Temporary Unemployment and Labor Market Dynamics During the COVID-19 Recession

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Motivation

The COVID-19 recession is a very unusual recession:

- Record-shattering UI claims, extremely rapid increase in the unemployment rate ($u$)
- Increase in $u$ much larger than corresponding drop in job vacancies - “breaking” the Beveridge curve
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This paper focuses on one specific way the COVID-19 recession stands out: the sharp increase in temporary unemployment.
Motivation

The COVID-19 recession is a very unusual recession:

- Record-shattering UI claims, extremely rapid increase in the unemployment rate ($u$)
- Increase in $u$ much larger than corresponding drop in job vacancies - “breaking” the Beveridge curve
- Typically, recessions begin with large increase in separations followed by low job finding rates, but job finding rates have remained relatively high during the COVID-19 recession

This paper focuses on one specific way the COVID-19 recession stands out: the sharp increase in temporary unemployment
Outline

- Related literature
- Data
- Motivating figures
- Search-and-matching model
- Calibration results
- Conclusion
Related literature

- BPEA papers on dynamics of recessions: **Elsby, Hobijn, Sahin (2010 BPEA)** and Elsby et al. (2011 BPEA)


- COVID-19 labor market dynamics papers: **Chodorow-Reich and Coglianese (2020)**, **Gregory, Menzio, Wiczer (2020)**, **Bick and Blandin (2020)**

- Additional COVID-19 papers: **Bartik et al. (2020a,b)**, **Goolsbee and Syverson (2020)**, **Barrero et al. (2020)**
Related literature

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Monthly Current Population Survey (CPS) data between January 2001 - August 2020, using both cross-sectional and matched panel

- Measure “stocks” each month of labor market states: employed \((E)\), temporary unemployment \((T)\), permanent unemployed \((P)\), and non-participation \((N)\)

- Temporary unemployed classified as either “waiting” \((T^W)\) or “actively searching” \((T^A)\)

- Drawing on Forsythe et al. (2020a,b), BLS guidance, and our analysis, we define stock of \(T^W\) to include employed workers who are “absent for other reasons” and unpaid

- Estimate month-to-month transition rates in a way that imposes consistency across measured stocks each month following Kroft et al. (2016)

Job vacancies measured using JOLTS
Motivating figures: Unemployment rate ($u$)

Panel A: Full Sample

Panel B: August 2019 to August 2020

Seasonally adjusted
Motivating figures: Unemployment rate ($u$)

Panel A: Full Sample

Unemployment rate

Panel B: August 2019 to August 2020

Seasonally adjusted
Job vacancies ($V$)

Panel A: Full Sample

Vacancies (JOLTS), thousands

Panel B: July 2019 - July 2020

Seasonally adjusted
Job separation rates $E$-to-$U$

Panel A: Full Sample

Panel B: July 2019 to July 2020

- Black circle: Probability unemployed this month if employed last month
- Blue square: Probability permanent unemployed this month if employed last month
- Red diamond: Probability temporary unemployed this month if employed last month
Temporary unemployed share, $T/(P + T)$

Panel A: Full Sample
Share of unemployed who are temporary unemployed

Panel B: August 2019 to August 2020
Seasonally adjusted
Panel A: Job finding rate of temporary unemployed

Panel B: Job finding rates of permanent unemployed and all unemployed
Negative duration dependence for \( T \) and \( P \)

**Job finding rate**

Unemployment duration (months)

- Permanent unemployed
- Searching temporary unemployed
Main endogenous objects: job finding rates for $P(d)$, $T(d)$, $N$

Exogenous ("forcing") variables: job separation rates, transition rates between non-employment categories, recall rates for $T^W$

Job finding rate (JFR) determined by matching model:

$$\frac{M(S_t, V_t)}{S_t} = m_0 x_t^{1-\alpha}, \text{ where } x_t = \frac{V_t}{S_t}$$

For $P(d)$, JFR is:

$$\lambda_t^{P(d)\to E} = \text{Prob}(E_t|P_{t-1}(d)) = A(d)m_0x_t^{1-\alpha}$$

For $N$, JFR is:

$$\lambda_t^{N\to E} = \text{Prob}(E_t|N_{t-1}) = sm_0x_t^{1-\alpha}$$
Job finding rates for $T^W$ and $T^A$

- Job finding rate for $T^A(d)$ is:

\[
\lambda_t^{T^A(d)\rightarrow E} = \pi \lambda_t^{T^W\rightarrow E} + (1 - \pi \lambda_t^{T^W\rightarrow E}) \lambda_T^{P(d)\rightarrow E}
\]

- Total search effort given by:

\[
S_t = \bar{P}_t + (1 - \pi \lambda_t^{T^W\rightarrow E}) \bar{T}_t^A + sN_t
\]

\[
\bar{P}_t = \sum_{d=1}^{D} A(d) P_t(d)
\]

\[
\bar{T}_t^A = \sum_{d=1}^{D} A(d) T_t^A(d)
\]
Calibration

1. Estimate stocks and transition rates using CPS data

2. Estimate duration dependence function $A(d)$ using 2001-2019 data; assumed to be stable over time and the same for $T^A(d)$ and $P(d)$

3. Estimate remaining model parameters using minimum distance on 2001-2019 data

4. In both (2) and (3) find very similar estimates to Kroft et al. (2016), which used only pre-2008 data. Suggests that the matching model parameters and duration dependence parameters are fairly stable over time
Job finding rates in-sample and out-of-sample

Job Finding Rates for Unemployed: Baseline Model

U-to-E observed  U-to-E predicted
Comparing to model without temporary unemployment

Job Finding Rate of Unemployed

- Observed
- Baseline Model
- Single Unemployment State
Baseline vs. model without temporary unemployment

Unemployment Rate

- Counterfactual begins with observed forcing variables
- Continues with simulated forcing variables

- Observed
- Baseline Model
- Single Unemployment State
Baseline vs. model without temporary unemployment

Unemployment Rate

Counterfactual begins with observed forcing variables

Continues with simulated forcing variables

- Observed
- Baseline Model
- Single Unemployment State

- CBO 2020Q4
- Fed SEP & Blue Chip 2020Q4
- Fed SEP Optimistic 2020Q4
- CBO 2021Q4
- Fed SEP 2021Q4
Summary of calibration results

- We find that $u$ declines more rapidly compared to a model without $T/P$ distinction & compared to forecasts.

- To match earlier professional forecasts, need a “U-turn” in trends in job separations, or substantial reductions in vacancies and the recall rate for $T$.

- Results consistent with small share of workers reporting that “jobs are hard to get” $\Rightarrow$ jobs may not have been “scarce” for the unemployed workers actively searching for a job.
Conclusions

- The COVID-19 recession is unusual: job finding rates usually fall during recessions following a rapid inflow into unemployment (Elsby et al. 2010) but job finding rates remained relatively high.

  Our model indicates temporary unemployment is an explanation.

- Calibrated model suggests focusing somewhat less on the “headline” unemployment rate as a measure of labor market slack - instead, more useful to look at composition of unemployed, alongside vacancies and job separations.
Panel A: Full Sample

Vacancies (JOLTS), thousands

Panel B: December 2019 to December 2020

Seasonally adjusted, in thousands
Panel A: Full Sample

Share of unemployed who are temporary unemployed

Panel B: December 2019 to December 2020

Seasonally adjusted
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