

The U.S. Labor Market During COVID Crisis

PRINCETON
UNIVERSITY



Webinar



Erik Hurst
Chicago Booth

Introductory
remarks by
Markus
Brunnermeier

PAST AND FUTURE SPEAKERS

■ Last



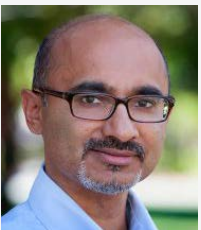
Philip Lane
"ECB's Pandemic Emergency Purchase Program"

■ Today



Erik Hurst
"The US Labor Market during COVID:
Real Time Evidence from Payroll Data"

■ Next webinars



Arvind Krishnamurthy
"Corporate Debt Overhang
and Credit Policy"

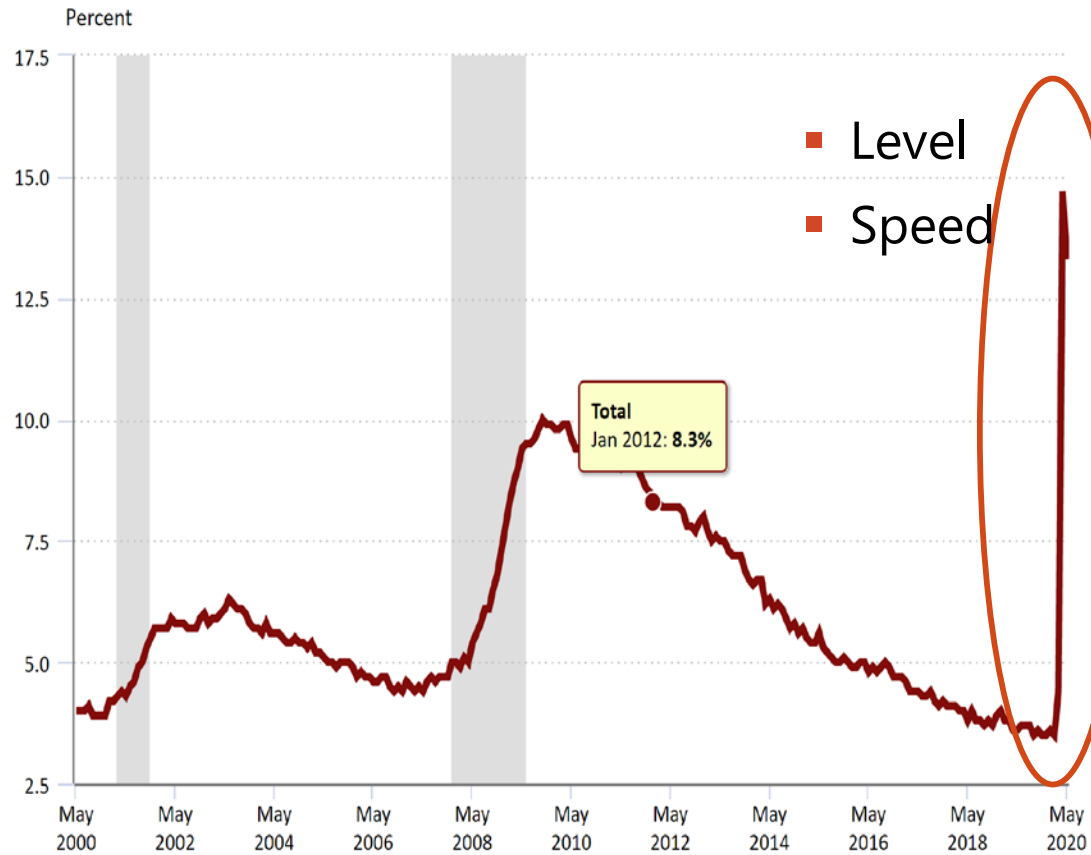
LABOR MARKET: US

EUROPE

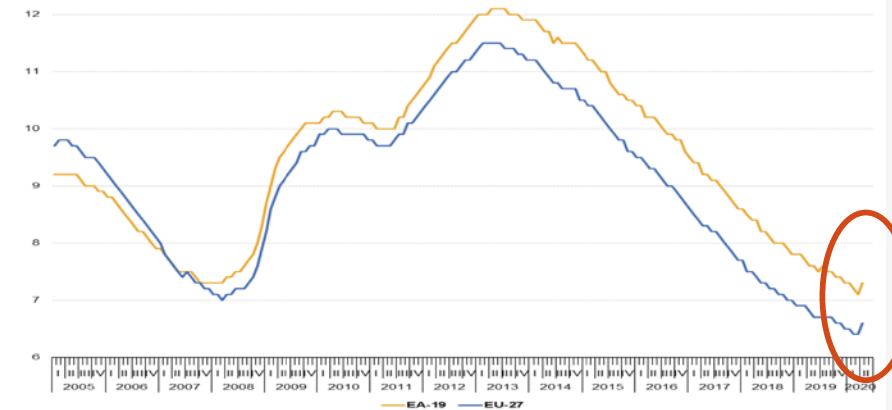
Civilian unemployment rate, seasonally adjusted

Click and drag within the chart to zoom in on time periods

— Total — Men, 20 years and over — Women, 20 years and over — 16 to 19 years old
— White — Black or African American — Asian — Hispanic or Latino



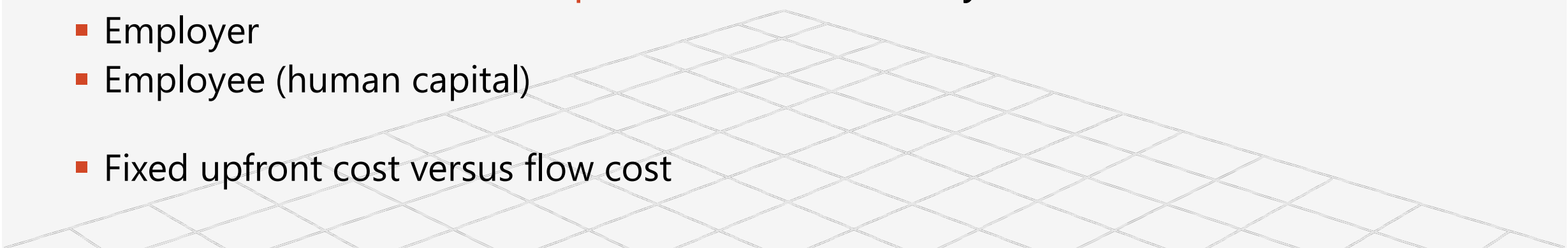
Unemployment rates EU-27, EA-19, seasonally adjusted, January 2005 - April 2020



STRATEGIC UNEMPLOYMENT: MATCH PRESERVATION

- US: Unemployment benefits
 - Not true, but “strategic unemployment” but a way to get to subsidy
 - How to measure true unemployment?
 - Phillips curve
 - Break up job-worker match
- Europe: Kurzarbeit (short-term work)
 - Statistics not comparable
 - maintain job-worker match
- Worker expectations were strongly predictive of rehiring probabilities
 - Bartik, Bertrand, Fin, Rothstein, Unrath (2020)
- New Labor Matching models needed
 - Old: binary matched vs. unmatched
 - 3 states/options: matched, **rehirable**, unmatched
 - Break match only when hired by someone else
 - **There is a nice model to be written!**
- Large/deep recession: recall option is more valuable

SKILL MISMATCH - MATCH SPECIFIC INVESTMENTS

- COVID is reallocation shock, Barrero, Nick Bloom and Steven J. Davis (2020)
 - US 32-42% unemployed jobs won't come back
 - Large share was due to closures of small firms ..
 - Broken matches might lead to **worse rematch** (logged in)
 - Enrich model with **match specific investment** by
 - Employer
 - Employee (human capital)
 - Fixed upfront cost versus flow cost
- 

FIRE OR CUT WAGES

- Euro crisis: extend working hours, eliminate bonus payments
- US: flexible (bonus) wages, see authors' earlier paper

- Wage stickiness

- | | | |
|--------------------------------|------------------|---------------------------------------|
| ■ Slow moving recession | wage stickiness | Keynesian insights |
| ■ Fast recession | wage flexibility | Classical,
but financial frictions |

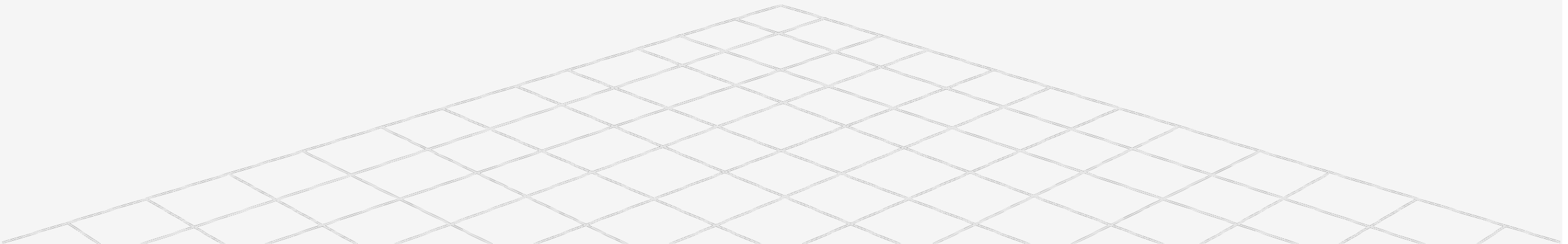
- Test for different types of wage/price stickiness

- Calvo stickiness
- Golosov-Lucas: menu cost
- Mankiw-Reis: sticky information/inattention

Mackowiak, Moench,
Wiederholt (2009)

INEQUALITY – FUTURE OF WORK

- Poor in rich neighborhoods are hit especially hard, Chetty et al. (2020)
 - City level inequality matters
- Future of work: Rethinking free-lancing model?
 - Private unemployment insurance or not?
 - Job security = insurance granted by employer, but can fire



POLL

1. US unemployment insurance vs. European “Kurzarbeit”/PPP
 - a. Former is better, since e.g. Kurzarbeit slows down restructuring
 - b. Latter is superior, as it preserves job matches

2. COVID is reallocation shock (>30% of COVID-induced layoffs will be permanent)
 - a. Yes
 - b. No

3. Future of work: Rethinking freelancing/sharing economy
 - a. Yes, return to more traditional employer/employee arrangement (insure against wage cut, but fire if shock is too large)
 - b. Yes, but substitute unemployment insurance with private insurance
 - c. No, UBER economy shows the way forward

4. COVID crisis will lead to re-evaluation of (relative) wages
 - a. Yes
 - b. No

The U.S. Labor Market during the Beginning of the Pandemic Recession¹

Tomaz Cajner Leland D. Crane Ryan A. Decker John Grigsby
Adrian Hamins-Puertolas Erik Hurst Christopher Kurz Ahu Yildirmaz

June 26, 2020

¹Opinions expressed herein are those of the authors alone and do not necessarily reflect the views of the Federal Reserve System. All results have been reviewed to ensure that no confidential data are disclosed.

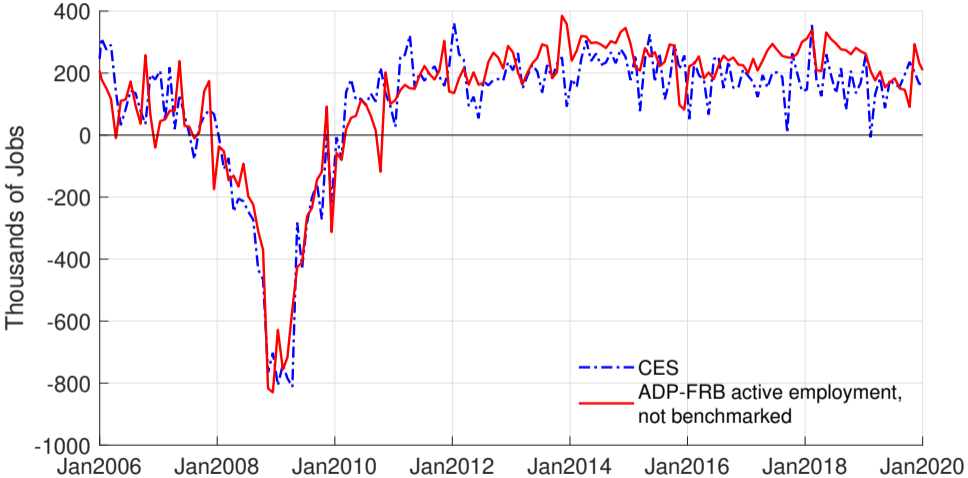
This Paper

- Use payroll microdata from ADP to chart the labor market at beginning of the Pandemic Recession
 - ① Employment, both aggregate and disaggregated
 - ② Wages
 - ③ Hours
 - ④ Business shutdown/re-entry and employee recall
 - ⑤ Job creation and job destruction
 - ⑥ Employment response of state re-opening

Why Administrative Data?

- BLS puts out monthly data on labor market conditions using both business and household data (CES and CPS)
- Benefits of administrative payroll data from ADP
 - ① Have data for 26 million workers (about 1/6 of US workforce)
 - ② Broadly nationally representative by firm size and industry
 - ③ Large samples and high frequency (allows for cross-location variation in state policies)
 - ④ Linked employer-employee data (critical for studying worker recall)
 - ⑤ Administrative data for wages (allows for measurement of nominal wage adjustments)

ADP Tracks CES very well



A Note on Timing

- Using the ADP data, we measure employment by observing number of paychecks issued (at firm level) or the number of paycheck received (at employee level)
- Workers are paid at different frequencies (weekly, bi-weekly, monthly).
- Consider a bi-weekly worker who gets paid in every odd week: $t + 1$, $t + 3$, etc.
- Suppose the worker losses their job in t . The worker would get paid in $t + 1$ but would not get paid in $t + 3$.
- The last date we can be sure that the worker had a job at their firm was in $t + 1$. That is when we impute their job loss.
- As a result, there is some measurement error (by a week or so) in our imputation.

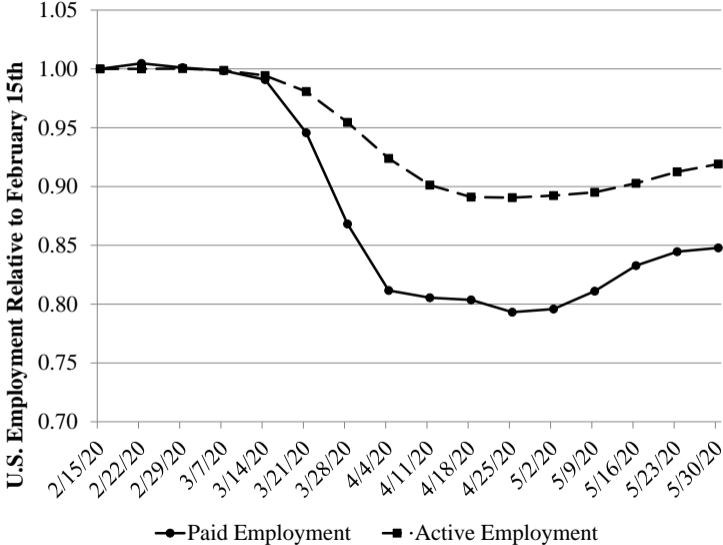
Comparison to Other Administrative Labor Market Data Sources

- Homebase Data: Chetty et al. (2020), Bartik et al. (2020), Kurmann et al. (2020)
 - ① Free time clock/scheduling software for firms (there is a paid tier as well)
 - ② Data for hourly workers in small businesses with less than 50 employees
 - ③ About 500K workers on platform in Feb 2020 - two-thirds in restaurant industry
 - ④ Almost certainly selection of firms into the service.

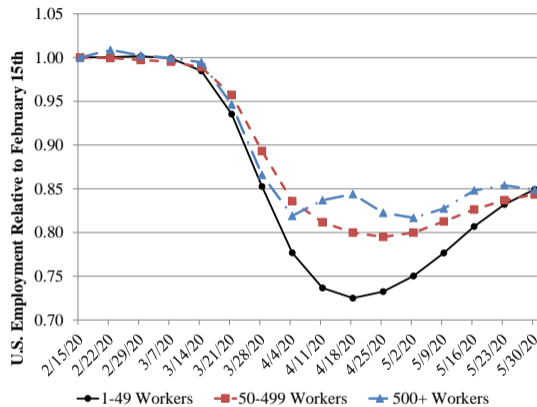
- Earnings Data: Chetty et al. (2020)
 - ① Free app that provides a payday lending-like services (i.e., individuals can borrow against paycheck)
 - ② Workers (not firms) opt in; no cost but workers encouraged to "tip".
 - ③ Has data on worker direct deposit paycheck amounts (which are collateral for loans) and hours (via GSP tracking)
 - ④ Data primarily comprises low wage workers seeking payroll advances.

Employment

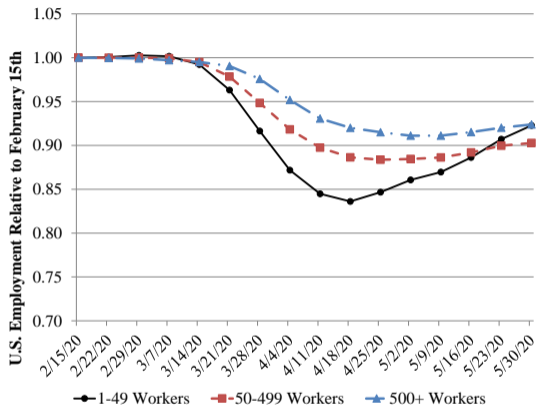
Active and Paid Employment Since February



Employment by Firm Size



PANEL A: PAID
EMPLOYMENT



PANEL B: ACTIVE
EMPLOYMENT

Paid Employment Changes By 2-Digit Industry

Industry	2/15-4/25	2/15-5/30
Arts, Entertainment and Recreation	-50.7%	-41.5%
Accommodation and Food Services	-45.5%	-34.1%
Retail Trade	-28.7%	-18.5%
Other Services	-25.0%	-17.1%
Transportation and Warehousing	-21.7%	-23.2%
Real Estate, Rental and Leasing	-20.9%	-19.6%
Wholesale Trade	-17.6%	-12.3%
Administrative and Support	-17.0%	-17.1%
Educational Services	-16.6%	-17.5%
Health Care and Social Assistance	-16.5%	-8.8%
Construction	-13.5%	-4.5%
Manufacturing	-12.4%	-8.6%
Professional, Scientific, and Tech Services	-12.1%	-9.1%
Finance and Insurance	-1.3%	-0.7%

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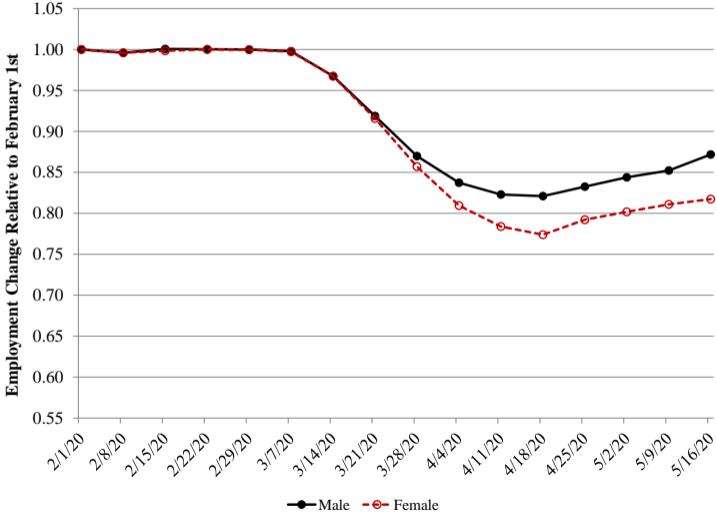
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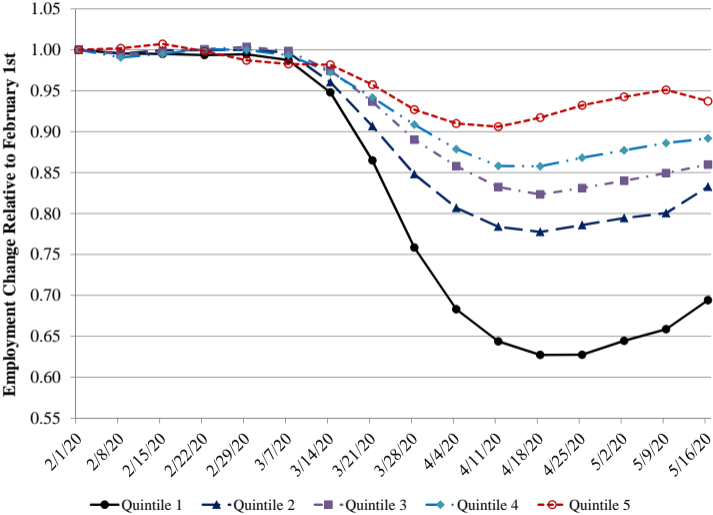
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Employment Declines by Sex

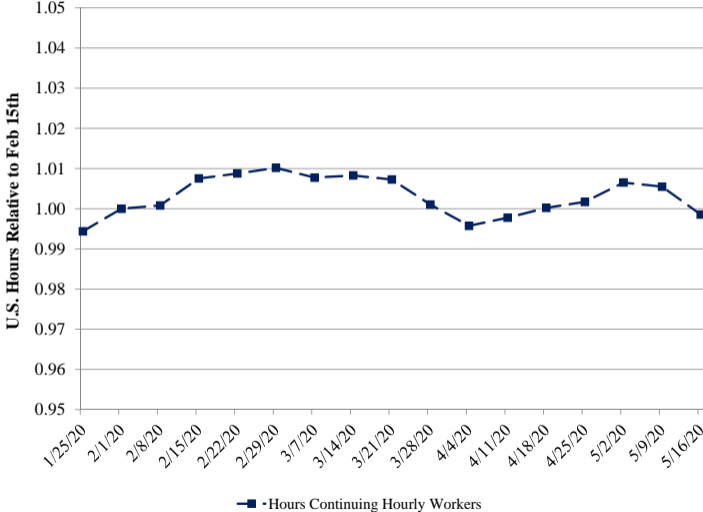


Employment Declines by Initial Wage Quintile



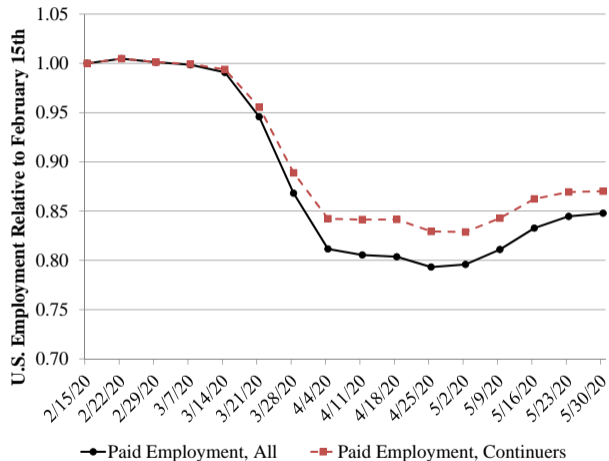
Hours

Hours of Continuously Employed Hourly Workers



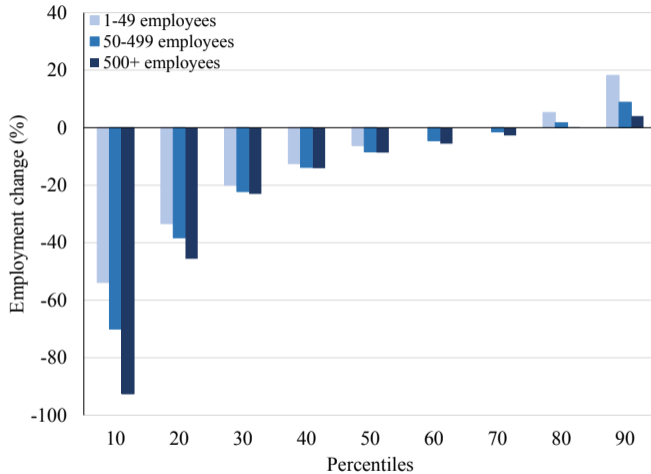
Business Closure, Re-Entry and Recalls

Employment in Continuing Firms



Continuing firms are those firms that make regularly scheduled payroll

Distribution of Employment Gains 2/15-5/30, Continuing Firms



Employment Changes Decomposition (Relative to Feb 15th)

Week	Continuers	New Entry	Ever Shutdown	Shutdown Re-entry	Total
2/29/2020	0.1	0.3	-0.3	0.0	0.1
3/07/2020	-0.1	0.5	-0.6	0.0	-0.1
3/14/2020	-0.6	0.6	-1.0	0.0	-0.9
3/21/2020	-4.4	0.7	-1.9	0.1	-5.4
3/28/2020	-10.7	0.8	-3.4	0.0	-13.2
4/04/2020	-15.0	1.0	-4.8	0.0	-18.8
4/11/2020	-15.0	1.1	-5.7	0.1	-19.5
4/18/2020	-14.9	1.2	-6.1	0.2	-19.6
4/25/2020	-16.1	1.2	-6.4	0.6	-20.7
5/02/2020	-16.2	1.3	-6.6	1.0	-20.4
5/09/2020	-14.8	1.5	-6.8	1.3	-18.9
5/16/2020	-13.0	1.6	-6.9	1.6	-16.7
5/23/2020	-12.4	1.8	-7.1	2.1	-15.5
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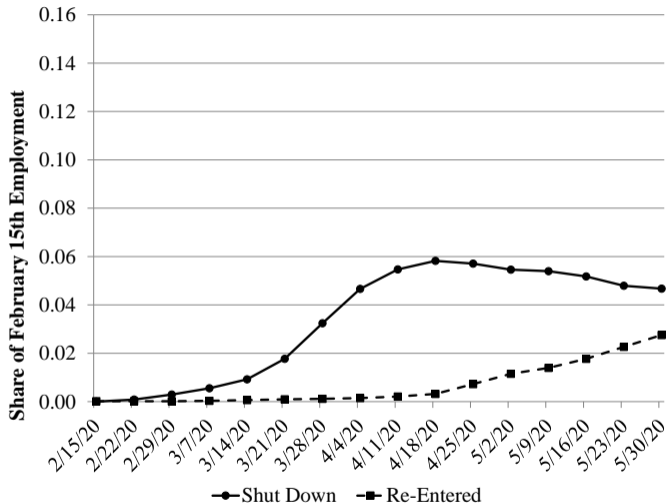
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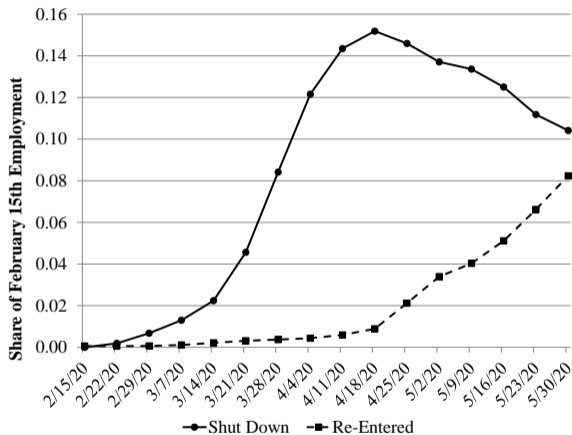
Current Business Shutdown and Re-Entry



Decomposition Summary Relative to Feb 15th

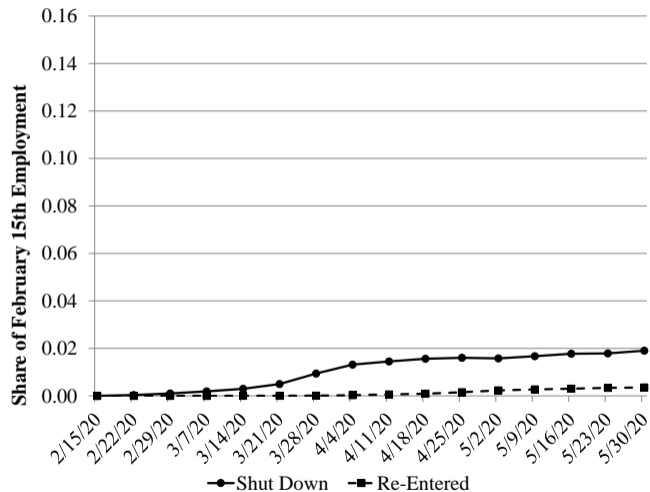
- Employment Declines Through April 25th
 - 77.8% of employment decline due to continuing firms
 - 28.0% of employment decline due to exiting firms
 - 5.8% increase to “new” sample entrants
- Employment Gains April 25th through May 30th
 - 67.3% of subsequent increase due to net hiring in continuing firms
 - 36.4% of subsequent increase due to employment gains in re-opening firms.
 - New sample entrants and new shutdowns roughly cancel

Firm Shutdown and Re-Entry: Firms < 50 Employees

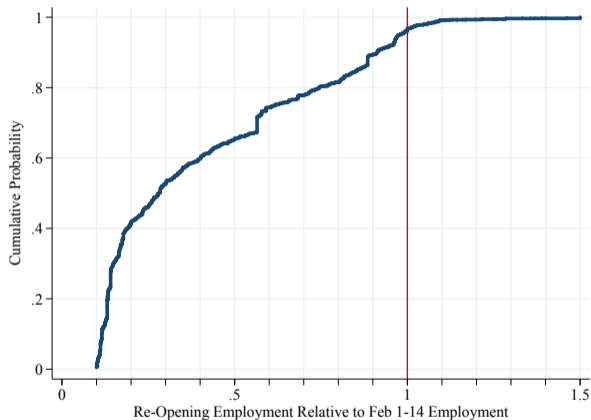


About 50% of employment losses for small firms through late April was due to exit.

Firm Shutdown and Re-Entry: Firms > 500 Employees

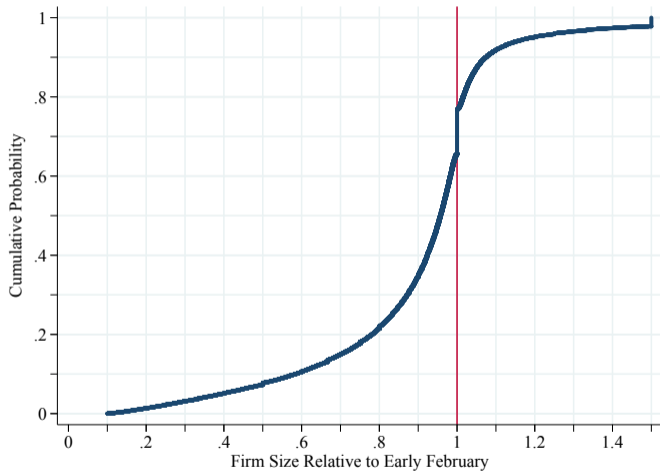


Firm Size of Re-Entering Firms (Relative to Feb 15th)



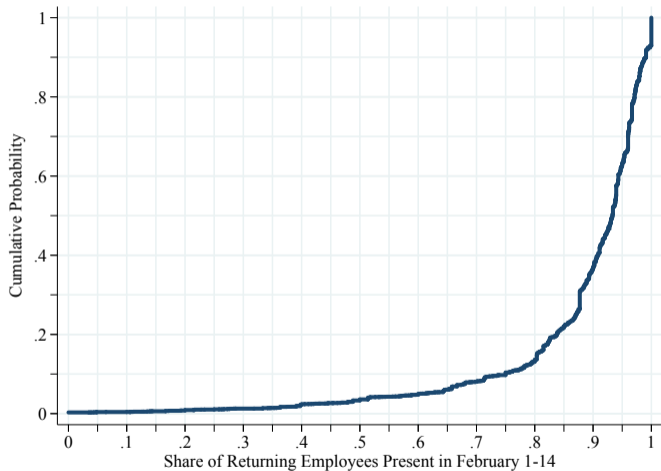
Median (Mean) re-entering firm is currently at 25% (40%) of their February size.

Late May Employment Relative to February: Continuing Firms



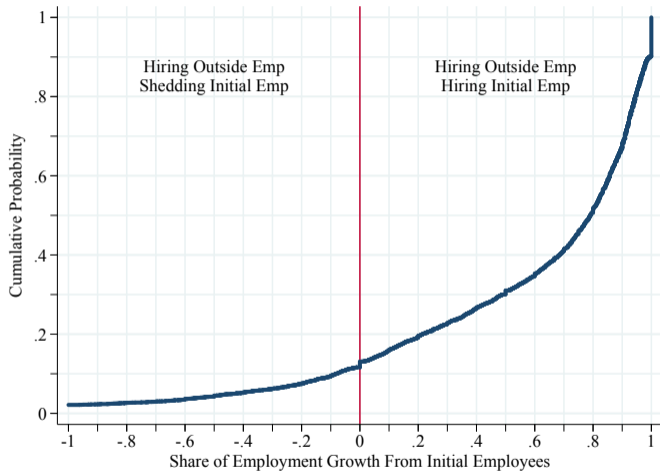
Median continuing firm is currently at 95% of their February size.

Share of Re-Entering Firms' Employment that are Recalls ◀



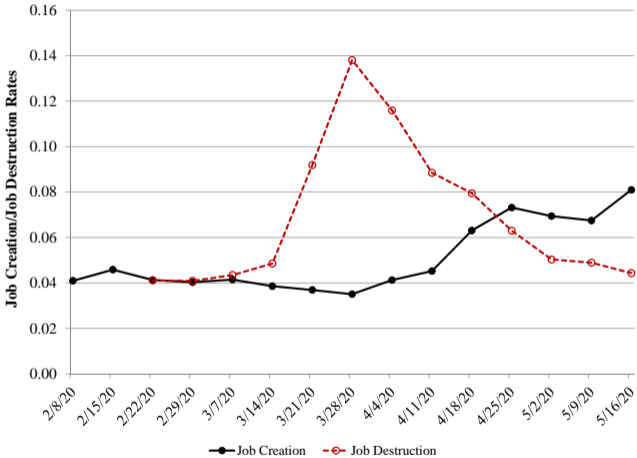
Nearly all employment in re-entering firms are recalled-workers.

Share of Continuing Firm Growth from Recall



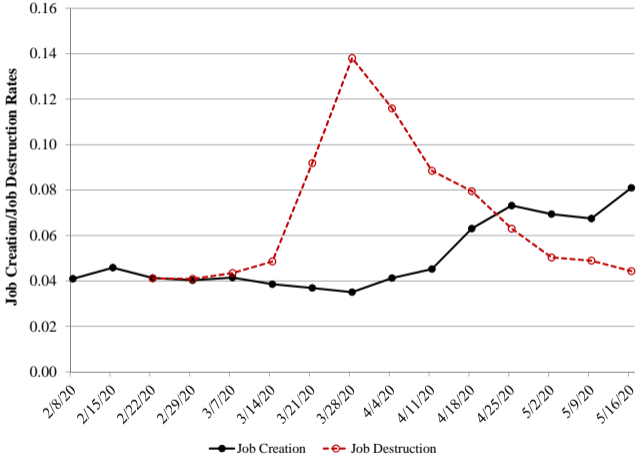
- Much of the employment growth in continuing growing firms are recalled-workers.

Job Creation and Job Destruction



- Spike in job destruction then return to baseline

Job Creation and Job Destruction



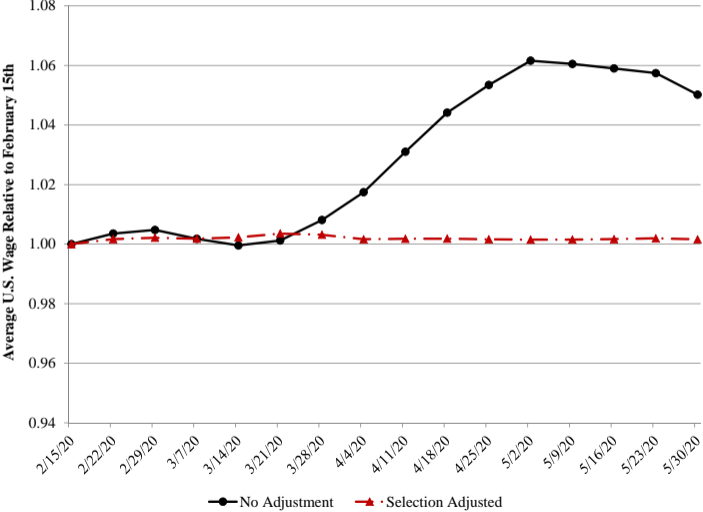
- Job creation remained steady during depths of recession before rising

Wages

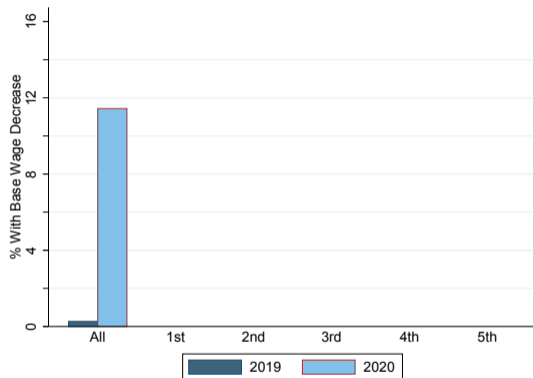
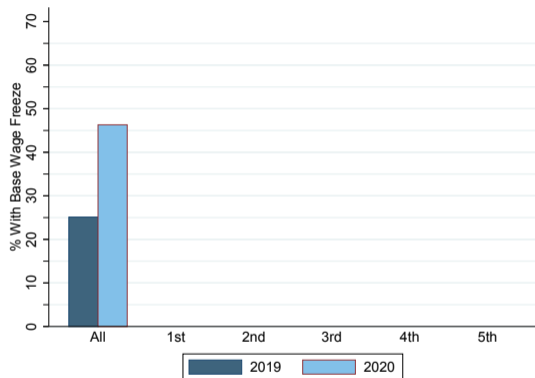
Wage Concept

- Administrative reports of worker “base” wages
 - Contracted hourly wage for workers paid hourly
 - Contracted per period guaranteed salary for salaried workers (annual salary divided by the annual number of pay periods)
 - Not using gross earnings which has hours variation as well as bonuses, overtime, performance pay, etc.
 - Compute statistics pooling together hourly and salaried workers
 - Similar to the base wage concept in Grigsby, Hurst and Yildirmaz (2020)

Aggregate Wages



Wage Adjustment: Firms that Traditionally Change Wages in March-May

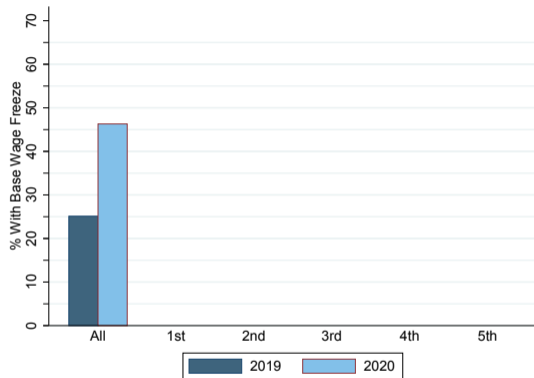


PANEL A: PROBABILITY OF WAGE FREEZE

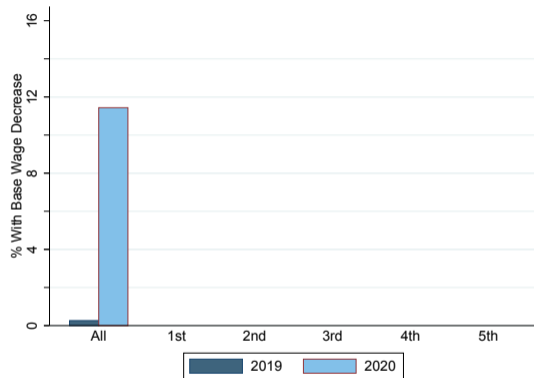
PANEL B: PROBABILITY OF WAGE CUT

- Sample: Firms that changed most of their wages during 2019 in March, April and May.

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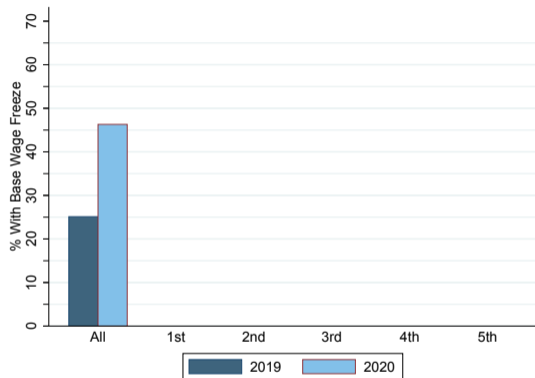
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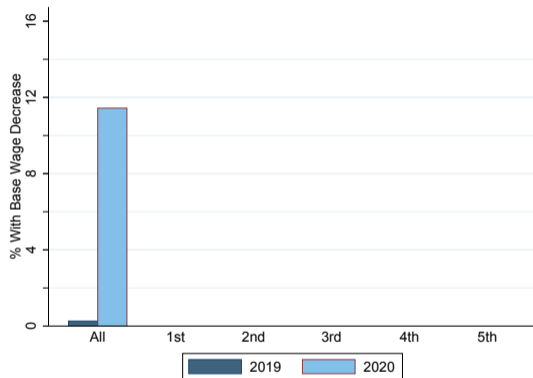
PANEL B: PROBABILITY OF WAGE CUT

- Sample: Firms that changed most of their wages during 2019 in March, April and May.
- Both wage cuts and wage freezes are more common in 2020

Wage Adjustment: Firms that Traditionally Change Wages in March-May



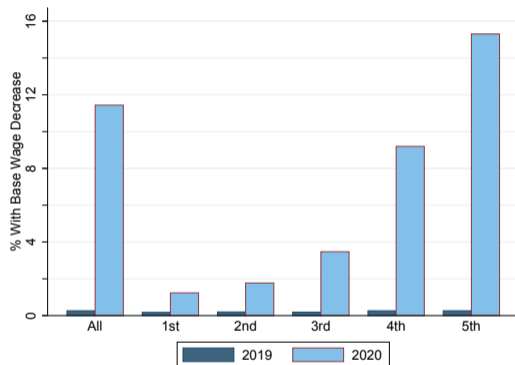
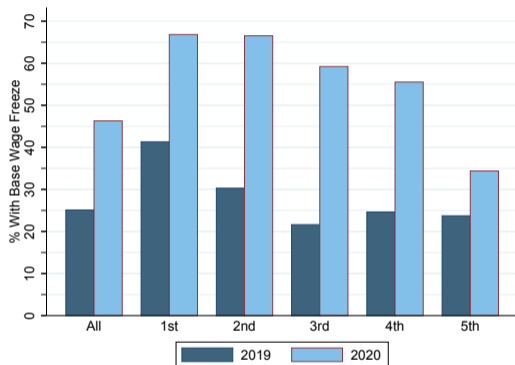
PANEL A: PROBABILITY OF WAGE FREEZE



PANEL B: PROBABILITY OF WAGE CUT

2020: 46% with freeze, 11.4% with cut
2008-10: 40% with freeze, 6% with cut

Wage Adjustment: Firms that Traditionally Change Wages in March-May



PANEL A: PROBABILITY OF WAGE FREEZE

PANEL B: PROBABILITY OF WAGE CUT

Bottom Quintile Workers: 67% with freeze, 1.2% with cut

Top Quintile Workers: 34% with freeze, 15.3% with cut

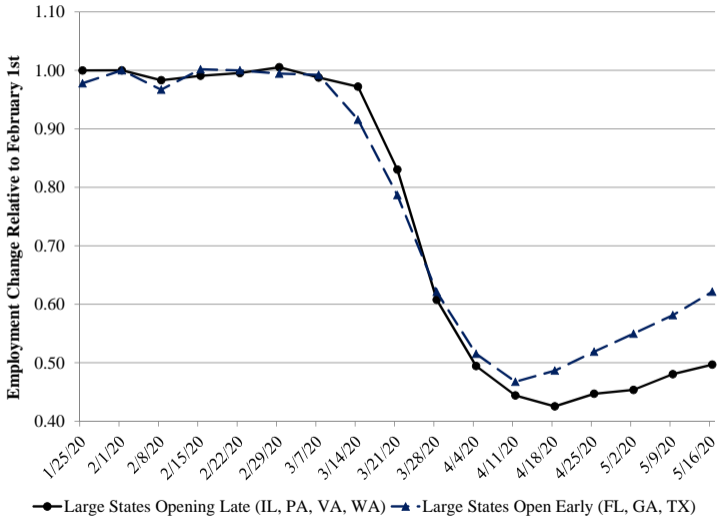
Cross State Re-Openings

Some Caveats on Cross-State Re-Opening Studies

- Most sectors did not close in most states (essential services in many states include manufacturing, construction, professional services (that can be done from home), finance, some retail, some medical, etc.
- Re-openings often took place at different times within states.
- The difference across most states in the timing of re-opening is small (a few weeks)
- State re-openings are often endogenous to changes in underlying health risks (which vary spatially).

Some caution needed in interpreting causal estimates of employment effects of state re-openings.

State Re-Opening: Employment in Food/Accommodation

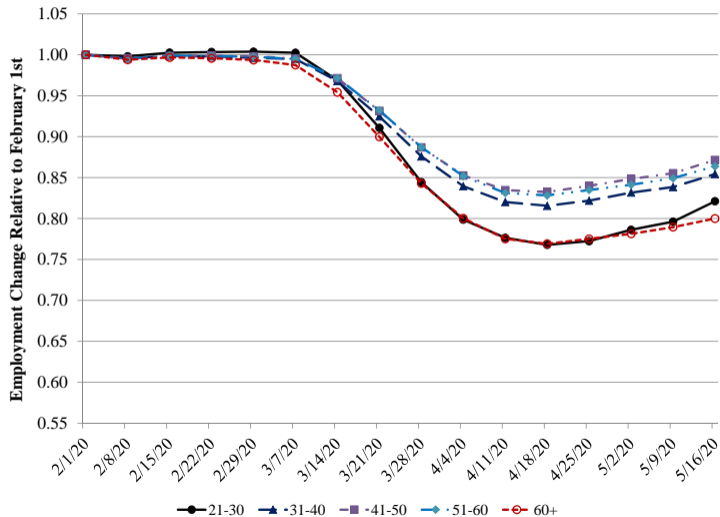


Conclusion

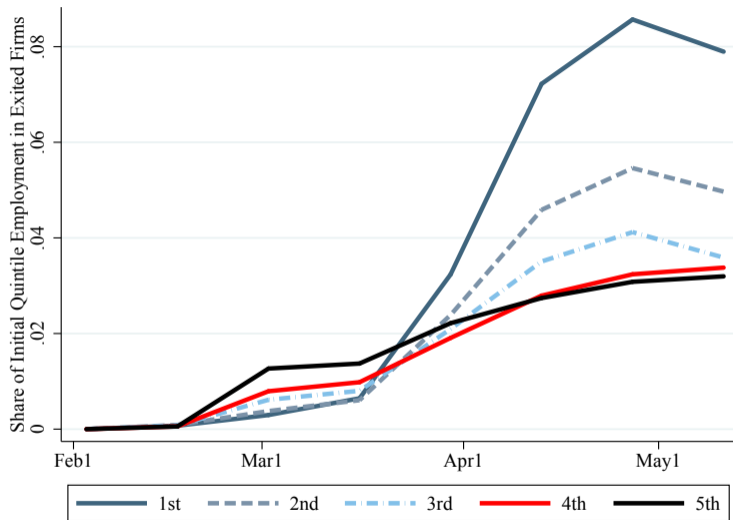
- Unprecedented paid employment declines at start of Pandemic Recession
- Concentrated among low wage workers, small firms, and women
- Employment has increased meaningfully (by about 7 million workers) during May.
- Selection effects → average wage increase
- More base wage freezes and cuts than in Great Recession
- Firm shutdown important, but some beginning to re-enter
- Re-entering and growing business mostly recall previous employees
- Not surprisingly, employment increases when states re-open sectors.

Appendix

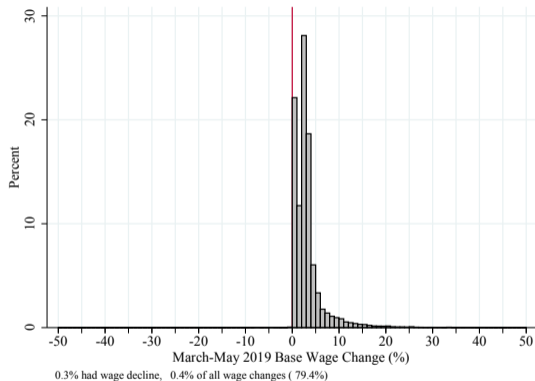
Employment Patterns by Employee Age



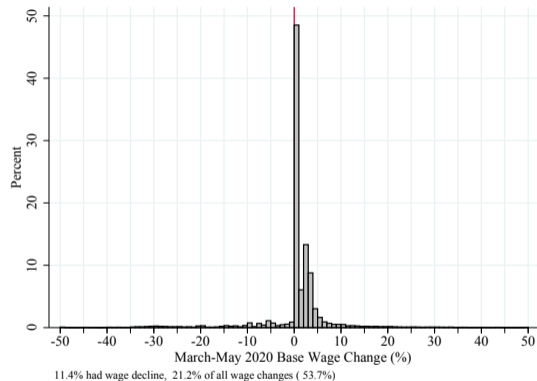
Share of Employment in Exited Firms by Initial Wage Quintile



Wage Adjustment: Firms that Traditionally Change Wages in March-May



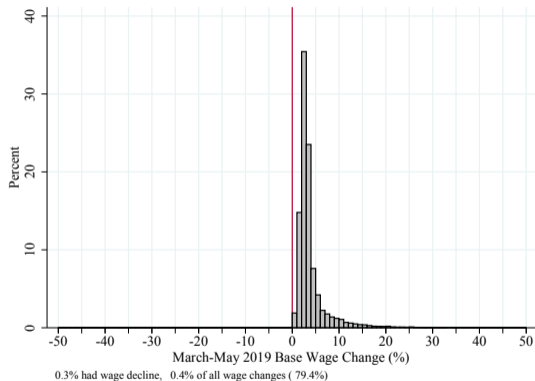
PANEL A: 2019



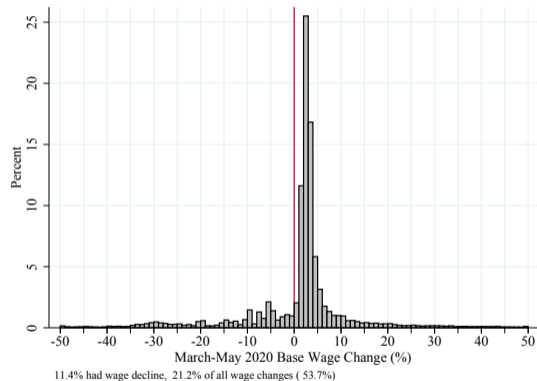
PANEL B: 2020

46% workers had wage freezes in 2020, compared with 21% in 2019

Wage Adjustment: Firms that Traditionally Change Wages in March-May, conditional on non-zero



PANEL A: 2019



PANEL B: 2020

11.4% workers had wage cuts in 2020, compared with 0.3% in 2019, 6% in 2008-10