

Searching, Recalls, and Tightness: An Interim Report on the COVID Labor Market

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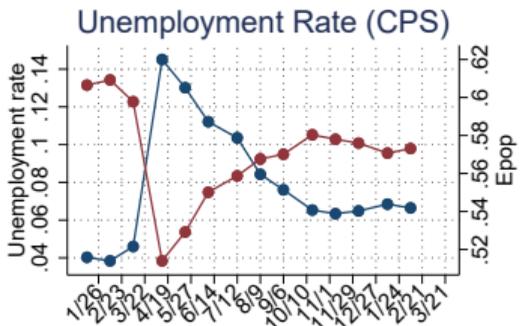
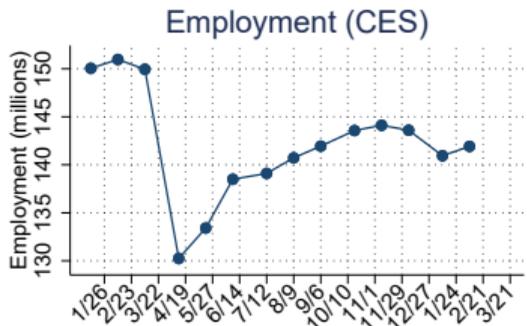
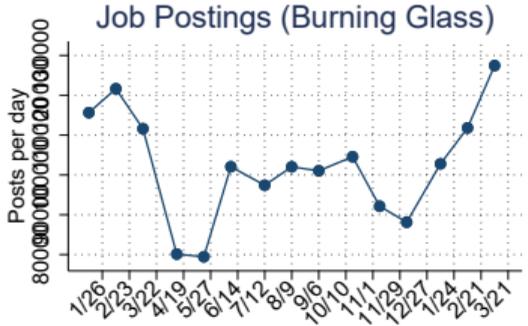
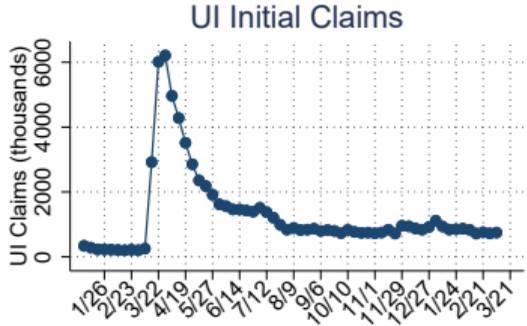
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NBER Labor Studies
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The economy was in free fall in spring, 2020; showed a surprising 2-month rebound but has been middling ever since

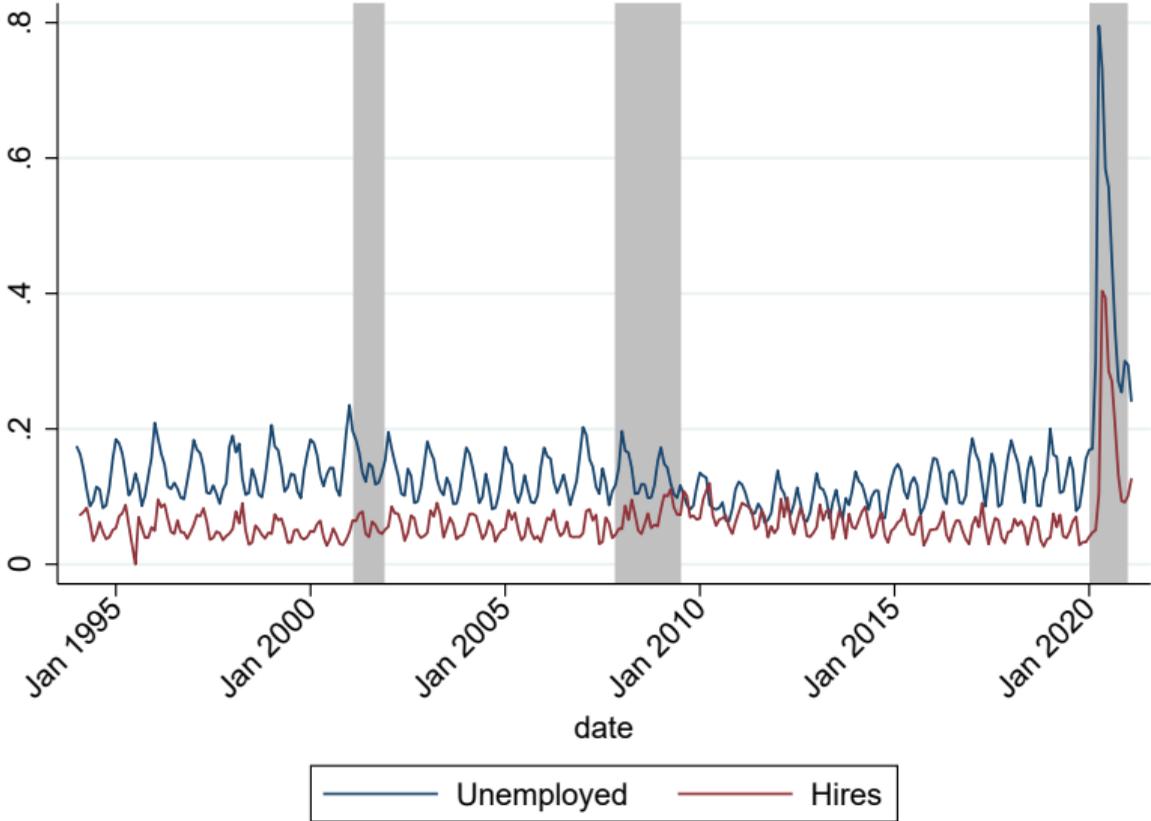


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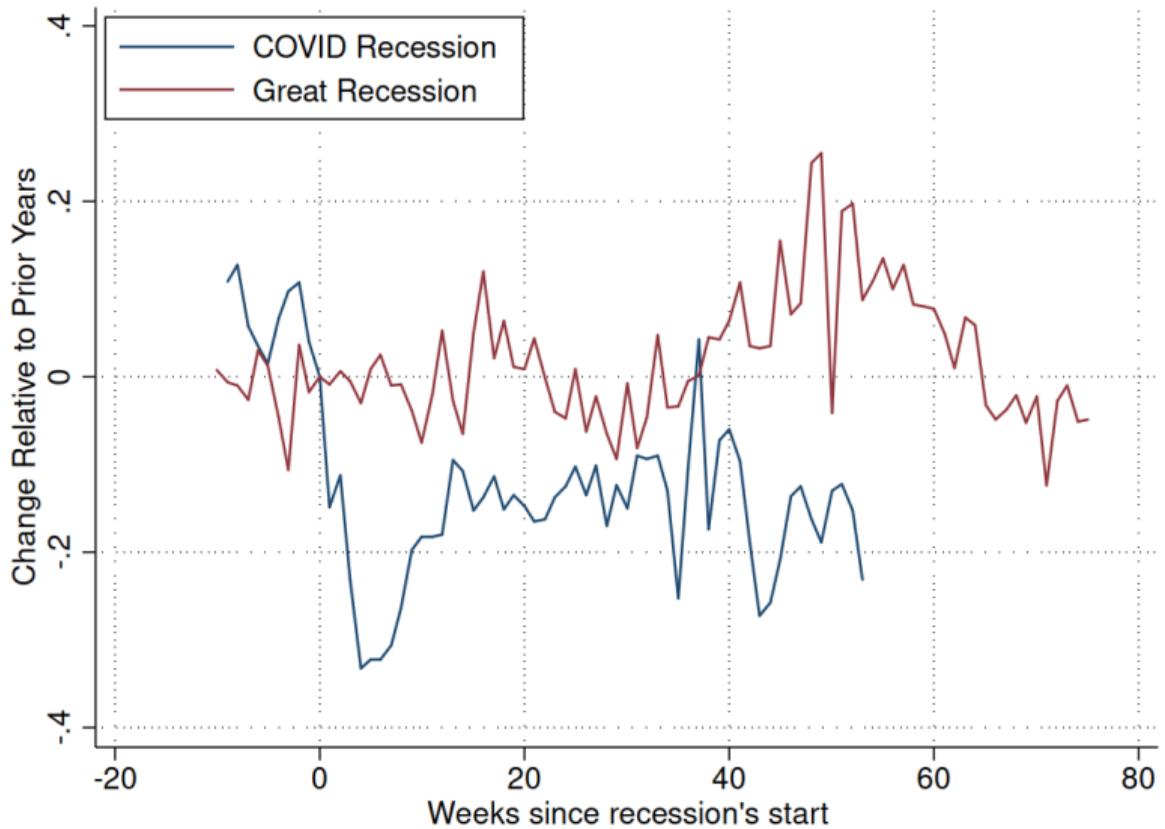
Interim Report on the Recovery

- ▶ One year in, want to understand how the recovery is going
- ▶ Two key features through the summer:
 1. Flows dominated by layoffs and (likely) recalls
 2. Collapse in aggregate search intensity

Temporary Layoffs Exploded in April



While Job Search Activity (Measured by Google Trends) Plummeted



Interim Report

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- ▶ Two key features through the summer:
 1. Flows dominated by layoffs and (likely) recalls
 2. Collapse in aggregate search intensity
- ▶ Unique feature of COVID Recession: negative shocks to both labor demand and labor supply
- ▶ Paper is aimed at understanding these shocks both theoretically and empirically

Outline

1. Model: the level of tightness matters & has policy prescriptions
 - ▶ Search model with shock to labor demand and supply
 - ⇒ Job creation's elasticity to these shocks varies with tightness
2. Measurement: who is searching?
 - ▶ Headline numbers dominated by temporary layoffs and recalls
 - ▶ Searching unemployment → how the market will function at forming new matches
3. Applications: adjusted tightness and mismatch

Preview of results

- ▶ Large “Waiting room” through the summer has mostly emptied
- ▶ Markets remained remarkably tight over last year:
 - ▶ Collapsed by 50 to 75%, modest recovery
 - Declined to 2016 levels
 - ▶ But \approx 5 million ‘extra’ NILF, \approx 3 million in Waiting Room
- ▶ Did the pandemic induce reallocation towards high-skill/remote workers?
 - ▶ So far no: mismatch narrowed
 - ▶ Tightness fell everywhere but relatively more in more-educated and historically tighter sub-markets

Model

Supply & demand shocks, e & ρ , in vacancy creation

Stock of vacancies (V), employment (L), matching function M :

$$V_{t+1} = V_t + v_t - M(e_t(1 - L_t), V_t) \quad (1)$$

$$1 - L_{t+1} = 1 - L_t - M(e_t(1 - L_t), V_t) + \delta_t L_t \quad (2)$$

► e represents aggregate effective search

► Tightness is $\theta = \frac{V}{e(1-L)}$

The firm chooses new vacancies v , costing $c(\cdot)$ with carrying cost ζ

$$\Pi(V, L) = \max_v \rho \tilde{\pi}(\theta) L - \zeta V - c(v) + \frac{1}{1+r} \Pi(L', V')$$

$$V' = (V + v)(1 - q(\theta))$$

$$L' = q(\theta)(V + v) + (1 - \delta)L .$$

► Profits depend on exogenous ρ and endogenous θ

Comparative Statics

Relative importance of **search effort** (e) and **profitability** (ρ):

$$\frac{\varepsilon_{ve}}{\varepsilon_{v\rho}} = -\varepsilon_{\pi\theta} \frac{1}{1-\eta} \quad (3)$$

- ▶ LHS: Elasticities of vacancies with respect to e and ρ
- ▶ RHS: Elasticities of profits to tightness and of matching function to vacancies

Tightness affects this:

$$\frac{\partial \frac{\varepsilon_{ve}}{\varepsilon_{v\rho}}}{\partial \theta} > 0$$

- ▶ $\varepsilon_{\pi\theta}$ decreases with θ (e.g. wage pressure)

In slack markets (θ small), search effort is relatively less important \rightarrow important to accurately measure tightness

Classifying Worker Flows

Measuring Worker Flows

- ▶ Want to better understand:
 - ▶ Effective search
 - ▶ Temporary layoff/recall dynamics
- ▶ *Ex post* classification Table
 - ▶ Follow April separators through May/June, subset through Feb 2021
- ▶ Use these to validate →
- ▶ *Ex ante* classification: “Waiting Room”, “Open Market”, “NILF”
 - ▶ Does not use info on pre-COVID employment
 - ▶ Does not use reemployment info

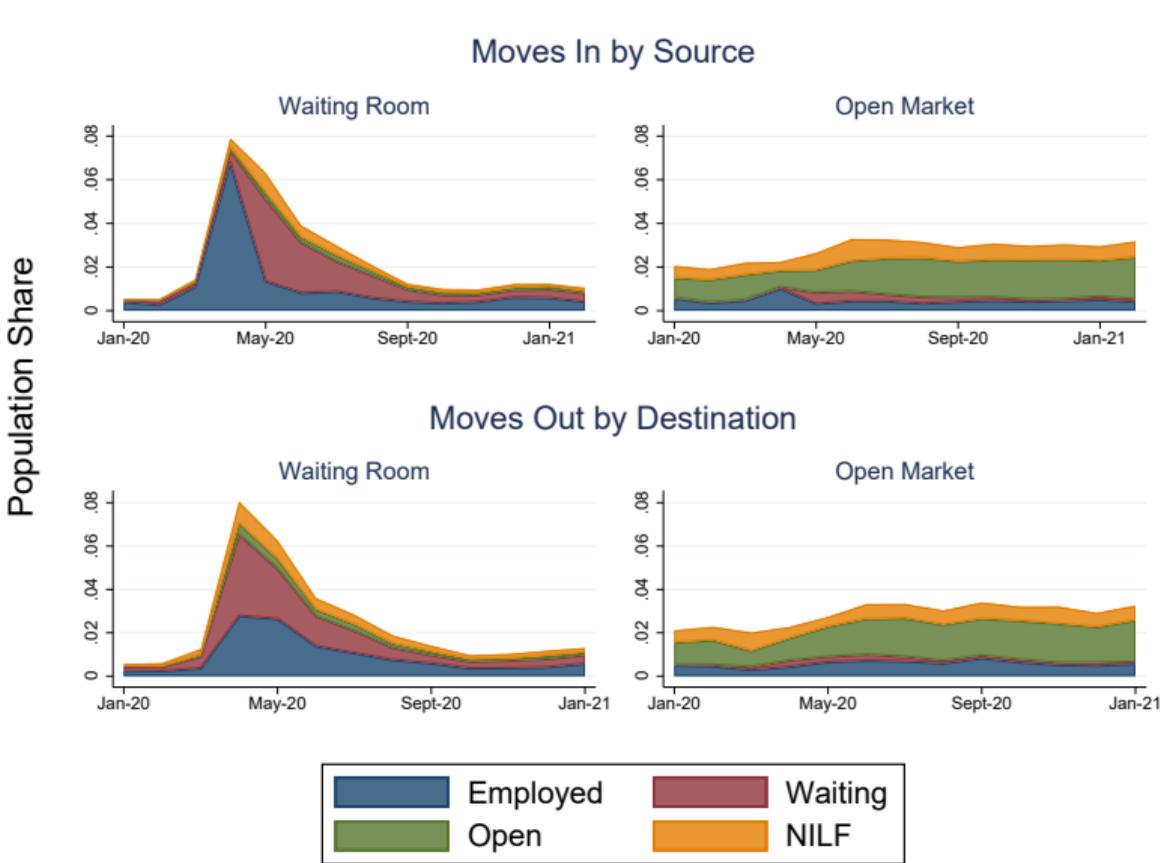
FKLW Taxonomy

- ▶ Subdivide non-employed into three groups:
 1. 'Waiting room': not at work with link to previous employer
 - Temp. lay-off, not actively searching.
 - Employed, absent from work for other reasons, not paid.
 2. 'Open market': Search unemployment
 - Search Unemployed
 - Temp. Layoff, active searching.
 3. 'NILF': Neither waiting nor searching
 - Out of the labor force
 - Today break into 'want a job' and 'don't want a job'

FKLW Taxonomy Population Shares in 2020 and 2021

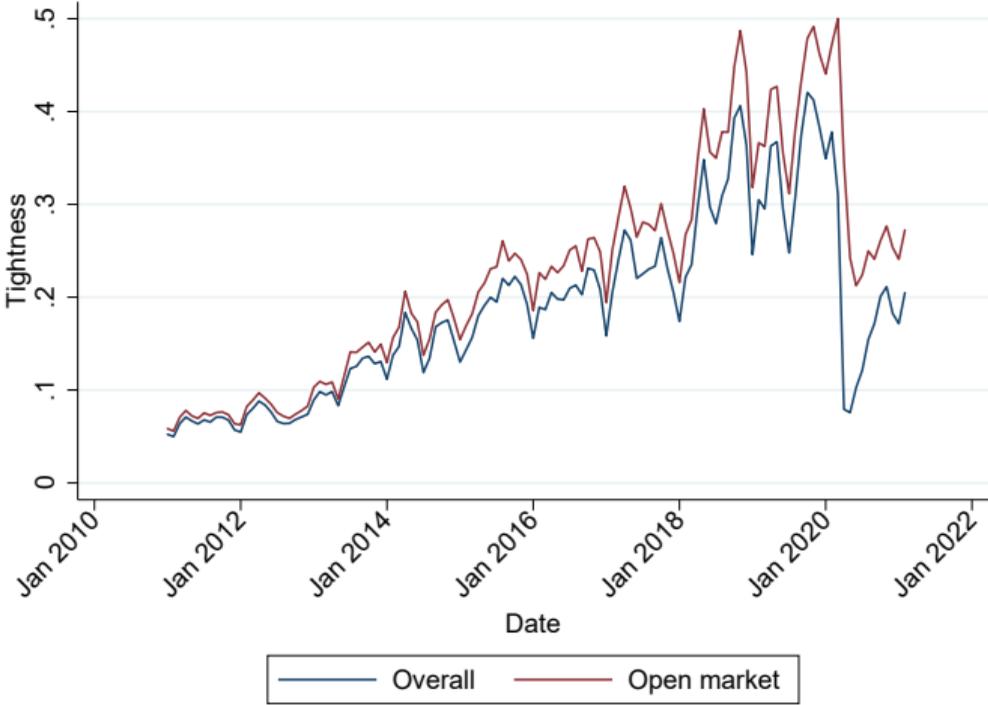
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Employed | .6 | .61 | .59 | .49 | .51 | .54 | .55 | .56 | .57 | .58 | .57 | .57 | .57 | .57 |
| Waiting Room | .0059 | .0053 | .013 | .085 | .066 | .04 | .032 | .022 | .015 | .01 | .01 | .013 | .014 | .011 |
| Open Market | .022 | .021 | .022 | .026 | .03 | .037 | .038 | .036 | .037 | .034 | .033 | .032 | .033 | .034 |
| NILF: Want Job | .02 | .019 | .02 | .038 | .036 | .033 | .03 | .027 | .027 | .024 | .026 | .027 | .027 | .026 |
| NILF: Other | .35 | .35 | .35 | .36 | .36 | .35 | .35 | .35 | .36 | .36 | .36 | .36 | .36 | .36 |
| Observations | 94400 | 94939 | 84661 | 82262 | 79490 | 76135 | 77637 | 80834 | 89683 | 91778 | 90496 | 87530 | 89172 | 88320 |

Movement in and out have been fairly stable as of this summer

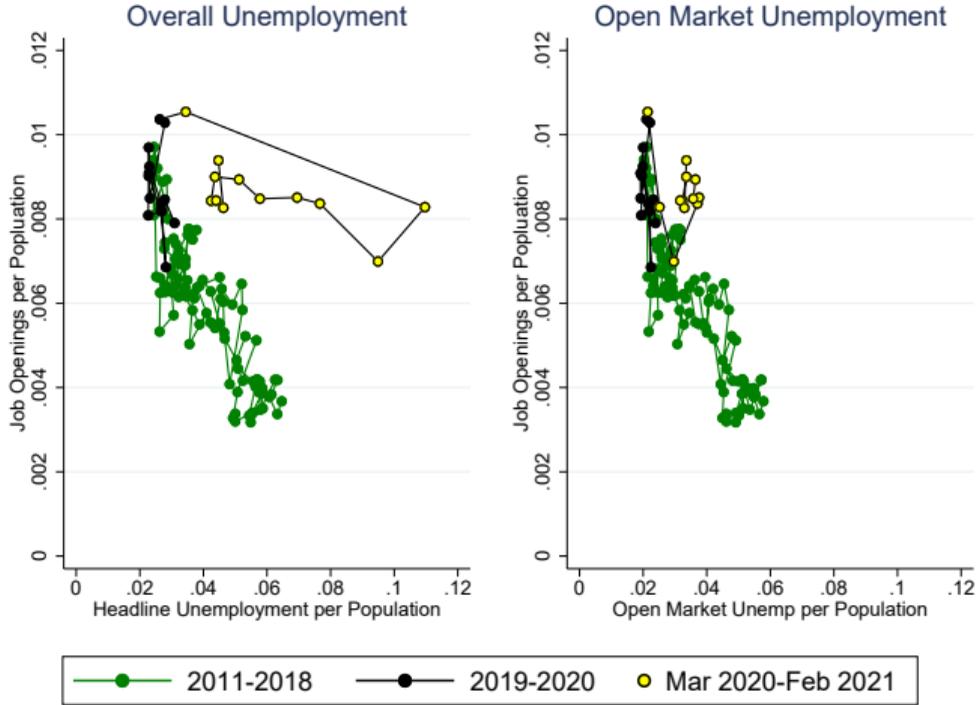


Labor Market Tightness: Pairing with Burning Glass Vacancies

BGT market tightness fell by 50%, but is still at approx. 2016 levels



Burning Glass Beveridge Curve



Conclusions about Tightness

- ▶ Steep drop in tightness but to much tighter levels than Great Recession
- ▶ Model implications:
 - ▶ Profit shifters more important than pre-pandemic
 - ▶ Search effort could be relatively more important than during Great Recession
- ▶ Caveat: We have not adjusted vacancies for effort
- ▶ Caveat: Large reserve of slack as of February 2021
 - ▶ 3 million in Waiting Room
 - ▶ 5 million 'extra' in NILF
 - ▶ compared to 9 million in Open Market
 - ▶ Note: good reasons for not searching right now!

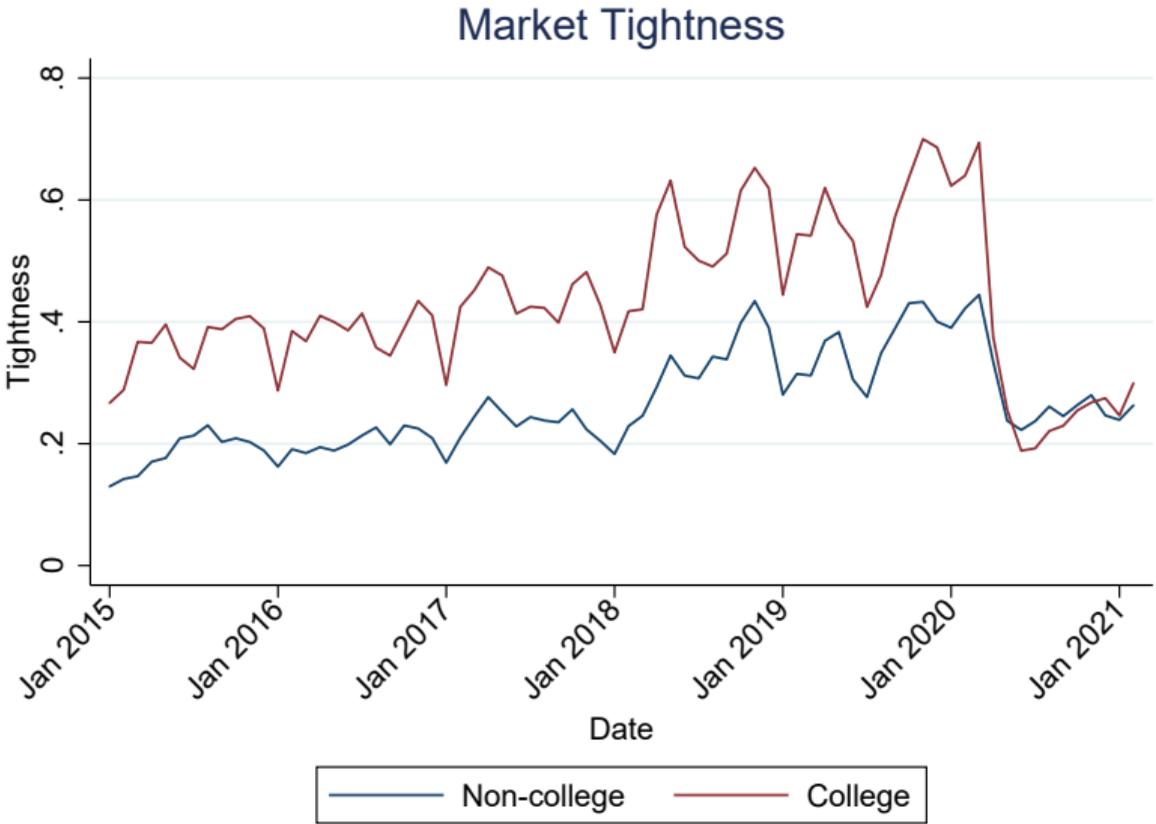
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- ▶ Mismatch?

Mismatch

Tightness in college market converged to non-college market



Decomposing the Decline in College Requirements

- ▶ Convergence in tightness driven by both postings and unemployed Figure
- ▶ Regress indicator for whether the ad requires a college degree on dummies for the timing of the posting and a series of controls
- ▶ Find U-shaped pattern in share requiring college (vs. pre-pandemic):
 - ▶ March-May 2020: \approx 12% decline
 - ▶ June-October 2020: \approx 23 % decline
 - ▶ November-February 2021: \approx 11% decline
- ▶ Mainly about occupation composition
 - ▶ \approx 20% due to sectoral shifts
 - ▶ \approx 20% due to shifts to firms that historically have lower ed. requirements
 - ▶ Bulk of decrease: due to occupational mix *within* firms
- ▶ Tightness converged across occupations \rightarrow declining mismatch

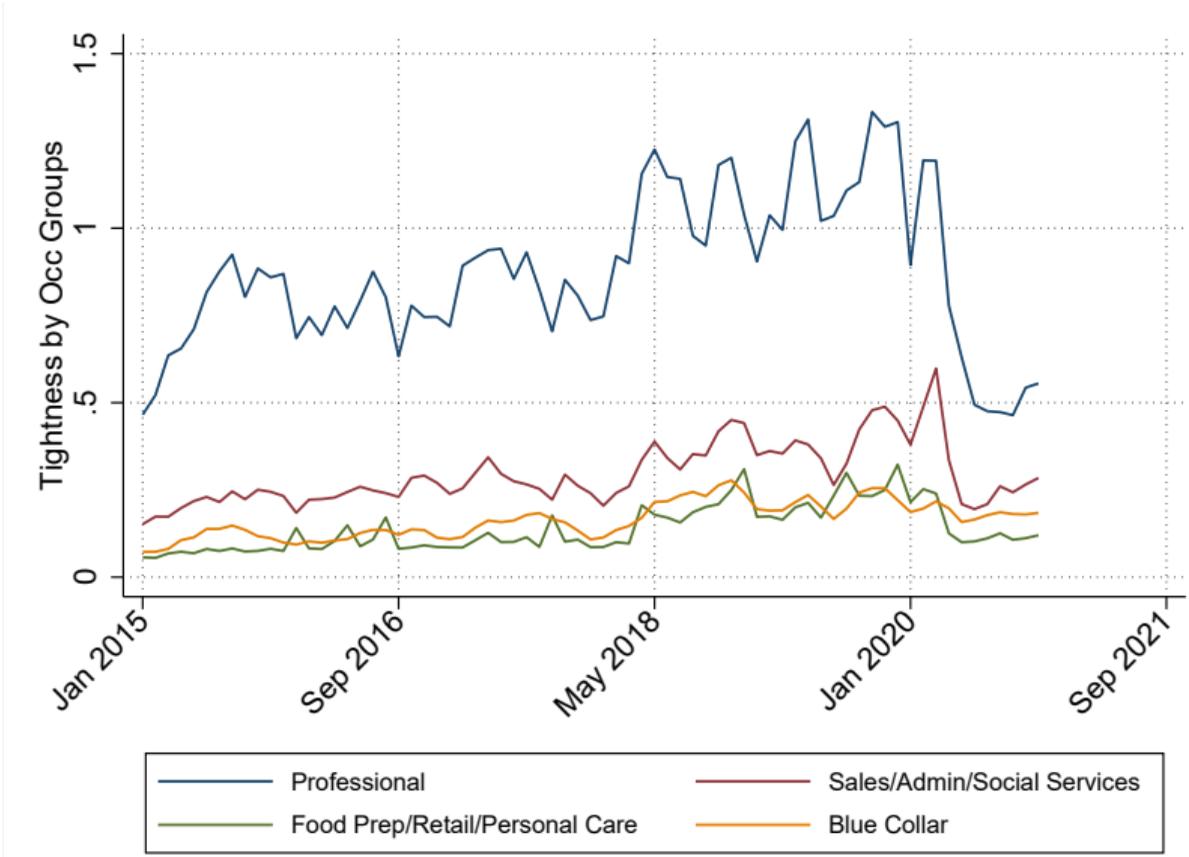
Occupation and Sector Role

Within Firm

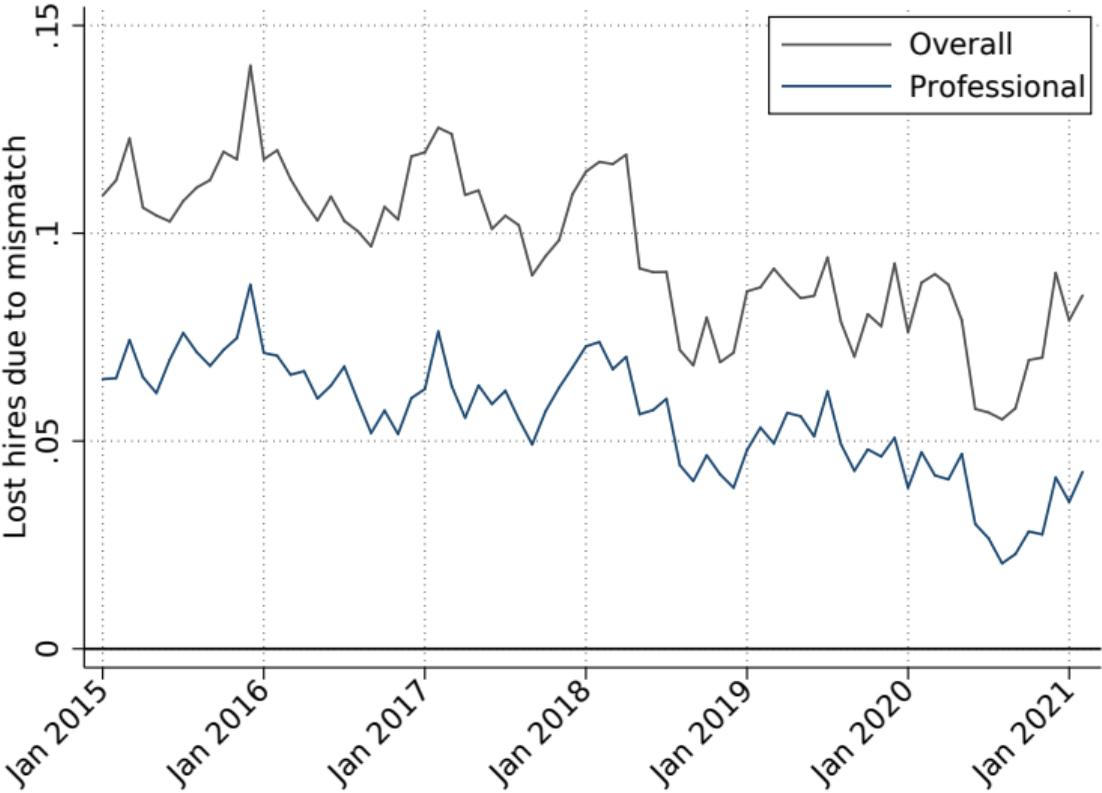
Hires by Ed.

Hires by Occ.

Tightness converged across occupational groups



Mismatch Index Fell in 2020 then Rebounded to Feb 2020 Levels, Driven by Professional Occupations

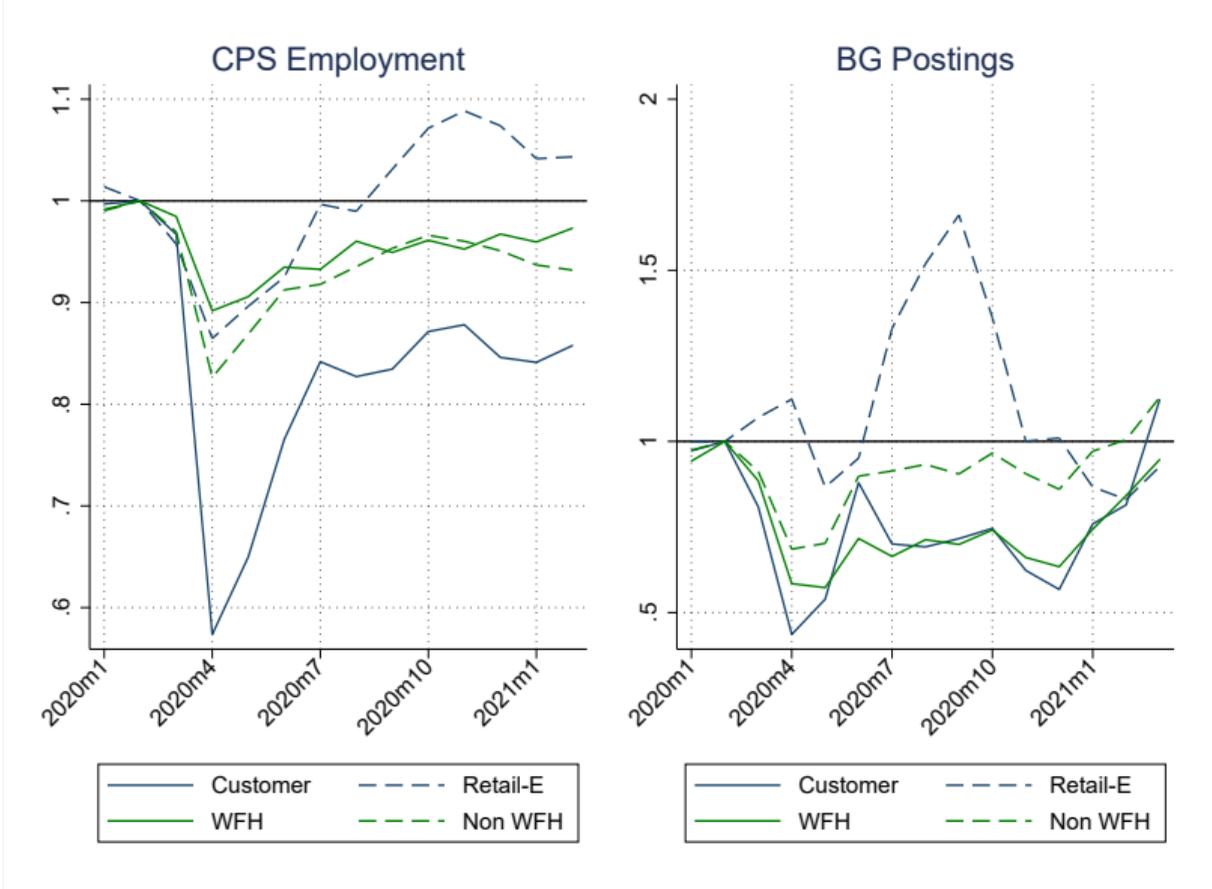


Conclusions about Mismatch

- ▶ Despite massive disparities across groups in pandemic job loss, exposure to virus, and ability to work remotely, so far do not see an increase in mismatch
 - ▶ Across education, occupations, and industries: tightness converged between groups
- ▶ Crisis is ongoing, pattern may yet change
 - ▶ Last couple months: a hint of divergence?
 - ▶ Similar pattern in Great Recession of early convergence, but then high-skill took off

HWOL Occ. Tightness

Positive Signals for Accelerating Recovery: Job Postings Taking-off Across Groups



Conclusions

Conclusions

- ▶ Two overlapping processes:
 1. Massive movement from employment to temp layoff and back again via (likely) recall (e.g. Waiting Room)
 2. Slower moving growth in the Open Market: individuals who are searching for new matches. Now 3x size of Waiting Room.
- ▶ Recovery hinges on...
 1. Controlling the virus
 2. Formation of new matches, which depends on effective tightness

Conclusions

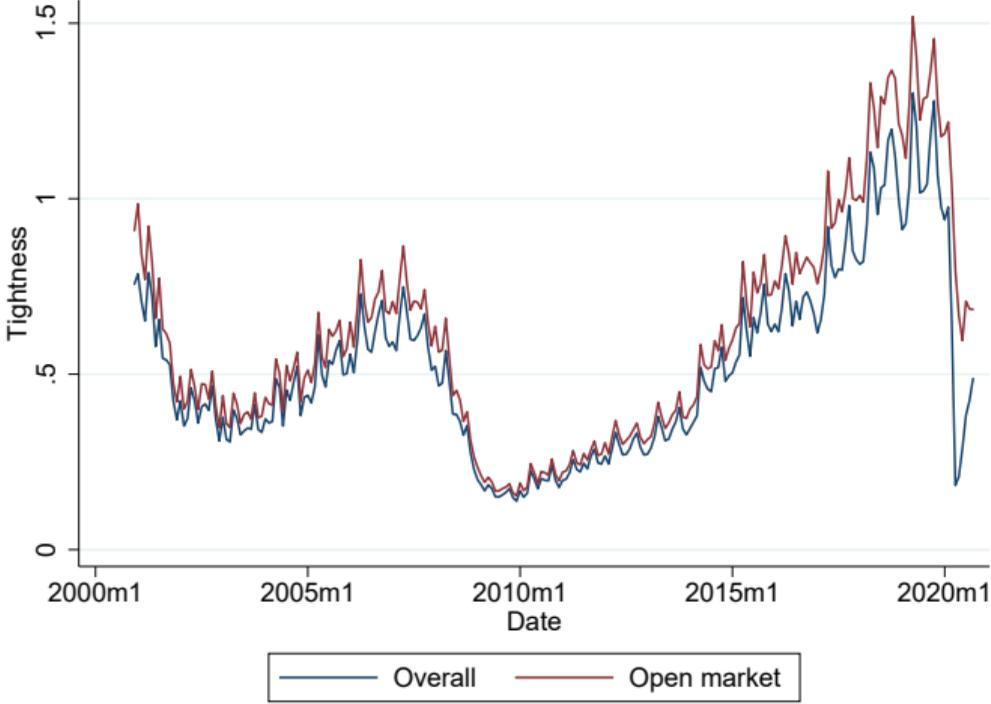
- ▶ Showed effective tightness lower than pre-pandemic but higher than Great Recession period
- ▶ Despite depressed aggregate search, model shows us that this has a smaller impact on vacancy posting compared with pre-pandemic
- ▶ Tightness fell across occupations, industries, and educational groups, but especially for 'higher-skill' groups → fall in mismatch
- ▶ Since December, encouraging movements in BG job postings

Extra Slides

Where did April Job Separators Go?

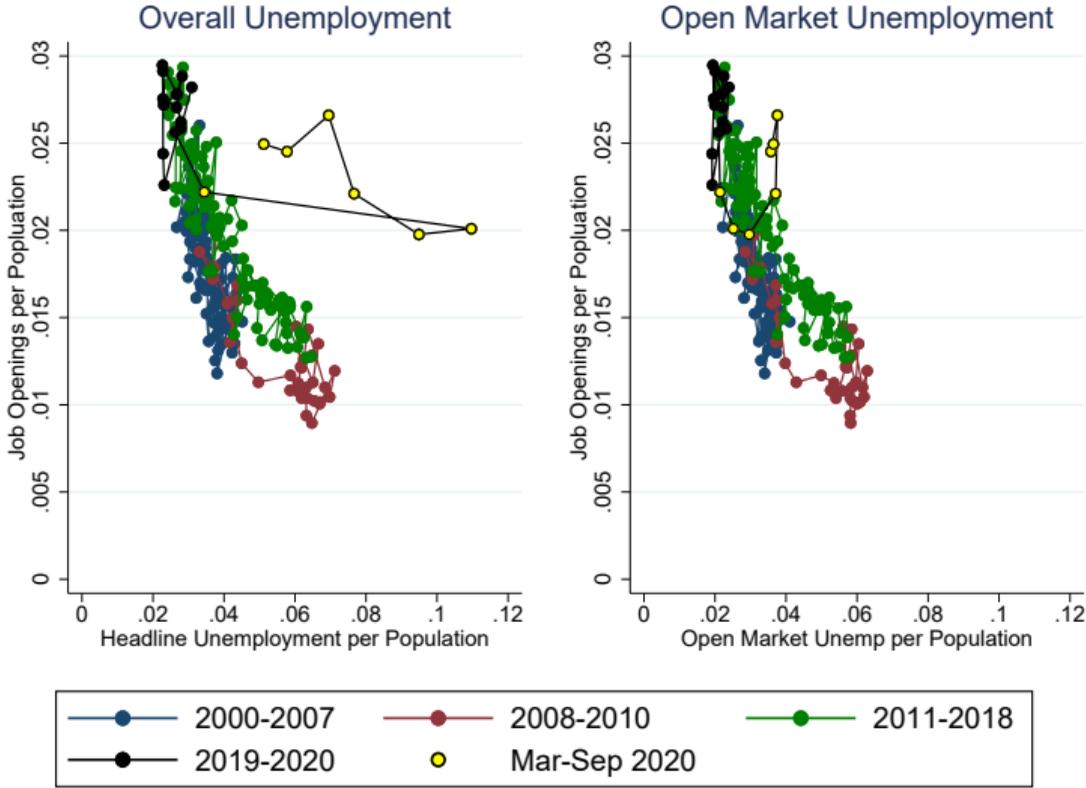
| Category | Share of Non-Employed | Hire Rate | Inferred Recall Rate |
|--|--------------------------|-----------|-------------------------|
| <i>Pandemic: Status in April 2020</i> | | | |
| Employed Absent | 0.16 | 0.53 | 0.93 |
| Temp, No Search | 0.43 | 0.48 | 0.84 |
| Temp, Search | 0.04 | 0.40 | 0.73 |
| Unemp. Search | 0.05 | 0.34 | 0.60 |
| NILF, Want Job, No Search | 0.09 | 0.31 | 0.82 |
| NILF, Want Job, Search | 0.01 | 0.24 | 0.43 |
| NILF, Don't Want Job | 0.16 | 0.34 | 0.69 |
| NILF, Retired/Disabled | 0.07 | 0.27 | 0.64 |
| <i>Pre-Pandemic: Status in April 2015-2019</i> | | | |
| Employed Absent | 0.05 | 0.82 | 0.91 |
| Temp, No Search | 0.04 | 0.66 | 0.82 |
| Temp, Search | 0.02 | 0.69 | 0.69 |
| Unemp. Search | 0.16 | 0.42 | 0.50 |
| NILF, Want Job, No Search | 0.07 | 0.47 | 0.59 |
| NILF, Want Job, Search | 0.01 | 0.35 | 0.46 |
| NILF, Don't Want Job | 0.41 | 0.41 | 0.61 |
| NILF, Retired/Disabled | 0.25 | 0.25 | 0.66 |

Market Tightness using JOLTS Vacancies

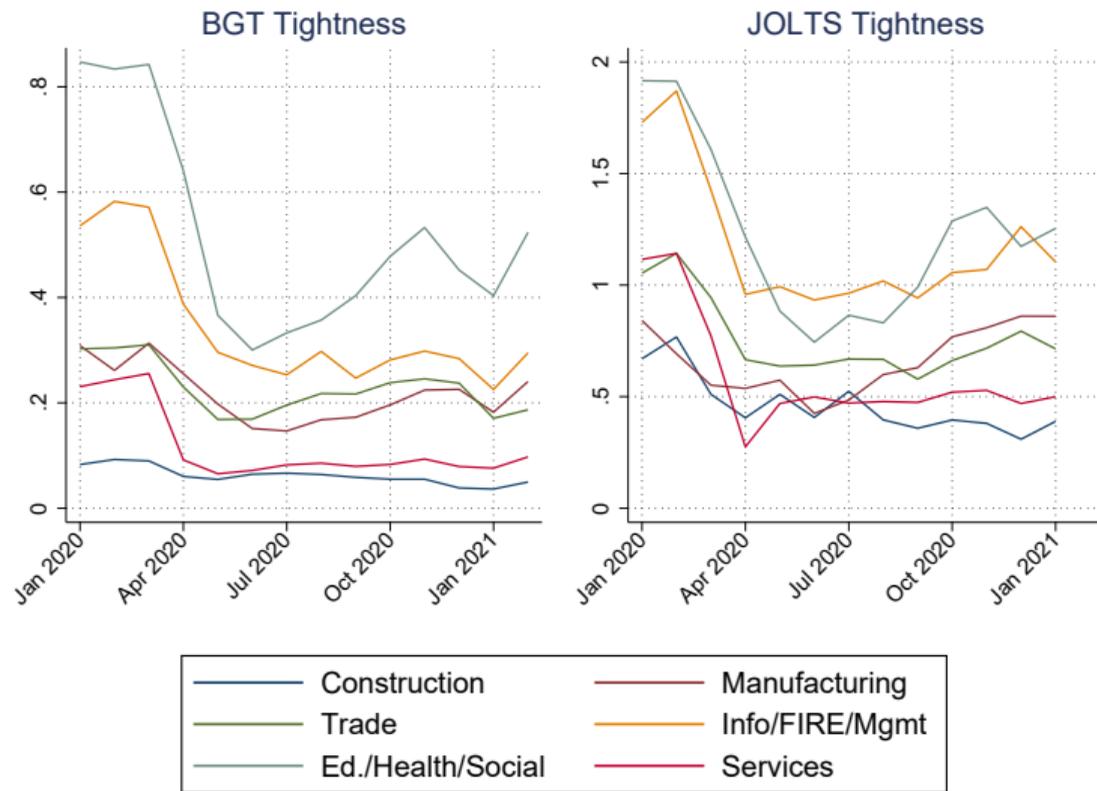


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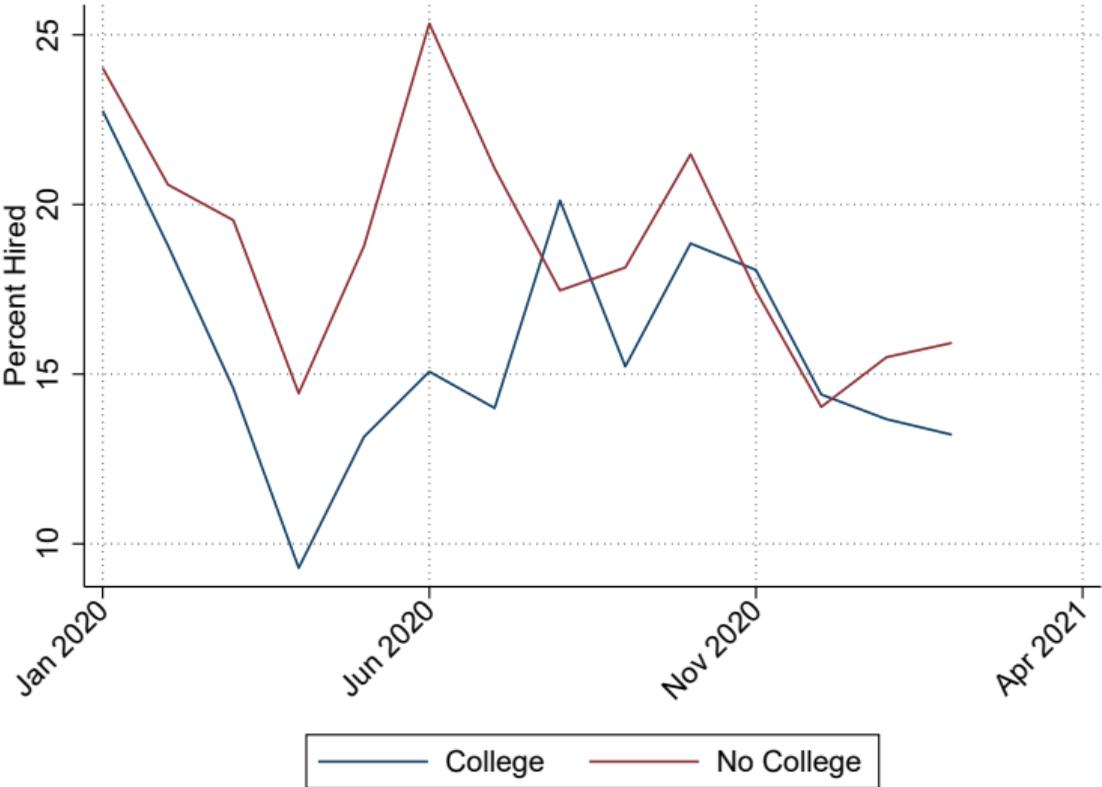
The Beveridge Curve using JOLTS Vacancies



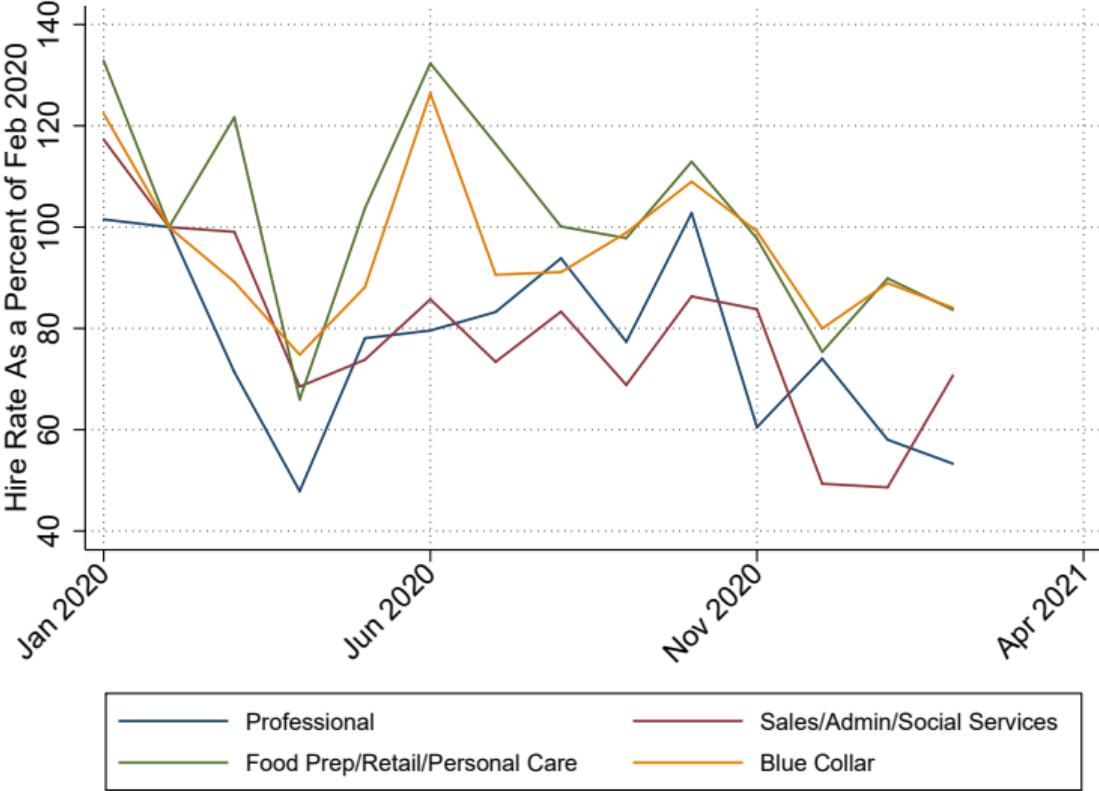
Tightness by Industry, Burning Glass vs. Jolts



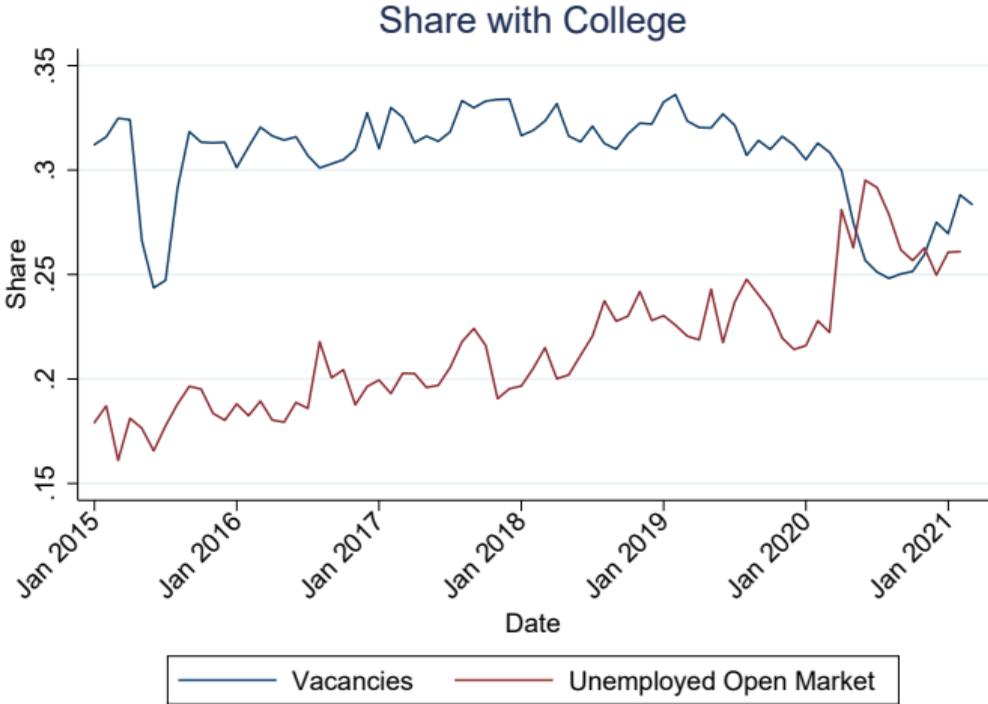
Share of Open Market Hired by Education



Share of Open Market Hired by Occupation



Share of vacancies requiring college decreased, while share of unemployed with college increased, now reversing



Occupation and sector-level variation

| Dependent variable: | Share of ads with college+ requirement | | | |
|--------------------------|--|-------------------------|-------------------------|-------------------------|
| | (1) | (2) | (3) | (4) |
| early COVID (Mar-May) | -0.0280*** (0.0105) | -0.0383*** (0.00679) | -0.0353*** (0.00447) | -0.0259*** (0.00248) |
| COVID recovery (Jun-Oct) | -0.0626*** (0.00310) | -0.0705*** (0.00562) | -0.0546*** (0.00370) | -0.0267*** (0.00164) |
| late COVID (Nov-Feb) | -0.0371*** (0.00485) | -0.0505*** (0.00684) | -0.0400*** (0.00400) | -0.0195*** (0.00262) |
| Ads | 1.850e+08 | 1.850e+08 | 1.850e+08 | 1.850e+08 |
| R-squared | 0.005 | 0.006 | 0.257 | 0.899 |
| Date controls | | X | X | X |
| Sector FEs | | | X | X |
| 6 digit SOC | | | | X |

Back

Within Firm Variation: Still most of the decline

| Dependent variable: | Share of ads with college+ requirement | | | |
|--------------------------|--|-------------------------|-------------------------|-------------------------|
| | (1) | (2) | (3) | (4) |
| early COVID (Mar-May) | -0.0390*** (0.00778) | -0.0317*** (0.00455) | -0.0163*** (0.00296) | -0.0148*** (0.00241) |
| COVID recovery (Jun-Oct) | -0.0752*** (0.00682) | -0.0505*** (0.00385) | -0.0304*** (0.00319) | -0.0198*** (0.00226) |
| late COVID (Nov-Feb) | -0.0477*** (0.00966) | -0.0338*** (0.00481) | -0.0207*** (0.00190) | -0.0144*** (0.00161) |
| Ads | 1.140e+08 | 1.140e+08 | 1.140e+08 | 1.140e+08 |
| R-squared | 0.007 | 0.357 | 0.827 | 0.527 |
| Date controls | X | X | X | X |
| Sector FEs | | X | | |
| Firm FEs | | | X | X |
| 2 digit SOC | | | | X |

Back

HWOL: Tightness by Occupation

