What Drives Wage Effects of Unemployment Benefits?
Evidence from Natural Experiments and Reservation Wage Data

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Abstract

How should we interpret wage effects of extensions of unemployment insurance (UI) benefits? This paper contributes to the current debate (see AER) about this highly policy relevant issue. 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 allows 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 the age threshold of 25 as well as a work requirement (contribution duration) threshold for prime aged individuals. The results show significant and relevant reservation wage effects which turn out to be increasing in the age of job seekers. Findings suggest that, per 20 days of extended PBD, reservation earnings increase by about 1%. Effects on realized earnings and non-employment duration provide a picture consistent with these findings. Interestingly, they reveal relevant age differences in the relative importance of the two mentioned channels of wage effects. The decomposition of the latter is further quantified and will also be structurally analyzed.

Keywords: Unemployment Insurance Benefits, Decomposition of Wage Effects, Reservation Wages, Job Search Behavior, Natural Experiments, Work Requirements

JEL Codes: J64, J65

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1 Introduction

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. Also in Europe some UI systems feature mechanisms to extend PBD generosity in periods of unfavorable economic conditions. Thus, it is of key importance for policy design to be empirically informed about the consequences of PBD changes on individual welfare.

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 relatively 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. Policy conclusions can heavily differ depending on which explanatory channels are predominant.

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 strengthened 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 impacts on realized wages, the empirically observed wage effects are the result of an overlap of two countervailing forces.

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 conceptual 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.[1] There is some empirical literature that discusses evidence on observed reservation wages, a recent example being Krueger & Mueller (2016), a prominent older one Feldstein & Poterba (1984)[2]. However, this evidence is not linked to natural experiments in UI which exogenously vary benefit generosity. As a consequence, they cannot provide a causal analysis on the relation between benefits, reservation wages and labor market outcomes.

Further related to the issue of estimating reservation wage elasticities with respect to benefit changes is an older literature which mainly relies on structural approaches; for an overview see Devine & Kiefer (1991). These older estimates, however, report elasticities with respect to changes in the benefit *level* – whereas the current literature, including this study, predominantly focuses on impacts of adapted PBD. Again, moreover, this earlier literature is neither able to rely on quasi-experimental identification nor on linked register data including reservation wages and realized earnings. This unique data combination available in this study will allow to deepen the causal analysis towards decomposing behavioral channels that determine the wage effects of unemployment benefits.

This paper is structured as follows. In the next section we will discuss the natural experiments exploited in this study as well as the data, institutional background and econometric framework. Next, we will shed light on characteristics of the used reservation wage data. Section 4 presents and discusses the results of the quasi-experimental estimations of reservation wage-, wage- and non-employment duration effects of adapted unemployment benefit generosity. Section 5 addresses reduced-form and structural decompositions of the wage effects. Section 6 concludes.

2 Empirical Setup

2.1 The Natural Experiments

Such a joint causal analysis of the effects of unemployment benefits (PBD) on reservation wages, realized wages and non-employment durations is based on a set of natural experiments in the Swiss unemployment insurance system.

The natural experiments that I exploit rely, in line with the mentioned literature, on an age discontinuity in the eligibility for UI benefits. Specifically, I analyze the effects of the threshold at age 25 on reservation earnings as well as on realized earnings and unemployment durations. Under age 25, young job seekers without children are subject to a potential benefit duration of

[1] Currently, Le Barbanchon et al. (2016) work on an analysis of empirical reservation wage data for the case of the French UI. They do, however, not dispose of data on realized earnings.

[2] A further relatively recent example is Addison et al. (2010)

200 working days. From age 25 onwards, eligible job seekers have the right to collect a maximum of 400 days of benefits.

Table 1: The natural experiment on potential benefit durations (in working days), around age 25

	w/o children	*with children*
< 25	200	400
≥ 25	400	400

Table 2: The natural experiment on the contribution duration (work requirement) threshold around 18 months (within a frame of 24 months)

months of UI contribution	*(for age 25-55) benefit days*
< 18	260
$18 - 24$	400

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 PBD of 400 days, the job seeker needs to have worked and contributed to 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 for the analysis of prime aged individuals – specifically, for the *comparison* of reservation wage (and labor market outcome) effects *between different age groups*.

2.2 Data and Institutional Background

Data The study is based on a unique data set of 8886 observations on reservation earnings, which has become part of the register data of the Swiss UI (due to a project[3]). It covers the inflow[4] 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[5] in the first

[3] 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.

[4] 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.

[5] 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.

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 a 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). Finally, the UI register data including reservation earnings are linked, on the individual level, to data on realized earnings and employment from the social security register. These data allow tracking individual earnings and employment paths in a monthly precision. So far, the maximum we can observe is up to 18 months after unemployment exit (exogenously censored at the end of 2014).

Institutional Background The generosity of UI benefits (of PBD) in Switzerland is on an average level within Europe. For fully eligible prime age individuals, potential benefit duration is 400 working days. For young or only partially eligible workers, benefit duration is reduced by 200 or 140 days, for older workers it is topped up by 120 days. The replacement ratio is 80%, for individuals above a certain earnings threshold or without children 70%.

The Swiss UI system is further characterized by strict monitoring and regular requirements to actively engage in job search activities, counseling and labor market policy programs. Claiming UI benefits entails thus a number of obligations. These include the provision of sufficient search effort, the regular appearance at caseworker meetings, the participation in active labor market programs prescribed by the caseworker and the acceptance of "suitable" job offers. The local Public Employment Service (PES) is obliged by law to monitor the job seeker's compliance with these requirements and rules. After the exhaustion of the PBD without success in job finding, individuals transfer into the welfare system. The level of the means tested social aid amounts to about 68% of the level of unemployment benefits, according to OECD.

2.3 Econometric Framework

This study analyzes the above-discussed natural experiments by means of classical diff-in-diff and RD estimation, following the large majority of the quasi-experimental literature on PBD effects. Since and additional control group is available for the natural experiment around age threshold 25 (see above), I apply a DiD estimation strategy. Specifically, the presented regression estimates are based on an empirical model of the following form:

$$\begin{aligned} y_i &= \alpha + x_i'\beta + \gamma^1 I_i^{post} + \gamma^2 I_i^{treat} + \delta D_i^{DID} \\ &\quad + \pi' f(age_i^{pre,post,c,t}) + \eta_t + \mu_r + \varepsilon_i \end{aligned} \tag{1}$$

The regression analyses control 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.), as represented by x. Moreover, calendar time dummy variables (month, year) are added, as well as regional dummies (PES, cantons), denoted by η_t and μ_r, respectively. The treatment effect parameter of interest is δ. It captures the causal effect of the described natural experiments, i.e. the impacts of changing PBD levels, differing by 200 or 140 working days, respectively. The treatment effects will be standardized by ratios per month of additional PBD and by the computation of elasticities.

y_i will contain the three outcomes of interest: reservation earnings – which are discussed in detail in the next section – and realized earnings and non-employment durations. The latter are defined as the time span between entry into unemployment insurance and the take-up of a new employment according to social security data. If an individual doesn't return to employment within two years, the non-employment duration will be consored (following the current wage effect literature). For the earnings outcome, the study currently focuses on the average monthly realized earnings, averaged over the first six months after non-employment exit. This design allows for a minimization of the numbers of missings in the earnings outcome variable. Further specifications of the latter will be assessed later as a robustness analysis (to do).

The second natural experiment around the contribution threshold of 18 months (out of 24) relies on RD estimates of the very similar form

$$y_i \quad = \quad \alpha + x_i'\beta + \delta D_i^{RD} + \pi' f(cmt_i^{pre,post}) + \eta_t + \mu_r + \varepsilon_i \tag{2}$$

Note that, in both specifications, I tested the application of different age trends within the sampling windows: on one hand flexible linear RD trends (i.e., allowing for separate trends for the four or two treatment/control groups separately); on the other hand step functions (indicator variables) by year of age. The preferred specification has been chosen according to the (non-)significance and the statistical fit (w.r.t. R^2 or likelihood) of the tested trends. It will be reported in the estimation tables. Note, however, that the age trends in general were of relatively minor importance and significance, possibly due to the relatively narrow sampling windows around the natural experiments.

3 Empirical Properties of Reservation Earnings

In the following I will shortly discuss a series of descriptive analyses on the dataset of reservation earnings as they were reported in the register data. The aim of the analyses is to document

the empirical properties of the reservation wage variable and the sample. Note that the sample is population-representative (at least for larger area of Fribourg, which represents a good average combining urban and rural population on both sides of the language border), as essentially the whole inflow into the PES of the area was subject to this additional reporting obligation implemented by the caseworkers.

Figure 1 documents the distribution of the reported (monthly gross) reservation earnings of the total sample of $N = 8886$. The total sample covers the full age range of the inflow population (18 to 61.5). The distribution turns out to be relatively close to normal. The mean is 4120 CHF (s.d. 1744), the median 4000 CHF [1 CHF = 0.84 EUR = 0.786 GBP]. Note that gross average earnings in Switzerland are clearly above this mean. Next, the reservation earnings are represented as a ratio relative to the monthly earnings in the last employment (which is reported in the UI register as insured earnings). Figure 1 also reports the distribution. The mean of this ratio is 1.04, the median 0.98. These figures are very close to Feldstein & Poterba (1984) and Krueger & Mueller (2016). These descriptive insights provide confidence that the reported reservation earnings are in line and thus well comparable to international evidence.

Next, we run a series of indicative regressions to explore the properties of the reported reservation earnings in relation to realized job search outcomes. Following job search theory, the reservation wage is supposed to affect the probability of accepting available job offers and thus to be a determinant of the duration to job finding.

Note, first, that the available reservation wages were reported at the beginning of the unemployment spell, about two to three weeks after UI entry (see above). Thus, they provide an indication of the general level of the reservation wage that the individual may have in her mind. We cannot empirically follow the path of the reservation wage over the unemployment spell[6]. According to the evidence of Krueger & Mueller (2016) from New Jersey, the reservation wage path for young individuals (approx. below 30) is flat. Older job seekers show a gently downward sloping path. Thus, it seems that the initial reservation wage is a good proxy for the individual's positioning in the reservation wage distribution and the approximate determination of its level.

Table 3 reports a series of Cox regressions that assesses the relation between the reported initial reservation earnings and the probability of exiting UI early into a job. We consider time windows of 50 and 180 days. A subsample of almost 900 observations shows at least two incidences of an unemployment spell in the sampling window (inflow between September 2012 and march 2014). For those we can add individual fixed effects to the regression. It is plausible that these observational regressions are affected by an omitted variable bias which could go against the expected negative correlation (e.g. in the case of unobserved ability or productivity). Indeed, it

[6] I do dispose of a subsample for which a second reservation earnings reporting has been recorded after about two months. This still needs to be explored.

turns out that the negative correlation becomes more apparent when conditioning on individual FE and thus eliminating unobserved time-invariant characteristics.

It is important to note that these reported regressions should be seen as an indicative test of correlation, without further causal interpretation. There could be further reasons why the real relations are more complex (for instance, they could be of non-linear nature etc.). However, the indicative assessment provides an additional element of evidence that the reservation earnings have been reported meaningfully in the sense of standard job search theory.

Finally, a whole series of further regression analyses has been conducted to gain insights on the determinants of the reported reservation earnings. From these it can be concluded that reservation earnings are meaningfully correlated to socio-demographic properties (like age, gender, education, experience). Interestingly, the regressions reveal that past earnings is a strong predictor of reported reservation earnings: it delivers an R^2 of 0.60 (in an OLS regression as a single explanatory variable). We tested as well the out-of-sample performance of past earnings as a predictor. The tests featured cross validation joint with either classical OLS regression or machine learning methods. They provided values of $R^2 = 0.71$ (OLS, LASSO) to $R^2 = 0.74$ (Random Forests). Thus, past earnings seem to be an important anchoring determinant of reservation earnings. This insight is, again, consistent with existing earlier literature.

4 Econometric Results: Natural Experiments

The joint quasi-experimental assessment of the effects of changes in benefit generosity on all the three key outcomes – reservation wages, non-employment durations and realized earnings – provides a unique empirical insight in the *relative importance* of the different channels of UI wage effects. In the next section, this will be further quantified in an according decomposition. Moreover, a structural empirical decomposition of the wage effect into its impact on the job offer arrival rate and on the job acceptance rate is currently work in progress. This will provide further behavioral insights.

4.1 The Effect of Unemployment Benefits on Reservation Wages

Do more generous unemployment benefits (in terms of longer PBDs) cause the job seeker's reservation wages to increase? The graphical evidence and the findings arising from the econometric models clearly and significantly support this hypothesis.

The age threshold at 25 and the contribution threshold at month 18 in the benefit eligibility scheme are assessed in Figures 2 and 3, respectively. 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.

The corresponding estimation results are reported in Table 4 for the age threshold of 25 and in Table 5 for the contribution threshold. The latter is split in three different age groups. These estimates allow for the computation of comparable *elasticities*, as reported in the tables. The preferred specification (6 year age window around threshold; stepwise age trends) for the first natural experiment yields a treatment effect estimate of slightly more than 200 CHF of reservation earnings per month. This implies a causal increase of reservation earnings by about 0.6% per additional month of PBD. Moreover, this corresponds to an elasticity of 0.11.

Table 5, which relies on the contribution threshold experiment for three different prime age groups, reveals significant treatment effects for all considered age groups. They correspond to elasticities between 0.11 and 0.15, increasing in age. Thus, the *reservation wage effect of UI benefits increases in importance in age*. The threshold effect increases from 160 to 250 CHF per month.

4.2 The Effect of Unemployment Benefits on Non-Employment Durations and on Wages

How do the reservation wage effects compare to the effects on the other behavioral channel – non-employment duration – and to the "final" outcome of the realized wage effect? Consequently, the same quasi-experimental analyses are run for the labor market outcomes of non-employment duration and realized earnings.

Figure 4 documents the graphical, unconditional results for the age threshold 25. The effects of an adapted PBD seem to be substantial for non-employment duration, total realized earnings and realized earnings while employed. The dimension of employment stability seems not to react. These results are confirmed by the corresponding regressions, as documented in the Table 6. Elasticities for the young job seekers are 0.06 for the wage effect and 0.34 for the non-employment duration effect.

We can compare these results to older age groups by considering again the contribution threshold experiment. Results are reported in Table 7. The wage (earnings while employed) effect turns out to be strongest among the age group 35-45, as well as the effect on total earnings ("income"). For job seekers above age 45 we do not find significantly positive earnings impacts of a higher PBD any more. So, the "middle aged" individuals seem to be most successful in turning selective job search into improved job matches (in terms of wages).

4.3 Joint Assessment of Benefit Effects: Elasticities

This unique data setup allows for a joint assessment of the effects of changing benefit generosity on the key outcomes. Table 8 compares the elasticities.

The results reveal a consistent picture of significant and economically relevant reservation wage effects of UI benefit generosity. The corresponding elasticities vary between 0.11 and 0.15, as function of increasing age. Consistent with a standard model of search theory, the elasticities representing the effects on realized wages (earnings) are below in size. They also show an age gradient – with expectation of the oldest age group. They youngest age group (around 25), on the other hand, reveals a strong reaction in terms of non-employment duration. They are remarkably elastic with respect to changes in benefit generosity: a decrease of the latter causes a substantial speed up of the job finding process.

Joint consideration of the findings provides a picture of remarkable differences in the *relative importance* of reservation wage- versus unemployment duration effects. Whereas among the young the moral hazard issue seems to be quite dominant – extended benefits cause a substantial slowdown of job finding – this is less the case for older job seekers. Individuals in (later) prime ages seem to benefit from additional PBD generosity by becoming more selective on accepted jobs entailing favorable wage consequences. Job seekers beyond 45 still show a comparably strong selectivity (in terms of the reservation wage effect) – but are not as successful any more in finding job matches that would substantially improve their income situation. The stability of found employment is barely affected in any of the age groups. Thus, the reservation wage effects dominantly translate into impacts on the level of realized wages.

5 Results: Further Decomposition of Wage Effect

In a final step, I aim at further decomposing and quantifying the relative importance of the different behavioral channels explaining the wage effect of unemployment benefits.

5.1 Reduced-Form Decomposition

I first proceed to implementing a reduced-form decomposition that separates the reservation wage-channels for the non-employment duration channels. The decomposition follows an expression derived by Schmieder et al. (2016). It has the following form:

$$\frac{dE[w^e(t;P)]}{dP} = \left[\frac{\partial w^e}{\partial \phi}\frac{\partial \phi}{\partial P}\right] + \left[\frac{\partial w^e}{\partial \phi}\frac{\partial \phi}{\partial t} + \frac{\partial w^e}{\partial \mu}\frac{\partial \mu}{\partial t}\right]\frac{dD}{dP}$$

Table 9 demonstrates the empirical reduced-form decomposition of the UI wage effect in its

components for the age group around 25 (other groups are work in progress). The reduced-form decomposition demonstrates the quantitative relevance of reservation wage effects – even for the youngest group of job seekers who show a strong reaction through the duration channel.

5.2 Structural Decompostion

Decomposition of effects by job offer arrival rate versus job acceptance rate.

$$\theta = \lambda[1 - F(\phi)] \tag{3}$$

Thus, the hazard of non-employment exit can be decomposed into the product of the job offer arrival rate λ and the probability of job acceptance if the offer exceeds reservation wage ϕ, i.e. $[1 - F(\phi)]$.

Following Eckstein & Van den Berg (2007), I model the joint distribution of t and w as:

$$Pr(t, w) = g(t)f(w|w > \phi) = (1 - F(\phi))e^{-\lambda(1-F(\phi))t}\lambda\frac{f(w)}{(1 - F(\phi))} \tag{4}$$

Assuming that ϕ is result of optimization, we can plug in... Express treatment effect as function of job offer arrival and job acceptance rate, respectively.

I am currently working on this extension of the empirical study.

6 Conclusions

This study exploits a unique combination of data and natural experiments to shed lights on the question what the drivers of wage effects of unemployment benefits are. The analysis allows to jointly consider the causal effects of PBS changes on reservation wages, non-employment duration and finally realized wages within the same natural experiments. Moreover, the natural experiments allow a comparison across age of the *relative importance* of the different channels via reservation wages and via unemployment duration. Finally, reduced-form and structural decompositions can shed further more light on the behavioral impact channels behind the estimated effects of unemployment benefits on realized wages.

The evidence reveals significant benefit effects not only on non-employment duration but also on reservation wages. Effects tend to increase in age. Middle-aged individuals seem to benefit most from increased PBD, in turning this additional time of paid job search into better job matches. Young job seekers around age 25 show the strongest effects with respect to the channel via adapting non-employment duration.

Thus, unlike current evidence for France (see Le Barbanchon et al. 2016), individuals on the Swiss labor market searching for jobs are sensitive to UI benefit generosity when it comes to choosing their selectivity towards job matches. A reason for the relevance of reservation wage effects could be rooted in the higher flexibility of the Swiss labor market as compared to countries like France (and Germany) featuring strong regulations in terms of minimum wage and employment protection. The latter may substantially restrict wage variability, in particular in the lower parts of the earnings distributions – i.e. among individuals who are predominantly represented in the population of unemployed. Thus, participants in more flexible labor markets like in the Swiss (and possibly also the Austrian) case dispose of a larger degree of freedom to adapt their decision in *both* basic dimensions of job search: search effort *and* reservation wage behavior.

Moreover, a comprehensive look at this novel evidence could also suggest that job seekers possibly show relevant *reference-dependence* in their job search behavior (see also DellaVigna et al. 2016, Koenig et al. 2016). Reservation wages seem to be strongly rooted in the wage level of the past job. This seems to serve as a reference point. A hypothesis is that older job seekers possibly set higher reference points and thus may suffer comparably more loss utility. This could result in a stronger wage-, in particular reservation wage effect.

Jointly considering the treatment effects on all three key labor market outcomes for the *same* population and natural experiments allows generating new empirical insights into the initially mentioned policy questions. The novel direct evidence for assessing the relative importance of the reservation wage- (or selectivity-) versus the unemployment duration channel for explaining wage effects of UI extensions can be useful for policy making. Based on evidence on the relative weight of the two behavioral channels, the design of UI benefit profiles and of incentives through labor market policy can be more specifically adapted to the individual's behaviors.

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Figures and Tables

Figure 1: Distribution of reservation earnings (N=8886): levels and ratio to past earnings

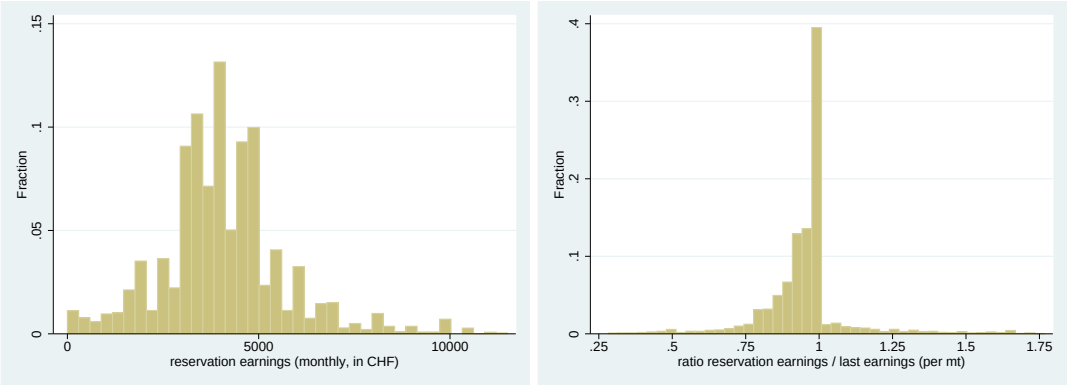


Figure 2: Reservation earnings around age threshold 25: extension of potential unemployment benefits (from 200 to 400 days), by DID groups, polynomial smoother

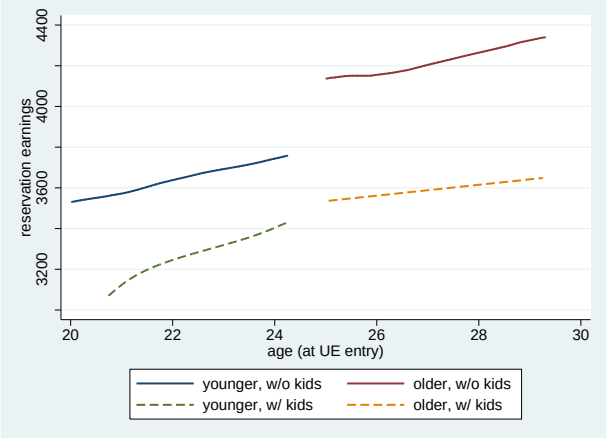


Figure 3: Reservation earnings by RD groups, ages 28–35, 35–50 and 50–54, polynomial smoother

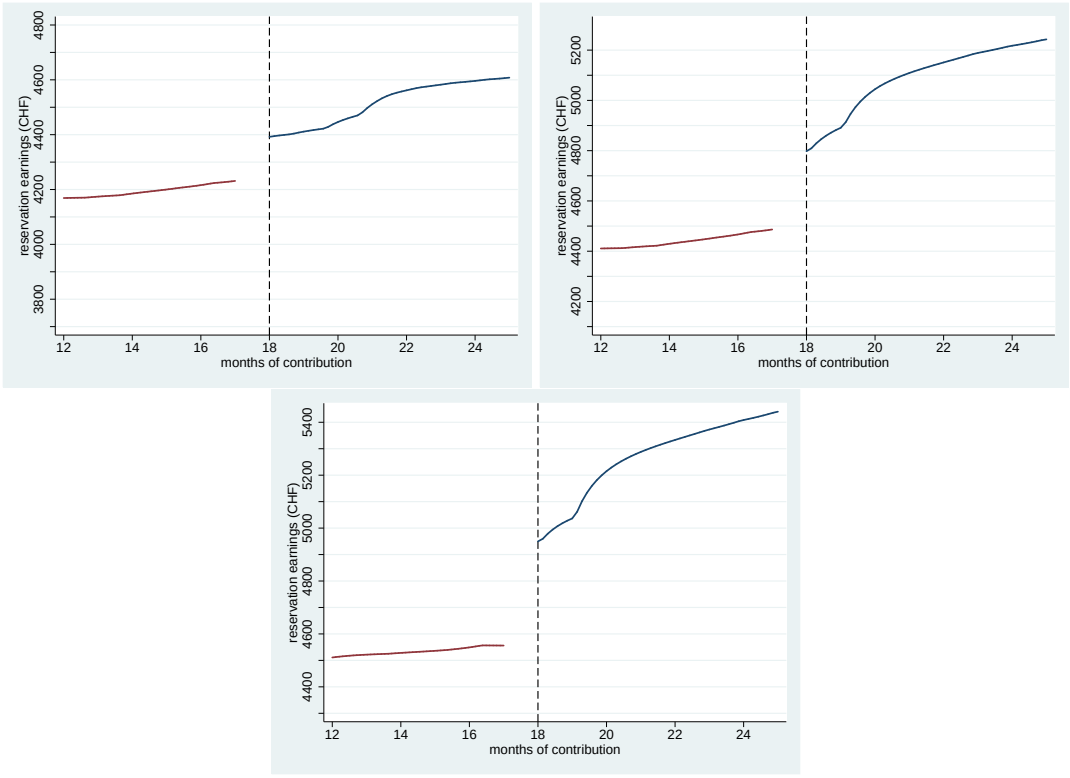
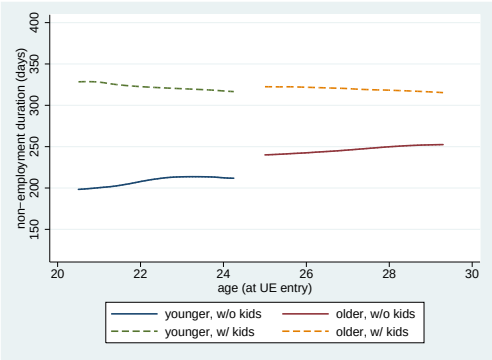
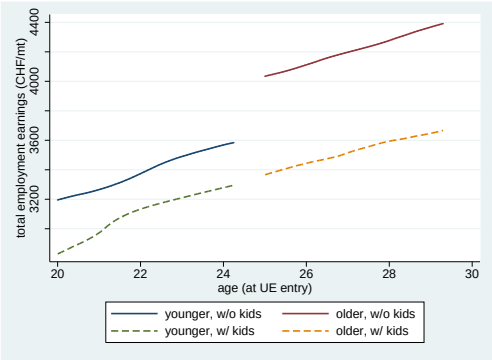


Figure 4: Graphical diff-in-diff assessments of outcomes around age threshold 25: non-employment duration, total monthly earnings (incl. zeros), earnings while employed (i.e. > 0), employment stability; polynomial smoothers

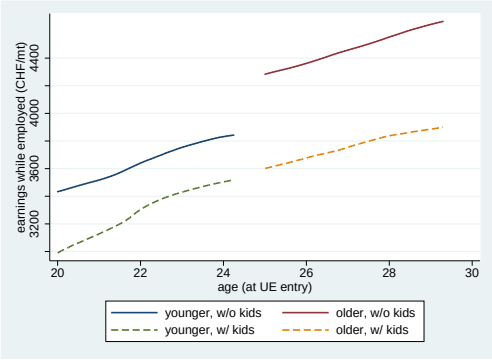
non-employment duration in days



total employment earnings per mt, individual average over 6 mt post-unemployment



earnings while employed, per mt, individual average over 6 mt post-unemployment



probability to be employed, individual average over 6 mt post-unemployment

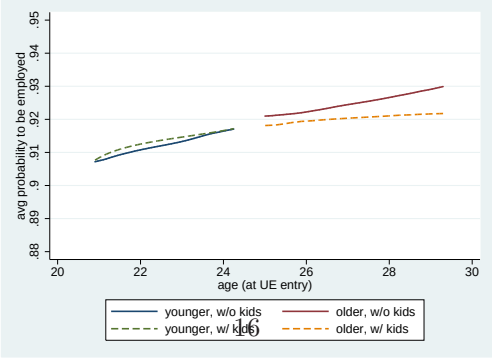


Table 3: The correlation between reservation earnings and early UE exit to a job: indicative regressions

	(1) Cox	(2) Cox	(3) Cox	(4) Cox
UE exit within	*50 days*	*180 days*	*50 days*	*180 days*
res. earnings	-0.0165	-0.0022	-1.249*	-0.202*
	(0.0428)	(0.0149)	(0.724)	(0.121)
ratio w^r/w^p	0.139	0.211*	-6.999**	-1.082
	(0.360)	(0.124)	(3.206)	(0.761)
indiv. FE			yes	yes
observations	7,049	7,049	865	865

Note: reservation earnings in 1000 CHF; ratio trimmed at top (1.5); X variables incl.

Table 4: The effect of extended potential benefit durations on reservation earnings: age threshold 25

	(1) 4y win	(2) 4y win	(3) 6y win
outcome	*reservation*	*earnings*	*(CHF, monthly)*
threshold effect	279.1***	219.6**	**218.5****
	(61.94)	(75.97)	(88.64)
Δ PBD (in days)	200	200	200
per month of dP	0.79%	0.62%	**0.61%**
elasticity	0.15	0.11	**0.11**
covariates	yes	yes	yes
age trend	no	step	step
outcome mean	3832	3832	3876
observations	1,067	1,067	1,612
R^2	0.393	0.398	0.417

Cluster robust standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; 1 CHF=0.79 GBP=0.96 USD=0.84 EUR

Table 5: The effect of extended potential benefit durations on reservation earnings: full work requirement threshold: 18 months of contribution (out of 24), by age groups

	(1)	(2)	(3)
age	29-35	35-45	45-54
outcome	*reservation*	*earnings*	*(CHF, monthly)*
threshold effect	161.6**	193.1**	253.3*
	(63.42)	(64.11)	(118.9)
Δ PBD (in days)	140	140	140
per month of dP	0.59%	0.66%	0.82%
elasticity	0.11	0.12	0.15
covariates	yes	yes	yes
age trend	1 step	1 step	1 step
outcome mean	4242	4527	4808
observations	1,192	1,537	1,125
R^2	0.454	0.519	0.581

Cluster robust standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; 1 CHF=0.79 GBP=0.96 USD=0.84 EUR

Table 6: The effect of extended potential benefit durations on realized earnings & non-employment durations: age threshold 25

	(1)	(2)	(3)	(4)	(6)
	age 25 threshold				
	DiD	DiD	DiD	DiD	DiD
outcome	*income*	*wage*	*empl.*	*duration*	*dur: Cox*
threshold effect	159.5***	130.2**	0.0002	30.79***	0.193***
	(60.91)	(55.33)	-0.0083	(6.479)	(0.0332)
Δ PBD (in days)	200	200	200	200	200
per month of dP	0.46%	0.35%	0.00%	1.84%	
elasticity	***0.08***	***0.06***	***0.00***	***0.34***	
covariates	yes	yes	yes	yes	yes
outcome mean	3773	4040	0.916	182	
observations	24,544	24,544	24,544	31,803	31,803
R^2	0.237	0.280	0.030	0.152	

Robust standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; 1 CHF=0.96 USD=0.84 EUR

Table 7: The effect of extended potential benefit durations on realized earnings & non-employment durations: full work requirement threshold: 18 months of contribution (out of 24), by age groups

	(1)	(2)	(3)	(4)	(6)	
	RD	RD	RD	RD	RD	
outcome	*income*	*wage*	*empl.*	*duration*	*dur: Cox*	Obs
age 28-35	172.4***	165.1***	0.0047	10.53***	-0.0568***	41,687
	(54.77)	(51.27)	(0.00581)	(1.951)	(0.0109)	59,193
per month of dP	0.71%	0.56%	0.08%	0.76%		
age 35-45	249.2***	208.8***	0.0135**	10.45***	-0.0466***	44,143
	(57.10)	(51.75)	(0.0060)	(1.951)	(0.0112)	65,541
per month of dP	0.82%	0.65%	0.23%	0.65%		
age 45-54	64.75	82.49	0.0025	14.99***	-0.0669***	31,922
	(64.78)	(58.78)	-0.0069	(2.355)	(0.0137)	49,475
per month of dP	0.21%	0.25%	0.04%	0.86%		
covariates	yes	yes	yes	yes	yes	
trend	step	step	step	step	step	

Robust standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; 1 CHF=0.96 USD=0.84 EUR

Table 8: Comparison: Elasticities w.r.t. Benefit Changes (P)

outcome	*reservation*	*earnings*			*non-employment*
age group	*earnings*	*income*	*wage*	*employment*	*duration*
around age 25	**0.11**	0.08	**0.06**	0.00	**0.34**
age 28-35	**0.11**	0.13	**0.10**	0.01	**0.14**
age 35-45	**0.12**	0.15	**0.12**	0.04	**0.12**
age 45-54	**0.15**	0.04	**0.05**	0.01	**0.16**

elasticities: percentage change in outcome, as a ratio of percentage change in potential benefit duration P: $\eta_{PBD} = \frac{\frac{dy}{y}}{\frac{dP}{P}}$

Table 9: Decomposition of the UI wage effect in components, job seekers around age 25

earnings effect	**res'wage effect**	$\frac{\partial w^e}{\partial \phi}$	$\frac{\partial \phi}{\partial P}$	**duration effect**	n-e on wage effect	$\frac{dD}{dP}$
14.13	**18.30**	0.772	23.71	**-4.18**	-37.87	0.110

Calculation of $\frac{\partial w^e}{\partial \phi}$: reservation earnings are predicted into earnings sample; then regression of realized earnings on predicted ϕ and covariates (per age group). $\frac{\partial \phi}{\partial t}$ is set to zero, following Krueger et al. (2016).