The Impact of Covid-19 on Older Workers' Employment and Social Security Spillovers: Evidence from Year 2

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Motivation

- COVID-19 global pandemic created unprecedented economic and social disruption
- Particular threat to older and disabled workers
  - Higher rates of mortality among those at older ages (Rosenthal et al. 2020)
  - More vulnerable to permanent labor market exits during recessions (Coile and Levine 2007, 2011)
- Despite initial economic shock, unique characteristics of COVID limit generalizing from earlier recessions
  - Massive health crisis
  - Rapid policy response to send stimulus and unemployment $
  - Increased availability of remote work
  - SSA office closures

Motivation

- In first year (March 2020 - March 2021), among older workers we saw:
  - Large decline in employment *but* no corresponding increase in retirement benefit claiming
  - Declines in labor market exits due to disability and disability applications

- Since March 2021, many changes including availability of vaccines, new variants, expiration of pandemic unemployment benefits

What do we do?

1. How have older workers' labor market outcomes and Social Security disability and retirement applications evolved over the second year of the COVID-19 pandemic?

2. Was the expiration of pandemic unemployment insurance programs associated with changes in labor market outcomes and Social Security applications?

Related literature and contributions

- COVID-19 and the labor market: Bartik et al., 2020; Bui et al.; Cajner et al., 2020; Coibion et al., 2020; Forsythe et al., 2020; Larrimore et al., 2021; Lee et al., 2021; Quinby et al., 2021; Montenovo et al., 2022; Davis, 2022; + more
- Retirement and economic conditions: Chan and Stevens, 1999; Coile and Levine, 2007, 2011; Gustman, Steinmeier and Tabatabai, 2010; Goda, Shoven and Slavov, 2011; Helppie McFall, 2011; Sierminska and Takhtamanova, 2011; Hoynes, Miller and Schaller, 2012; Munnell and Rutledge 2013; Neumark and Button, 2014
- Disability and economic conditions: Stapleton et al., 1998; Black, Daniel and Sanders, 2002; Autor and Duggan, 2003; Coe, Haverstick et al., 2010; Cutler, Meara and Richards-Shubik, 2012; Schmidt, 2012; Maestas, Mullen and Strand, 2015, 2018; Lindner, 2016; Mueller, Rothstein and Von Wachter, 2016; Charles, Li and Stephens Jr, 2018; Carey, Miller and Molitor, 2022
- UI generosity and retirement + disability: Hamermesh, 1980; Coile and Levine, 2007; Rutledge, 2011; Couch et al., 2014; Lindner and Nichols, 2014; Inderbitzin et al., 2016; Lindner, 2016; Mueller et al., 2016; Rothstein and Valletta, 2017

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We contribute to this literature by:

- Focus on the age 50-70 population and examine spillovers on the Social Security program
- Explore the effects of pandemic-related unemployment programs expiring on retirement decisions and disability applications

Outline

Data

Empirical Methods

Results
- Main Results
- Expiration of UI Extensions

Conclusions

Data Sources

- Current Population Survey [N = 2,847,633]
  - Individual-level data
  - Sample restrictions: Ages 50-70, January 2015 - March 2022
  - Outcomes: Employed, Employed (Absent), Unemployed, Not in the Labor Force (NILF)
  - NILF further broken down into Retired, Disabled, Other summary

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- SSA State Agency Monthly Workload (MOWL) [N = 4,350]
  - Number of applications at the state-by-month level from January 2015 - March 2022
  - Convert outcomes to applications per 100,000 people aged 20-64 using state population counts from Census and SSA date translation table
  - Outcomes: SSDI only, SSI only, Concurrent (SSDI and SSI), Total ▸ summary

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- SSA Monthly Retirements Applications [N = 87]
  - Number of applications each month from January 2015 - March 2022
  - Convert outcomes to applications per 100,000 people aged 60-70 using state population counts from Census and SSA date translation table
  - Outcomes: Applications Filed via Internet, Filed Offline, Total summary

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Event Study Specification

Current Population Survey:

$$\begin{aligned} Y_{ist} =& \alpha + \sum_{k=-5}^{-1} \beta_k \times 1[e(t) = k] + \sum_{k=1}^{25} \beta_k \times 1[e(t) = k] + \theta \times 1[e(t) < -5] \\ &+ \mu_{m(t)} + \delta t + \omega_s + \beta X_{ist} + \varepsilon_{ist} \end{aligned} \tag{1a}$$

SSA Applications:

$$\begin{aligned} Y_{st} =& \alpha + \sum_{k=-5}^{-1} \beta_k \times 1[e(t) = k] + \sum_{k=1}^{24} \beta_k \times 1[e(t) = k] + \theta \times 1[e(t) < -5] \\ &+ \mu_{m(t)} + \gamma_{y(t)} + \omega_s + \varepsilon_{st} \end{aligned} \tag{1b}$$

post

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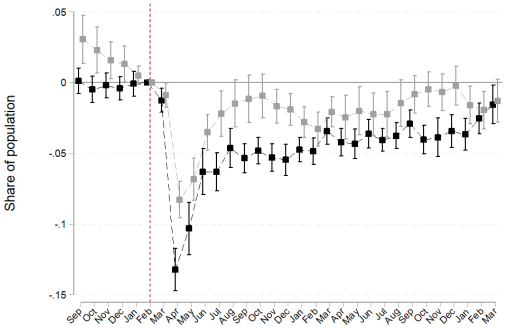
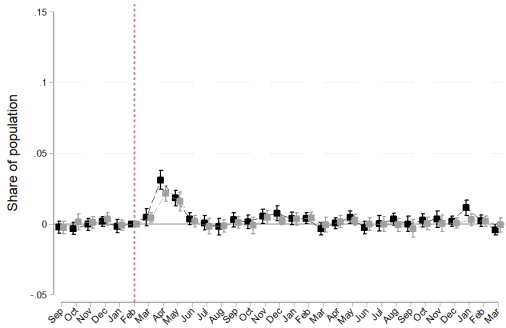
CPS Employment Outcomes Event Studies



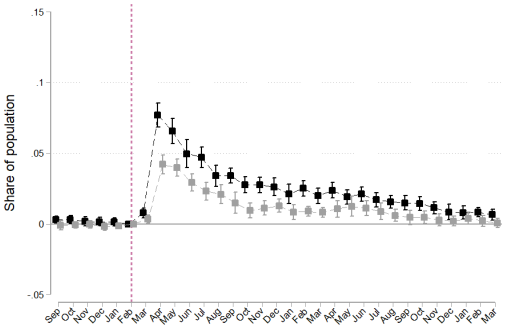
Employed



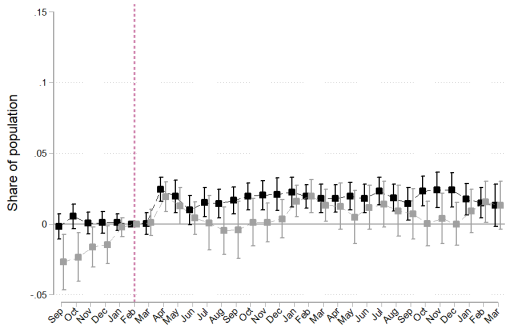
Employed-Absent

50-61
62-70

CPS Employment Outcomes Event Studies



Unemployed



NILF

50-61
62-70

Changes in Employment Categories Following COVID-19 Pandemic

A. 50-61 Year Olds

	(1) Employed	(2) Employed-Absent	(3) Unemployed	(4) NILF
Post-Covid 1	-0.055***	0.006***	0.034***	0.014***
	(0.003)	(0.001)	(0.002)	(0.003)
Post-Covid 2	-0.031***	0.002**	0.013***	0.016***
	(0.003)	(0.001)	(0.002)	(0.004)
Observations	1701077	1701077	1701077	1701077
Pre-Covid Mean	0.688	0.026	0.024	0.262
T-test PC1 = PC2	0.000	0.000	0.000	0.488

B. 62-70 Year Olds

	(1) Employed	(2) Employed-Absent	(3) Unemployed	(4) NILF
Post-Covid 1	-0.038***	0.003***	0.019***	0.016***
	(0.004)	(0.001)	(0.002)	(0.003)
Post-Covid 2	-0.025***	-0.000	0.007***	0.018***
	(0.004)	(0.001)	(0.002)	(0.004)
Observations	1146556	1146556	1146556	1146556
Pre-Covid Mean	0.363	0.019	0.013	0.606
T-test PC1 = PC2	0.000	0.000	0.000	0.459

Standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: *Post-Covid 1* is defined as 1 between March 2020-March 2021, *Post-Covid 2* is defined as 1 between April 2021-March 2022

Changes in NILF Categories Following COVID-19 Pandemic

A. 50-61 Year Olds

	(1) NILF	(2) Retired	(3) Disabled	(4) Other
Post-Covid 1	0.014***	0.003*	-0.005***	0.017***
	(0.003)	(0.002)	(0.002)	(0.001)
Post-Covid 2	0.016***	0.006**	0.000	0.010***
	(0.004)	(0.003)	(0.003)	(0.002)
Observations	1701077	1701077	1701077	1701077
Pre-Covid Mean	0.262	0.080	0.105	0.078
T-test PC1 = PC2	0.488	0.086	0.041	0.000

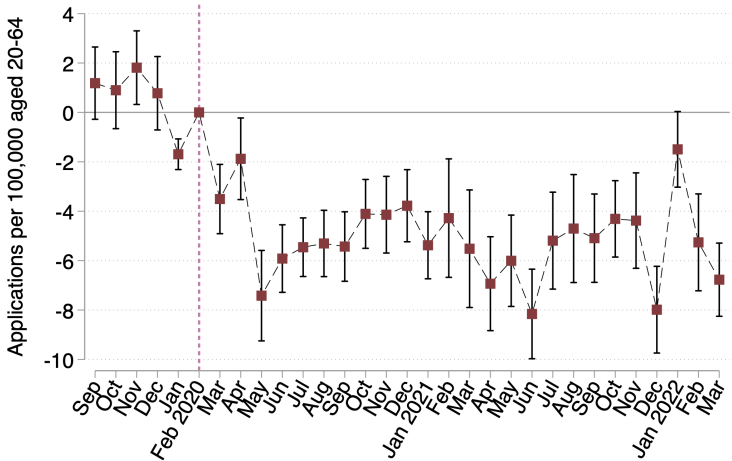
B. 62-70 Year Olds

	(1) NILF	(2) Retired	(3) Disabled	(4) Other
Post-Covid 1	0.016***	0.012***	-0.004*	0.008***
	(0.003)	(0.004)	(0.002)	(0.001)
Post-Covid 2	0.018***	0.018***	-0.005*	0.005***
	(0.004)	(0.006)	(0.002)	(0.002)
Observations	1146556	1146556	1146556	1146556
Pre-Covid Mean	0.606	0.491	0.079	0.036
T-test PC1 = PC2	0.459	0.075	0.694	0.031

Standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: *Post-Covid 1* is defined as 1 between March 2020-March 2021, *Post-Covid 2* is defined as 1 between April 2021-March 2022

Social Security Disability Applications Event Studies



All SSDI/SSI

Changes in Disability Applications Following COVID-19 Pandemic

	(1) All	(2) SSDI	(3) SSI	(4) Concurrent
Post-Covid 1	-3.64***	-0.54***	-2.03***	-1.07***
	(0.509)	(0.194)	(0.217)	(0.155)
Post-Covid 2	-4.39***	-0.47	-2.77***	-1.15***
	(0.865)	(0.314)	(0.378)	(0.236)
Observations	4350	4350	4350	4350
Pre-Covid Mean	25.49	9.55	9.54	6.41
T-test PC1 = PC2	0.24	0.77	0.00	0.60

Robust and clustered (at state level) standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: *Post-Covid 1* is defined as 1 between March 2020-March 2021, *Post-Covid 2* is defined as 1 between April 2021-March 2022 ▸ event studies

Changes in Retirement Applications Following COVID-19 Pandemic

	(1) Total	(2) Filed via Internet	(3) Filed offline
Post-Covid 1	-4.18	14.76***	-18.94***
	(2.904)	(2.345)	(1.602)
Post-Covid 2	10.61**	24.54***	-13.93***
	(5.299)	(4.609)	(2.564)
Observations	87	87	87
Pre-Covid Mean	145.23	74.69	70.53
T-test PC1 = PC2	0.00	0.01	0.00

Robust and clustered (at state level) standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

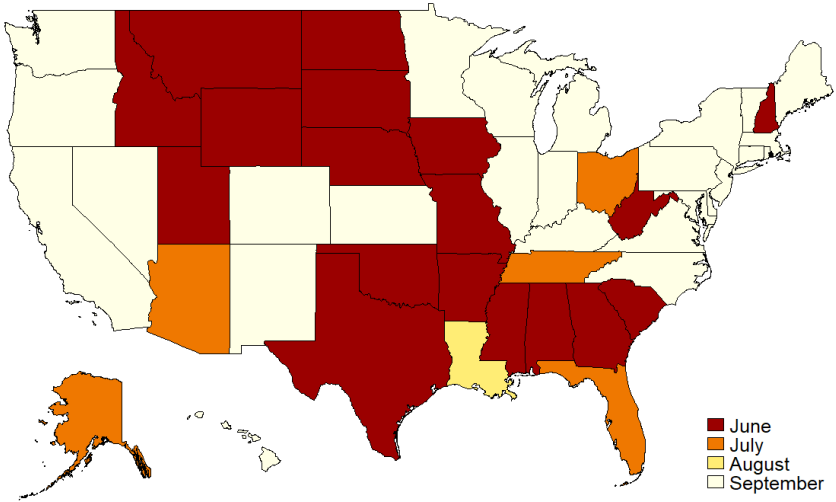
Notes: *Post-Covid 1* is defined as 1 between March 2020-March 2021, *Post-Covid 2* is defined as 1 between April 2021-March 2022 ▸ event studies

Variation in UI expiration dates in 2021

- During the pandemic, unemployment insurance (UI) was extended
  - In generosity: Federal Pandemic Unemployment Compensation (FPUC)
  - To previously ineligible groups: Pandemic Unemployment Assistance (PUA)

- All pandemic-related federal unemployment benefits expired on Sept. 6, 2021
  - However, some states opted out early of the FPUC and PUA programs in June-August 2021
  - Draw from Holzer, Hubbard, and Strain (2021) for state variation

Variation in UI expiration dates in 2021



Notes: All benefits expired on September 6, 2021. Various states opted to allow these programs to expire early. Figure depicts the month in which a state opted out of at least one of the two federal UI programs (FPUC and PUA).

Empirical Specification with UI Expiration

Current Population Survey:

$$Y_{ist} = \alpha + \delta_1 PostCovid1_{ist} + \delta_2 PostCovid2_{ist} + \delta_3 UIexpiration_{st} + \mu_{m(t)} + \eta t + \omega_s + \beta X_{ist} + \varepsilon_{st} \quad (2a)$$

SSA Applications:

$$Y_{st} = \alpha + \delta_1 PostCovid1_{st} + \delta_2 PostCovid2_{st} + \delta_3 UIexpiration_{st} + \mu_{m(t)} + \gamma_{y(t)} + \omega_s + \varepsilon_{st} \quad (2b)$$

Notes: *UI expiration* is defined as 1 in months after the state expiration of pandemic-related UI, *Post-Covid 1* is defined as 1 between March 2020-March 2021, *Post-Covid 2* is defined as 1 between April 2021-March 2022

Changes in Employment Categories Following COVID-19 Pandemic

A. 50-61 Year Olds

	(1) Employed	(2) Employed-Absent	(3) Unemployed	(4) NILF
Post-Covid 1	-0.055***	0.006***	0.034***	0.014***
	(0.003)	(0.001)	(0.002)	(0.003)
Post-Covid 2	-0.033***	0.001	0.016***	0.017***
	(0.003)	(0.001)	(0.002)	(0.004)
UI Expiration	0.003	0.002**	-0.005***	-0.000
	(0.004)	(0.001)	(0.001)	(0.004)
Observations	1701077	1701077	1701077	1701077
Pre-Covid Mean	0.688	0.026	0.024	0.262
T-test PC1 = PC2	0.000	0.000	0.000	0.491

Standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: *UI expiration* is defined as 1 in months after the state expiration of pandemic-related UI, *Post-Covid 1* is defined as 1 between March 2020-March 2021, *Post-Covid 2* is defined as 1 between April 2021-March 2022

▸ NILF

Changes in Employment Categories Following COVID-19 Pandemic

B. 62-70 Year Olds

	(1) Employed	(2) Employed-Absent	(3) Unemployed	(4) NILF
Post-Covid 1	-0.038***	0.003***	0.019***	0.016***
	(0.004)	(0.001)	(0.002)	(0.003)
Post-Covid 2	-0.028***	-0.001	0.009***	0.020***
	(0.006)	(0.001)	(0.002)	(0.006)
UI Expiration	0.005	0.000	-0.004**	-0.002
	(0.005)	(0.001)	(0.001)	(0.005)
Observations	1146556	1146556	1146556	1146556
Pre-Covid Mean	0.363	0.019	0.013	0.606
T-test PC1 = PC2	0.069	0.002	0.000	0.482

Standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: *UI expiration* is defined as 1 in months after the state expiration of pandemic-related UI, *Post-Covid 1* is defined as 1 between March 2020-March 2021, *Post-Covid 2* is defined as 1 between April 2021-March 2022

▸ NILF

Changes in Disability Applications Following COVID-19 Pandemic

	(1) All	(2) SSDI	(3) SSI	(4) Concurrent
Post-Covid 1	-3.64***	-0.54***	-2.03***	-1.07***
	(0.509)	(0.194)	(0.217)	(0.155)
Post-Covid 2	-4.99***	-0.75**	-2.78***	-1.46***
	(0.854)	(0.305)	(0.376)	(0.229)
UI Expiration	1.09***	0.50***	0.03	0.56***
	(0.379)	(0.158)	(0.148)	(0.111)
Observations	4350	4350	4350	4350
Pre-Covid Mean	25.49	9.55	9.54	6.41
T-test PC1 = PC2	0.04	0.42	0.01	0.02

Standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: *UI expiration* is defined as 1 in months after the state expiration of pandemic-related UI, *Post-Covid 1* is defined as 1 between March 2020-March 2021, *Post-Covid 2* is defined as 1 between April 2021-March 2022

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Findings to Date

- Employment and unemployment recovering throughout the second year of Covid-19, labor force non-participation remains elevated
  - Shift among labor force non-participants towards classifying themselves as "retired" rather than "other" (likely a wait-and-see group)

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- Evidence of small increase in retirement applications at end of 2021
  - Change from first year (employment declines w/o substantial increases in retirement benefit claiming)
  - Retirement and Social Security claiming can lag unemployment; expanded UI benefits may have been playing a role

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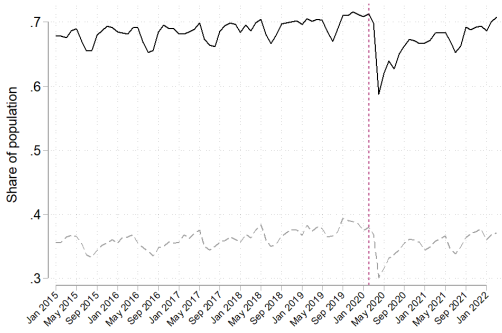
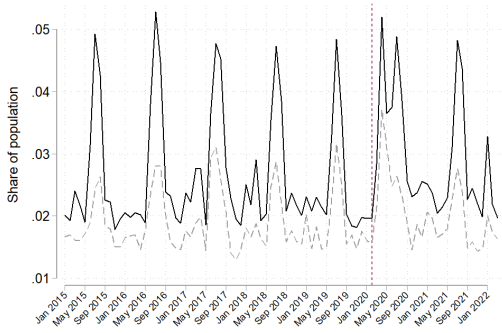
  - Shift among labor force non-participants towards classifying themselves as "retired" rather than "other" (likely a wait-and-see group)
- Evidence of small increase in retirement applications at end of 2021
  - Change from first year (employment declines w/o substantial increases in retirement benefit claiming)
  - Retirement and Social Security claiming can lag unemployment; expanded UI benefits may have been playing a role
- Disability applications remain depressed
  - Small increase (recovery) in SSDI and concurrent applications following the expiration of UI benefits

Thank you!

Employment Outcomes for Ages 50-61 and 62-70, 2015-2021



Employed

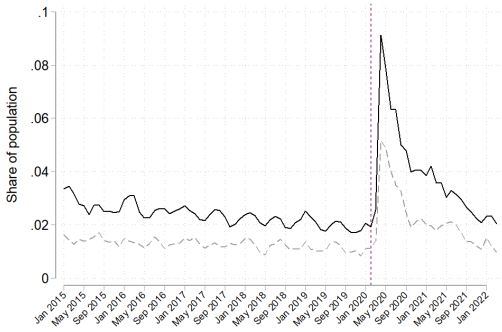


Employed-Absent

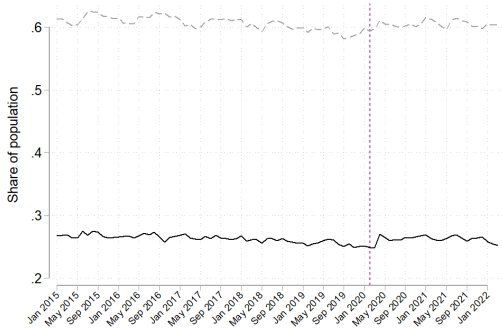
— 50-61 yrs
– – 62-70 yrs

back

Employment Outcomes for Ages 50-61 and 62-70, 2015-2021



Unemployed

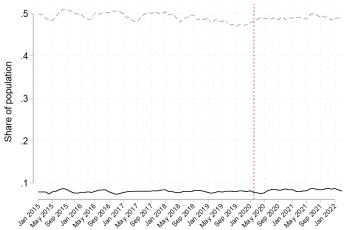


NILF

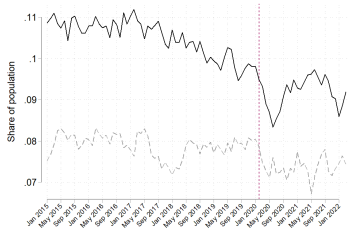
— 50-61 yrs
- - 62-70 yrs

back

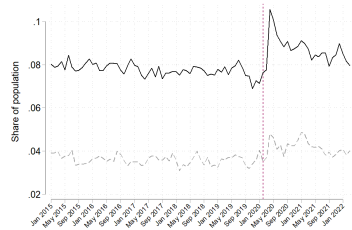
NILF Categories for Ages 50-61 and 62-70, 2015-2021



Retired



Disabled

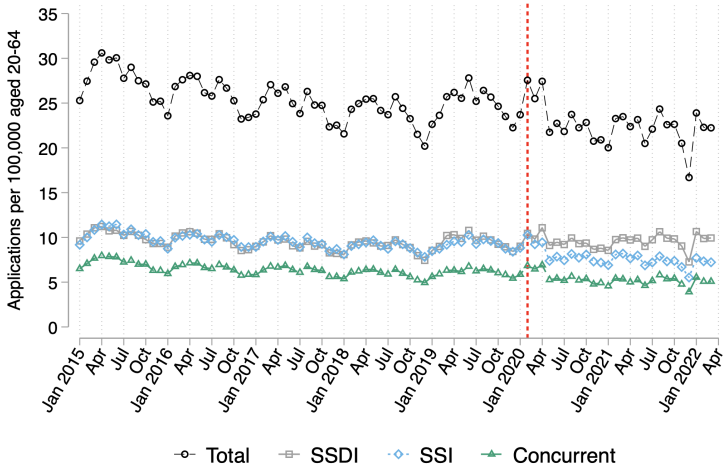


Other

— 50-61 yrs
- - 62-70 yrs

back

Weekly Disability Applications Rate



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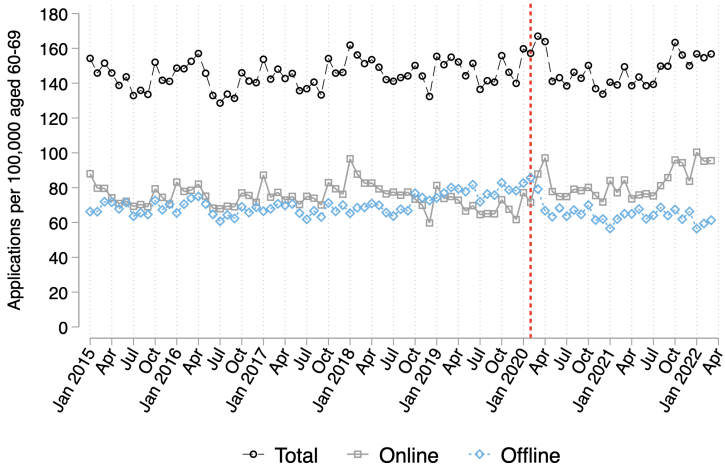
Weekly Retirement Applications Rate



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Post-Covid DD Specification

Current Population Survey:

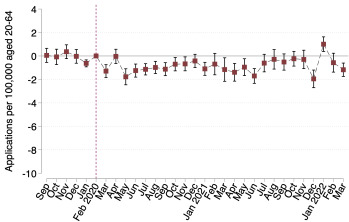
$$Y_{ist} = \alpha + \delta_1 PostCovid1_{ist} + \delta PostCovid2_{ist} + \mu_{m(t)} + \eta t + \omega_s + \beta X_{ist} + \varepsilon_{st} \quad (3a)$$

SSA Applications:

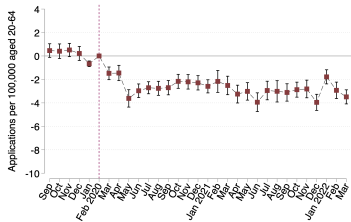
$$Y_{st} = \alpha + \delta_1 PostCovid1_{st} + \delta_2 PostCovid2_{st} + \mu_{m(t)} + \gamma_{y(t)} + \omega_s + \varepsilon_{st} \quad (3b)$$

back

Social Security Disability Applications Event Studies



SSDI Only



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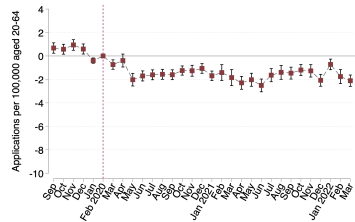
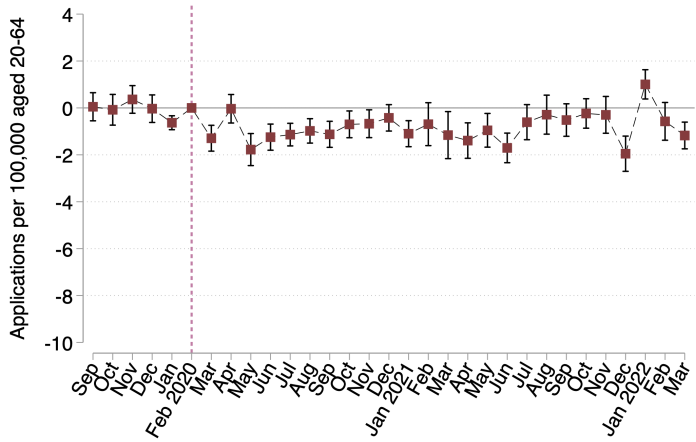


Concurrent

▸ Regs

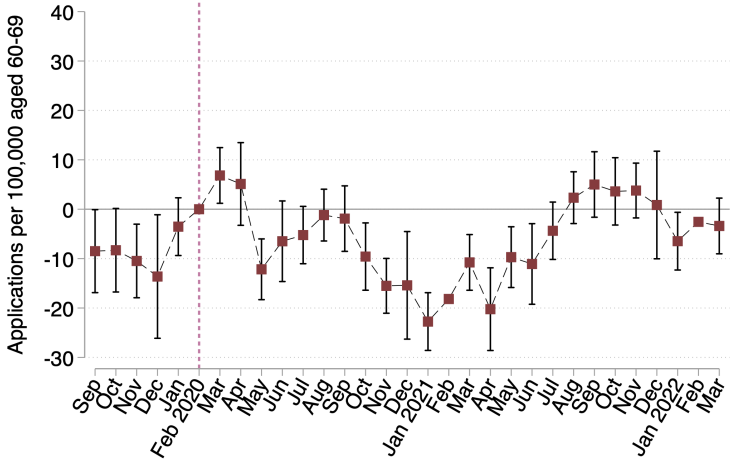
Social Security Disability Applications Event Studies



SSDI Only

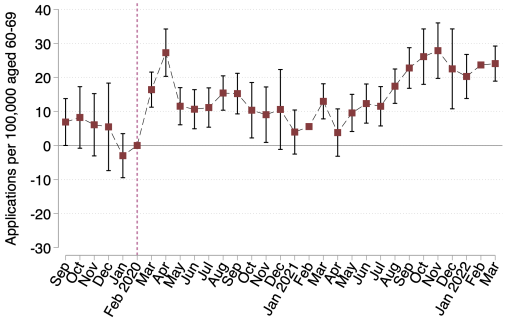
▸ Regs

Social Security Retirement Applications Event Studies

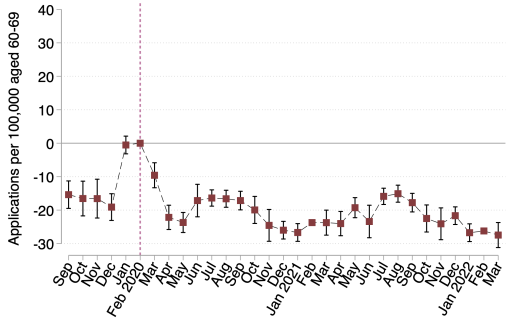


Total Retirement Applications

Social Security Retirement Applications Event Studies



Apps Filed via Internet



Apps Filed Offline

▸ Regs

Changes in NILF Categories Following COVID-19 Pandemic

A. 50-61 Year Olds

	(1) NILF	(2) Retired	(3) Disabled	(4) Other
Post-Covid 1	0.014***	0.003	-0.005***	0.017***
	(0.003)	(0.002)	(0.002)	(0.001)
Post-Covid 2	0.017***	0.006**	0.002	0.009***
	(0.004)	(0.002)	(0.004)	(0.002)
UI Expiration	-0.000	0.000	-0.003	0.002
	(0.004)	(0.003)	(0.002)	(0.002)
Observations	1701077	1701077	1701077	1701077
Pre-Covid Mean	0.262	0.080	0.105	0.078
T-test PC1 = PC2	0.491	0.146	0.043	0.001

$UIexpiration_{st}$ is defined as 1 in months after the state expiration of pandemic-related UI, $PostCovid1_{st}$ is defined as 1 between March 2020-March 2021, $PostCovid2_{st}$ is defined as 1 between April 2021-March 2022 back

Changes in NILF Categories Following COVID-19 Pandemic

B. 62-70 Year Olds

	(1) NILF	(2) Retired	(3) Disabled	(4) Other
Post-Covid 1	0.016***	0.012***	-0.004*	0.008***
	(0.003)	(0.004)	(0.002)	(0.001)
Post-Covid 2	0.020***	0.020***	-0.007**	0.006***
	(0.006)	(0.007)	(0.003)	(0.001)
UI Expiration	-0.002	-0.003	0.003	-0.002
	(0.005)	(0.004)	(0.003)	(0.002)
Observations	1146556	1146556	1146556	1146556
Pre-Covid Mean	0.606	0.491	0.079	0.036
T-test PC1 = PC2	0.482	0.069	0.249	0.045

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

$UIexpiration_{st}$ is defined as 1 in months after the state expiration of pandemic-related UI, $PostCovid1_{st}$ is defined as 1 between March 2020-March 2021, $PostCovid2_{st}$ is defined as 1 between April 2021-March 2022 back