Job Loss, Job Finding, and Continued Claims for UI Benefits*

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1 Introduction

Continued claims for unemployment insurance (UI) represent the stock of unemployed workers seeking UI benefits in a given week.[1] Because they are reported promptly and at weekly frequency, continued claims—together with initial claims—are a widely followed indicator of labor market slack. In principle, continued claims capture changes in unemployment along both job-losing and job-finding margins. In practice, however, interpretation of continued claims is complicated by a number of institutional factors that influence flows into and out of the UI system.

In this note, I use Department of Labor (DOL) data on initial and continued claims, eligibility determinations, and benefit exhaustions to decompose changes in continued claims into inflows and outflows. My approach yields an estimate of what I call the *withdrawal rate*, the share of continued claimants who stop filing due to either reemployment or labor force exit. I show that changes in the withdrawal rate closely track changes in job finding among unemployed job losers in the Current Population Survey (CPS). The withdrawal rate may be useful in gauging and forecasting labor market conditions, as it is (i) timely and high-frequency, (ii) based on administrative data and thus immune to declining response rates to government surveys, and (iii) measurable over a long time period, (iv) potentially at both state and national levels.

Section 2 explains how I measure UI inflows and outflows. Section 3 examines these flows and compares them to transition rates in the CPS. Section 4 discusses limitations and potential refinements. Appendix A documents my methodology in detail, including the assumptions needed to combine UI data at weekly, monthly, and quarterly frequencies to construct a weekly decomposition.

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[1] Continued claims in regular state UI programs are the numerator in the insured unemployment rate, which is an input into the trigger rules governing state Extended Benefits programs. Appendix Figure A1 plots the insured unemployment rate alongside the overall unemployment rate.

2 Measurement

Initial claims for UI benefits fall into two main categories: *new* initial claims, filed by workers without a recent history of benefit receipt, and *reopened* initial claims, filed by workers who are seeking to resume benefit receipt after an intervening period of reemployment.[2] New claims are screened for eligibility on both "monetary" grounds (having sufficient base-period earnings) and "non-monetary" grounds (having a valid cause of separation, among other requirements). Reopened claims have already satisfied the monetary test but may still be denied on non-monetary grounds.

To receive benefits for a given week of unemployment, a claimant must file a continued claim documenting their earnings and job search activities in that week and certifying their eligibility for benefits. Claimants exit the count of continued claims when they exhaust benefits or otherwise stop filing, usually due to either reemployment or labor force exit. Claimants may also skip filing for one or more weeks—for example, due to temporary ineligibility—and subsequently resume filing.

Abstracting from some institutional details, I assume that C_t, the number of continued claims seeking compensation for unemployment experienced in week t, can be expressed as

$$C_t = C_{t-1} + \underbrace{(I^N_{t+1} + I^R_{t+1})}_{\text{initial claims}} - \underbrace{(D^M_t + D^S_t)}_{\text{denials}} - \underbrace{(X_t + W_t)}_{\text{other outflows}} \tag{1}$$

where I^N_t denotes new claims filed in week t, I^R_t denotes reopened claims, D^M_t denotes claims denied due to failing the monetary test, D^S_t denotes claims denied due to an invalid cause of separation, X_t denotes benefit exhaustions, and W_t is an unobserved residual reflecting exits from the UI system for reasons other than benefit denial or exhaustion—what I call "withdrawals". I further assume that $D^M_t \equiv \delta^M_t I^N_t$, where δ^M_t is the share of new claims denied on monetary grounds, and that $D^S_t \equiv \delta^S_t[(1-\delta^M_t)I^N_t + I^R_t]$, where δ^S_t is the share of claims denied on separation grounds.

The time conventions in Equation (1) assume that (i) each initial claimant files a continued claim seeking benefits in the *preceding* week at the time of their initial claim[3] and that (ii) eligibility is quickly assessed, such that (iii) denied applicants stop filing continued claims thereafter.[4] Equa-

[2] A third category is *transitional* claims, which are filed by workers who reach the end of their benefit-year without having exhausted benefits. These are excluded from the headline count of initial claims and should be roughly neutral for changes in continued claims, since transitional claimants file continued claims both before and after the transition.

[3] Note that a worker's initial claim (which pertains to their unemployment spell as a whole) is distinct from their first continued claim (which pertains only to the first week of unemployment for which they are seeking benefits).

[4] Monetary determinations are usually prompt, since state unemployment offices have ongoing access to the payroll

tion (1) also assumes that temporary lapses in filing reduce the *level* of continued claims but roughly cancel out in *changes*, since each temporary exit is accompanied by a subsequent resumption.

The DOL reports state-level data on initial and continued claims (weekly frequency), new vs. reopened claims (monthly), eligibility determinations (quarterly), and benefit exhaustions (monthly). In Appendix A, I describe how I combine these data to compute state-level analogues to each term in Equation (1), aggregate across states, and seasonally adjust each term using pre-pandemic data (so as to sidestep seasonal distortions caused by the pandemic). The source data are near-complete by 1990, and the decomposition is populated from January 1990 through the latest reading for continued claims, though it requires extrapolation for monthly and quarterly components that are published with longer lags. I implement Equation (1) using data only on regular state UI programs, which account for nearly all UI claims during expansions. Although the withdrawal rate is a meaningful measure of job finding at all points in the business cycle, my methodology could be extended to encompass the temporary UI programs in effect during recessions.

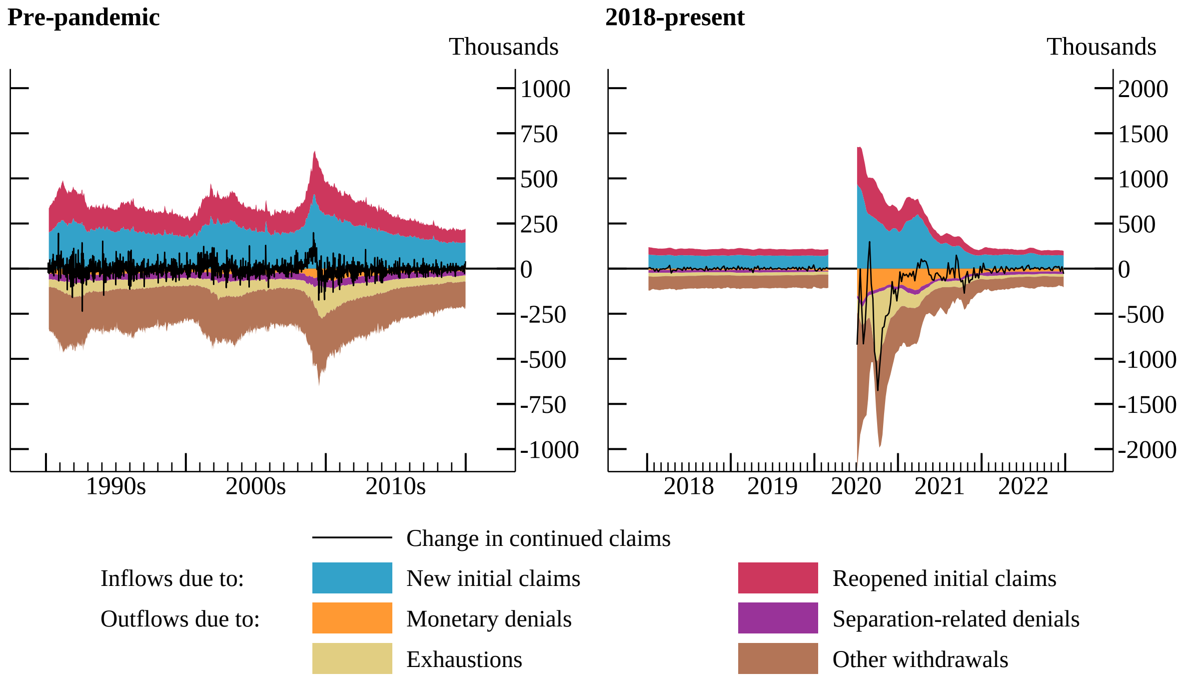
3 An analysis of UI flows

Figure 1 plots weekly changes in continued claims (black series) along with each of the inflow and outflow components that appear in Equation (1). All components are shown as four-week moving averages to smooth through the week-to-week volatility in claims data; the right panel, which straddles the pandemic, doubles the vertical axis and omits March–June 2020 for visual clarity. Appendix Figure A2 presents the same decomposition in proportional terms by dividing each term by lagged continued claims, C_{t-1}.

Several facts emerge from Figure 1. First, net changes in continued claims are dwarfed by gross flows. Second, both inflows and outflows are countercyclical, with clear increases during each of the last four recessions. Third, new initial claims account for the majority of inflows, but reopened claims make a significant contribution as well. Fourth, on the outflow margin, monetary denials, separation denials, and exhaustions all make important contributions, but the residual component—withdrawals—typically comprises between one-half and two-thirds of exits from continued claims.

data needed to calculate a claimant's base-period earnings (and base periods typically omit the most recent quarter). Non-monetary determinations typically take longer since they can involve more extensive fact-finding, including input from a claimant's former employer (whose tax obligations depend on how much their workers draw on UI).

Figure 1: Decomposing weekly changes in continued claims (in absolute terms)



Source: DOL ETA forms 207, 218, 539, and 5159 and author's calculations.
Note: Components are four-week trailing averages at weekly frequency. Observations during March–June 2020 are omitted for visual clarity. See Section 2 and Appendix A for details.

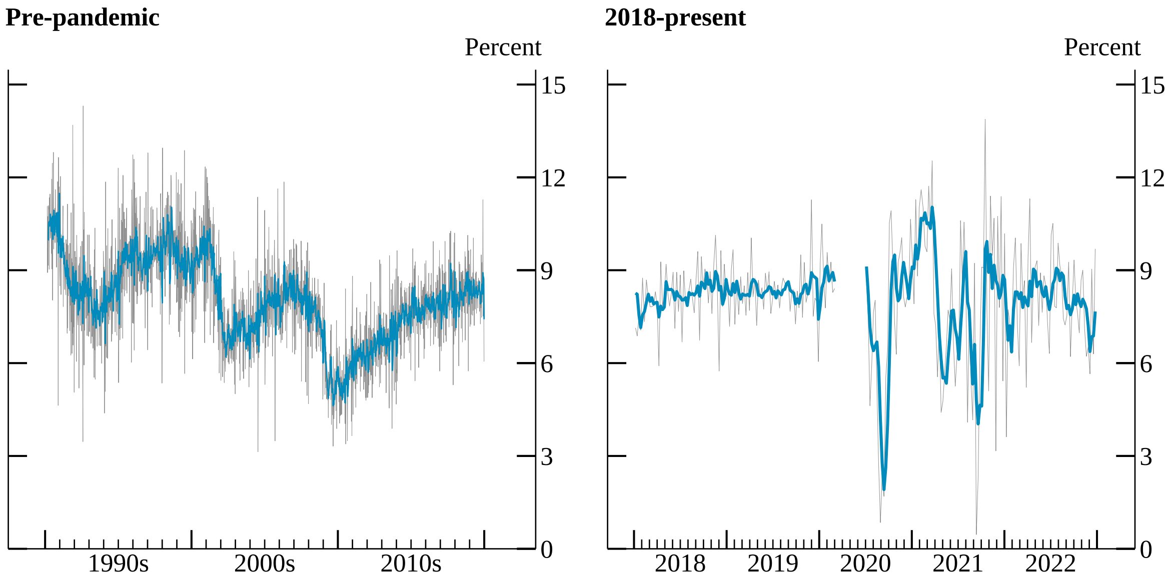
Fifth, exhaustions unsurprisingly lag initial claims; in particular, they drove a spike in UI exits in fall 2020, as the spate of new claims filed at the start of the pandemic expired en masse and transitioned from regular state UI to other UI programs established during the pandemic.

Figure 2 plots the *withdrawal rate*, defined as $\frac{W_t}{C_{t-1}}$, this time using the same vertical axis in both panels.[5] The withdrawal rate is strongly procyclical, consistent with the fact that the job-finding rate rises during expansions and falls during recessions, and displays quantitatively large movements between business cycle peaks and troughs. Withdrawals swung wildly in 2020, in part reflecting measurement error in the conversion of quarterly eligibility data and monthly exhaustion data into weekly series in an environment where denial and exhaustion rates were changing rapidly.[6] The withdrawal rate has been more stable since the institutional landscape normalized with the expiration of the temporary pandemic UI programs in September 2021.

[5] Appendix Figure A3 plots weekly withdrawals in absolute terms.

[6] For example, benefit exhaustions surged in September 2020. Since initial claims surged in late March and most entitlements last 26 weeks, the bulk of these exhaustions likely occurred in late September. As detailed in Appendix A, I apportion monthly exhaustions evenly across weeks within the month, so Equation (1) rationalizes the September claims data by inferring a surge in exhaustions starting in early September accompanied by a plunge in withdrawals.

Figure 2: Withdrawal rate net of denials and exhaustions

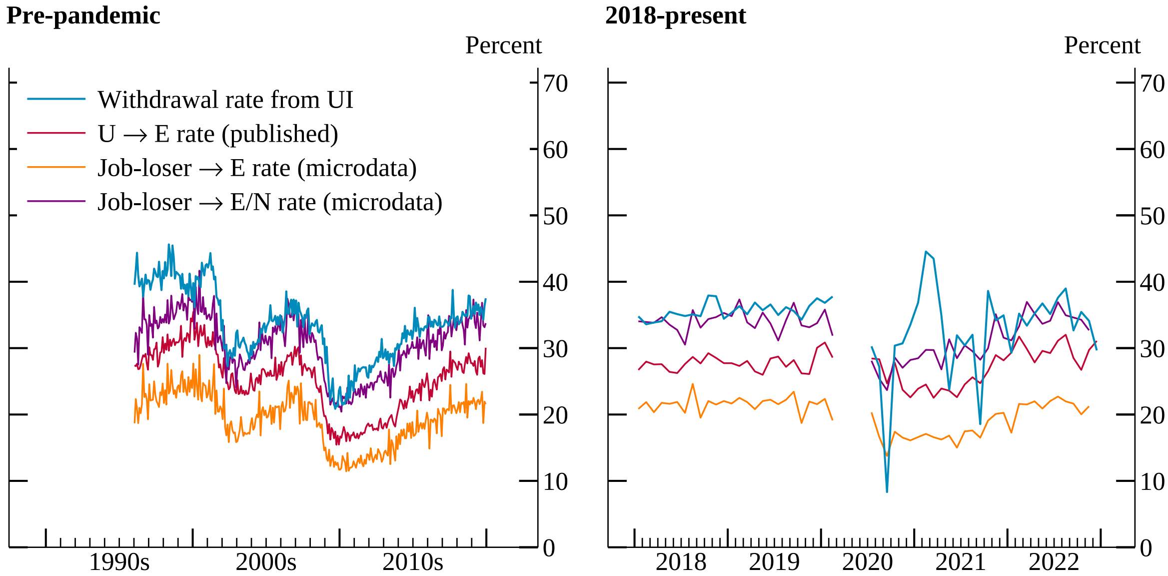


Source: DOL ETA forms 207, 218, 539, and 5159 and author's calculations.
Note: Series is at weekly frequency. Thin grey series is weekly measure; thick blue series is a four-week trailing average. The period March–June 2020 is omitted for visual clarity. See Section 2 and Appendix A for details.

Recent movements in the withdrawal rate are of particular interest, since they may provide insight into current labor market conditions. The withdrawal rate fell sharply in January 2022, rose on net from January through July, and has come down somewhat since July. The recent decline is consistent with the modest reduction in labor market tightness implied by declining job vacancies and some other indicators, but the measure is noisy enough to preclude strong conclusions.

Withdrawals from the UI system, net of denials and exhaustions, should primarily reflect reemployment and labor force exit. To gauge whether the withdrawal rate indeed captures these transitions, Figure 3 plots W_t—cumulated between CPS reference weeks, rescaled to account for the number of weeks elapsed, and divided by continued claims—alongside three transition rates drawn from the CPS: (i) flows from unemployment to employment as a share of lagged unemployment, as published by the Bureau of Labor Statistics; (ii) flows from unemployment to employment among CPS job losers, computed from the microdata; and (iii) flows from unemployment to either employment or non-participation among CPS job losers, also computed from microdata. As shown in Figure 3, movements in the withdrawal rate over the business cycle closely tracked each of these transition rates in the pre-pandemic period (especially since the early 2000s), and the level of the withdrawal rate has historically been close to the level of the $U \to E/N$ rate among CPS job losers.

Figure 3: Comparing UI withdrawals to CPS transition rates



Source: DOL ETA forms 207, 218, 539, and 5159; Bureau of Labor Statistics (published series) and Current Population Survey (CPS series); and author's calculations.
Note: Series are at monthly frequency. Monthly withdrawal rate is computed by cumulating weekly withdrawals between successive CPS reference weeks, rescaling to a 4.3-week basis to account for the number of weeks elapsed between reference weeks, and then dividing by lagged continued claims. See Section 2 and Appendix A for details.

4 Limitations and potential refinements

The decomposition introduced here is limited in important respects, and it could be refined. First, mapping quarterly and monthly data on denials and exhaustions to weekly frequency entails measurement error, as does extrapolating these series to combine them with the latest weekly readings on initial and continued claims. Both sources of measurement error are especially severe when the UI landscape is changing rapidly, as it did in 2020–21. The accounting identities used here could potentially be combined with time-series modeling to better harmonize data at mixed frequencies and to extract an estimate of the job-finding rate jointly from UI and CPS data.

Second, UI inflows and outflows can be influenced by a number of institutional factors not captured here. For example, job losers' takeup of UI benefits might depend on weekly benefit amounts, which are functions of state policy and change over time; the pace of benefit exhaustions depends on potential benefit durations, which likewise change over time; and denial rates depend on the degree to which employers contest claimants' reasons for separation. Although these factors do not change the validity of the accounting identity in Equation (1), they do affect the interpretation of the decomposition and its implications for labor market conditions.

Third, while I have focused exclusively on regular state UI programs, the temporary programs active during recessions can account for a large share of UI recipients. Even when these programs are in place, the withdrawal rate retains a meaningful economic interpretation, since in a weaker labor market fewer claimants will exit UI prior to exhausting regular benefits. But the withdrawal rate derived here is essentially silent about job prospects among long-term unemployed workers who may be entitled to benefits under Emergency Unemployment Compensation or Extended Benefits programs. My methodology could be extended to encompass these other programs, though data on these programs is somewhat more limited and hence additional assumptions would be required.

Lastly, while I have focused on national aggregates, the data construction yields state-level inflows and outflows that may be informative about local labor market conditions and the effects of states' UI policies on claim volumes. State-level UI data can be noisy, however, and measurement issues that largely cancel out in the aggregate may be more acute at the state level. One pitfall is that Equation (1) does not guarantee that withdrawals W_t, obtained as a residual, will be non-negative. Negative readings are rare at the national level, occurring only in April 2020, but more common at the state level. At a minimum, adapting this approach for state-level analysis would require some means of ensuring non-negative residuals, such as treating each flow component as a latent variable observed with error.

A Measurement details

I implement Equation (1) using state-level data published by the DOL's Employment and Training Administration (ETA) under forms 207 (quarterly data on non-monetary determinations), 218 (quarterly data on monetary determinations), 539 (weekly data on initial and continued claims), and 5159 (monthly data on types of initial claims as well as benefit exhaustions).[7] Because states differ in the timeliness with which they report UI data to ETA, we observe an unbalanced panel of states for each measure. I start at the state level, extrapolating each state's data as needed for the most recent observations, then aggregate to the national level.

[7] These data are available at https://oui.doleta.gov/unemploy/DataDownloads.asp. Supporting evidence later in this appendix also draws on ETA 9051 (monthly data on the timeliness of payments).

Weekly claims. On Thursday of a given week, call it week $t+2$, the ETA reports initial claims filed in state s in week $t+1$, denoted $I_{s,t+1}$, as well as continued claims *filed* in week $t+1$ but seeking compensation for unemployment experienced in week t, denoted C_{st}.[8] In the weekly press release, these continued claims are dated to week t, so that the latest reading for continued claims lags the latest reading for initial claims by one week. This time convention reflects the fact that continued claims report earnings (if any) and job search activities during the preceding week, so that claimants have to wait until a week ends before they can certify their eligibility for that week.

Equation (1) assumes that new claimants file their initial claim and their first continued claim in the same week, so that the continued claim is dated to week t and the initial claim is dated to week $t+1$. In practice, some claimants file their initial claim during the week of job loss and their first continued claim in the subsequent week, so that both claims are dated to week t. An advantage of the time convention assumed in Equation (1) is that the decomposition will rely on the latest readings for both initial and continued claims, so that it incorporates the timeliest data available.

In some states, continued claims exhibit a sawtooth pattern stemming from biweekly filing practices. Following Cajner et al. (2020), I neutralize these data artifacts by taking a two-week moving average in affected states, then extrapolating to populate the latest value.

New vs. reopened initial claims. The ETA reports the number of new initial claims and reopened initial claims filed in each calendar month.[9] As shown in Appendix Figure A4, reopened claims accounted for about one-third of initial claims in the years preceding the pandemic, swung wildly in 2020–21, and currently comprise about one-quarter of initial claims.

I convert new and reopened claims into weekly series by setting

$$I^N_{st} \equiv \frac{I^N_{s,m(t)}}{I^N_{s,m(t)} + I^R_{s.m(t)}} I_{st} \quad \text{and} \quad I^R_{st} \equiv \frac{I^R_{s,m(t)}}{I^N_{s,m(t)} + I^R_{s.m(t)}} I_{st}, \tag{2}$$

where $m(t)$ is the calendar month corresponding to week t (for most of the analysis period) or the most recent month available (for the latest observations).

[8] Claimants sometimes file belated continued claims seeking compensation for some earlier week $t-k$. Such claims are dated to week t in the ETA data.

[9] Reopened claims are called "additional" claims in the ETA data. The ETA reports breakdowns only for intrastate claims; interstate claims, filed by individuals who reside and work in different states, are not broken out separately. I implicitly assume that reopened claims account for identical shares of intrastate and interstate claims.

Monetary denials. The ETA reports the number of monetary determinations made each quarter as well as the number found to have insufficient base-period earnings.[10] As shown in Appendix Figure A5, about 10 percent of new claims were denied on monetary grounds in the lead up to the pandemic, but the denial rate surged above 40 percent from 2020:Q3 through 2021:Q3. Price (2021) shows that the unusually high denial rate during the pandemic stemmed largely from an influx of non-traditional claimants who needed to apply (and be denied) for regular state UI benefits as a precondition for receiving Pandemic Unemployment Assistance (PUA). Although the denial rate fell sharply in 2021:Q4, after the PUA program expired, it is still well above pre-pandemic levels.[11]

I assume that the number of monetary denials is $D^M_{st} \equiv \delta^M_{s,q(t)} I^N_{st}$, where $\delta^M_{s,q(t)}$ is the share of new claims denied on monetary grounds in the quarter $q(t)$ corresponding to week t, or in the latest quarter with available data.

Non-monetary denials. The ETA reports the number and disposition of non-monetary determinations made each quarter, subdivided into separation issues and non-separation issues. I focus on benefit denials due to an invalid separation, such as quitting without good cause or being fired for misconduct.[12] As shown in Appendix Figure A6, the "separation denial rate"—which I define as the ratio of denials in a given quarter to continued claims at the end of the previous quarter—was a little under 15 percent in the lead up to the pandemic, with denials split evenly between voluntary separations and other invalid separations. The denial rate was low throughout 2020 and 2021 but has been elevated in 2022, driven by voluntary separations.

I assume that the number of separation-related denials is $D^S_{st} \equiv \delta^S_{s,q(t)}[(1 - \delta^M_{s,q(t)})I^N_{st} + I^R_{st}]$, where $\delta^S_{s,q(t)}$ is the share of initial claims denied on separation grounds in quarter $q(t)$.[13]

[10] In some states, claimants must satisfy additional criteria, such as sufficient hours worked, to receive a favorable monetary determination. However, the share of claims meeting these additional criteria is nearly identical to the share passing the earnings test alone, suggesting that the extra conditions are seldom binding.

[11] Possible explanations for the still-elevated denial rate include depleted entitlements among recent job losers or a continuation of the fraudulent third-party filing that plagued the UI system during the pandemic (GAO, 2022).

[12] In some states, claimants with an invalid separation are fully disqualified from receiving benefits; in other states, they can eventually receive benefits after serving a penalty period. Some other kinds of non-separation denial, such as being unavailable for work or having earnings in excess of the disregard level, pertain to individual benefit-weeks and should have little net influence on changes in continued claims.

[13] Note that Equation (1) assumes that separation issues are detected as part of the initial eligibility review, though invalid separations sometimes come to light later on, as when an employer belatedly contests a worker's eligibility.

Exhaustions. The ETA reports the number of claimants who receive "final payments" in a given month by virtue of having exhausted benefits. (Claimants who exit UI without exhausting benefits are not included in this count.) As shown in Appendix Figure A7, the "exhaustion rate"—which I define as the ratio of final payments in a given month to continued claims at the end of the previous month—was a little under 10 percent in the years preceding the pandemic. The exhaustion rate plunged in spring 2020 (owing to the unprecedented influx of new claims), surged in late 2020 (as the spring claims exhausted en masse), and has now returned to pre-pandemic levels.

Final payments in month m are a good proxy for exhaustions in month m to the extent that (i) payments are made in a timely fashion, so that the date of payment is close to the date of unemployment, or (ii) the ratio of final payments to continued claims is relatively stable. As shown in Appendix Figure A8, before the pandemic about two-thirds of payments were issued within 7 days of the compensable week of unemployment, and over 90 percent were issued within 14 days. Timeliness fell sharply at the onset of the pandemic and has not yet fully recovered: in the latest data, about 60 percent of all payments were made within 7 days and only about 80 percent were made within 14 days. Though ETA does not report data on the timeliness of final payments specifically, they are probably somewhat timelier than payments as a whole, since processing delays related to initial eligibility screening should primarily affect the timing of earlier payments. Aside from 2020–21, the relatively stable payment–claim ratio (Appendix Figure A7) and reasonably prompt payment issuances (Appendix Figure A8) suggest that final payments should be a fairly good proxy for exhaustions outside of the acute phase of the pandemic.

I convert monthly final payments into a weekly series X_{st} by assuming payments are distributed uniformly across calendar days within the month.[14] In particular, I set final payments to $7/(\textit{days in month}) \times (\textit{final payments})_{sm}$ for each week fully contained within month m, and I prorate payments for weeks straddling multiple months. I populate the latest weeks by calculating the ratio of (allocated) payments to lagged continued claims in the last week of the most recent month with payment data available, then applying this ratio to (lagged) weekly continued claims.

[14] I experimented with using weekly data on *potential* exhaustions—estimated using weekly claims data coupled with data on the distribution of potential benefit durations—to allocate final payments more accurately across weeks. The resulting series performed poorly in practice, in part due to holiday effects that survived seasonal adjustment.

Aggregation. The above steps yield state × week series C_{st}, I_{st}, I_{st}^N, I_{st}^R, D_{st}^M, D_{st}^S, and X_{st} corresponding to the terms that appear in Equation (1). I sum each of these count variables across states to obtain national-level counts.[15]

Seasonal adjustment. Weekly claim volumes are highly seasonal (e.g., claims surge at the onset of winter) and are also heavily influenced by holidays, which close state unemployment offices and otherwise distort filing dates. I compute multiplicative seasonal factors for C_t, I_t, I_t^N, I_t^R, D_t^M, D_t^S, and X_t by running each series through a weekly seasonal adjustment routine that explicitly incorporates holiday effects (Pierce, Grupe and Cleveland, 1984; Cleveland and Scott, 2007), using data from January 1990 through mid-February 2020 to sidestep seasonal distortions caused by the pandemic. Since independent seasonal adjustment breaks the additivity between initial claims and its subcomponents, I rescale I_t^N and I_t^R so that they sum to total initial claims in each week.

References

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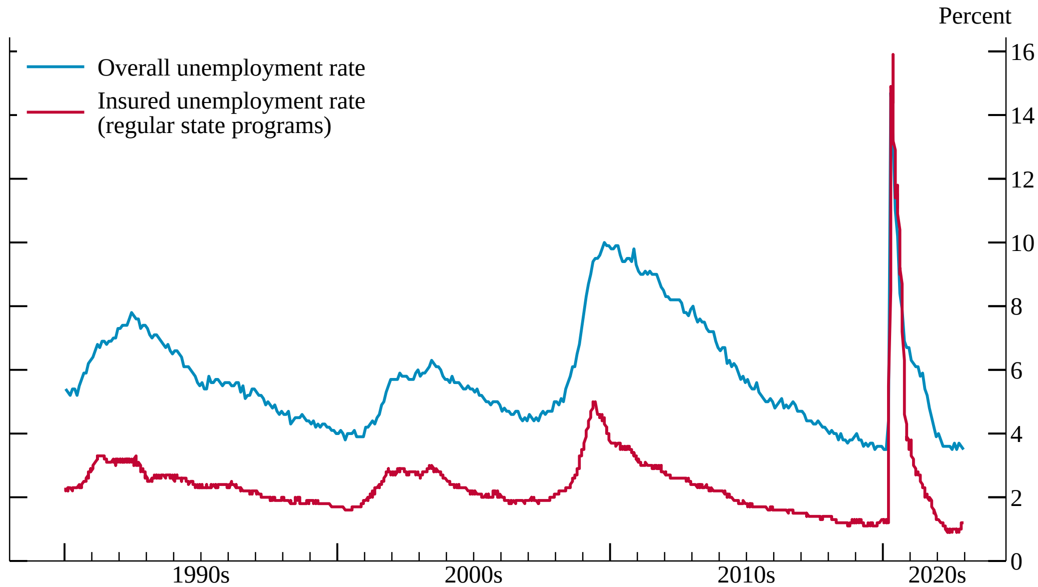
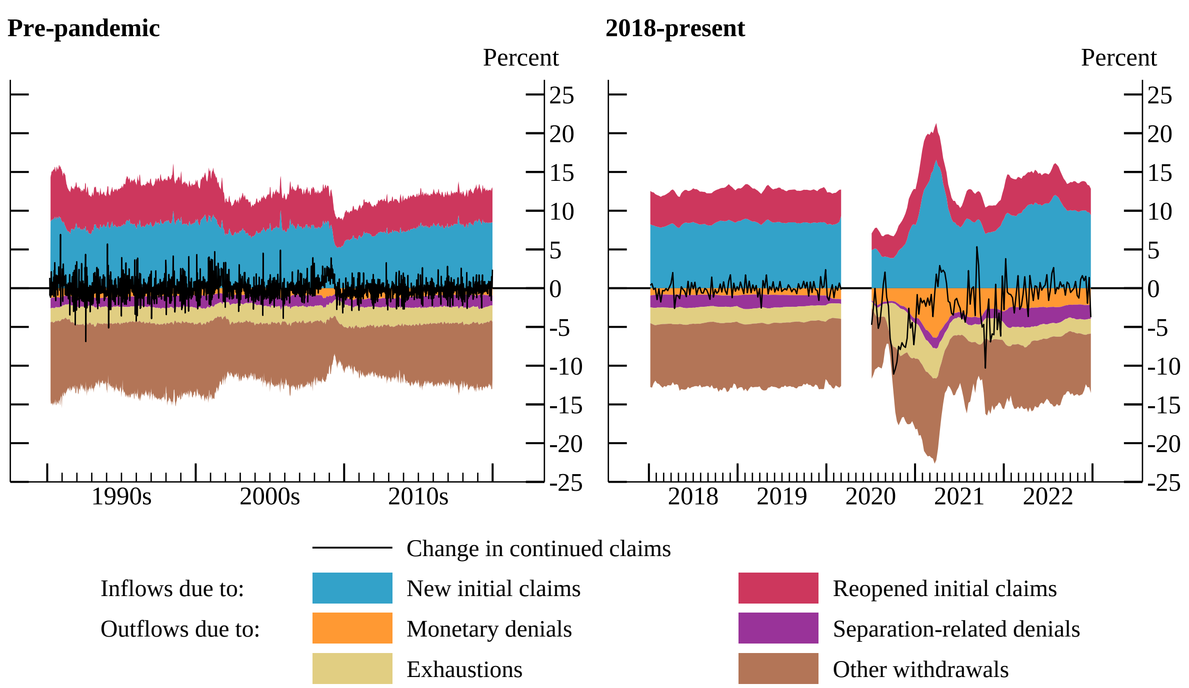
[15] We could also aggregate to the national level earlier in the process (e.g., calculating denial rates in quarter q at the national level and applying those rates uniformly to weekly initial claims in all states). Staying at the state level for as long as possible offers two advantages, which are relevant mostly for real-time analysis of the latest claims data. First, because states differ in the timeliness with which they report data to the ETA, it minimizes reliance on extrapolated data from states that are slow to report. Second, it allows the pass-through of initial claims to continued claims to depend on the distribution of weekly claims across states, and similarly for benefit exhaustions.

Appendix Figure A1: Overall and insured unemployment rates



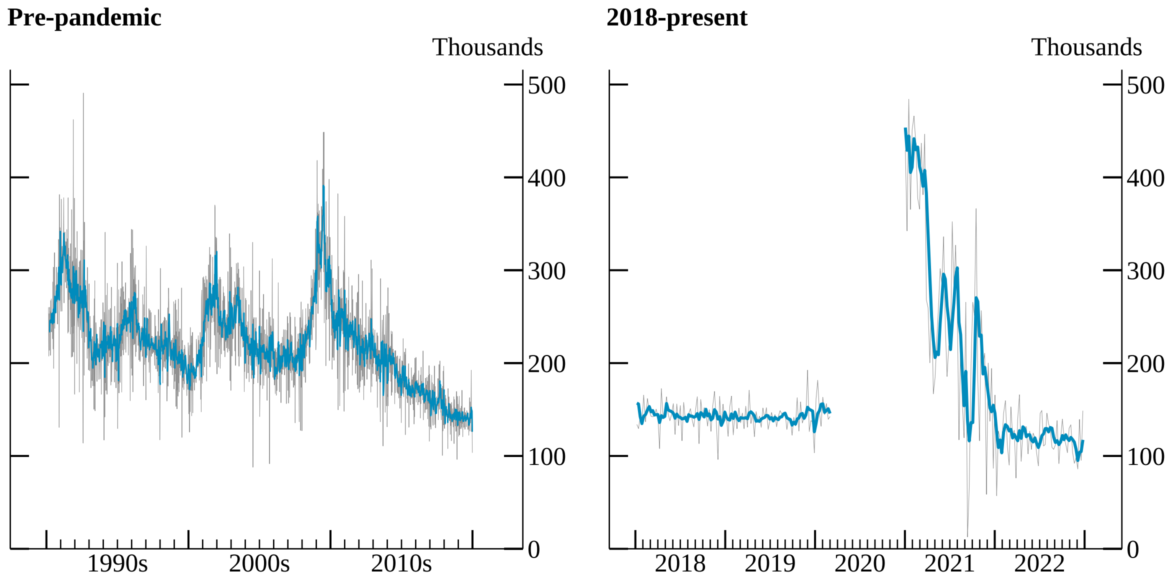
Source: Bureau of Labor Statistics (unemployment rate) and DOL ETA (insured unemployment rate).

Appendix Figure A2: Decomposing weekly changes in continued claims (in percent terms)



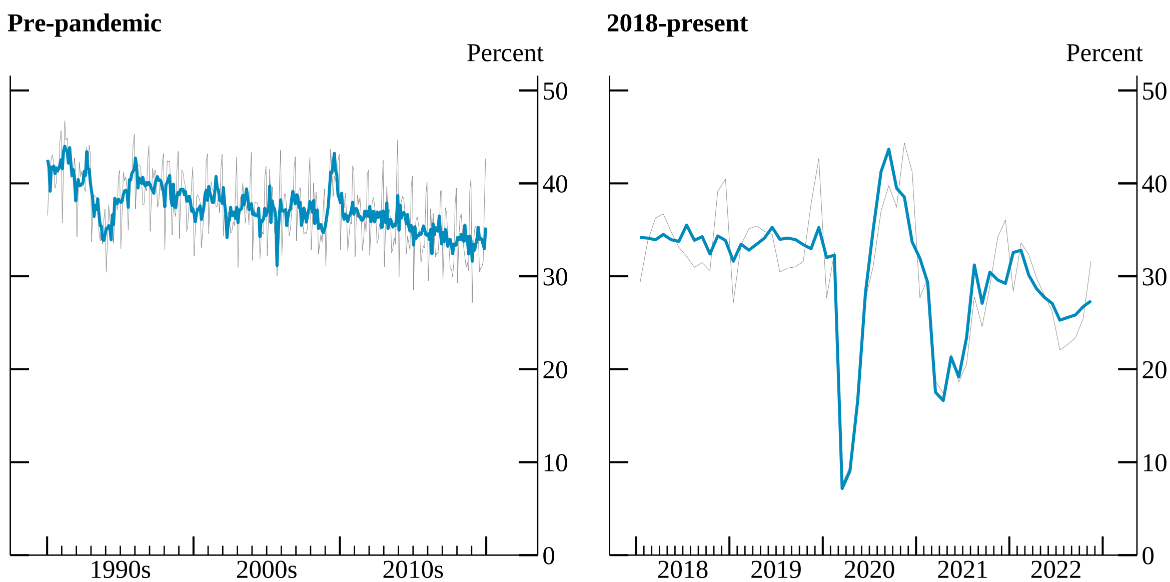
Source: DOL ETA forms 207, 218, 539, and 5159 and author's calculations.
Note: Components are four-week trailing averages at weekly frequency, denominated by lagged continued claims. The months March–June 2020 are omitted for visual clarity. See Section 2 and Appendix A for details.

Appendix Figure A3: Withdrawals net of denials and exhaustions (in absolute terms)



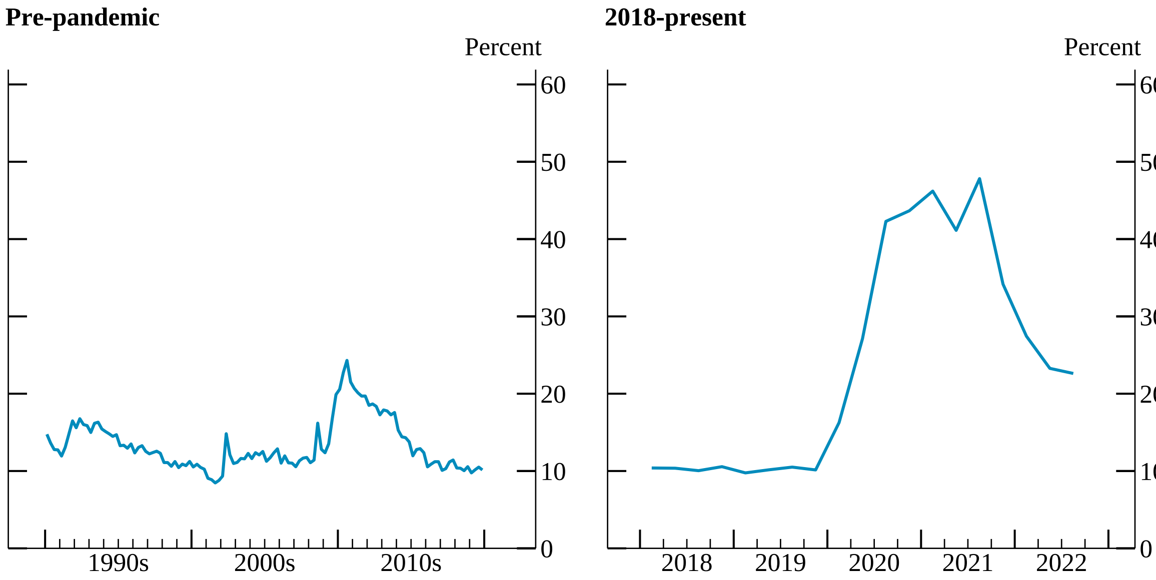
Source: DOL ETA forms 207, 218, 539, and 5159 and author's calculations.
Note: Series is at weekly frequency. Thin grey series is weekly measure; thick blue series is a four-week trailing average. The year 2020 is omitted for visual clarity. See Section 2 and Appendix A for details.

Appendix Figure A4: Reopened claims as a share of all initial claims



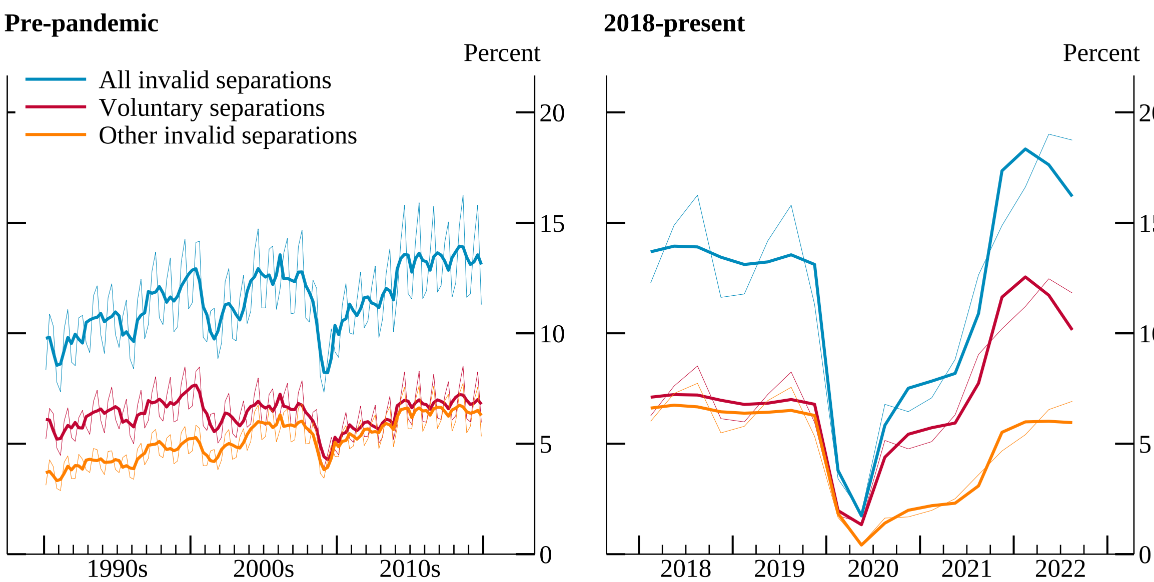
Source: DOL ETA form 5159 and author's calculations.
Note: Series are at monthly frequency. Thin grey series is non–seasonally adjusted; thick blue series is seasonally adjusted using X13ARIMA-SEATS applied to pre-pandemic data. Denominator is the sum of new initial claims and reopened initial claims.

Appendix Figure A5: Share of new initial claims failing the earnings test



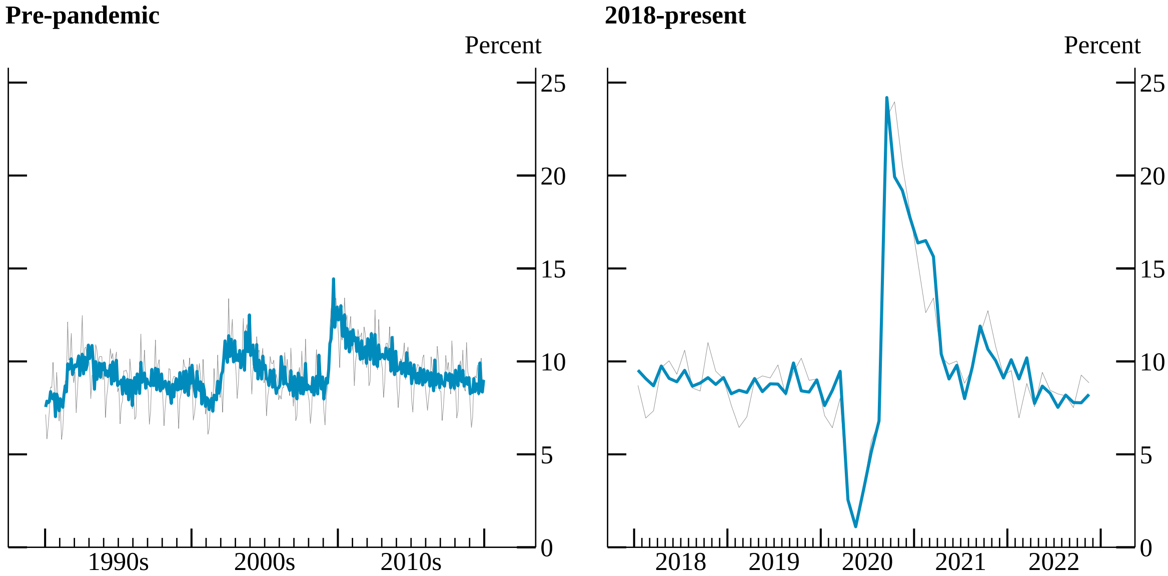
Source: DOL ETA form 218 and author's calculations.
Note: Series are at quarterly frequency and non–seasonally adjusted. Numerator is the number of claims receiving favorable monetary determinations in a given quarter; denominator is the total number of monetary determinations.

Appendix Figure A6: Separation-related denials as a share of claims passing the earnings test



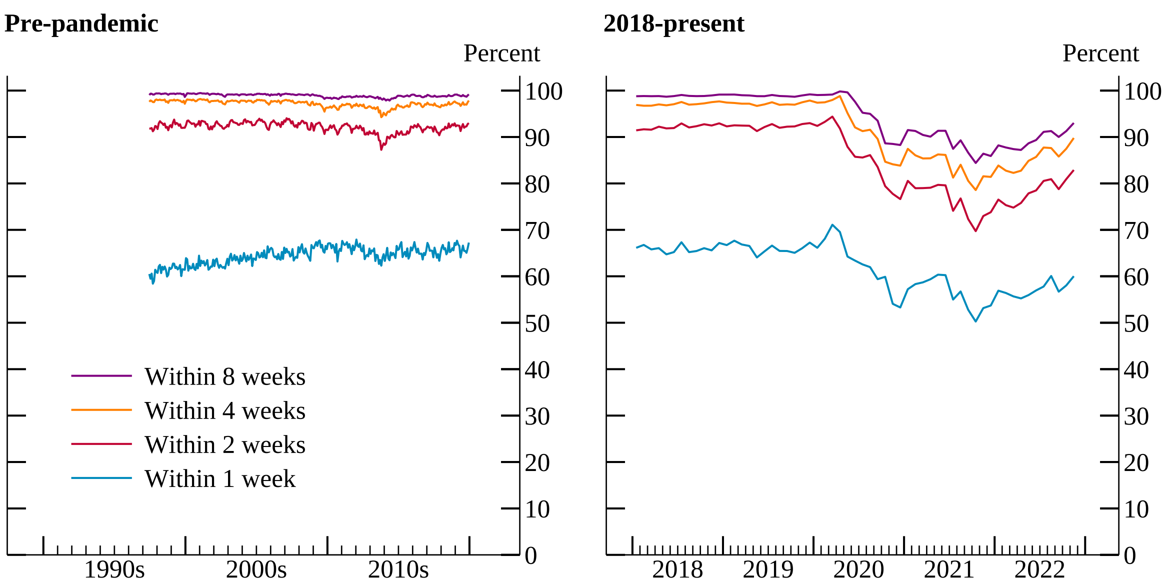
Source: DOL ETA forms 207, 218, and 5159 and author's calculations.
Note: Series are at quarterly frequency. Thin series are non–seasonally adjusted; thick series are seasonally adjusted using X13ARIMA-SEATS applied to pre-pandemic data. Numerator in each measure is the number of claims denied on separation-related grounds in a given quarter; denominator is the number of claims passing the earnings test in the preceding quarter (reopened claims plus new claims passing the earnings test).

Appendix Figure A7: Exhaustions (final payments) as a share of continued claims



Source: DOL ETA forms 539 and 5159 and author's calculations.
Note: Series are at monthly frequency. Thin grey series is non–seasonally adjusted; thick blue series is seasonally adjusted using X13ARIMA-SEATS applied to pre-pandemic data. Numerator is the number of final payments issued in a given month; denominator is the number of continued claims as of the last week of the preceding month.

Appendix Figure A8: Timeliness of benefit payments



Source: DOL ETA form 9051 and author's calculations.
Note: Series are at monthly frequency and non–seasonally adjusted. Each series shows the share of payments issued in a given month that were made within 1, 2, 4, or 8 weeks of the compensated week of unemployment.