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## Should unemployment insurance be asset tested? ☆

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## ABSTRACT

We study asset-tested unemployment insurance in an incomplete markets model with moral hazard during job search. Optimal asset testing is weak and yields negligible welfare gains. The optimal replacement rate of an unemployed worker with zero liquidity is 9 percentage points higher than that of the median worker. Welfare rises by 0.03 percent in consumption equivalent terms. We develop a general welfare decomposition for heterogeneous agent models with transitional dynamics. Asset testing creates welfare gains due to redistribution and additional consumption during the transition phase, and welfare losses due to reduced consumption smoothing, lower consumption, and higher effort levels.

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## 1. Introduction

The financial situation during unemployment is a key determinant of job search behavior. Empirical evidence shows that liquidity-constrained households have higher job finding rates. Moreover, their job finding rates and consumption expenditures are more elastic with respect to the generosity of unemployment insurance (UI).<sup>1</sup> A natural question is therefore whether an optimal UI system should be asset tested. The answer to this question has to trade off two counteracting effects. On the one hand, liquidity-constrained households have the least ability to smooth consumption and the highest marginal utility of consumption. Following this reasoning, redistribution to liquidity-constrained households is good for social welfare, and so UI should be asset tested (i.e., UI benefits should decrease with assets). On the other hand, asset testing undermines the incentive for asset accumulation. Fewer assets at the beginning of an unemployment spell imply a larger consumption

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<sup>1</sup> Rendon (2006), Card et al. (2007), and Lentz (2009) document that higher asset holdings lead to prolonged job search. Chetty (2008) shows that the elasticity of the job finding rate with respect to unemployment benefits decreases with liquid wealth. Browning and Crossley (2001) show that unemployment insurance improves consumption smoothing for poor agents, but not for rich ones.

drop and reduce the internalization of the costs of unemployment, as well as the smoothing of those costs across time.<sup>2</sup> This reasoning suggests that UI should not be asset tested. It is an open question which of the two effects dominates.

We answer this question in an incomplete markets model with moral hazard during job search calibrated to the U.S. economy. We find that asset testing is optimal but weak: the optimal replacement rate of an unemployed worker at the borrowing constraint is a mere 9 percentage points higher than that of the median worker. The welfare gains from introducing optimal asset testing are negligible: welfare rises by only 0.03 percent in consumption equivalent terms. We conclude that the absence of asset testing in the current U.S. unemployment insurance system is approximately optimal.

We decompose the welfare change from the reform to examine the countervailing effects of asset testing. We find that effects related to redistribution (inequality) and additional consumption during the transition phase yield welfare gains, whereas effects related to consumption smoothing (uncertainty) and level changes of consumption and effort yield welfare losses. We provide a simple two-period model to discuss the trade-off between redistribution and consumption smoothing analytically. Moreover, we relate our results to previous findings on asset testing based on single-spell models of unemployment. These models emphasize the welfare gains from redistribution and are therefore severely biased toward asset testing.

Due to the complexity of the government's problem in our setup, we refrain from a characterization of the second best allocation and follow the large strand of the literature that uses calibrated models to study the optimal policy for a restricted class of policy instruments (Ramsey optimal policy).<sup>3</sup> We build an incomplete markets model in which workers are randomly separated into unemployment and exert unobservable effort to influence their chances of finding a job. Workers save in a risk-free asset and have access to a limited amount of unsecured credit. The asset distribution is thus endogenous and depends, in particular, on the structure of the UI system. For simplification, we assume that assets are observable for the UI agency without costs. Including such costs would further strengthen our conclusion that the absence of asset testing is approximately optimal.

Our quantitative analysis imposes strong discipline on the model's parameters. We calibrate the model according to empirical evidence on U.S. job finding and separation rates, holdings of liquid assets, and the availability of unsecured credit. For the calibration of liquid assets, we construct alternative liquidity measures from the 2004 Survey of Consumer Finances (SCF). Our calibration focuses on the median household, but we provide a sensitivity check that targets further quantiles of the distribution.

Starting from the calibrated benchmark economy, we study the utilitarian welfare effects of UI reform. We first explore asset-independent UI systems. We find that the current U.S. system with a replacement rate of 50 percent is close to optimal if the level of the replacement rate is the only policy instrument. This result is in line with [Chetty \(2008\)](#), who analyzes unemployment insurance with a sufficient statistic approach.<sup>4</sup> In a second step, we explore simple parametric functional forms of asset tests. We show that the optimal slope of UI benefits with respect to assets is negative but very close to zero. We show that this result is robust to alternative parameter values, alternative definitions of liquid assets, additional asset heterogeneity, simultaneous changes in tax rates and UI benefits, and the class of Epstein–Zin preferences.

We extend previous work on the decomposition of the welfare effects from policy changes. Our decomposition applies to a large class of heterogeneous agent models with transitional dynamics.<sup>5</sup> We decompose the welfare effects of asset testing into level changes of consumption and effort, changes in cross-sectional heterogeneity and uncertainty, and transitional effects. The decomposition finds two welfare-improving effects from introducing asset testing. First, asset testing redistributes resources from asset-rich to asset-poor unemployed households. This mitigates cross-sectional inequality within the group of unemployment workers but not across the groups of employed and unemployed workers. Total inequality therefore improves only marginally. Second, asset testing lowers the incentive for saving, and thus agents enjoy a transitional gain from asset decumulation during the transition phase after the policy reform. On the other hand, asset testing brings a number of negative consequences. First, asset testing reduces the incentive to save. This exacerbates the consumption drop from unemployment and increases the amount of uncertainty that agents face. Second, it raises job search efforts in order to escape from unemployment more quickly. Finally, the reduced incentive to save causes a negative income effect due to lower asset income.

We also provide a link to the literature on single-spell models of unemployment. Such models have been widely used for the analysis of optimal UI, including the role of asset testing. In single-spell models, workers are initially unemployed but remain employed once they have found a job. The initial asset distribution of the unemployed is exogenous. When we explore a single-spell version of our model, we see that the optimal slope of UI benefits with respect to assets becomes much more negative—about six times as large in absolute value. This shows that heterogeneity in asset holdings among unemployed workers creates a strong motive for asset testing. Once we endogenize asset heterogeneity in a model with repeated employment and unemployment spells, we obtain a strong countervailing force due to the reduced incentive

<sup>2</sup> [Feldstein and Altman \(1998\)](#) argue that asset-based unemployment insurance systems reduce moral hazard, because agents internalize the costs of their unemployment spell. [Shimer and Werning \(2008\)](#) show that savings technologies emulate the optimal consumption dynamics during unemployment and reemployment in a framework with limited planner instruments.

<sup>3</sup> See [Hansen and Imrohoroglu \(1992\)](#), [Wang and Williamson \(2002\)](#), and [Abdulkadiroglu et al. \(2002\)](#), for example.

<sup>4</sup> [Chetty](#) derives a formula for the optimal benefit level based on a number of sufficient statistics with natural empirical counterparts. Since his approach does not rely on functional form assumptions, the fact that we find similar results provides support for our calibration strategy.

<sup>5</sup> [Benabou \(2002\)](#) and [Floden \(2001\)](#) provide similar formulas for steady state comparisons with multiplicative preferences.

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