

The Effect of Extended Unemployment Insurance Benefits: Evidence from the 2012–2013 Phase-Out[†]

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The duration of US Unemployment Insurance (UI) benefits was expanded to an unprecedented degree in the Great Recession, reaching a maximum of 99 weeks in many states by 2010. These expansions were then rolled back in 2012 and 2013. Since January 2014, no state has had UI benefits available beyond the normal duration (26 weeks in most states).

Unemployment insurance extensions may raise measured unemployment by reducing the incentive for recipients to find jobs quickly and by bolstering the incentive to engage in and report active job search. But the magnitudes of these effects are uncertain and may vary with economic conditions. In earlier work, we examined the effects of the 2008–2011 UI expansions, relying on cross-state and temporal variation in UI durations (Rothstein 2011; Farber and Valletta forthcoming). We found that benefit extensions slightly reduced the exit rate from unemployment, largely through increased labor force attachment rather than reduced job finding.¹ These estimates may be affected by the historically weak labor market conditions around the Great Recession, however, and may not generalize to changes in UI durations under more favorable labor market conditions.

In this study, we update our earlier analyses to incorporate the phase-out of benefit extensions in 2012 and 2013. Figure 1 contains plots of median weeks of available UI, quarterly since 2007, along with a measure of labor market slack, the ratio of unemployment to job openings.² This figure shows the run-up of UI availability in the Great Recession, from the basic 26 weeks early in 2008 to the maximum of 99 weeks in late 2009, followed by a decline beginning in early 2012. The benefit extensions came during a period of sharply increasing slack, but by the time of the rollbacks the labor market was substantially tighter. It is plausible that UI extensions could have larger effects on job finding in a tighter labor market (Kroft and Notowidigdo 2011).

We estimate models for the likelihood that an unemployed individual exits employment, using two different empirical specifications designed to isolate variation in UI durations produced by policy changes (as distinct from changes in labor demand conditions). We estimate separate effects for 2008–2011, when UI durations were expanding or stable, and for 2012–2014:6, when they were contracting. We use a competing risks framework to model separate effects of UI extensions on exit to employment (job finding) and on exit from the labor force. Large effects on job finding would suggest important economic efficiency costs of UI extensions. By contrast, effects on labor force attachment have little or no implication for economic efficiency (Card, Chetty, and Weber 2007).

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[†] Go to <http://dx.doi.org/10.1257/aer.p20151088> to visit the article page for additional materials and author disclosure statement(s).

¹ Our past and current analyses focus on worker search behavior. Other recent work examines the labor market effects of potential employer responses to UI extensions (Hagedorn et al. 2013).

² Weeks of available UI are measured monthly by state. We average this across months within quarters.

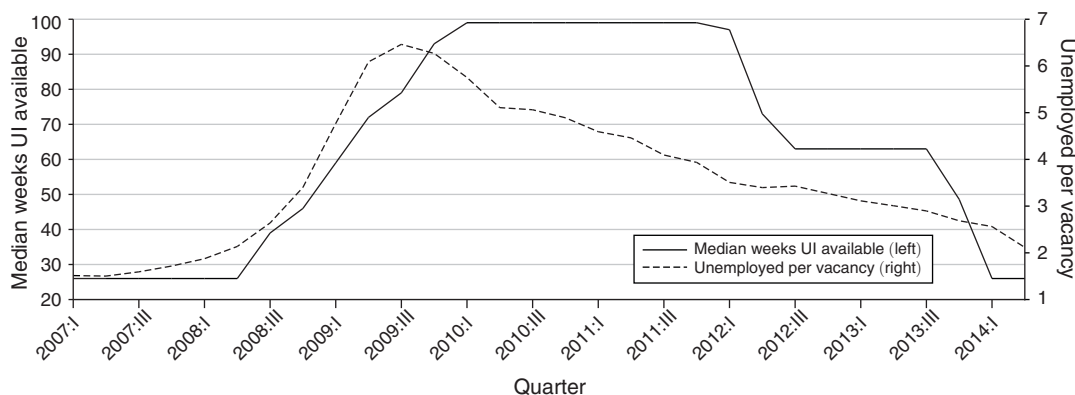


FIGURE 1. WEEKS OF UI AVAILABLE AND UNEMPLOYED/VACANCIES, QUARTERLY, 2007–2014:II

Notes: UI weeks available is median across states, weighting states by the number of UI-eligible unemployed (authors' tabulations of weighted CPS microdata). Unemployed per vacancy computed from Bureau of Labor Statistics (BLS) tabulations of CPS and JOLTS data (seasonally adjusted).

I. The Expansion and Reduction of UI Benefit Durations, 2008–2014

The rapid decline in UI durations in Figure 1 reflects the automatic and legislated rollback of two programs that provided for extra benefits during the recession. These are the temporary Emergency Unemployment Compensation (EUC) program and the permanently authorized Extended Benefits (EB) program.

EUC was a federally funded program, introduced and expanded in several steps beginning in 2008:7. It provided for as many as 53 weeks of benefits through four separate “tiers,” some of which were activated for all states and some of which were conditioned on high state unemployment rates. The program expired at the end of 2013, causing a reduction in median weeks of available UI from 63 to 26 (Figure 1).

EB provides for 13 or 20 additional weeks of benefits in states with high unemployment rates, following exhaustion of regular and emergency benefits.³ Most states became eligible for EB in early 2009. A provision in the EB rules restricts benefits to states with unemployment rates higher than they were three years prior. The rule became binding in early 2012, and by 2012:8

no state was paying EB.⁴ This contributed to the first step down in Figure 1, as median weeks of benefits fell from 99 weeks in 2011:IV to 63 weeks in 2012:III.

EUC and EB complemented regular state benefits. These are typically 26 weeks, so the maximum duration of benefits during the period we study was 99 weeks (26 weeks regular benefits, 53 weeks EUC, 20 weeks EB).⁵ A few states cut regular benefit durations to less than 26 weeks in 2011 or later.

Our initial analysis exploits changes in benefit durations coming from changes in EUC rules, from the phase-out of EUC and EB, and from decisions by some states to cut regular benefits. We also present estimates that focus on variation arising directly from the phase-out of EB in 2012 and the termination of EUC at the end of 2013.

II. Sample Definition and Data Issues

We use Current Population Survey (CPS) microdata for the period 2008:1–2014:8 for individuals ages 18–69. We restrict our analyses to respondents who are unemployed and report job loss as the reason, and hence are potentially

³State participation is optional. However, the federal government bore 100 percent of the cost of EB from 2009 to mid-2013, so state participation was high during the period of interest here.

⁴New York and Alaska briefly resumed EB payments later in 2012. No state paid EB benefits after 2013:4.

⁵Some states had 63 weeks of EUC in early 2012, but this was conditional on not offering EB benefits, so the maximum duration never exceeded 99 weeks.

eligible for UI.⁶ Given our focus on the effect of extended benefits, and because most new spells of unemployment end before extended benefits could be an important factor, we restrict attention to individuals who have been unemployed for at least three full months.

We use the reported duration of unemployment, together with state-level maximum benefit durations, to assign UI availability to individuals. We assume that job losers are eligible for the full duration of benefits and that each draws benefits continuously from the date of job loss until benefit expiration or exit from unemployment.

We use the panel structure of the CPS to identify exits from unemployment. Each sampled address (housing unit) is interviewed for four consecutive months, left alone for eight months, then reinterviewed for another four months. This sample structure allows us to match unemployed individuals within households to month-ahead labor market outcomes for three consecutive months during each four-month rotation.⁷

One key concern with regard to use of the matched data is the likelihood of spurious transitions due to mismeasurement of labor force status (see, for example, Abowd and Zellner 1985). To address this concern, we follow the recoding approach developed in our earlier work. For unemployed individuals in month 1 who report a transition out of unemployment in month 2 (to employment or nonparticipation) and a return to unemployment in month 3, we recode the month 2 status as unemployed. We retain and use the resulting observations created by the recode (with associated variables such as reason for unemployment and duration imputed based on their month 1 values). Imposing this adjustment to observed transitions requires three consecutive matched months of data and hence restriction to respondents in the first two of each set of four consecutive CPS interviews. As such,

although we use CPS data through 2014:8, our last measured exit hazards are for 2014:6.

Our matched CPS sample covers 2008:1–2014:6 and contains 56,491 monthly observations on 37,059 spells of unemployment for eligible workers out of work 3 months or more and aged 18–69. To compare our estimates across periods of extended benefit expansion and contraction, we split this sample in two: 2008–2011 and 2012–2014:6. In the earlier period, we use 25,021 spells of unemployment, of which 15.3 percent are observed to end in exit to employment and 13.2 percent are observed to end in exit from the labor force. In the later period, we use 12,324 spells, of which 16.4 percent are observed to end in exit to employment and 16.4 percent are observed to end in exit from the labor force.

III. The Effects of Extended Benefits on Exits from Unemployment

Figure 2 contains plots of seasonally adjusted monthly exit rates from unemployment (averaged by quarter) for the spells in our analysis sample. We show series for all exits, for exits to employment, and for exits out of the labor force. Total exits and exits to employment fell sharply in 2008 as the recession deepened. Both reemployment and labor force exit rates have risen gradually since the recession ended in mid-2009. There is no visible change in the rates of increase as extended benefits were phased out in 2012 and 2013.

Our primary estimates of the effects of UI durations come from a simple logistic discrete-choice model of exit from unemployment. The model is specified by assuming a spell ends in a given month t if an unobserved latent variable for spell i in state s and month t (y_{ist}^*) is positive. This latent variable is modeled as

$$y_{ist}^* = X_{ist}\beta + Z_{st}\lambda + UI_{ist}\delta + \omega_s + \psi_t + \epsilon_{ist},$$

where X_{ist} is a vector of individual variables, Z_{st} is a vector of time-varying state labor market variables, ω_s and ψ_t are vectors of state and date (month-year) effects respectively, β and λ are vectors of coefficients, and ϵ_{ist} is an error term with a logistic distribution. UI_{ist} (with coefficient δ) is an indicator that equals 1 if

⁶Due to potential reporting errors and incomplete take-up rates for UI benefits, this is an imperfect means of identifying UI eligibility. See Rothstein (2011) and Farber and Valletta (forthcoming) for further discussion.

⁷Failures to match occur primarily when a household moves to a new housing unit between interviews (less than 5 percent of cases). To ensure valid matches of individuals across months, we dropped a small number of observations for which reported age, gender, race, or educational attainment is not consistent across months (e.g., age changes by more than one year).

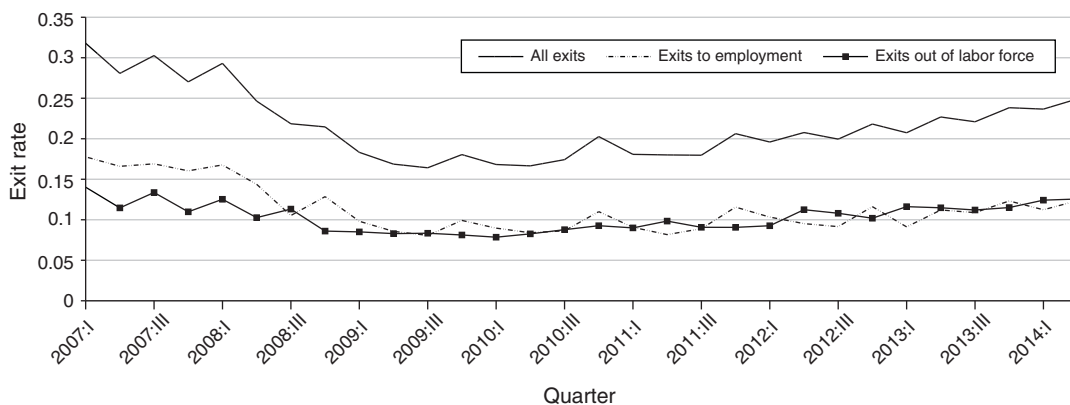


FIGURE 2. MONTHLY EXIT RATES FROM UNEMPLOYMENT, 2007–2014:II (*seasonally adjusted*)

Note: Quarterly averages of monthly exit hazards, computed from weighted analysis sample of UI-eligible individuals unemployed for at least three full months.

individual i , identified as unemployed in state s and month $t - 1$, will have been unemployed in month t (the potential transition month) for fewer weeks than the number of weeks of UI benefits available.⁸ We estimate the parameters specified in this relationship using a logit model of the observed monthly spell outcomes (exit or continuation). To examine the separate effects of UI_{ist} on exit to employment and exit out of the labor force, we use a competing risks version of this model. We assume that the two types of exit are independent events and treat each realized event as censoring the time until the other type of exit occurs.

The estimated model includes in the X vector a set of standard personal characteristics that are systematically related to labor market outcomes: indicators for 4 education categories, 6 age categories (decade indicators covering the included ages 18–69), female, married, female*married, race/ethnicity, and 13 broad industry categories. In order to account for state labor market conditions over time (Z_{st}), the model includes a cubic in the monthly seasonally adjusted state unemployment rate and a cubic in the three-month annualized growth rate in seasonally adjusted

log nonfarm payroll employment. To allow for a flexible baseline hazard and to account for the effects of normal UI benefits, the model also includes a set of indicators for months 4, 5, and 6 of unemployment and single indicators for months 7–9, months 10–12, and months 13 and beyond (6 categories in total).⁹ We also include a complete set of state and date (year-month) indicators (ω_s and ψ_t) in the model.

The first two columns of Table 1 contain estimated marginal effects of UI availability on the probability of exit from unemployment. We present three estimates for each of our two time periods (2008–2011 and 2012–2014:6): one for all exits from unemployment, one for exit to employment, and one for labor force exit. The estimates for the single risk model (row 1) imply that the availability of UI benefits to an unemployed worker has a significant negative effect on the probability of exit from unemployment. The estimated effect is about 3.5 percentage points in 2008–2011 and 2.7 percentage points in 2012–2014. With an average monthly exit hazard around 20 percent (Figure 2), these imply that the availability of extended benefits

⁸This specification follows Farber and Valletta (forthcoming). Their models include an additional indicator for being in final month of UI benefits. Inclusion of that variable does not affect our results. Rothstein (2011) takes a somewhat different approach to modeling extended UI effects but obtains results consistent with those presented here.

⁹Given the detailed controls for unemployment duration included in the model, our estimated effects of UI availability primarily reflect variation in extended benefits (EUC and EB). However, the estimated effects also reflect in part reductions of regular UI durations below 26 weeks in eight states since 2011.

TABLE 1—ESTIMATED AVERAGE MARGINAL EFFECTS ON PROBABILITY OF EXIT FROM UNEMPLOYMENT

Model	Specification 1		Specification 2
	2008–2011	2012–2014:6	2012–2014:6
(1) Single risk	−0.034 (0.008)	−0.024 (0.011)	0.018 (0.016)
(2) Exit to employment	−0.000 (0.006)	−0.002 (0.009)	0.018 (0.011)
(3) Exit from labor force	−0.030 (0.005)	−0.020 (0.007)	0.001 (0.011)

Notes: Columns 1 and 2 present the average marginal effect on the exit probability of an indicator for availability of UI benefits (a transformation of $\hat{\delta}$). Column 3 presents the average marginal effect of an indicator for the *loss* of benefits (a transformation of $\hat{\theta}$), controlling for an indicator for simulated benefit eligibility in the pre-expiration period. See text for a list of other controls included in the models and for spell counts.

reduced the monthly exit rate from unemployment by about 15 percent.

Consistent with our earlier work, the estimates for the competing risks of exit to employment and exit from the labor force (rows 2 and 3 of the table, respectively) imply that the UI effect on overall exits is primarily driven by the participation margin rather than the employment margin. We find very small, statistically insignificant effects on exit to employment in both periods. However, available UI benefits do have statistically and economically significant negative effects on labor force exit. The effect is 3.1 percentage points in 2008–2011 and 2.1 percentage points in 2012–2014. With an average rate of labor force exit of about 10 percentage points (Figure 2), these estimates imply that the availability of extended benefits reduced the rate of labor force exit by those eligible for extended UI benefits by 20–30 percent. We cannot reject equality of coefficients across the two periods in any of our three models.

Column 3 contains results from an alternative specification that identifies the effect of UI availability only from variation due to the phase-out of EUC and EB. Specifically, we identify duration ranges that were covered by EUC and EB in each state prior to each program’s disappearance, and we examine how unemployment exit rates for individuals in those ranges change following the relevant program’s disappearance.

To implement this, we define four new variables: $postEUC_t$ and $postEB_{st}$, indicators for observations after the end of EUC and EB benefits, respectively, in state s , and $EUCrange_{ist}$

and $EBrange_{ist}$, indicators for observations with unemployment durations that were covered by EUC and EB in the last month in which the relevant program was available in the state. These vary across states based on the specific benefit durations. For example, California offers 26 weeks of regular benefits. Before the state lost EB eligibility in 2012:4, it had 53 weeks of EUC and 20 weeks of EB benefits. Thus, in California $EBrange_{ist}$ is an indicator for an unemployment duration between 80–99 weeks. Subsequent EUC changes reduced California’s EUC benefits to 37 weeks before it expired in 2013:12, so in California $EUCrange_{ist}$ is an indicator for a duration between 27–63 weeks. Across states, individuals with $EUCrange_{ist} = 1$ would have received EUC benefits in the months before 2013:12 but not afterward, while those with $EBrange_{ist} = 1$ would have received EB benefits in the months before their state’s EB program phased out but not afterward.

We model the latent propensity to exit unemployment as

$$\begin{aligned} y_{ist}^* = & X_{ist}\beta + Z_{st}\lambda + \gamma postEB_{st} \\ & + \pi_{EUC}EUCrange_{ist} + \pi_{EB}EBrange_{ist} \\ & + \theta \max\{EUCrange_{ist} \times postEUC_t, \\ & \qquad EBrange_{ist} \times postEB_{st}\} \\ & + \omega_s + \psi_t + \mu_{ist}. \end{aligned}$$

The coefficient of interest is θ , capturing the change in the exit hazard at the relevant durations for those who have lost benefits due to elimination of the EB or EUC programs in a state.¹⁰ We expect θ to have the opposite sign from δ , as it reflects the effect of *not* having access to UI benefits.¹¹ The estimates in column 3 are generally consistent with those in columns 1 and 2. The effect on job finding is larger here and marginally significant, but still small.

IV. Final Comments

We draw two primary conclusions from our analysis. First, there is no evidence that the effects of UI were larger under the tighter labor market conditions since 2012. This is consistent with the finding from Farber and Valletta (forthcoming) of little difference in UI effects between the Great Recession and the less severe recession of the early 2000s. Second, the primary effects of extended UI are on labor force attachment rather than job finding. From this perspective, the phasing out of extended and emergency benefits reduced the unemployment rate mainly by moving people out of the labor force rather than by increasing the job-finding rate.

One implication is that the expiration of extended UI benefits may have put downward pressure on the labor force participation rate in 2012 and after. However, our estimates indicate that this effect is small. Even in 2014, less than 15 percent of the unemployed (and well under 1 percent of the population) would have received UI benefits but for the rollback, and our estimates imply that the availability of benefits reduced their likelihood of exiting the labor force each month by under 2.5 percentage points (or around 20 percent). A rough calculation that combines these figures and cumulates over the time since the benefits were rolled back indicates that the extended UI rollbacks reduced the labor force participation rate in mid-2014 by at most 0.1 percentage point, and likely less.¹²

We conclude that the phase-out of extended UI is not important for explaining why labor force participation has remained low during the recovery.

A stronger implication of our results is that the UI extensions have not had large moral hazard effects on recipients' job-finding rates, either during the worst period of the Great Recession or during the subsequent recovery. Our point estimates suggest a near-zero effect in each period, and confidence intervals are small enough to rule out any quantitatively important effect. This suggests that the UI extensions around the Great Recession had very limited impacts on labor market efficiency.

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¹⁰The main effect of $postEUC_t$ is absorbed by the calendar month controls.

¹¹In a linear probability model for UI_{ist} that includes the other controls, the coefficient on the benefit loss interaction is -0.58 (standard error 0.01).

¹²See the online Appendix for details.

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