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# Moral hazard, optimal unemployment insurance, and experience rating<sup>☆</sup>

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## Abstract

This paper is concerned with evaluating alternative unemployment insurance (UI) schemes in a dynamic economy with moral hazard. We consider changes in the size and duration of UI benefits, and the effects of experience rating, and use a dynamic contracting approach to determine a benchmark optimal allocation. Radical changes in the current UI system increase welfare, but not by much. A move to full experience rating has distributional effects, but the aggregate effects are negligible.

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## 1. Introduction

The incentive problems associated with moral hazard have long been recognized as being of critical importance for the design of unemployment insurance (UI) systems. A dynamic model with moral hazard is constructed here to evaluate UI along several dimensions. In particular, we are interested in the effects of the

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replacement rate, the duration of UI benefits, and experience rating on the search behavior of the unemployed, shirking by the employed, unemployment, and welfare. Taking the solution to a dynamic contracting problem under moral hazard as a benchmark, we evaluate changes in the UI system in the U.S.

In most countries, UI benefits are tied in some way to wages when employed, and there is often a maximum length of time for which benefits can be collected. In these two respects, the United States is not unusual. In the U.S., UI systems differ by state, but typically can be characterized as providing benefits at a replacement rate of about 50% for 26 weeks at the maximum. A key difference in the U.S. UI system, relative to other countries, is in its financing. In the U.S., UI benefits are funded through payroll taxes on firms, and an individual firm's payroll tax rate tends to increase as the firm generates more insured unemployment. This feature of the UI system is referred to as experience rating.

A replacement rate below 100% and a limit on the UI benefit period are apparently intended as incentive devices in the context of moral hazard. That is, since the search effort of the unemployed is costly or impossible to monitor, too much insurance implies that the unemployment rate would be too high. As in any contracting relationship with moral hazard, there is a tradeoff between incentives and insurance, and reducing benefits and/or cutting off benefits after some period of time are two simple ways to limit insurance.

It is an open question whether UI is in fact limited in the U.S. in a way that comes close to achieving an optimal incentive structure. In the literature, one approach has been to ask what replacement rate would be optimal in the context of a model where UI benefits continue indefinitely. For example, Hansen and Imrohorglu (1992) study an incomplete markets model where there is a moral hazard problem concerning the observability of job refusals by unemployed agents. They find that UI benefits in the U.S. are in general too generous. In a related model with heterogeneous agents and voting, Pallage and Zimmerman (1998) argue that current UI benefit levels can be supported in a voting equilibrium. Davidson and Woodbury (1998) construct a two-sided search model, and look for an optimal UI program by varying the replacement rate. Their conclusions, while predicated on the degree of risk aversion, indicate again that the replacement rate is too high in the U.S. In a principal-agent environment with moral hazard, where UI benefits are interpreted as the consumption of an unemployed agent, Shavell and Weiss (1979) and Hopenhayn and Nicolini (1997) find that a welfare-maximizing UI program features benefits which decline monotonically during a spell of unemployment.

Topel (1983, 1985, 1990) has argued that experience rating plays an important role in the UI system in the U.S. In the absence of experience rating, it is argued, firms have the incentive to lay off employees temporarily, and these laid-off workers then collect UI. With full experience rating, the firm ultimately bears the entire cost of the UI benefits paid out, in which case the firm might prefer to keep employees on the payroll who might otherwise be laid off.

In the U.S., experience rating is not perfect, since there are upper and lower bounds on payroll tax rates. Thus, firms in industries with high average unemployment tend to be subsidized at the expense of firms in industries with low

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