Unemployment insurance and capital accumulation

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Abstract

In this paper, I examine a model economy with production, search, and unemployment insurance. The introduction of capital into the economy of Wang and Williamson (J. Monetary Econom. 49(7)(2001)1337) generates the result that optimal replacement ratios are always zero. The result arises from the decline in aggregate activity caused by unemployment insurance: both capital and labor inputs to production fall when benefits rise. Unlike most of the literature, I compute explicitly the cost of the transition path; agents are made better off by switching to a steady state with no unemployment insurance, but the welfare gain is approximately cut in half. Only the very poor and unemployed suffer welfare losses along the transition path. I then briefly investigate the implications of negative replacement ratios.

JEL classification: E62; H21

Keywords: Unemployment insurance; Savings; General equilibrium search

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1. Introduction

The optimal provision of unemployment insurance (UI) in dynamic economies has generated a large body of literature, beginning with Shavell and Weiss (1979). However, much of the literature abstracts from the production side of the economy, instead choosing to ignore private savings entirely or to simply allow savings in the form of stored consumption. In general, it has been (at least implicitly) assumed that the introduction of endogenous interest and wage rates would add little insight into the role of unemployment insurance and would make little quantitative difference, and also therefore that capital accumulation is unimportant. The main purpose of this paper is to examine whether these assumptions are innocuous.

The model economy here extends the model in Wang and Williamson (2001) to include firms, capital, and endogenous prices for labor and capital. Other papers have examined the role played by UI in models with capital markets; these papers include Costain (1997) and Heer (2002). However, those papers introduce other complicating features as well: wage contracting, thin and thick market externalities, and finite horizons with retirement. In those papers, it is not clear where exactly the benefit from unemployment insurance comes from: is it beneficial because it alleviates these labor market frictions or because it overcomes some capital market incompleteness? This paper retains one labor market friction—the costly and unobservable search which leads to moral hazard—but otherwise abstracts from the details of the labor market. The purpose of this abstraction is to isolate attention on the role unemployment insurance can play in mitigating the effects of a missing market.

The literature finds a wide range of optimal replacement ratios (defined variously as that maximizing average welfare or the welfare of a newborn). For example, Hansen and İmrohoroğlu (1992) finds that the optimal permanent replacement ratio ranges from 0.65 in the absence of moral hazard to 0.05 in a case with extreme moral hazard. Sleet (1997), in a model quite similar to this one but without capital, finds an optimal value of 0.4. Wang and Williamson (2001) computes the optimal replacement ratio for benefits that last only two quarters; they obtain a value of 0.47. Davidson and Woodbury (1997) finds an even stronger result: the optimal replacement ratio is 1 if benefits are given for a short duration and around 0.5 if unlimited. Costain (1997) and Heer (2002) instead choose to maximize the utility of a newborn agent—they find that optimal replacement ratios are typically around 0.5 for benefits that are limited in duration. In contrast, the results in this paper point to an optimal replacement ratio of zero independent of the duration. The welfare gain from eliminating the current system is 1.1 percent of aggregate consumption, a number which is somewhat larger than those found in the literature, and 0.59 percent of consumption if the transition is taken into account.

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