

## **Extended Unemployment Benefits and the Risk of Hysteresis**

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January 14, 2011

Concerns have arisen that generous unemployment benefits combined with skill depreciation may induce higher unemployment and burden the economy with long and persistent spells of joblessness. In this memo, we use a quantitative model developed by Kitao and Şahin (2011) to assess, under alternative scenarios, the effect of the policy to extend unemployment benefits.<sup>1</sup> We then discuss the possibility of a European-style hysteresis problem with persistently high unemployment.

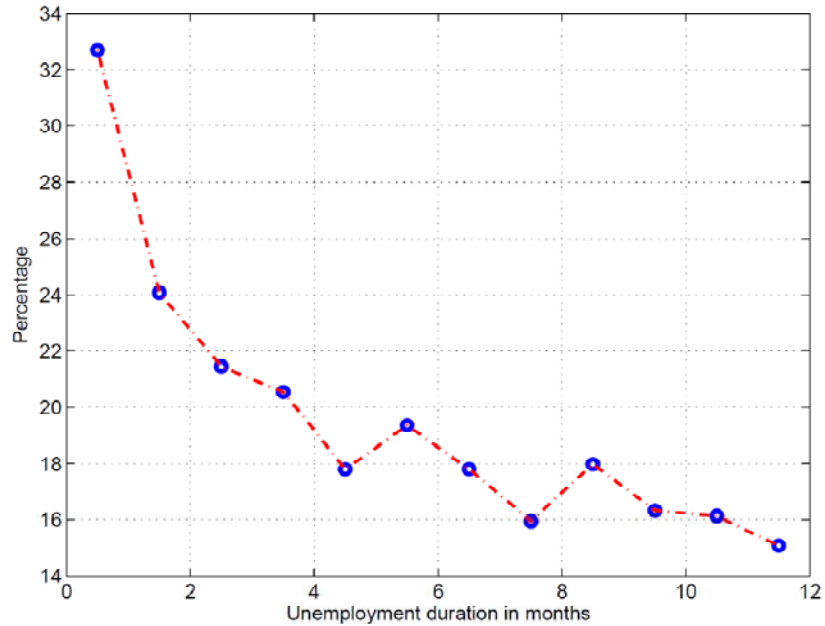
### ***The model***

The economy is populated by a continuum of employed and unemployed agents who face stochastic accumulation or depreciation of skills. The skills can be accumulated on the job, and they depreciate at a constant rate during unemployment spells. In each period, employed agents face an exogenous probability of job destruction, and laid-off workers are entitled to unemployment insurance benefits for certain periods of unemployment. The job-finding rate of unemployed individuals depends on their search effort and the duration of unemployment as well as aggregate labor market conditions. The market is incomplete and agents can only self-insure against idiosyncratic uncertainty by accumulating one-period riskless assets.

The model is first calibrated to approximate the labor market conditions before the onset of the 2007 recession; we call this the “benchmark economy.” We then consider exogenous changes in the labor market conditions that characterize the recessionary environment, and study the effects of the unemployment insurance policy under different economic settings. The function that maps the job search effort of unemployment workers to the job-finding rate is calibrated to match the path of the average outflow rates from unemployment to employment during the first 6 months of unemployment. This choice is motivated by the observation that unemployment-to-employment transition rates fall rapidly during the first several months of unemployment and stabilize somewhat thereafter, as shown in Figure 1. The exogenous job-destruction rate is set so that the average unemployment rate is 5.5% in the benchmark model.

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<sup>1</sup> Kitao and Şahin, 2011, “The American Unemployment Dilemma? Not Really!” mimeo.



**Figure 1. Monthly unemployment-to-employment transition rates by unemployment duration.** Source: Current Population Survey, 2002-2006

*Policy experiments*

Table 1 shows the effect of an extension of unemployment insurance benefits in the benchmark model. A 1-year benefit extension would raise the unemployment rate by about 0.5 percentage point and the duration of unemployment by approximately 10%, or about 2 weeks. The magnitude of the effect is in line with the estimates in empirical studies, which find positive effects of an extension on unemployment durations.<sup>2</sup> Various studies suggest that a 1-week increase in potential benefit duration is associated with an increase of about 0.08 to 0.20 weeks in the average duration of the unemployment spells of the benefit recipients. Extension of the benefits by 6 months to 1 year would be associated with an increase of 2.1 to 5.2 weeks in the unemployment duration. The effect of extended benefits in the recent recession is likely to be at the lower end of the range. Many of the larger estimates are based on data from the 1970s and 1980s, when temporary layoffs—which are more responsive to the generosity of unemployment insurance—made up a larger fraction of unemployment. In addition, many of the larger estimates are based on empirical strategies that identify the effect by exploiting differences in benefit schedules across states and time. As Card and Levine (2000) emphasize, a potential difficulty of

<sup>2</sup> See, for example, Card and Levine, 2000, “Extended Benefits and the Duration of UI Spells: Evidence from the New Jersey Extended Benefit Program,” *Journal of Public Economics* 78, 107-138; and Katz and Meyer, 1990, “The Impact of the Potential Duration of Unemployment Benefits on the Duration of Unemployment,” *Journal of Public Economics* 41, 45-72.

the estimates is that many states extend benefits as a response to poor job-finding prospects in recessions, overstating the true disincentive effect of the unemployment insurance.

An extension of the benefit duration from 6 months to 2 years would raise the unemployment rate by 1.2 percentage points and the average duration of unemployment from 4.9 months to 6.0 months. The effect on the unemployment rate grows as the duration of the benefits becomes longer. At the limit, if the benefits are extended indefinitely, the unemployment rate could reach 9.7%, even without any change in macroeconomic conditions.

	Benchmark	UI extension 1 year	UI extension 2 years	UI extension indefinite
Unemployment rate	5.5%	+0.5ppt	+1.2ppt	+4.2ppt
Avg. duration of unemp. (months)	4.9	+0.5	+1.1	+4.1

**Table 1: Effects of the extension of unemployment insurance: benchmark economy.**

Next, we consider alternative scenarios that potentially characterize labor market conditions under the recent recession and quantify the effects of the benefit extension under different models. The results are summarized in Table 2.

	No extension	UI extension 2 years	UI extension indefinite
Benchmark model	5.5%	+1.2pp	+4.2ppt
Model A: higher probability of separation	7.8%	+1.7%	+5.3%
Model B: turbulence (skill loss upon separation)	5.7%	+1.5%	+9.1%
Model C: lower job-finding rate	7.0%	+1.4%	+6.8%
Model D: turbulence + lower job-finding rate	7.2%	+1.6%	+11.0%

**Table 2: Effects of benefit extension on unemployment rates under alternative scenarios.**

Model A assumes a higher risk of layoffs by increasing the probability of exogenous separations by 50% compared with the benchmark model. As shown in Table 2, the higher inflow rate from employment to unemployment raises the unemployment rate to 7.8%, an increase of 2.3 percentage points (relative to the benchmark). A benefit extension to 2 years raises unemployment by an additional 1.7 percentage points, which is larger than the 1.2 percentage point increase in the benchmark economy. The reason for this greater effect is the increased layoff risk, which lowers the expected value of finding a job. Consequently, the search efforts of unemployed individuals decline, especially during the first year of unemployment when the expiration of unemployment benefits is still distant.

In Model B, we assume a possibility that workers will lose their skills upon exogenous separation,<sup>3</sup> an outcome that we refer to as a “turbulence shock,” following Ljungqvist and Sargent (1998).<sup>4</sup> The turbulence shock is particularly relevant in the current economic environment, in which skill mismatch has been increasing. The decline in skill and wages that is experienced by many workers upon reemployment will reduce the search effort, but the quantitative effect is relatively small: the unemployment rate would be only 0.2 percentage point higher than in the benchmark economy.

The unemployment benefit replaces a fixed fraction of earnings before individuals become unemployed and lose some of their skills. As a result, the benefits become relatively more attractive in an economy with higher turbulence than in a tranquil economy without such skill shocks. In Model B, the effect of the benefit extension is a 1.5 percentage point increase in the unemployment rate, which is somewhat greater but not very different from the effect under the benchmark economy. The effect, however, can be significantly greater if the benefits are extended indefinitely. In that case, the unemployment rate will shoot up 9.1 percentage points, to 14.8%, and the average duration will rise by about 12 weeks. Ljungqvist and Sargent (1998) argue that neither generous benefits nor increased economic turbulence is enough by itself to explain the surge in unemployment in many European countries after late 1970s. It is the combination of the economic turbulence and a generous labor market policy that induces such high unemployment. Our results are in line with their finding that a massive rise in unemployment occurs only when generous benefits are provided to the unemployed in a turbulent economy.

Model C assumes a decline in job-finding probability to mimic the big drop in unemployment-to-employment transitions during a recession.<sup>5</sup> Various developments could trigger such a decline in the efficiency of the search effort. For example, an exogenous demand shock could reduce the number of job vacancies and thereby lower the efficiency of the search effort, leading to lower job-finding rates. The unemployment rate would rise by 1.4 percentage points because of the decline in the outflow rates from unemployment to employment. The effect of a benefit extension is similar in magnitude to that observed in the benchmark model. In model D, the two shocks posited in models B and C are combined, making the effect of the benefit

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<sup>3</sup> We assume that laid-off individuals face a 50% probability of losing skills and that their new skill level is drawn from a right-truncated normal distribution centered at the current skill level with a variance of 0.1. This assumption implies that individuals at the peak level of skills would lose 25% of their accumulated skills on average.

<sup>4</sup> Ljungqvist and Sargent, 1998, “The European Unemployment Dilemma,” *Journal of Political Economy*, 106, 514-550.

<sup>5</sup> We assume that the probability of finding a job offer declines by 20% at any given level of search effort.

extension slightly larger than in the cases where the shocks enter the economy separately. As in model B, the policy would induce a huge increase in unemployment when the benefits are extended indefinitely.

It should be noted that the results presented in the memo are based on the comparison of steady states and represent the long-run effects of a permanent extension of benefits. We have also calculated transition paths in which the extension is temporary and the duration of the unemployment benefits returns back to normal after a certain number of periods. We find that as long as the extension is not extremely short-lived (or long enough like the current extension), the peak of the unemployment rate during the transition is similar in magnitude to the level of unemployment rate in the steady state with permanent policy extension. Therefore, the long-run effects we report can be considered as upper bounds on the effect of UI extensions on the unemployment rate.

***Are we at risk for a “European unemployment dilemma”?***

We find that the policy to extend unemployment insurance benefits to two years should not expose the economy to a massive increase in unemployment. The extension can account for an increase in the unemployment rate in the range of 1.2 to 1.7 percentage points, with the exact magnitude, depending on the underlying economic and labor market conditions.

An important caveat of the Kitao and Şahin (2011) study cited in this memo concerns the effect of other income-replacing welfare programs on unemployment—in particular, disability insurance, which provides benefits indefinitely as long as certain eligibility requirements are met. Such programs could potentially have effects similar to those unemployment insurance benefits with unlimited durations. A unique feature of the disability program is its progressive benefit schedule, which may generate differential effects across income groups and provide more work disincentives to individuals with lower earnings. We are exploring these issues in our current research—an extension of the work summarized in this memo.