The Effect of Unemployment Benefits on Reservation Wages: Evidence from Natural Experiments

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Abstract

This paper contributes to the current debate (see AER) about how to interpret wage effects of extensions of unemployment insurance (UI) benefits. Is it mostly through unemployment duration – i.e., human capital depreciation etc. – that UI affects wages, or are reservation wage effects – i.e., higher demands towards a future job match – of key importance as well? The two channels lead to fundamentally different policy conclusions on how (non-)beneficial UI extensions are. This paper is based on a unique combination of register data, which will make it possible for the first time to consider all the three necessary outcomes – reservation earnings, realized earnings and unemployment durations – for the same population and within the same natural experiments. Based on Swiss data, we explore different discontinuities with respect to potential benefit durations (PBD): at ages 25 and 55 as well as a work requirement (contribution duration) threshold for prime aged individuals. Preliminary results point to the existence of a reservation wage effect, in particular among older job seekers. For the latter, findings suggest that, per 20 days of extended PBD, reservation earnings increase by about 1%. The merge of realized earnings data is ongoing.

Keywords: Reservation Wages, Job Search Behavior, Unemployment Insurance, Extension of Benefits, Work Requirements

JEL Codes: J64, J65

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Extended Abstract

The debate on the role of unemployment insurance (UI) extensions as a measure of economic policy in business cycle downswings is long-standing. It repeatedly gets renewed in its political saliency in recessionary periods, lastly due to the Great Recession. For instance, the U.S. saw a large rise in the potential benefit durations (PBD) in UI; the maximal PBD went up to 90 weeks temporarily. However, how do PBD extensions affect the individual economic outcomes (wages, job quality) of concerned workers in the mid-run? Empirical large-scale evidence on this question is still quite scarce. Moreover, the explanation of found wage effects is not straight-forward per se, since several channels operate and can cancel out each other. Thus, the distinction of explanatory channels is key for an economically profound interpretation.

This issue is taken up by two current empirical papers which are forthcoming or close to acceptance in the AER, Schmieder et al. (2016, forthcoming) and Nekoei & Weber (2016, R&R). Based on job search models, they both put two channels forward for understanding wage effects: unemployment duration and reservation wages. On the one hand, extended UI may lead to prolonged unemployment durations, as individuals have more (potential) time available for paid job search. Due to reasons like human capital depreciation or scarring (negative signals), workers who stay longer in unemployment may be confronted with negative demand-side effects yielding worse job and wage offers. On the other hand, the improved insurance effect of UI may allow for positive supply-side effects, i.e. the individuals may use the available time to look for better job matches. The latter implies increased reservation wages. Since both of these channels have opposite effects on realized wages, the empirically observed wages represent an overlap of the two presented impacts.

The current empirical literature was not yet able to disentangle these two impacts, mostly due to the lack of direct information on individual reservation wages (or -earnings), which must be linked to the usual register data. Schmieder et al. (2016) claim that in their case – they use German register data and find small negative effects of UI extensions on realized earnings – reservation wage effects do not matter for the observed earnings outcomes. This is, however, a purely theory-based statement, which depends on the implied assumptions. Also, Nekoei & Weber (2016) discuss reservation wage effects only in a theoretical context – they use Austrian register data and find positive earnings effects of UI extensions.

This paper is the first that can present direct empirical evidence on the effects of UI benefit extensions on observed reservation earnings. There is some empirical literature that discusses evidence on observed reservation wages, a prominent recent example being Krueger & Mueller (2016). However, this evidence is not linked to natural experiments in UI which exogenously vary benefit generosity. This is possible here, we exploit a unique data set of about 9000 observations

on reservation earnings, which has become part of the register data of the Swiss UI (due to a project[1]). It covers the inflow[2] of UI claimants in one region in Switzerland (canton of Fribourg) between September 2012 and March 2014. Reservation earnings are surveyed by the responsible caseworker[3] in the first meeting with the job seeker, usually about 3 weeks after registration with the UI. The commonly used reservation wage question is applied: "which is the minimal gross (monthly) earnings you would require in order to accept a job offer?". This information on individual reservation earnings is part of larger base of UI register data which comprises a broad collection of socio-demographic and benefit-related information. The register data are also available for the rest of the country (full coverage).

The natural experiments that I exploit are, in line with the mentioned literature, age discontinuities in the eligibility for UI benefits. Specifically, I will analyze the effects of the age thresholds at ages 25 and 55 on reservation earnings as well as (in preparation) on realized earnings and unemployment durations. Under age 25, young job seekers without children are subject to a potential benefit duration of 200 working days. From age 25 onwards, eligible job seekers have the right to collect a maximum of 400 days of benefits. The next systematic threshold is at age 55, above which individuals are eligible for a potential benefit duration of 520 days. Beyond this, I also exploit a discontinuity in the UI eligibility scheme which relates to the work requirement: to be eligible for the above-mentioned full PBDs, the job seeker needs to have worked and contributed the UI payroll tax within at least 18 months out of the last 24 months. Otherwise, if she just contributed 12 to 17 months, she will be subject to a PBD of 260 days. This discontinuity at 18 months is applicable for individuals up to age 55 and thus allows the analysis of prime aged individuals.

First preliminary results

Figure 1 below documents the distribution of reservation earnings of 9067 job seekers, covering the full age range of the inflow population (18 to 65). The mean of the gross monthly reservation earnings amounts to 4130 CHF. Note that mean realized gross earnings on the Swiss labor market are higher than this figure. [I am currently applying to have our register data base linked to individual social security earnings. This will allow complementing the analysis by addressing

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[1]In the context of a field experiment to test a new profiling system, the register data base was extended by a series of variables, including reservation earnings, expected earnings and some more items on job search and application behavior. The project has been conducted in a cooperation between the Swiss State Secretariat of Economic Affairs and the author.

[2]The coverage is subject to some non-response by caseworkers. We are running analyzes on the characteristics of the non-response, up to now we couldn't find systematic biases.

[3]The fact that the caseworker asks the job seeker about her/his reservation earnings within the meeting delivers at least two advantages: First, the risk that the job seeker provides an unrealistic reply is very small; the caseworker will ask back in case of unrealistic answers. Second, the reporting via the "official" caseworker channel ensures higher response rates, compared to a less binding direct job seeker survey.

realized earnings.]

The age thresholds at ages 55 and 25 in the benefit eligibility scheme are assessed in Figures 2 and 3. The graphical analysis suggests in both cases a discontinuity in the reservation earnings path in the expected direction: above the respective thresholds, higher PBDs are available, and job seekers seem to react to this extended potential time span of paid search by declaring higher reservation wages. In analogy to the realized earnings paths on the labor market, we see that also reservation earnings show a steeper growth as a function of age among the younger job seekers than among the older.

First very preliminary results from OLS regressions for the populations around the mentioned age thresholds are documented in Table 1. The preferred specification (1) – which controls for a broad variety of socio-demographic and benefit-related information from the register (occupations, education, gender, nationality, time of inflow/seasonality, level of replacement ratio, employability score, Public Employment Service region fixed effects etc.) – suggests a threshold effect of about 280 CHF[4] in reservation earnings for job seekers around age 55. This has to be taken in relation with the size of the PBD change at the discontinuity, which amounts to 120 days. Thus, roughly, this means that per 20 days of extended PBD, reservation earnings increase by 1%, relative to the mean of the corresponding population. For the younger job seekers the reservation wage effect turns out to be weaker as specification (2) suggests. The estimate is of similar size but the underlying PBD change is substantially larger (200 days).

A first preliminary estimate of the reservation wage effect identified by the work requirement threshold of 18 months is presented in Table 2. The effect estimated for the age group 40 to 55 (specification (3)) turns out to be a bit smaller than the one found for the age threshold at 55. The effect for the age group 20 to 39 (specification (4)) is even smaller and insignificant. This suggests again that reservation wage effects are substantially age-dependent.

Note that these specifications are still very preliminary. I couldn't model appropriate age trends yet; linear trends are an obvious miss-specification within the different models, as remarkably high standard errors and unrealistic estimates show (see (b) specifications, reported for background documentation). Thus, a next step in the development of the paper should involve the improvement of the estimation specifications. Moreover, I will assess pooled estimation models, in order to increase sample size and statistical power. The current models for sub-populations imply comparably high standard errors on the estimates of the reservation wage effects. And, most importantly, in the next steps the paper will be complemented by analog estimations of the treatment effects on the other two related key outcomes: realized earnings and realized unemployment durations.

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[4]1 CHF=1.00 USD=0.92 EUR

Jointly considering the treatment effects on those three outcomes for the *same* population will allow generating new empirical insights into the mentioned policy question. It will provide novel direct evidence for assessing the relative importance of the reservation wage– and the unemployment duration– channel for explaining wage effects of UI extensions.

Mentioned Literature

Krueger, Alan B. and Andreas Mueller (2016). "A Contribution to the Empirics of Reservation Wages," NBER Working Papers 19870. Forthcoming in *AEJ: Economic Policy.*

Nekoei, Arash and Andrea Weber (2016). "Does Extending Unemployment Benefits Improve Job Quality?". R & R for *American Economic Review.*

Schmieder, Johannes F., von Wachter, Till, and Stefan Bender (2016): "The Effect of Unemployment Benefits and Nonemployment Durations on Wages". Forthcoming in *American Economic Review.*

Figures and Tables

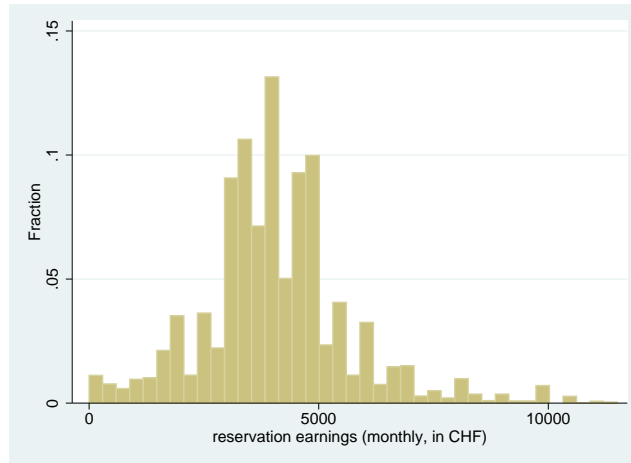Figure 1: Distribution of reservation earnings (N=9067)

Figure 2: Reservation earnings around age threshold 55: extension of potential unemployment benefits (from 400 to 520 days)
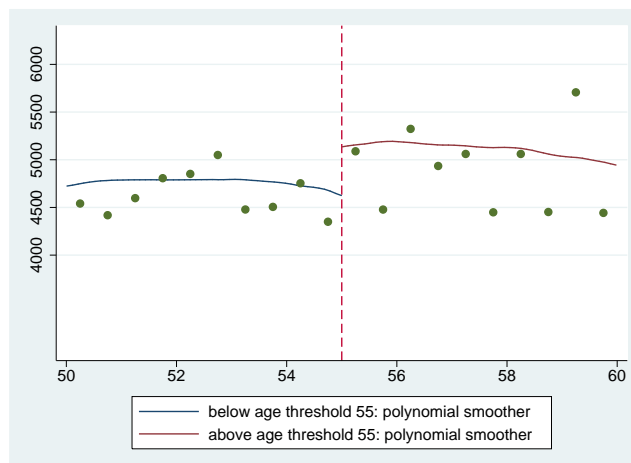
Figure 3: Reservation earnings around age threshold 25: extension of potential unemployment benefits (from 200 to 400 days)
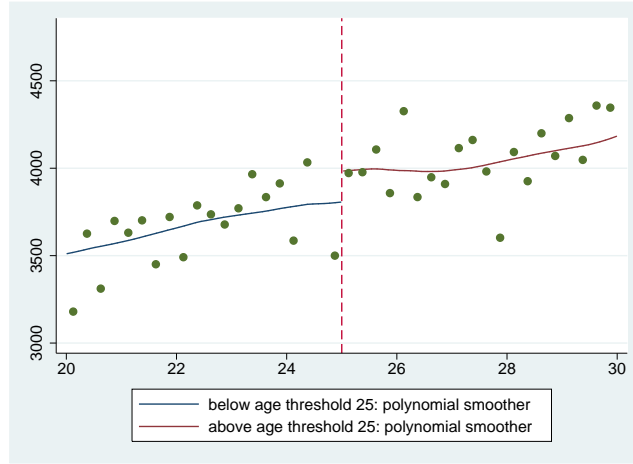

Table 1: The effect of extended potential benefit durations on reservation earnings: age thresholds 55 and 25

outcome	(1)	(1b)	(2)	(2b)
	age threshold 55		age threshold 25	
	reservation earnings (CHF, monthly)			
threshold effect	279.9*	501.8*	334.1***	-108.3
	(160.3)	(303.8)	(59.92)	(124.0)
Δ PBD (in days)	120	120	200	200
covariates	yes	yes	yes	yes
linear trend	no	yes	no	yes
outcome mean	3893	3893	4915	4915
observations	550	550	1,212	1,212
R^2	0.615	0.616	0.394	0.402

$*p < 0.10, **p < 0.05, ***p < 0.01$. OLS regressions. Robust standard errors in parentheses. 1 CHF=1.00 USD=0.92 EUR. Reservation earnings: minimal monthly gross earning which job seeker is willing to accept.

Table 2: The effect of extended potential benefit durations on reservation earnings: full work requirement threshold: 18 months of contribution (out of 24)

	(3)	(3b)	(4)	(4b)
	contribution threshold 18 months			
	ages 40-55		ages 20-39	
outcome	*reservation earnings (CHF, monthly)*			
threshold effect	169.5**	-154.7	69.36	-149.3
	(74.97)	(171.6)	(46.42)	(103.7)
Δ PBD (in days)	140	140	140	140
covariates	yes	yes	yes	yes
linear trend	no	yes	no	yes
outcome mean	4753	4753	4176	4176
observations	2,000	2,000	3,067	3,067
R^2	0.565	0.568	0.425	0.427

$*p < 0.10, **p < 0.05, ***p < 0.01$. OLS regressions. Robust standard errors in parentheses. 1 CHF=0.96 USD=0.84 EUR. Reservation earnings: minimal monthly gross earning which job seeker is willing to accept.