The Heterogeneous Labor Market Impacts of the Covid-19 Pandemic

Matías Cortés (York University)

Eliza Forsythe (University of Illinois, Urbana-Champaign)

OECD, September 2021

This Paper

- Distributional impacts of the Covid-19 pandemic in the United States

- Heterogeneous impacts across:

    1. Occupations
    2. Industries
    3. Demographic groups

- Companion paper: "Impacts of the Covid-19 Pandemic and the CARES Act on Earnings and Inequality"

    - Individual-level earnings impacts
    - Role of public policy response

Key Findings

The pandemic has exacerbated pre-existing inequalities

1. Individuals in low-earning jobs much more likely to lose employment during the pandemic

2. Partly due to larger impacts of pandemic on employment in low-paying occupations and industries

3. But individuals from disadvantaged groups also more likely to lose employment when compared to others with the same job background

4. Low earners have benefited less from post-April 2020 employment recovery

5. CARES Act provisions were strongly progressive, but recipiency rates among displaced low earners were low

Key Findings

The pandemic has exacerbated pre-existing inequalities

1. Individuals in low-earning jobs much more likely to lose employment during the pandemic

2. Partly due to larger impacts of pandemic on employment in low-paying occupations and industries

3. But individuals from disadvantaged groups also more likely to lose employment when compared to others with the same job background

4. Low earners have benefited less from post-April 2020 employment recovery

5. CARES Act provisions were strongly progressive, but recipiency rates among displaced low earners were low

Key Findings

The pandemic has exacerbated pre-existing inequalities

1. Individuals in low-earning jobs much more likely to lose employment during the pandemic

2. Partly due to larger impacts of pandemic on employment in low-paying occupations and industries

3. But individuals from disadvantaged groups also more likely to lose employment when compared to others with the same job background

4. Low earners have benefited less from post-April 2020 employment recovery

5. CARES Act provisions were strongly progressive, but recipiency rates among displaced low earners were low

Key Findings

The pandemic has exacerbated pre-existing inequalities

1. Individuals in low-earning jobs much more likely to lose employment during the pandemic

2. Partly due to larger impacts of pandemic on employment in low-paying occupations and industries

3. But individuals from disadvantaged groups also more likely to lose employment when compared to others with the same job background

4. Low earners have benefited less from post-April 2020 employment recovery

5. CARES Act provisions were strongly progressive, but recipiency rates among displaced low earners were low

Key Findings

The pandemic has exacerbated pre-existing inequalities

1. Individuals in low-earning jobs much more likely to lose employment during the pandemic

2. Partly due to larger impacts of pandemic on employment in low-paying occupations and industries

3. But individuals from disadvantaged groups also more likely to lose employment when compared to others with the same job background

4. Low earners have benefited less from post-April 2020 employment recovery

5. CARES Act provisions were strongly progressive, but recipiency rates among displaced low earners were low

Key Findings

The pandemic has exacerbated pre-existing inequalities

1. Individuals in low-earning jobs much more likely to lose employment during the pandemic

2. Partly due to larger impacts of pandemic on employment in low-paying occupations and industries

3. But individuals from disadvantaged groups also more likely to lose employment when compared to others with the same job background

4. Low earners have benefited less from post-April 2020 employment recovery

5. CARES Act provisions were strongly progressive, but recipiency rates among displaced low earners were low

Data and Aggregate Patterns

Data

Current Population Survey (available through IPUMS):

- Official source for labor market statistics in the U.S.

- Monthly data

- Rotating sampling structure: individuals can be tracked over short panels; we focus on year-on-year flows

- "Although the collection rates were adversely affected by pandemic-related issues, BLS was still able to obtain estimates that met our standards for accuracy and reliability"

- Focus on April 2020: month where the impacts of the pandemic were most acutely felt

- And February 2021: last month where we can look at year-on-year changes that are not affected by pandemic in base period
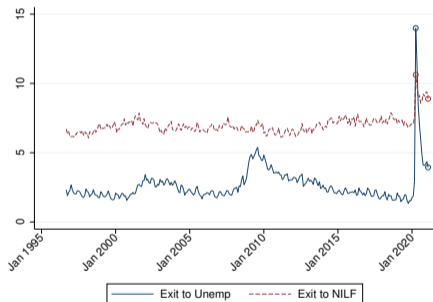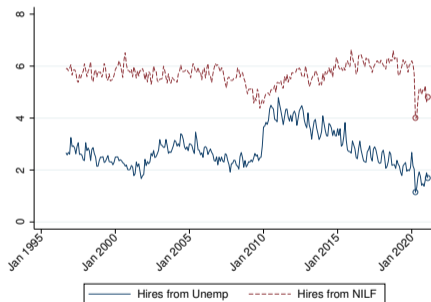
Employment Rate
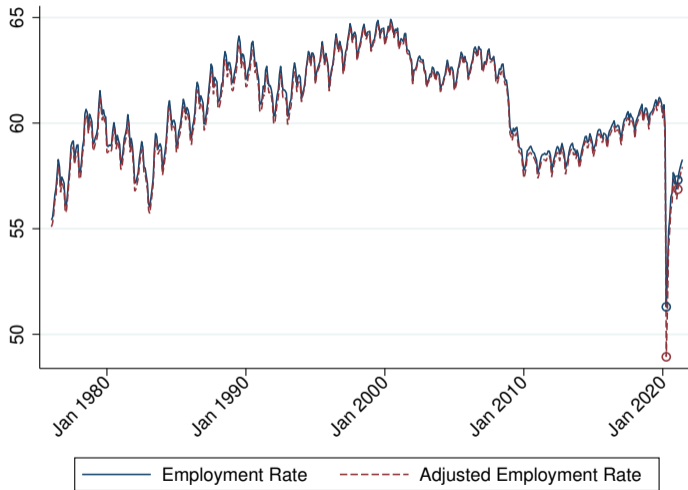
Adjusted: excludes employed who were absent from work for "other" reasons and were not paid.

Introduction
○○

Data
○○○●○

Distributional Impacts
○○○○○○○○○

Demographic Groups
○○○○○○○

Earnings
○○○○○○○○○

Public Policy
○○○○○○○○○○○

Conclusions
○○○

Labor Market Flows

Panel B: Outflows from Employment (%) **Panel C: Inflows to Employment (%)**

Empirical Strategy

- Goal: isolate pandemic-related changes from *seasonal* or *annual* patterns (which may be particularly important for certain occupations, industries, or demographic groups)

- Regression approach, using data from January 2015 onwards

- Use data collapsed to the group level (groups may be occupations, industries or demographic categories):

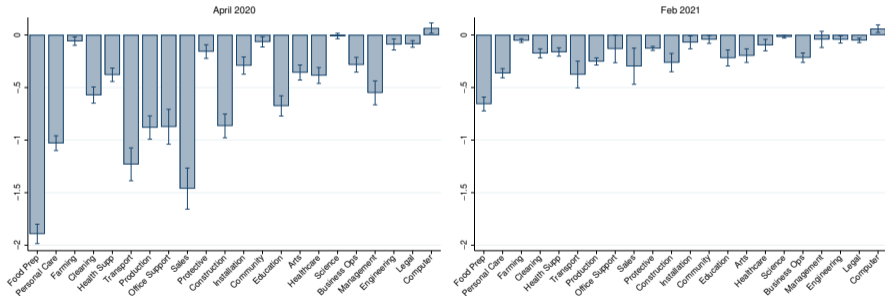$$Y_{gt} = \gamma_g D_{m(t)} + \alpha_g D_{y(t)} + \beta_g D_t^C + \epsilon_{gt}$$

- $D_{m(t)}$: calendar month dummies
- $D_{y(t)}$: year dummies
- D_t^C: vector of dummies for the Covid-19 pandemic months (March 2020 onwards)

Results: Distributional Impacts of the Pandemic

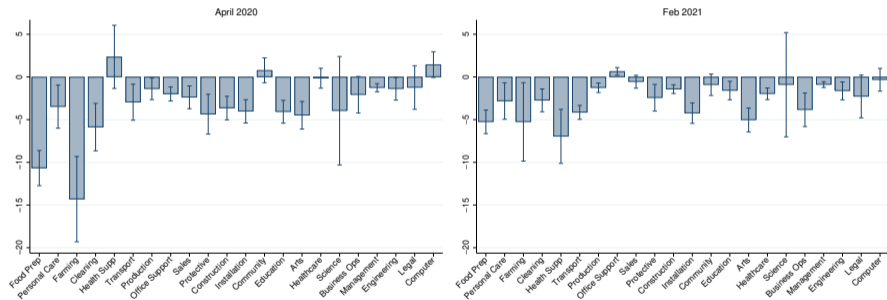## Employment losses disproportionately concentrated in lower-paying occupations

Figure: Impact of the Pandemic across Occupations

Panel A: Adjusted Employment Rate

Figure: Impact of the Pandemic across Occupations

Panel B: Hires from Non-Employment

Introduction
00

Data
00000

Distributional Impacts
000●00000

Demographic Groups
0000000

Earnings
000000000

Public Policy
00000000000

Conclusions
000

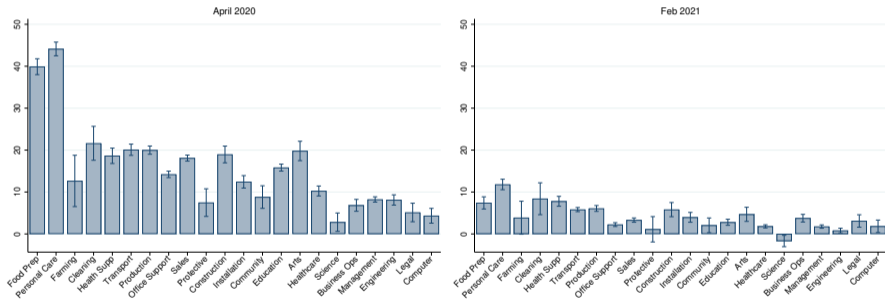Figure: Impact of the Pandemic across Occupations

Panel C: Exits to Non-Employment

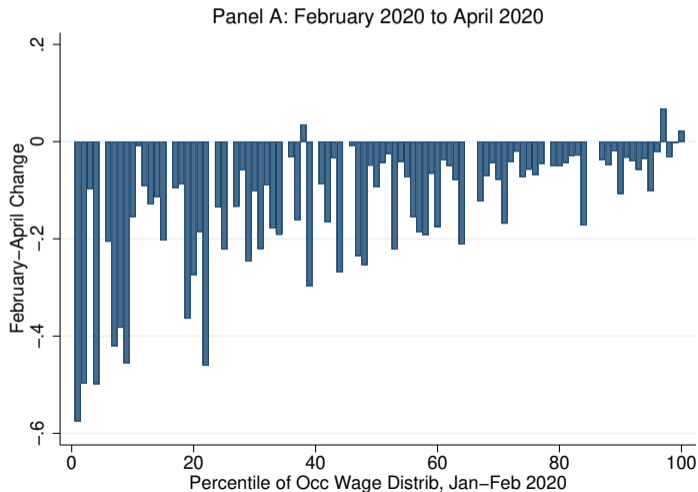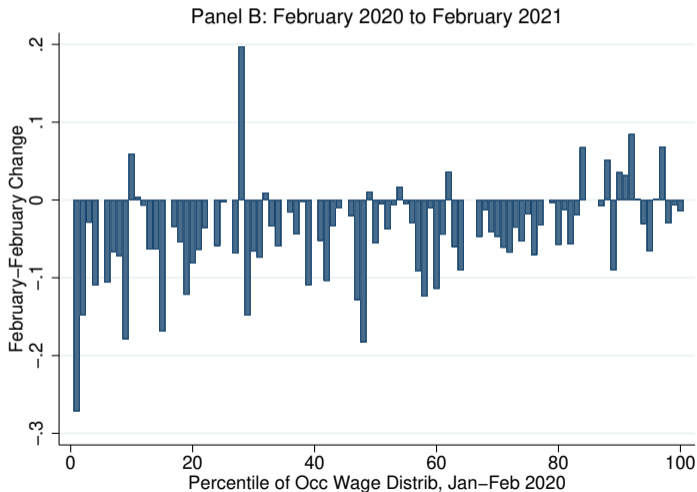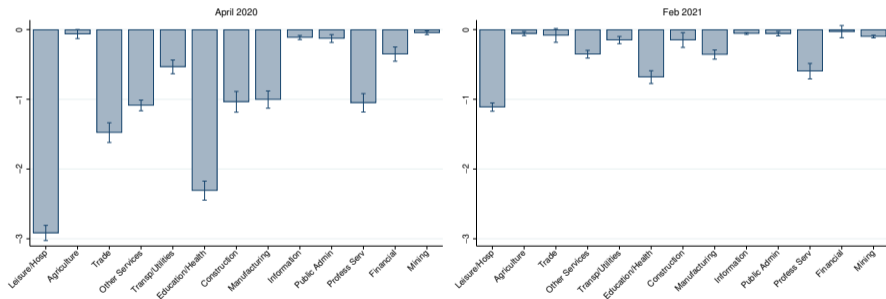Figure: Emp Changes across 4-Digit Occ (as a share of total pop)

Panel A: February 2020 to April 2020

Figure: Emp Changes across 4-Digit Occ (as a share of total pop)

Panel B: February 2020 to February 2021

Similar pattern across industries:

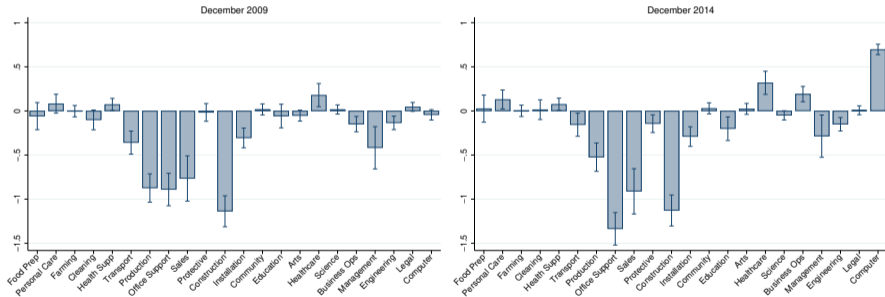Figure: Impact of the Pandemic across Industries

Panel A: Adjusted Employment Rate
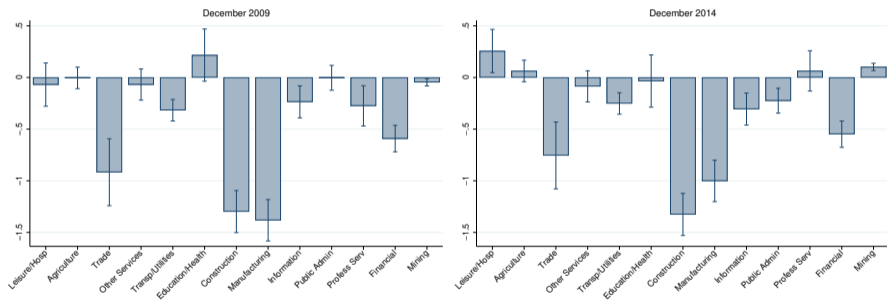
Pattern is not typical for a recession:

Figure: Great Recession

Panel A: Across Occupations

Figure: Great Recession

Panel B: Across Industries

Heterogeneous Impacts
across Demographic Groups

Introduction
oo
Data
ooooo
Distributional Impacts
ooooooooo
Demographic Groups
o●ooooo
Earnings
ooooooooo
Public Policy
ooooooooooo
Conclusions
ooo

Impacts across Demographic Groups

	Stocks			Flows			
	Feb 2020	Emp Rate Chg (%)		Exits		Hires	
	Emp. Rate	April	Feb.	April	Feb.	April	Feb.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Male	0.65	-0.18***	-0.07***	0.14***	0.04***	-0.02***	-0.02***
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Female	0.54	-0.22***	-0.08***	0.18***	0.04***	-0.03***	-0.02***
		(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
No HS Deg.	0.35	-0.31***	-0.08**	0.22***	0.05***	-0.06**	-0.04
		(0.03)	(0.03)	(0.01)	(0.01)	(0.02)	(0.02)
HS Grad.	0.54	-0.26***	-0.11***	0.20***	0.06***	-0.04***	-0.01*
		(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Some Col.	0.60	-0.23***	-0.07***	0.19***	0.04***	-0.03***	-0.02***
		(0.01)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)
Col. Grad.	0.71	-0.12***	-0.04***	0.10***	0.02***	-0.02***	-0.02***
		(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)

Differences across Demographic Groups

| | Stocks | | | Flows | | | |
| | Feb 2020 | Emp Rate Chg (%) | | Exits | | Hires | |
| | Emp. Rate | April | Feb. | April | Feb. | April | Feb. |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
16 to 25	0.53	-0.35***	-0.10***	0.24***	0.02	-0.12***	-0.06**
		(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
26 to 35	0.81	-0.19***	-0.07***	0.16***	0.03***	-0.02***	-0.01*
		(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
36 to 55	0.80	-0.15***	-0.05***	0.14***	0.03***	-0.01**	-0.01***
		(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
56 to 85	0.38	-0.19***	-0.10***	0.16***	0.06***	-0.02***	-0.02***
		(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)
White	0.59	-0.18***	-0.06***	0.14***	0.03***	-0.02***	-0.02***
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Black	0.57	-0.21***	-0.10***	0.17***	0.06***	-0.04**	-0.04**
		(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Hispanic	0.63	-0.25***	-0.10***	0.20***	0.06***	-0.05***	-0.02*
		(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Other	0.62	-0.21***	-0.06***	0.19***	0.02*	-0.03*	-0.02
		(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)

Extent to which differences in employment exit rates are explained by pre-displacement occupation and industry

Run individual-level regressions:

$$Y_{it} = \omega D_{demo(i)} + \beta D_{demo(i)} \times D_t^C + \gamma D_{demo(i)} \times D_{m(t)} + \alpha D_{demo(i)} \times D_{y(t)} \quad (1)$$
$$+ \rho D_{occ(it)} + \delta D_t^C \times D_{occ(it)} + \epsilon_{it}$$

- β: differential change in exit rates across demographic groups during pandemic
- Determine extent to which $\widehat{\beta}$ is driven to zero once controls for base period occupation/industry are introduced
- Estimate of β once occupation/industry controls are introduced indicates differential exit rates across demographic groups occurring *within* job types

Figure: Exits from Employment: Differentials across Demographic Groups with Different Sets of Fixed Effects
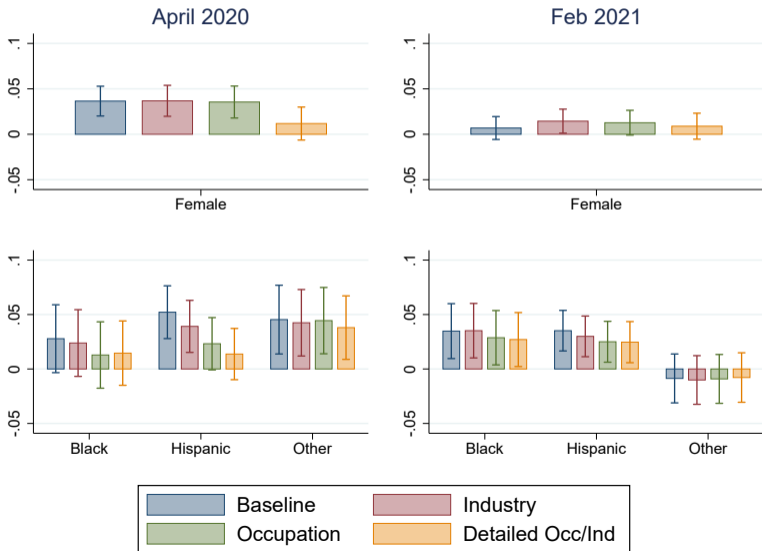
Figure: Exits from Employment: Differentials across Demographic Groups with Different Sets of Fixed Effects
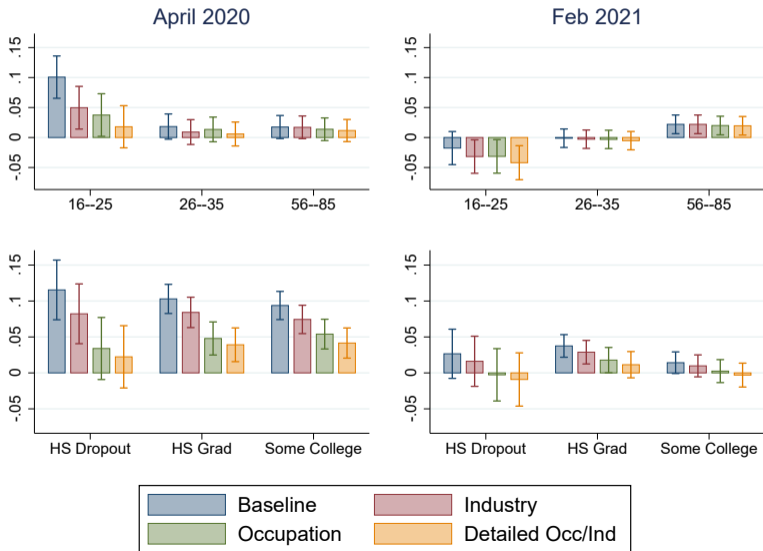
Key Takeaways

- Important gaps between demographic groups, even when conditioning on detailed pre-displacement occupation and industry

- Most of the gaps have narrowed as of February 2021

  - However, the gap increased in absolute terms for black vs white workers

  - For both black and Hispanic workers, over 70% of the gap in February is within detailed industry and occupational categories

  ⇒ Workers from minority groups have benefited much less from the employment recovery, even when compared to workers with the same occupation and industry background

- Patterns for older workers suggest increased retirement rates

- *Additional result not shown here:* Heterogeneous geographical impacts (e.g. due to state-level lockdown policies) cannot explain the (residual) gaps between demographic groups

Individual-Level Earnings Changes

Results from the paper: "Impacts of the Covid-19 Pandemic and the CARES Act on Earnings and Inequality"

Earnings Changes

- Focus directly on individual earnings, rather than employment outcomes

- Observed for a given individual at two points in time, one year apart

  - Usual weekly earnings at the current job, before deductions

  - For workers paid by the hour, use hourly wage rate multiplied by their actual hours worked at their main job during the reference week

  - Top-coded earnings multiplied by a factor of 1.4 (Lemieux, 2006); lowest 1% of earnings are winsorized

- Classify individuals into ventiles (bins containing 5% of workers)

  - Due to noisiness at the tails, group top and bottom two ventiles

- Similar empirical strategy to isolate impact of the pandemic from seasonal/annual patterns
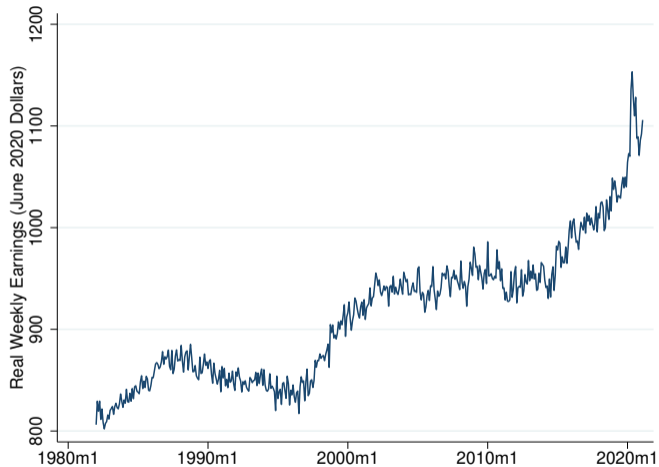
Earnings Changes

- Focus directly on individual earnings, rather than employment outcomes

- Observed for a given individual at two points in time, one year apart

  - Usual weekly earnings at the current job, before deductions

  - For workers paid by the hour, use hourly wage rate multiplied by their actual hours worked at their main job during the reference week

  - Top-coded earnings multiplied by a factor of 1.4 (Lemieux, 2006); lowest 1% of earnings are winsorized

- Classify individuals into ventiles (bins containing 5% of workers)

  - Due to noisiness at the tails, group top and bottom two ventiles

- Similar empirical strategy to isolate impact of the pandemic from seasonal/annual patterns
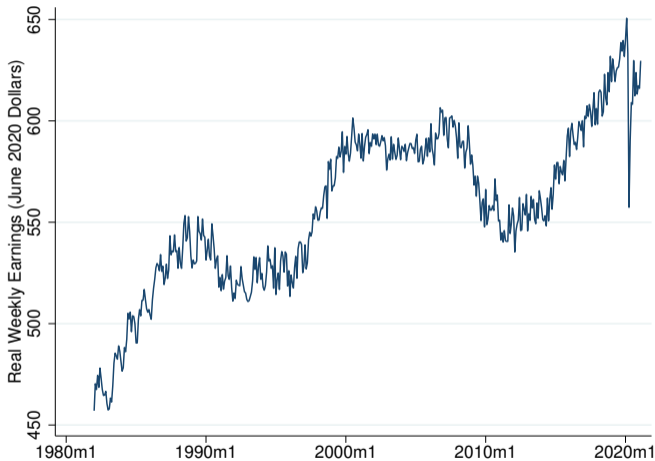
Earnings Changes

- Focus directly on individual earnings, rather than employment outcomes

- Observed for a given individual at two points in time, one year apart

  - Usual weekly earnings at the current job, before deductions
  - For workers paid by the hour, use hourly wage rate multiplied by their actual hours worked at their main job during the reference week
  - Top-coded earnings multiplied by a factor of 1.4 (Lemieux, 2006); lowest 1% of earnings are winsorized

- Classify individuals into ventiles (bins containing 5% of workers)

  - Due to noisiness at the tails, group top and bottom two ventiles

- Similar empirical strategy to isolate impact of the pandemic from seasonal/annual patterns

Earnings Changes

- Focus directly on individual earnings, rather than employment outcomes

- Observed for a given individual at two points in time, one year apart

  - Usual weekly earnings at the current job, before deductions
  - For workers paid by the hour, use hourly wage rate multiplied by their actual hours worked at their main job during the reference week
  - Top-coded earnings multiplied by a factor of 1.4 (Lemieux, 2006); lowest 1% of earnings are winsorized

- Classify individuals into ventiles (bins containing 5% of workers)

  - Due to noisiness at the tails, group top and bottom two ventiles

- Similar empirical strategy to isolate impact of the pandemic from seasonal/annual patterns

Introduction
oo

Data
ooooo

Distributional Impacts
ooooooooo

Demographic Groups
ooooooo

Earnings
oo●oooooo

Public Policy
ooooooooooo

Conclusions
ooo

Panel A: Average Real Weekly Earnings per Worker

Introduction
○○

Data
○○○○○

Distributional Impacts
○○○○○○○○○

Demographic Groups
○○○○○○○

Earnings
○○○●○○○○○

Public Policy
○○○○○○○○○○○

Conclusions
○○○

Panel B: Average Real Weekly Earnings per Adult

Panel A: Year-on-Year Changes in Real Weekly Earnings
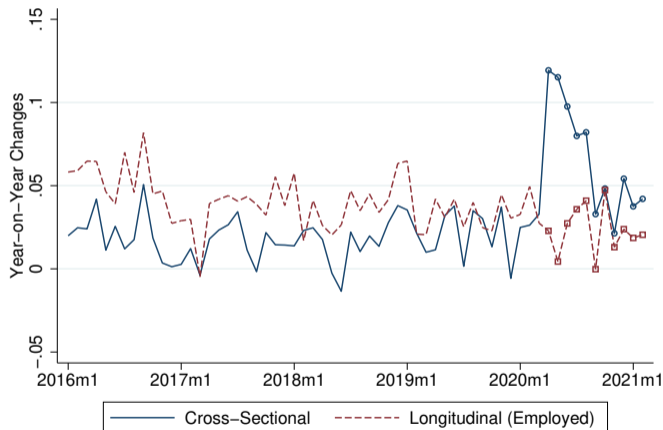
Panel B: Pandemic Impact on Real Weekly Earnings
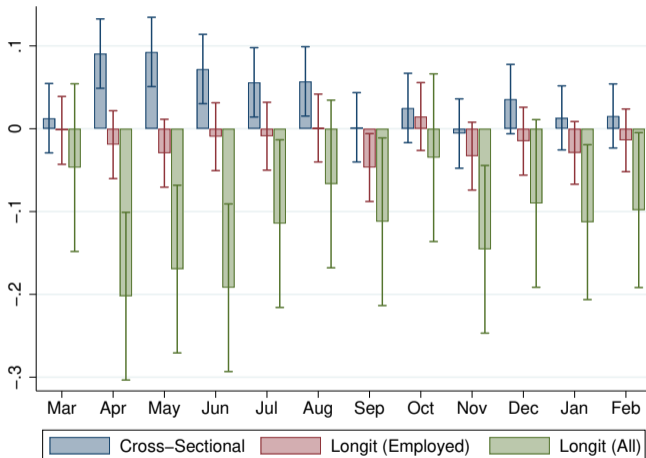
Impacts along the Earnings Distribution

Panel A: Impact of the Pandemic on Labor Earnings Growth Rates (%)
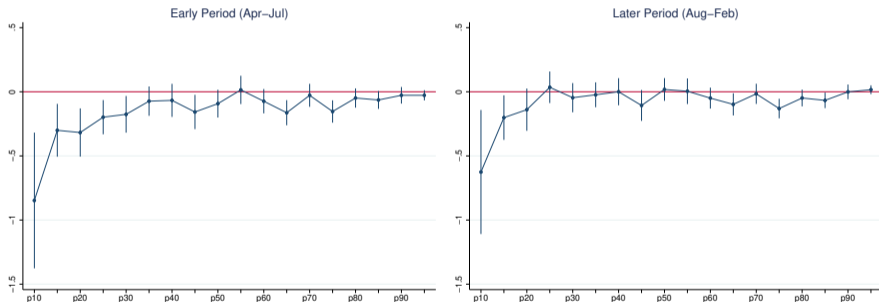
Panel B: Impact on Probability of Remaining Employed (Extensive Margin)
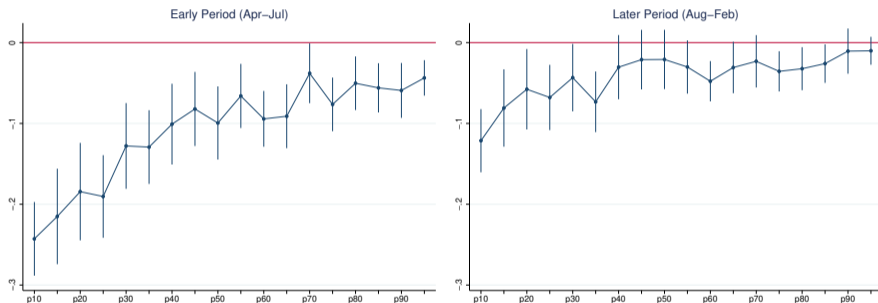
Panel C: Impact on Earnings Conditional on Remaining Employed (Intensive Margin)
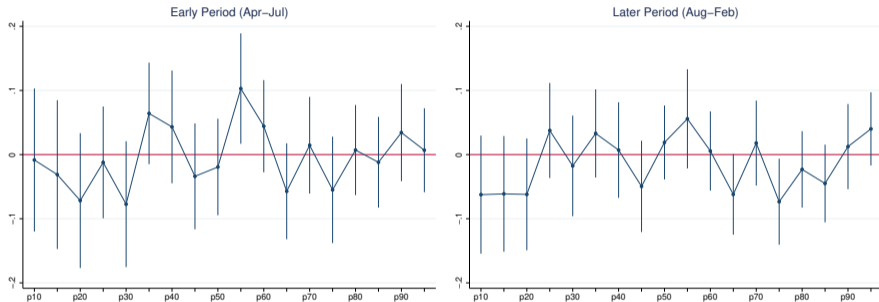
$\Rightarrow$ **Pandemic disproportionately impacts low earners; earnings impacts driven by job loss, not by earnings changes on the job.**

Public Policy Response

Determining Eligibility

- Eligibility pre-pandemic:

    1. Employed one year prior
    2. Currently involuntarily unemployed or had a temporary job end
    3. Duration of unemployment less than 26 weeks

- From April 2020 onwards, also count as eligible if:

    - Not employed in the current period but employed at any point in the last three months
    - Unemployed with spell starting on or after March 1, 2020
    - Currently classified as out of the labor force, but classified as unemployed in a previous month and would have qualified given above criteria

Simulating Benefits

1. Standard UI Benefits
   - Build on UI simulator of Ganong et al. (2020)
   - Based on state of residence, pre-displacement earnings and (imputed) weeks worked per quarter
   - Self-employed not eligible

2. Pandemic Unemployment Assistance (PUA)
   - For those deemed potentially eligible, but whose earnings are too low for standard UI
   - For the self-employed

3. Additional top-ups
   - April through July 2020: $600 per week
   - August 2020: $300 per week
   - January and February 2021: $300 per week

Recipiency

Benchmark our estimates to data from the Department of Labor and the
Bureau of Economic Analysis

- **3%** of individuals eligible for standard UI do not receive benefits

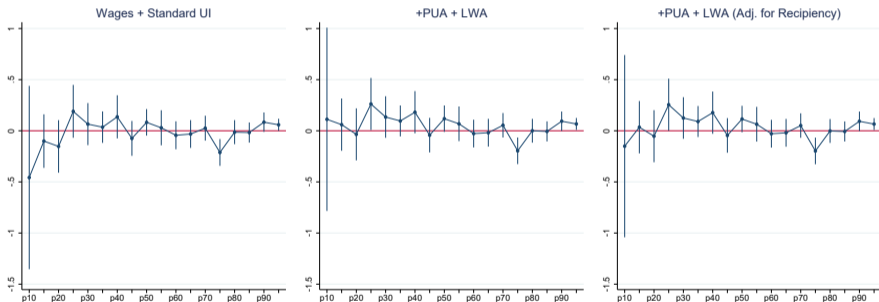- **45%** of individuals eligible for PUA do not receive benefits

Results: Earnings Changes after Factoring in Benefits

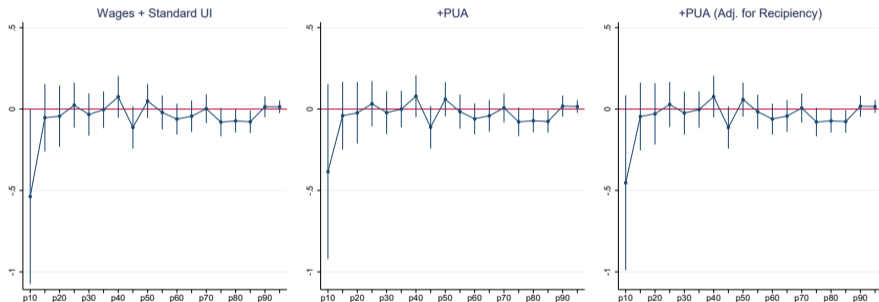**Panel A: PUC Period (April through July 2020)**
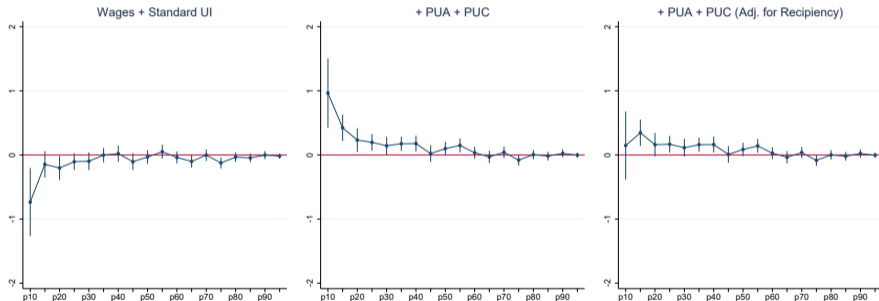
Results: Earnings Changes after Factoring in Benefits

Panel B: LWA Period (August 2020)

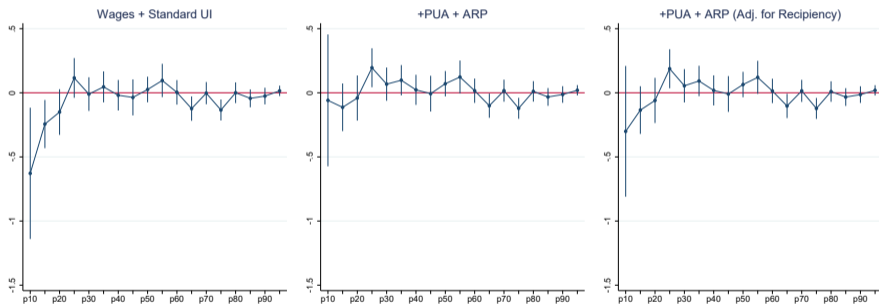# Results: Earnings Changes after Factoring in Benefits
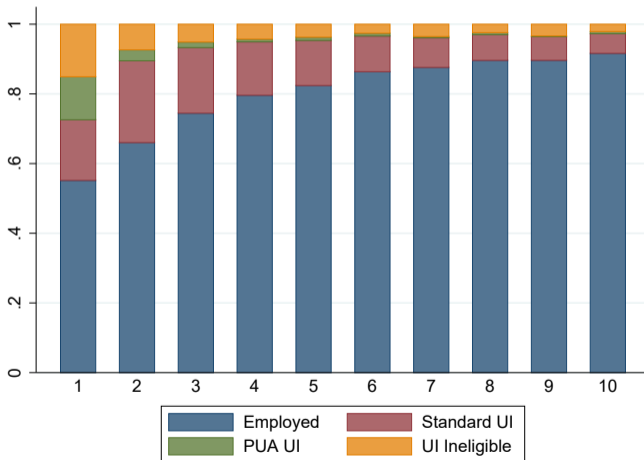
Panel C: No Top-Up (September through December 2020)

Results: Earnings Changes after Factoring in Benefits

Panel D: ARP Period (January through February 2021)

Introduction
oo

Data
ooooo

Distributional Impacts
ooooooooo

Demographic Groups
ooooooo

Earnings
ooooooooo

Public Policy
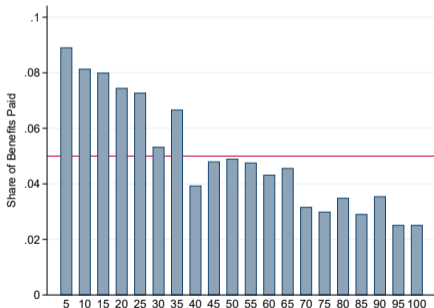oooooooo●oo

Conclusions
ooo

Results: Eligibility

Panel A: PUC Period (April through July 2020)
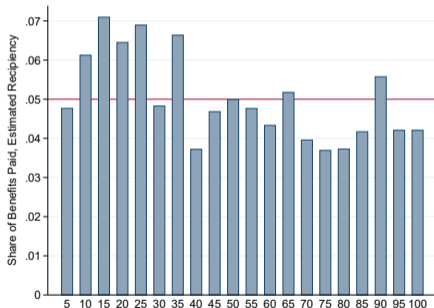
Results: Share of Total Benefits Received by Each Ventile

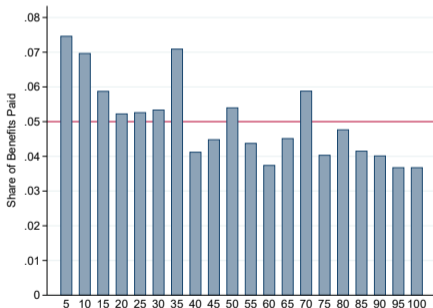**Panel A: Early Pandemic (April-July 2020)**
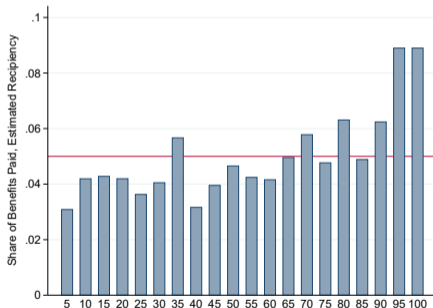
All Eligible

Estimated Recipients

Results: Share of Total Benefits Received by Each Ventile

Panel B: Late Pandemic (August-February 2021)

All Eligible

Estimated Recipients

Conclusions

Introduction
○○

Data
○○○○○

Distributional Impacts
○○○○○○○○○

Demographic Groups
○○○○○○○

Earnings
○○○○○○○○○

Public Policy
○○○○○○○○○○○

Conclusions
○●○

Conclusions

- The pandemic has exacerbated pre-existing inequalities

- Low-earning individuals were, by a large margin, disproportionately likely to lose their jobs during the pandemic

- Not only because of their higher exposure due to their occupation/ industry affiliation, but also when compared to others in the same detailed occupation, industry and geography

- Minority workers have benefited less from the employment recovery between April 2020 and February 2021

- CARES Act provisions were strongly progressive (especially during $600 top-up period), but this was offset to a large extent by low recipiency rates among displaced low earners

Thank You!