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Recent Extensions of U.S. Unemployment Benefits: Search Responses Under Varying Labor Market States

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ABSTRACT

In response to the 2007-09 "Great Recession" and elevated unemployment in the United States, the maximum duration of unemployment benefits was increased from the normal level of 26 weeks to a historically unprecedented 99 weeks. I compare the impact of these extensions on job search with the corresponding impact of the more limited extensions that occurred in the aftermath of the relatively mild 2001 recession. The analyses rely on microdata on unemployment exits from matched monthly files from the Current Population Survey, combined with data on variation in maximum available weeks of unemployment benefits measured across U.S. states. I find that a 10-week extension of UI benefits raises unemployment duration by about 1.5 weeks, with little variation across the two episodes. This estimate lies in the middle-to-upper end of the range of estimates from past analyses, suggesting a moderate overall labor market impact of the recent benefit extensions.

Keywords: unemployment benefits, job search
JEL classification: J64, J65

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Recent Extensions of U.S. Unemployment Benefits: Search Responses Under Varying Labor Market States

1. Introduction

During the recent "Great Recession" and its aftermath, unemployment insurance (UI) benefits in the United States were extended from the normal period of 26 weeks to the historically unprecedented level of 99 weeks. Rather than being rolled out comprehensively, the extensions were phased in slowly over time, and their full extent and exact timing varied across states based on state unemployment rates. This complex rollout created near-random variation in the maximum availability of UI benefits and hence provides a unique opportunity for assessing the effects of UI benefit extensions on job search behavior and unemployment duration.

Other recent research has examined the impact of the benefit extensions and found modest effects on search behavior and the overall unemployment rate but a larger effect on the share of unemployment that is long term (Rothstein 2011, Farber and Valletta 2013). Consistent with recent research using data for other countries (Card, Chetty, and Weber 2007), the main estimated impact of the recent U.S. benefit extensions was prolonged labor force attachment rather than reduced job finding.

In this paper, I provide new estimates of the impact of recent benefit extensions on search behavior and unemployment duration, using matched data from consecutive months of the U.S. Current Population Survey (CPS). These data are combined with data on the timing of UI extensions at the state level. The resulting data set is used for a discrete hazard analysis of the determinants of unemployment exits, focusing on the role

of variation in the maximum availability of UI benefits based on the triggered extensions at the state level.

The paper makes three main contributions relative to the existing literature.

First, I estimate the response of unemployment duration to benefit duration and directly compare results for the recent benefit extensions with past estimates based on U.S. administrative data (Moffitt 1985; Katz and Meyer 1990; Card and Levine 2000; Jurajda and Tannery 2003). The findings suggest that the CPS household survey data provide a useful substitute for UI administrative data.

Second, I compare the most recent episode of benefit extensions with the prior episode that occurred during a period of relatively favorable labor market conditions in the early 2000s. This enables an assessment of whether search responses vary based on the state of the labor market. Kroft and Notowidigdo (2011) demonstrated empirically that the disincentive effects of UI benefit generosity on job search are more limited under adverse labor market conditions. Farber and Valletta (2013) focused on the duration of benefits rather than their generosity and found no meaningful difference in their job search impact under the very different labor market conditions prevailing during the benefit extension episodes of 2002-04 and 2008-12. However, they used a restricted specification that does not enable direct estimation of the response of unemployment duration to benefit duration.

Finally, I also compare the impact of the UI extensions on search behavior and outcomes for individuals who are eligible or ineligible to receive UI benefits. Individuals who are ineligible to receive UI benefits will not be directly affected by the availability of extended benefits. However, the ineligible group may be affected by spillover effects or

search externalities that increase their job-finding rates (Levine 1993; Lalive, Landais, and Zweimüller 2013). Recent research suggests that such spillover effects are likely to be most pronounced when available jobs are rationed due to a severe downturn, such as that associated with the recent recession (Landais, Michaillat, and Saez 2010). My comparison of extended UI effects for eligible and ineligible individuals provides a test for search externalities that result from the implementation of broad labor market programs.

The paper proceeds as follows. Section 2 describes the UI extension programs and relevant past research, along with further discussion of the value-added of my paper relative to past research. Sections 3 and 4 describe the matched CPS data and econometric framework, followed by the empirical results in Section 5. To preview, my results show that for the identifiable group most likely to be affected by UI extensions (job losers unemployed for at least 6 months), the estimated search response is in the middle-to-upper end of the range of past estimates based on administrative data. The estimates do not vary meaningfully across the labor market states that prevailed during the two separate episodes analyzed (2000-04 and 2007-11). Moreover, no evidence for spillover effects among the ineligible sample is found. I provide interpretation and discussion of these findings in the conclusion and suggest avenues for future research.

2. UI Extensions and Job Search

2.1. Normal and Extended UI Benefits in the United States

UI benefits are normally available for 26 weeks in the United States under the joint federal-state Unemployment Compensation (UC) program established under the

Social Security Act of 1935. Unemployed individuals are eligible to receive benefits if they lost a job through no fault of their own (typically a permanent or temporary layoff) and they meet state-specific minimum requirements regarding work history and wages during the 12 to 15 month period preceding job loss. Availability for work and active job search typically are required for ongoing receipt of UI benefits, although the exact rules vary across states.

Normal UI benefits periodically are supplemented and extended during episodes of economic distress, through a combination of permanent and temporary legislation. The federal Extended Benefits (EB) program, permanently authorized beginning in 1970, provides up to 20 weeks of additional unemployment compensation for unemployed individuals who lost jobs in states where the level and change in the state unemployment rate is above a specified threshold. The thresholds or triggers are state specific but most commonly are based on an overall unemployment rate of 6.5 percent (for a 13-week extension) or 8.0 percent (for 20 weeks), combined with a 10-percent increase in the unemployment rate over the previous two years.

The EB program has been supplemented by temporary programs that have been used eight times since 1958, with the most recent episode beginning in 2008. Due to data availability constraints, I focus on the two episodes of UI extensions since 2002. The severity of job loss and persistent labor market weakness during and after the recession of 2007-2009 resulted in an unprecedented expansion of UI benefit availability. Between mid-2008 and late 2009, the Emergency Unemployment Compensation (EUC) program was slowly phased in; in conjunction with the existing EB program, it caused an expansion of available UI benefits to 99 weeks for most covered job seekers. A similar

but much more limited extension of UI benefits occurred through the Temporary Extension of Unemployment Compensation (TEUC) legislation that was effective from March 2002 through early 2004. A maximum of 72 weeks of total benefits were phased in during this period, although that maximum was reached in only a small number of states and applied to a limited number of individuals.

Information on maximum available UI duration through the EB and EUC programs for each state is released weekly by the U.S. Department of Labor (DOL). I used these weekly releases to construct a panel of UI availability for each state at a monthly frequency (to match the monthly CPS data used for the primary analyses). These data cover the last two periods of UI extensions.[1] I focus on a measure of the maximum number of weeks that an eligible individual can receive in a particular state and month, which I term the "potential benefit duration," or PBD (following Marinescu 2013). Variation in the PBD will be used as the measure of extended UI availability in the analyses below.

Figure 1 illustrates the variation in eligibility for extended UI over time (years 2000-2012) based on the various programs in effect. Panel A displays the maximum and minimum PBD measured across states in each sample month, and Panel B displays the average and standard deviation of the PBD across unemployed individuals (measured using a sample of all individuals identified as unemployed and eligible to receive UI in

[1] The weekly "trigger" notices for the EB and EUC programs are available online at http://www.ows.doleta.gov/unemploy/trigger/, http://www.oui.doleta.gov/unemploy/euc_trigger/. Similar trigger date information for the TEUC program (March 2002 through early 2004) is not available online but was kindly provided by Scott Gibbons of DOL.

the CPS microdata; see the definition of eligibility in Section 3.2).[2] Most states provide 26 weeks of UI during non-extension periods, although Massachusetts provides 30 and Montana provides 28 (hence the maximum exceeds 26 during non-extension periods).

Panel A shows that the PBD maximum/minimum spread across states was quite large (around 30-40 weeks) in the most recent extension episode and the preceding episode in the early 2000s. However, the number of states at or near the minimum in the recent episode, and their labor force shares, were much smaller in the recent episode than in the preceding episode. This is reflected in Panel B, which shows that the average weeks of total UI eligibility reached about 96 in late 2009, implying that the typical unemployed individual was located in a state in which maximum UI eligibility was 99 weeks. In the early 2000s, maximum weeks of eligibility reached 72, but few states triggered on to the maximum extensions, and only about 13 additional weeks of UI beyond the normal 26 were available to the typical unemployed individual. The standard deviation displayed in Panel B indicates that the dispersion in total weeks available was only slightly higher in the recent episode than in the preceding one, implying that there is a similar degree of cross-state variation that can be used for our estimates in both episodes. Panel B also shows a sharp drop in 2012 in the average PBD. This sharp drop occurred as unemployment rates dropped below the thresholds required for program

[2] Figure 1 does not reflect several temporary suspensions of the EUC program arising from legislative disagreements that occurred in April, June-July, and December of 2010. During those periods, reauthorization was expected and individuals were allowed to receive benefits through their current EUC tier and retroactive benefits for the next tier after reauthorization. It is therefore likely that the suspension periods did not significantly offset any behavioral responses to the overall extension programs. In any event, the suspension periods are addressed in the empirical analysis through the use of complete monthly date dummies in my econometric equations.

continuation and some states reduced their normal UI duration below the prior low of 26 weeks.[3]

2.2. UI Extension Effects on Unemployment Duration

Much of the existing research that assesses the impacts of unemployment benefits on search behavior focuses on benefit generosity (weekly/monthly payment amounts), which follows directly from the underlying theory of optimal UI (e.g. Baily 1978, Chetty 2008). However, a number of papers have directly examined the search response to U.S. benefit extensions and found that an increase in the maximum duration of benefits leads to an increase in average UI spell durations (notably Moffitt 1985, Katz and Meyer 1990, Card and Levine 2000, Jurajda and Tannery 2003).[4]

More recently, researchers have turned their attention to the question of optimal benefit duration and whether it varies based on the business cycle or local economic conditions. In the classic formulation and extensions, optimal benefit generosity reflects a tradeoff between the welfare gains arising from insurance against income loss versus the disincentive or moral hazard effects of UI benefits on job search (Bailey 1978, Chetty 2008). Recent research suggests that this tradeoff may depend on labor market conditions, for example through reduced arrival rates of job offers under weak labor market conditions that limit the moral hazard effect on job search. Kroft and

[3] In 2011-13, eight states passed legislation that reduced their normal UI duration below 26 weeks. As an extreme example, in July 2013 North Carolina implemented new legislation that reduced normal UI duration to 19 weeks based on a formula tied to the prevailing state unemployment rate. This and related changes in their state UI laws caused it to lose eligibility for the federal extensions, reducing total available UI weeks to 19, as reflected in the minimum weeks plot near the end of the sample frame in Panel A of Figure 1.

[4] In addition, selected recent work has focused on direct measures of search activity using high-frequency survey or online data from periods corresponding to the recent benefit extensions (Krueger and Mueller 2011, Marinescu 2013). The results from these papers regarding UI extension effects on search intensity and job finding are mixed.

Notowidigdo (2011) find direct empirical support for such effects based on joint variation in benefit generosity and state economic conditions. Alternatively, if jobs are rationed when labor market conditions are weak, the resulting search externalities imply that the effects of increased program generosity will be smaller at the aggregate ("macro") level than is implied by the direct individual ("micro") responses (Landais et al 2010). This gap between micro and macro estimates is likely to take the form of spillovers to individuals who are not eligible for the program expansion (Levine 1993, Lalive et al. 2013).

Direct empirical tests have yielded little or no support for variation in the effects of benefit extensions based on labor market conditions. Schmieder, von Wachter, and Bender (2012) used German data and found small effects of benefit extensions on unemployment duration, with limited variation in these effects over the business cycle. Using U.S. data, Jurajda and Tannery (2003) found no variation in UI duration effects across two local labor markets with very different labor market conditions. Similarly, Farber and Valletta (2013) found no difference in UI extension effects on unemployment duration across the two episodes associated with the relatively mild recession of the early 2000s and the more severe recent recession.

Past papers on the effects of benefit extensions generally have relied on administrative data on UI recipients. These data sets provide limited information on recipients' post-UI experiences and unemployment (e.g., whether they exit through job finding, continue searching, or withdraw from the labor force). In addition, the empirical focus on UI recipients in administrative data precludes analyses of indirect or spillover effects on UI nonrecipients and ineligibles. The use of survey data such as the CPS

enables analyses along both dimensions. In the empirical work below, I examine how the unemployment experience of likely UI recipients responds to variation in the duration of UI benefits. I also test for search externalities by comparing outcomes for UI eligible and ineligible individuals across the extension episodes associated with the relatively mild recession of the early 2000s and the more severe recent recession. Relative to Farber and Valletta (2013), I use a less restrictive specification that enables direct estimation of the response of unemployment duration to benefit duration and direct comparison to prior findings.

3. CPS Matched Transitions Data

3.1 Matching and adjustments

To analyze transitions out of unemployment and link them to changes in UI availability, I use matched monthly data on individual labor force participants from the U.S. CPS. The CPS is the monthly household survey that forms the basis for official U.S. labor force statistics, such as the unemployment rate. The pre-match sample is restricted to unemployed individuals age 16 and over during all months of the years 2000-04 and 2007-11. These correspond to the periods of labor market weakness and associated activation of extended benefits, as displayed earlier in Figure 1 (with about 12 months of pre-recession data included in each case, for normalization purposes).[5]

Due to the rotating sampling scheme used for the CPS, surveyed households and individuals are in the sample for two separate periods of 4 consecutive months (with an

[5] Both the matched CPS and extended UI benefits data are currently available through mid-2013. I restrict the later sample period to end in 2011 because preliminary analysis indicated that the search responses to the rollback of extended UI that occurred during 2012-13 are not simply the inverse of the responses to the prior expansion of extended UI.

intervening 8-month period spent out of the sample). This enables matching for about three-fourths of the monthly sample. The monthly match is based on household identifiers and validated by ensuring that the reported data on age, education, race, and gender do not conflict across matched observations.

I identify labor market transitions by comparing an individual's labor force status in month t to that in month t+1. The data on UI benefits is matched based on the state's UI extension status as of the 5th day of month t+1. Because the survey reference week is defined to always include the 12th day of the month, the 5th is the day immediately preceding the earliest possible day of the reference week.[6] This ensures that any changes in PBD that could affect the individual's transition status between months t and t+1 are incorporated. All other variables are measured at the time of the base transition month (month t).

A well-known concern regarding matched CPS data is the likelihood of spurious transitions in labor force status arising from inconsistent or error-ridden survey responses rather than meaningful changes (Abowd and Zellner 1985; Poterba and Summers, 1986, 1995). Such spurious transitions could impart a downward bias to the estimated effect of UI extensions on unemployment exits and might also reduce the precision of the estimates. I therefore follow past research by adjusting the data to minimize the incidence of spurious transitions (Rothstein 2011, Farber and Valletta 2013). In particular, for individuals identified as leaving unemployment one month and then returning to unemployment the next month, either through job finding or labor force exit, their records are recoded to show no transition (and the newly created observations are

[6] Rare exceptions to this exact timing can occur, such as during the occasional temporary shutdowns of the U.S. federal government that arise due to political impasses.

retained). This correction requires restriction of the final analysis sample to individuals who are observed to be in their first or second month of a consecutive four-month span in the sample. I refer to these below as "two-month forward matches."

To illustrate the impact of this correction on the measured transitions, Figure 2 displays the survivor curves—the percentage of spells that achieve a specific duration or greater—for the observed (uncorrected) and corrected transitions in the 2007-11 sample. The correction raises measured durations. The corrected data show that about 15 percent of unemployment spells last at least 6 months, approximately double the share reaching 6 months duration based on the unadjusted data.[7] The corrected transitions will be used in the remainder of the analyses.

3.2. Distinguishing UI Eligibility

An appropriate sample for analysis of the effect of UI benefits is a sample of unemployed individuals who are eligible to receive UI. However, because no direct information on receipt of UI benefits is available in the monthly CPS data, I rely on a proxy measure based on the reported reason for unemployment. Unemployed individuals who report job loss as the reason for unemployment are in principle eligible to receive UI, while those who report a voluntary separation or labor force entry (new or re-entry) are in principle not eligible to receive UI. I rely on this distinction below for the identification of UI eligible individuals and a comparison sample of ineligibles. Past research shows that this distinction corresponds well to actual patterns of UI recipiency, although it is imperfect (Rothstein 2011, Farber and Valletta 2013). A worker who

[7] Due to the flow-based sampling used for construction of the unemployment spell data in these analyses, the implied unemployment durations based on the corrected data understate the durations of in-progress spells, as sampled in each monthly CPS. However, simulations in Farber and Valletta (2013) show that the distributions largely converge in steady state.

reports a job loss may not have sufficient prior employment experience to qualify for unemployment insurance or may have been fired for cause. In addition, an eligible worker may choose not to apply for benefits. These potential problems are mitigated somewhat by my empirical focus on job losers who have been unemployed for at least 6 months, since UI take-up among job losers generally increases with unemployment duration. More generally, my estimates should be interpreted as the effects of UI extensions on a sample of individuals who are potentially affected by the extensions.

3.3 Descriptive Statistics for UI Eligible/Ineligible Samples

The basic characteristics of the matched CPS data extract to be used in the econometric analyses are displayed in Table 1. For the two separate analysis periods of 2000-04 and 2007-11, the sample is divided into UI eligible and ineligible individuals, as described below.

The top portion of Table 1 illustrates the construction of the analysis samples of matched observations from the initial complete samples of unemployed individuals in the monthly CPS surveys. The complete set of restrictions, including two-month forward matches and elimination of observations with missing values, leaves about 40 percent of the original sample of unemployed individuals. This pattern is consistent across the two sub-periods and also for UI eligible and ineligible individuals.

Table 1 shows that exit rates from unemployment are lower in the recent sample period than in the earlier sample period, as expected given that labor market conditions were more favorable in the earlier period.[8] In both sample periods, exit rates generally are lower for UI eligible individuals (job losers) than for ineligibles (job leavers and labor

[8] The U.S. unemployment rates averaged 7.6 percent during 2007-11, with a peak of 10.0 percent in October 2009. By contrast, it averaged 5.2 percent during 2000-04, with a peak of 6.3 percent in June 2003.

force entrants). The difference is primarily due to exits out of the labor force rather than to employment; the substantial movements in and out of the labor force for ineligibles are consistent with the preponderance of labor force entrants in this group.[9]

Table 1 also shows that despite substantially higher exit rates for UI ineligibles, average reported duration is nearly the same for both groups. This likely reflects the recently documented tendency for labor force re-entrants to report unemployment durations upon re-entry that substantially exceed one month (Elsby, Hobijn, Şahin, and Valletta 2011). Such misreporting of unemployment duration is unlikely to affect the econometric analyses below, for two reasons: (i) in my analyses, reported duration is used only as a control variable and for coarse sample breaks rather than precise measurement of the timing of UI receipt and exhaustion; (ii) receipt of UI benefits is not restricted to self-reported unemployment spells but instead applies to prolonged periods of non-employment as well (Rothstein and Valletta 2013). The table also shows that state labor market conditions are slightly more adverse and available UI weeks are slightly longer for eligible than for ineligible individuals in the later sample period, which reflects the higher preponderance of job losers in states that were hit hardest by the downturn.

Additional comparison of the characteristics of the eligible and ineligible sub-samples is provided in Appendix Table A1. In each period, the sample of ineligibles is younger and less educated, with a higher proportion of women. These differences in characteristics are as expected, given that the ineligible sample is dominated by labor force entrants. Finally, eligibles are more likely to be affiliated with cyclically sensitive

[9] Among the sample of ineligibles in both periods, about 60 percent are re-entrants, 15-20 percent are new entrants, and 20-25 percent are job leavers (quits).

sectors such as construction and durable manufacturing, while ineligibles are relatively more concentrated in industry sectors that are characterized by tenuous employment attachment even during cyclical upturns, such as the retail and personal services sectors.[10] On net, these descriptive statistics are broadly consistent with the delineation of the sample into UI eligible and ineligible groups.

Figures 3 and 4 provide more detail on unemployment exit rates, displaying them across the samples and by UI eligibility, broken down by unemployment duration (measured in months).

Figure 3 displays exit rates for the complete sample (eligibles and ineligibles together) separately for the two periods. It shows that overall exit rates are higher in the earlier sample period across all durations, with a noticeable uptick in exits at durations beyond 20 months in both samples. The gap in exit rates also widens somewhat beyond 6 months. To the extent that extended UI availability reduces exit rates, the widening gap in overall exit rates at higher durations may reflect the broader availability of extended UI benefits in the recent period, which reduced exit rates for the long-term unemployed in that period versus the earlier period.

Figure 4 separates the exit rate plots by sample period in the separate panels, and by UI eligibility status within each panel. Exit rates are generally higher for the ineligibles versus eligibles across all durations. The notable exception is at the longest durations (21 months or longer) in the 2007-11 sample, for which exit rates for eligibles and ineligibles are similar. Since benefit availability was extended up to 23 months in this period, the relative increase in exit rates at long duration for UI eligibles may reflect

[10] Industry of prior employment is not defined for new labor force entrants; the industry tabulations in the Appendix are restricted to job leavers and re-entrants.

exhaustion of extended UI benefits. However, a similar pattern of increased exit rates at durations in the earlier sample undercuts this explanation somewhat, because extended UI benefits would have been exhausted well before 21 months in that period (the PBD was 72 weeks or about 17 months during this period).

The exit rate plots are mildly suggestive of extended benefit effects on unemployment exit rates. The next section lays out the discrete time hazard framework for testing these effects more formally.

4. Econometric Framework

My econometric analysis of extended UI effects on job search behavior and outcomes is based on a discrete time framework for the estimation of the probability of exiting unemployment. I estimate equations of the following form:

$$\Pr(Y_{ist} = 1) = \delta \cdot (PBD_{st} / 10) + \omega_s + \psi_t + \beta X_{ist} + f(D_{ist}; \gamma) + \lambda Z_{st} \qquad (1)$$

The dependent variable Y is an indicator for whether an individual i living in state s who is unemployed in the survey reference week in month t exits unemployment by month t+1 (i.e., reports no longer being unemployed in the reference week in the subsequent survey month). Exits from unemployment can occur either through job finding or labor force withdrawal. Below, I focus on specifications that do not distinguish the exit route, although I also provide estimates based on the separate routes.

The main coefficient of interest is δ, which measures the effect on unemployment exits of 10 additional weeks of extended UI benefits (potential benefit duration, or *PBD*),

which varies across states and over time. Because the UI benefit extensions are most relevant for individuals who have been unemployed for at least 26 weeks, I follow Rothstein (2011) below in estimating additional specifications that allow the effects of PBD to vary across groups defined by whether they have been unemployed for at least 26 weeks.

The most basic specification estimated below incorporates a complete set of state dummies (ω_s) and date dummies (ψ_t; one for each of the 60 months observed in the sample, less one). The state dummies account for differences in the labor market environment that are constant over time within states, while the date dummies account for changes in economic conditions that are uniform across states. [11]

Subsequent specifications reported below add vectors of individual characteristics (X), individual unemployment duration (D), and state labor market characteristics (Z). The vector X is relatively standard and includes education (4 categories), age (7 categories), gender, marital status, the interaction of gender and marital status, an indicator for nonwhite race, and industry dummies (14 categories).[12] D is individual unemployment duration, which is incorporated based on the nonlinear function f; it includes terms for duration in weeks, its square, its inverse, and an indicator for newly unemployed individuals (duration<5 weeks). Finally, and most important, my final preferred specification includes monthly measures of conditions in the state labor market, in particular cubics in the contemporaneous state unemployment rate and the rate of payroll employment growth (measured over the 3 months ending in the observation month, at an annual rate). Because the availability of extended UI benefits reflects state-

[11] As noted earlier, the date dummies account for the potential effects of temporary suspensions of extended benefit (EUC) availability in 2010.
[12] See Appendix Table A2 for the complete list (except the industry categories).

specific economic conditions, in particular the unemployment rate, it is critical to ensure that the estimates of extended UI effects on search behavior are not contaminated by the direct correlation between extended UI and deterioration in state labor market conditions that determines its availability. In all of the regressions, the standard errors are clustered by state.

Because the regressions include complete state and time (month) dummies, the identifying variation reflects variation in available UI benefits (PBD) across states and over time, conditional on individual characteristics and state labor market conditions. The complexity of the extended UI trigger rules causes idiosyncratic and plausibly exogenous PBD variation across states and over time. It is common over my sample frame for two states to have identical unemployment rates in a particular month but PBDs that differ by 20 weeks or more. For example, in April of 2011, the unemployment rates in Texas and Arkansas were both 8.0 percent and payroll employment was growing at just under a 3 percent pace in both states. However, due to different state-specific rules regarding the EB program triggers and regular UI availability, eligible UI recipients had a PBD of 71 weeks in Arkansas and 93 weeks in Texas. It is also common to observe large differences in PBD's based only a small change over time or small difference across states in the unemployment rate.[13] The differences in economic conditions that trigger benefit extensions are controlled for through the flexible polynomials in the state unemployment rate and rate of job growth.

[13] This variation raises the possibility of a regression discontinuity (RD) design for empirical analysis, in which the pattern of unemployment transitions is compared across individuals in states that are on either side of an unemployment threshold that triggers additional UI extension weeks. Marinescu (2013) implemented an RD strategy using data from online job searches. With my matched CPS data, this strategy would produce observation counts that are too small to yield adequate statistical precision.

The main identifying assumption is that unobserved characteristics of state labor markets that affect job search behavior and outcomes are uncorrelated with variation over time in the availability of extended UI benefits in a state (conditional on the state labor market conditions that trigger the extensions). These identifying assumptions are less stringent than those used in Farber and Valletta (2013), who relied on within-state variation created by the comparison of individual unemployment duration to maximum available weeks of UI for each individual's state at a point in time. This raises the possibility that my estimates are contaminated by unobserved correlations between state economic conditions that affect search behavior and the availability of extended benefits. As noted above, this concern is mitigated by the inclusion of detailed controls for state economic conditions. Examining the results for ineligible individuals provides additional information regarding the potential impact of omitted variables.

5. Estimation Results

5.1 Logit regressions

The main estimation results for UI eligible individuals are displayed in Table 2. Four different specifications are estimated for each sample period, with individual characteristics, unemployment duration, and state labor market conditions added sequentially to the baseline specification that includes only state and time dummies. Panel A shows the impact of UI benefit extensions (PBD) in the full sample of eligible individuals, while the second panel shows results for the same specifications but with the impact of UI benefit extensions estimated separately for individuals who have been

unemployed for at least 26 weeks (6 months) or fewer than 26 weeks.[14] The estimates listed in both panels are based on transformed logit coefficients. They represent the marginal effects of 10 additional weeks of extended UI benefits on the probability of existing from unemployment (expressed as proportions, like the baseline exit rates in Table 1 and Figures 3-4).

For the full sample results in Panel A, the column (1) estimate for the 2007-11 sample indicates that a UI extension of 10 weeks reduces the probability of exiting unemployment by about 1 percentage point. This estimate is reduced by half and becomes statistically insignificant as the complete sets of control variables are added. No significant estimates for the overall PBD effect are found for the 2000-04 sample.

By contrast, Panel B of Table 2 shows that for both time periods the estimated negative effect of UI benefit extensions on unemployment exits is relatively robust for individuals who have been unemployed for at least 6 months and hence are directly affected by the benefit extensions. In the 2007-11 sample, the PBD coefficient for the long duration group is cut approximately in half by the inclusion of individual characteristics and state labor market controls. However, it remains highly significant in all columns. The estimate in the fourth column is significant at nearly the 1-percent level and implies a reduction in the unemployment exit probability of about 1 percentage point (relative to a baseline exit rate of about 17 percent for UI eligibles unemployed for at least 6 months; see Table 1). A similar pattern across the columns is evident for the 2000-04 sample, but with a larger estimated effect of benefit extensions on unemployment exits. For this earlier sample period, column (8) shows approximately a 2

[14] Complete coefficient estimates for the column (4) and (8) specifications are listed in Appendix Table A2 (excluding the coefficients on the industry, state, and time dummies).

percentage point reduction in the probability of exiting unemployment (relative to a baseline probability of about 24 percent in Table 1). Although this estimate is substantially larger than the corresponding estimate for the 2007-11 sample (column 4), the exit rates are also larger in the 2000-04 sample, suggesting that the impact on unemployment duration may not differ by much. The difference between the two estimates is not statistically significant at conventional levels (t-stat around 1.0).

Table 3 lists the results for the same specifications as Table 2, but with the sample restricted to individuals who are not eligible to receive UI benefits.[15] The estimated effects of benefit extensions generally are small and highly insignificant, especially in the specifications with complete controls, and they vary in sign. This is true for the overall sample effect (Panel A) and also the effect for individuals unemployed for at least 26 weeks (Panel B). The absence of any negative effects of PBD on exits for the ineligible sample suggests that PBD is not serving as a proxy for unobserved, adverse economic conditions. These results provide further evidence that the effects of benefit extensions are largely restricted to individuals who are eligible to receive them. They also suggest the absence of search externalities or spillover effects to ineligibles (in contrast to Levine (1993).

Table 4 lists the final set of regression results. These show the separate effects of UI extensions on unemployment exits through the separate routes of employment (job finding) and out of the labor force (not in labor force, or NILF). Each equation is estimated using the cause-specific outcome as the dependent variable, with exits through

[15] Complete coefficient estimates for the column (4) and (8) specifications are listed in Appendix Table A2 (excluding the coefficients on the state and time dummies). Industry of prior employment is not defined for new labor force entrants and therefore is excluded from the regressions.

the alternative route included with continuation in unemployment. Consistent with Rothstein (2011) and Farber and Valletta (2013), UI extensions lengthen unemployment spells primarily through reducing labor force exits rather than job finding. The only statistically significant estimates are for the PBD effect on labor force exits for individuals unemployed for at least 26 weeks, and the magnitudes of the NILF estimates are uniformly much larger than the magnitudes of the job-finding estimates.

5.2 Translation to Unemployment Duration

The estimated coefficients for the specifications with complete controls in Table 2 suggest a moderate effect of UI benefit extensions on unemployment exits for individuals who are directly affected by the extensions. In particular, for job losers who have been unemployed for at least 26 weeks, 10 additional weeks of UI benefits reduce unemployment exit rates by about 1-2 percentage points (relative to baseline exit rates of about 17-25 percent). In this section, I translate these estimates into effects on expected duration of unemployment, for direct comparison to past results regarding the effects of UI benefit extensions.

Conversion of the effects on unemployment exits into effects on unemployment duration is straightforward. Let P_t = (the fraction continuing in unemployment from month t to t+1) which is just $(1-(\text{exit rate}))_t$. Then the expected (average) duration of a completed spell of unemployment (*S*) is as follows (see e.g Sider 1985):

$$S = (1-P_1) + 2\cdot P_1\cdot(1-P_2) + 3\cdot P_1\cdot P_2\cdot(1-P_3) + \ldots$$

$$= 1 + P_1 + P_1\cdot P_2 + P_1\cdot P_2\cdot P_3 + \ldots$$

I apply this formula to the sample of eligible individuals unemployed for at least 26 weeks. For this group, I obtain expected completed duration S by setting P_1 through P_6 equal to 1 (to ensure spell lengths of at least 6 months) and then using the observed empirical continuation rates to calculate P_7 through $P_{24,}$ which are then plugged into the formula for S above.[16] This represents duration with the extensions as observed. To assess the impact of the extensions on expected duration, I obtain a counterfactual value of S by subtracting from P_7 through P_{24} the estimated effects of benefit extensions for individuals unemployed for at least 26 weeks in the models with complete controls (Table 2, Panel B, columns 4 and 8) and then recalculating S. The impact of benefit extensions on expected duration for affected individuals (job losers unemployed for at least 6 months) is represented by the difference between the observed and counterfactual values of S.

Table 5 lists the results of this calculation of expected duration in Panel A, along with a comparison to past estimates in Panel B. The expected durations calculated in months are converted to weeks (months *(52/12)) for direct comparability to past estimates. My estimates indicate that the increase in expected unemployment duration due to a 10-week extension of UI benefits is approximately 1.3 weeks in the 2007-11 episode and a slightly larger 1.6 weeks for the 2000-04 episode. These estimates are in the middle-to-upper end of the range of past estimates listed in Panel B of Table 5.

On balance, my estimates suggest a moderate effect of UI benefit extensions on unemployment duration in the recent episode. As noted in Section 2.1, in 2009 the potential duration of UI benefits reached about 96 weeks for the typical eligible

[16] I truncate durations at 24 months because very few spells are observed beyond that point in my data; accounting for the small number of longer spells does not have a meaningful impact on expected duration.

individual. This implies an overall extension of about 70 weeks. Applying the method of Table 5, Panel A to a 70-week extension indicates that the recent extensions increased unemployment duration by about 7.3 weeks (16 percent) for job losers unemployed for at least 6 months.

6. Conclusions

I used U.S. labor market survey (CPS) data to estimate the impact of variation in the potential duration of UI benefits arising from benefit extensions that differed across states and over time. I compared the effects from the recent unprecedented extension episode (beginning in 2008) and the earlier, more limited episode from the early 2000s, focusing on the group most likely to be affected by the benefit extensions—job losers unemployed for at least 6 months. The estimated effect of the benefit extensions on unemployment duration is nearly identical across the two episodes. These estimates suggest that 10 additional weeks of benefits increase unemployment duration by about 1.5 weeks, which is in the middle-to-upper end of the range of past estimates based on U.S. administrative data. My results also show no measurable spillover effects to groups that are not directly affected by the extensions (UI ineligibles, plus eligible individuals who have been unemployed for fewer than 6 months).

The absence of variation in the UI extension effect across labor market states is consistent with other recent research (e.g., Schmieder et al. 2012), although it contrasts with the findings of Kroft and Notowidigdo (2011). This likely reflects differences in specific elements of our respective empirical designs, for example Kroft and Notowidigdo's focus on benefit generosity rather than benefit duration. The absence of

spillovers or search externalities for unaffected groups may seem surprising, particularly given past evidence of such spillovers for the United States (Levine 1993). However, as noted earlier, in my specific setting the increase in unemployment duration associated with benefit extensions arises primarily through extended labor force attachment rather than reduced job finding. This implies that benefit extensions do not affect the tendency of UI-eligible individuals to search for and accept job offers, which in turn implies little or no potential for positive spillovers to UI-ineligible individuals.

One open question is the optimality of the unprecedented UI benefit extensions that occurred during the Great Recession and its aftermath. My finding of little or no impact of the extensions on job finding is relevant in this regard. As Schmieder et al. (2012) argue, the socially optimal duration of UI benefits varies with the inverse of the ratio between the effects of UI extensions on nonemployment duration and the duration of UI benefit recipiency. Given my estimate of a limited impact on nonemployment duration combined with very high take-up rates for extended UI benefits, it is likely that optimal duration was quite long during the Great Recession and its aftermath. This is an important area for future research.

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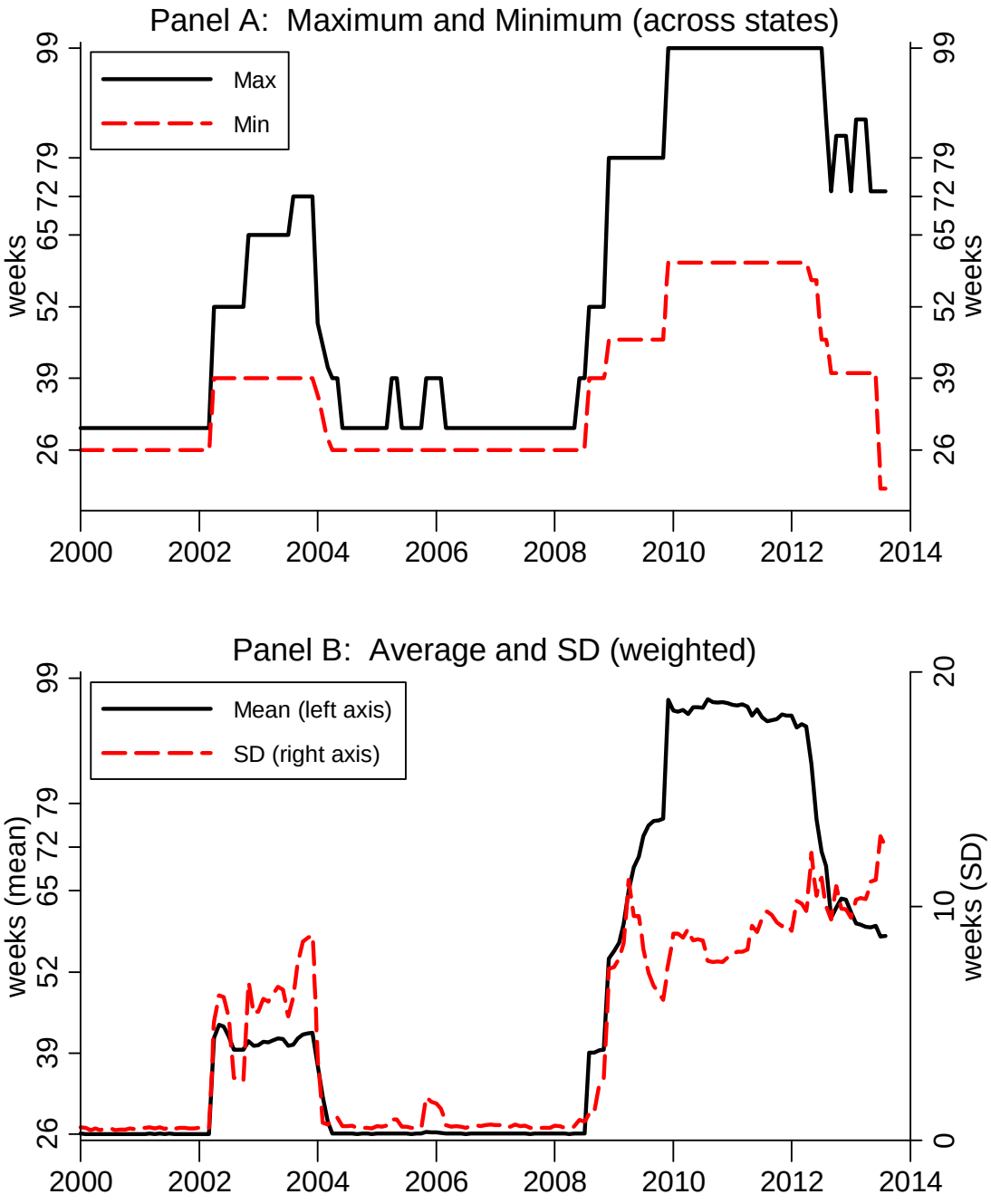
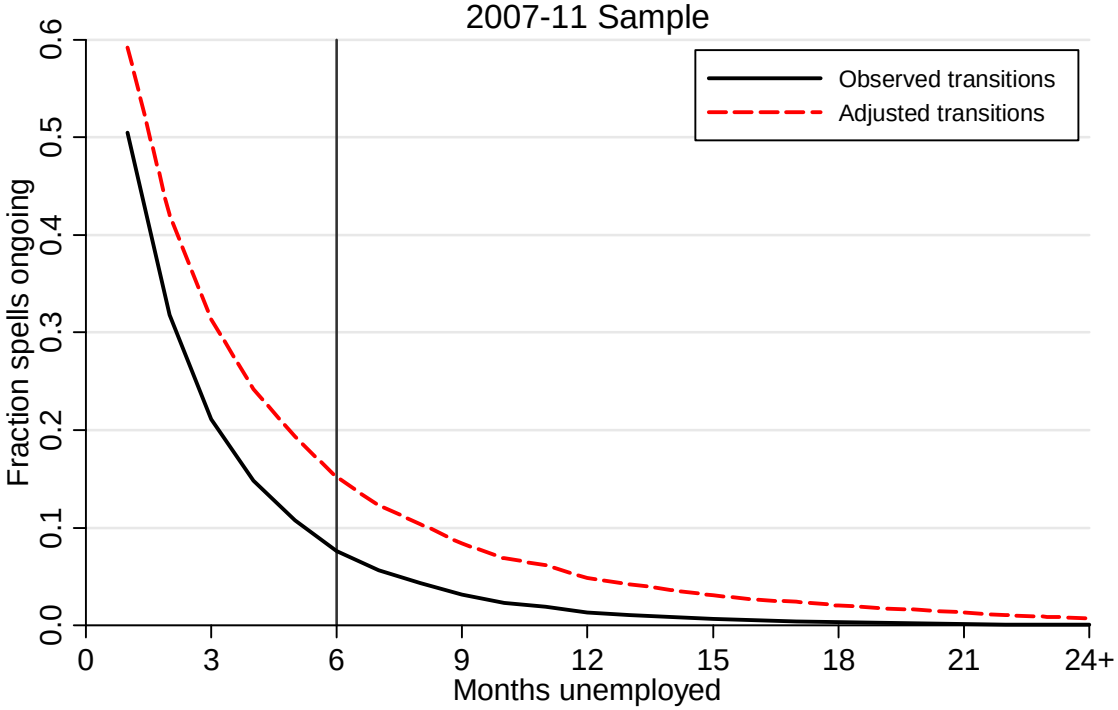
Figure 1: Variation in Total Weeks of UI Available
(Jan. 2000 through Aug. 2013)



Note: Author's calculations from U.S. Department of Labor data (see text). Panel B series calculated using CPS weighted unemployment observations.

Figure 2: Unemployment Survivor Curves

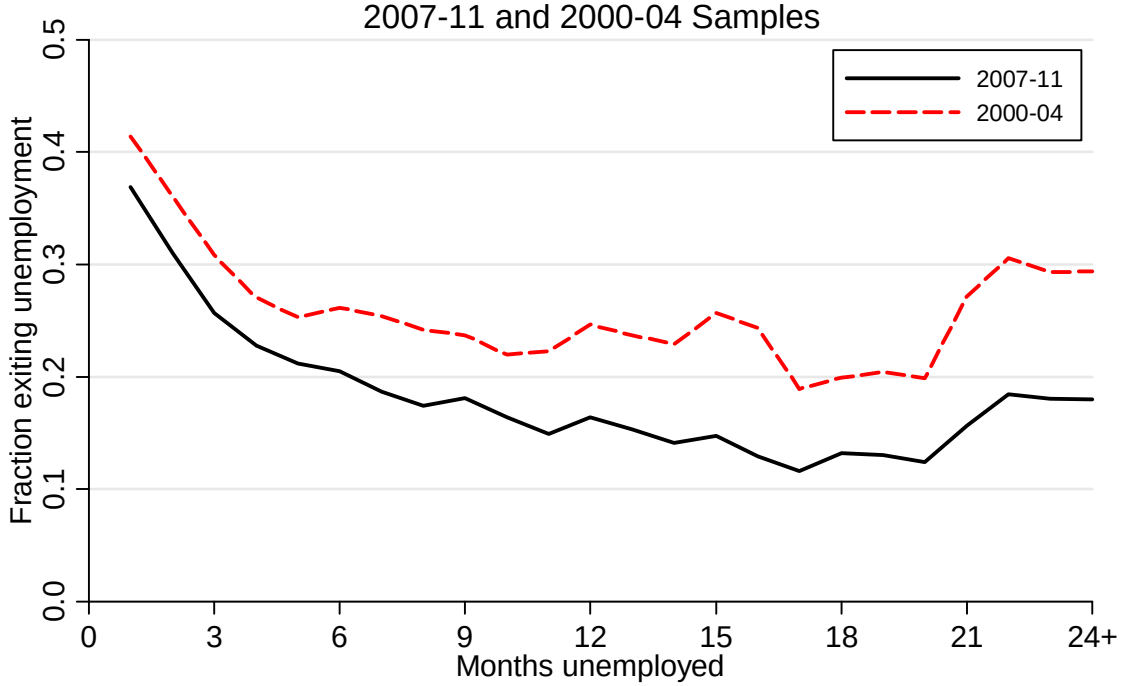
2007-11 Sample



Note: Author's calculations from matched CPS data (weighted).

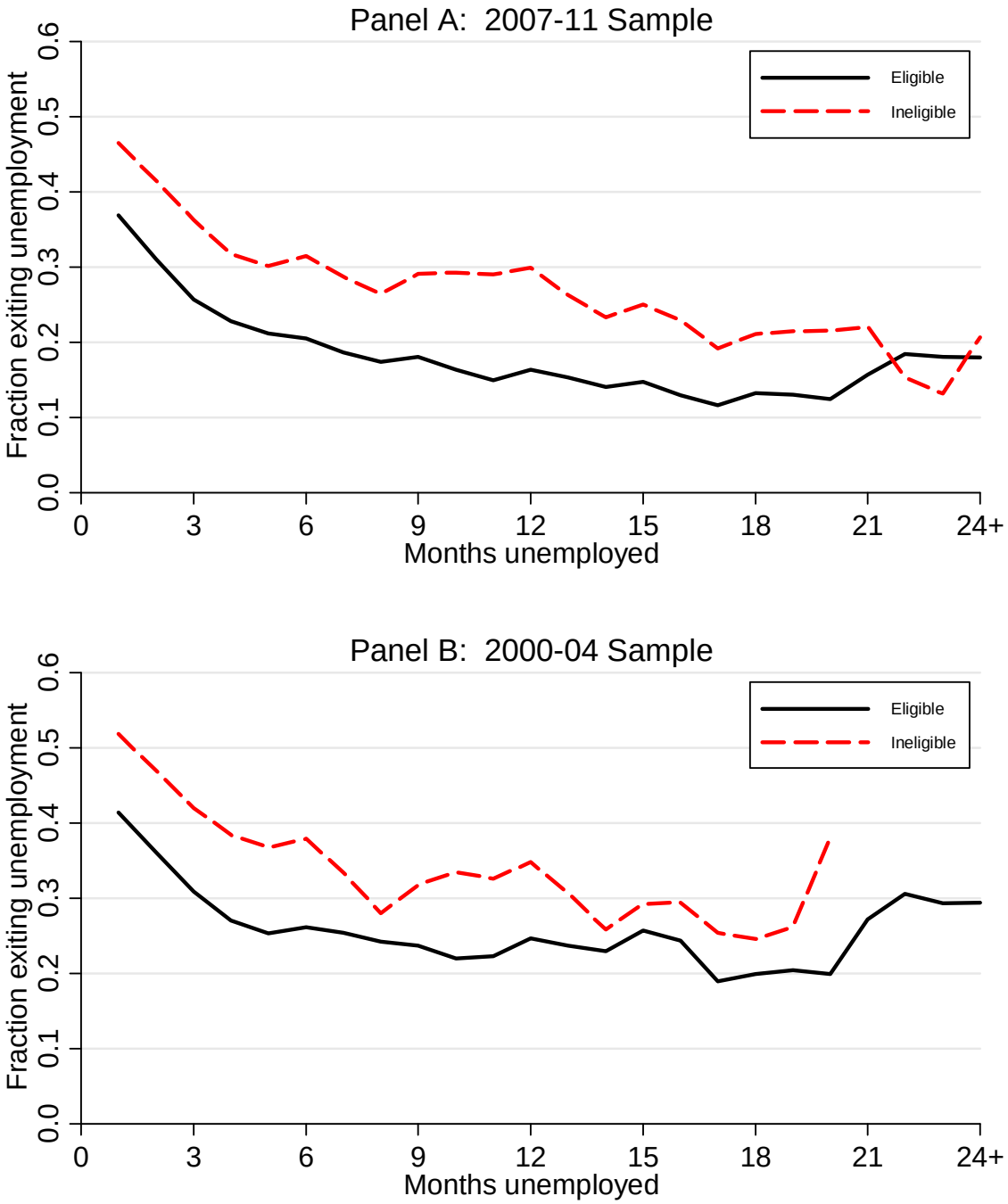
Figure 3: Unemployment Exit Rates

2007-11 and 2000-04 Samples



Note: Author's calculations from matched CPS data (weighted). Transitions adjusted as described in the text. Values smoothed across adjacent duration bins.

Figure 4: Unemployment Exit Rates
By Sample and UI Eligibility



Note: Author's calculations from matched CPS data (weighted). Transitions adjusted as described in the text. Values smoothed across adjacent duration bins. Durations for UI ineligibles in 2000-04 censored at 20 months (due to sparse data).

Table 1: CPS Matched Sample Formation and Descriptive Statistics

	(1)	(2)	(3)	(4)
	2007-2011		2000-2004	
	UI eligible (job losers)	UI ineligible (job leavers and LF entrants)	UI eligible (job losers)	UI ineligible (job leavers and LF entrants)
Sample steps:				
Currently unemployed	173,391	123,276	107,327	102,417
Valid matches[1]	115,479	82,014	70,630	67,639
Matched two months forward	73,022	51,818	43,546	42,210
Final analysis samples (recoded transitions, dropped missings)[2]	72,347	50,141	43,167	40,129
Exit Rates from unemployment				
Total exit rate	0.253	0.362	0.336	0.445
Exit to employment	0.166	0.143	0.235	0.216
Exit to not in the labor force	0.087	0.219	0.101	0.229
Unemployment duration >= 26 weeks				
Total exit rate	0.171	0.282	0.241	0.343
Exit to employment	0.078	0.086	0.125	0.119
Exit to not in the labor force	0.093	0.196	0.116	0.223
Unemployment duration				
Average	28.2	27.4	16.7	16.6
Share unemployment duration >=26 weeks	0.402	0.377	0.225	0.215
Share newly unemployed (<5 weeks)	0.231	0.250	0.346	0.383
State variables (means)				
Potential duration of UI benefits (PBD)	74.2	69.4	33.0	32.2
Unemployment rate (percent)	8.7	8.2	5.5	5.4
Δln(payroll emp.), 3-month annualized	-0.010	-0.007	0.001	0.003

Notes

[1]Matched identification from month t to t+1, including id variables and consistent gender, race, age, and educational attainment.

[2] Dropped observations with missing values (or weights equal to zero) and allocated labor force or unemployment duration values. Selected transitions recoded as described in the text.

Table 2: Logit Regression Results, Pr(Exit from Unemployment), UI ELIGIBLE
Marginal Effects of 10 Additional UI Weeks

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Panel A: Single UI Weeks Variable							
	2007-11				2000-04			
UI Variables:								
Potential benefit duration	-0.0106**	-0.0104**	-0.00788**	-0.00529	-0.00625	-0.00808	-0.00759	-0.0103
(PBD)	(0.00331)	(0.00321)	(0.00293)	(0.00341)	(0.00763)	(0.00691)	(0.00638)	(0.00855)
	Panel B: Separate effects of UI Weeks for Unemployment Duration >= or < 26 weeks							
	2007-11				2000-04			
PBD (dur>=26)	-0.0174**	-0.0165**	-0.0116**	-0.00918*	-0.0299**	-0.0264**	-0.0183**	-0.0212**
	(0.00326)	(0.00318)	(0.00333)	(0.00375)	(0.00672)	(0.00632)	(0.00700)	(0.00822)
PBD (dur<26)	-0.00333	-0.00377	-0.00574*	-0.00323	-0.000704	-0.00345	-0.00441	-0.00702
	(0.00316)	(0.00307)	(0.00289)	(0.00334)	(0.00657)	(0.00620)	(0.00661)	(0.00891)
Additional Controls:								
State/time	Y	Y	Y	Y	Y	Y	Y	Y
Individual characteristics	N	Y	Y	Y	N	Y	Y	Y
Unemployment duration	N	N	Y	Y	N	N	Y	Y
State unemployment & employment growth	N	N	N	Y	N	N	N	Y
Observations	72,347	72,347	72,347	72,347	43,167	43,167	43,167	43,167

Standard errors in parentheses (clustered by state). ** p<0.01, * p<0.05.
Notes: Numbers are transformed logit coefficients, expressed as marginal effects on the probability of observing an unemployment exit. See text and Appendix Table 2 for the complete list of additional controls.

Table 3: Logit Regression Results, Pr(Exit from Unemployment), UI INELIGIBLE
Marginal Effects of 10 Additional UI Weeks

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Panel A: Single UI Weeks Variable							
	2007-11				2000-04			
UI Variables:								
Potential benefit duration	0.000573	0.000943	0.00105	0.00446	0.00313	0.00243	0.000739	0.00327
(PBD)	(0.00486)	(0.00505)	(0.00480)	(0.00597)	(0.00728)	(0.00689)	(0.00718)	(0.00719)
	Panel B: Separate effects of UI Weeks for Unemployment Duration >= or < 26 weeks							
	2007-11				2000-04			
PBD (dur>=26)	-0.00578	-0.00445	-0.00102	0.00220	-0.0216**	-0.0176*	-0.000962	0.00101
	(0.00499)	(0.00520)	(0.00482)	(0.00633)	(0.00825)	(0.00781)	(0.00953)	(0.00945)
PBD (dur<26)	0.00631	0.00574	0.00259	0.00601	0.00905	0.00732	0.00122	0.00393
	(0.00504)	(0.00514)	(0.00498)	(0.00589)	(0.00815)	(0.00767)	(0.00705)	(0.00706)
Additional Controls:								
State/time	Y	Y	Y	Y	Y	Y	Y	Y
Individual characteristics	N	Y	Y	Y	N	Y	Y	Y
Unemployment duration	N	N	Y	Y	N	N	Y	Y
State unemployment & employment growth	N	N	N	Y	N	N	N	Y
Observations	50,141	50,141	50,141	50,141	40,129	40,129	40,129	40,129

Standard errors in parentheses (clustered by state). ** p<0.01, * p<0.05.
Notes: Numbers are transformed logit coefficients, expressed as marginal effects on the probability of observing an unemployment exit. See text and Appendix Table 2 for the complete list of additional controls.

Table 4: Logit Regression Results, Pr(Exit from Unemployment), UI ELIGIBLE
Separate Exit Routes: to Employment or Not in Labor Force (NILF)
Marginal Effects of 10 Additional UI Weeks

	(1)	(2)	(3)	(4)
	Panel A: Single UI Weeks Variable			
	2007-11		2000-04	
	Exit to Employment	Exit to NILF	Exit to Employment	Exit to NILF
UI Variables:				
Potential benefit duration	-0.00150	-0.00359	-0.00142	-0.00916
(PBD)	(0.00288)	(0.00214)	(0.00635)	(0.00637)
	Panel B: Separate effects for Unemployment Duration >= or < 26 weeks			
	2007-11		2000-04	
	Exit to Employment	Exit to NILF	Exit to Employment	Exit to NILF
PBD (dur>=26)	-0.00347	-0.00564*	-0.00201	-0.0185**
	(0.00312)	(0.00228)	(0.00618)	(0.00602)
PBD (dur<26)	-0.000820	-0.00181	-0.00127	-0.00568
	(0.00286)	(0.00210)	(0.00681)	(0.00632)
Additional Controls:				
State/time	Y	Y	Y	Y
Individual characteristics	Y	Y	Y	Y
Unemployment duration	Y	Y	Y	Y
State unemployment & employment growth	Y	Y	Y	Y
Observations	72,347	72,347	43,167	43,167

Standard errors in parentheses (clustered by state). ** p<0.01, * p<0.05.
Notes: Numbers are transformed logit coefficients, expressed as marginal effects on the probability of observing an unemployment exit. See text and Appendix Table 2 for the complete list of additional controls.

Table 5: Effects of UI Benefit Extensions on Unemployment Duration

Panel A: Estimates for 10 Extra UI Weeks
(based on Table 2, Panel B, columns 4 and 8)
(UI Eligibles, Duration>=26 Weeks)

	Expected duration (weeks)		Difference (effect of 10 extra UI weeks)
	Observed exits	Counterfactual exits	
Sample period:			
2007-11	52.5	51.2	1.3
2000-04	45.3	43.7	1.6

Panel B: Estimates from Past Research (UI adminstrative data)

Paper:	Cited estimate	Effect scaled for 10 extra UI weeks
Moffitt (1985)	Table 4: duration up 0.16 weeks with 1-week extension	1.6
Katz and Meyer (1990)	Abstract: duration up 0.16-0.20 weeks with 1-week extension	1.6-2.0
Card and Levine (2000)	Abstract: duration up 1 week with 13-week extension	0.8
Jurajda and Tannery (2003)	Fn. 35: duration up 1.87 weeks for 25-week extension	0.7

Notes: Panel A based on estimated effects of 10 additional weeks of UI benefits on unemployment exits, from Table 2, Panel B, columns 4 (2007-11) and 8 (2000-04). See text for method.

Appendix Table A1: Descriptive Statistics, Analysis Samples
(continued from text Table 1)

	(1)	(2)	(3)	(4)
	2007-2011		2000-2004	
	UI eligible (job losers)	UI ineligible (job leavers and LF entrants)	UI eligible (job losers)	UI ineligible (job leavers and LF entrants)
Observation counts	72,347	50,141	43,167	40,129
Individual characteristics (shares)				
Age				
16-19	0.028	0.245	0.041	0.291
20-24	0.108	0.223	0.120	0.211
25-34	0.229	0.209	0.236	0.192
35-44	0.220	0.125	0.258	0.144
45-54	0.238	0.108	0.213	0.093
55-64	0.145	0.062	0.110	0.047
65 and over	0.033	0.027	0.021	0.021
Education				
<High school	0.170	0.269	0.205	0.334
High school	0.385	0.310	0.378	0.302
Some college	0.271	0.275	0.251	0.238
>=College	0.174	0.146	0.166	0.126
Non-white	0.401	0.453	0.389	0.438
Married	0.482	0.298	0.498	0.304
Female	0.371	0.522	0.393	0.538
Prior industry				
Agriculture	0.018	0.012	0.033	0.019
Mining	0.006	0.003	0.006	0.002
Construction	0.178	0.072	0.142	0.056
Manufacturing non-durables	0.048	0.034	0.069	0.046
Manufacturing durables	0.101	0.054	0.130	0.057
TCPU	0.070	0.058	0.073	0.052
Wholesale	0.025	0.017	0.035	0.024
Retail	0.106	0.170	0.123	0.259
FIRE	0.054	0.047	0.042	0.039
Business services	0.111	0.094	0.120	0.099
Personal services	0.085	0.179	0.054	0.104
Entertainment services	0.024	0.032	0.026	0.032
Professional services	0.155	0.198	0.129	0.181
Government	0.018	0.024	0.016	0.024
Armed Forces		0.008		0.007

Note: Industry prior to unemployment spell is not defined for new labor force entrants.

Appendix Table A2: Logit Regression Results, Pr(Exit from Unemployment)

Complete Specification, UI Eligibles and Ineligibles (Panel B of Tables 2-3, Columns 4 and 8)

	(1)	(2)	(3)	(4)
	2007-11		2000-04	
	UI Eligible	UI Ineligible	UI Eligible	UI Ineligible
Variables:				
PBD (dur>=26)	-0.0524*	0.0100	-0.102**	0.00429
	(0.0215)	(0.0288)	(0.0397)	(0.0402)
PBD (dur<26)	-0.0184	0.0274	-0.0338	0.0167
	(0.0191)	(0.0268)	(0.0429)	(0.0300)
State unemp rate	-0.372**	-0.357*	-0.483	-1.184**
	(0.131)	(0.141)	(0.402)	(0.258)
(State unemp rate)^2	0.0293*	0.0227	0.0155	0.169**
	(0.0149)	(0.0176)	(0.0817)	(0.0557)
(State unemp rate)^3	-0.000923	-0.000557	0.00126	-0.00911*
	(0.000558)	(0.000672)	(0.00545)	(0.00376)
dln(state emp)	-0.557	-0.902	-2.361	0.592
	(0.957)	(0.979)	(1.340)	(1.188)
dln(state emp)^2	-11.91	2.819	-8.577	52.42**
	(12.81)	(21.14)	(19.49)	(18.55)
dln(state emp)^3	5.703	53.61	1034	-286.9
	(81.57)	(164.5)	(559.2)	(350.6)
Unemployment duration	-1.609**	-1.207**	-1.381**	-1.024**
(weeks)	(0.196)	(0.273)	(0.479)	(0.379)
Unemp duration^2	1.163**	0.730**	1.190**	0.775**
	(0.144)	(0.190)	(0.412)	(0.298)
1/(unemp duration)	1.422**	0.488**	1.578**	0.712**
	(0.107)	(0.0891)	(0.168)	(0.0873)
Newly unemployed	0.191**	0.392**	0.0589	0.292**
(dummy for dur<5)	(0.0415)	(0.0365)	(0.0389)	(0.0348)
Dummy for dur>=26	0.350**	0.300**	0.431**	0.169
	(0.0594)	(0.0882)	(0.100)	(0.109)
Education<HS	0.100*	0.0984**	0.0714	0.0520
	(0.0483)	(0.0251)	(0.0395)	(0.0357)
Education=Some College	-0.0572*	0.110**	0.0191	0.114**
	(0.0227)	(0.0238)	(0.0292)	(0.0233)
Education=College Grad	-0.00607	0.0298	-0.111**	-0.00884
	(0.0321)	(0.0407)	(0.0324)	(0.0522)
Age 20-24	-0.256**	-0.187**	-0.313**	-0.175**
	(0.0592)	(0.0428)	(0.0762)	(0.0392)
Age 25-34	-0.328**	-0.401**	-0.427**	-0.302**
	(0.0604)	(0.0489)	(0.0657)	(0.0404)
Age 35-44	-0.445**	-0.394**	-0.511**	-0.400**
	(0.0615)	(0.0529)	(0.0565)	(0.0427)
Age 45-54	-0.455**	-0.433**	-0.590**	-0.489**
	(0.0638)	(0.0596)	(0.0723)	(0.0526)
Age 55-64	-0.507**	-0.267**	-0.579**	-0.237**
	(0.0612)	(0.0463)	(0.0699)	(0.0614)
Age>64	-0.0647	0.174*	-0.0484	0.111
	(0.0777)	(0.0684)	(0.0779)	(0.0923)
Female	0.0773*	0.150**	0.0432	0.190**
	(0.0352)	(0.0298)	(0.0513)	(0.0320)
Married	0.104**	0.0347	0.103*	0.159**
	(0.0229)	(0.0369)	(0.0417)	(0.0581)
Female*Married	0.114**	0.167**	0.142*	-0.0162
	(0.0382)	(0.0480)	(0.0646)	(0.0636)
Nonwhite	0.0419*	-0.0615	-0.0272	-0.147**
	(0.0165)	(0.0347)	(0.0266)	(0.0358)
Observations	72,347	50,141	43,167	40,129

Standard errors in parentheses (clustered by state). ** p<0.01, * p<0.05.

Notes: Unadjusted logit coefficients. Additional controls include complete sets of state, time(month/year), and industry dummies (UI Eligibles only).