Reexamining the consumption smoothing benefits of Unemployment Insurance ☆

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ABSTRACT

The Great Recession spurred renewed interest in the moral hazard effects of the Unemployment Insurance (UI) program, however little research has focused on determining its benefits. This paper examines the consumption smoothing benefit of the UI program over the last 40 years, finding strong evidence of heterogeneity in this effect over time. In particular, the effects of UI are smaller in the 1990s compared with the 1970s. The 1990s were unique because of the long period of low unemployment rates as well as relatively low UI program generosity, thus we test whether the consumption smoothing effects vary by the state unemployment rate and average program generosity. We find suggestive evidence that the effects are larger when the state unemployment rate and average generosity are high. Together, these two dimensions can explain around 30–46% of the differential effect that we find in the 1990s.

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1. Introduction

During the Great Recession, roughly 700,000 workers lost their jobs every month,[1] and more than 10 million individuals received Unemployment Insurance (UI) between 2007 and 2010 (Vroman et al., 2011). The size of the recession has generated renewed interest in understanding the moral hazard effects of the UI program (Rothstein, 2011; Farber and Valletta, 2011; Hagedorn et al., 2013) and the relationship between these effects and the optimal level of benefits (Landais et al., 2010; Schmieder et al., 2012; Kroft and Notowidigdo, 2014; Lalive et al., 2013). Most studies focus on providing new estimates of the social costs of UI, however, and ignore its potential benefits, which are also fundamental for the calculation of optimal benefit levels.

Upon job displacement, earnings are estimated to fall by roughly 25% in the first year and this drop remains large for many years afterwards (Stevens, 1997; Jacobson et al., 1993). Moreover, one third of the unemployed do not have enough savings to replace even 10% of their lost earnings (Gruber, 2001). The consumption smoothing effects of UI may therefore play an important role in the efficacy of the safety net. Despite this, the existing literature on the consumption smoothing benefits of UI is limited. Gruber (1997) provided the first such estimates for the U.S. in the 1970s and 1980s, finding that a 10 percentage point increase in UI generosity leads to a 2.8% reduction in the fall in consumption upon job loss. Two other recent papers examine this question, but neither analyzes the magnitude of the consumption smoothing effect for the most recent decades in the U.S.[2]

While new estimates of the moral hazard effects of UI have been generated as a result of the Great Recession, recent estimates of the consumption smoothing effects of UI are not available. Given the long periods of economic expansion in the 1990s and mid 2000s (Zarnowitz, 2000) and the changes to the safety net that have taken place since the late 1980s — both to the UI program itself and other welfare programs (Bitler and Hoynes, 2010) — it is unclear whether the consumption smoothing effects that have been documented previously still hold.

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[2] First, Browning and Crossley (2001) use Canadian data from the 1990s and find that the average effect of UI on total consumption is statistically insignificant and smaller in magnitude compared to Gruber (a 10 percentage point increase in UI generosity leads to 0.8% reduction in the fall in consumption). Second, Kroft and Notowidigdo (2014) use the same sample as Gruber (1997) to examine how the consumption smoothing effects vary over the business cycle, finding no evidence of heterogeneous effects.

Six years after the official end of the Great Recession, the efficacy of UI and its optimal level of benefits remains a contentious political issue. Therefore quantifying the benefits of this program is especially important today, and this paper uses the 1968–2011 Panel Study of Income Dynamics (PSID) to provide new estimates of the consumption smoothing effects of UI.

The PSID is well suited for our analysis in several ways. First, it is a panel that follows individuals over time, which allows us to observe transitions into unemployment. Second, information about food consumption is collected annually, which to our knowledge makes this the only data set for which we can observe consumption smoothing at the individual level. Third, it spans more than 40 years, which allows us to examine how the benefits of UI may have changed over time. The main limitation of the PSID is the small sample size — only about 5000 families are interviewed each year. Additionally, we are only able to measure food consumption, rather total consumption. However, we believe that the uniquely detailed individual level data in the PSID outweigh these limitations.

Our core specification focuses on a sample of heads of household who transition from employment to unemployment, and it relates the changes in consumption observed over this transition to the generosity of UI benefits. While in principle we could use the benefit amount that an individual actually receives, we take a different approach by calculating the benefit amount that an individual is eligible for based on past wages, state of residence, year of unemployment, and number of children. This allows us to avoid problems of selection into take-up of UI, which is endogenous and could lead to biased estimates. This methodology was used also by Gruber (1997), and has been used in other contexts to estimate the effects of various safety net programs (Currie and Gruber, 1996a, 1996b; Dahl and Lochner, 2012). We use these eligible benefit amounts to construct our measure of UI generosity — the after-tax replacement rate — which is calculated as the after-tax weekly UI benefits divided by the after-tax weekly pre-unemployment wages. Since wages enter directly into the formula for UI benefits, we implement several checks to ensure that the potential endogeneity of lagged wages are not biasing our results.

Our estimate of the food consumption smoothing effect of UI over the full sample period is small compared to the previous literature — a 10 percentage point increase in UI generosity leads to a statistically insignificant 1.0% reduction in the consumption drop upon unemployment (off an average fall in consumption of 7%). We find that this small effect is driven by the fact that the consumption smoothing effect of UI was heterogeneous across decades, and significantly smaller in the 1990s compared to the 1970s. This result is generally robust to our sample and variable selection choices, as well as accounting for the potential endogeneity of wages. Additionally, we find evidence that the heterogeneity across decades is not explained by changes in the fraction of income that individuals spend on food over time, and we find similarly heterogeneous effects over time when analyzing imputed total consumption, suggesting that our findings may be applicable to total consumption as well.

We explore two key mechanisms that could explain the smaller effect in the 1990s. Since this decade was a period of a long economic expansion, we first analyze whether heterogeneous consumption smoothing benefits with respect to the state unemployment rate may contribute to this smaller effect. We find suggestive evidence that the consumption smoothing effects of UI are concentrated among individuals who are unemployed in states and years with high unemployment rates. These heterogeneous effects may be due to UI benefit extensions, longer durations of unemployment or higher take-up of UI benefits that occur during recessions. Second, we investigate whether the consumption smoothing effects are non-linear with respect to the state average replacement rate. Lower average replacement rates could lead to smaller consumption smoothing effects because of their negative effect on take-up rates (Anderson and Meyer, 1997) or because only replacement rates of

a certain level affect consumption smoothing. Indeed, our findings suggest that in states and years with above median UI generosity, the consumption smoothing effects of UI are larger. Once we take into account these two dimensions of heterogeneity, the difference between the effect in the 1990s and the 1970s is reduced by 30–46%.[3]

The rest of the paper proceeds as follows. In Section 2 we provide background information on the UI program and the previous literature that analyzes its effects. In Section 3 we describe our empirical strategy and how we calculate the UI benefits that an individual is eligible for. Section 4 describes the PSID data and Section 5 presents the results. Finally, we conclude in Section 6.

2. Background on Unemployment Insurance

UI is a joint federal-state program that provides cash benefits to workers who have been laid off and are searching for work. Each state funds their own program through payroll taxes, except when the state or national unemployment rates become very high, at which point the states can receive supplemental funding from the federal government. As a result, the benefit amount varies by state, and in each state it is computed from formulas that depend on previous earnings and number of children. These formulas are frequently changing across states and over time, and Fig. A.1 provides an example of this variation for several states over time.[4] One might be concerned that changes in these formulas are endogenous and correlated with other state characteristics such as local economic conditions. Hsu et al. (2013) conduct detailed tests of the correlations between UI generosity and states' unemployment rates, GDP growth, house price growth, and average wages, finding that these relationships are very close to zero.

Previous studies have used this type of variation to analyze both the benefits and costs associated with UI. The literature on the costs of UI, specifically the moral hazard effects of lengthening durations of unemployment, is very extensive. See for example Meyer (1990), Katz and Meyer (1990), Lalive et al. (2006) and Card et al. (2007). All of this work finds that more generous benefits, and longer benefit durations, lead to longer unemployment durations. Related to our finding of heterogeneous consumption smoothing benefits with respect to the state unemployment rate, Schmieder et al. (2012) and Kroft and Notowidigdo (2014) find that these moral hazard effects are significantly smaller in recessions than expansions.

On the other hand the literature on the benefits of UI is very limited. Pioneering work was done by Gruber (1997), who used the variation described above to look at the consumption smoothing benefits of UI in the PSID. He constructs benefit eligibility using individuals' characteristics, and finds that a 10 percentage point increase in the replacement rate leads to a 2.8 percent reduction in the fall of food consumption upon job loss (off a mean fall in consumption of 7%). Taking a slightly different approach, Browning and Crossley (2001) use changes in the generosity of Canadian UI benefits at the federal level in the 1990s to examine how differences in the replacement rate affect individual's ability to consumption smooth as measured by total consumption rather than food consumption. Their results of the average consumption smoothing effects are slightly smaller in magnitude relative to Gruber (1997), and not statistically different from zero. In addition, they find that these effects are

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[3] Our limited sample size leads to imprecise results, and we cannot rule out the possibility that these dimensions explain as little at 7% or as much as 94% of the differential effect in the 1990s.

[4] The data for this figure come from a simulated replacement rate, which entails using a fixed, national sample of unemployed individuals and assigning it to each state and year consecutively. After each assignment we run the sample through our UI benefit calculator and then collapse to generate an average replacement rate for each state and year. Therefore these state averages are only affected by state laws and not by differences in wages or demographics.