

Unemployment Insurance: Strengthening the Relationship between Theory and Policy

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Ever since the U.S. federal–state system of unemployment insurance was founded in the 1930s, it has provided partial, temporary replacement of wages to eligible workers who lose jobs “through no fault of their own” (as determined by state-level regulations). Unemployment insurance is one of the largest social insurance programs in the United States, with benefits paid totaling about \$34 billion in 2004. This figure is considerably smaller than for Social Security, Medicare or Medicaid, but it exceeds spending on such major programs as Workers’ Compensation, Temporary Assistance to Needy Families (TANF) or Food Stamps.

In this paper we focus on the ways economic theory can help us understand the challenges that this complex program is likely to face over the next few years. We begin by summarizing the salient characteristics of the unemployment insurance program and then examine the theoretical and econometric research. Much of this research revolves around the main goals of the program, which include: 1) sustaining consumption for workers and their families; 2) helping recipients to make efficient job choices during a period of financial stress; and 3) minimizing the adverse incentives that may accompany partial wage replacement. Of course, these goals can come into conflict—for example, if replacing wages for an unemployed worker also discourages that worker from aggressively searching for or accepting a new job—and our discussion will focus on these conflicts. With this background, we then conclude with a discussion of the key policy issues that the unemployment insurance system is likely to face in upcoming years and a description of ways in

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which policymakers may be able to use economic analysis to adjust the program so that it remains effective in addressing the needs of unemployed workers.

Some would also add a fourth goal for unemployment compensation: helping to stabilize the overall economy. In this paper, however, we do not examine the macroeconomic stabilization properties of unemployment insurance. In principle, such stabilization could occur through a build-up of trust fund accounts during strong economic times and the net payouts during weak economic times. Examining whether this pattern in fact holds would inherently focus on a dramatically different set of economic questions than we wish to address here. For a good discussion of these issues, see Chimerrine, Black and Coffey (1999). Similarly, although many of the theoretical and policy issues we will be discussing are relevant to unemployment insurance programs in other countries, here we focus solely on the U.S. program. Storey and Neisner (1997) discuss program operations elsewhere.

The Federal–State Unemployment Insurance System

Unemployment insurance reflects the structure of American government. There are 53 separate unemployment insurance jurisdictions—50 states, the District of Columbia, Puerto Rico, and the Virgin Islands—each with unique laws and operating procedures. In this paper, references to “state unemployment insurance programs” cover all 53 jurisdictions. The system is formally financed through a federal tax on payrolls, but this tax includes a credit for taxes paid to state programs that meet federal guidelines, which is all of them, so the majority of the benefits paid by the system are actually collected by state-level taxes. Additional federal involvement in the unemployment insurance system occurs during recessions, when both “permanent” extended and temporary “emergency” programs for additional benefits are often enacted.

T1 Table 1 provides a snapshot of the unemployment insurance program in 2004, during which \$34 billion was paid to 8.4 million recipients. On average, recipients collected weekly benefits of \$262 for about 16 weeks, and 42 percent of those who started receiving benefits eventually collected all the benefits to which they were entitled—a process referred to as “exhausting” those benefits. Individuals who exhaust their benefits cannot collect additional regular benefits until they reestablish eligibility after returning to employment. During 2004, only about 36 percent of all unemployed workers collected unemployment insurance benefits. Here are some of the principal reasons for nonreceipt: 1) many unemployed workers were not covered for unemployment insurance benefits because they were recent entrants to the labor market or because they voluntarily quit their previous job; 2) some unemployed workers were not eligible for unemployment insurance benefits because they had had not earned enough in their recent previous jobs to make them eligible; 3) some otherwise eligible workers opted not to file for benefits; and 4) some unemployed workers had exhausted all of the benefits to which they were entitled.

Table 1

Characteristics of the U.S. Unemployment Insurance Program, 2004

<i>Characteristic</i>	<i>Amount</i>
Number of first payments made	8,368,623 recipients
Total weeks compensated	135,132,839 weeks
Total benefits paid	\$34.4 billion
Average weekly benefit	\$262.50
Average duration of benefits	16.1 weeks
Average benefits per recipient	\$4,115.61
Total exhaustions	3,531,535 recipients
Exhaustion rate (Total exhaustions/# first payments made)	0.42
Average weekly insured unemployed	2,949,670 recipients
Average weekly total unemployment	8,149,000 persons
Implied reciprocity rate (average weekly insured unemployed/average weekly total unemployment)	0.36

Source: All data except for unemployment numbers from unemployment insurance program statistics at (<http://www.workforcsecurity.doleta.gov/unemploy/hb394/hndbkrpt.asp>), accessed on March 4, 2006. Unemployment data from Bureau of Labor Statistics.

Because the federal government establishes guidelines and provides most of the funds to administer the unemployment insurance program, federal policymakers might seem to have considerable leverage to establish consistency across the states. For historical reasons, however, states vary considerably along practically all dimensions of the program. With respect to taxation that funds unemployment benefits, for example, there is considerable variation in the amount of wages taxed (states' wage bases for taxation vary between \$7,000 and \$30,000 in annual earnings) and in the tax rate charged on this base (between 1 and 4 percent). Rates of taxation on total wages range between about 0.3 percent and 1.2 percent. Similarly, although all states are required to use "experience-rating" that results in lower tax rates for firms with few layoffs, the effectiveness of these tax schedules varies widely across states. The primary reason for such variation is the existence of binding floors and ceilings in the tax rates that the states apply to specific firms (Levine, 1997).

T2 Although a complete review of state-specific variation in unemployment insurance regulations and benefit schedules would fill volumes, Table 2 highlights some key differences across the ten largest states in 2004. These figures illustrate some of the ways in which program differences are manifest in the experience of the typical worker. Average weekly benefits ranged from below \$230 (Florida) to more than \$330 (New Jersey). Average weeks of benefits that were collected range from 12 weeks (Georgia) to nearly 19 weeks (Illinois). The rates of benefit collection among unemployed workers generally also varied significantly, from below 20 percent (Texas) to over 50 percent (New Jersey). Experiences across all states are even more variable than for the ten largest shown here.

These variations in average recipient's program experience stem both from differences in state labor markets and from programmatic choices that the states have made in four general areas: 1) rules about eligibility for benefits of workers in

Table 2
State-Specific Unemployment Insurance Program Characteristics for Ten Largest States in 2004

<i>State</i>	<i>Average Benefit Amount (Dollars per Week)</i>	<i>Average Duration (Weeks)</i>	<i>Implied Reciprocity Rate (Percentage)</i>
California	260	17.9	35.0
Florida	223	15.3	22.1
Georgia	242	12.0	23.8
Illinois	279	18.9	36.0
Michigan	289	14.5	35.8
New Jersey	331	18.6	56.0
New York	271	18.5	33.6
Ohio	252	15.9	25.8
Pennsylvania	294	17.3	46.6
Texas	259	16.2	19.6

Source: Authors' calculations using data on average benefits, average duration and first payments from the Unemployment Insurance Information Technology Support Center, (www.itsc.state.md.us/prog_info/SESASStatsCY04.asp), accessed on June 24, 2005, and data on average total unemployment from the Bureau of Labor Statistics, (www.bls.gov/news.release/pdf/srgune.pdf), accessed on June 24, 2005. *Note.* Implied reciprocity rates were calculated by multiplying annual number of unemployment insurance first payments by average duration and dividing by average total unemployment and by 52.

covered jobs; 2) decisions about what jobs are covered by unemployment insurance; 3) variations in weekly benefit amounts available to eligible workers; and 4) variations in the number of weeks for which a worker can collect benefits before his or her initial entitlement is exhausted. We will consider each of these four areas in turn. Haber and Murray (1966) and O'Leary and Wandner (1997) serve as classic references on these topics by providing thorough descriptions of how all state programs operate in practice. Significant provisions of state unemployment insurance laws are summarized on the U.S. Department of labor's website at (<http://www.workforcesecurity.doleta.gov/unemploy/sigprojan2006.asp>), and updates describing important changes in states' unemployment insurance laws are published annually in the *Monthly Labor Review*.

Eligibility

To be eligible for unemployment insurance benefits, covered workers who lose their jobs must meet three sets of conditions: 1) a "monetary standard" that determines whether a worker had sufficient employment during some defined base period; 2) a "nonmonetary standard" that determines whether the worker had an acceptable reason for his or her job separation; and 3) "continuing eligibility standards" that determine whether the worker continues to be unemployed and thus eligible for benefits.

All states require a minimum level of prior employment as a condition for unemployment insurance eligibility, but their methods for doing so vary in ways that can affect who is eligible. The most typical rule is to require that workers become eligible for unemployment insurance if they have quarterly earnings of at

least \$2,500–\$3,500. Such rules can affect collection rates; for example, econometric analysis suggests that the tightening of monetary eligibility requirements in the early 1980s, which made it harder to qualify for benefits, may have caused as much as 10 percent of the decline in unemployment insurance claims during that decade (Corson and Nicholson, 1988). Similarly, an analysis of job-experienced unemployed workers who did not file for unemployment insurance shows that tighter monetary eligibility standards, together with a lack of understanding of those standards on the part of workers, may explain why some workers fail to file for unemployment benefits (Wandner and Stettner, 2002).

Using a monetary standard for determining prior employment raises some concerns. For example, low-wage workers may be ineligible for benefits if they do not work full time. Temporary employees, an important and growing segment of the labor force, may also be ineligible. This is one reason why the Advisory Council on Unemployment Compensation (1995) recommended adopting an alternative eligibility standard based on hours worked, which has been done in an increasing number of states. A similar issue is that workers who lose a job they only recently obtained may not qualify for benefits, because many states' accounting systems for determining earnings operate with three- to six-month lags. This problem may be especially important for former welfare recipients under the Temporary Assistance to Needy Families (TANF) program, who generally have short work histories. "Alternative base periods" for calculating eligibility typically allow workers' recent earnings to be taken into account if the workers are ineligible under the traditional one-year time window for the base period (Vroman, 1995a).¹ In some cases, states also may use monetary eligibility formulas to bar workers in seasonal jobs from eligibility. For example, many states require workers to have minimum levels or distributions of earnings in at least two quarters. However, these formulas can end up barring other types of workers from eligibility as well (Nicholson, 1997).

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The main purpose of state nonmonetary eligibility provisions is to ensure that workers cannot voluntarily quit their jobs or be fired for cause and collect unemployment insurance; instead, workers must have lost their jobs "through no fault of their own." Three types of issues dominate these regulations: 1) differentiating between voluntary separations and layoffs; 2) clarifying the meaning of dismissals for "cause"; and 3) determining eligibility for unemployment insurance of workers in a labor dispute. As might be expected in a situation where fine gradations of definition matter, research on the effects of nonmonetary provisions has produced some ambiguous findings (Corson, Hershey and Kerachsky, 1986; Corson and Nicholson, 1988; Vroman, 1995b).

The proper definition of "quits" has been a contentious issue, and states vary widely in how they define acceptable reasons for quitting a job (Fishman, Farrell, Gardiner, Barnow and Trutko, 2003). For example, some states consider following

¹ Rangarajan and Razafindrakoto (2004) found that after the former Aid to Families with Dependent Children (AFDC) program was transformed by the welfare reform act of 1996 into TANF, a higher fraction of former TANF recipients were eligible for unemployment insurance benefits than were AFDC recipients in the past.

a spouse who relocates to be an acceptable reason for leaving a job, while other states do not. The prevalence of part-time work and other nonstandard employment arrangements has also increased the complexity of determining whether a worker's separation was voluntary. Similar concerns arise about misconduct and labor disputes. An increased use of unemployment insurance "service bureaus" (which advise employers on the administrative and regulatory issues related to unemployment insurance claims) is associated with an increase in contested claims by experience-rated employers (Vroman, 1995b), but it is hard to determine how this has affected the overall program. At a minimum, many workers seem to be confused about whether their reasons for losing their jobs bar them from collecting benefits (Wandner and Stettner, 2002).

States use "continuing eligibility standards" to ensure that unemployment insurance recipients remain able and available for work while collecting unemployment benefits. These standards are usually grouped under three headings: 1) availability for work; 2) active job search; and 3) refusal of suitable employment. Precise distinctions among the categories are not always possible, however. All states require that recipients be "able and available for work" to continue receiving benefits, but interpretations of this requirement vary widely. Some states require availability for "any work," whereas others require availability for "suitable" work or work in the claimant's "usual occupation." Other issues include geographic definitions of availability, availability during pregnancy, and availability if the claimant has a disability. Many states treat active job search as one indication of availability for work, and all states require registration at local employment offices as one indication of such activity. In some cases, people must provide evidence of contact with potential employers to show they have been looking for work. States also vary in whether they require workers in training or education programs to actively seek work (Anderson, 1997). Under federal law, states cannot deny benefits to someone enrolled in an "approved" training course, but state-level rules often distinguish between "training" and "education" courses. As a consequence, many students cannot collect benefits, although their courses may be job-related. Similarly, some states require that workers who are pursuing self-employment opportunities search for jobs, even though doing so might impair their success at self-employment. Workers seeking part-time work do not necessarily meet states' availability tests. Some states consider the refusal of a full-time job as disqualifying in all cases; others allow a refusal if the worker had usually worked part-time.

Finally, the connection between continuing eligibility requirements and the unemployment insurance "profiling system" should be mentioned. Every state is required to set up a Worker Profiling and Reemployment Services System, under which workers who are predicted (usually through a statistical model) to be likely to exhaust their benefits must participate in enhanced reemployment services as a condition of continuing eligibility. Some evidence suggests that disqualifications for failure to participate in enhanced reemployment services are rare, but the information gathered in the profiling process can cause increased disqualifications for other reasons (U.S. Department of Labor, 1999; Decker, Olsen, Freeman and Klepinger, 2000; Needels, Corson and Nicholson, 2002).

Unemployment Insurance Job Coverage

Nearly all wage and salary workers are covered by the unemployment insurance system (Bassi and McMurrer, 1997). Two areas in which coverage is less than complete are seasonal employment and self-employment. The most prominent example of seasonal employment is agriculture, but other industries with a substantial seasonal component include construction, transportation and retailing. Because many seasonal workers earn low wages, providing benefits to them might be seen as a progressive transfer. However, providing benefits to seasonal workers would (in the absence of effective experience-rating) implicitly subsidize seasonal jobs and could encourage inefficient employment patterns, so the case for expanded coverage is not clear-cut.

Two issues have dominated the debate over covering self-employed workers. First, granting unemployment insurance coverage to the self-employed poses significant conceptual and administrative problems in determining when a job is "lost." Taxing each self-employed worker to cover his or her own unemployment is also problematic. A second policy issue concerns "independent contractors." Legal questions about this employment relationship are complex, but many firms have incentives to classify workers as independent contractors rather than employees. In such cases, those workers are often ineligible for benefits (de Silva, Millett, Rotondi and Sullivan, 2000). Some states have experimented with providing unemployment insurance coverage of the self-employed by requiring that recipients of benefits pay back those benefits later. Kosanovich and Fleck (2002) provide additional detail on initiatives related to the self-employed.

The Weekly Benefit Allowance and Wage Replacement

Unemployment insurance seeks to sustain the consumption of workers during periods of job loss. Traditionally, success in achieving this goal has been judged by comparing the unemployment insurance weekly benefit with weekly consumption spending. Gruber (1999) and Hamermesh and Slesnick (1995) find that unemployment insurance benefits do an adequate job, on average, of preventing major declines in consumption spending in response to layoffs. However, these studies do not examine variations in experience across workers. In addition, their conclusion applies only to unemployed workers who actually collect benefits. The unemployment insurance system (even with the federal extensions that may be enacted) replaces only 8 to 15 percent of economy-wide earnings lost during recessions (Corson, Needles and Nicholson, 1999).

Studies of the degree to which weekly unemployment insurance benefits replace previous weekly wages find substantial variation among workers, primarily as a result of variation in the maximum benefit amounts that states provide.² Procedures for establishing these maximums vary significantly across the states.

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² Other sources of variation include supplemental benefits for spouses and dependents in some states. Early research showed that nontaxation of unemployment insurance benefits could also yield very high net replacement ratios in some cases (Feldstein, 1978), but inclusion of unemployment insurance benefits as part of taxable income starting in the 1980s largely eliminated this source of variation.

Thirty-four states use a formula that ties the maximum to the state's average weekly wage; the maximum is usually between 50 and 70 percent of the average weekly wage. Other states set their maxima by statute, which typically yields lower maxima relative to average wages (O'Leary and Rubin, 1997). This variation means that high-wage workers experience very different wage replacement rates based on the state in which they file.

Workers can sometimes receive partial benefits with some minimal level of employment, although states' formulas for partial benefits are stringent. Typically states reduce weekly benefits by 100 percent of earnings above small amounts that are disregarded. Under these rules, part-time workers are generally excluded from collecting unemployment insurance benefits at the same time. A related issue is that some states offer unemployment benefits for reductions in hours on existing jobs, a policy option termed "short-time compensation" (Walsh et al., 1997). Most U.S. workers placed on reduced hours do not receive benefits, but in European countries short-time compensation can constitute up to 40 percent of recession-induced unemployment insurance benefits (Abraham and Houseman, 1994).

Duration of Unemployment Insurance Benefits

The number of weeks for which an unemployed worker can collect benefits is determined by both state and federal law. State laws determine potential duration under the regular unemployment insurance program, whereas federal laws determine the availability of additional weeks of "extended" benefits during recessions.

In the regular state-level program, nine states provide a "uniform" maximum potential duration—usually 26 weeks—to all recipients. In the other states, a worker's maximum potential duration is determined by earnings history. The formulas vary widely across states; most provide 26 weeks to workers with substantial work experience, but potential durations may be as short as 10 to 12 weeks. Several researchers have shown that when duration is short, the proportion of workers who exhaust their benefits rises significantly (Murray, 1974; Nicholson, 1981; Woodbury and Rubin, 1997). The national average potential duration of benefits in the regular unemployment insurance program has remained remarkably constant at about 24 weeks over the past 50 years. Because the average duration of unemployment has risen in recent years, the proportion of workers' unemployment spells during which benefits are received has been shrinking.

In contrast to the stability in state regulations about the duration of regular unemployment insurance benefits, the history of programs that extend the duration of benefits during recessionary periods has been quite eventful. A program of extended benefits that would be triggered automatically by worsening labor market conditions became a permanent feature of unemployment insurance law in the early 1970s and led to large additional benefit payments during recessions in the 1970s and early 1980s. The significance of this automatic program was greatly reduced after 1985 because of changes in the criteria for which these benefits become available. However, the federal government also has implemented additional, "emergency" benefits programs for every recession since 1971. Each emergency program had its own special duration provisions and other unique features.

Depending on the emergency program, potential benefit collection was extended by between 13 and 39 weeks. We discuss extended benefits in detail later in this paper.

The Theory of Optimal Unemployment Insurance Benefits

We believe that the rapidly expanding theoretical literature about how unemployment insurance systems should be structured, provides a useful prism for addressing the policy issues that the program is likely to face in future years. The starting point for this theory of “optimal” unemployment insurance is to focus on the program as *insurance*—rather than, say, as an income transfer program—against the risk of wage loss as a result of involuntary job loss. Consider a case in which unemployment insurance is actuarially fair and in which no selection effects arise. In this situation, complete insurance is superior to other ways of insuring against wage loss from unemployment, such as precautionary savings, because this insurance compensates explicitly for the contingency of concern.

However, as with any insurance contract, the possibility of moral hazard complicates matters. If receipt of unemployment insurance benefits prompts workers to remain unemployed longer, as econometric evidence discussed later in this paper suggests, then complete insurance is no longer optimal. In this case, a trade-off exists between the benefits of reduced risk caused by the mandatory insurance and the welfare costs of added unemployment. Baily (1978) first modeled this trade-off explicitly. Under most scenarios about the responsiveness of recipient’s job search efforts to the wage replacement ratio, his results suggested that the optimal wage replacement ratio is about 0.65. Baily also noted that a one-time, lump-sum redundancy payment instead of weekly benefits might improve welfare, because there is no added benefit to the job loser from remaining unemployed longer. Fleming (1978) stressed the importance of savings and of limitations on the ability of unemployed workers to borrow money by showing that optimal wage replacement ratios would be lower (perhaps as low as 0.20) if workers could always save and borrow, compared to a situation in which they cannot do so. In the final installment of these early papers, Shavell and Weiss (1979) considered departures from the current practice of having a fixed benefit schedule throughout the unemployment insurance spell.³ If workers do not have savings, they showed that benefits should decline over time to induce active job search early in the unemployment spell. More recently, Fredriksson and Holmlund (2001) study the theoretical properties of a two-tier program (similar to those found in many European countries) in which weekly benefit amounts decline significantly in the second tier.

Fn3

³ In Michigan, the weekly benefit allowance for a recipient of unemployment insurance benefits may vary during the benefit collection period if the recipient has more than one base-period employer. However, because the variations are tied to prior earnings at the different employers, it seems unlikely that they are designed to address the disincentive effects of the program.

They find nontrivial welfare gains arising from the additional job search induced by such a system.

Theorists have also modeled the possible effects of unemployment insurance on other aspects of the job search process such as intensity of search effort (Hopenhayn and Nicolini, 1997) or refusal of suitable employment (Hansen and Imrohoroglu, 1992). Such additions allow explicit consideration of how unemployment insurance benefits affect reservation wages, since these benefits improve the attractiveness of unemployment relative to working, for workers who are eligible to receive them. Other models focus on how the availability of unemployment insurance can cause workers to be more willing to shirk on their pre-unemployment jobs (Wang and Williamson, 1996) or even to act in a way that is equivalent to quitting their jobs voluntarily—given that making administrative distinctions between voluntary and involuntary separations can be difficult. Although these papers provide a richer specification of how unemployment insurance may affect behavior, they do not alter basic conclusions about the inherent trade-offs between insurance protection and additional unemployment.

Another body of theoretical literature looks at the implications of heterogeneity in firms or workers for unemployment insurance policy. With the U.S. unemployment insurance program, experience rating is, in principle, used to distinguish firms with frequent layoffs from those with infrequent layoffs, so that employers with a more extensive history of workers claiming unemployment benefits will pay higher rates for unemployment insurance. However, states have not adopted complete experience rating, which results in subsidization of firms, or groups of workers, with a greater than average number of layoffs. (Feldstein, 1978; Topel, 1984). Empirical estimates suggest that this subsidy leads to an increase of about 1 percentage point in the unemployment rate (Card and Levine, 1994). In a theoretical context, Blanchard and Tirole (2004) show that full experience rating is necessary if firms are to internalize the social costs of their own layoff decisions (such as workers' loss of job-specific human capital and the resulting loss in wages that workers are likely to incur). Similarly, Wang and Williamson (2002) show that incomplete experience rating can reduce the welfare of low-unemployment workers, although these losses represent mainly transfers to high-unemployment workers; in their model, effects on total output are small.

Other forms of heterogeneity might well be important in unemployment insurance, including differences in skills or preferences for leisure among workers, or differences in production technology across firms or industries. In one interesting application, Wang and Williamson (2002) show that in a system of unemployment insurance without experience rating, optimal allocations result in large transfers from workers in industries with low employee turnover rates to workers in industries with higher turnover rates. However, the authors do not pursue the consequences of this finding for general policy purposes. Karni (1999) also briefly discusses worker heterogeneity in the context of devising incentive-compatible unemployment insurance schemes that target benefits to some categories of workers and exclude others. But in general, formal modeling of these possibilities has been minimal.

The optimal duration of unemployment insurance benefits is a third theoretical topic that may have important implications for policy. Davidson and Woodbury (1997) find that the potential duration of unemployment benefits should be infinite if the benefits do not reduce the incentive to work because, under that assumption, an actuarially fair increase in benefit duration always will improve welfare. They calculate that, if the potential duration of unemployment benefits is infinite, a wage replacement ratio of approximately 0.50 is about right. However, if potential duration were to be limited to about 26 weeks, in their model optimal replacement ratios might exceed 1.00. Using a somewhat different methodology, Wang and Williamson (2002) compute an optimal replacement rate of 0.24 for benefits of unlimited duration and about 0.60 for benefits of limited duration. They also find significant welfare gains from increasing duration.

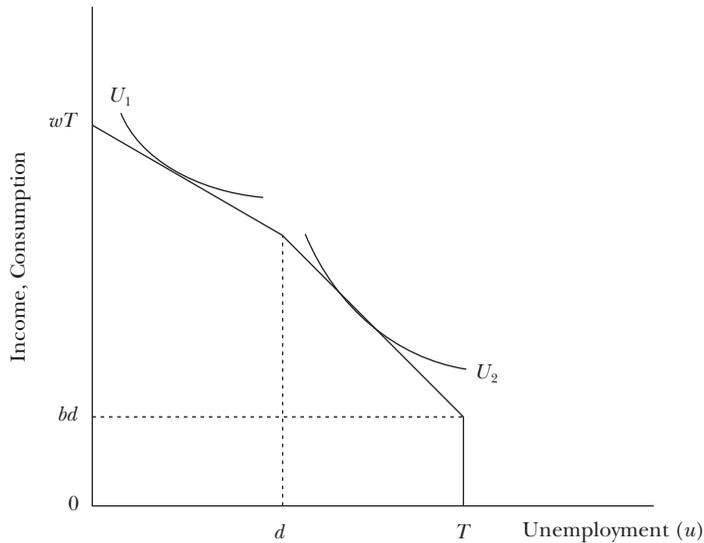
This brief theoretical review suggests five lessons for the design of unemployment insurance: First, almost all models find that optimal replacement ratios are considerably less than 1.0 when unemployment benefits pose significant disincentives to find work. Second, models that allow for realistic levels of personal borrowing and saving lead to lower optimal replacement ratios than those that do not. Third, replacement rates that decline over the duration of the unemployment spell may be preferable to constant wage replacement rates, but the welfare gains from very complex benefit schedules may be small. Fourth, the sharp fall in income that accompanies exhaustion of benefits argues for longer durations of benefits, but there are moral hazard effects leading to higher unemployment rates from such extensions. (The major policy question of how to adjust durations for changing unemployment risk *during* recessions has not been addressed in the theoretical literature.) Fifth, although experience rating of unemployment insurance taxes has been studied as one way to control for heterogeneity among workers and firms, other approaches to designing more customized eligibility rules have received little attention.

Econometric Evidence

Most econometric research on unemployment insurance has focused on estimating the effects of two key program parameters: the wage replacement ratio provided by unemployment insurance benefits and the potential duration of those benefits. Although researchers have used a variety of data sets and taken a variety of approaches to issues of econometric specification, the estimates of the effects of varying these two policy parameters cluster in a fairly narrow range.

A consumption (c) and leisure (l) labor supply model that incorporates both these parameters is illustrated in Figure 1 (Moffitt and Nicholson, 1982). The planning horizon for a newly unemployed worker is taken to be T weeks, and this person must choose how many weeks (u) to remain unemployed. The worker's potential wage is w . To get an intuitive feeling for the figure, start at the upper left, where the duration of unemployment $u = 0$, and so the level of consumption is just wages (w) multiplied by the time horizon T , that is $c = wT$. As the worker experiences added weeks of unemployment, consumption is reduced but this reduction is cushioned by receipt of unemployment insurance benefits. (Along this

Figure 1
Consumption/Unemployment Model of Choice



segment, the slope of the budget constraint is $-w + b = -w(1 - r)$ where b is the weekly unemployment benefit and r is the replacement rate $r = b/w$.) The worker can collect unemployment insurance benefits for up to a maximum of d weeks. This limit on the duration of benefits creates a kink in the budget constraint. When unemployment extends beyond duration d , consumption falls more rapidly (the slope of the budget constraint is $-w$) since the lost wages are no longer partially being replaced by unemployment insurance. If the worker remains unemployed through the entire period T , consumption would be equal to total unemployment benefits received. Given this budget constraint, workers will choose a utility-maximizing duration of unemployment depending on their preferences for consumption versus leisure. Preferences for two different individuals are shown in the figure. Increases in either the duration of benefits (d) or the replacement rate (r) will create both substitution and income effects that tend to increase the duration of unemployment duration u .

Ehrenberg and Oaxaca (1976) were the first to report significant positive effects of unemployment insurance wage replacement rates on the duration of unemployment. They found that each 10 percentage point increase in the replacement rate r was associated with approximately 0.5 to 1.0 extra weeks of unemployment. Phrased another way, the elasticity of unemployment duration with respect to the wage replacement ratio was estimated to fall in the 0.4 to 0.8 range. Many subsequent studies have derived similar estimates. A good summary of the early econometric evidence can be found in Hamermesh (1977), while more recent summaries are in Decker (1997) and Woodbury and Rubin (1997).

Econometric estimates of the effect of potential duration (d) are more varied, in part because different researchers use different sources of variation in this

parameter to obtain their results. For example, some researchers focus on variations in duration that occur in regular unemployment insurance program entitlements. But because these variations arise primarily from differences in state policy and in individual's labor market histories, estimated effects of the basic duration variable may exhibit various types of endogeneity bias. Alternatively, some researchers focus on variations in duration that arise in extended and emergency benefits. But these extensions usually occur at times of reduced job availability, so the results may understate disincentives during more normal times. Moffitt and Nicholson (1982) and Moffitt (1985), used experiences under extended benefits programs to derive some of the earliest estimates of the effects of variations in the duration of benefits d , finding that each extra week of potential benefits added about 0.1 to 0.4 weeks of extra unemployment. Katz and Meyer (1990) used within-state variation in duration and obtained estimates that were also within this range. Decker, O'Leary and Woodbury (2001) obtained similar estimates from the unemployment insurance bonus experiments (a series of experiments in which randomly assigned workers were paid a significant fraction of their remaining unemployment insurance entitlements if they found work quickly). Decker (1997) concludes that a consensus estimate of the elasticity of unemployment duration with respect to potential unemployment insurance duration is about 0.2.

Empirical research has not adequately addressed the question of how the incentive effects of unemployment insurance might differ across groups of workers. However, three types of findings suggest that such heterogeneity may be important. First, only workers who have no expectation of recall to their prior employer respond significantly to the parameters of the unemployment insurance system (Corson and Dynarski, 1990). Second, the unemployment insurance bonus experiments found that, consistent with standard labor supply findings, female workers on average have greater substitution elasticities in their duration of unemployment than do male workers, since they are more likely than males to move in and out of the labor force (Decker and O'Leary, 1995). Third, older workers seem to remain unemployed longer when benefits are available for longer and when retirement is an option. Implications of such findings of heterogeneity for policy are at best ambiguous, however, and other evidence on differential responses is nonexistent.

Implications of the Theory for Emerging Policy Issues

The unemployment insurance system will face a number of policy questions over the next decade. Here, we use our brief review of the program to focus on two broad areas of concern: adapting the regular unemployment insurance program to changes in the labor market and clarifying the nature of unemployment insurance policy during recessions.

Unemployment Insurance and the Changing Labor Market

Most significant features of the unemployment insurance program have remained largely unchanged over the 70 years of the program's existence. It should

not be surprising that a program that was designed primarily to address short-term layoffs from manufacturing jobs is showing its age. Two indicators of the need for change are: 1) declining rates of reciprocity of unemployment insurance benefits among the unemployed; and 2) lengthening durations of collecting benefits for those who receive benefits. The reciprocity rate, which is defined as the ratio of total weeks of unemployment insurance collected during a year to total weeks of unemployment during that year, has been in a gradual long-term decline since the late 1940s. It declined rapidly during the late 1970s and 1980s (Bassi and McMurrer, 1997) before stabilizing in the 1990s. Now, during periods of strong labor markets, only about one-third of unemployed workers collect benefits, representing a decline of 10 to 15 percentage points over the past 25 years.⁴ The average duration of receipt of unemployment insurance has also steadily increased in recent years (Needels and Nicholson, 1999). Average durations appear to have increased by between 1.1 and 1.4 weeks since 1992, relative to predictions from a historical trend. In addition, the share of those receiving benefits who exhaust those benefits before taking a new job during periods of strong labor markets (that is, adjusted for the business cycle) have increased from less than 30 percent to nearly 35 percent since the 1980s.

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Broad changes in labor markets in recent decades have surely contributed to the lower reciprocity rate and higher durations of benefits. Extended reviews of these factors are provided by Bassi and McMurrer (1997) and Wittenburg, Fishman, Stapleton, Scrivner and Tucker (1999). Here we briefly summarize these findings. Perhaps most important factor has been the decline in the percentage of all jobs that are in the manufacturing sector of the economy. This decline has been associated both with a decline in receipt of unemployment benefits and an increase in the duration of benefits collected, primarily because manufacturing layoffs are more likely to be short-term than those in other sectors. Similarly, because the decline in manufacturing jobs is related to an overall decline in the extent of unionization, this may also affect the number of workers who qualify for unemployment benefits and the ease with which they hear about and apply for such benefits. The increasing importance of permanent dislocations, especially among skilled and educated workers, has lengthened the unemployment durations of some groups who were formerly unemployed for only short, frictional periods. Growth in nontraditional forms of employment, such as temporary employment, contract employment or self-employment, also may have reduced overall eligibility and coverage, although these trends have not been extensively studied. Finally, the increasing labor force participation of women, a group for whom transitions in and out of the labor force are more common, has meant that a system that requires

⁴ As pointed out earlier, reciprocity rates vary widely across states, because of the substantial differences in state programs. In 1997, reciprocity rates ranged from 19 percent to 59 percent across states (Wittenburg et al., 1999). Although states' relative rankings fluctuate, they generally remain in the same portion of the distribution over time: for example, rates in low-reciprocity states in one year, tend to remain low relative to rates in other states.

recent employment for eligibility will necessarily cover a smaller fraction of all workers.

Changes in unemployment insurance laws at both the federal and state levels may also have had important effects on the outcomes of individual workers. For example, taxation of unemployment benefits was phased in between 1979 and 1986, and this may have reduced the incentives to collect such benefits. Future rates of benefit receipt may be more heavily influenced by the movement of former welfare recipients into the labor market, as they gain additional work experience and encounter the time limits in welfare benefits. Finally, a variety of other administrative and policy changes to tighten eligibility rules—such as greater contesting of unemployment insurance claims associated with possible voluntary quits, increasing penalties for fraudulent claims, lengthening disqualification periods for certain actions, or increasing requirements for re-qualification following disqualification—may have reduced unemployment insurance reciprocity rates. However, attempts to estimate these effects have suffered from methodological or data limitations due to the many minor changes in procedures made during the last 30 years.

Overall, changing labor market conditions and other factors have reduced the rate of receipt of unemployment insurance benefits and lengthened the average duration of receipt primarily because the program is focusing on successively narrower segments of the unemployed population. This observation raises three key issues for policymakers: First, to what extent do workers currently collecting unemployment insurance benefits face more severe labor market difficulties than recipients did in the past? Could more generous benefits packages for these workers, perhaps in terms of longer regular durations or relaxed benefit maximums, be justified as a welfare-enhancing tradeoff between insurance protection and search disincentives? Second, are there important categories of workers, such as labor force re-entrants or workers in part-time or nonstandard employment arrangements, for whom some expansion of coverage could be justified? Finally, are there other categories of workers, such as those who make repeated claims, for whom the current regular unemployment insurance program may be too generous, in that the disincentive costs outweigh the positive benefits from the insurance protection being provided? Can eligibility rules be structured to limit benefits to these groups?

Unemployment Insurance during Recessions

During recessionary periods, the exhaustion rates for regular unemployment insurance benefits typically rise. Programs that extend the duration of unemployment insurance benefits, which have been adopted in every recession since the 1960s, counteract some of the extra hardship that these higher-than-normal exhaustion rates have on workers' incomes. At the same time, one would expect that the added difficulty in finding a job when the unemployment rate is high may mitigate the adverse disincentive effects of extensions of potential benefits to workers.

The complex history of these extensions is detailed in Nicholson and Needels

(2004). These extensions fall into two broad categories: “extended” benefits and “emergency” benefits. Initially the concept was that the Extended Benefits program, which is a “permanent” feature of unemployment insurance law since 1971, would be automatically triggered by a recession, on the basis of certain unemployment indicators. Emergency benefits programs would be enacted if the automatic response was insufficient to meet the needs of workers during a severe recession. In the 1980s, however, changes in its trigger mechanism caused the Extended Benefits program to be unavailable in many states. In such cases, those who had exhausted their unemployment benefits could go directly onto emergency benefits. In addition, states were occasionally allowed to opt out of the Extended Benefits program, which again meant that their workers could collect emergency benefits immediately after their regular unemployment benefits were exhausted. Because the emergency programs are fully federally financed and extended benefits are financed on a fifty-fifty basis with the states, states overwhelmingly chose this option. Under the most recent emergency program, the original sequencing was reversed so that extended benefits would be payable only to claimants who had exhausted their emergency entitlements.

T3 Table 3 reports some program details and measures of the performance of the unemployment insurance system during four recent recessions. (Because the recession from January to June 1980 was both very short and its aftermath was complicated by the arrival of another recession, we exclude it from the table.) We consider both the Extended Benefits program and the emergency programs (each with its own name and abbreviation) that are unique to each recessionary period. Each emergency program had complex phase-in and phase-out provisions, but the periods defined here are sufficiently precise to contain almost all activity under the programs.

The relationship between the emergency program periods and the dating of recessionary periods shown in Table 3 demonstrates several points. First, emergency programs are activated late in cyclical downturns. Second, the programs pay benefits for about 10 quarters after each cyclical trough, on average. These timing features have become more exaggerated in recent recessions. In both the recession of the early 1990s and the recession of 2001, no emergency benefits were paid until about two quarters after the cyclical trough. In part, these figures are consistent with the typical pattern that unemployment is a lagging indicator, since peak unemployment rates occur well after cyclical troughs. In addition, it takes time for workers laid off as a result of recessions to exhaust their regular unemployment insurance benefits entitlements and to qualify for extended or emergency benefits. Given these considerations, Congress may be justifiably slow in deciding how, if at all, to address the needs of recession victims.

Table 3 also illustrates some other patterns. Activity under the state unemployment insurance programs has been about the same during each emergency period. Total benefits paid were \$80 billion to \$100 billion in 2004 dollars. The number of first payments provided, which can be interpreted as the number of claimants who received at least some benefits, ranged from 20 million to 28 million and average benefits paid to individuals per first payment ranged from \$3,500 to \$4,200. In

Table 3

Characteristics of Emergency Benefits Programs, the Extended Benefits Program and the Regular Unemployment Insurance Program during Recessionary Periods since 1970

<i>Recessionary time period</i>				
NBER Dates for the Recession	1973.4–1975.1	1981.3–1982.4	1990.3–1991.1	2001.1–2001.4
The quarter of the peak of Total Unemployment Rate	1975.2	1982.4	1992.3	2003.2
<i>Emergency benefits programs</i>				
Dates of operation	1975.1–1977.4	1982.3–1985.1	1991.4–1994.2	2002.2–2004.1
Program name	Federal Supplemental Benefits (FSB)	Federal Supplemental Compensation (FSC)	Emergency Unemployment Compensation (EUC)	Temporary Extended Unemployment Compensation (TEUC)
Potential durations provided (weeks)	13 to 26	8 to 12	7 to 27	13 to 20
Total benefits paid (\$billions)	20.4	17.6	37.1	23.4
Number of first payments (millions)	6.1	7.6	9.2	7.5
Average benefits per first payment (\$)	3,340	2,320	4,030	3,120
Exhaustion rate	0.60	0.79	0.80	0.72
<i>Extended Benefits program</i>				
Total benefits paid (\$billions)	22.8	6.0	0.3	0.4
Number of first payments (millions)	10.1	2.5	0.2	0.2
Average benefits per first payment (\$)	2,260	2,400	1,440	2,350
Exhaustion rate	0.69	0.63	0.35	0.53
<i>Regular unemployment insurance program</i>				
Total benefits paid (\$billions)	99.0	87.2	84.6	83.2
Number of first payments (millions)	27.7	25.0	23.9	19.6
Average benefits per first payment (\$)	3,570	3,490	3,540	4,240
Exhaustion rate	0.36	0.37	0.38	0.42
<i>Overall unemployment insurance performance during period</i>				
Total exhaustion rate	0.17	0.28	0.24	0.32
Percentage of lost compensation replaced	27.3	15.6	36.8	28.2

Note: All dollar amounts are in 2004 dollars. We denote the quarters of a year by using a decimal point and numeral after the year. For example, "1975.1" indicates the first quarter of 1975.

contrast, the Extended and emergency benefits programs were used much more unevenly. For extended benefits, payments and total benefits paid were large during the recession of the mid-1970s, but extended benefits contracted sharply during the recession of the early 1980s and disappeared almost completely thereafter. As noted earlier, legislative changes in 1981 limited the reach of the program (Corson and Nicholson, 1985; Blank and Card, 1991).

The emergency programs exhibit less variation. The program of the early 1980s paid the fewest benefits, primarily because the program provided relatively short extensions in potential duration. Although the program of the early 1990s appears to be the largest emergency program, adjusting for a special (and very complicated) program feature that allowed claimants for regular unemployment insurance benefits to start collecting emergency benefits immediately would make these figures similar to those for the 1970s and 2001 recessions.

Fn5 The fraction of recipients who exhaust their regular unemployment insurance benefits rises significantly during recessions and exceeded 35 percent during these four periods, as Table 3 shows. All emergency programs, and especially the one during the 1970s, reduced total exhaustion rates—that is the rate at which benefits from all programs were exhausted—to well below pre-recession levels.⁵ Interestingly, the highest total exhaustion rates were during the most recent emergency period, when nearly one-third of unemployment insurance recipients exhausted all their regular, extended and emergency benefit entitlements.

Fn6 Another measure of the effectiveness of extended benefits during recessions focuses on how much of the earnings lost because of downturns are replaced by total benefits paid (see bottom of Table 3). By calculating how much workers' aggregate real compensation during the emergency periods was below a time trend, we find a different ranking for the generosity of the system compared with the ranking implicit in our estimates of total exhaustion rates.⁶ According to this approach, the system was more generous (relative to compensation losses due to the recession) during the two most recent recessions than it was during the recessions of the 1970s and 1980s. Although the estimates for losses in real compensation are imprecise, because they are measured against a hypothetical trend line, these calculations highlight the milder nature of the two most recent recessions.

Several policy lessons emerge from this consideration of system performance during recessions over the past 35 years. The automatic extended benefit policy response to recessions has been essentially repealed. Emergency programs have been more successful at meeting workers' needs during recessions, but there is little agreement either about how generous these programs should be or about how generosity should relate to a recession's characteristics. Moreover, emergency programs were difficult to administer primarily because of both their interactions with the regular unemployment insurance program and the permanent Extended

⁵ The calculations are based on exhaustion and participation rates for each of the programs in effect during these periods, but they are close to estimates obtained by the simpler method of dividing emergency exhaustions by regular unemployment insurance first payments during each period. Details are available from the authors.

⁶ Details of this calculation are available from the authors. An alternative estimate of wage replacement using a Hodrick–Prescott filter over the 1970–2004 period yielded similar results. The extra volume of regular unemployment insurance benefits during the periods examined replaced between 7 and 16 percent of this shortfall in aggregate real compensation. Generally, the emergency programs replaced between 7 and 12 percent of lost compensation during the emergency periods, but our estimate for the early 1990s may be unduly large and influenced by a small estimate for wages lost during that period.

Benefits program. But since there seems to be a broad legislative consensus that unemployment benefits should be extended during recession, it would be useful to give some thought before the next recession hits as to what should trigger such additional benefits and how such additional benefits should be tailored to the specifics of the recession.

Conclusion

Over the past 70 years, the unemployment insurance system has provided a cushion to the incomes of many workers who lose their jobs. The federal–state partnership generates complex regulations and operating procedures, but it also has also provided flexibility to adapt to different labor market environments. As with any program of long-standing that has worked fairly well, would-be reformers should be cautious in making proposals to improve the system.

But the U.S. unemployment insurance system is beginning to show its age, and new thinking may be warranted. To us, perhaps the most productive area for this thinking is in reevaluating certain “one size fits all” aspects of the system. Today, essentially the same unemployment insurance benefits are available to all workers who lose a job in a state, and during recessions, almost all workers within a state qualify for the same extended benefits package. Such universality can conflict both with theoretical considerations of optimal wage loss insurance and with emerging empirical evidence about worker and firm heterogeneity.

Some policymakers have experimented with targeted eligibility rules for unemployment insurance benefits. For example, the Trade Adjustment Assistance program offers extra benefits to workers whose job losses are trade related, though the definition of “trade related” has frequently been adjusted to changing circumstances (Baicker and Rehavi, 2004). Similarly, the most recent program of emergency benefits (Temporary Extended Unemployment Compensation) provided extra benefits to airline workers who lost jobs as a result of the September 11, 2001, terrorist attacks. A possible rationale for such targeting may be that the losses of job-specific human capital from these job dislocations may have been especially severe and that the period of search required to recover may be especially long. Explicit program targeting has been less frequent in the regular unemployment insurance program, although both federal and state policymakers have experimented with such innovations as limited coverage of self-employment, alternative base periods for determining monetary eligibility, bonus benefit schedules contingent on more rapid reemployment, and implementation of extensive job search requirements. For example, O’Leary, Decker and Wandner (2005) found that targeting reemployment bonuses towards unemployment insurance recipients who are most likely to exhaust their benefit entitlements has the potential to reduce overall payouts and to speed these workers’ returns to work. More generally, several researchers have suggested ways in which individual workers could be given greater incentives to save for their own unemployment as a way of reducing the moral

hazard and adverse selection aspects of government-provided unemployment insurance (for example, Feldstein, 2005).

Unfortunately, the empirical foundation for many proposed innovations in unemployment insurance policy is often weak. Hence, rather than basing innovations on *ad hoc* intuition, an approach focusing on a series of small-scale, random assignment experiments could be especially valuable. Policymakers might want to use this approach to consider a number of potential innovations, such as relaxing eligibility provisions for part-time workers; restricting repeated unemployment insurance claims (a form of individual-based experience rating); examining the impact of current benefit maximums on dislocated, high-wage workers; exploring the potential for gains from two-tier programs with declining wage replacement rates; using more finely targeted approaches to extending potential durations during recessions; and encouraging unemployment-related savings accounts. The information obtained from such studies, in combination with our improved theoretical understanding of the optimal structuring of unemployment insurance systems, offers significant promise for modernizing and improving this essential program.

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