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David R. Howell and Bert M. Azizoglu[1]

In the midst of massive job destruction and sharply rising long-term unemployment, a series of unemployment insurance (UI) eligibility extensions were enacted in 2008-09 that raised the regular 26-week limit to as many as 99 weeks. In response, many leading economists and business press editorials invoked the 'laws of economics' to warn that since extended benefits reduce work incentives, UI extensions would exacerbate the long-term unemployment problem. This prediction follows directly from the conventional *labor-leisure* conception of the work decision, in which work is done only for the income it produces, downward wage flexibility allows workers to "price" themselves into jobs, and there are no effective UI work rules. In this vision, UI payments must be subsidize unemployment (leisure). Alternatively, in an *employment-idleness* labor market, employment has intrinsic value, job loss results in idleness that is accompanied by substantial nonpecuniary costs, and UI rules are enforced. Here the predicted effect of UI benefits is to maintain labor market participation by subsidizing job search rather than to produce large-scale strategic work avoidance. We review the evidence put forward in support of the orthodox prediction, which has relied on extrapolating from pre-Great Recession conditions, particularly through the application of "spike at benefit-exhaustion" findings from the early 1980s. Much more compelling evidence can be found by direct examination of the 2008-10 data, which shows no support for UI related work disincentive effects.

The 2007-09 recession produced the greatest labor market meltdown since the Great Recession. Three indicators underscore the collapse in labor demand responsible for the record rates of long-term unemployment that have persisted into 2011 (see Figure 1). Job destruction, measured as the share of the work force that experienced permanent job loss (not temporarily laid off) rose to 4.5 percent in late 2009, far above its worst level of 2 percent reached in the aftermath of the 2001 recession. The job openings rate fell from a normal range of well above 3 percent (2006-7) to 1.6 percent in mid-2009 and has remained at only around 2 percent between March and January 2011. And finally, the hires rate, which in good times is around 4 percent (2005-6), has been stuck at an abysmal 3 percent since mid-2008.

Large-scale job destruction and feeble hiring have had predictable consequences for the employment numbers. The employment-to-population rate (EPR) fell from 63.4 percent in March 2007 to just 58.2 percent at the end of 2009, an unprecedented collapse in recent memory. Figure 2 shows that the number of unemployed workers increased from 7.7 to 14.8 million between December 2007 and June 2009, peaked at nearly 16 million in late 2009, and was still at 14.9 million in October 2010. Long-term unemployment increased from 1.3 million to 4.4 million over the course of the official recession. By mid-2010 the long-term unemployed had increased by another 50%, to 6.6 million workers.

Policy makers responded to this employment calamity by extending the maximum duration of unemployment insurance (UI) benefits. Beginning in May 2008, Federal Extended Benefits (EB) and Emergency Unemployment Compensation (EUC) extensions raised the regular 26-week limit to as many as 99 weeks for some workers.[2] As Figure 2 shows, total UI claimants rose from a "normal" level of 2-3 million to about 4 million in the fall of 2008, and then exploded to nearly 12 million early 2010. At least as striking, Federal extended UI claimants increased from zero in May 2008 to 6 million in January-March 2010.

In response to this dramatic increase in the duration of eligibility for UI benefits, leading economists and business press editorials have warned that these policy interventions must reduce incentives to take jobs and predicted that the extensions had become a leading source of the persistence of high unemployment. NBER President Martin Feldstein testified before Congress at the very bottom of the trough of the Great Recession

(September 2009) that extending benefit eligibility would "create undesirable incentives for individuals to delay returning to work".[3] University of Chicago's Casey B. Mulligan (2010a) predicted that passage of UI benefit extensions "would raise unemployment rates and reduce both employment and economic output" and that to believe otherwise would be to suspend "the laws of economics." Writing in the *Wall Street Journal*, Harvard's Robert Barro (2010) estimated that two-thirds of 6.7 million long-term unemployed would have been employed in the summer of 2010 but for the eligibility extensions. Barro's colleague at Harvard, Gregory Mankiw (2010), explained that the reason for his "ambivalence" about whether UI benefit extensions should be reauthorized at the height of the unemployment crisis was because "UI reduces the job search efforts of the unemployed."

With such professional luminaries sounding the alarm over work disincentives, *The Economist* (November 2009) needed no reference to the evidence to inform its readers that "It may seem heartless to counsel against too much support for the unemployed but incentives matter even when unemployment is high…. More generous benefits will mean vacancies are filled less quickly, pushing up unemployment." The *Wall Street Journal's* editorial page responded with numerous attacks on the extensions, with such titles as "Incentives Not to Work" (April 13, 2010) and "Stimulating Unemployment" (July 20, 2010).

The prediction of such large work disincentive effects is consistent with the conventional wisdom in academic and policy circles that labor market rigidities caused by social protection policies like UI were at the root of high European unemployment in the 1980-90s (for a critical assessment see Howell et al., 2007; Howell and Rehm, 2009). As it turned out, the U.S. unemployment advantage was actually limited to the 1990s and turned out to be short lived. By the mid-2000s, the U.S. was no longer among the top employment performers. The OECD's harmonized figures for November 2010 put U.S. unemployment at 9.8 percent, far above the German and Italian rates (6.6% and 8.6%) and about the same as the French rate (9.7%). But labor market rigidities have remained at the heart of the orthodox explanation for persistent high unemployment. As Mulligan (2010b) put it, "It is no surprise that adopting a European safety net is giving us a European unemployment problem" (Mulligan, 2010b).

We argue that the case against the 2008-10 UI extensions on work disincentive grounds has been vastly exaggerated and suggest that this misdiagnosis of the direction of causation between unemployment and UI benefits reflects the orthodox theoretical lens through which the labor market and the work decision are viewed. In short, it is theory-driven. The policy consequences of getting the direction of causation right are obvious.

In Section 1, we contrast the conventional "labor-leisure" model of the work decision, which provides the theoretical framework for the work disincentive view, with an alternative "employment-idleness" view. In the conventional model, workers allocate their time between two activities, *labor*, which is market work done only to get the income necessary for consumption, and *leisure,* which is the residual. Workers want both consumption and leisure and they choose the combination they prefer. "Unemployment" falls under leisure since it is chosen: workers are assumed to be able to reduce their reservation wage to get a job if they really want one, so there is no involuntary unemployment. The function of UI benefits is to reduce the need for market work to satisfy a given level of consumption. Such strategic use of UI benefits requires that the UI system's work requirements either do not exist or are not effectively enforced (requirements of adequate pre-benefit employment, job loss without cause, active job search, and job-taking). If the sum of the value of leisure and the UI benefit are greater than the value of income from labor, workers choose leisure ("unemployment"), and the longer the duration of benefits the longer the period of full-time leisure. In this way, the "laws of economics" require direct UI-related work disincentive effects.

In contrast, in an *employment-idleness* labor market, labor markets are characterized by nominal wage rigidity (workers cannot get jobs by lowering their wage demands), there is job rationing (especially in downturns), and there is assumed to be a more expansive set of relevant benefits and costs. Workers get substantial nonpecuniary benefits to employment, experience large nonpecuniary costs from unemployment, can expect significant "scarring" effects of on future wages and employment that increase with the duration of unemployment, and confront effective enforcement of work requirements by the UI system. In a labor market of this sort, even quite generous benefits available for long durations may have little or no work disincentive effects for a rational worker, especially when job rationing is severe. But UI benefits can be expected to promote labor market

attachment and job search (required for the benefits), and may therefore increase the formal unemployment rate.

Sections 2 and 3 address the evidence. Section 2 considers the literature that makes use of pre-Great Recession studies to estimate effects of the 2008-9 UI extensions on unemployment. We address three main approaches. The first extrapolates from earlier labor markets under the assumption that the U.S. labor market would have produced outcomes, such as long-term unemployment and the job finding rates of the unemployed, similar to those in the past in the absence of the policy shock of large-scale UI extensions. A second approach sees shifts in the Beveridge curve (the relationship between job vacancies and unemployment) in the Great Recession as evidence of UI work disincentive effects. The third and most credible extrapolation approach has relied on evidence on the exit rate from unemployment at benefit exhaustion (e.g., at 26 weeks) – the so-called "spike" evidence. It is notable that these supply elasticities are typically taken from a small selective set of studies that used data from the U.S. in the early 1980s, and not from the many studies, most notably those published since 2000, that have found little evidence of such "spikes". No justification is offered in any of the studies we reviewed for the unconditional application of elasticity coefficients generated from earlier labor markets to the Great Recession collapse.

Section 3 considers some suggestive evidence from 2008-10, both from recently published studies and from our own examination of the data. We find no support for UI extended benefit effects in either benefit exhaustion rates or labor flow rates (from unemployment to employment). On the other hand, the labor flow data appear consistent with a "nonparticipation" effect on long-term unemployment, since the timing of flows from unemployment to nonparticipation for the long-term unemployed closely correspond to changes in extended benefit claimant numbers and rates. Section 4 concludes.

1. The "Laws of Economics" and Alternative Visions of the Labor Market

> "Workers who lose jobs, for whatever reason, typically pass through a period of unemployment instead of taking temporary work on the 'spot' labour market, jobs that are readily available in any economy…. To explain why people allocate time to a particular *activity* – like unemployment – we need to know why they prefer it to *all* other available activities" (Robert Lucas, 1987, p. 54).

> "They simply could not understand what was happening to them. They had been brought up to work, and behold! it seemed as if they were never going to have the chance of working again… Everyone who saw Greenwood's play *Love on the Dole* must remember that dreadful moment when the poor, good, stupid working man beats on the table and cries out, 'O God, send me some work!' This was not dramatic exaggeration, it was a touch from life." (George Orwell, 1958 [1937], p. 86).

The prediction of a highly elastic labor supply response by workers to the availability of UI benefits is not a necessary consequence of the application of mainstream theory, at least broadly construed. The neoclassical vision requires only that incentives are put at the center of the story, that workers have reasonable full information, and that they weigh all current and expected future costs and benefits. UI benefits will reduce the short-run income cost of unemployment, but whether receipt of this compensation actually reduces labor supply depends on its importance in the balance of the full range of costs and benefits, both pecuniary and nonpecuniary. If, for example, there are large net nonpecuniary benefits to employment (income is only part of the reason workers work), or there are large expected future scarring effects on future employment and wages, there is no reason to presume that an increase in the UI replacement rate or in the duration of benefits will necessarily increase the duration of unemployment spells by reducing search effort and job finding. Nor does increased unemployment duration necessarily reflect strategic work avoidance behavior (moral hazard), since it could also be a rational response to imperfect insurance markets, in which case UI benefits facilitate an efficient allocation of time between job search and other activities that would otherwise not have been possible (Chetty, 2008).

As the Lucas quote at the top of this section illustrates, the orthodox application of the general neoclassical cost-benefit framework reflects a vision of the labor market in

which workers can always "price" themselves into a job. The choice to do so depends on the relative values they place on consumption and leisure. As Nicholson and Needels (2006, p. 58) put it, "The planning horizon for a newly unemployed worker is taken to be T weeks, and this worker must choose how many weeks (u) to remain unemployed…. Workers will choose a utility maximizing duration of unemployment depending on their preferences for consumption versus leisure."

By framing time allocation as a choice between labor and leisure, any compensated unemployment will reduce what workers do not want to do ("labor") by subsidizing what they prefer to do ("leisure"). In the language of search theory, "all agents are risk-neutral wealth maximizers" (nonpecuniary benefits and costs are ruled out) and the condition for workers to take a job is that the value of the match (income from a job) is greater than the value of unemployment, which is the sum of the value of leisure (which may be interpreted to include home production) and the value of the UI benefit (Mortensen and Nagypal, 2005, pp. 4-5). This is also known as the "opportunity cost of employment".

In this vision of the labor market and the work decision, there is no involuntary unemployment and no UI system work requirements – that to be eligible for benefits, workers must have prior work experience, lose their job involuntarily through no fault of their own, actively search for work, and take any available job.[4] As Holmlund (1998, p. 117) notes, "It is clear that incentive effects will be unimportant if the work test is effective."

In the U.S., the work test is at least partially effective, since State Workforce Agencies clearly do enforce the eligibility rules. According to the Benefit Accuracy Measurement program (Department of Labor, 2011, pp. 18-20) there were 20 million new and transitional UI claims in 2009 and over 2.2 million denials on "monetary" grounds alone (requirement of sufficient pre-unemployment earnings). There were also 2.35 million "separation" denials (must have lost a job through no faulty of their own), and 2.77 million "nonseparation" denials (must be able and available to work).[5]

In sum, disincentive effects necessarily follow from a model in which: 1) full downward wage flexibility prevails; 2) there are no nonpecuniary benefits to employment, and no social or psychological costs to joblessness (there is only leisure, not idleness); 3) the UI system does not enforce its work rules; and 4) workers are not concerned about future scarring effects on employment and wages. Framed in this way, UI benefits simply

offer unemployed workers the option of "leisure" at a lower cost in foregone consumption, and the longer unemployment durations are assumed to translate directly into higher unemployment rates (for problems with this simple translation, see below). Guided by this vision, the mainstream literature has been nearly exclusively focused on 1) empirical confirmation of moral hazard effects, and 2) minimizing this strategic behavior through the design of optimal UI benefits (e.g., see the overview by Nicholson and Needels, 2006).

Quite different predictions of UI benefits effects on labor supply follow from what we term an "employment-idleness" vision, in which workers are risk-averse and sensitive to social norms that associate respect and dignity to financial independence and employment, and experience shame and humiliation from idleness and dependency on the dole. In labor markets of this sort, as Robert Solow (1990, p. 12) has put it "The employment and job-search choices of unemployed workers, so far as they have choices, do not seem to be governed simply, or even predominantly, by any simple trade between income and the irksomeness of labor."

There is compelling evidence that for many workers there are substantial nonpecuniary benefits to employment. In addition to status, identity, and "regular contact with peers," Stavrova et al. argue that among the most critical nonpecuniary benefits of employment is that "working for a living means complying with the social norm to work" (p. 160). The cost of unemployment (measured as "life satisfaction") is found to vary with the strength of this social norm, but not with the generosity of the welfare state provision for the unemployed (p. 168).

A literature that dates back to the 19th century and that expanded greatly during the Great Depression (see the Orwell quote at the top of this section) has documented that increasing hours of non-work time caused by job loss is typically experienced by workers as unhappy "idleness" rather that happy "leisure". Thomas Cottle's (2001) examination of the individual experiences of unemployed men and their families in 1980s America underscores the intrinsic value of employment:

> Although it is often said that we never appreciate something until we lose it, the men whose stories fill this book knew full well how important their jobs were long before they lost them" (p. 2)…. If the men whose stories appear in these pages are to be believed, their very perceptions and sensations, the moment by

> moment working of their conscious minds, their mental representations, their personal and social frames of reference, grew out of their employment, or at least out of their anticipation of working (p. 278).

There are often huge social and psychological costs to unemployment that have been extensively documented by qualitative studies (Bakke, 1933; Orwell, 1958; Newman, 1999; Uchitelle, 2007) and confirmed by numerous quantitative studies (Blanchflower and Oswald, 1994; Winkelman an Winkelman, 1998; Krueger and Mueller, 2008; 2011). It is also well established that there are predictable scarring costs on future employment and wages (Arulampalam et al., 2001).

This alternative perspective shifts the focus from the "value of unemployment" to the value of employment and to the nonpecuniary costs of unemployment. In the language of search theory, in an employment-idleness labor market, the *value of the match* for workers is income plus net nonpecuniary benefits; on the other hand, the *value of unemployment* must take into account, in addition to UI benefits and the value of (real) leisure, the negative social and psychological effects of idleness and "being on the dole" (which include the costs of evasion of UI work rules that are enforced), together with the value of scarring costs on future employment and wages. In addition, it seems reasonable to assume that, being risk-averse, any temptation to act strategically by choosing UI benefits over work will be lower the greater the slack in the labor market. When there is job rationing, most workers will be less choosy about what is an acceptable job.

There will be cases in which the availability of UI, no matter how optimally designed, will increase the duration of joblessness. But the interpretation of this as moral hazard (strategic work avoidance) rather than as enhancing efficiency (via liquidity effects – see below), and the presumed magnitude of the aggregate effects, depends on "our vision of things", as Schumpeter put it.[6] In contrast to the textbook labor-leisure model, an employment-idleness view opens the possibility that the only UI effect on aggregate unemployment in a deep recession is via the "participation effect", in which UI reduces the incentive for unemployed workers to drop out of the labor force. In a comment on a paper by Holmlund (1998), Alan Manning (1998, p. 143) concluded that "the strength of the evidence linking the generosity of the benefit system and unemployment is not as strong as we would like and our belief in such a link derives more from the theory than from the

evidence." The next two sections present our assessment of the strength of the evidence, and we reach much the same conclusion.

2. Extrapolating from the Past

The empirical case for substantial causal effects of the 2008-9 UI extensions on work incentives has relied on extrapolating from past experience. We consider variations on this methodology. The first assumes that previous labor market outcomes (long-term unemployment rates in 1983; the duration of unemployment in 2006-7) would have prevailed in 2008-10 in the absence of the UI extensions. The second points to the "breakdown" of the 2000-07 Beveridge curve in 2009-10 as evidence of growing match inefficiency that could have been caused by the UI extensions. The third takes estimates of the exit rate out of unemployment at benefit exhaustion (the "spike" evidence) from selected studies of 1970s-90s labor markets and uses them to predict worker behavior in the 2008-10 Great Recession.

"Stationary Labor Markets with a Policy Shock" Estimates

Several back-of-the-envelope estimates of disincentive effects have assumed that pre-Great Recession unemployment rates or unemployment duration levels would have prevailed in 2010 but for the 2008-9 EUC extensions. Essentially, the U.S. labor market is assumed to be stationary over time and all that changes is the policy shock of the UI extensions. For example, referring to the persistent high long-term unemployment prevailing in mid-2010, Robert Barro explains that "The dramatic expansion of unemployment-insurance eligibility to 99 weeks is almost surely the culprit…. My calculations suggest the jobless rate could be as low as 6.8% instead of 9.5%, if jobless benefits hadn't been extended to 99 weeks." By assuming that the July 1983 long-term unemployment rate (24.5%) would have otherwise prevailed in 2010, he has long-term unemployment dropping from 6.7 to 2.5 million. To get a 6.8% unemployment rate, he explicitly assumes an unchanged labor force, which requires that all 4.2 million workers who are no longer long-term unemployed in mid 2010 would have been employed in the absence of the UI extensions, presumably by lowering their wage demands. No explanation

is given for why the 1983 labor market should be the reference point for the effects of UI extensions in 2010.

Fujita (2010) compares unemployment-to-employment (UE) and unemployment-to-nonparticipation (UN) flows for workers in different unemployment duration groups for 2004-7 and 2009-10: "It is assumed that in the absence of the benefit extensions, the shapes of the UE and UN transition rate functions are the same as those estimated for 2004-2007" (p. 12). He finds a "hump" around the 26-week benefit exhaustion point in 2004-2007 but not in 2009-10. This difference is attributed to the availability of benefit extensions in the latter period. The idea is that workers showed a greater tendency to exhaust benefits before taking a job before they had the option of extended benefits. He uses this counterfactual exercise to estimate that the extensions "raised male workers' unemployment rate by .9 - 1.7 percentage points." This method requires the assumption that workers unemployed in 2009-10 were just like those in 2004-2007 (e.g., the demographic and geographic distributions) and had the same opportunities for job finding.

The "Breakdown" of the Beveridge Curve

It has been argued that UI work disincentive effects are a likely explanation for the apparent "breakdown" of the Beveridge curve, which shows the relationship between job openings (labor demand) and unemployment (labor supply). There tends to be a tradeoff, shown by a negative slope, between vacancies and unemployment: lots of job vacancies indicate that employers are having trouble getting the workers they need, while a low vacancy rate will occur under conditions of job rationing and high unemployment.

If policy interventions have reduced the efficiency of job matching, the Beveridge Curve should shift outwards, and it has been common to cite the recent movements in the curve as evidence of the work disincentive effects of the UI benefit extensions. As Elsby et al. (2010, p. 28) write, "One particularly salient reason for a temporary decline in match efficiency relates to the temporary extension of Emergency Unemployment Compensation (EUC) that began in June 2008…. as those searching for become ore selective about which job offers they accept" (see also Barnichon et al., 2010; Barnichon and Figura, 2011). The curve is shown in Figure 3.

In the first half of 2010, prior to the recent revisions, the BLS' vacancy measure (the job openings rate - JOR) crept up from around 1.6 in mid 2009 to 2.5 in October 2010, while the unemployment rate (UR) hardly changed, falling from 9.9-10.0 to 9.6-9.8. The Barnichon et al. papers (2010, 2011) point to a "3.6 percentage point gap", which refers to what the unemployment rate should have been (3.6 points lower than it actually was in October 2010) had the 2009-10 vacancy-unemployment points fallen on the 2000-2007 Beveridge Curve. This is another example of estimating UI extension effects by simple extrapolation from past conditions.

There are a variety of problems with this use of Beveridge curve evidence. First, the BLS JOLTS program has revised downward recent JORs, so the October 2010 rate is now only 2.2, not 2.5. The revised data show that the increase in the JOR was concentrated in January-April (1.8 to 2.1) and that it has fluctuated between 2.1 and 2.2 since (U.S Bureau of Labor Statistics, 2011, Table D). This revision reduces the gap to 2.6 from 3.6 points (see figure 3). Since the unemployment rate has fallen sharply in the months after October 2010 (to 8.9 percent in February 2011), extending the period from October 2010 to February 2011 reduces the gap further, to about 1.6 percentage points. This exercise illustrates how contingent such "gap" estimates are to monthly changes and revisions in the data.

Second, the increase in the JOR was driven to a considerable degree by the rise in demand for temporary workers in the Professional and Business Services Sector. Of the total increase of 500,000 job openings between January and October of 2010 (2,399 to 2,905 million), almost 200,000 were in this sector (381,000 to 575,000). [7] According to the BLS (U.S. Bureau of Labor Statistics, 2011, p. 13), "Since September 2009, employment growth in professional and business services has been driven primarily by temporary help services." Since most temp jobs are in offices and many of the long-term unemployed lost jobs in construction and manufacturing, it should not be surprising that an uptick in the JOR that is driven by the rise in demand for temporary workers should have little immediate effect on the unemployment rate.

Third, unemployment rates tend to lag behind changes in the JOR in the aftermath of economic downturns because of the backlog of discouraged workers and those new entrants who have waited to enter the work force until conditions improve (Tasci and Lindner, 2010, p. 5). The early 2010 uptick in the JOR reflected an increase of about

350,000 openings. But as the labor market improves, discouraged workers compete for the same job openings as workers who are counted as unemployed. In early 2010 there were 1.2 million workers counted as discouraged (want a job and ready to take one, have searched in the previous 12 months but not in the last 3 months), and between January and April the number of discouraged workers increased by 130,000. In addition, higher numbers of workers entering the labor force could entirely offset any rise in job openings, leaving the unemployment rates unchanged.

Figure 3 shows that there was a vertical movement of the Beveridge curve in 2003, over a year after the 2001 recession, not dissimilar to the one in 2010. This figure also shows that the Beveridge curve can move in the opposite direction as well, as the unemployment rate has dropped sharply between late fall 2010 and February 2011 without a preceding increase in the JOR.

Another way to look at Beveridge curve data is to compare the change in the ratio of the job openings rate to the unemployment rate, a standard indicator of the tightness of the labor market. This was .75 in March 2007, collapsed to .175 in October/November 2009, and then rose slightly to .225 in October/November 2010. This means that this measure of labor market tightness fell to 23 percent of its mid-2007 level in late 2009, improved to 29 percent in late 2009, and was nearly the same (30 percent) by late 2010.

In sum, very short-term shifts in the Beveridge curve should not be assumed to be a meaningful indicator of changes in match efficiency in the labor market. For more compelling evidence of large UI-related work disincentive effects in the Great Recession, many recent papers have turned to "spike at benefit exhaustion" evidence from earlier decades.

The "Spike" Evidence

Standard search theory predicts a sharp increase (a spike) in the exit rate from the UI system near the end of benefit eligibility, which would imply substantial strategic work avoidance behavior by the unemployed. There are a number of reasons to be extremely cautious about the use of this evidence, generated from earlier periods, for explaining high rates of long-term unemployment in the Great Recession.

First, much of the spike evidence cited in the current policy debate over the effects of extensions on work incentives relied on data from the 1970-80s, which often included large numbers of workers on temporary layoff (Katz, 2010). In addition, in many older studies the spike measured all those exiting unemployment at the exhaustion of benefits, not just those exiting at benefit exhaustion into jobs.

A second consideration is the interpretation of spikes as evidence of strategic work avoidance. As Chetty (2008) has argued, a spike into employment may reflect mainly "liquidity", not moral hazard effects. In imperfect private insurance markets, UI benefits can help smooth consumption over periods of joblessness. Without UI benefits, unemployed workers with little savings would be pressed to return to work by taking jobs of lower quality that they would not have chosen had it been possible to borrow the resources necessary to extend their job search. In this case UI extensions promote efficiency, not moral hazard.

Third, it seems straightforward that if there is strategic behavior, rational workers would be most likely to display it in good times when employers are struggling to fill vacancies. Conversely, strategic work avoidance is most risky in deep recessions characterized by severe job rationing (see Landais et al., 2010). If this is so, it may be misleading to use estimates from less severe labor markets (e.g., the 1970s-80s), much less from boom periods (the mid-1990s), to identify effects in the Great Recession, even if we can assume that all else can be held constant over these decades (the stationarity assumption).

Finally, any increase in unemployment duration that is reliably identified as a reflection of moral hazard stemming from UI does not necessarily directly translate into an increase in the aggregate unemployment rate, due to both composition and entitlement effects. Composition effects would matter if greater or lesser unemployment duration due to changes in benefit eligibility would be likely to affect the job finding probabilities of unemployed workers not on benefit. Entitlement effects would be relevant if increases in the generosity of UI benefits raised job-finding efforts in order to meet the UI system's work experience requirements for benefit eligibility. For both reasons, longer UI-related unemployment duration does not necessarily translate neatly into higher unemployment rates.[8] The literature we have reviewed uniformly ignores these considerations.

Card, Chetty, and Weber's (2007) survey of the literature on the effects of benefit exhaustion on the re-employment rate indicates that the strongest evidence of spikes appears in very early literature for the U.S. in the early 1980s (Moffitt, 1985; Meyer, 1990; and Katz and Meyer, 1990a and 1990b). Card et al. (2007, p. 5-6 and Table 1) include five other studies that show no re-employment spike at benefit exhaustion but are not cited in the recent disincentive literature, one from the U.S., one from Canada, and three from the Scandinavian countries.

One often-cited study that does find a small spike is Card and Levine (2000), which reports an elasticity estimate of .08, about half that of some of the most referenced studies just mentioned. But their study focused on the New Jersey labor market in the mid-1990s, one that "remained robust throughout the period." Since strategic work-avoiding behavior should be expected to carry the least risk when job finding is relatively easy, their results ought to be interpreted as being at the high end of the possible range of effects. But in the recent discussions of UI disincentives in the Great Recession, their estimate is treated as the low end of the possible range (see below).[9]

Using recent data from Austria, Card et al. (2007, p. 15) find little evidence of disincentive effects. "We conclude that most job seekers in Austria are not waiting to return to work until their UI benefits are exhausted. Rather, a large fraction simply leave the unemployment registry once their benefits end and they are no longer required to register to maintain their eligibility for benefits…. This modest spike (in exiting into employment) implies that fewer than 1% of jobless spells have an ending date that is manipulated to coincide with the end of UI benefits."[10]

Similarly, Schmieder et al. (2009) use administrative data from Germany and find small effects: "We find that increases in UI have small to modest effects on non-employment rates, a result robust over various measures of the business cycle and across groups. Thus, large expansions of UI during recessions do not lead to lasting increases in unemployment duration, nor can they explain differences in unemployment durations across countries."

In the only study that has used data from the current recession (for 2009-10 from New Jersey), Krueger and Mueller (2011, p. 4) conclude: "we find little evidence that

exhaustion of extended UI benefits is associated with an increase in job search activity or in job offers."

It is notable that recent references to the spike-at-exhaustion evidence in support of large work disincentive effects during the Great Recession has not referenced either older studies that found no effects of benefit exhaustion on re-employment rates (see Card et al., 2007), or the more recent studies just discussed that have consistently shown little or no such effects.

For example, in the latest edition of his public finance text, Jonathan Gruber (2010) references only the Meyer (1990) paper, which uses 1978-83 data. Gruber asserts that the spike Meyer finds "suggests that UI benefits are a key factor in a person's decision about when to return to work" (p. 399). Similarly, because another paper by Meyer (1989) found that wages after unemployment were not found to be higher for those who had received more generous UI benefits in 1979-84, Gruber writes in 2010 that "it appears that higher UI benefits are not leading to better job matches, and that UI has a significant moral hazard cost in terms of subsidizing unproductive leisure" (p. 402). Similarly, Mulligan (2010a) cites only Jurajda and Tannery (2003) for the evidence of UI induced work avoidance, which also used early 1980s data, despite questions that were raised years before about the reliability of their estimates (see Card et al., 2007, fn. 3). Nakajima (2011, p. 3) relies on estimates taken mainly from studies using data from the 1970s and 1980s, but also cites Card and Levine (2000) as the "smallest estimate."

Taking a step beyond simply asserting that UI benefits have large work disincentive effects on the basis of a few studies that used data from several decades ago, a number of recent studies have produced estimates of the effects of the 2008-9 EUC extensions on unemployment by applying supply elasticities from a range of these early studies. Both Elsby et al. (2010) and Aaronson et al. (2010) use Katz and Meyer (1990) for the high estimate (.2) and Card and Levine (2000) for the low estimate (.08), while Mazumder (2011) relies only on the Card and Levine coefficient. In the Elsby et al. calculation, the extensions account for 15-40 percent of the increase in unemployment duration, which "corresponds to between .7 and 1.8 percentage points of the 5.5 percentage point rise in the unemployment rate witnessed in the current recession." Aaronson et al.'s estimates are

a bit lower, with the extensions increasing unemployment duration by 10-25 percent, and this is then translated directly into a 10-25 percent increase in long-term unemployment.

These conclusions rely on high estimates from selected studies in the early literature, treat the Card/Levine study on New Jersey during the mid-1990s boom as a low estimate, ignore the many studies that have found little or no spike at benefit exhaustion, assume that the estimated changes in unemployment duration can be interpreted as evidence of moral hazard, and casually translate these increased durations directly into changes in the unemployment rate.

3. Evidence from the Great Recession

It has been just over three years since the start of the 2007-09 recession, enough time to begin to explore some data series for suggestive evidence on the possible effects of the EUC extensions on the job finding behavior of the unemployed. This section presents some evidence on exhaustion rates, job loss patterns, and job finding and labor force dropout rates for workers with different durations of unemployment.

Exhaustion Rates and the Job Loss Evidence

If the UI extensions have had large effects on unemployment duration, we might expect to see them in the exhaustion rates for the regular UI programs run by the States. The 2008-10 UI extensions were unprecedented in their generosity, at least in the U.S. context. Shortly after the first extension in July 2008, between 70 and 95 percent of all long-term unemployed received UI under the extension programs. Not only did most long-term unemployed get benefits, but the Emergency Unemployment Compensation (EUC) extensions were substantially longer (up to 53 weeks, plus an additional 20 weeks for Extended Benefits) than earlier ones (10-16 weeks for 1982-85; 7-33 weeks for 1992-94; and 13-26 weeks for 2002-03).

Given this unprecedented extension of benefits, workers had an exceptionally strong incentive to exhaust the initial 26-week limit. But as Figure 4 shows, the regular program exhaustion rate peaked at only about 55 percent in early 2010 and has declined only slightly since. This compares to 40-45 percent exhaustion rates after the much less severe 2001 recession. If the 2001 recession had been equally severe, perhaps this increase

in the regular UI exhaustion rate could be explained by the work disincentives produced by the far longer benefit eligibility in 2009-10. But the 2001 recession was mild in comparison. Given the circumstances, the regular UI program exhaustion rates do not suggest large-scale opportunistic behavior in response to the relatively easy availability of much longer UI benefits in 2009-10.

Did unemployed job losers, most of whom were eligible for UI benefits, exhibit longer spells of unemployment than other unemployed workers less likely to get benefits? A recent Federal Reserve Bank of San Francisco study explored the effects of extended unemployment benefits on the duration of unemployment by comparing unemployment duration for two populations, job losers and quits/new entrants (Valletta and Kuang, 2010). Since very few people who quit or newly enter the labor force are eligible for unemployment benefits, job losers should be those primarily affected by the receipt of benefits. Valletta and Kuang (p. 4) found that the durations for job losers (UI claimants) and new entrants and re-entrants (non UI claimants) were nearly identical: "As of the fourth quarter of 2009, the expected duration of unemployment had risen about 18.7 weeks for job losers and about 17.2 weeks for leavers and entrants, using the years 2006-2007 as a baseline. The differential increase of 1.6 weeks for job losers is the presumed impact of extended UI benefits on unemployment duration."

Valleta and Kuang suggest that the difference between these two groups (18.7 and 17.2 weeks) was likely due to disincentive effects, but this is purely speculative – no supporting evidence is provided. Nor is there any robustness test that would identify the sensitivity of these estimates to the choice of the 2006-7 (e.g., how much variation was there in the values for each of the 24 months in 2006-7?). And like other authors in this literature, they simply assume that this gap in unemployment duration can be directly translated into an unemployment rate effect, ignoring the complications of possible composition and entitlement effects (see above).

Barnichon and Figura (2011) also identified UI recipients by distinguishing job losers from unemployed new entrants and re-entrants. But instead of looking at unemployment duration, they test for effects of the 2008-10 extensions on job finding, measured by the outflows of workers from unemployment to employment. They concluded that "…EEB (emergency unemployment benefits) has little effect on job finding

probabilities" (p. 17). Krueger and Mueller (2011, p. 29) found the same result using a large-scale weekly survey of UI recipients in New Jersey in the Fall-Spring of 2009-10: "workers do not search more or lower their reservation wage in periods when their UI benefits have lapsed or been exhausted, suggesting that EUC (the benefit extensions) did not provide a serious disincentive to finding a job."

Evidence on Outflows from Unemployment

Figures 5 and 6 report outflows from unemployment to employment and nonparticipation by duration of unemployment. Figure 5 shows the monthly outflow rates of workers from unemployment to employment (U to E) for three duration groups: those unemployed from 1-14 weeks, 15-26 weeks, and more than 26 weeks. As the labor market worsened in 2008, we should expect to see declines in job finding rates. But if the increase in availability of extended benefits had large negative effects on job finding by the unemployed, we should see much larger declines for the long-term than the short-term unemployed. But Figure 5 shows the reverse: a modest decline from spring to the fall of 2008 in job finding for the long-term unemployed and much larger declines for the 1-14 and 15-26 week groups. As the job openings and hires rates collapsed in 2008 (see figure 1), the long-term unemployed job finding rate fell from about 15 percent in March 2008 to around 10 in January 2009; this compares to a decline from around 32 percent to 22 percent for the 1-14 week group, and from 22 to 12 percent for the 15-26 week group. Between early 2009 and late 2010, the job finding rates for each of these duration groups improved by just a few percentage points. There is no evidence here that the UI extensions had particularly severe effects on the job finding outcomes of the long-term unemployed.

But while there is no evidence that the UI extensions have decreased job finding rates, they may have substantially increased long-term unemployment rates by discouraging workers from dropping out of the formal labor market. Figure 6 offers some indirect evidence for this nonparticipation effect. The outflow from long-term unemployment to "not-in-the-labor-force" decreased from 26-27 percent in the year prior to the extensions to 18-20 percent after mid-2009. The most striking decline was from May to August 2008 (27 to 23 percent – left axis), as the long-term extended UI recipiency rate leapt from zero to over 70 percent (right axis). A year later, just after the formal end of The

Great Recession in July 2009, as about 6 million long-term unemployed were collecting extended UI benefits, the outflow rate to nonparticipation for the long-term unemployed had fallen to just 17 percent. It has since remained at just over 20 percent.

In sum, we find no suggestion in the labor flows data that the sudden availability of benefit extensions for up to 99 weeks, collected by as many as 6.7 million workers (up to 95 percent of the long-term unemployed), had any observable effect on the aggregate job-finding behavior of unemployed workers. But the same data is consistent with a nonparticipation effect, which may have raised the official long-term unemployment rate by providing an incentive for long-term unemployed workers to continue to search for work.

4. **Conclusion**

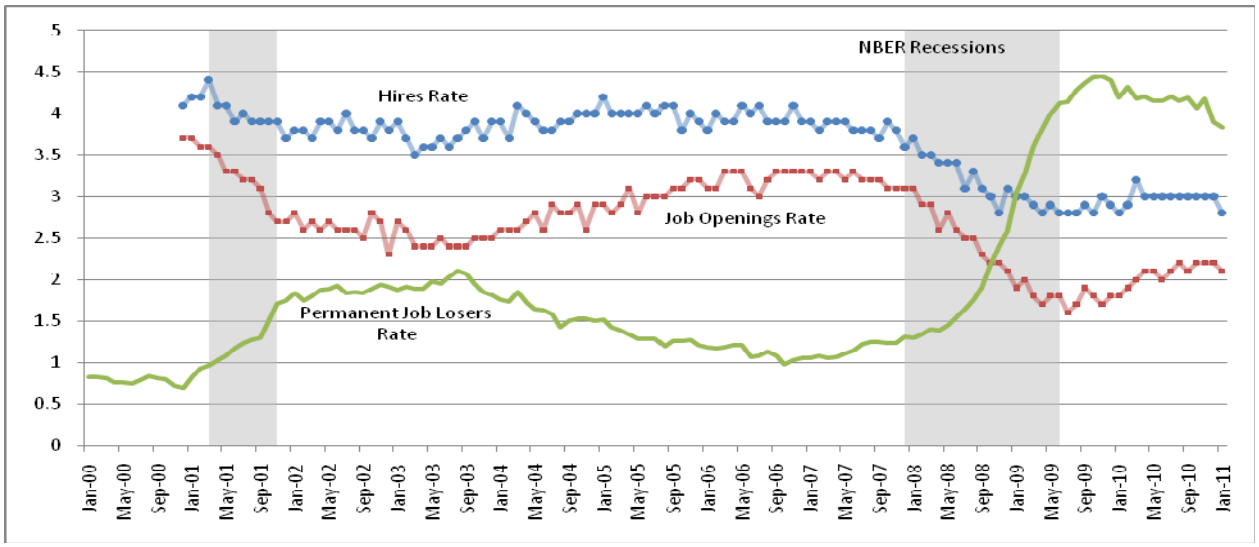
Addressing a popular audience through the *New York Times*, Harvard's Edward Glaeser wrote that "Perhaps the single most important policy-related insight in economics is that changes in policies lead to behavioral responses" (Glaeser, 2010). It is instructive that Glaeser's first example is UI benefits and that the effects are presented as unconditional: "More generous unemployment insurance leads to longer spells of unemployment." If this is true, and it reflects moral hazard (work avoidance), and it is assumed that longer spells directly translate into higher rates of unemployment, it would be natural to expect that the unprecedented expansion of UI benefits from 26 to as many as 99 weeks has been a leading cause of the extraordinary 2008-9 increases in U.S. long-term unemployment. Among mainstream economists, this story appears to be overwhelmingly accepted.

Focusing on the Great Recession, this paper has taken a critical look at this vision of large-scale policy-induced work avoidance and the evidence that has been put forward to confirm it. We find that this evidence, which has relied entirely on the application of past labor market conditions to the Great Recession, is not very compelling appears largely theory-driven. On the other hand, examination of 2008-10 data, both in several recent studies and by us, offer no support for the work disincentive account. If UI benefit extensions are responsible for increasing unemployment, it appears to have been more by

increasing the incentive to remain connected to the labor market in a time of severe job rationing than by increasing the incentive to avoid working.

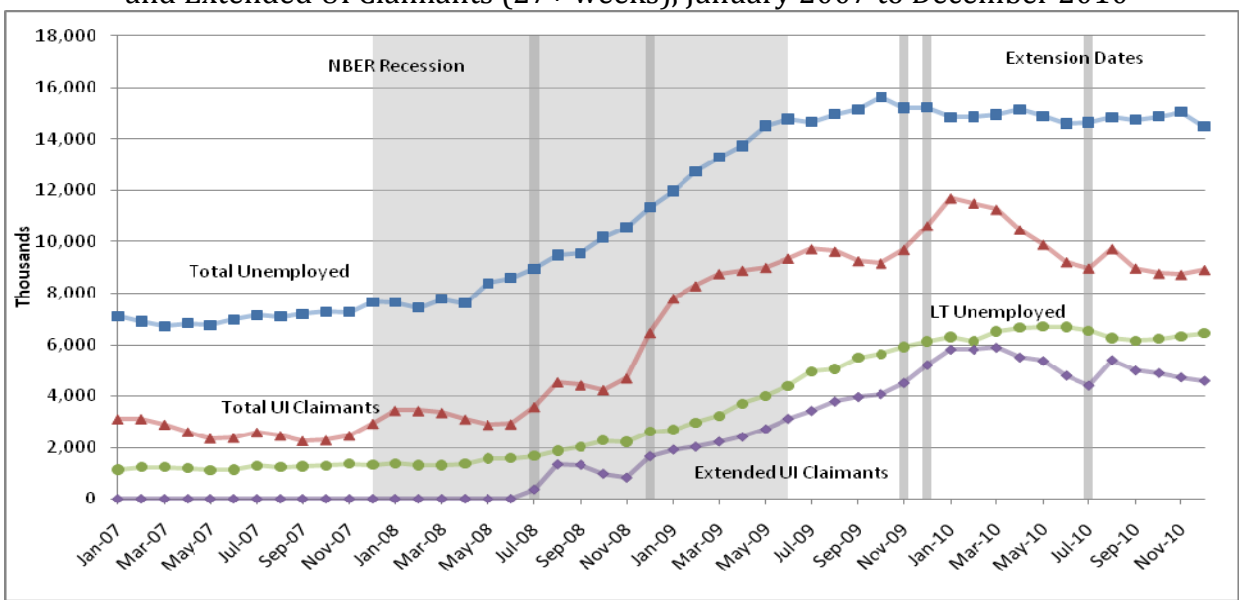
If more rigorous future empirical work supports this conclusion, it would be consistent with the heterodox vision that most workers value a job apart from the income it provides and abhor unemployment, because it is idleness, shame, inadequate income, and fear of a jobless future that they wake up to every morning, not leisure. In times of deficient aggregate demand, UI spending increases job openings and encourages job search. The policy implications are straightforward. On both equity and efficiency grounds, the correct policy response to large-scale job destruction and job rationing is to dramatically increase the duration of benefits, just as U.S. policymakers did in The Great Recession.

Figure1: Hires, Job Openings and Job Loss Rates, January 2000 to December 2010



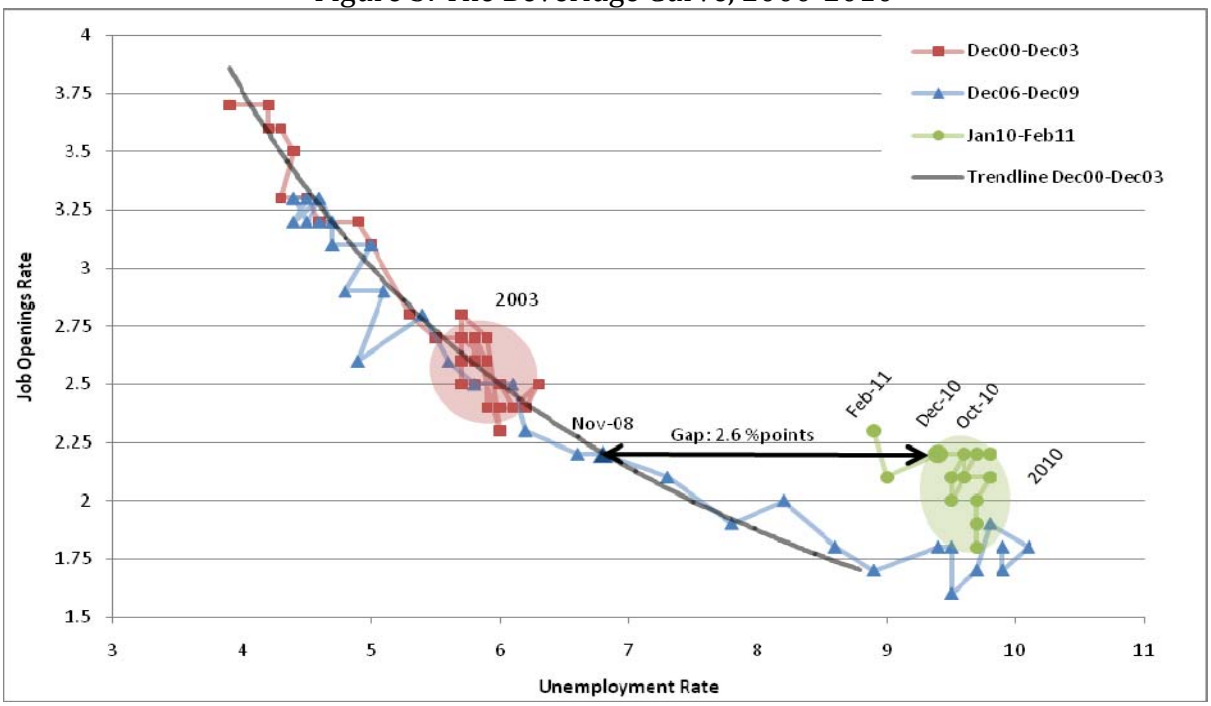
Sources: the hires rate is from the Job Openings and Labor Turnover Survey (JOLTS), Bureau of Labor Statistics (http://www.bls.gov/jlt/); job loss rates are calculated by the authors with numbers of permanent job losers and labor force data from the Current Population Survey (http://www.bls.gov/cps/).

Figure 2: Numbers of Unemployed, UI Claimants, Long-term Unemployed (27+ weeks), and Extended UI Claimants (27+ weeks), January 2007 to December 2010



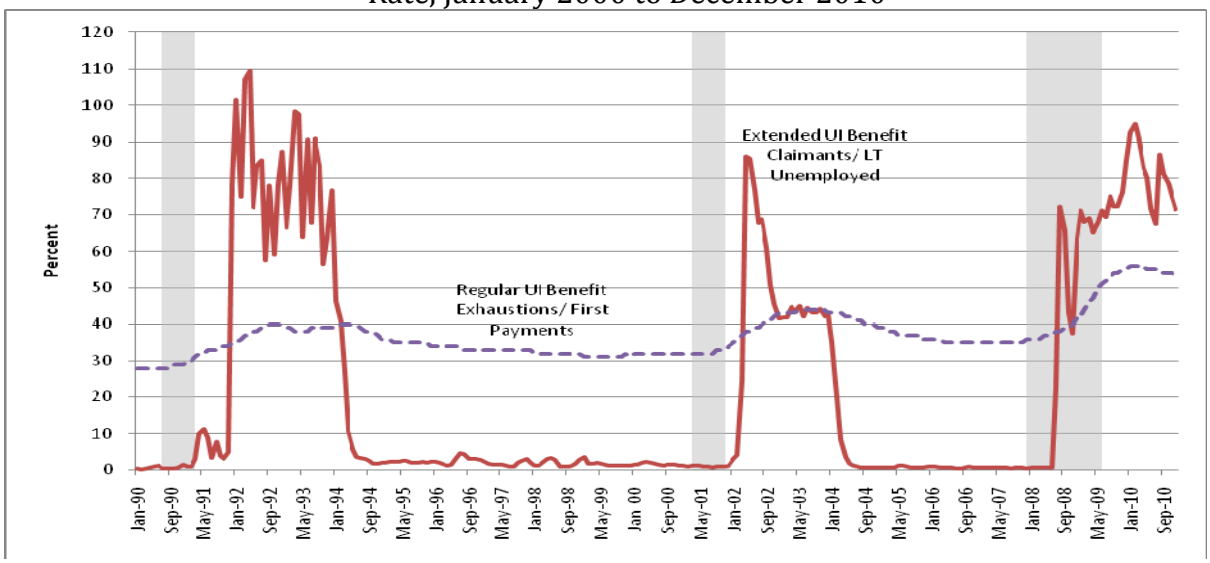
Sources: The number of total unemployed and long-term unemployed are from the Bureau of Labor Statistics (http://www.bls.gov/cps/); the number of total UI claimants and extended UI claimants are from Department of Labor, Employment and Training Administration http://www.ows.doleta.gov/unemploy/finance.asp).

Figure 3: The Beveridge Curve, 2000-2010



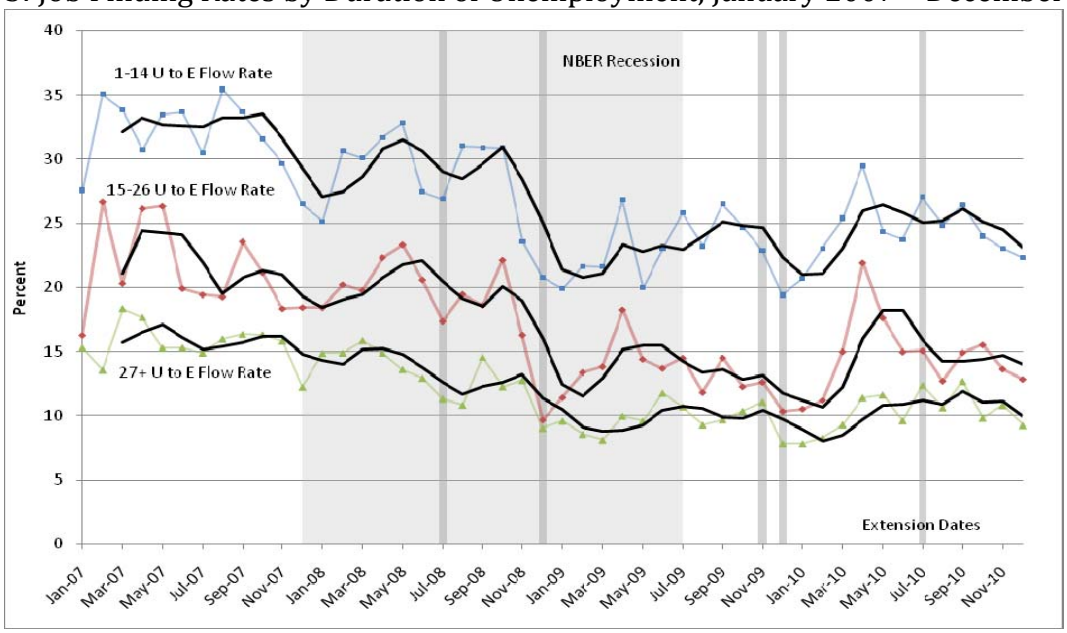
Sources: the job openings rate is from the Job Openings and Labor Turnover Survey (JOLTS), Bureau of Labor Statistics (http://www.bls.gov/jlt/); the unemployment rate is from the Current Population Survey, Bureau of Labor Statistics (http://www.bls.gov/cps/)

Figure 4: The Regular (26 week) UI Benefit Exhaustion Rate and the Extended UI Claimant Rate, January 2000 to December 2010



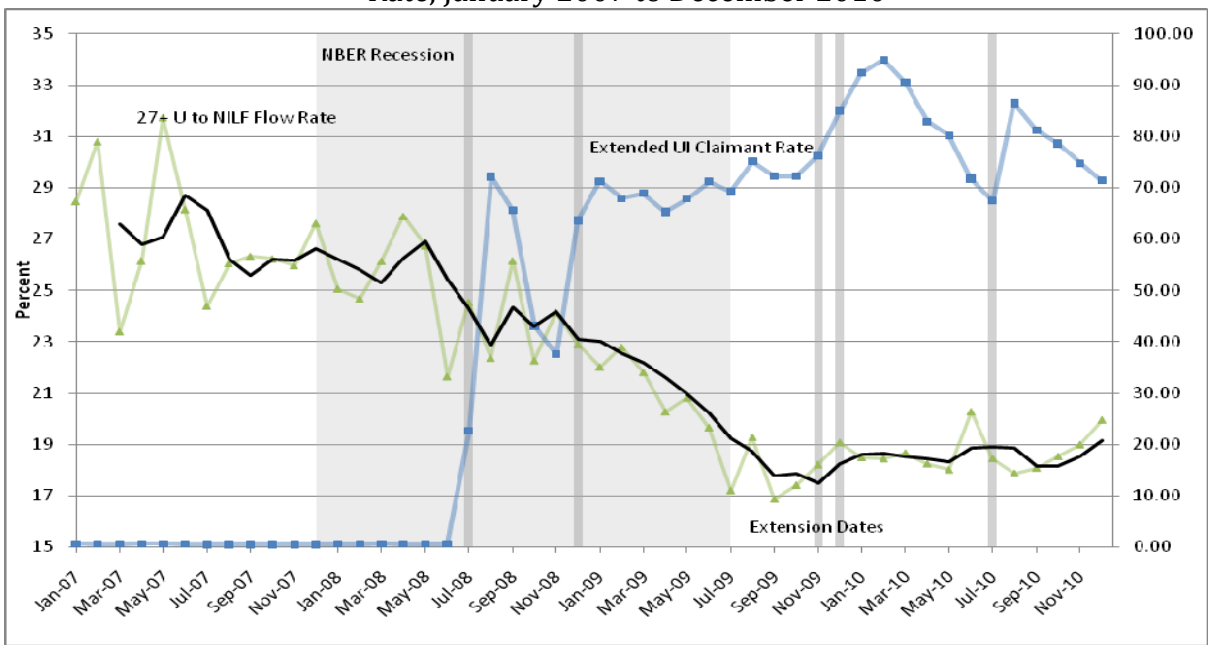
Sources: For the extended UI benefits rate and long-term unemployed, see Figure 2; the exhaustion rate is from the Department of Labor (http://www.ows.doleta.gov/unemploy/finance.asp).

Figure 5: Job Finding Rates by Duration of Unemployment, January 2007 – December 2010



Sources: Sources: Long-term unemployment flows data from the Bureau of Labor Statistics, Current Population Survey Labor Force Status Flows Research Series (unpublished data generously provided by Randy Ilg of the BLS); extended UI claimants data from the Department of Labor, ETA Program Statistics (http://www.ows.doleta.gov/unemploy/finance.asp).

Figure 6: Outflows from Unemployment to Nonparticipation and the Extended UI Claimant Rate, January 2007 to December 2010



Sources: Authors' calculations using flow data (see sources for Figure 4) and long-term unemployment (see sources for Figure 3). (http://www.ows.doleta.gov/unemploy/finance.asp). The flow rates are measured in percent of the total unemployed for each duration group.

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[2] Under the federal Extended Benefits program, enacted in 1970, "emergency benefits" were already available for additional 13-20 weeks, depending on the state's unemployment rate. On top of these extensions, additional weeks of benefits were funded by Congress in 2008 under the Emergency Unemployment Compensation program (EUC08) in four "tiers": the first two are available to all states for up to 34 weeks (20 and 14) and the 3rd and 4th for an additional 20 weeks (13 and 6); the latter were limited to high unemployment states. The EUC was legislated to expire at the end of 2009, at which time new long-term unemployed workers would not be eligible to claim EUC benefits and existing EUC recipients would only be able to complete their current tier, but there have been a number of extensions since late 2009 (see Shaw and Stone, 2010)

[3] "House Passes 13-Week Unemployment Insurance Extension," All Headline News, September 23, 2009.

[4] For example, according to the eligibility rules in Connecticut, one of the most generous states: "You must be physically and mentally able to work during each week for which you claim benefits. You must be able to work and available for work as defined by law, during each week for which you are claiming benefits. This means that you must be ready, willing, and able to accept any suitable work. You must make reasonable efforts to find employment each week" (downloaded September 6, 2010 from http://www.ctdol.state.ct.us/progsupt/unemplt/uceligb.htm#Weekly%20Requirements).

[5] Because the claims are defined differently for each of these categories, it is not a simple matter to produce an aggregate denial rate. We thank Andrew Spizak of the Department of Labor's Employment and Training Administration for clarifying this issue.

[6] "Analytic work begins with material provided by our vision of things, and this vision is ideological almost by definition… the way we see things can hardly be distinguished from the way we wish to see them" (quoted by Heilbroner and Milberg, 1995, p. 16).

[7] JOLTS News Release, March 2011, Table 1.

[8] As Blanchard and Diamond (1990, p. 163) put it, "cross-section results on the importance of unemployment compensation for the likelihood of finding a job do not translate directly into implications for aggregate unemployment because less availability by some workers

will raise the probability of job finding by others." See also Atkinson and Micklewright, (1991, p. 1710) and Holmlund (1998, p. 116).

[9] Notably, they also "found a similar spike in exit rates in the 25th week of benefit receipt for people who were eligible for 26 or 39 weeks, perhaps reflecting a tendency to return to work after exactly 6 months, irrespective of UI benefits" (Card et al. (2007, p. 4).

[10] For a more extensive survey of the microeconomic evidence on UI effects on unemployment duration and unemployment, see Howell et al. (2007).