# Online Appendix for "Temporary Unemployment and Labor Market Dynamics During the COVID-19 Recession"

## Appendix A: Data Appendix

This section describes some additional details regarding the construction of the CPS and JOLTS data.

- **Distribution of unemployment durations** We use CPS monthly data to measure unemployment duration distribution each month for all unemployed adults aged 25-55. We group all unemployment durations greater than or equal to 24 months together in a single category, and the rest of the durations are grouped by month.

- **Vacancies** We measure job vacancies using JOLTS monthly data. We use the seasonally unadjusted data released by the BLS and residualize out month fixed effects to account for seasonality.

- **Stocks of unemployment, employment, and non-participation** We use CPS monthly data and the CPS survey weights to estimate stocks in each month for our baseline sample of adults aged 25-55.

- **Transition rates between labor market states** See Appendix B below for more details on construction of these panel transition rates, which are based on matching individuals across months as in Shimer (2012).

- **Duration dependence function** We estimate the duration dependence function $A(d)$ pooling all monthly CPS data in pre-2020 period. The job-finding rate is defined as the monthly probability that a given unemployed job seeker reports employment in both of the following two months (the requirement of two months follows Rothstein (2011)).

- **Transitions into unemployment** In the CPS panel, transitions into unemployment occur across the entire duration distribution, not only to an unemployment duration of zero months. To account for this, we estimate the empirical distributions of unemployment durations that individuals transition into as follows:

  1. We first calculate in each month the share of individuals who transition into an unemployment duration of less than 6 months, between 6 and 11 months, and 12 months: $\lambda_t^{X\to Y(0,...,5))}$, $\lambda_t^{X\to Y(6,...,11))}$, and $\lambda_t^{X\to Y(12,...,24))}$ for each transition $X \in \{E, N\}$ and $Y \in \{T, P\}$, and for $\lambda_t^{T(d)\to P(d)}$ and $\lambda_t^{P(d)\to T(d)}$.
  2. We residualize out month fixed effects to account for seasonality and then take three-month moving averages to smooth each series.
  3. Again using the CPS panel, we then calculate average shares individually for each transition and this time for each $d \in \{0, \ldots, 24\}$. For flows from nonparticipation into unemployment, we estimate these separately for the 2001-2007 and 2008-2020 time

periods. For flows between permanent and temporary unemployment, we estimate these separately for the 2001-2019 and 2020 time periods. Finally, we allow these shares to vary by year for flows from employment into unemployment, i.e. they are estimated separately for each year.

4. Finally we re-weight the average shares calculated in step 3 by the monthly shares calculated in step 1 to ensure the probabilities of individuals transitioning into unemployment duration categories $d \in \{0, \ldots, 5\}$, $d \in \{6, \ldots, 11\}$ and $d \in \{12, \ldots, 24\}$ are consistent.

# Appendix B: Measurement and Identification of Transition Rates from CPS

### MEASURING TRANSITION RATES

We rely on the monthly CPS repeated cross-sections to estimate the distribution across labor force states, and we rely on the matched panel data to estimate transition rates. This section describes how we estimate transition between employment, temporary unemployment, permanent unemployment, and non-participation $(E, T, P, N)$, and we discuss below how we measure transition rates for the two types of temporary unemployed (the actively searching and the "waiting").

Unfortunately, the transition rates directly estimated using the panel are not consistent with the time series of labor forces states obtained from the monthly cross-sections. In particular, denote by $\hat{\Pi}_t$ the vector containing the distribution across the four labor force states, as measured in the cross-section in $t$, and denote by $\hat{\Lambda}_t$ the four-by-four matrix containing the measured transition rates between each labor market state between time $t$ and $t+1$. If the transition rates $\hat{\Lambda}_t$ were consistent with the measured states $\hat{\Pi}_t$ each month, then the following relationship would hold in the CPS data:

$$\hat{\Pi}_{t+1} = \hat{\Lambda}_t \hat{\Pi}_t \tag{7}$$

As discussed in detail in Kroft et al. (2016), however, it turns out that this identity does not hold in the CPS data, largely because respondents are more likely to report not being in the labor force when interviewed in later months in samples, a phenomenon known as rotation group bias.[30] Left unaddressed, this bias compounds over time if one simulates a model economy using $\hat{\Lambda}_t$; over time, the simulated distributions start to diverge rapidly from those observed in the cross-sectional data.

To address this inconsistency in the data, we assume that the measured distribution $\hat{\Pi}_t$ coincides with the true distribution in the population $\Pi_t$ each month, and we estimate the transition rates in the population $(\hat{\Lambda}_t)$ in a way that forces consistency with the time series of

[30]See Krueger et al. (2017) and Ahn and Hamilton (2020) for more detailed discussion.

$\Pi_t$. Given the adding-up constraint that the transition rates must add up to 1 for each state, we need to estimate 12 transition rates.

To estimate these transition rates and remain consistent with observed distributions across labor force states, we adapt the approach in Kroft et al. (2016) and Kroft et al. (2019). We sketch this approach here and provide the exact algorithm in the Appendix.[31]

We have a few additional restrictions that we can use when estimating equation 7, evaluated when replacing $\hat{\Lambda}_t$ with $\Lambda_t$. First, we normalize the population to be 1 each month (i.e., $E + T + P + N = 1$), which provides 3 restrictions for identification. Second, the observed fraction of those on permanent or temporary unemployment with duration ($d = 0$) provides us with two additional restrictions on the job loss rates. We thus require 7 ($= 12 - 5$) additional restrictions to estimate the transition rates. Let $\lambda_t^{X \to Y}$ and $\lambda_t^{W \to Z}$ denote the transition rates from state $X$ to state $Y$ and from state $W$ to state $Z$ in period t.

We then estimate the following ratio using estimates of each transition rate:

$$\frac{\widehat{\lambda_t^{X \to Y}}}{\widehat{\lambda_t^{W \to Z}}},$$

and we assume that this ratio of estimated transition rates is a valid estimate of the ratio of the true transition rates, $\lambda_t^{X \to Y} / \lambda_t^{W \to Z}$. We do this for each of the following seven ratios of transition rates:

$$\frac{\lambda_t^{N \to P}}{\lambda_t^{N \to E}}, \frac{\lambda_t^{E \to N}}{\lambda_t^{E \to P}}, \frac{\lambda_t^{P \to N}}{\lambda_t^{P \to E}}, \frac{\lambda_t^{E \to R}}{\lambda_t^{N \to R}}, \frac{\lambda_t^{P \to R}}{\lambda_t^{N \to R}}, \frac{\lambda_t^{R \to P}}{\lambda_t^{R \to N}}, \frac{\lambda_t^{R \to E}}{\lambda_t^{R \to N}}$$

This delivers the final 7 restrictions needed to identify and estimate the 12 unknown transition rates using a system of 12 linear equations, which are described in more detail below. The key assumption is that the biases in the estimated transition rates need to "cancel out" when we take ratios (i.e., that the biases that cause the inconsistency are proportional across each of the pairs of labor market states above). The resulting "adjusted" transition rates are thus estimated to impose consistency in stocks from month to month.

## IDENTIFICATION OF TRANSITION RATES

1. Normalize the population so that $N_t + P_t + T_t + E_t = 1$

2. Obtain levels and net flows from the data. Note that $\Delta N_t + \Delta T_t + \Delta P_t + \Delta E_t = 0$ so without loss of generality work with $\Delta T_t, \Delta E_t$ and $\Delta P_t$

3. Let the transition rates $\{\lambda_t^{EN}, \lambda_t^{ET}, \lambda_t^{EP}, \lambda_t^{TP}, \lambda_t^{TN}, \lambda_t^{RE}, \lambda_t^{PE}, \lambda_t^{PN}, \lambda_t^{PT}, \lambda_t^{NE}, \lambda_t^{NP}, \lambda_t^{NT}\}$ be unknown parameters

[31] Ahn and Hamilton (2020) discuss an alternative approach to address rotation group bias; their approach, however, requires data on all eight of the months in sample for each respondent. Clearly, we do not have the ability to use that approach to estimate transition rates in recent months, so we follow our approach instead so that we can see how transition rates are changing in the first few months of the COVID-19 recession.

4. By definition change in levels equals inflows - outflows

$$\Delta T_t = \lambda_t^{ET} E_t + \lambda_t^{NT} N_t + \lambda_t^{PT} P_t - (\lambda_t^{TE} + \lambda_t^{TN} + \lambda_t^{TP}) T_t$$

$$\Delta E_t = \lambda_t^{TE} T_t + \lambda_t^{NE} N_t + \lambda_t^{PE} P_t - (\lambda_t^{ET} + \lambda_t^{EP} + \lambda_t^{EN}) E_t$$

$$\Delta P_t = \lambda_t^{TP} T_t + \lambda_t^{NP} N_t + \lambda_t^{EP} E_t - (\lambda_t^{PE} + \lambda_t^{PN} + \lambda_t^{PT}) P_t$$

5. We assume that when individuals transition between unemployment states, the duration of their unemployment spell must be greater than zero since we know they have been unemployed for two consecutive months. Specifically we assume that $\theta_t^{TP}(d = 0) = 0$ and $\theta_t^{PT}(d = 0) = 0$ which is supported in the data. Therefore flows into $P_t(d = 0)$ and $T_t(d = 0)$ originate from $N$ and $E$ only:

$$P_{t+1}(d = 0) = \lambda_t^{EP} \theta_t^{EP}(d = 0) E_t + \lambda_t^{NP} \theta_t^{NP}(d = 0) N_t$$

$$T_{t+1}(d = 0) = \lambda_t^{ET} \theta_t^{ET}(d = 0) E_t + \lambda_t^{NT} \theta_t^{NT}(d = 0) N_t$$

6. Now have 5 equations and 12 unknowns. We will also require that the following ratio of transition rates are equal to those obtained from the panel data. That is we estimate from the data

$$\psi_N = \frac{\hat{\lambda}_t^{NP}}{\hat{\lambda}_t^{NE}}$$

   and proceed in this manner for all of these 7 ratios:

$$\frac{\lambda_t^{NP}}{\lambda_t^{NE}}, \frac{\lambda_t^{EN}}{\lambda_t^{EP}}, \frac{\lambda_t^{PN}}{\lambda_t^{PE}}, \frac{\lambda_t^{ET}}{\lambda_t^{NT}}, \frac{\lambda_t^{PT}}{\lambda_t^{NT}}, \frac{\lambda_t^{TP}}{\lambda_t^{TN}}, \frac{\lambda_t^{TE}}{\lambda_t^{TN}}$$

   Yielding the following 7 equations:

$$\psi_N = \frac{\lambda_t^{NP}}{\lambda_t^{NE}} \qquad \psi_E = \frac{\lambda_t^{EN}}{\lambda_t^{EP}} \qquad \psi_P = \frac{\lambda_t^{PN}}{\lambda_t^{PE}}$$

$$\psi_{T1} = \frac{\lambda_t^{NT}}{\lambda_t^{ET}} \qquad \psi_{T2} = \frac{\lambda_t^{NT}}{\lambda_t^{PT}} \qquad \psi_{T3} = \frac{\lambda_t^{TN}}{\lambda_t^{TP}} \qquad \psi_{T4} = \frac{\lambda_t^{TN}}{\lambda_t^{TE}}$$

We therefore have the following system of equations which we can solve to find the adjusted transition rates:

$$
\begin{pmatrix}
0 & E_t & 0 & -T_t & -T_t & -T_t & 0 & 0 & P_t & 0 & 0 & N_t \\
-E_t & -E_t & -E_t & 0 & 0 & T_t & P_t & 0 & 0 & N_t & 0 & 0 \\
0 & 0 & E_t & T_t & 0 & 0 & -P_t & -P_t & -P_t & 0 & N_t & 0 \\
0 & 0 & \theta_t^{EP}(d=0)E_t & 0 & 0 & 0 & 0 & 0 & 0 & 0 & \theta_t^{NP}(d=0)N_t & 0 \\
0 & \theta_t^{ET}(d=0)E_t & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & \theta_t^{NT}(d=0)N_t \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & \psi_N & -1 & 0 \\
-1 & 0 & \psi_E & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & \psi_P & -1 & 0 & 0 & 0 & 0 \\
0 & \psi_{T1} & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & \psi_{T2} & 0 & 0 & -1 \\
0 & 0 & 0 & \psi_{T3} & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & -1 & \psi_{T4} & 0 & 0 & 0 & 0 & 0 & 0
\end{pmatrix}
$$

$$
\times \begin{pmatrix}
\lambda_t^{EN} \\ \lambda_t^{ET} \\ \lambda_t^{EP} \\ \lambda_t^{TP} \\ \lambda_t^{TN} \\ \lambda_t^{TE} \\ \lambda_t^{PE} \\ \lambda_t^{PN} \\ \lambda_t^{PT} \\ \lambda_t^{NE} \\ \lambda_t^{NP} \\ \lambda_t^{NT}
\end{pmatrix}
=
\begin{pmatrix}
\Delta T_t \\ \Delta E_t \\ \Delta P_t \\ P_{t+1}(d=0) \\ T_{t+1}(d=0) \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0
\end{pmatrix}
$$

**Re-weighting job finding rates to have common duration distribution for the calculation of $\pi$**

First we determine $\alpha_t$ and $\alpha_p$ from the following:

$$
\lambda_t^{\tilde{P}E} = \alpha_p \lambda_t^{\hat{P}E}
$$

$$
\lambda_t^{\tilde{T}E} = \alpha_t \lambda_t^{\hat{T}E}
$$

where $\lambda_t^{\hat{T}E}$ and $\lambda_t^{\hat{P}E}$ are the job finding rates measured directly from the CPS. The adjusted transition rates obtained from solving system of equations above we denote by $\lambda_t^{\tilde{T}E}$ and $\lambda_t^{\tilde{P}E}$.

Second, we measure from the CPS the job finding rates for the permanent unemployed $P$, the temporary unemployed $T$, and then separately for the two states of temporary unemployment: actively searching $A$ and waiting $W$, imposing a common duration distribution across time and all four groups. We use the same weights $w_d$ based on the distribution of unemployment durations among all unemployed in 2018. We then scale these re-weighted transition rates by the same factors $\alpha^T$ and $\alpha^P$ which adjusted the original transition rates.

$$
\lambda_t^{PE} = \alpha^P \sum_{d=0}^{6} w_d \lambda_t^{PE}(d)
$$

$$
\lambda_t^{TE} = \alpha^T \sum_{d=0}^{6} w_d \lambda_t^{TE}(d)
$$

Finally, we adjust the re-weighted $\lambda_t^{T^W E}$ and $\lambda_t^{T^A E}$ to be consistent with $\lambda_t^{TE}$. $q_t$ is the share of temporary layoffs $T$ who are actively searching.

$$q_t = \frac{T_t^A}{T_t^A + T_t^W} = \frac{T_t^A}{T_t}$$

We solve for $\alpha_t$ in the following:

$$\lambda_t^{TE} = \alpha_t (q_t \lambda_t^{T^A E} + (1 - q_t)\lambda_t^{T^W E})$$

and then

$$\lambda_t^{T^W E} = \alpha_t \sum_{d=0}^{6} w_d \lambda_t^{T^W E}(d)$$

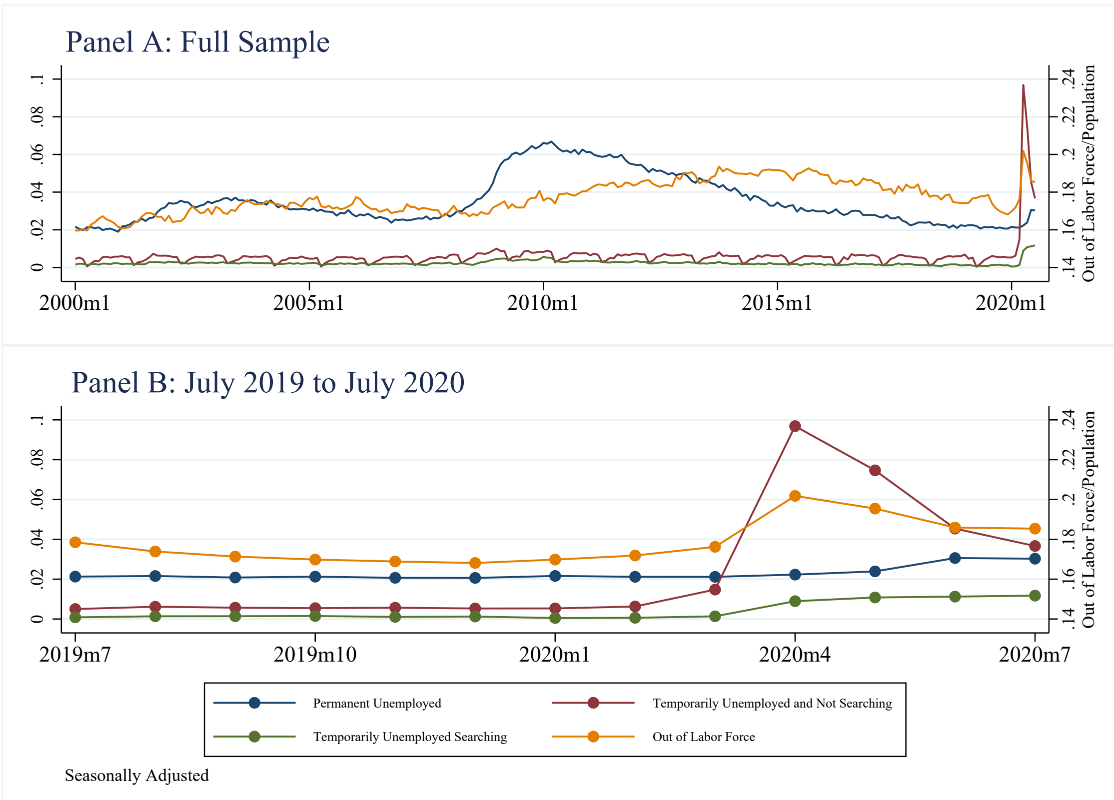
and

$$\lambda_t^{T^A E} = \alpha_t \sum_{d=0}^{6} w_d \lambda_t^{T^A E}(d)$$

$$\pi_t = \frac{\lambda_t^{T^A E} - \lambda_t^{PE}}{\lambda_t^{T^W E}(1 - \lambda_t^{PE})}$$

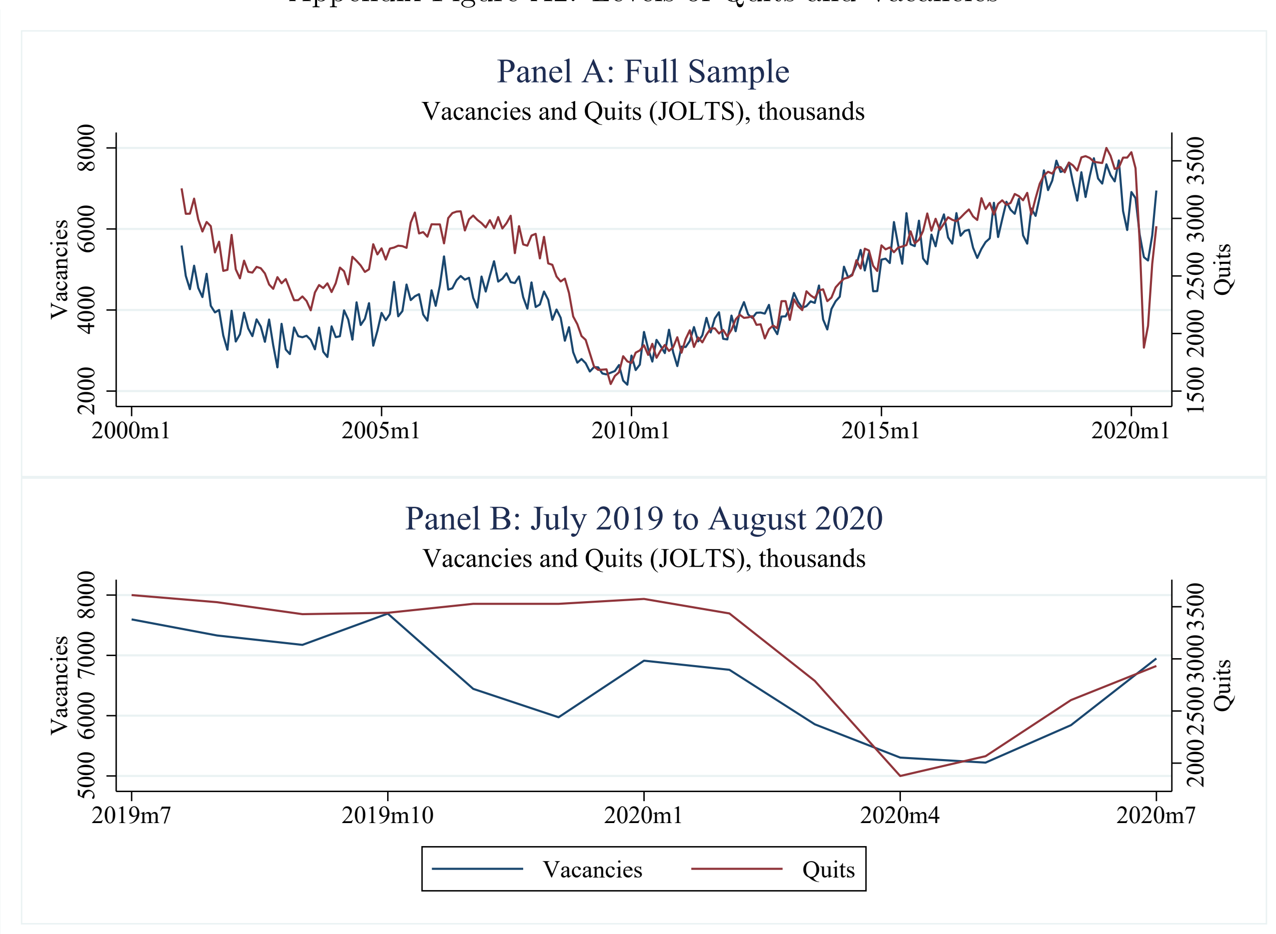
We take as $\pi$ the average $\pi_t$ over the years 2001-2019.

Appendix Figure A1: Temporary Unemployment, Permanent Unemployment, and Non-Participation



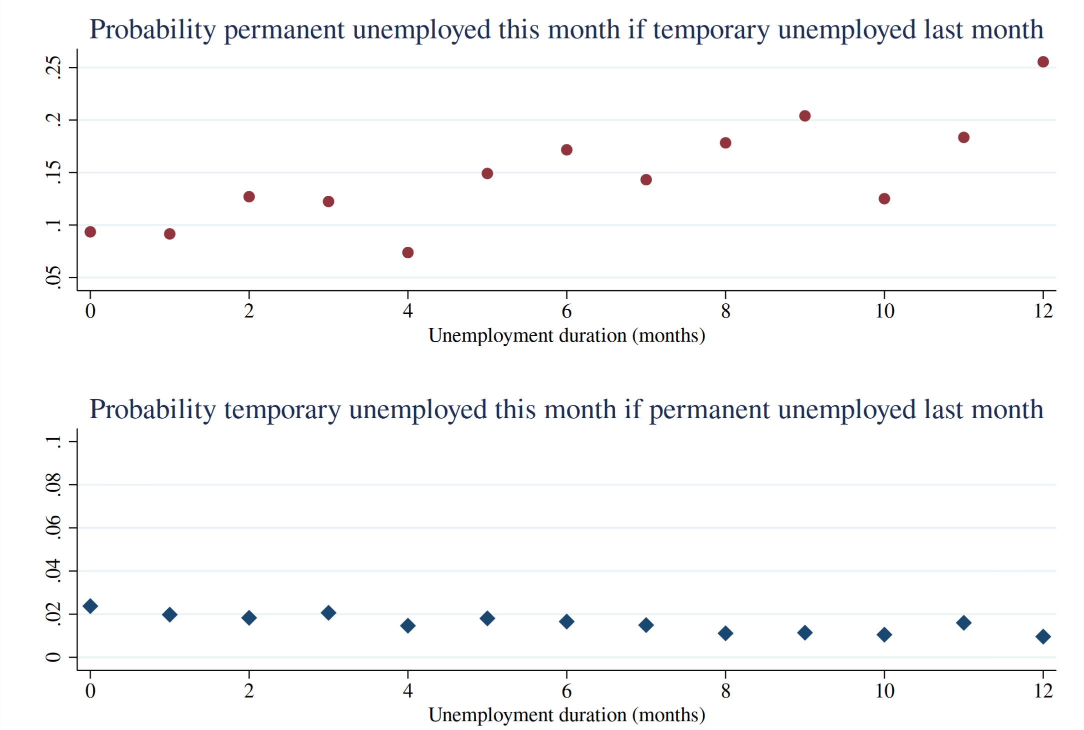

Notes: This figure reports the distribution of non-employment states, reported as a share of the total population (including employed in denominator). The monthly values are calculated using the monthly CPS cross-sections. See Data Appendix for more details on construction of the data.

Appendix Figure A2: Levels of Quits and Vacancies



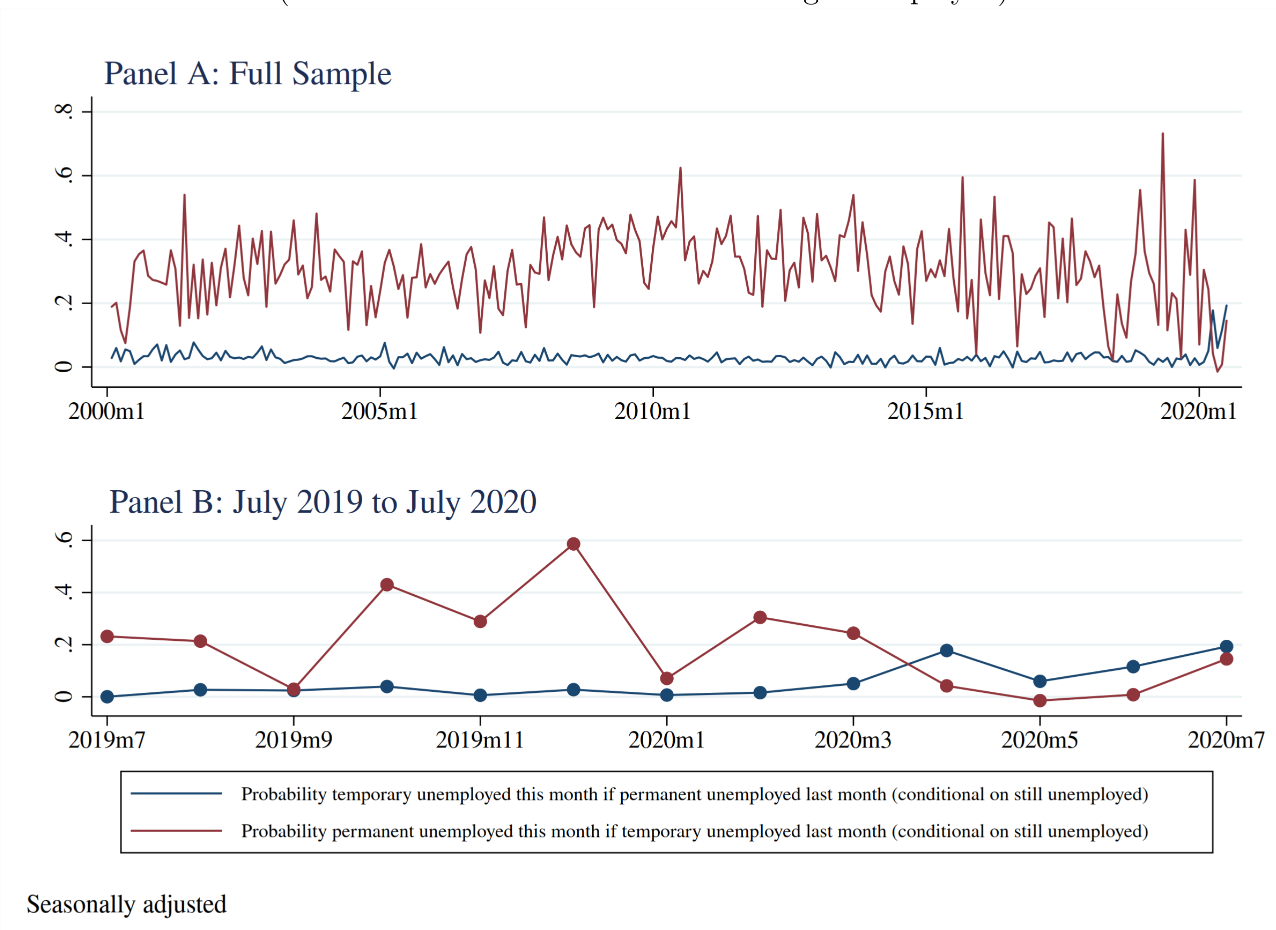

Notes: This figure reports variation in the levels of job quits and job openings over the last two decades and over the last year. Data in this figure is from the Job Openings and Labor Turnover Survey (JOLTS).

Appendix Figure A3: Transitions Between Permanent and Temporary Unemployment by Unemployment Duration




*Notes:* This figure reports the transition rates between temporary and permanent unemployment by unemployment duration using the matched panel CPS monthly data covering the period 2000-2020.

Appendix Figure A4: Transition Rates Between Temporary and Permanent Unemployment (Conditional Conditional on Remaining Unemployed)

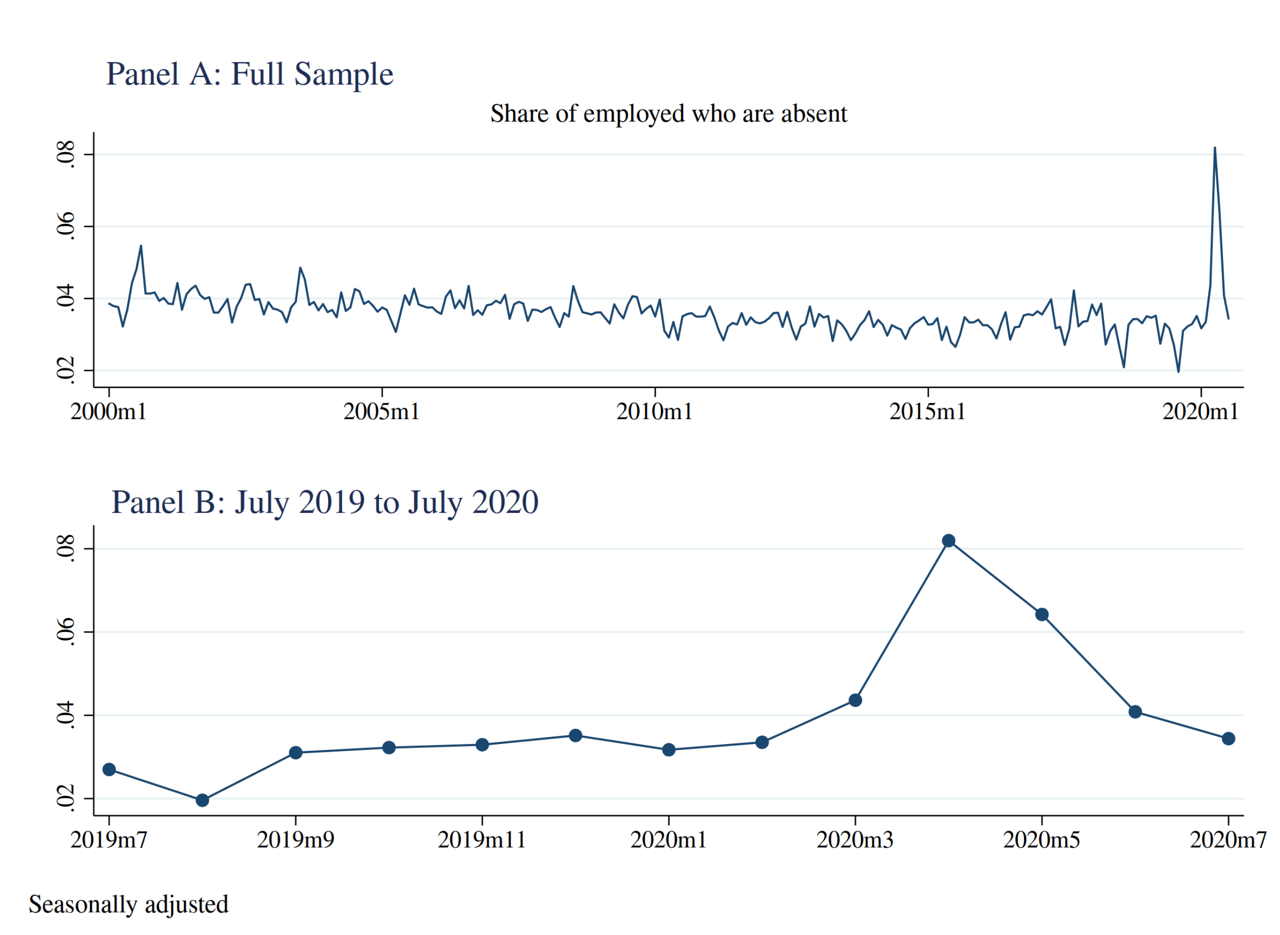



Notes: This figure reports transition rates analogous to Figure 6, but restricting sample to individuals who remain unemployed between months. See notes to Figure 6 for more details.

Appendix Figure A5: Transitions Between Permanent and Temporary Unemployment by Unemployment Duration
(Conditional on Remaining Unemployed)

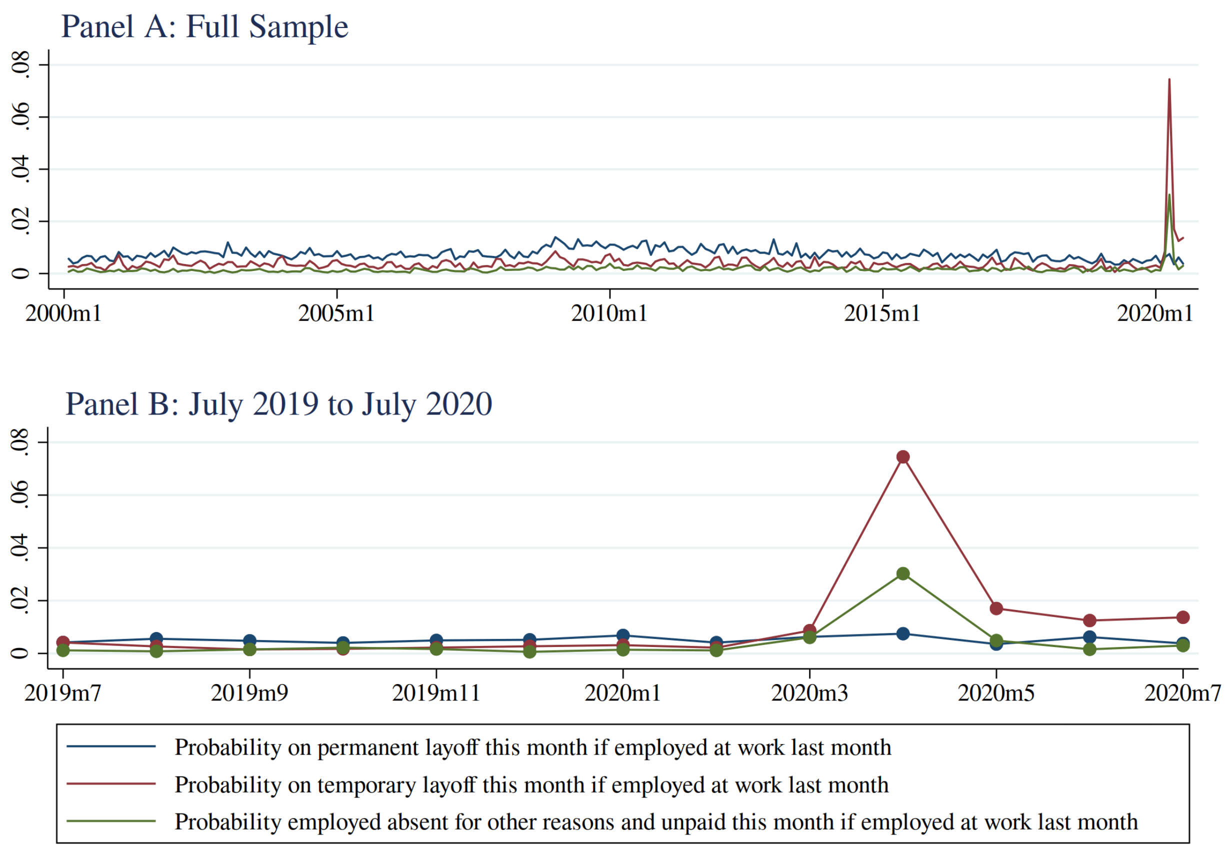

Notes: This figure reports transition rates analogous to Figure 7, but restricting sample to individuals who remain unemployed between months. See notes to Figure 7 for more details.

Appendix Figure A6: Share of Employed Workers Absent From Work (Seasonally Adjusted)



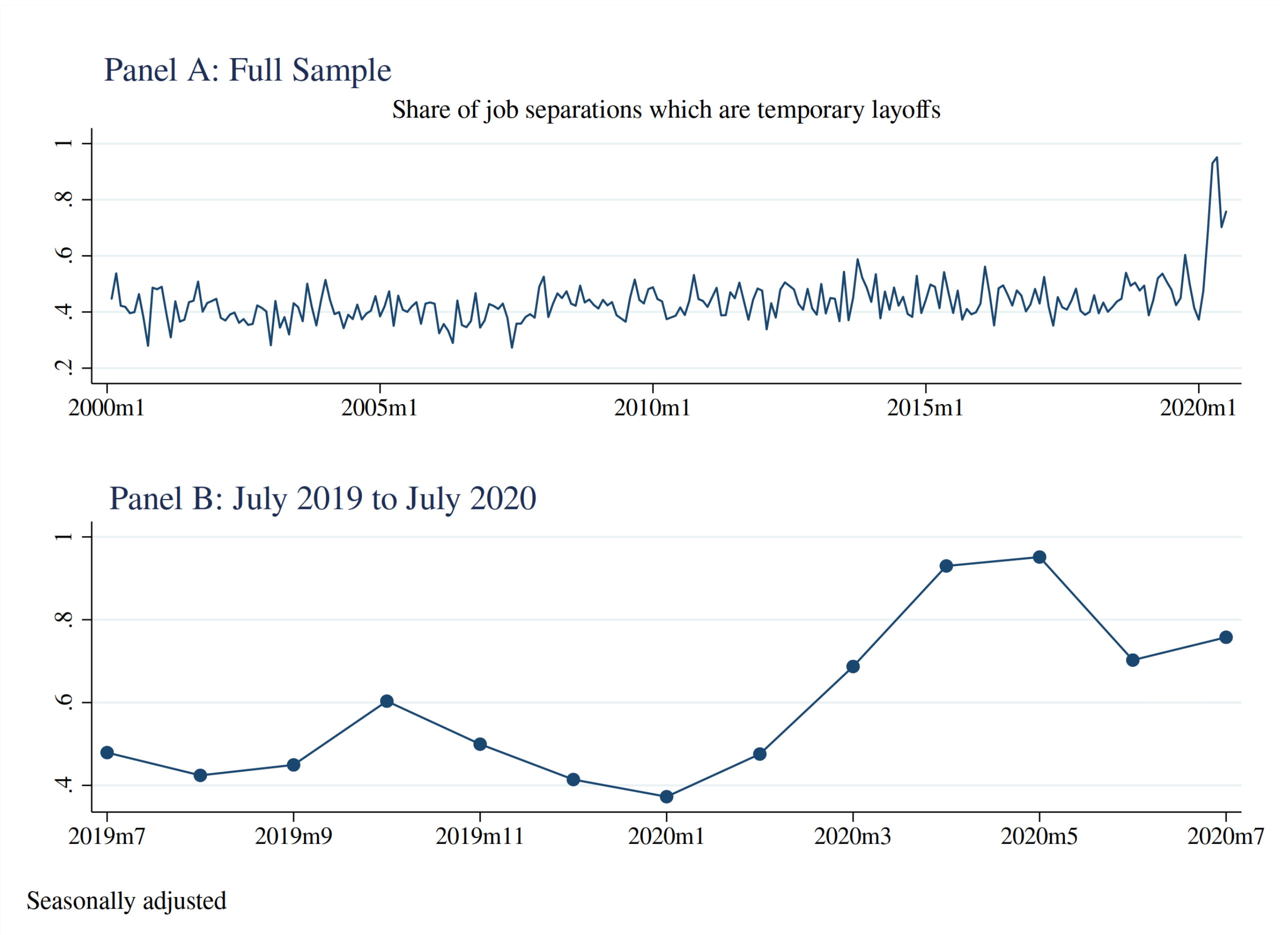

Notes: Calculated using monthly CPS cross-sections. Seasonal adjustment is done by regressing the full time series on month fixed effects that are constrained to be mean zero.

Appendix Figure A7: Temporary Unemployment Combines Temporary Layoffs and Unpaid Work Absences for Other Reasons



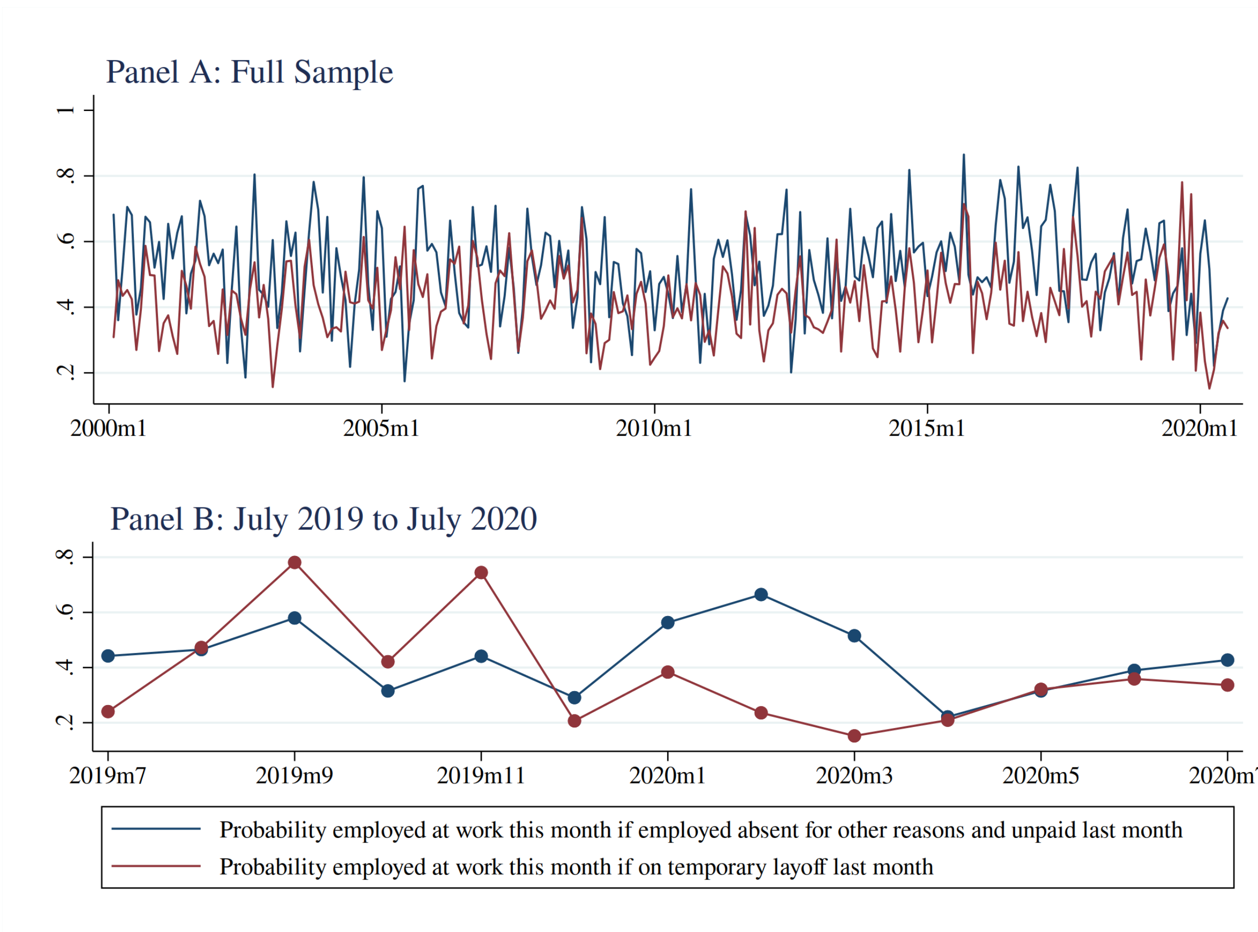

Notes: This figure decomposes the measure of temporary unemployment used in the main text and presents the two sub-components alongside permanent unemployment. Calculated using monthly CPS cross-sections.

Appendix Figure A8: Temporary Unemployed Share of $E$-to-$U$ Flows



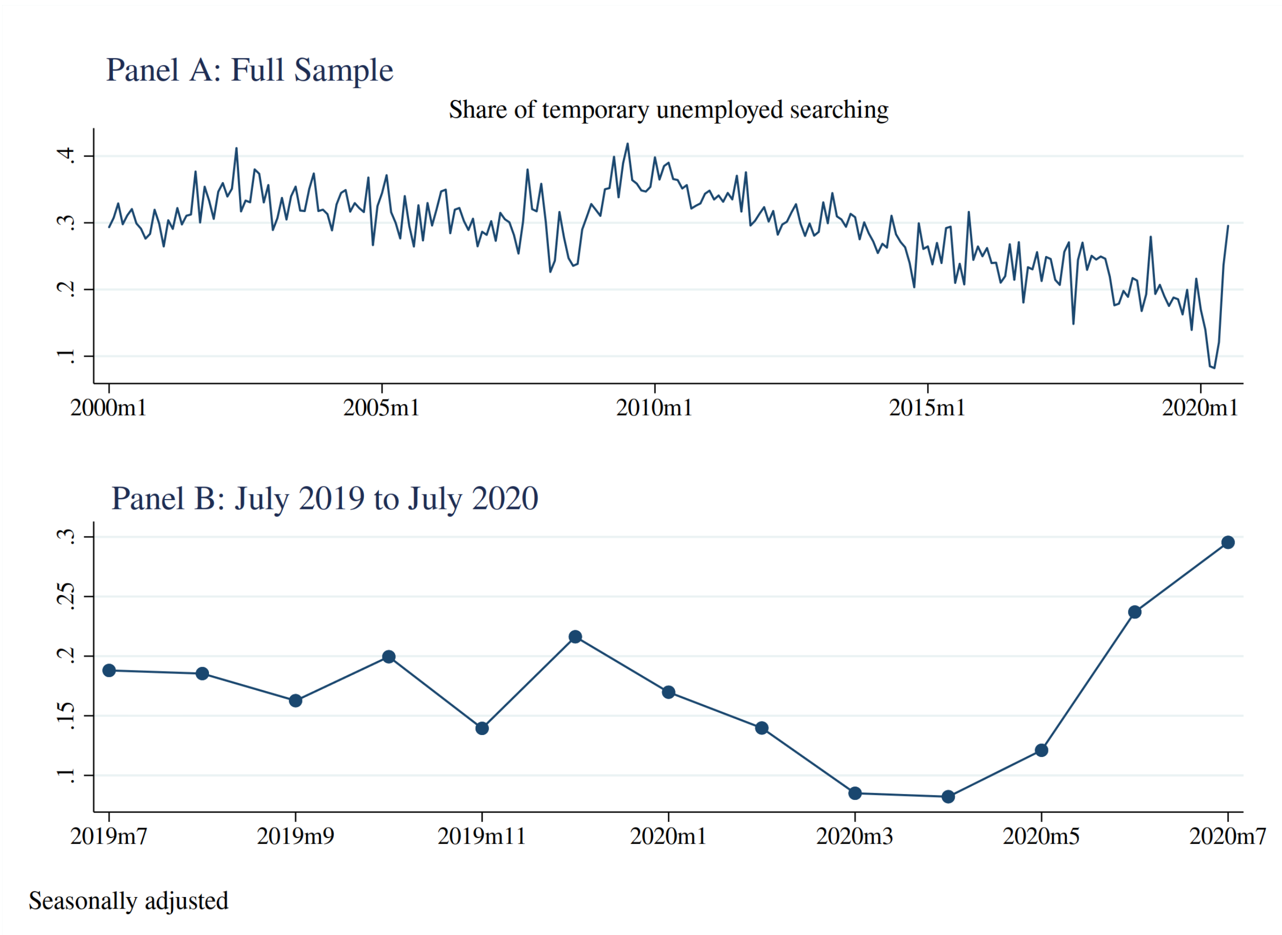

Notes: This figure reports the seasonally-adjusted share of employment-to-unemployment transitions using monthly CPS data. See Figure 1 notes for more details on seasonal adjustment.

Appendix Figure A9: Job Finding Rates for Temporary Unemployed and Employed Workers Absent From Work



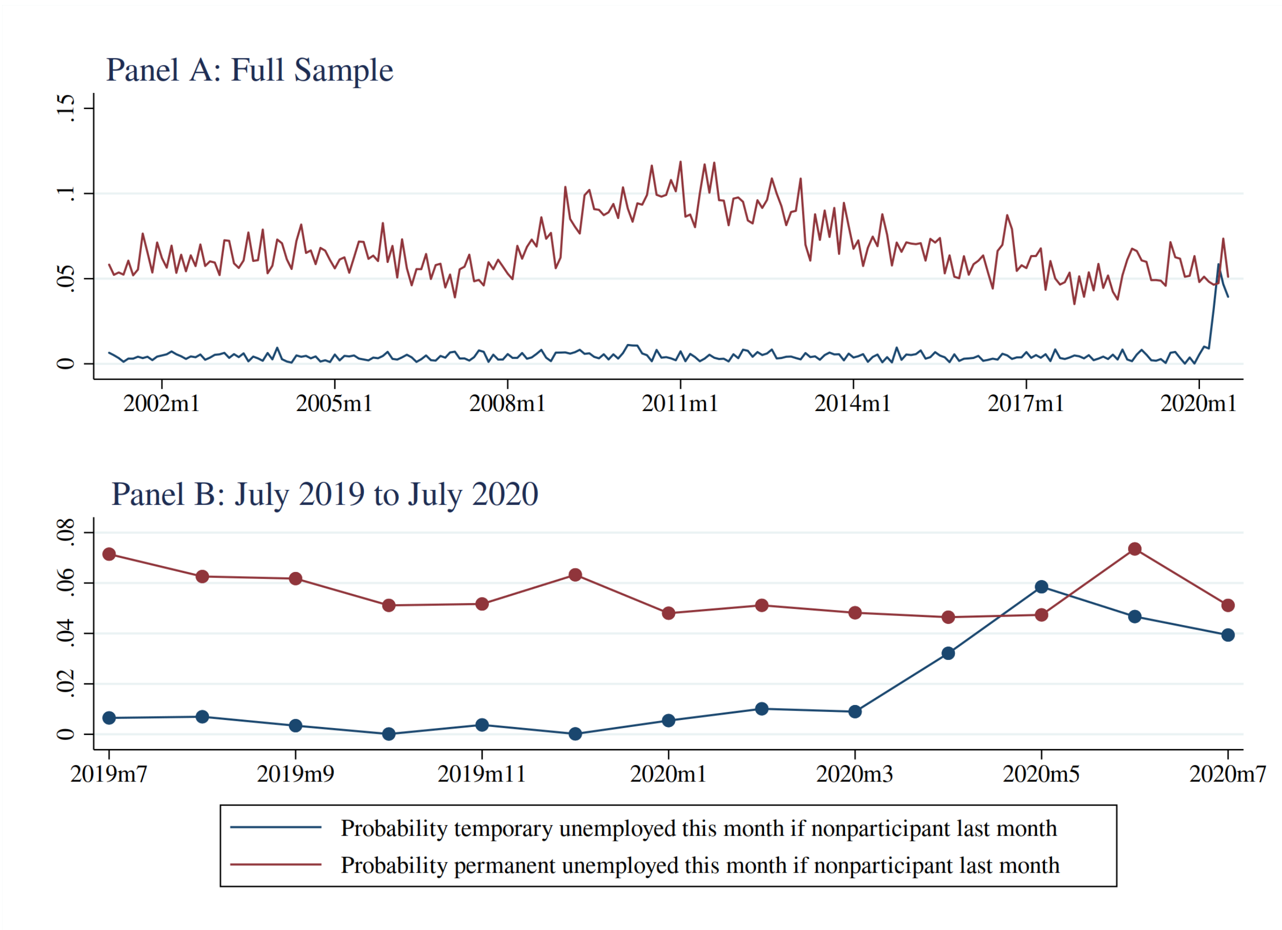

Notes: This figure compares job finding rates for the two groups that combine to make the temporary unemployed population the main paper. The similarity in job finding rates provides evidence that the two groups are made up of similar workers, and support combining the two groups together in the model. The figure reports transition rates calculated using the CPS matched panel data.

Appendix Figure A10: Share of Temporary Unemployed Actively Searching



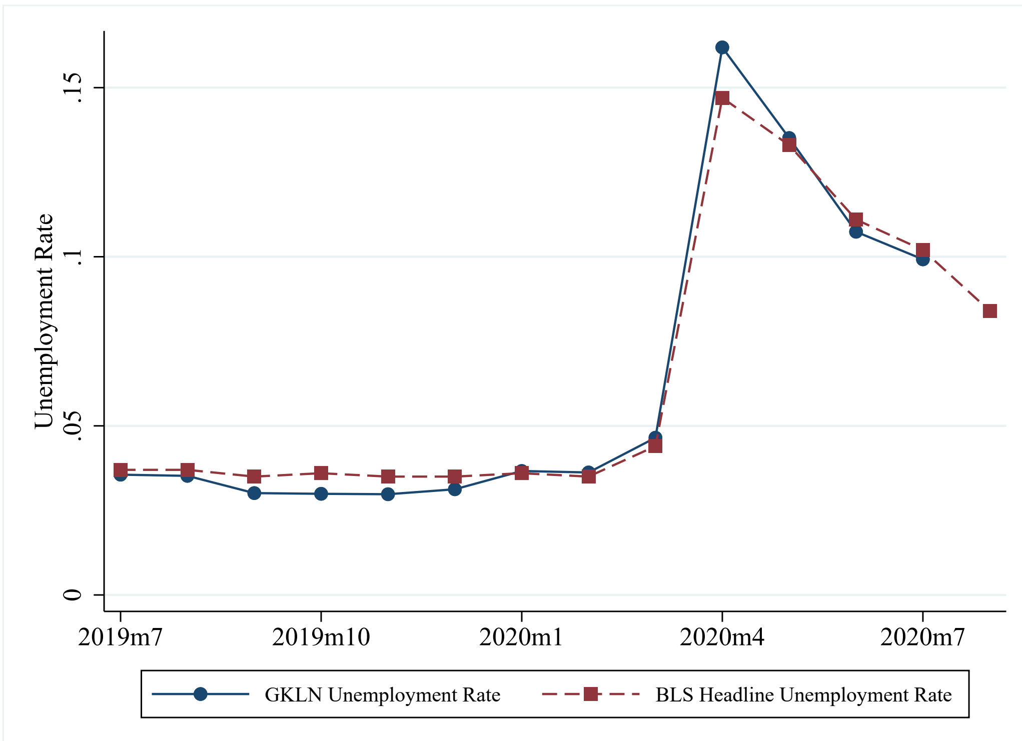

Notes: This figure reports the seasonally-adjusted share of temporary actively searching using monthly CPS data. See Figure 1 notes for more details on seasonal adjustment.

Appendix Figure A11: Transition Rates from Nonparticipation to Temporary Unemployment and Permanent Unemployment



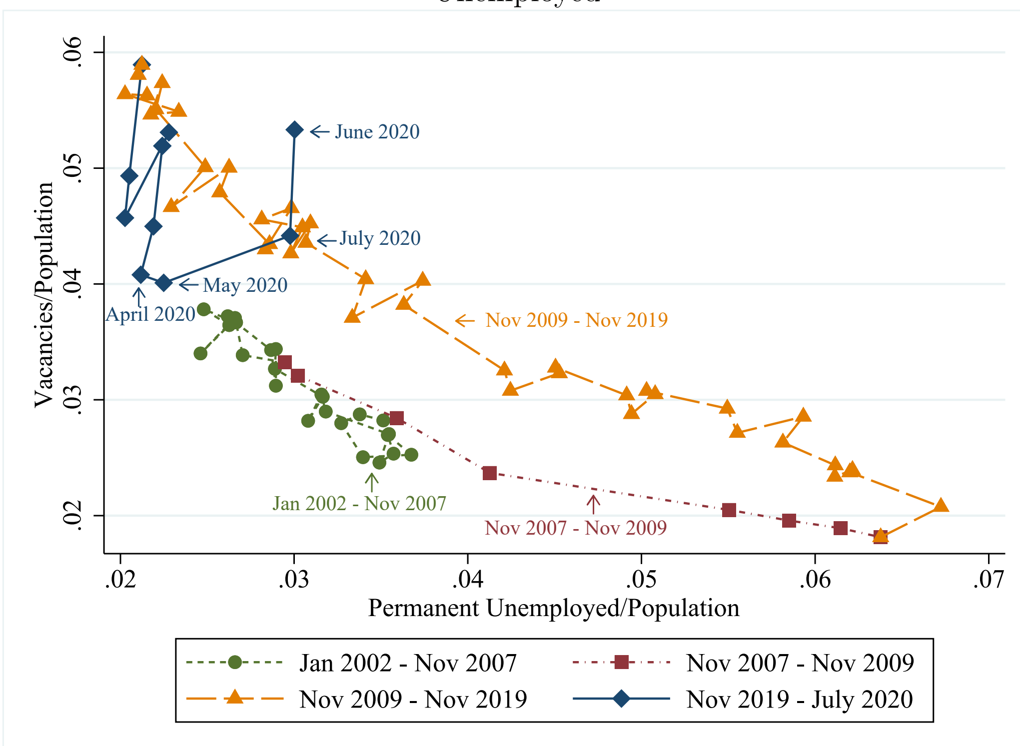

Notes: This figure reports the transition rates from nonparticipation to temporary unemployment and permanent unemployed using the adjusted transition rates measured using the monthly matched CPS panel.

Appendix Figure A12: Comparison of Unemployment Series



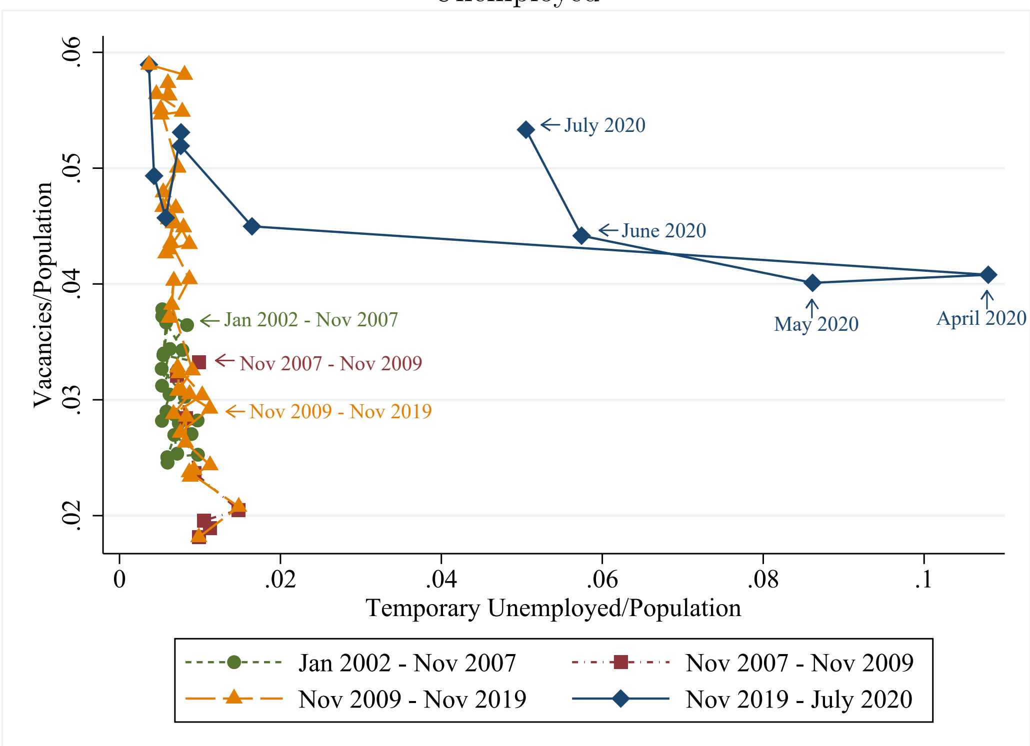

Notes: This figure compares the unemployment rate measure used in the main paper ("GKLN Unemployment Rate") to the headline unemployment rate reported by the BLS. The GKLN unemployment rate is calculated for the prime-age adult population (age 25-55) and it includes in temporary unemployed individuals who are employed but absent from work for other reasons and unpaid.

Appendix Figure A13: Modified Beveridge Curve - Observed Vacancies Against Permanent Unemployed



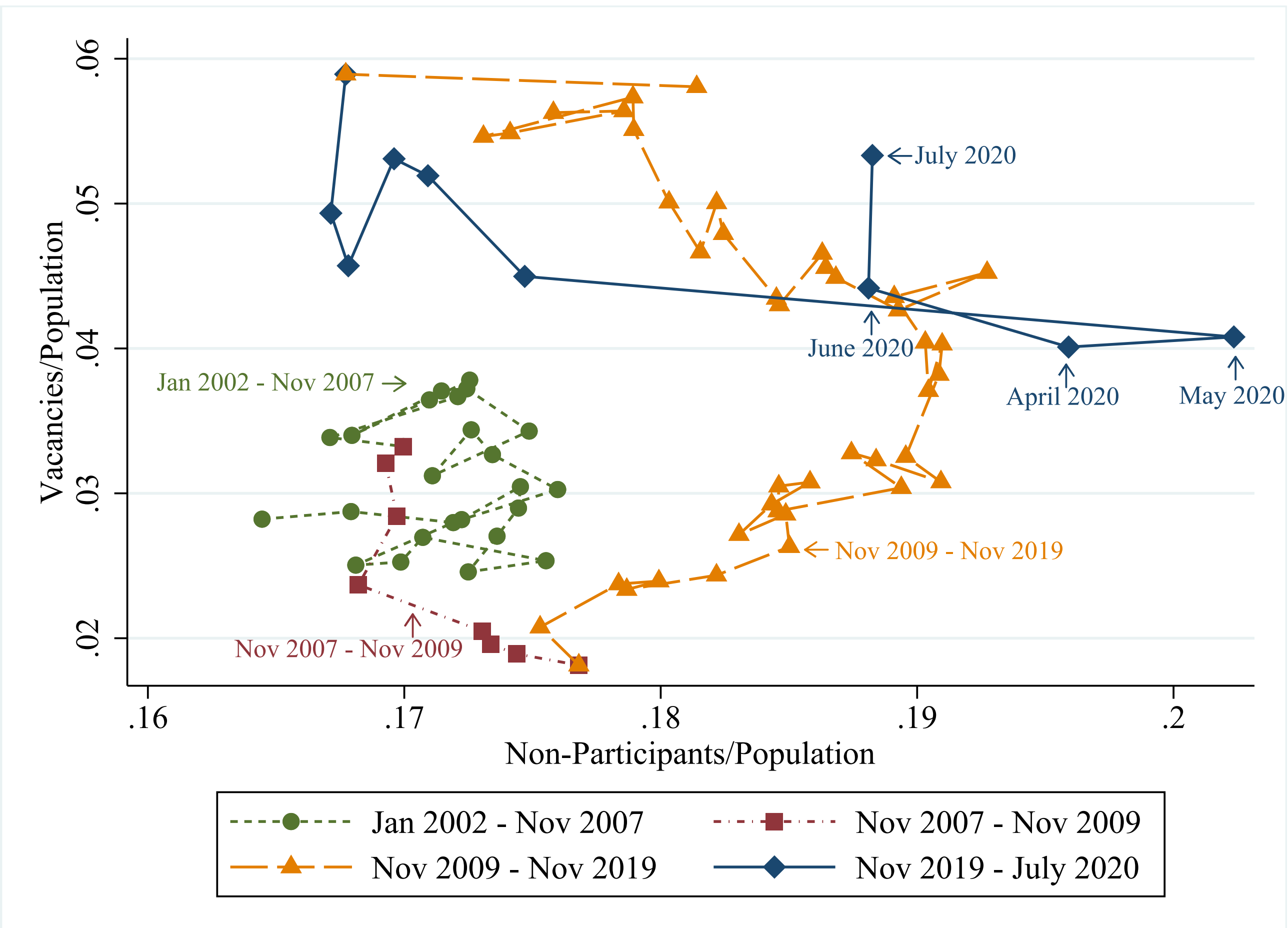

Notes: This figure reports a "modified" Beveridge Curve replacing the unemployment rate with the permanent unemployed to population ratio. The vacancy series comes from JOLTS, and the permanent unemployed series is measured using the CPS.

Appendix Figure A14: Modified Beveridge Curve - Observed Vacancies Against Temporary Unemployed



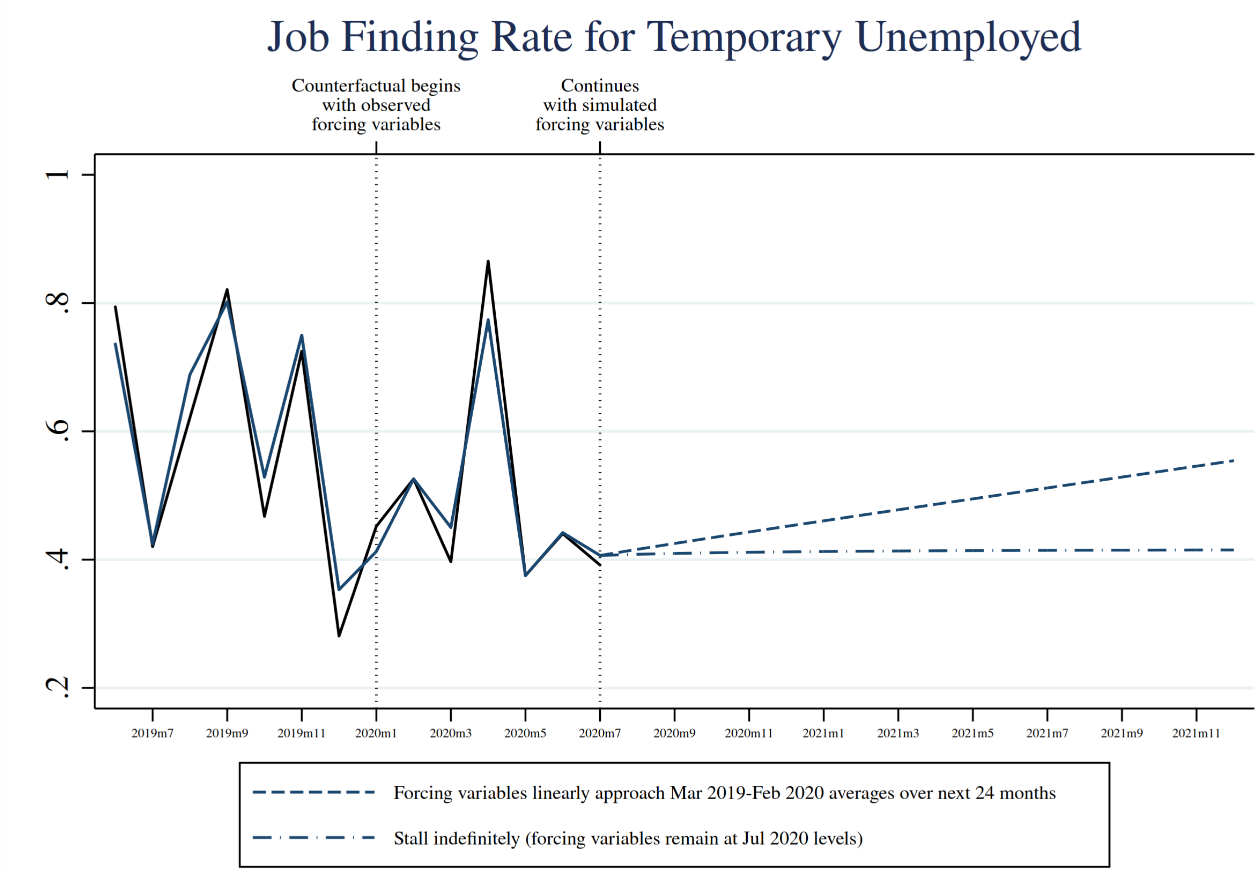

Notes: This figure reports a "modified" Beveridge Curve replacing the unemployment rate with the temporary unemployed to population ratio. The vacancy series comes from JOLTS, and the temporary unemployed series is measured using the CPS.

Appendix Figure A15: Modified Beveridge Curve - Observed Vacancies Against Non-Participants



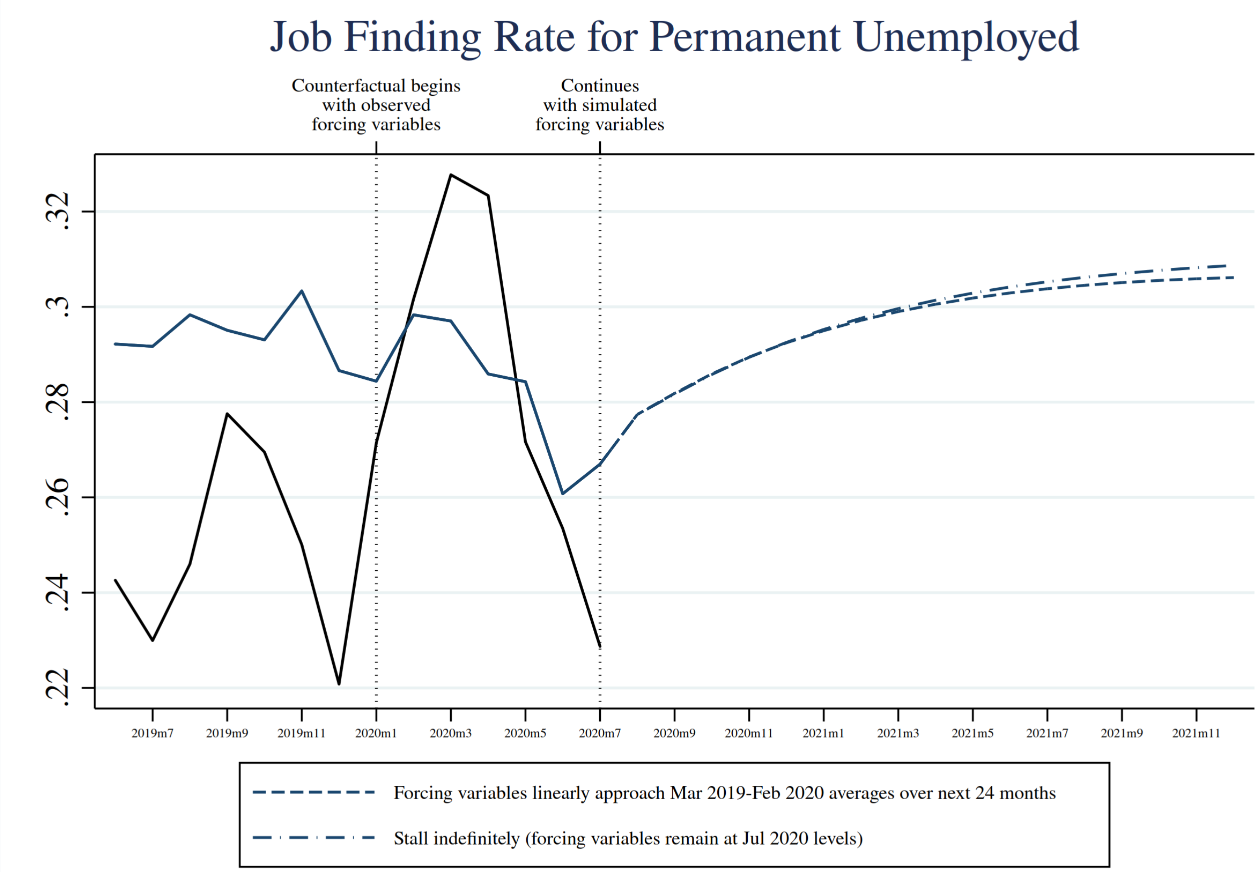

Notes: This figure reports a "modified" Beveridge Curve replacing the unemployment rate with the non-participants to population ratio. The vacancy series comes from JOLTS, and the non-participant population share is measured using the CPS.

Appendix Figure A16: Job Finding Rates for Temporary Unemployed by Forcing Variable Scenario



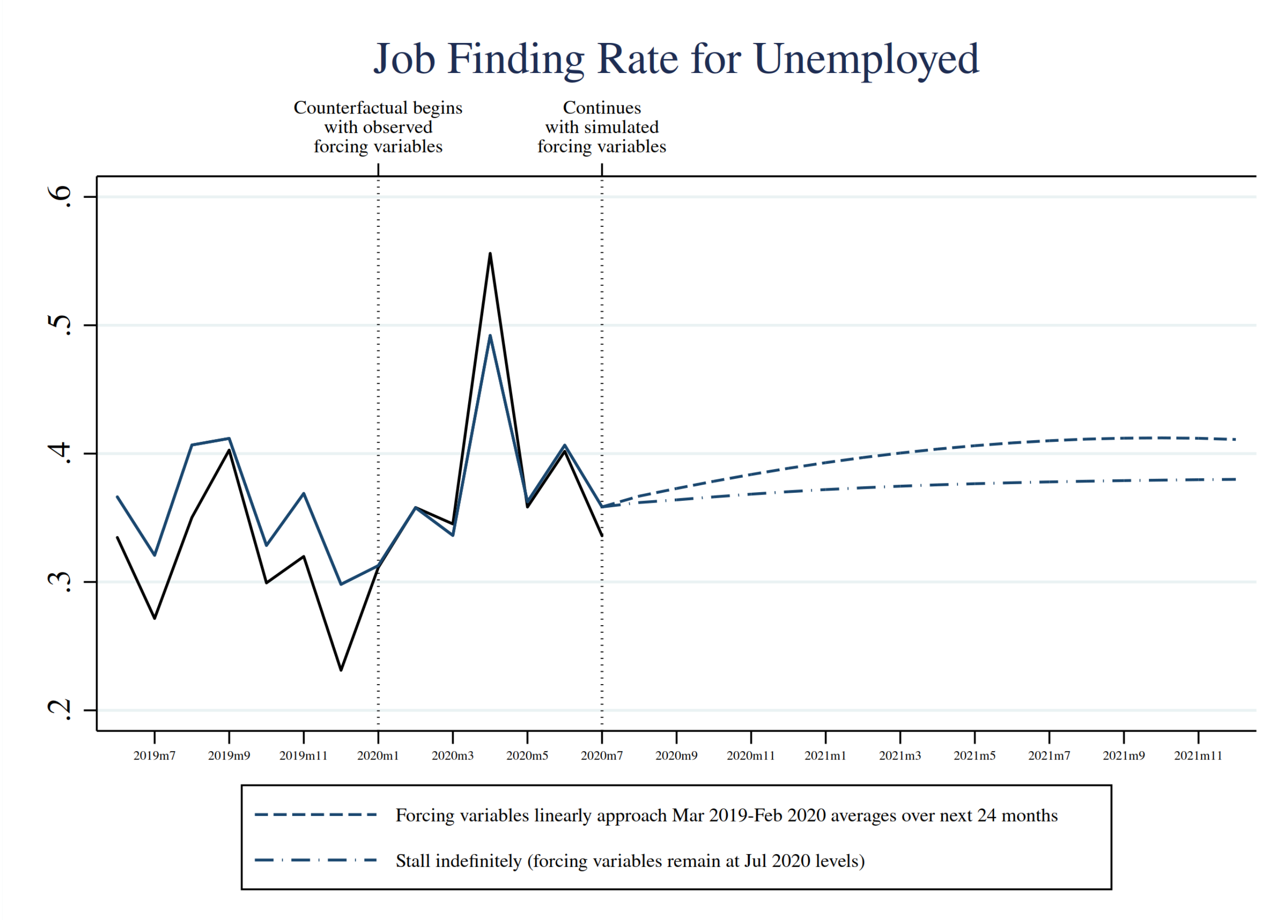

Notes: This figure reports counterfactual simulation results.

Appendix Figure A17: Job Finding Rates for Permanent Unemployed by Forcing Variable Scenario



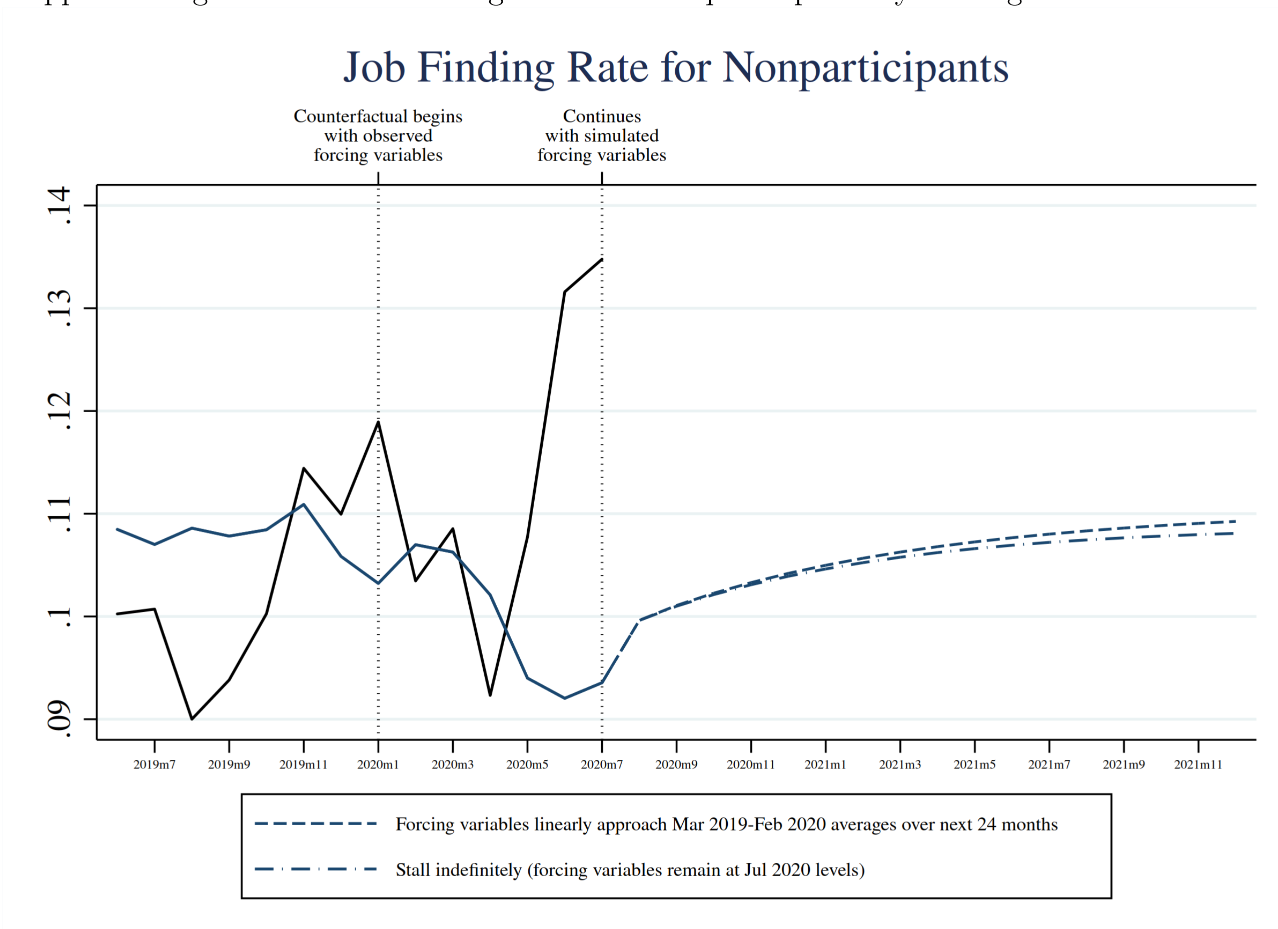

Notes: This figure reports counterfactual simulation results.

Appendix Figure A18: Job Finding Rates for Unemployed by Forcing Variable Scenario



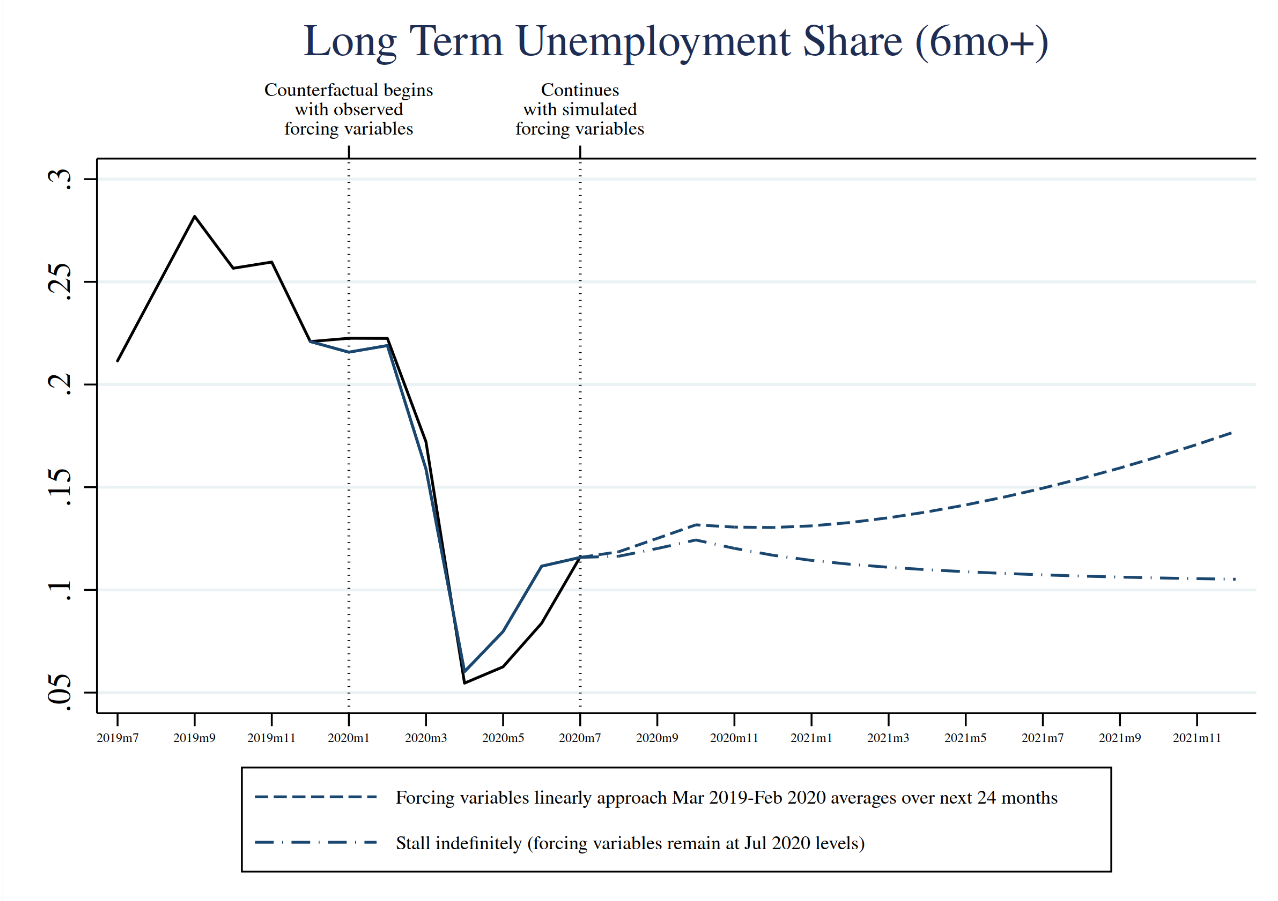

Notes: This figure reports counterfactual simulation results.

Appendix Figure A19: Job Finding Rates for Nonparticipants by Forcing Variable Scenario



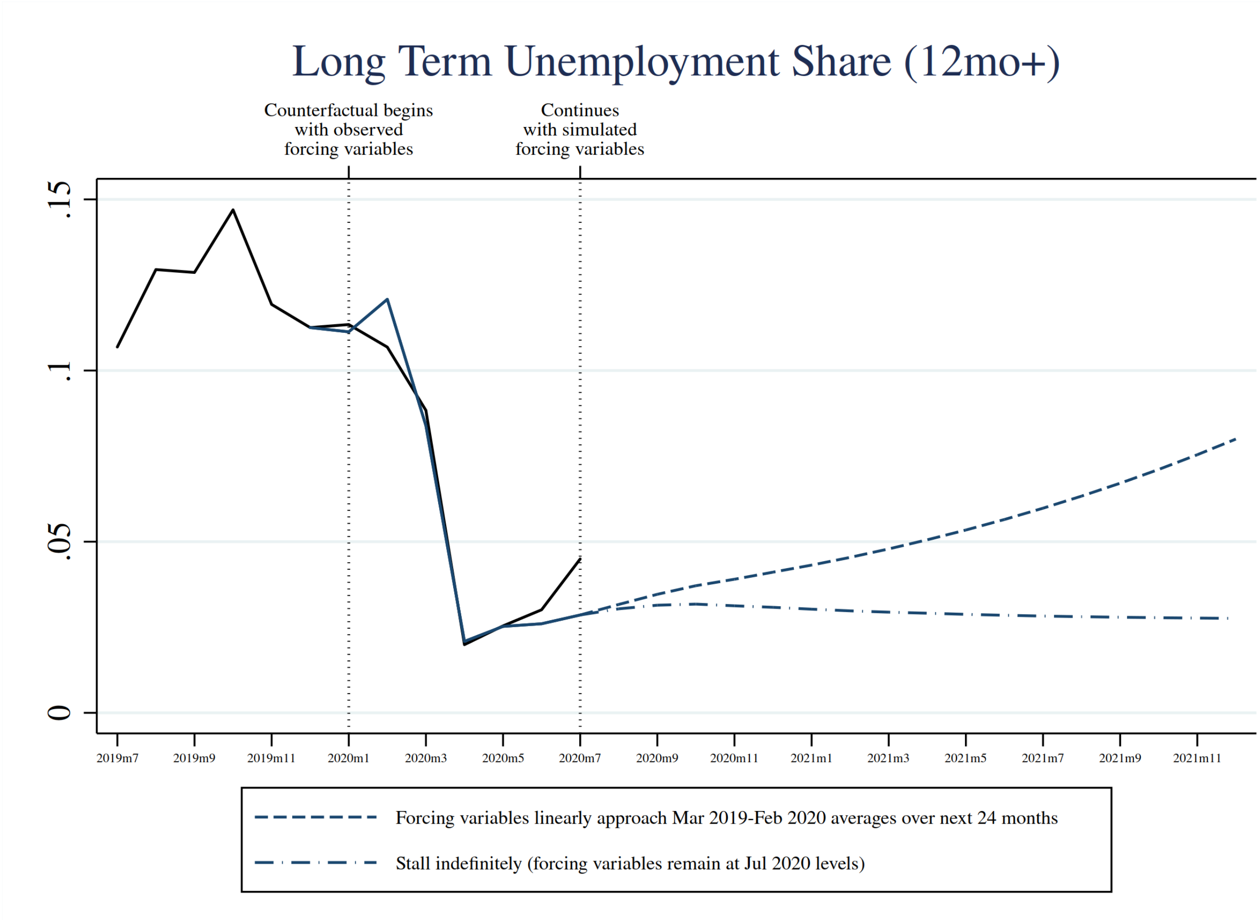

Notes: This figure reports counterfactual simulation results.

Appendix Figure A20: Long-Term Unemployment Share (6mo+) by Forcing Variable Scenario



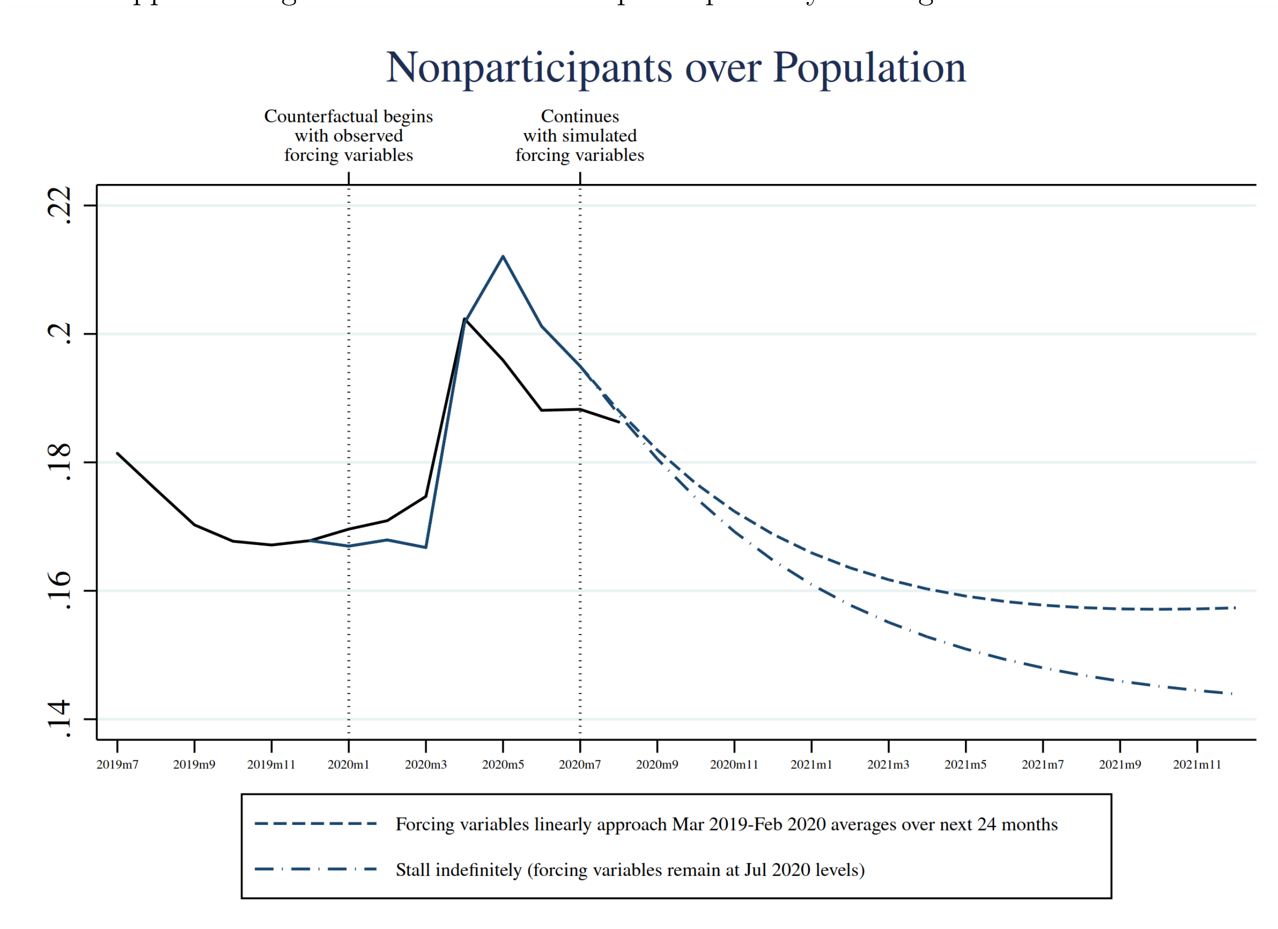

Notes: This figure reports counterfactual simulation results.

Appendix Figure A21: Long-Term Unemployment Share (12mo+) by Forcing Variable Scenario



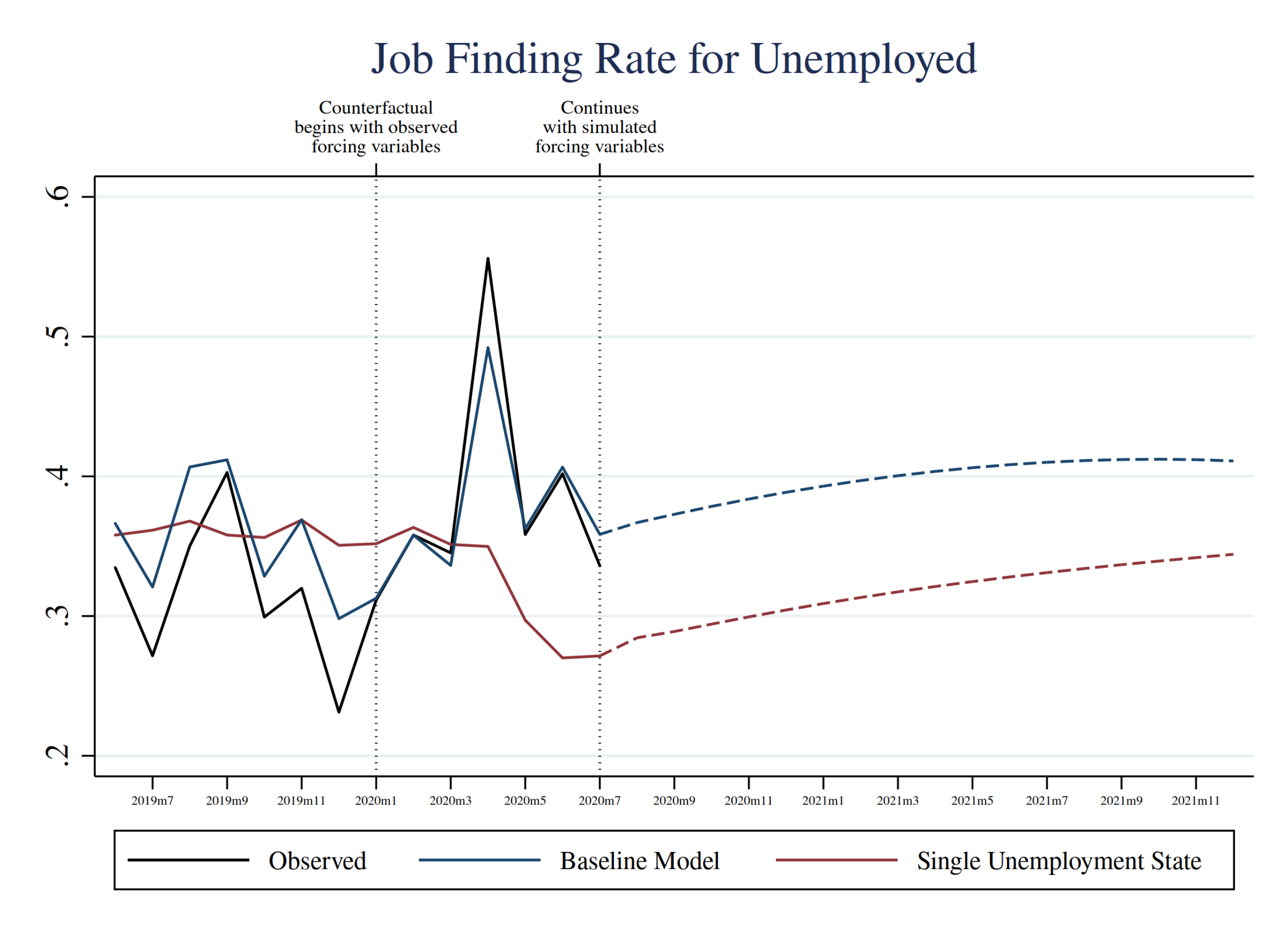

Notes: This figure reports counterfactual simulation results.

Appendix Figure A22: Share of Non-participants by Forcing Variable Scenario



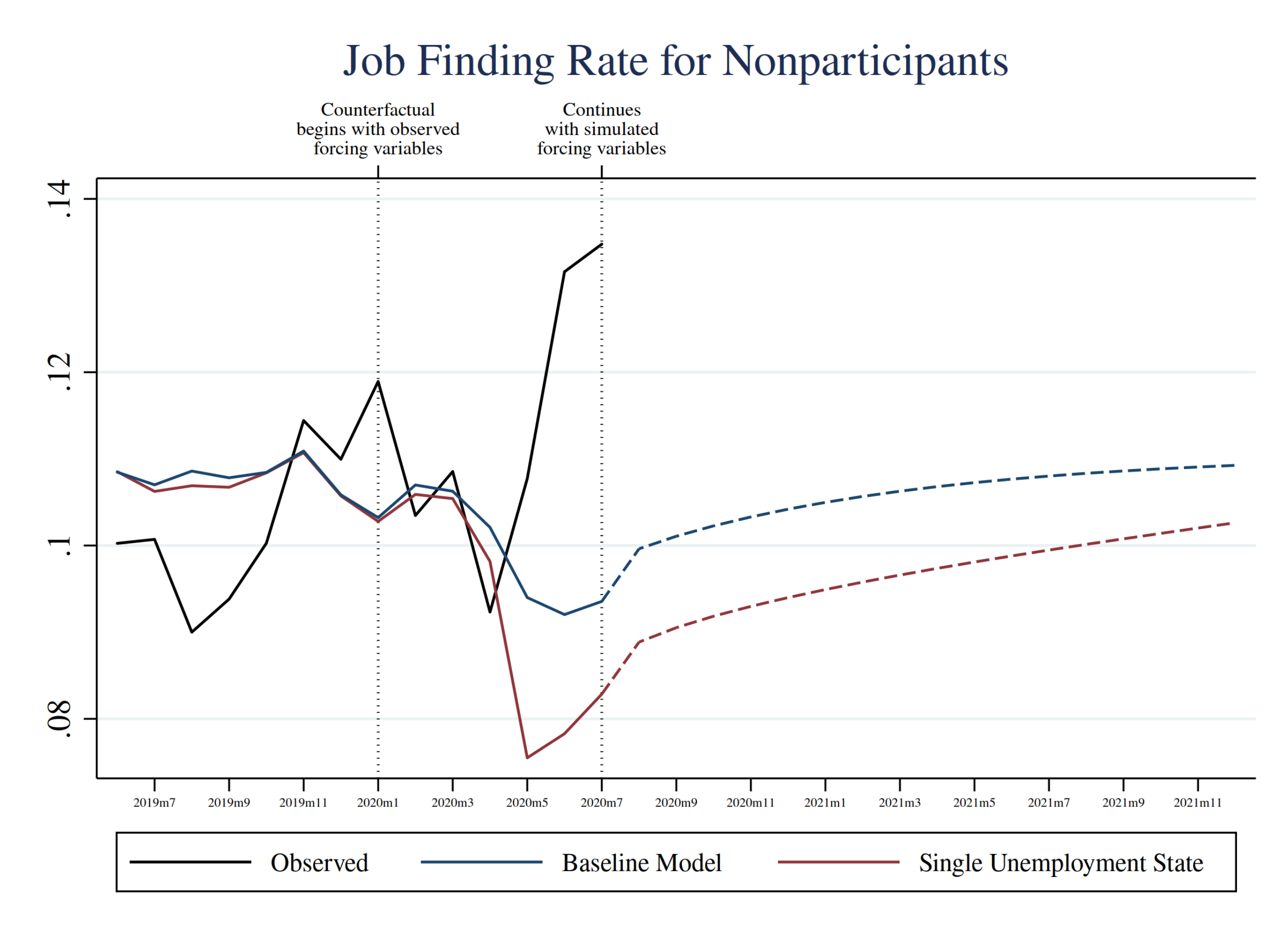

Notes: This figure reports counterfactual simulation results.

Appendix Figure A23: Observed Job Finding Rate for Unemployed Compared to Baseline and Single Unemployment State Models



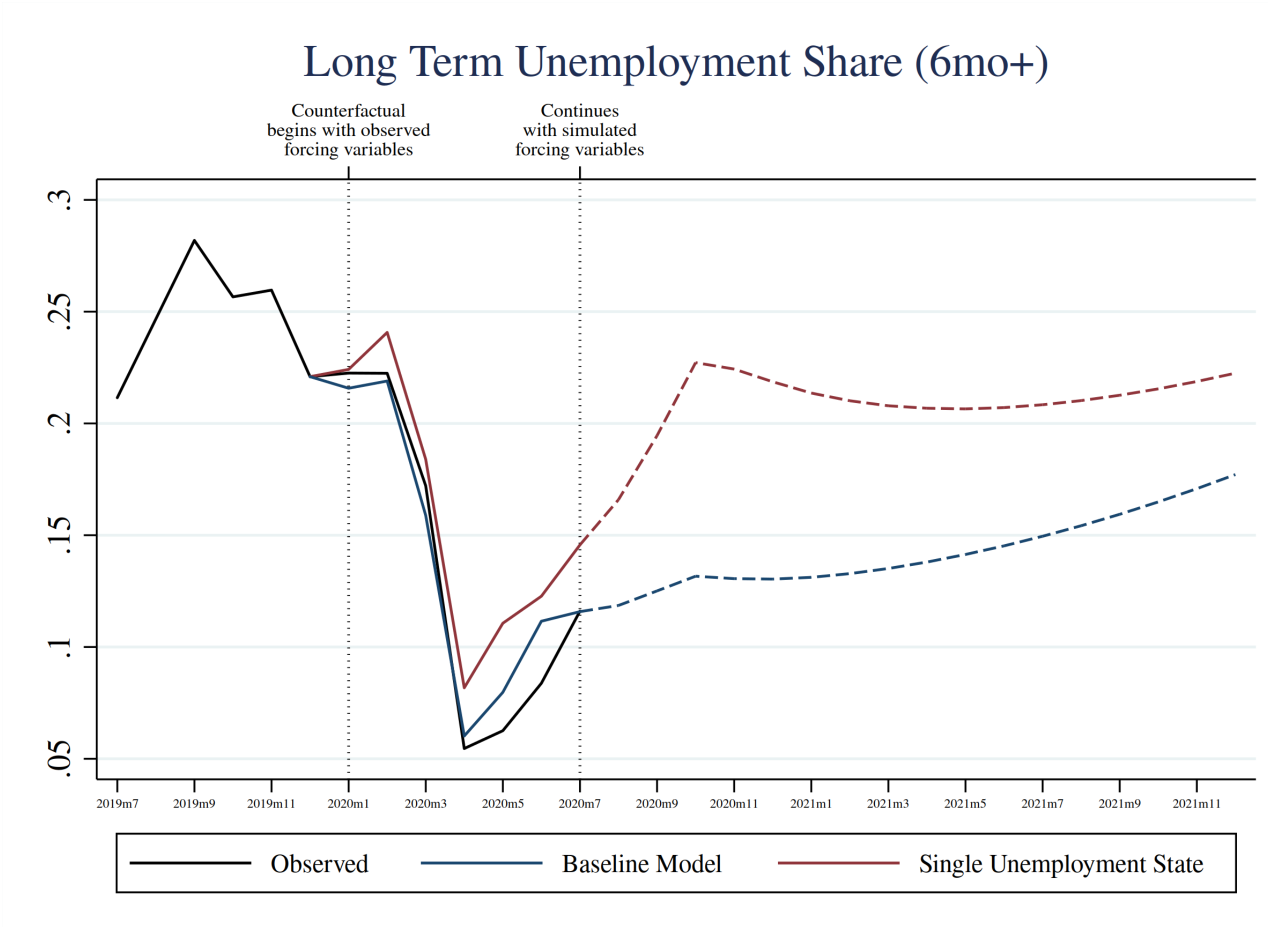

Notes: This figure reports counterfactual simulation results.

Appendix Figure A24: Observed Job Finding Rate for Non-participants Compared to Baseline and Single Unemployment State Models



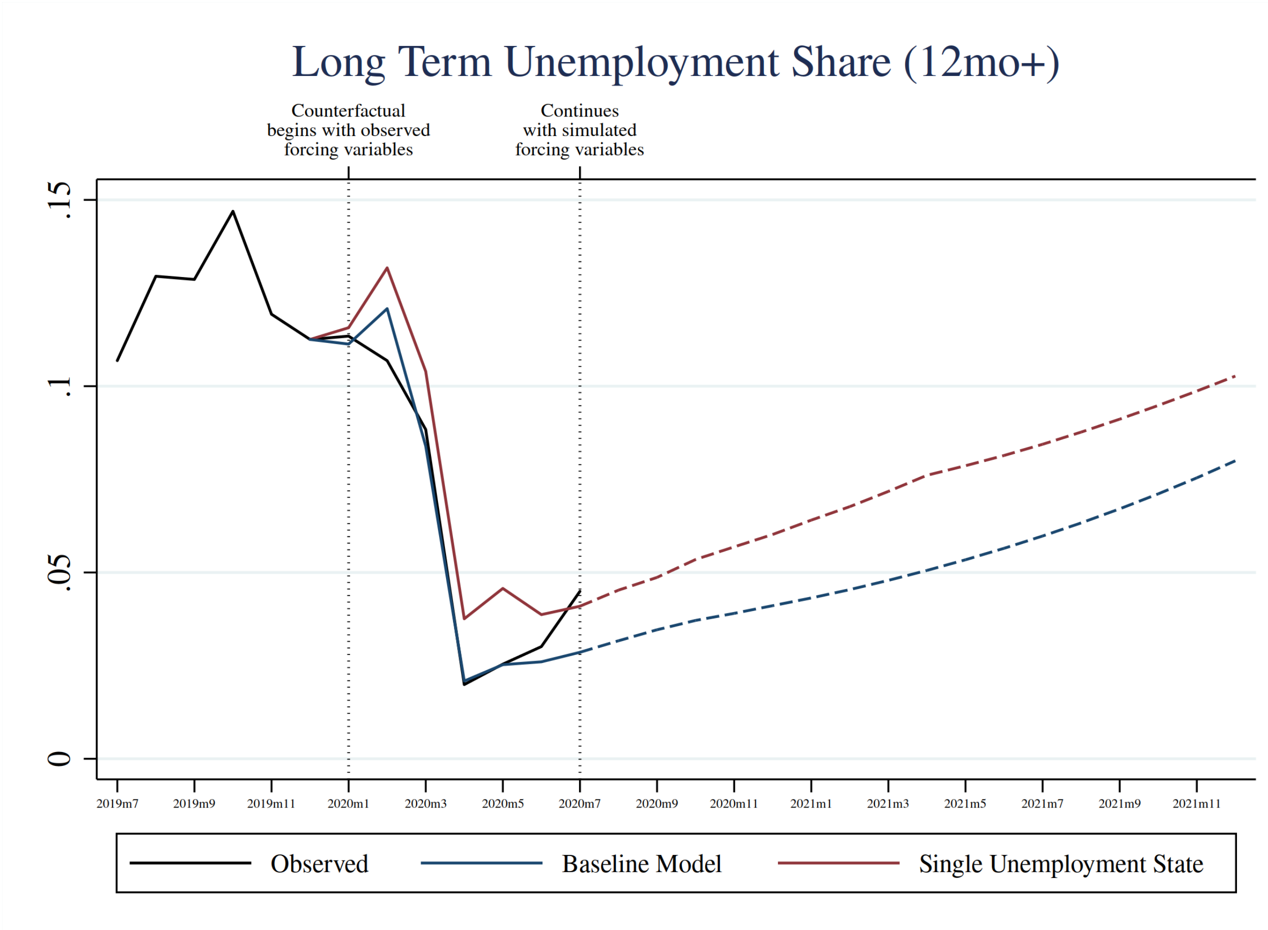

Notes: This figure reports counterfactual simulation results.

Appendix Figure A25: Observed Long Term Unemployment Share (6mo+) Compared to Baseline and Single Unemployment State Models




Notes: This figure reports counterfactual simulation results.

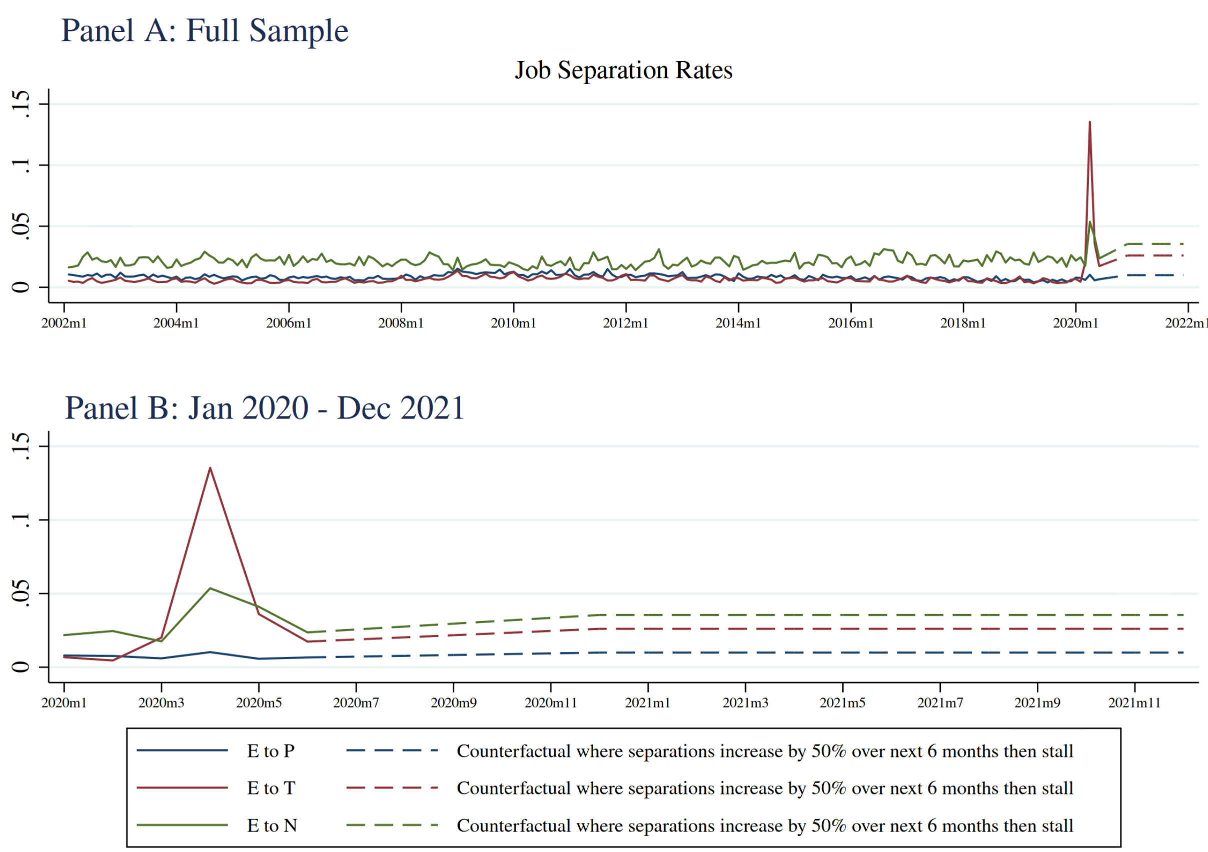
Appendix Figure A26: Observed Long Term Unemployment Share (12mo+) Compared to Baseline and Single Unemployment State Models




Notes: This figure reports counterfactual simulation results.

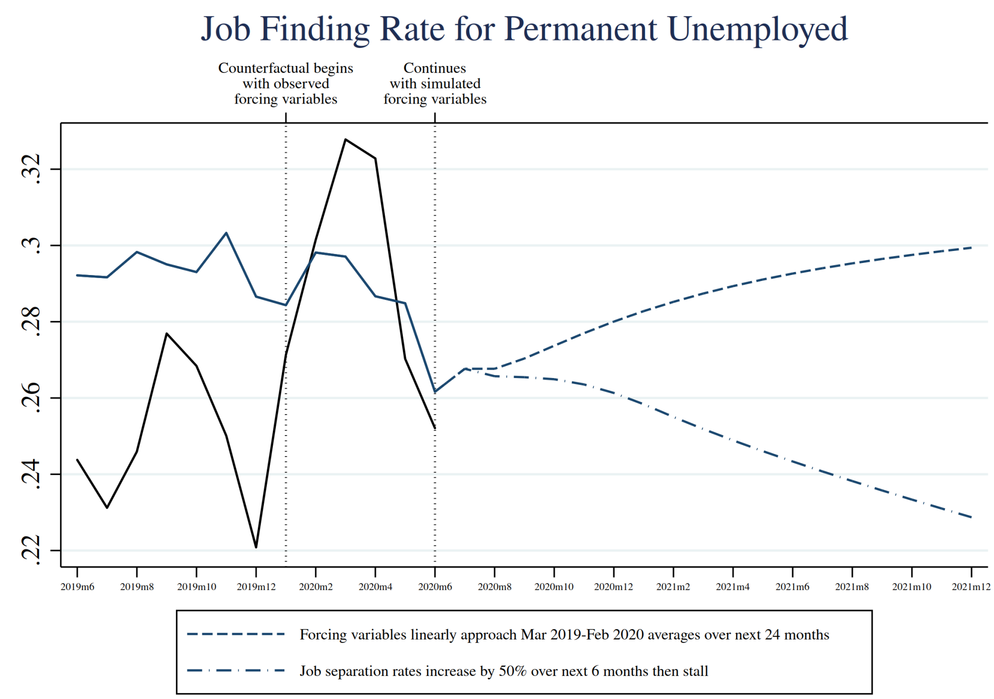
**SCENARIO: Increase in Job Separation Rates**

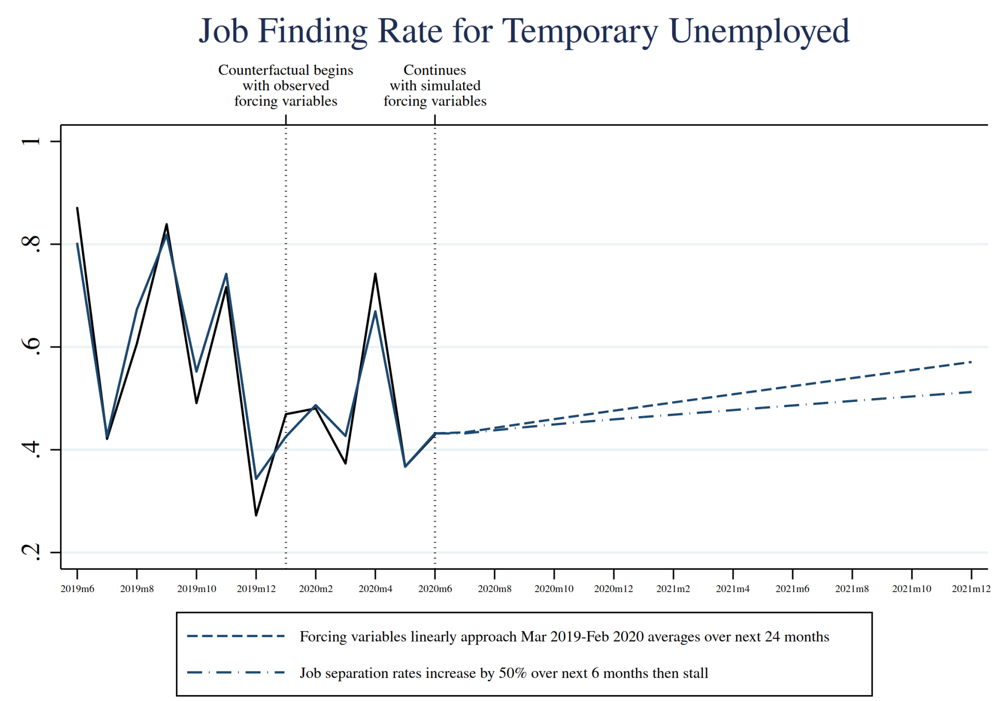
Appendix Figure A27: Job Separation Rates **- Separation Rates Increase**




Notes: This figure reports counterfactual simulation results.

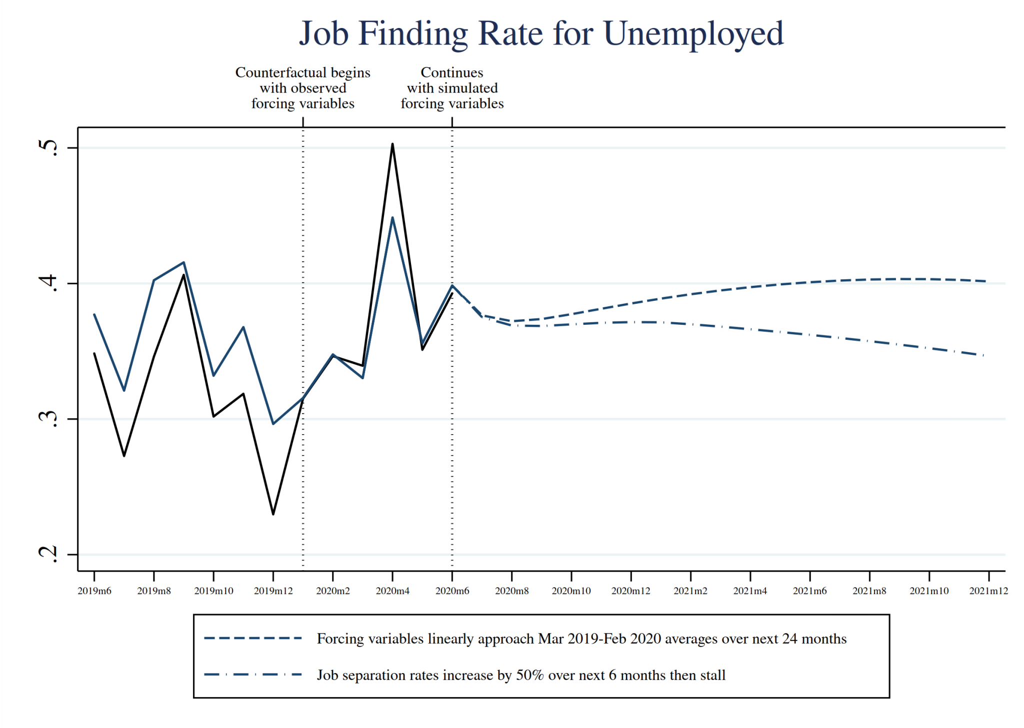
Appendix Figure A28: Job Finding Rates for The Permanent and Temporary Unemployed - **Separation Rates Increase**

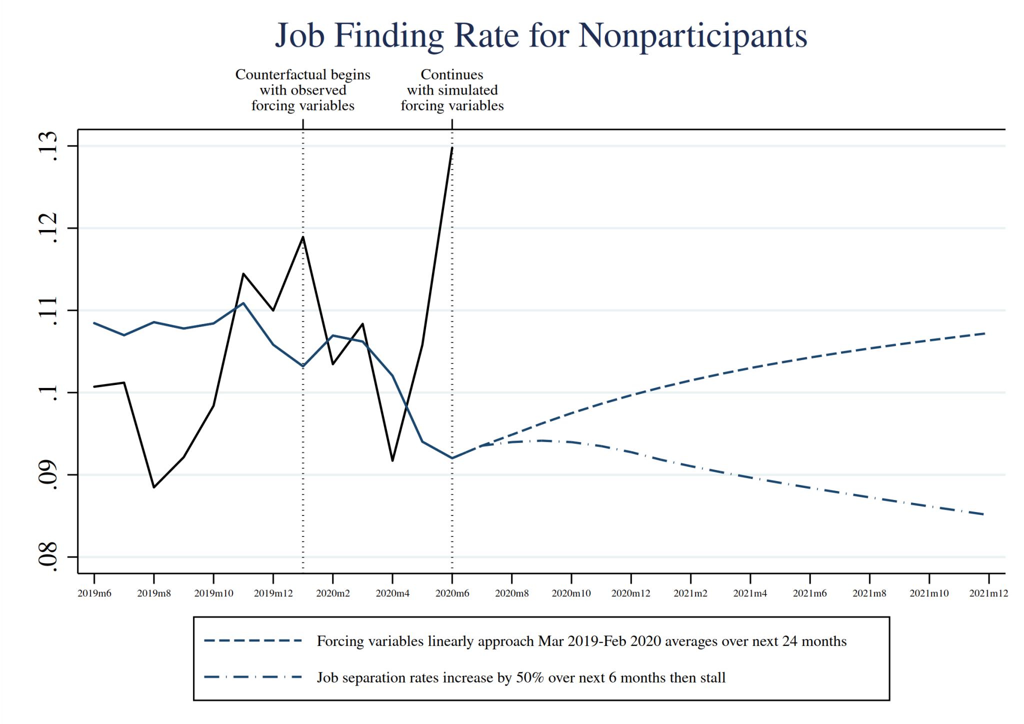



Notes: This figure reports counterfactual simulation results.

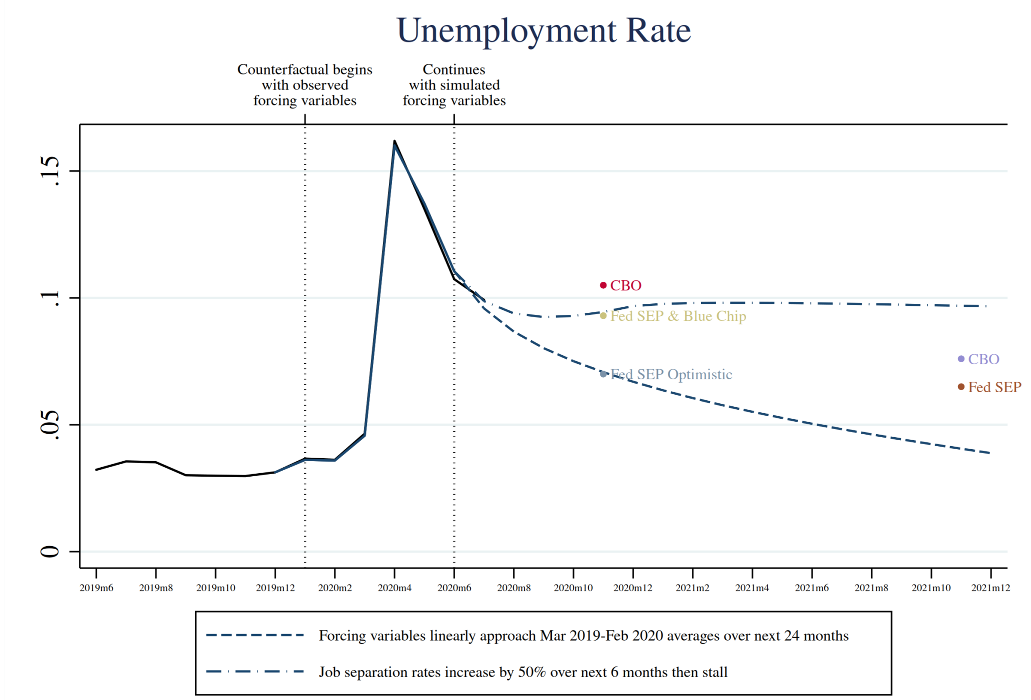
Appendix Figure A29: Job Finding Rates for Unemployed and Nonparticipants - **Separation Rates Increase**

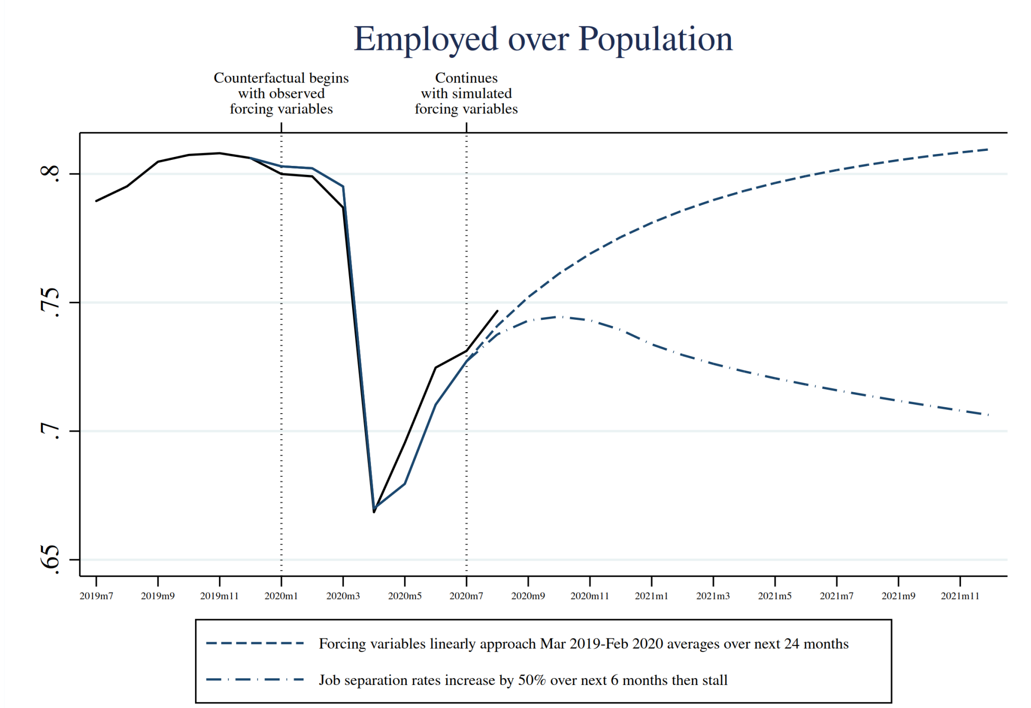



Notes: This figure reports counterfactual simulation results.

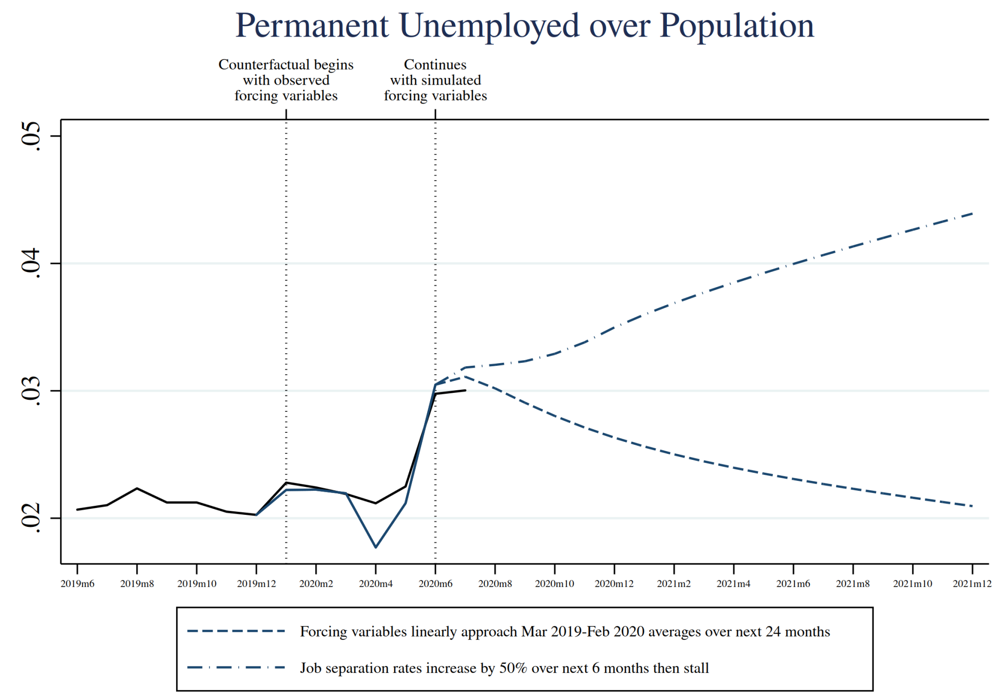
Appendix Figure A30: Unemployment rate and Employed over Population -
**Separation Rates Increase**

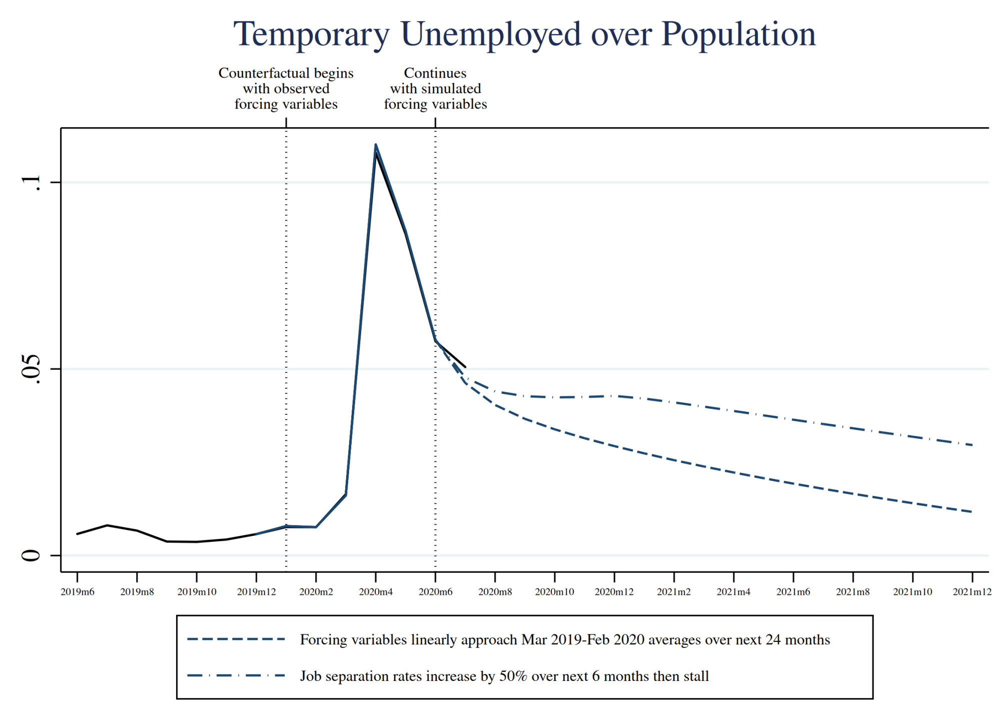



<u>Notes:</u> This figure reports counterfactual simulation results.

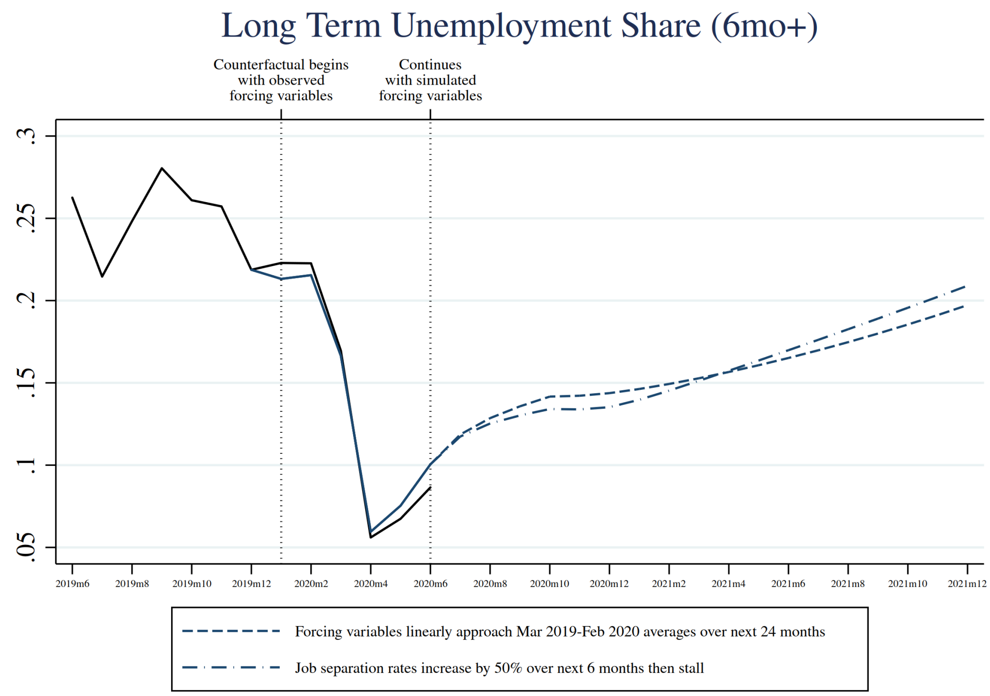
Appendix Figure A31: Permanent and Temporary Unemployment over Population - **Separation Rates Increase**

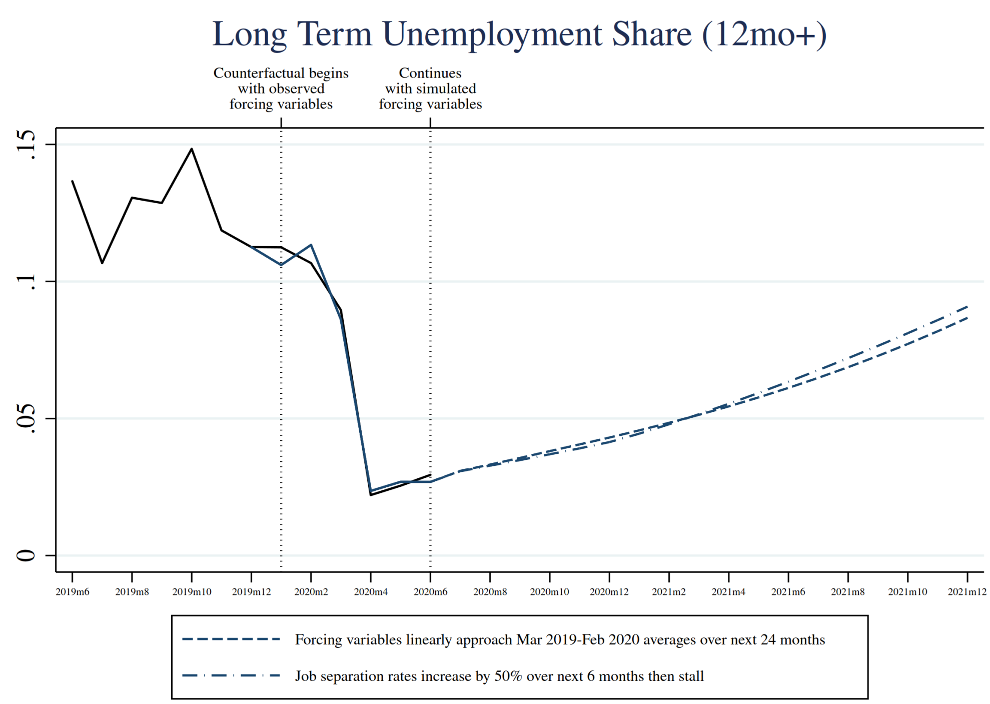



Notes: This figure reports counterfactual simulation results.

Appendix Figure A32: Long Term Unemployment 6mo+ and 12mo+ -
**Separation Rates Increase**

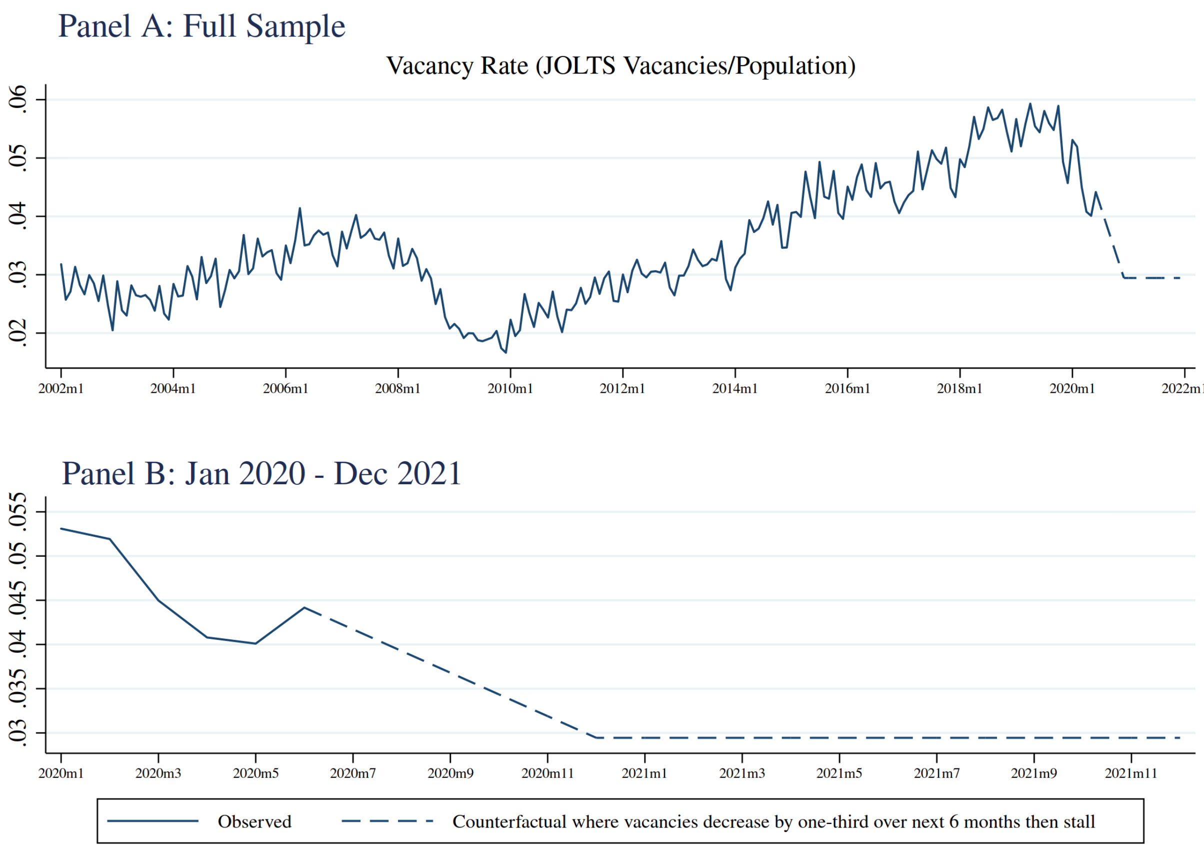



Notes: This figure reports counterfactual simulation results.

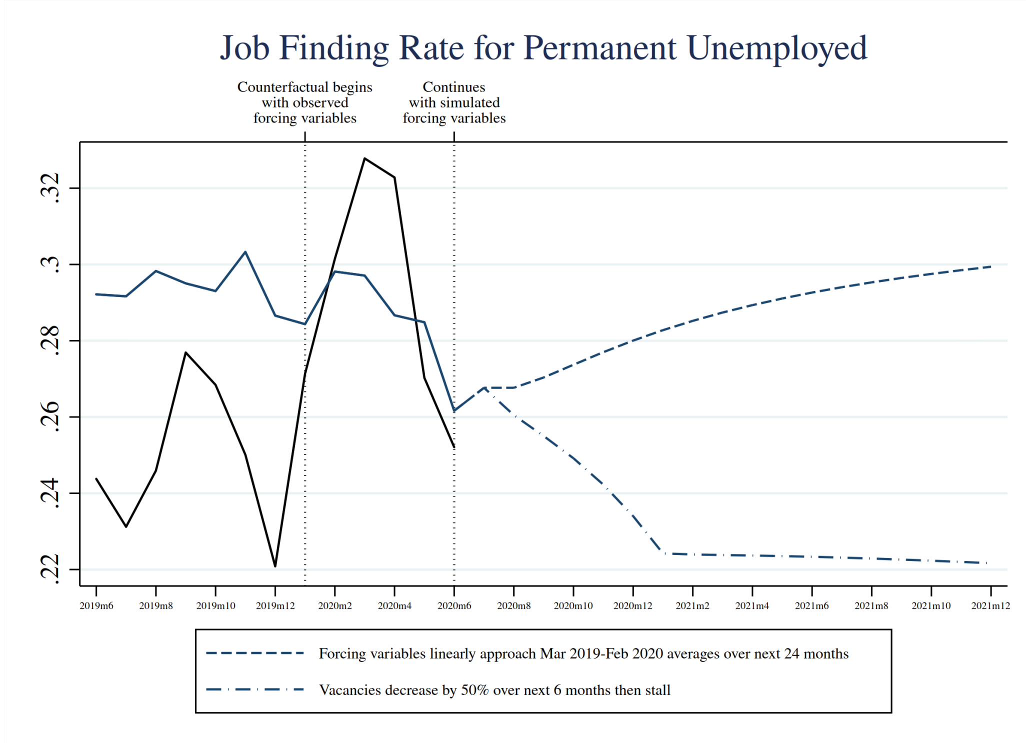
**SCENARIO: Decrease in Vacancy Rate**

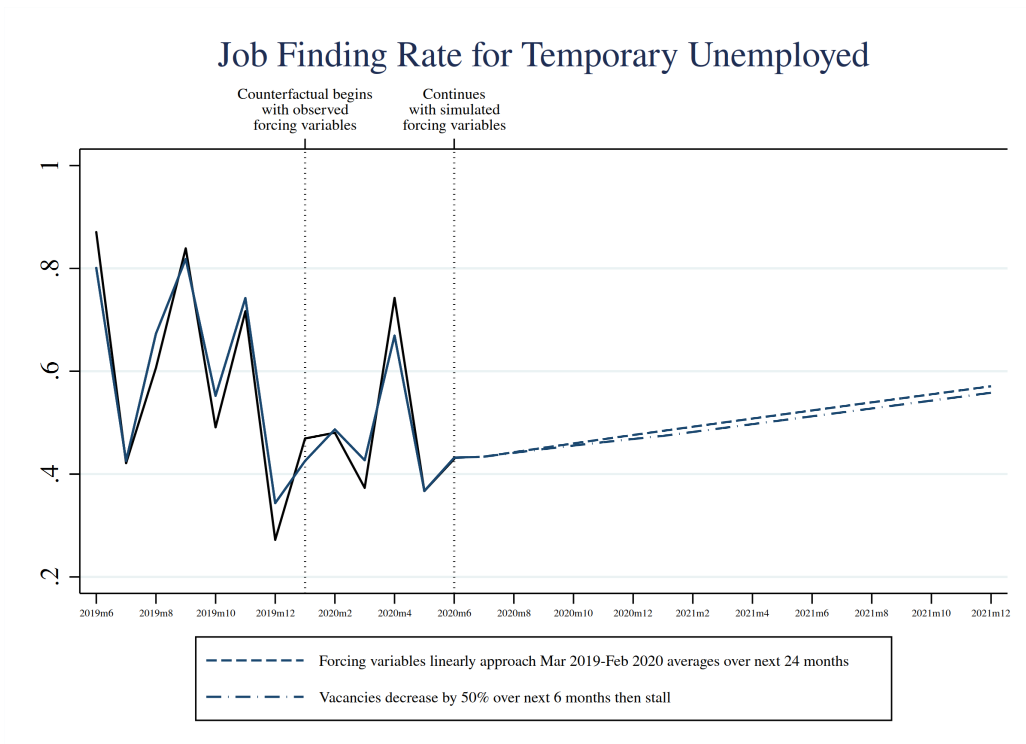
Appendix Figure A33: Vacancy Rates in **Vacancy Rate Decreases** scenario




Notes: This figure reports counterfactual simulation results.

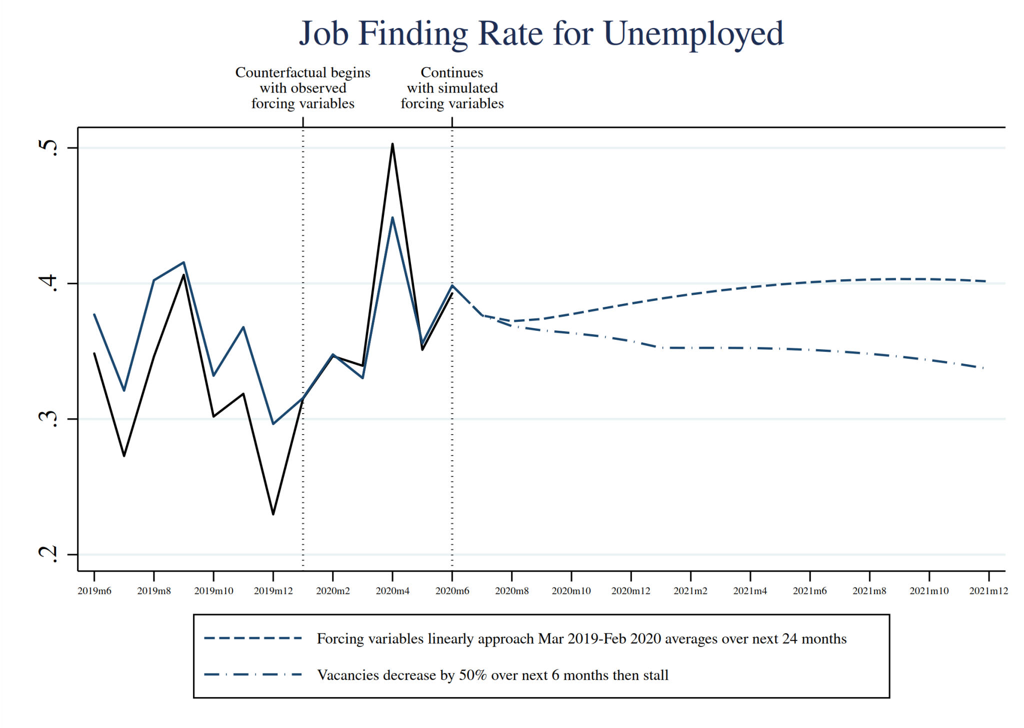
Appendix Figure A34: Job Finding Rates for The Permanent and Temporary Unemployed - **Vacancy Rate Decreases**

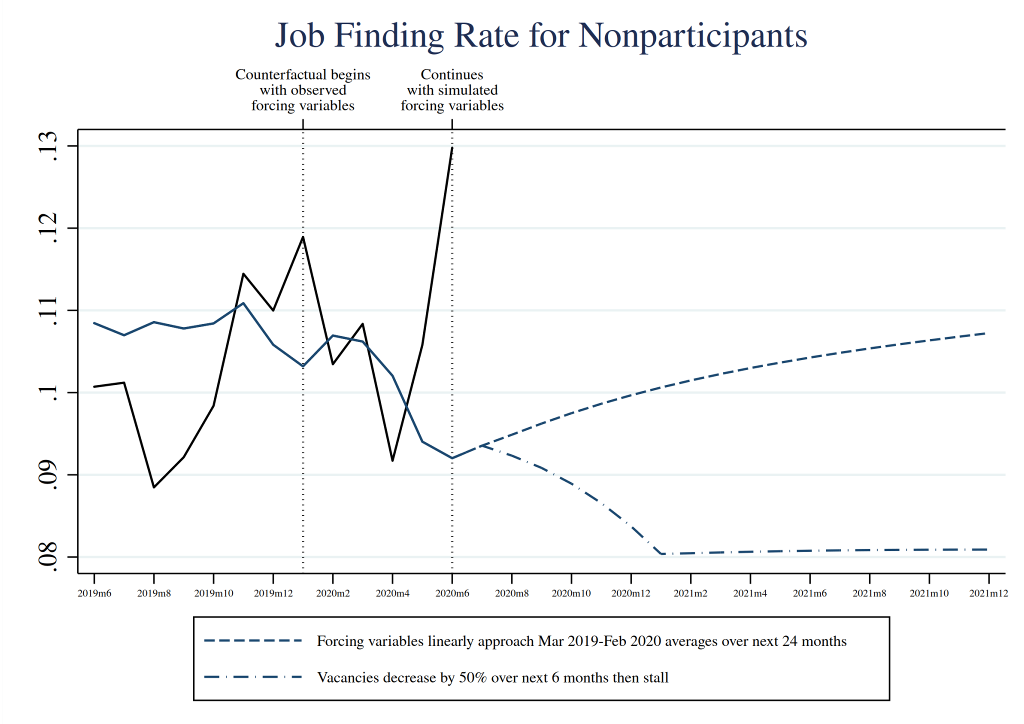



Notes: This figure reports counterfactual simulation results.

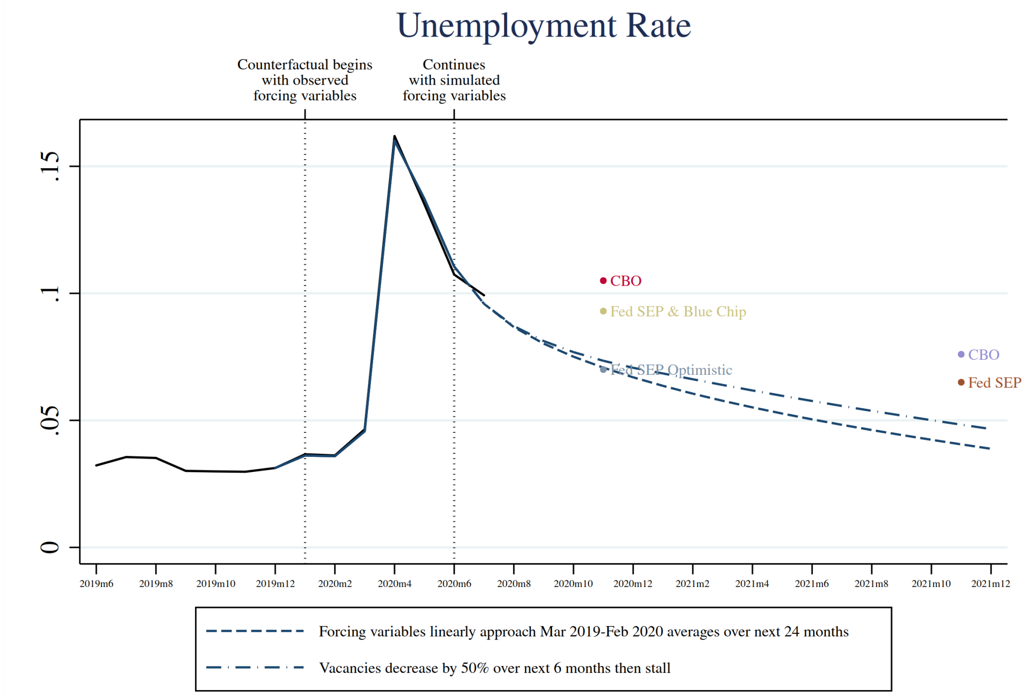
Appendix Figure A35: Job Finding Rates for Unemployed and Nonparticipants - **Vacancy Rate Decreases**

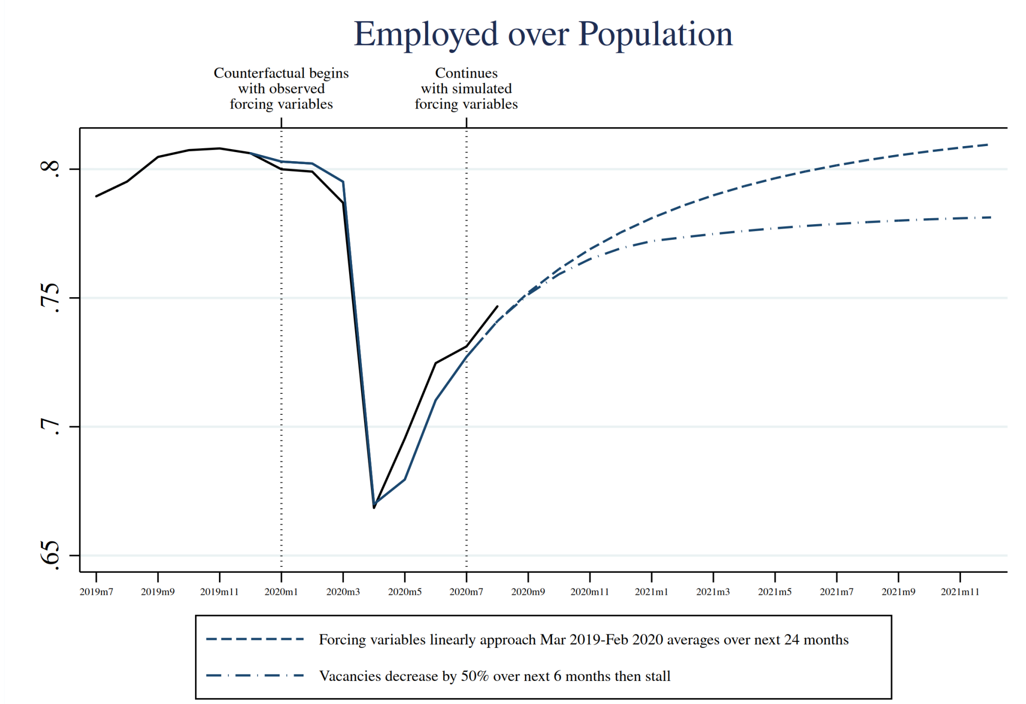



Notes: This figure reports counterfactual simulation results.

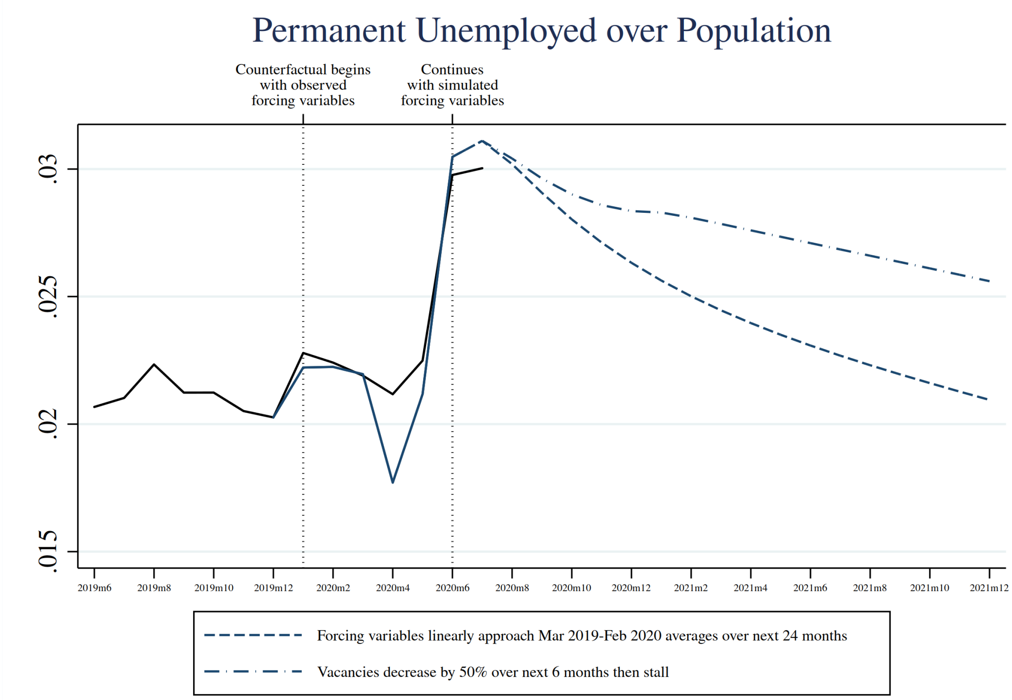
Appendix Figure A36: Unemployment rate and Employed over Population -
**Vacancy Rate Decreases**

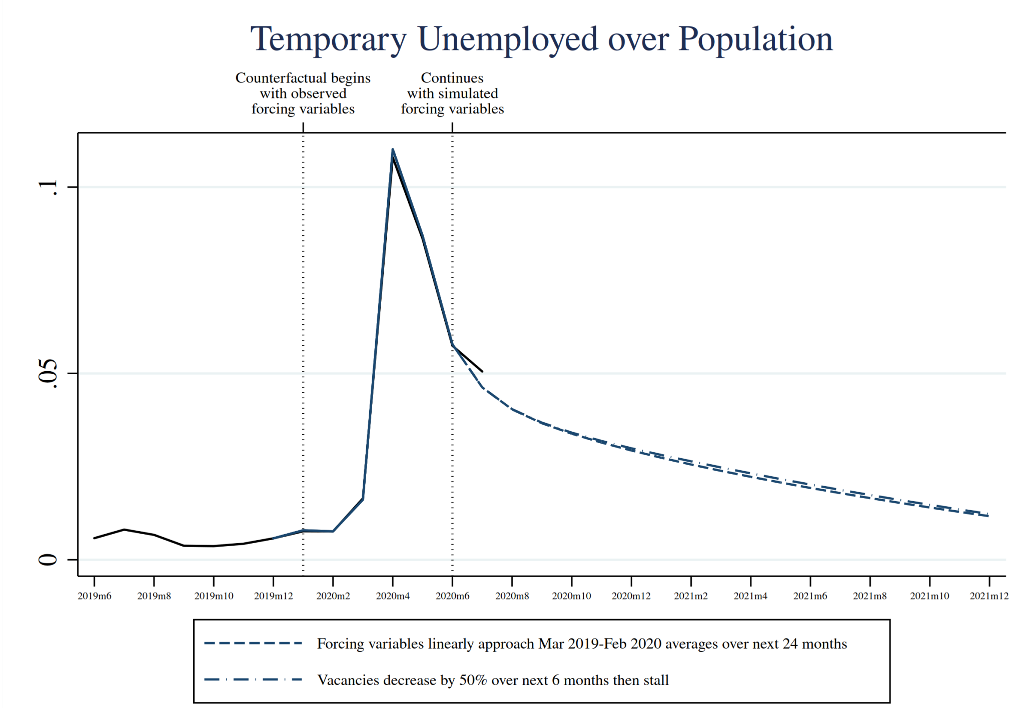



Notes: This figure reports counterfactual simulation results.

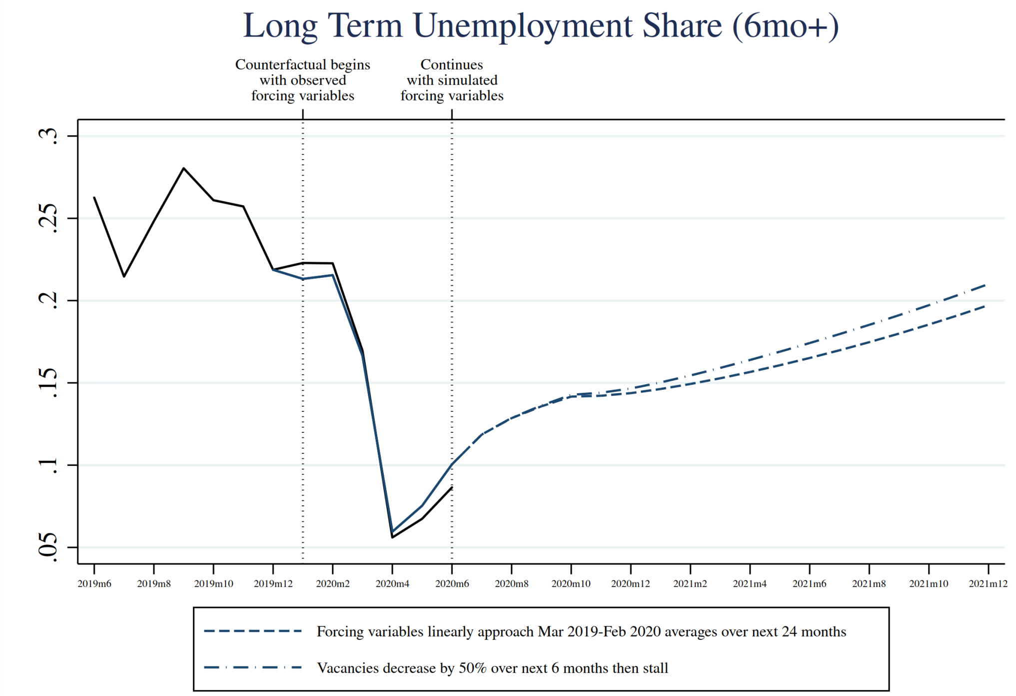
Appendix Figure A37: Permanent and Temporary Unemployment over Population - **Separation Rates Increase**

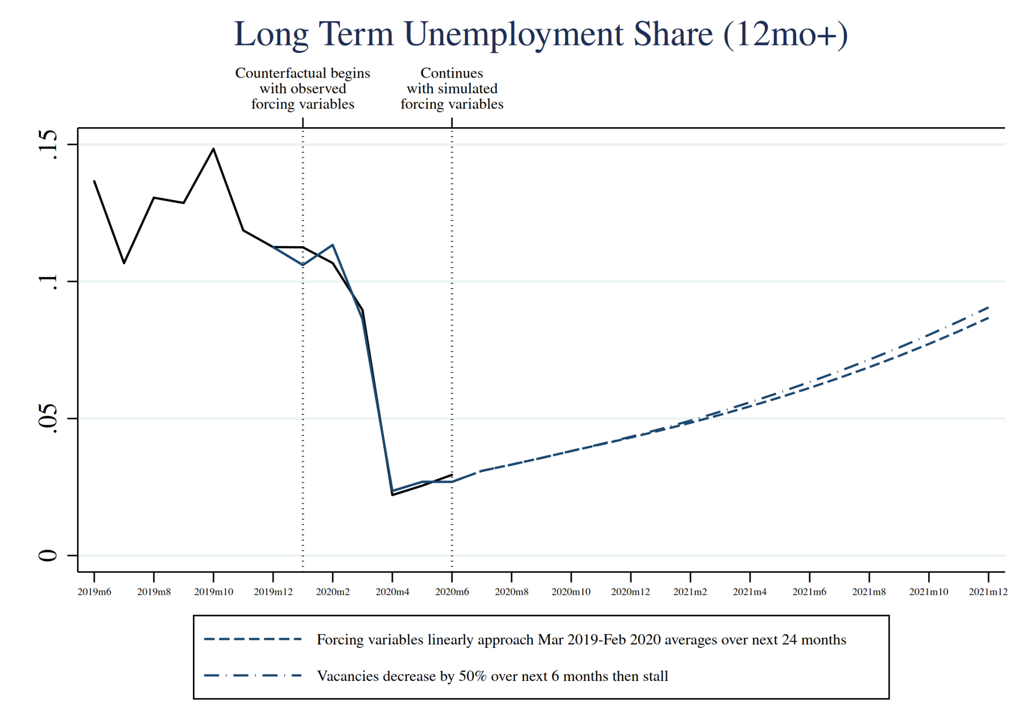



Notes: This figure reports counterfactual simulation results.

Appendix Figure A38: Long Term Unemployment 6mo+ and 12mo+ -
**Separation Rates Increase**

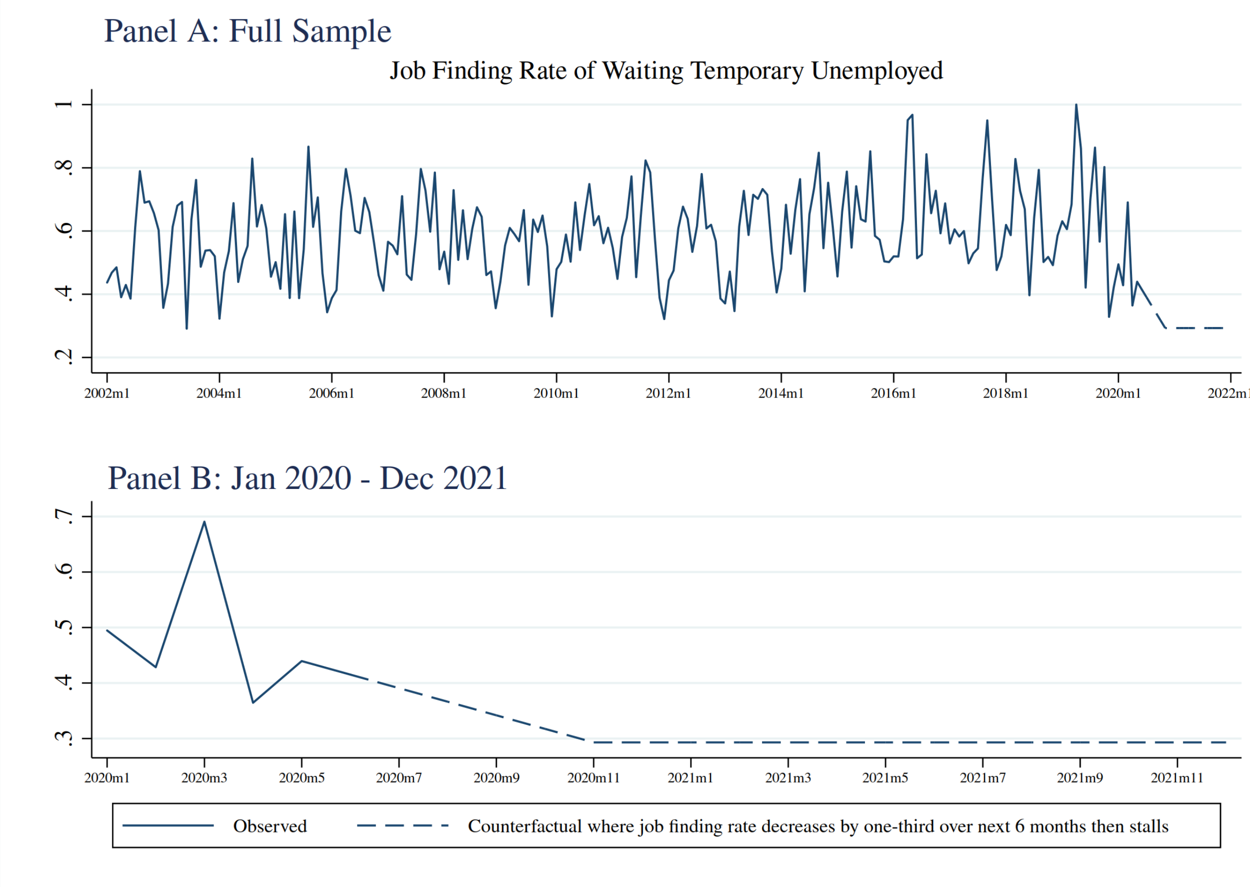



Notes: This figure reports counterfactual simulation results.

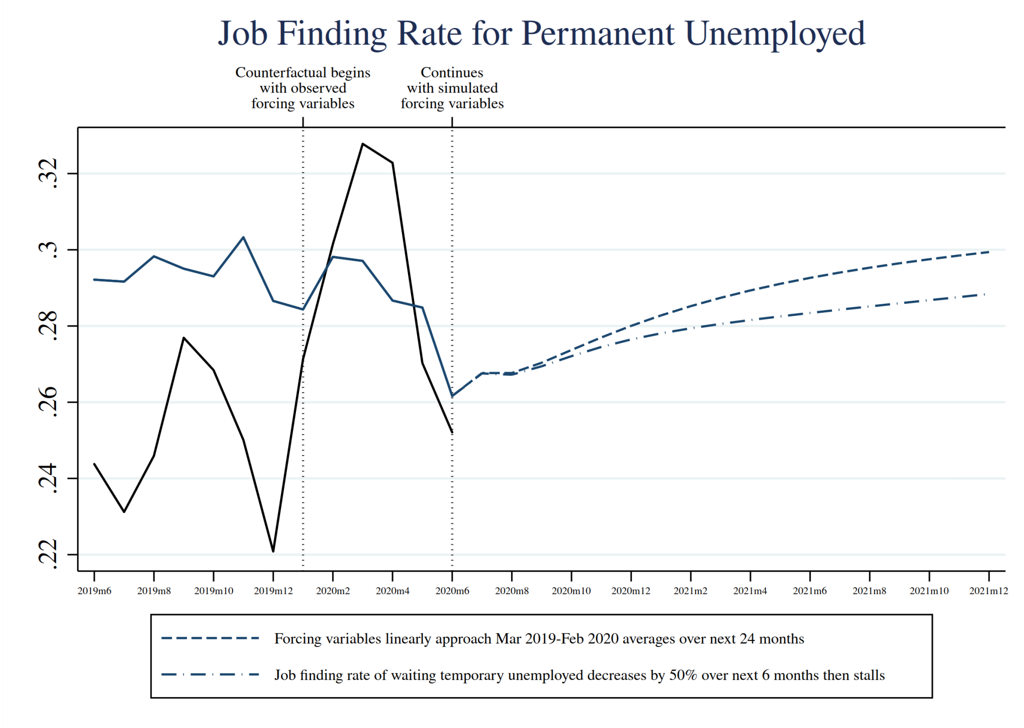
**SCENARIO: Job Finding Rate of Waiting Temporary Unemployed Decreases**

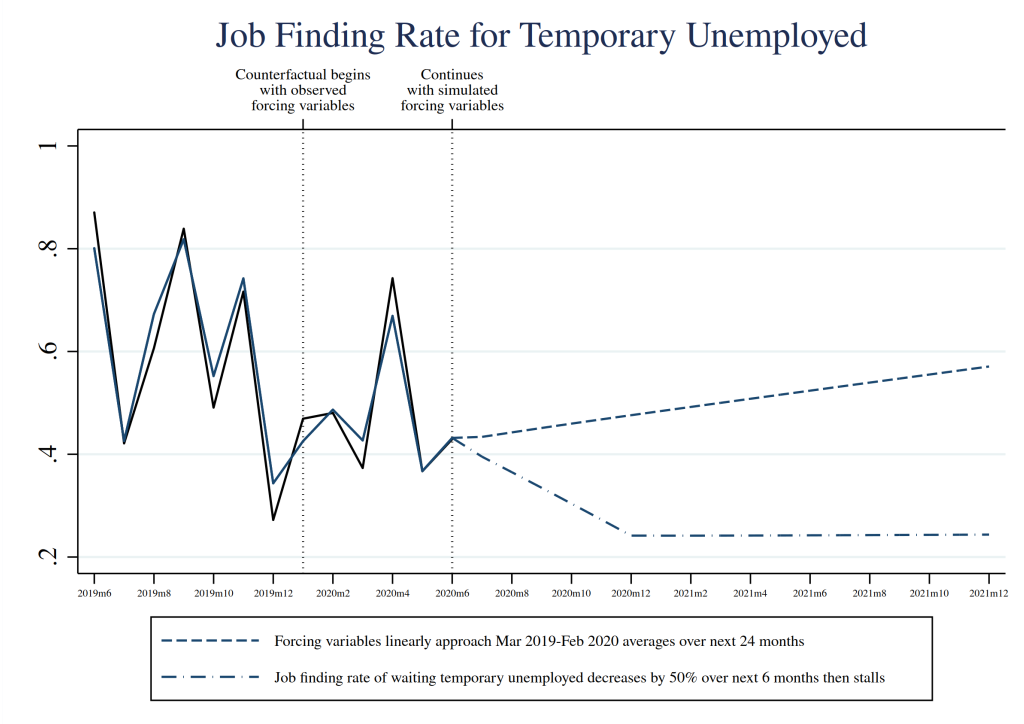
Appendix Figure A39: Job Finding Rate of Waiting Temporary Unemployed **- Job Finding Rate of Waiting Temporary Unemployed Decreases**




Notes: This figure reports counterfactual simulation results.

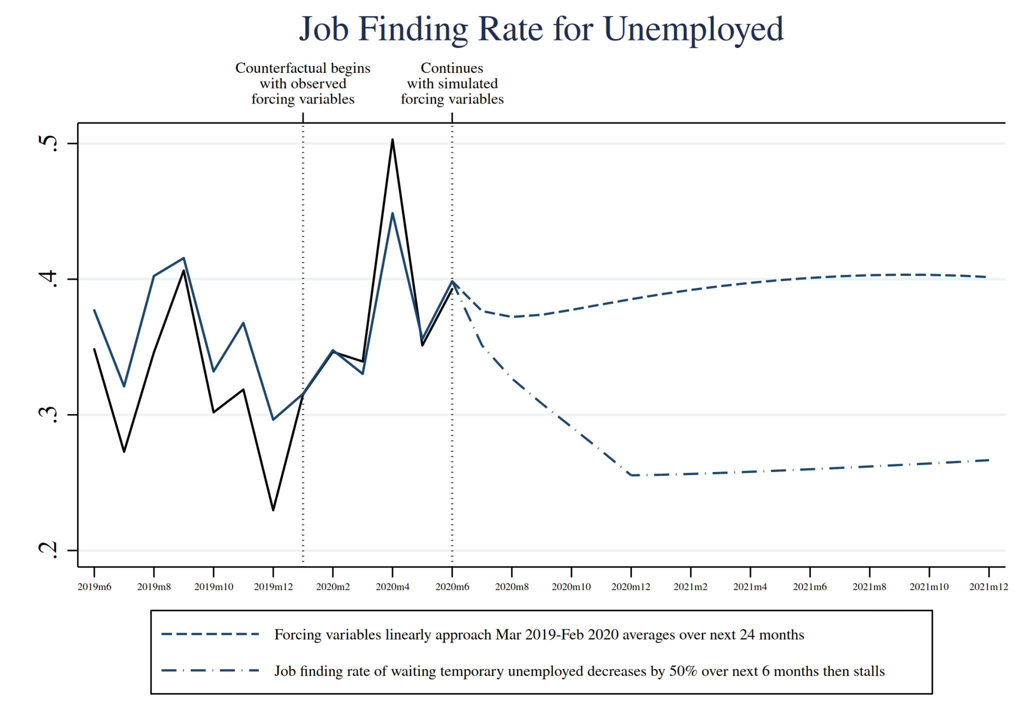
Appendix Figure A40: Job Finding Rates for The Permanent and Temporary Unemployed - **Job Finding Rate of Waiting Temporary Unemployed Decreases**

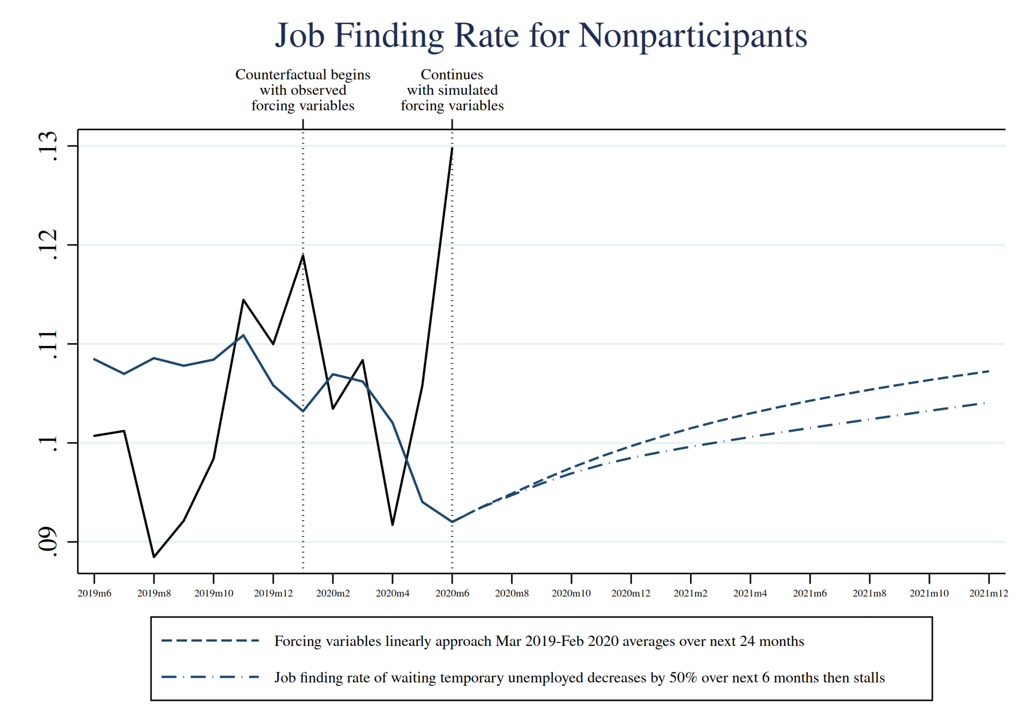



Notes: This figure reports counterfactual simulation results.

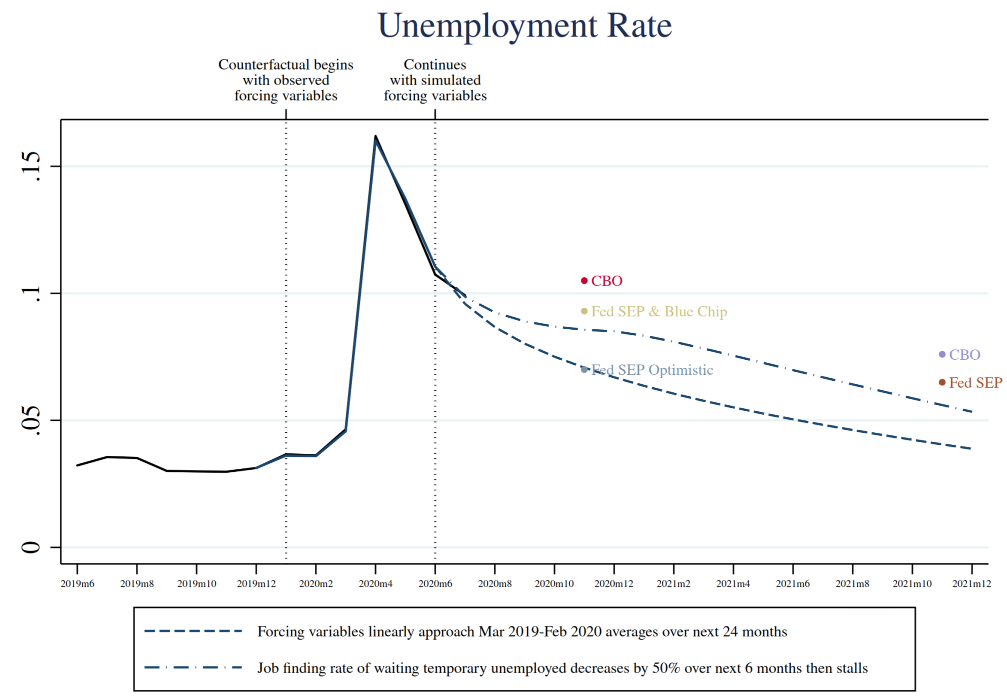
Appendix Figure A41: Job Finding Rates for Unemployed and Nonparticipants - **Job Finding Rate of Waiting Temporary Unemployed Decreases**

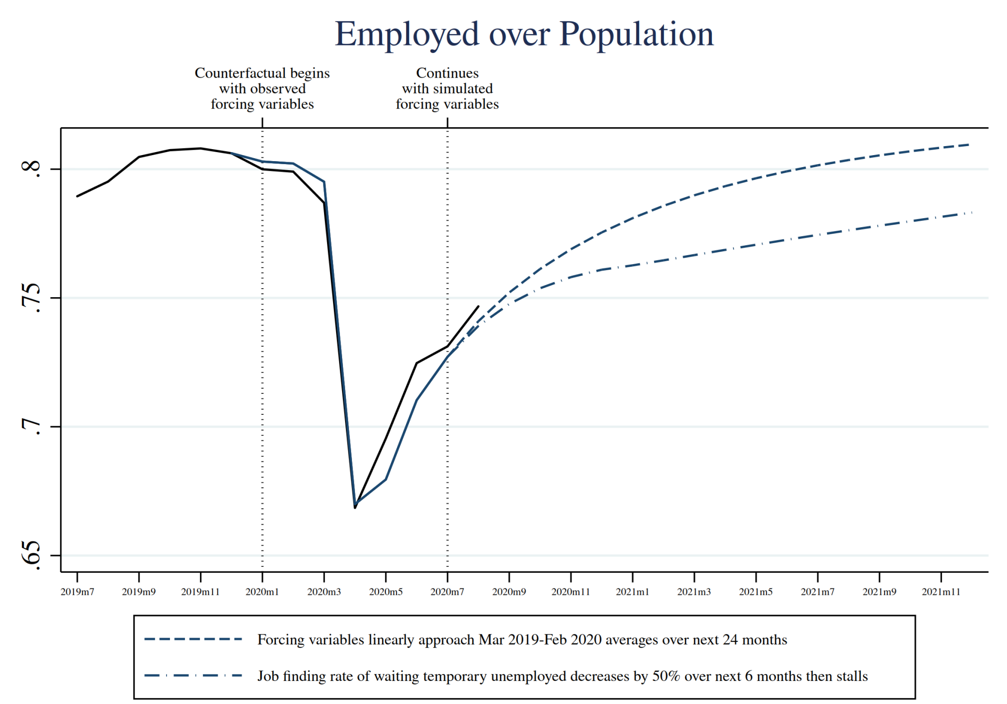



Notes: This figure reports counterfactual simulation results.

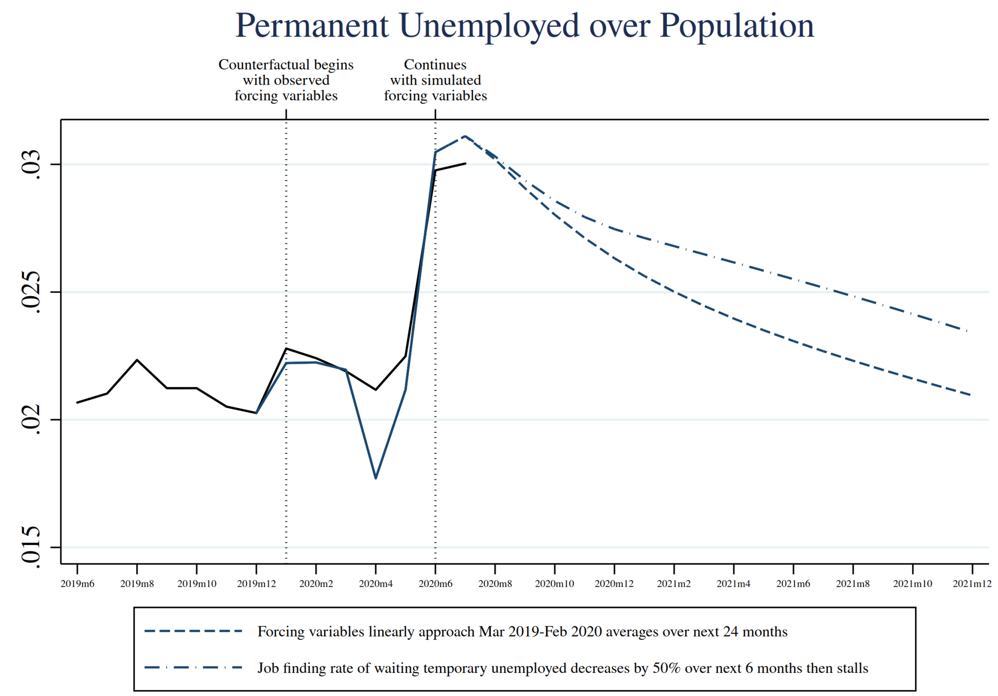
Appendix Figure A42: Unemployment rate and Employed over Population -
**Job Finding Rate of Waiting Temporary Unemployed Decreases**

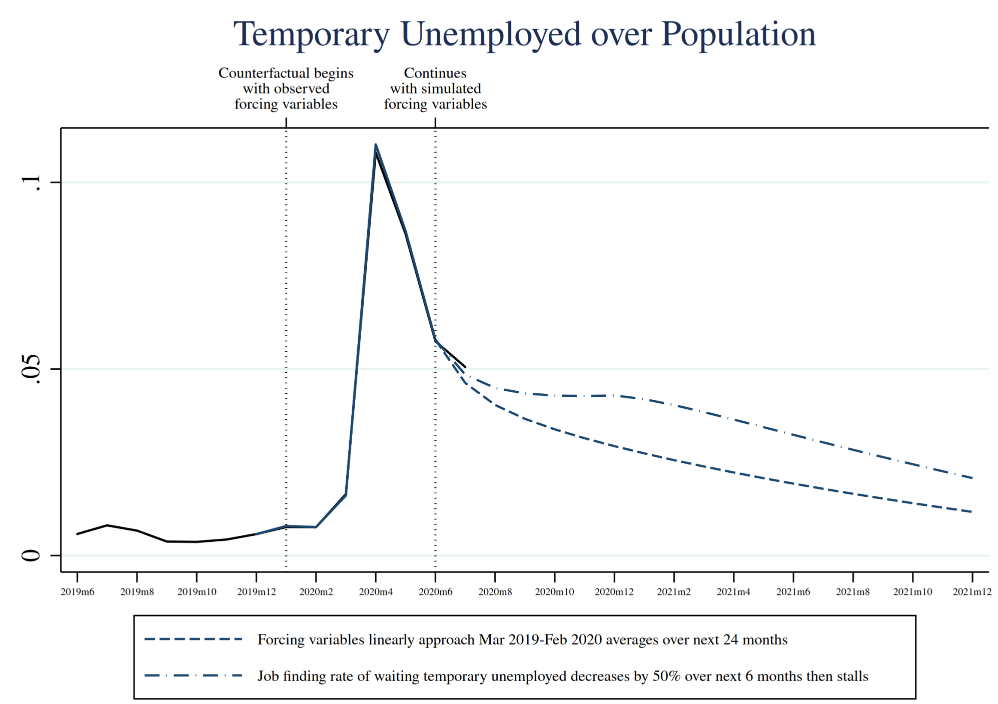



Notes: This figure reports counterfactual simulation results.

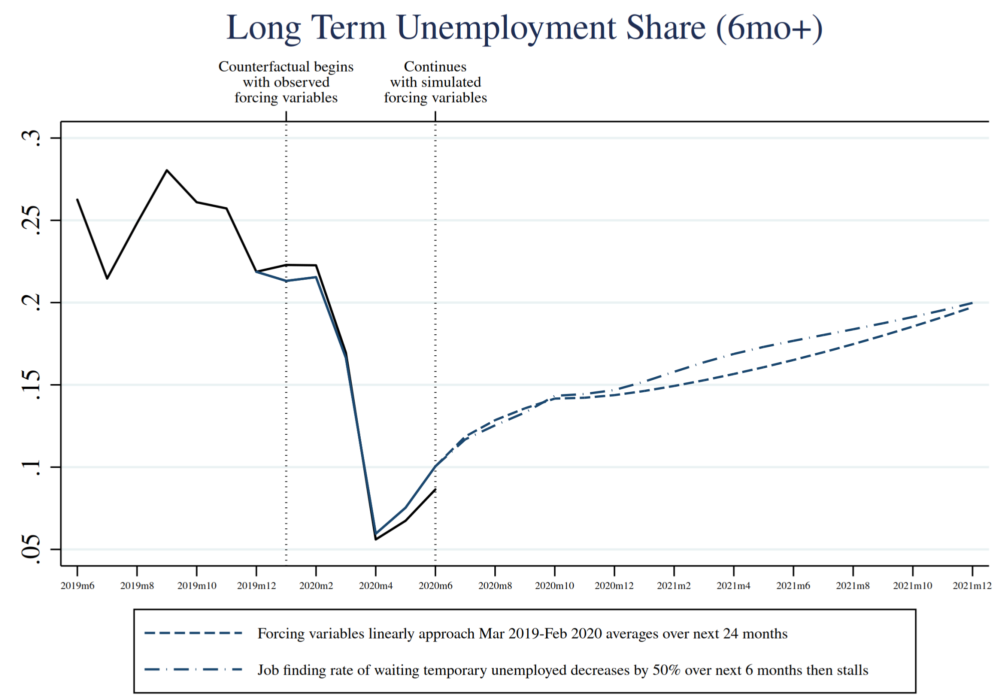
Appendix Figure A43: Permanent and Temporary Unemployment over Population -
**Job Finding Rate of Waiting Temporary Unemployed Decreases**

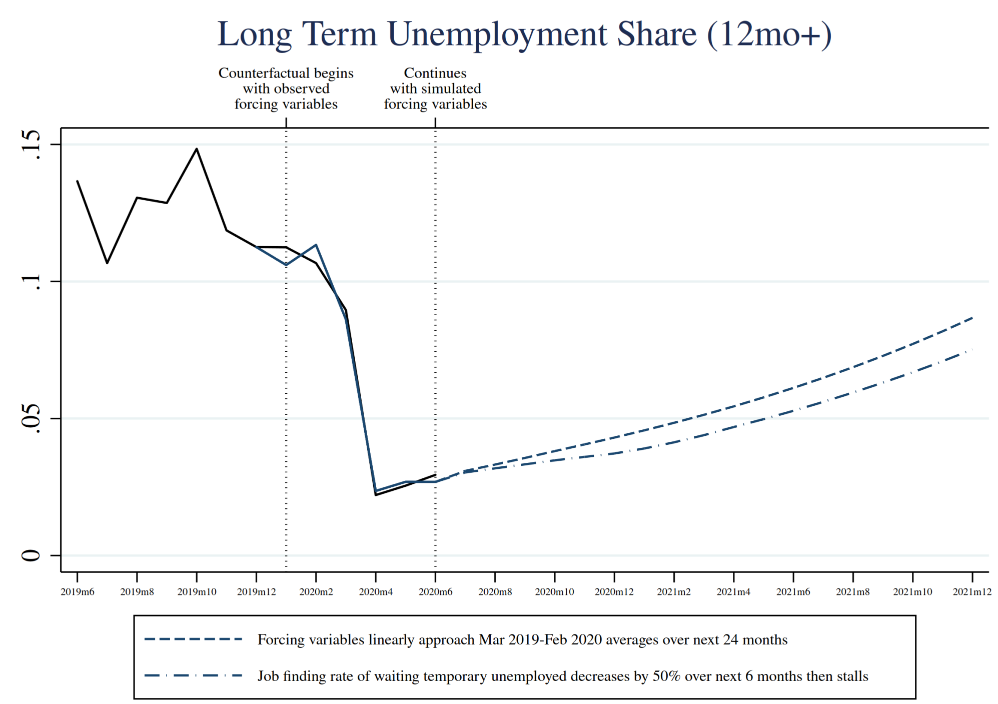



Notes: This figure reports counterfactual simulation results.

Appendix Figure A44: Long Term Unemployment 6mo+ and 12mo+ -
**Job Finding Rate of Waiting Temporary Unemployed Decreases**

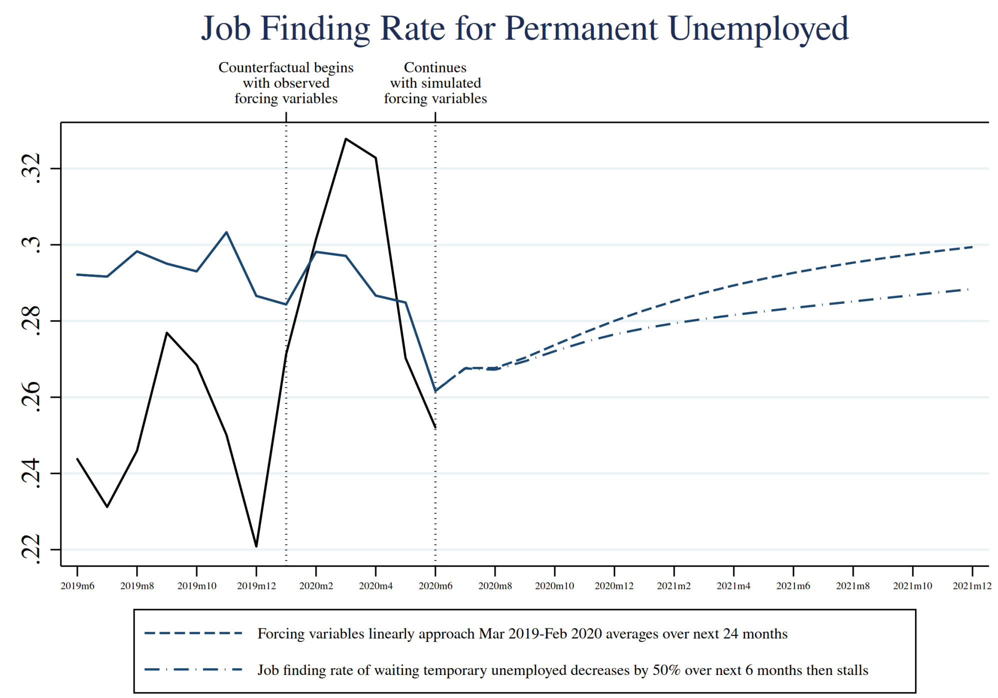


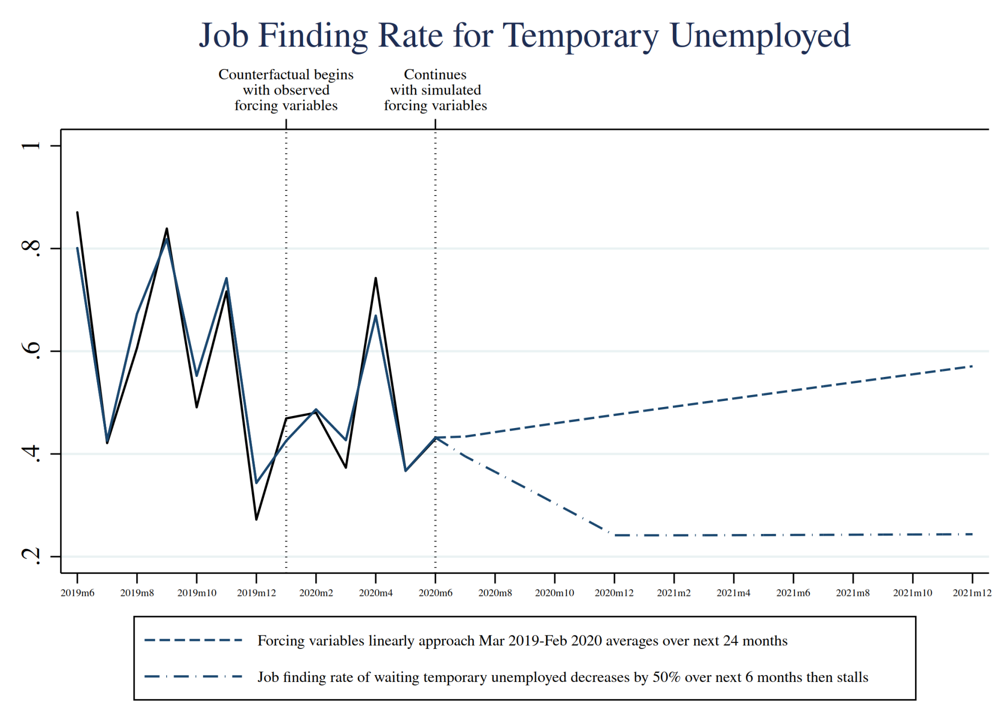




Notes: This figure reports counterfactual simulation results.

**SCENARIO: Vacancy Rate Decreases AND Job Finding Rate of Waiting Temporary Unemployed Decreases**

Appendix Figure A45: Job Finding Rates for The Permanent and Temporary Unemployed - **Vacancies and Job Finding Rate of Waiting Temporary Unemployed Decreases**

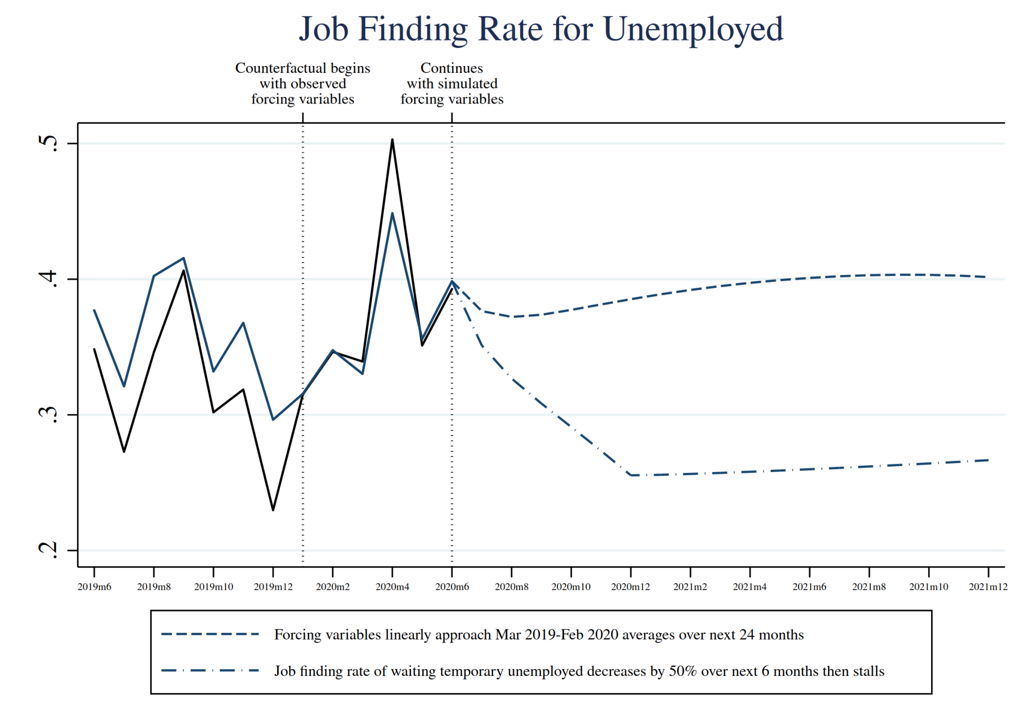


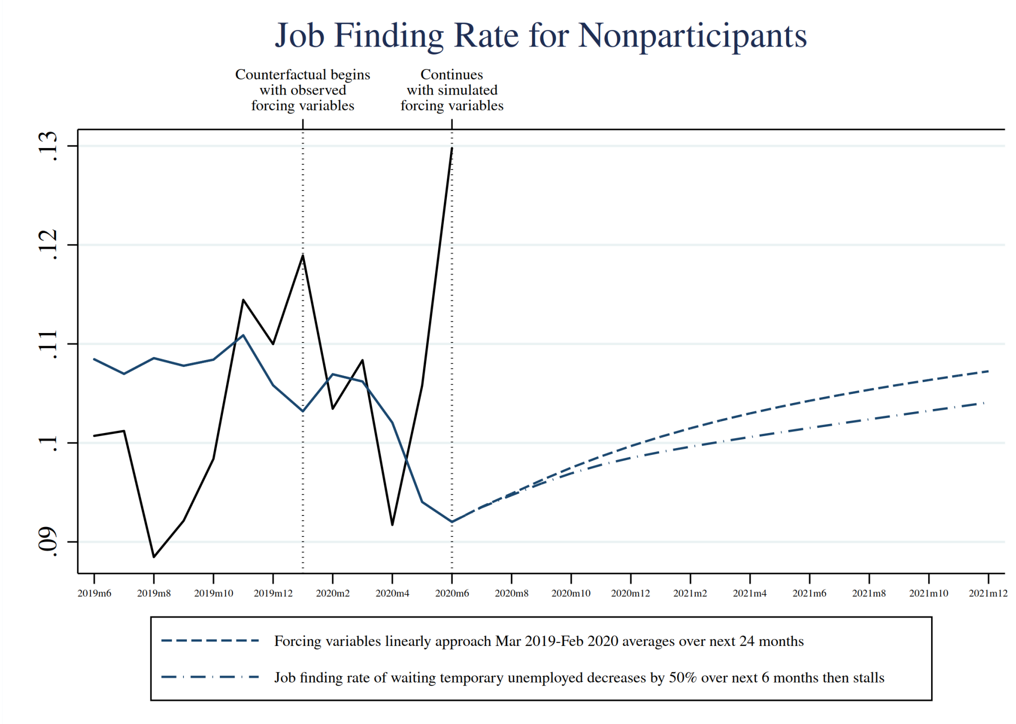






Notes: This figure reports counterfactual simulation results.

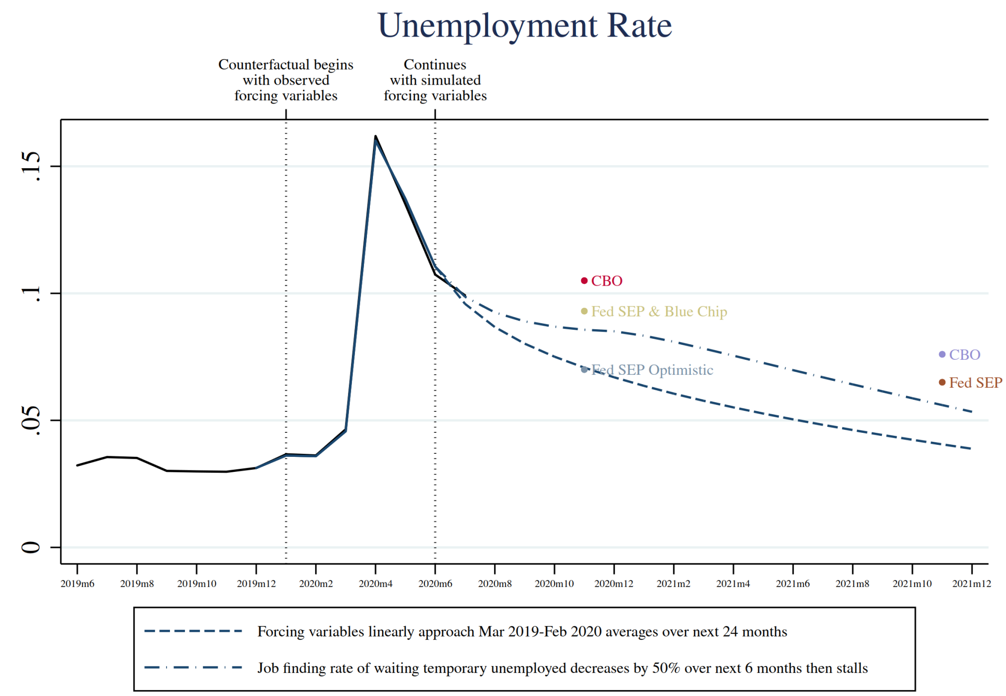
Appendix Figure A46: Job Finding Rates for Unemployed and Nonparticipants -
**Vacancies and Job Finding Rate of Waiting Temporary Unemployed Decreases**

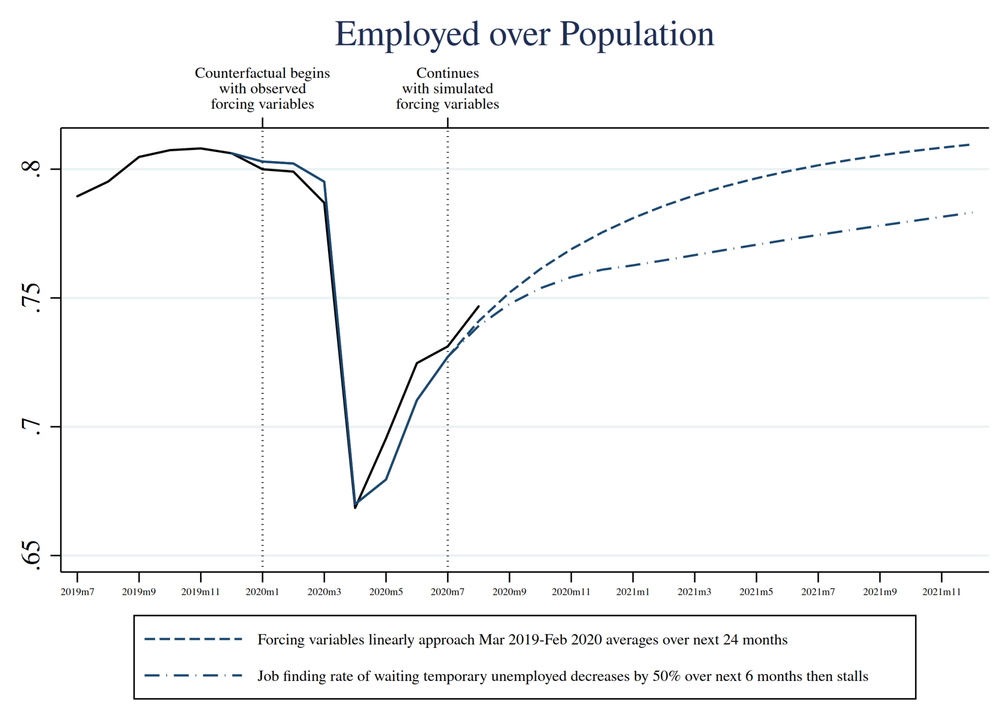



Notes: This figure reports counterfactual simulation results.

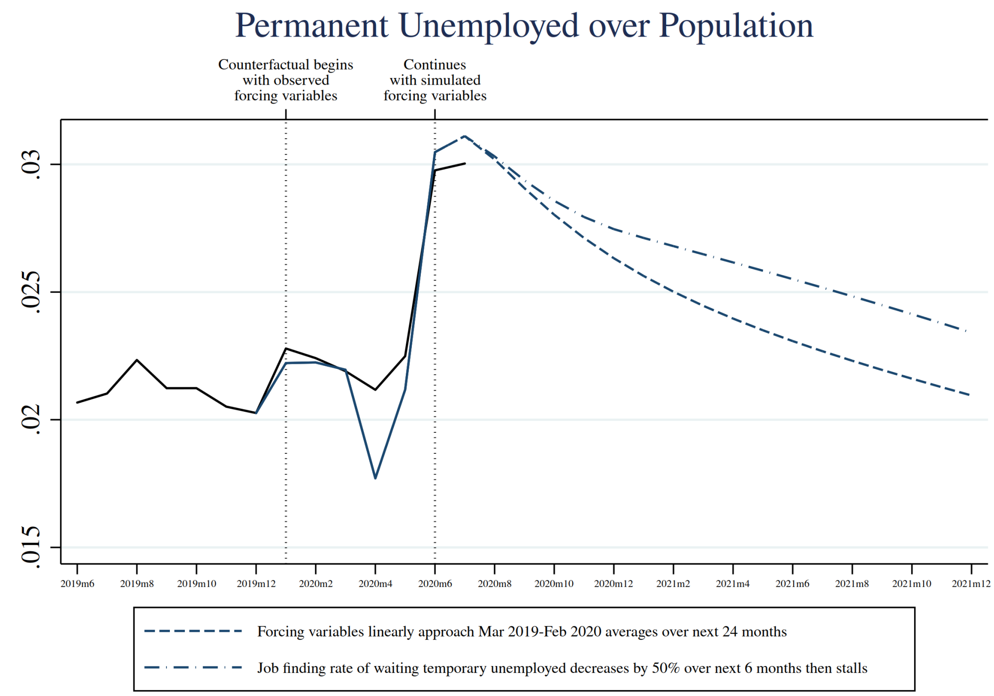
Appendix Figure A47: Unemployment rate and Employed over Population -
**Vacancies and Job Finding Rate of Waiting Temporary Unemployed Decreases**

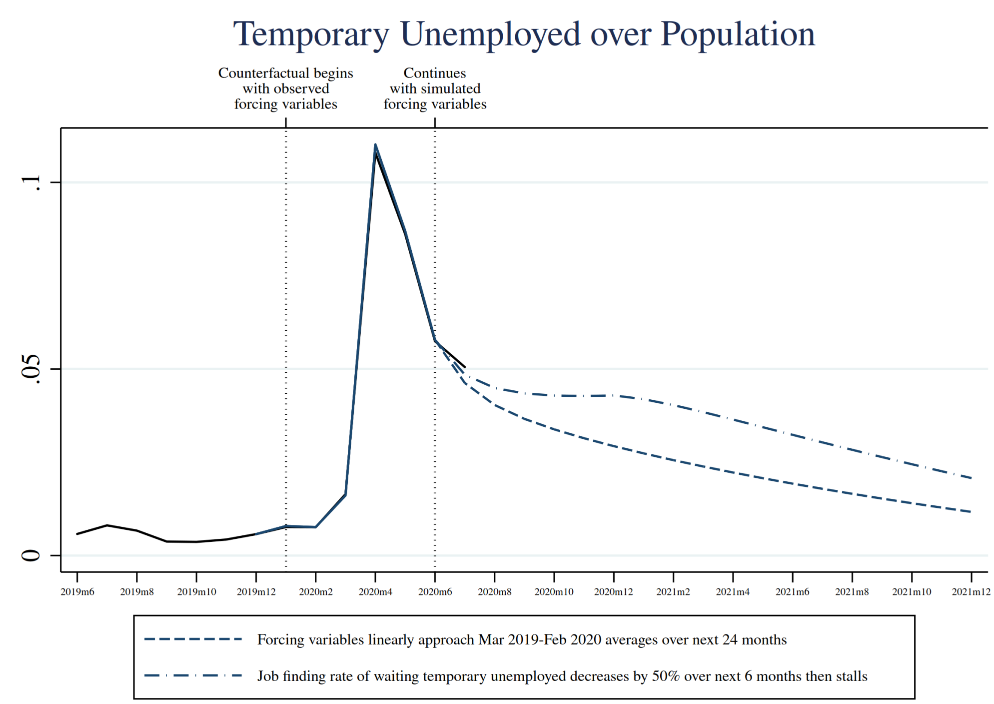



Notes: This figure reports counterfactual simulation results.

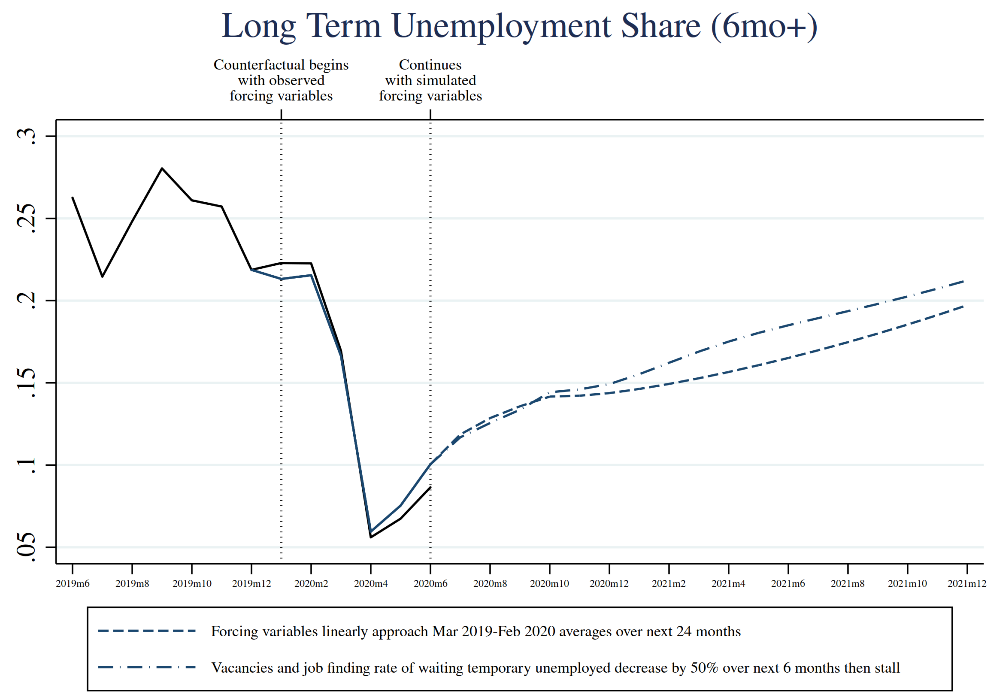
Appendix Figure A48: Permanent and Temporary Unemployment over Population -
**Vacancies and Job Finding Rate of Waiting Temporary Unemployed Decreases**

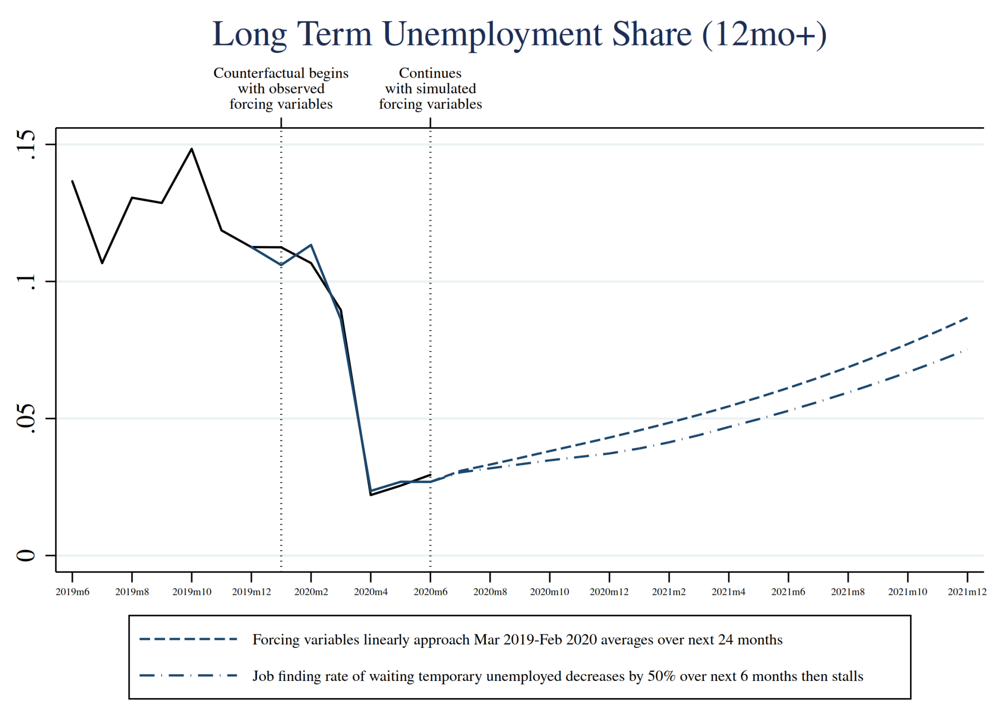



Notes: This figure reports counterfactual simulation results.

Appendix Figure A49: Long Term Unemployment 6mo+ and 12mo+ -
**Vacancies and Job Finding Rate of Waiting Temporary Unemployed Decreases**




Notes: This figure reports counterfactual simulation results.