  - Severe, HS degree.
  - Some null effects.
- Find some positive effects of terminating the sub MW on emp for pwd.
  - Cognitive and cognitive-outside, HS degree.
  - Severe, HS degree.
  - Employment First training programs.
  - Some negative effects.

Conclusion

Thank you!

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