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Online Supplement

Unemployment Insurance and the Family: Heterogeneous Effects of Benefit Generosity on Reemployment and Economic Precarity

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A1. Data preparation and analytical methods

A1.1 Discontinuity assessment

Potential manipulation of the assignment variable (contribution months)

The validity of the discontinuity design relies on the assumption that individuals do not select into treatment (contribution month). We discuss the validity of the assumption regarding heaping due to voluntary quits (1), relationship of contribution months with socio-economic variables (2), and placebo tests for the first year of unemployment, when all unemployed in the sample have benefit rights (3).

As unemployment benefits are considerably more generous after 18 months of contribution, employees who intend to quit have an incentive to wait until they have 18 months of contribution before doing so. That said, most voluntary quitters do not go on to unemployment insurance benefits, but move directly to another job, because voluntary quitters have a waiting period before they can receive unemployment benefit, which discourages voluntarily quits before having a new job offer. Incentives to strategically wait to reach 18 months of contribution before quitting a job exist only for employees who anticipate more than 12 months of unemployment. If individuals feel confident of finding a job within a year, the difference in PBD is unlikely to affect the timing in quitting their job. If the job loss is involuntary, employees have no control over the timing and months of contribution. The same applies if unemployment occurs because a temporary contract has ended or individuals do not immediately find a job after leaving education.

The distribution of contribution months does not show an accumulation just after the threshold at 18 contribution months (Figure 1 in the main text). Although there is a slight increase in the number of unemployed with between 17 and 18 contribution months (from 4,481 to 5,981), the frequencies are continuously increasing with contribution months, with the most important jumps at 23 and 24 months of contribution.

Relation between contribution months and socio-economic characteristics

As an additional assessment of the continuity assumptions, we compared various observable characteristics by number of contribution months descriptively in Table A1 and using regression models in Table A2. Several characteristics are associated with more contribution months: occupation, tertiary education, Swiss citizenship, living with a partner (both married and cohabiting), having dependent children, being female. Moreover, income levels increase with the number of contribution months. This is the case for insured income, income in the year before unemployment, partner's income before unemployment and household income. The descriptive analysis shows a rather linear increase with no specific selectivity between contribution month 17 and 18.

	16 (N=4200)	17 (N=4501)	18 (N=6007)	19 (N=6054)
Gender: female	2047 (49.0%)	2211 (49.3%)	2989 (50.1%)	2994 (49.9%)
Household type				
Single	1324 (31.5%)	1427 (31.7%)	1867 (31.1%)	1822 (30.1%)
Breadw. No kids	240 (5.8%)	250 (5.6%)	333 (5.6%)	315 (5.2%)
Breadw. kids	341 (8.2%)	382 (8.5%)	506 (8.5%)	521 (8.6%)
Egalitarian no kids	474 (11.4%)	520 (11.6%)	707 (11.9%)	822 (13.6%)
Egalitarian kids	502 (7.1%)	494 (11.0%)	721 (12.1%)	732 (12.1%)
Sec. Earner no kids	221 (5.3%)	227 (5.1%)	281 (4.7%)	270 (4.5%)
Sec. Earner kids	323 (7.7%)	386 (8.6%)	502 (8.4%)	481 (8.0%)
Single parent	749 (17.9%)	795 (17.7%)	1047 (17.6%)	1091 (17.4%)
Married	1265 (30.1%)	1380 (30.8%)	1843 (30.9%)	1908 (31.8%)
Age	36.3 (7.8)	36.3 (7.8)	36.7 (7.8)	36.5 (7.7)
Nationality: Swiss	2018 (48.4%)	2265 (50.6%)	3198 (53.0%)	3270 (54.5%)
Partner's income (/1000, before unemployment)	2.219 (3.2)	2.377 (3.9)	2.557 (3.7)	2.611 (3.9)
Insured employment income (/1000)	4.609 (2.2)	4.669 (2.2)	4.937 (2.4)	4.989 (2.4)
Waiting days	4.3 (4.4)	4.5 (4.4)	4.8 (4.7)	4.8 (4.6)
Education				
Low	907 (21.6%)	865 (19.2%)	1065 (17.7%)	1042 (17.2%)
Upper Secondary	2004 (47.7%)	2160 (48.0%)	2842 (47.3%)	3007 (49.7%)
Tertiary	1289 (30.7%)	1476 (32.8%)	2100 (35.0%)	2005 (33.1%)
Occupation				
High	770 (18.3%)	891 (19.8%)	1253 (20.9%)	1251 (21.2%)
Intermediate	2590 (53.4%)	2836 (53.2%)	3993 (55.6%)	3997 (55.8%)
Low	1610 (38.3%)	1665 (37.0%)	2014 (33.5%)	2057 (34.0%)
Region				
Central	290 (6.9%)	287 (6.4%)	668 (8.1%)	667 (7.6%)
East	484 (11.5%)	612 (13.6%)	1168 (12.6%)	1122 (12.9%)
Leman	1000 (23.8%)	1035 (23.0%)	2188 (23.1%)	2059 (22.0%)
Mittelland	899 (21.4%)	936 (20.8%)	1685 (19.1%)	1696 (19.6%)
Northwest	496 (11.8%)	505 (11.2%)	995 (11.6%)	1028 (11.5%)
Ticino	175 (4.2%)	186 (3.7%)	401 (4.4%)	334 (3.6%)
Zurich	856 (20.4%)	958 (21.3%)	1785 (21.1%)	1853 (22.8%)

Table A1: Descriptive statistics by contribution month

As a more formal assessment, we use socio-economic variables as dependent variables to test whether there is a discontinuity between 17 and 18 contribution months, controlling for linear and quadratic contribution month. This is the same approach as in the main analysis. As

dependent variables we test educational level (low, intermediate, high), occupational categories (low qualified, intermediate, high), insured income (income level before unemployment), partner income, and age. We find discontinuities between 17 and 18 contribution months for low and high education (men only), occupation (low skilled men, medium skilled women), income level (men and women), and partner income (men only). There are no apparent selection effects with regard to age, women's education, and partner income for women. When controlling for insured income and partner income (as we do in the main analysis), the effects for education and different occupations are no longer relevant, with one exception (intermediate occupations for women). As this is only one effect out of 14 variables tested, we consider this to be random, and believe that selection effects are taken into account.

That said, it is important to note that sensitivity analysis show that estimates for shorter PBD are hardly affected by control variables in the model. For example, the marginal effects for employment rate amount to 6.0, 6.3 or 6.2 percentage points when PBD is shorter, depending on whether no socio-economic controls, controls for income before unemployment or extended controls are considered in the models.

	Insured income		Partner income		Age							
	Men	Women	Men	Women	Men	Women	Men	Women				
Short PBD (Ref: Long PBD)	0.231***	-0.194***	-0.240**	0.018	-0.315	-0.433*	-0.154	-0.363				
Contribution months	0.107	0.091	0.006	0.190	-0.606**	-0.830***	-0.699**	-0.846***				
squared	-0.001	-0.001	0.000	-0.003	0.017**	0.022***	0.017**	0.022***				
Insured income							0.877***	0.351***				
Partner income							-0.173***	-0.087***				
Constant	3.9	2.983	1.752	1.179	42.671	439	396	42.9				
Observations	29,080	28,853	29,080	28,853	29,080	28,853	29,080	28,853				

	Low education		Intermediate education				High education					
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Short PBD (Ref: Long PBD)	0.020*	0.010	0.010	0.003	0.014	0.001	0.001	-0.007	-0.034**	-0.011	-0.012	0.004
Contribution months	-0.014	-0.013	-0.010	-0.009	0.007	-0.015	0.012	-0.011	0.007	0.028	-0.002	0.020
squared	0.000	0.000	0.000	0.000	-0.000	0.001	-0.000	0.000	-0.000	-0.001	-0.000	-0.001
Insured income			-0.039***	-0.037***			-0.042***	-0.039***			0.080***	0.077***
Partner income			-0.004***	-0.005***			-0.012***	-0.005***			0.016***	0.010***
Constant	0.376	0.349	0.534	0.467	0.388	0.570	0.571	0.694	0.235	0.081	-0.105	-0.161
Observations	29,080	28,853	29,080	28,853	29,080	28,853	29,080	28,853	29,080	28,853	29,080	28,853

	Low occupation		Intermediate occupation				High occupation					
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Short PBD (Ref: Long PBD)	0.034**	0.019	0.018	0.012	-0.012	-0.026*	-0.015	-0.031*	-0.022*	0.007	-0.003	0.019
Contribution months	0.007	0.008	0.013	0.012	-0.019	-0.021	-0.017	-0.018	0.012	0.013	0.004	0.006
squared	-0.000	-0.000	-0.000	-0.000	0.001	0.001	0.001	0.000	-0.000	-0.000	-0.000	-0.000
Insured income			-0.060***	-0.038***			-0.016***	-0.028***			0.075***	0.065***
Partner income			-0.010***	-0.001			0.001	-0.005***			0.009***	0.005***
Constant	0.477	0.168	0.726	0.281	0.464	0.804	0.522	0.893	0.059	0.028	-0.248	-0.174
Observations	29,080	28,853	29,080	28,853	29,080	28,853	29,080	28,853	29,080	28,853	29,080	28,853

Table A2: Discontinuity analysis for socio-economic characteristics

Anticipation effects

As all unemployed in the sample are entitled to benefits in the first year of unemployment, differences in potential benefit duration do not directly affect the income in the first year, but may have anticipation effects. To test whether differences in PBD affect the probability of reemployment and precarity in the first year after unemployment, Figures A1 and A2 show placebo discontinuity plots.

For employment (Figure A1), there is a significant discontinuity between 17 and 18 contribution month, which is considerably smaller than the discontinuity in the second year. There are different potential explanations for this discontinuity. First, self-selection into contribution month is unlikely as discussed above (no heaping at 18 months, no large incentives). Second, we cannot exclude other unintended selection effects, for example in the attribution of contribution month by institution or employers, there are no indications for this though. Third, anticipation effects play a role. We know from previous studies, that differences in PBD do have anticipation effects (Le Barbanchon 2016). For precarity, there is no discontinuity in precarity risk between 17 and 18 contribution months (Figure A2).

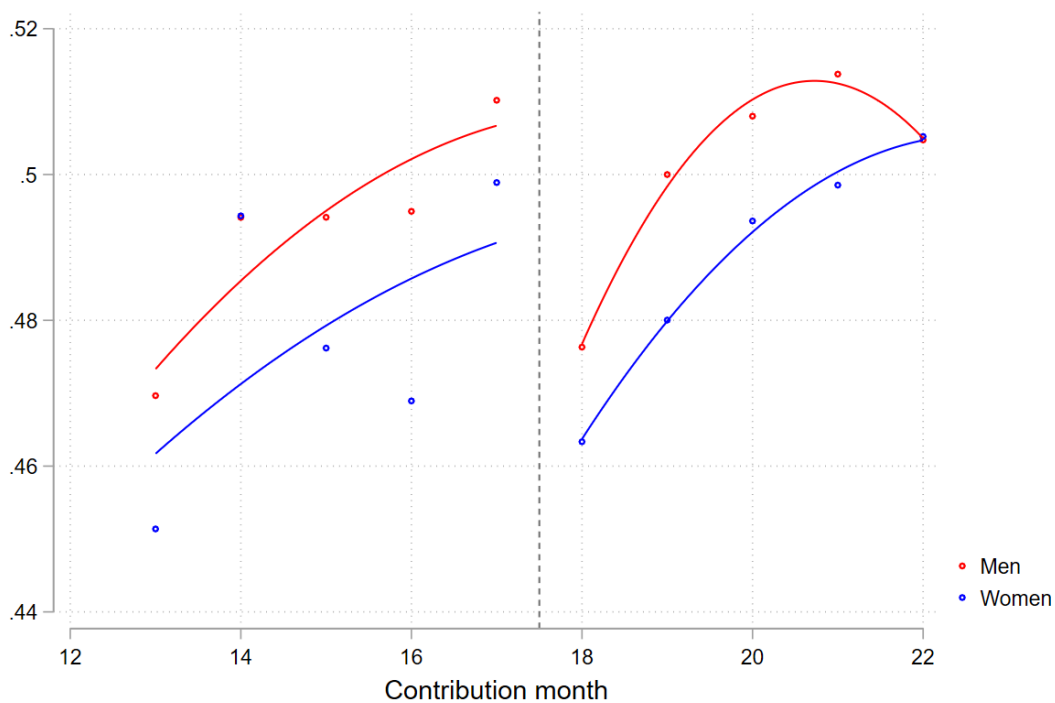


Figure A1: Probability of employment in first year following unemployment (month 1-11) by contribution months.

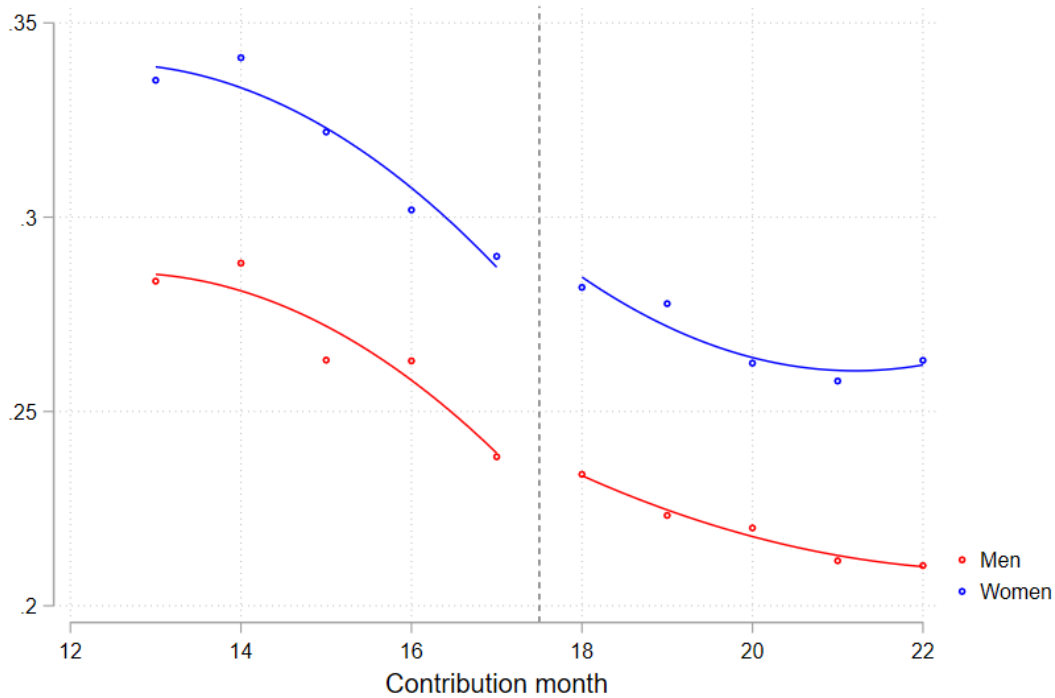


Figure A2: Probability of economic precarity in first year following unemployment (month 1-11) by contribution months.

A1.2 Evolution of labor market status, welfare state benefits and precarity

Figure A3 shows the status of individuals during the first two years following unemployment, distinguishing between long and short PBD. Generally, the share of individuals on unemployment insurance drops considerably at the end of PBD, but the decrease is more pronounced for the group with shorter PBD (12 months) than for the group with longer PBD (18 months). At the end of PBD, there is an increase in the number of people transitioning onto social assistance and no registered income. Unemployment insurance receipt does not end after the PBD, as individuals can extend their eligibility by working intermittently during their unemployment spell. Interestingly, these overall patterns are very similar for men and women. The transition to no registered income and social assistance at the end of PBD are stronger when PBD is shorter. Transitions into employment are less influenced by PBD. Figure A4 shows precarity status by months after unemployment.

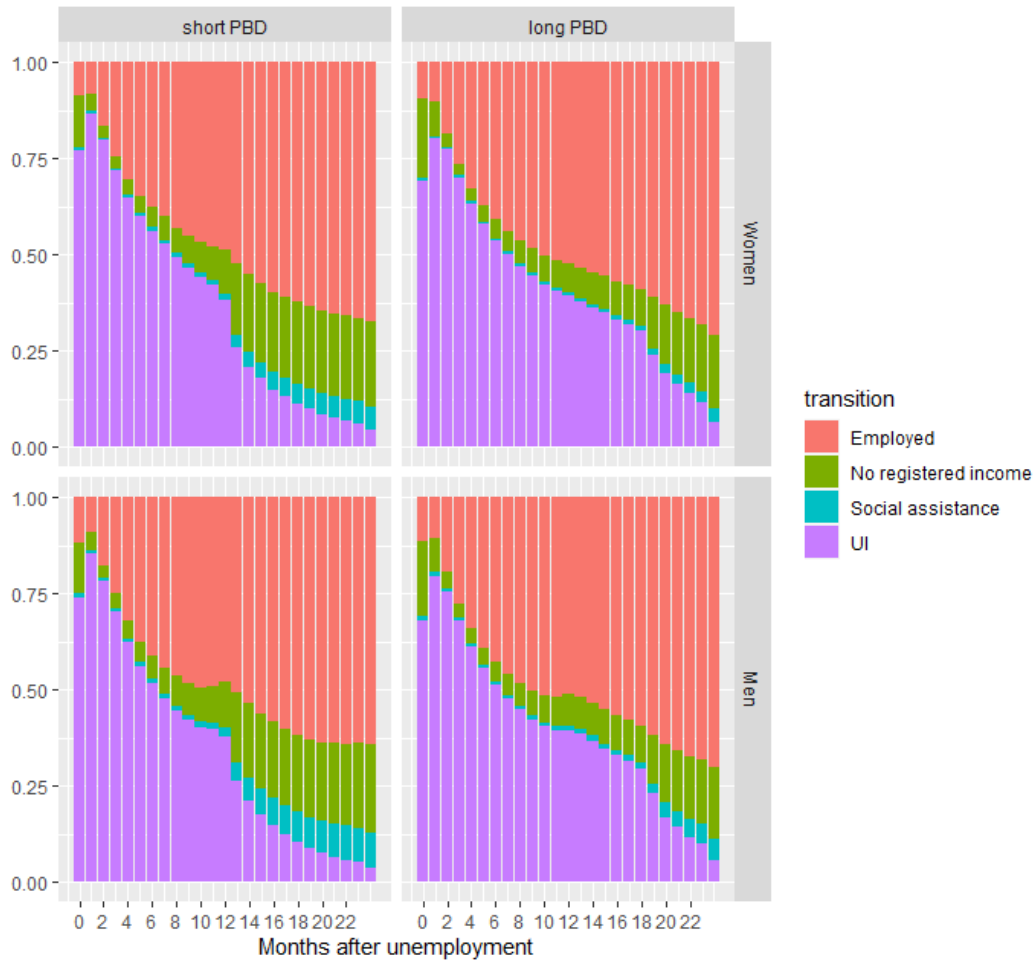


Figure A3: Labor market status and income sources by month after unemployment

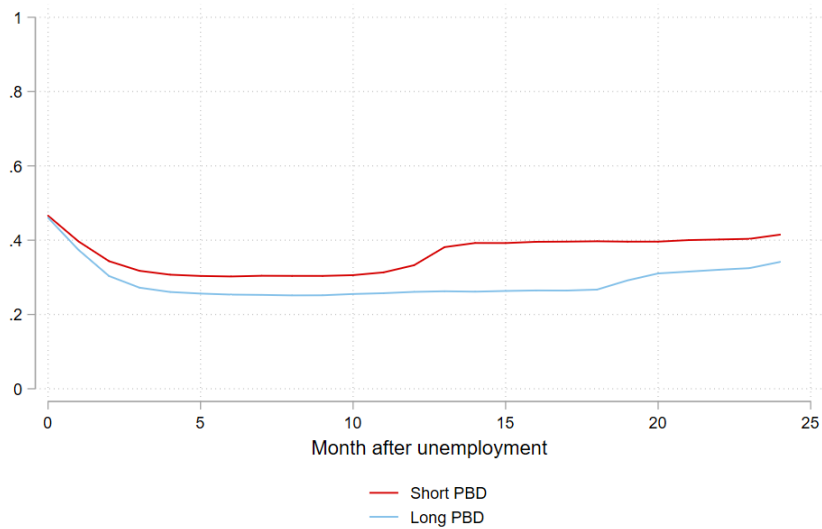


Figure A4: Probability of economic precarity by month after unemployment (descriptive, not modelled)

A1.3 Linear probability model and logistic regression

For binary outcomes, both non-linear models and linear probability models (LPM) are commonly used in empirical research. Non-linear models, most importantly logit and probit, became increasingly popular in parallel with increasing computational power since the 1980s and have become the standard approach to analysing dichotomous variables. The main arguments against using LPM are that predictions are not bounded between 0 and 1, the latent variable is assumed to be linear, and heteroscedasticity (Long 1997). More recently, linear probability models regained popularity, mainly due to their interpretability, fast estimation, robustness of OLS models due to weaker assumptions required, and consistent results compared to logistic regression (Breen, Karlson, and Holm 2018; Mood 2010). For longitudinal, interactions or multilevel models, non-linear regression requires important computational power, often has convergence problems and probability estimation is complex (Hippel 2015). Difficulties with the LPM do not imply that non-linear regression is the correct specification of the probability model (Angrist and Pischke 2008; Horrace and Oaxaca 2006 Chapter 3). Because the functional form between the predictors and outcome probabilities are unknown, the assumption of an S function of logistic regression is as arbitrary as a linear function (Jaccard and Brinberg 2021).

Although there is no agreement on the appropriate models to use for binary outcomes, various criteria have been made for the appropriateness of the LPM or logistic model. A rule of thumb suggests that linear probability is problematic when probabilities are close to 0 or 1. If the modelled probabilities are mostly between 0.2 and 0.8, the linear probability should suffice (e.g. Long 1997). However, Ganzach et al. (2000) show that this rule does not apply when interactions are involved.

Several scholars suggest that the LPM is most problematic if the main purpose of a model is to predict probabilities. When the main interest is in marginal effects, and especially if the variable of interest is categorical, the LPM can be a good choice (Hippel 2015, 2017, Pischke 2012). Most importantly, it is stressed that the appropriateness of the model needs to be explored. For example, Battey et al. (2019) suggest to check the number of fitted values outside the unit range, explore these cases and check whether their omission affect the conclusions.

Addressing the problem of noncollapsibility of the logistic model¹, Karlson and Jann (Karlson and Jann 2023) suggest using marginal odds ratios rather than average marginal effects when researchers are interested in relative differences and using logistic models. In contrast to marginal effects, odds ratios do not depend on the distribution of the dependent variables.

Considering that there are no agreed guidelines on the appropriate models to be used in scientific literature, we estimated and compared both linear probability models and logistic regression for our application. In addition, we estimated stratified models using each household type as a subsample (Tables A3, A4, A5, A6).

¹ Estimates of regression coefficients change when additional variables are included in the model, even if they are uncorrelated with the predictor.

We opted to show and discuss the results of the LPM models in the main text for different reasons. First, the comparison of different models (short and long term, women and men) is a central part of our study. Secondly, the previous literature reported effects of unemployment generosity in percentage points, which allows us to relate our results to previous studies rather than showing odds ratios. Thirdly, the comparison of both LPM and logistic models shows that the estimates by the LPM are closer to the estimates in the stratified models, in particular for employment probability. Fourth, logistic regressions are preferable if modelling a continuous probability function is central (Hippel 2015). As we are interested in estimates for specific groups, this argument is not of relevance for our approach. However, for the interpretations and conclusions we consider the results as definitive only then the models agree.

The results were consistent for employment probability in the short and long term (Table A3 and A4). For financial precarity in the short term, the main conclusions were consistent, but large differences in a few marginal effects appeared. We were cautious in interpreting marginal effects that were not robust across model specification. We conducted further investigations, which we outline below, to identify the most plausible model to be used as a base for the Figure illustrating marginal effects (Figure 4 and Figure 5). For financial precarity in the long term, results were inconsistent.

Employment, short term	Stratified			Interaction	
	LPM	Logit AME	Logit MOR	LPM	Logit AME
Men					
Single	6.4***	6.4***	1.3***	6.1***	6.4***
Single parent	4.0	4.1	1.5***	8.6***	8.8***
Main earner, no kids	5.6	4.8	1.3**	6.7**	6.4**
Main earner, kids	7.3**	7.2**	1.2*	4.5*	3.9*
Egalitarian earner, no kids	8.9**	9.1**	1.3**	5.6**	4.7**
Egalitarian earner, kids	3.3	3.2	1.3**	5.4**	4.5**
Secondary earner, no kids	8.7	8.7	1.4*	8.4*	8.6*
Secondary earner, kids	12.3	12.3	1.7***	12.4***	12.6***
Women					
Single	2.1	2.2	1.2**	4.1**	3.7***
Single parent	4.8*	4.9*	1.3***	5.7***	6.1***
Main earner, no kids	9.2	8.8	1.2	4.7	4.1
Main earner, kids	6.9	5.8	1.3	5.9*	6.6*
Egalitarian earner, no kids	5.4	5.0	1.2*	5.3**	4.0**
Egalitarian earner, kids	5.9	5.7	1.4***	7.4***	7.6***
Secondary earner, no kids	7.6	7.6	1.3**	6.3**	5.6**
Secondary earner, kids	8.9**	8.9**	1.3**	5.4**	5.8**

Note: Stratified models are separate regression for each household type. * significant at 95%, ** significant at 99%, *** significant at 99.9%

Table A3: Marginal effects of less generous unemployment insurance (shorter potential benefit duration) on reemployment probability in the short-term. AME (average marginal effect) MOR (marginal odds ratio).

Employment, long term	Stratified			Interaction	
	LPM	Logit AME	Logit MOR	LPM	Logit AME
Men					
Single	3.1	3.1	1.1*	2.4	3.0*
Single parent	2.1	2.1	1.2*	4.2*	4.4*
Main earner, no kids	3.6	3.6	1.2	3.7	3.3
Main earner, kids	1.9	1.7	1.1	2.9	1.9
Egalitarian earner, no kids	2.1	2.0	1.0	1.2	0.3
Egalitarian earner, kids	3.7	3.1	1.1	2.8	1.4
Secondary earner, no kids	-3.2	-3.2	1.1	1.0	1.3
Secondary earner, kids	13.0	13.1	1.7**	12.0*	12.1**
Women					
Single	0.3	0.2	1.1	1.3	1.1
Single parent	1.4	1.3	1.1	2.2	2.6
Main earner, no kids	7.0	6.9	1.0	0.9	0.6
Main earner, kids	-0.8	-0.8	1.0	-1.1	0
Egalitarian earner, no kids	6.7*	6.5*	1.2	4.3*	3.0*
Egalitarian earner, kids	2.4	2.3	1.3**	4.8*	4.9*
Secondary earner, no kids	4.5	4.4	1.3	4.8*	4.3*
Secondary earner, kids	4.8	4.8	1.2	3.0	3.3

Note: Stratified models are separate regression for each household type. * significant at 95%, ** significant at 99%, *** significant at 99.9%

Table A4: Marginal effects of less generous unemployment insurance (shorter potential benefit duration) on reemployment probability in the long-term. AME (average marginal effect) MOR (marginal odds ratio).

For financial precarity in the short term (Table A5), the main findings on the heterogeneity between households types are consistent across both logistic and LPM, with stronger effects for high financial responsibility (in particular singles) and weak effects for low financial responsibility (in particular egalitarian earners without children). There are some large differences in predicted marginal effects and marginal odds ratios, though. The LPM model yields stronger differences between household types, and suggests that shorter PBD may even reduce precarity risk for some categories of individuals with weak financial responsibility. In the logistic model, results suggest insignificant or precarity-increasing effects of shorter PBD. The stratified models (separate models for each household type to avoid interactions) do not give an indication on whether results of the LPM or of logistic regression are more plausible, as both models differ considerably from the stratified estimates. In terms of consistent regarding significance tests, both the LPM and the logistic models compare similarly to the stratified models.

Precarity, short term	Stratified			Interaction	
	LPM	Logit AME	Logit MOR	LPM	Logit AME
Men					
Single	8.3***	8.2***	1.5***	9.7***	8.1***
Single parent	5.6*	5.6*	1.1*	5.6***	3.4*
Main earner, no kids	2.5	2.3	1.3**	3.5	4.5**
Main earner, kids	1.5	1.6	1.2*	5.3***	3.5*
Egalitarian earner, no kids	1.7	2.0	1.2	-3.4**	1.7
Egalitarian earner, kids	4.3	5.4**	1.2	-0.5	2.8
Secondary earner, no kids	1.2	2.4	1.2	-2.3**	2.0
Secondary earner, kids	7.4	8.0	1.2	0.7	3.6
Women					
Single	7.8***	7.7***	1.4***	8.8***	6.7***
Single parent	2.5	2.8	1.1*	3.2**	3.2*
Main earner, no kids	2.2	3.6	1.1	2.6	1.9
Main earner, kids	5.7*	5.7	1.2	8.0**	4.6
Egalitarian earner, no kids	-2.3	1.9	1.2	-0.7	2.2
Egalitarian earner, kids	2.5	2.0	1.2	1.3	2.6*
Secondary earner, no kids	-0.3	-0.1	1.1	-0.6	1.1
Secondary earner, kids	4.1*	3.2*	1.4**	1.5	3.2**

Note: Stratified models are separate regression for each household type. * significant at 95%, ** significant at 99%, *** significant at 99.9%

Table A5: Marginal effects of less generous unemployment insurance (shorter potential benefit duration) on probability of financial precarity in the short-term. AME (average marginal effect) MOR (marginal odds ratio).

For financial precarity in the long term (Table A6), the differences between the LPM and the logistic models are even stronger. Findings were robust to excluding the cases with negative probabilities in the LPM model, and adding additional control variables, but differences arose due to the comparison of either probabilities or odds between the difference of the groups (see Gazach et al. 2000 for an illustration). The logistic model and the linear probability model show different conclusions for financial precarity in the long-term. In the linear probability model, less generous unemployment insurance seems to reduce precarity risk in the longer term for men in egalitarian earner couples and secondary earner men without children. At the same time, less generous unemployment insurance heightens precarity risk for singles (both men and women). In the logistic regression, none of these effects is significant. The stratified regression suggests that both precarity reducing and precarity increasing effects could arise for some groups, but these effects are not statistically significant from zero and estimated marginal effects of both the logistic and LPM interaction model differed considerably from the stratified model. Most importantly, both the stratified model and the logistic interaction model show no effects (with one exception) that differ significantly from zero. Therefore, we did not visualize the effect with a Figure and conclude that there are no clear long-term effects.

Precarity, long term	Stratified			Interaction	
	LPM	Logit AME	Logit MOR	LPM	Logit AME
Men					
Single	8.3	1.1	1.1	3.1*	1.8
Single parent	0.1	0.2	0.9	-1.1	-2.5
Breadwinner, no children	1.7	-0.3	0.9	-1.8	-1.0
Breadwinner with children	-5.8	-5.6	0.9	-1.2	-2.1
Egalitarian earner, no children	1.1	1.6	1.0	-4.2**	0.6
Egalitarian earner with children	0.6	2.2	0.9	-3.6*	-1.0
Secondary earner, no children	-5.7	-5.9	0.9	-5.6*	-1.8
Secondary earner with children	-8.7	-9.2	0.8	-5.5	-4.4
Women					
Single	1.7	1.9	1.1	4.2**	1.7
Single parent	0.3	0.2	1.0	0.0	-0.1
Breadwinner, no children	-1.3	-1.3	0.9	-1.2	-2.0
Breadwinner with children	9.5	2.6	1.0	2.2	-0.7
Egalitarian earner, no children	-3.2	-4.1*	0.9	-2.7	-0.6
Egalitarian earner with children	-0.5	-1.9	0.9	-2.5	-1.4
Secondary earner, no children	2.4	3.6	1.2	-0.9	1.5
Secondary earner with children	2.5	2.0	1.2	0.4	2.2

Note: Stratified models are separate regression for each household type. * significant at 95%, ** significant at 99%, *** significant at 99.9%

Table A6: Marginal effects of less generous unemployment insurance (shorter potential benefit duration) on probability of financial precarity in the short-term. AME (average marginal effect) MOR (marginal odds ratio).

A2. Results on reemployment

A2.1 Regression tables for reemployment (pooled analysis)

	(1)	(2)	(3)	(4)	(5)	(6)
	12-18	19-24	12-18	19-24	12-18	19-24
	month	months	month	months	month	months
	Men	Men	Women	Women	Gender	Gender
Short PBD (Ref: Long PBD)	0.061***	0.024	0.041**	0.014	0.059***	0.023*
Household type : (Ref : Single)						
Single parent	-0.001	0.031**	-0.081***	-0.045***	-0.025***	0.008
Main earner, no children	0.062***	0.072***	0.010	0.002	0.045***	0.049***
Main earner, with children	0.092***	0.111***	-0.142***	-0.098***	0.029***	0.056***
Equal earner, no children	0.109***	0.115***	0.054***	0.053***	0.096***	0.103***
Equal earner, with children	0.107***	0.131***	-0.072***	-0.041***	0.028***	0.062***
Secondary earner, no children	-0.008	0.031	0.005	0.008	0.042***	0.056***
Secondary earner, with children	-0.033	-0.022	-0.093***	-0.052***	-0.037***	0.004
Interaction Short PCD*Houdhold type	-0.001	0.031**	-0.081***	-0.045***	-0.025***	0.008
Short PBD * Single parent	0.026	0.019	0.016	0.009		
Short PBD * Main earner, no children	0.007	0.013	0.006	-0.005		
Short PBD * Main earner, with children	-0.016	0.005	0.018	-0.025		
Short PBD * Equal earner, no children	-0.005	-0.011	0.012	0.029		
Short PBD * Equal earner, with children	-0.007	0.004	0.033	0.034		
Short PBD * Secondary earner, no children	0.023	-0.014	0.022	0.034		
Short PBD * Secondary earner with children	0.063	0.097*	0.013	0.016		
Insured income	0.010***	0.013***	0.010***	0.012***	0.012***	0.014***
Partner income	0.003	0.003	0.001	-0.001	-0.001	-0.001
Contribution months	0.040**	0.059***	0.013	0.028	0.027**	0.043***
contribution months squared	-0.001*	-0.001***	0	0	-0.001**	-0.001**
Women (Ref : Men)					0.026**	0.018
Interaction Short PBD*Women					-0.001	0.008
Constant	0.038	-0.072	0.381**	0.310*	0.180*	0.092
Observations	187,246	137,116	187,322	134,500	374,568	271,616
R-squared	0.017	0.025	0.020	0.016	0.013	0.015

Remarks: control for clustered standard errors (multiple observations per person for different time points). Swiss registry data from 2012-2016. Regression output for Figures 1 and 2. * significant at 95%, ** significant at 99%, *** significant at 99.9%

Table A7: Pooled OLS regression for reemployment probability in the short-term and long-term by gender

A2.2. Employment: Logistic regression

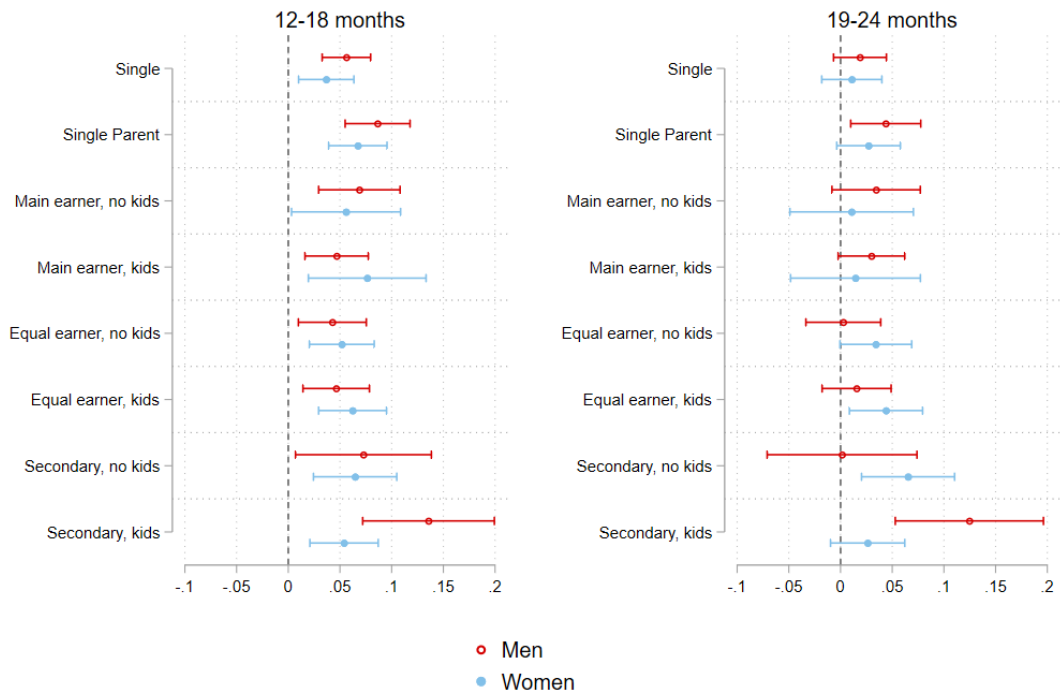


Figure A5: Marginal effects of less generous unemployment insurance on reemployment by household type (logistic regression)

A2.3 Employment: by month after unemployment

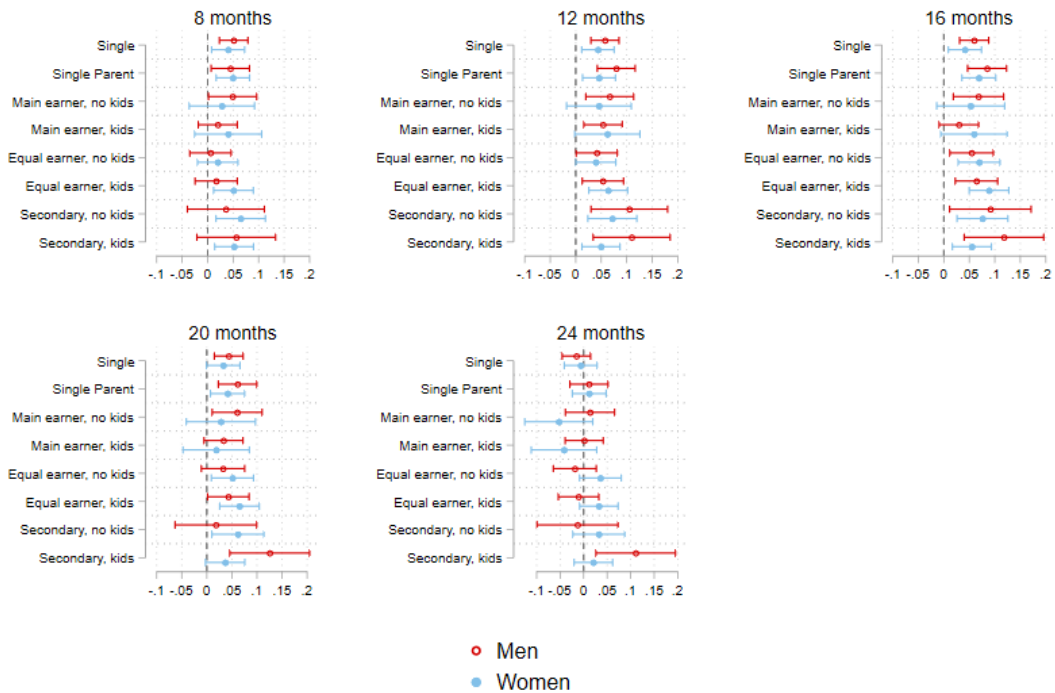


Figure A6: Marginal effects of less generous unemployment insurance on reemployment by household type (by month after unemployment start)

A2.4 Employment: including individuals with 12 contribution months

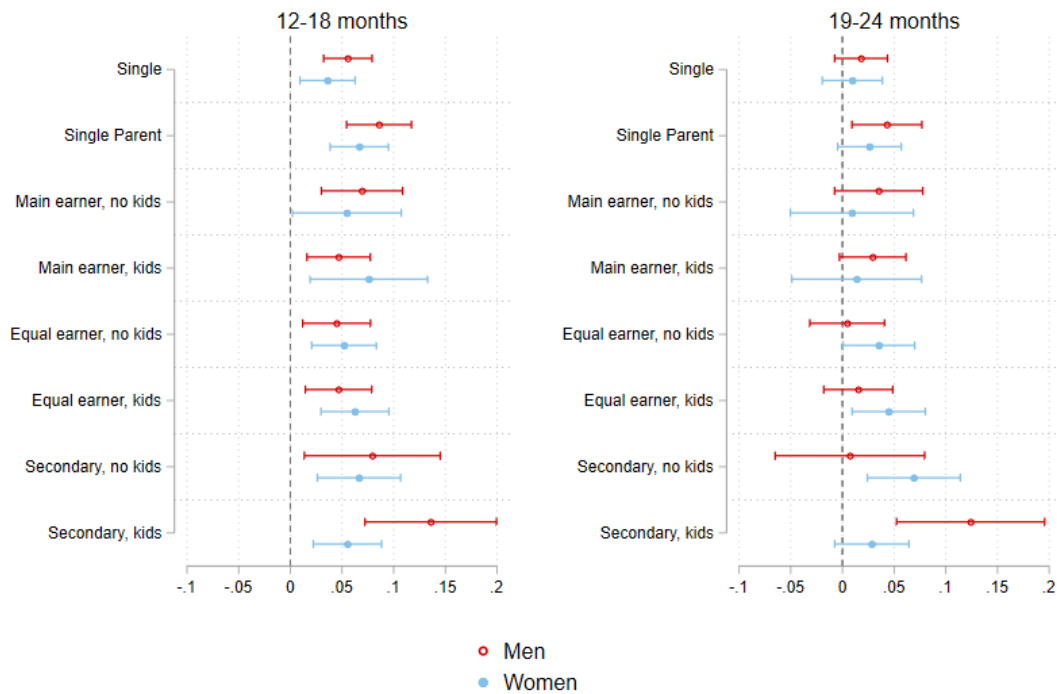


Figure A7: Marginal effects of less generous unemployment insurance on reemployment by household type (including individuals with 12 contribution months)

A2.5 Employment: additional control variables

The following control variables were included in the model: insured income, income of the partner before unemployment, marital status, age, education (tertiary vs others), occupation (managerial, middle, low), region (Southwest, Geneva region, Northwest, Central flatlands, Zurich, East, Central mountains, and Ticino), citizenship (Swiss vs. other), work percentage in desired job, waiting days (which generally indicate a voluntary quit compared to a layoff), and sanctions indicating non-compliance with case workers' job search requirements.

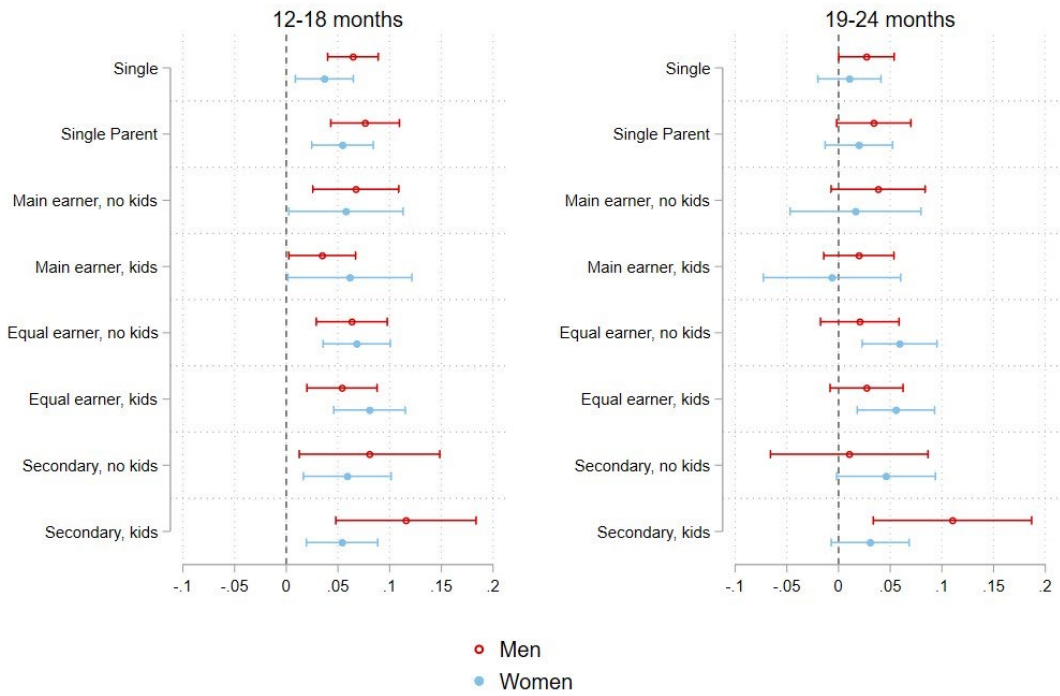


Figure A8: Marginal effects of less generous unemployment insurance on reemployment by household type (additional control variables)

A2.6 Employment: adding other households

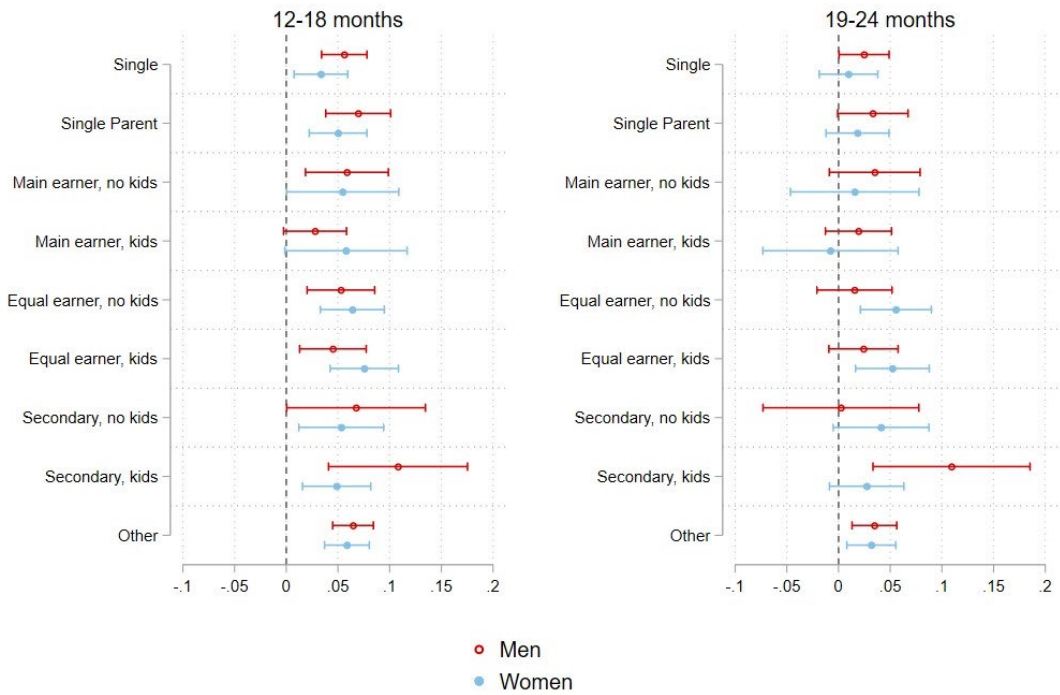


Figure A9: Marginal effects of less generous unemployment insurance on reemployment (including other households)

A3. Results on financial precarity

A3.1 Regression tables for financial precarity

	(1)	(2)	(3)	(4)	(5)	(6)
	12-18	19-24	12-18	19-24	12-18	19-24
	month	months	month	months	month	months
	Men	Men	Women	Women		
Short PBD (Ref: Long PBD)	0.097***	0.031*	0.088***	0.041**	0.059***	0.005
Household type: Ref(=single)						
Single parent	0.237***	0.177***	0.453***	0.402***	0.343***	0.289***
Main earner, no kids	-0.048***	-0.102***	-0.049***	-0.076***	-0.073***	-0.113***
Main earner, kids	0.065***	-0.012	0.041*	0.012	0.048***	-0.015*
Egalitarian earner, no kids	-0.125***	-0.197***	-0.176***	-0.214***	-0.205***	-0.248***
Egalitarian earner kids	-0.080***	-0.144***	-0.185***	-0.220***	-0.183***	-0.225***
Secondary earner, no kids	-0.160***	-0.198***	-0.250***	-0.288***	-0.278***	-0.300***
Secondary earner, kids	-0.107***	-0.127***	-0.262***	-0.290***	-0.274***	-0.289***
Interaction Short PBD*Houdhold type	0.237***	0.177***	0.453***	0.402***	0.343***	0.289***
Short PBD * Single parent	-0.042**	-0.043*	-0.057***	-0.040*		
Short PBD * Main earner, no children	-0.062***	-0.049*	-0.062*	-0.052		
Short PBD * Main earner, kids	-0.044**	-0.043*	-0.008	-0.019		
Short PBD * Egalitarian earner, no kids	-0.132***	-0.073***	-0.096***	-0.068***		
Short PBD * Egalitarian earner, kids	-0.102***	-0.067***	-0.075***	-0.066***		
Short PBD * Secondary earner, no kids	-0.121***	-0.087***	-0.095***	-0.050**		
Short PBD * Secondary earner, kids	-0.090***	-0.086**	-0.074***	-0.037*		
Insured income	-0.010***	-0.014***	0.001	-0.001	-0.002***	-0.004***
Partner income	-0.044***	-0.032***	-0.046***	-0.040***	-0.047***	-0.038***
Contribution months	-0.038***	-0.049***	-0.015	-0.028*	-0.029***	-0.041***
contribution months squared	0.001**	0.001**	0.000	0.001	0.001**	0.001***
Gender (Ref: Men)					0.007	-0.012*
Short PBD *Women					-0.033***	-0.011
Constant	0.914***	1.082***	0.663***	0.835***	0.838***	1.018***
Observations	187,246	137,116	187,322	134,500	374,568	271,616
R-squared	0.161	0.124	0.410	0.364	0.278	0.232

Robust standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05

Table A8: Pooled OLS regression for probability of financial precarity in the short-term and long-term by gender

A3.2 Precarity: Logistic regression

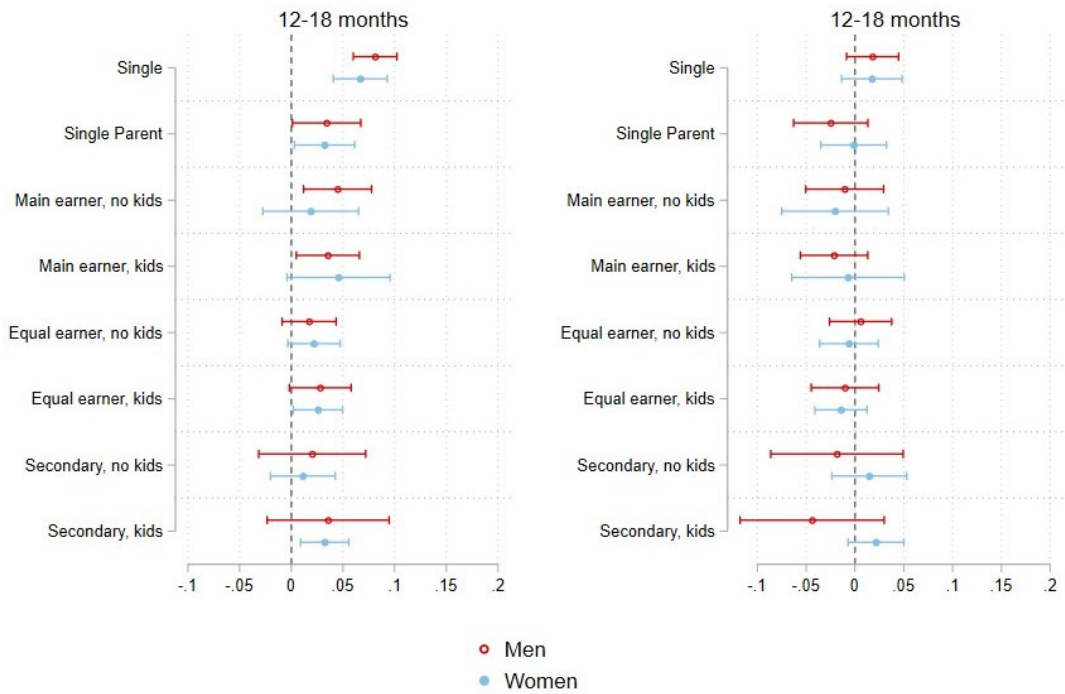


Figure A10: Marginal effects of less generous unemployment insurance on precarity by household type (logistic regression)

A3.3 Precarity: by month after unemployment

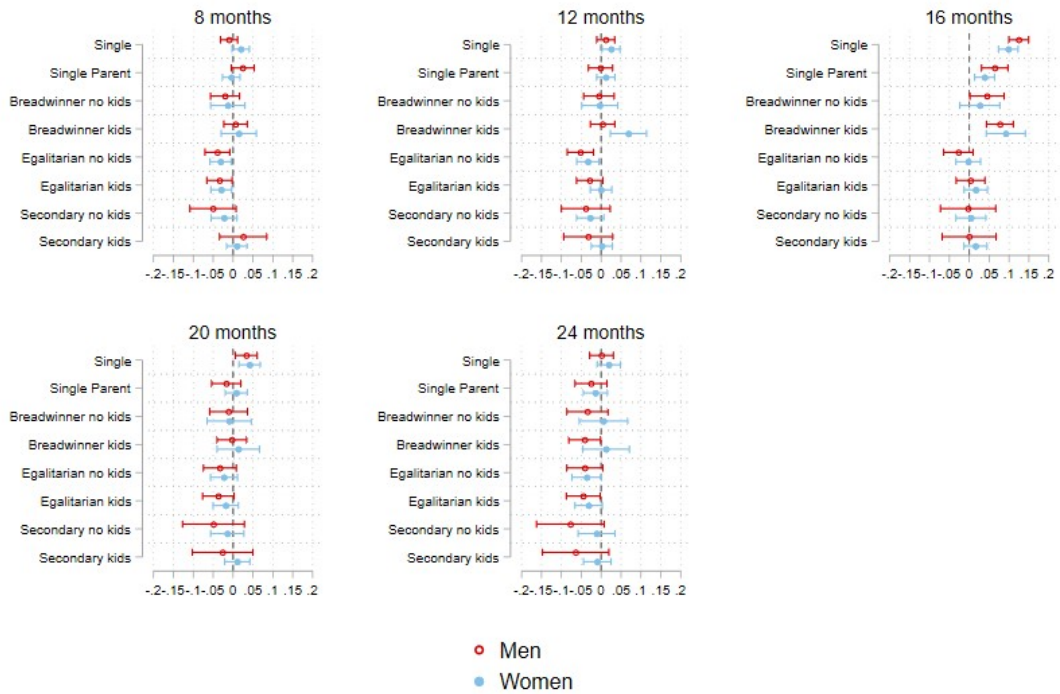


Figure A11: Marginal effects financial precarity of short potential benefit duration by household type (by months after unemployment)

A3.4 Precarity: including individuals with 12 contribution months

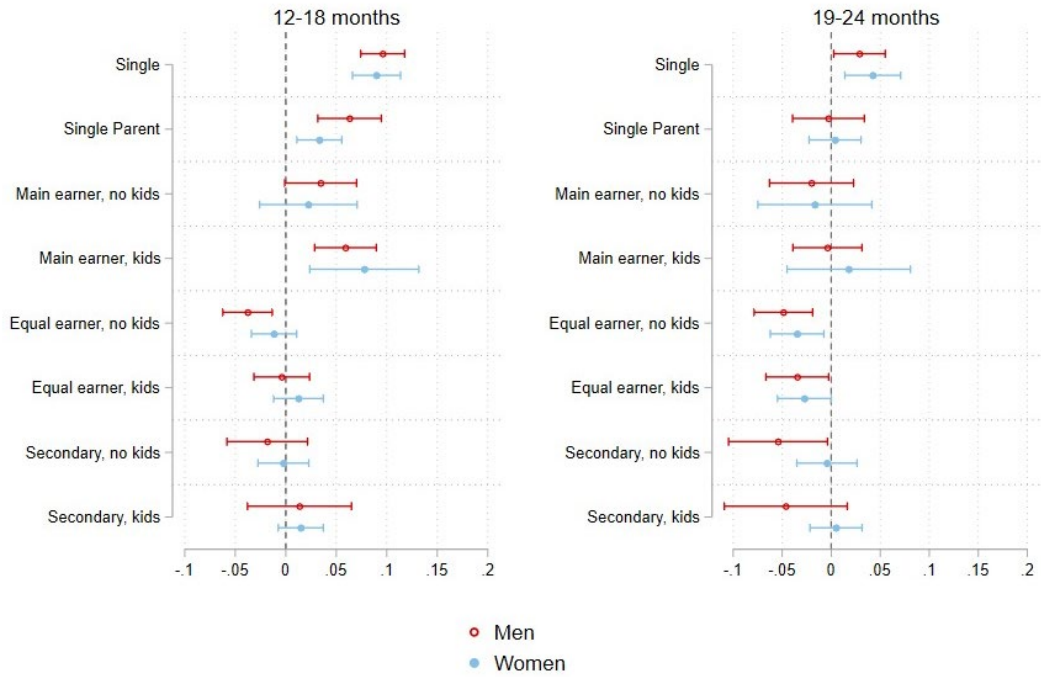


Figure A12: Marginal effects of less generous unemployment insurance on precarity by household type (including 12 contribution months)

A3.5 Precarity: additional control variables

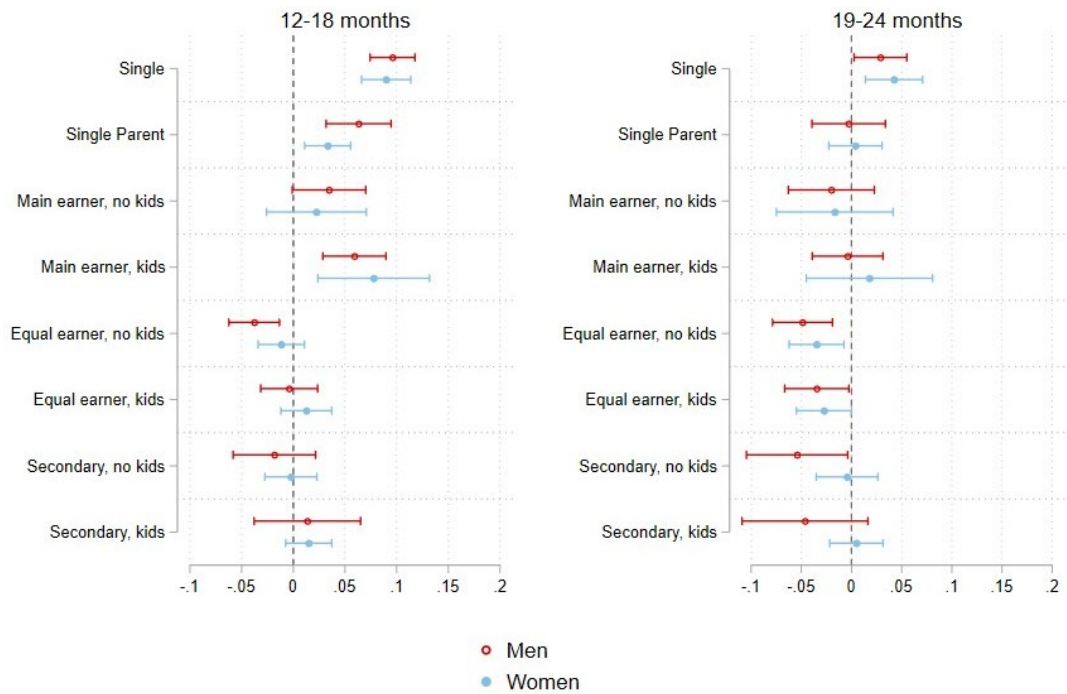


Figure A13: Marginal effects of less generous unemployment insurance on precarity by household type (additional control variables)

A3.6 Precarity: including child allowances

The registry data used for the analysis do not include child allowances which are paid as a lump sum per child as part of the salary. The minimum amount is set by cantonal legislation and ranges from 200 to 280 CHF per child per month. As the amount is not related to income, child allowances have a redistributive effect on income inequality. Moreover, the differences in equalized household income between household types decrease when family allowances are included. To test whether the omission of child allowances in our main analysis affects the results, we simulated child allowances and recalculated the models. We assumed 250 CHF per month for each child, which reduces the share of households in financial precarity from 28.1% to 26.2 % (using the same income threshold) for the period 12 to 17 months after unemployment.

The main effects of short PBD are consistent, but the main effects of household types differ. Households with children (single parents, main earners, egalitarian couples) have a lower risk of precarity if child allowances are considered. This is to some extent a mechanical result, as the income of households with children is higher when child allowances are included. There are only marginal changes for households where the secondary earner becomes unemployed and for households without children.

There are no notable differences in the interaction effects in either the short or the long term. The precarity risk of single households remains higher with less generous unemployment insurance in line with the reference model.

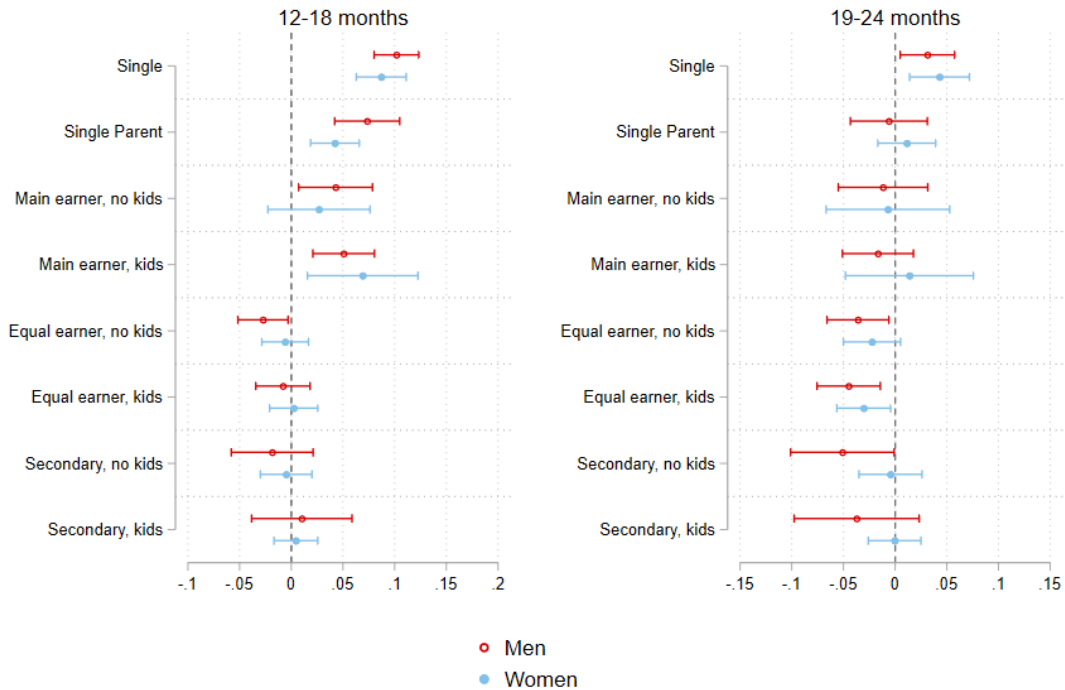


Figure A14: Marginal effects of less generous unemployment insurance on precarity by household type (including child allowances)

A3.7 Precarity: alternative threshold

Results for setting the precarity threshold considerably lower (levels of absolute poverty used for official statistics) at 2240 CHF per month (equivalized income). With this lower threshold, 18 % of observations in the analytical sample (compared to 30 %) fall below the precarity threshold. The results are mainly comparable, with one exception: in the longer term, single mothers have an increased precarity risk in the longer term when unemployment insurance is more restrictive.

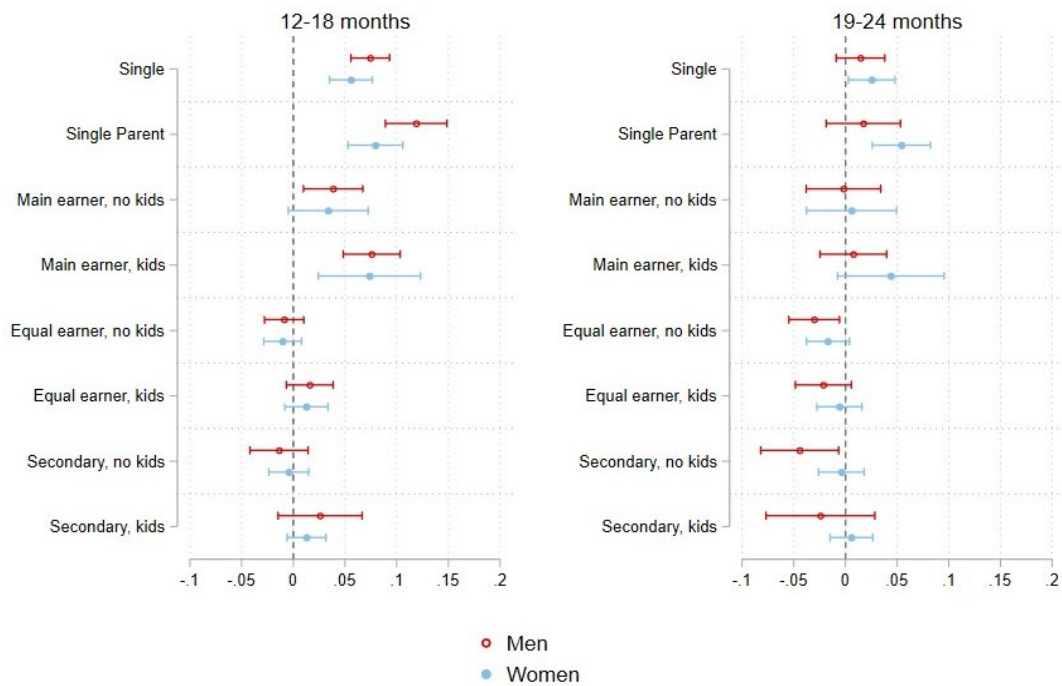


Figure A15: Marginal effects financial precarity of short potential benefit duration by household type

A3.8 Precarity: adding other households

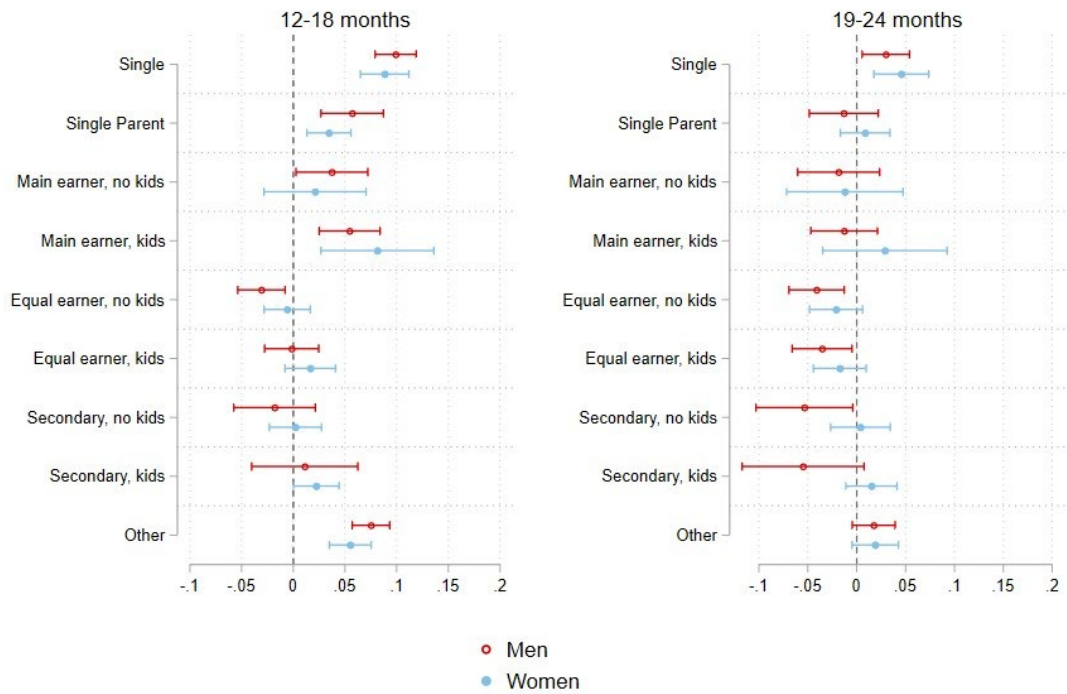


Figure A16: Marginal effects of less generous unemployment insurance on precarity by household type (including other households)

A4. Job quality: employment income (only employed individuals)

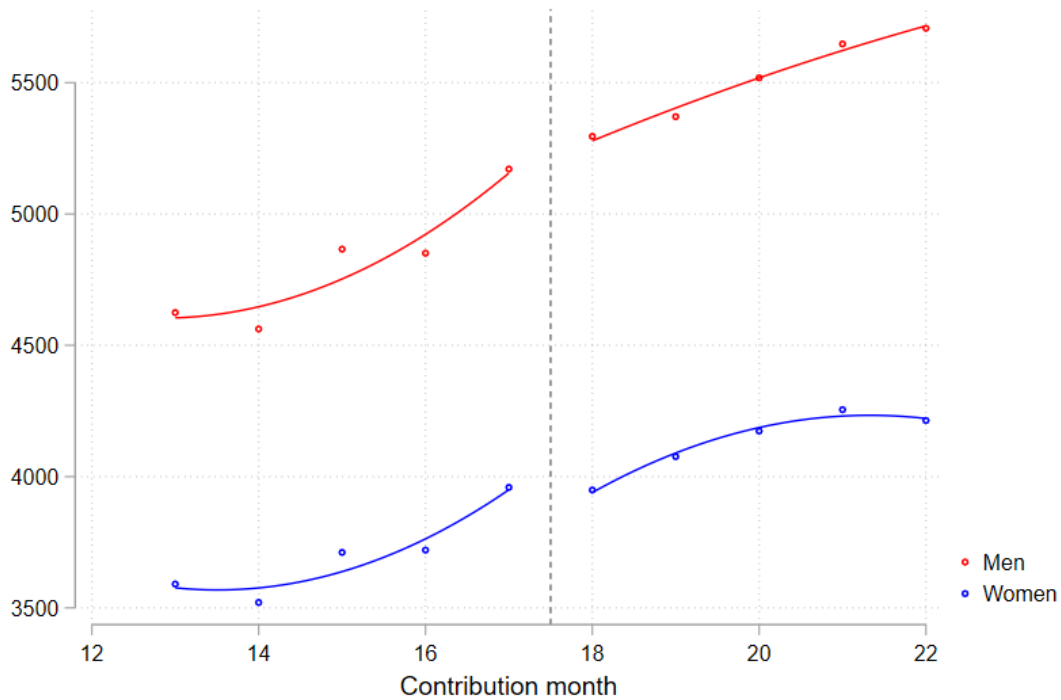


Figure A17: Average monthly wages by number of contribution months.

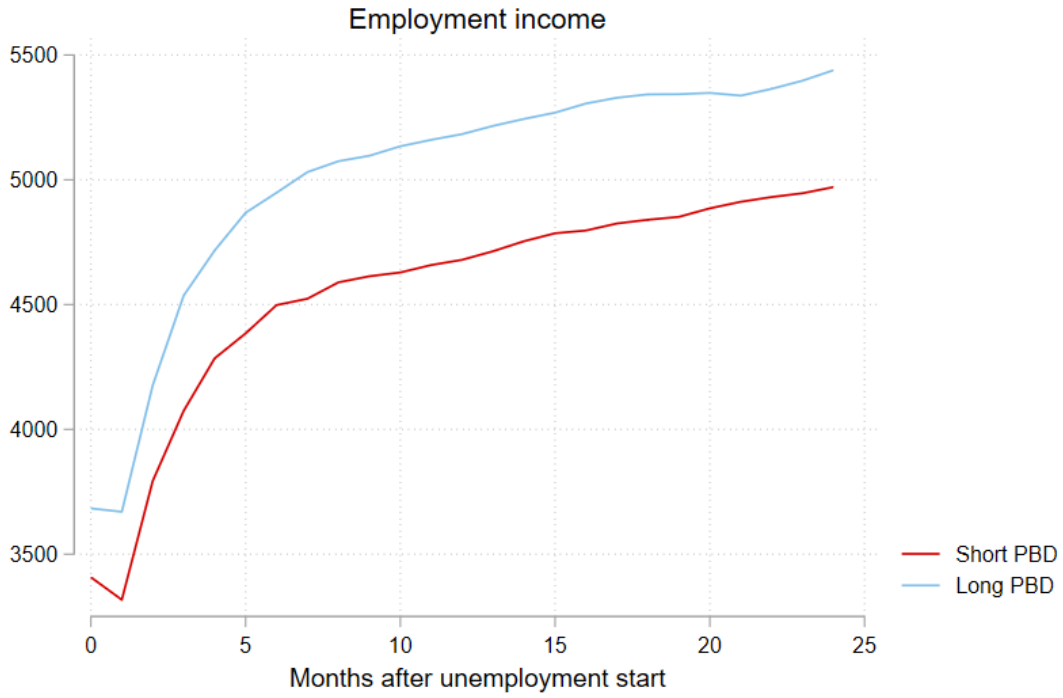


Figure A18: Average monthly wages over time since start of unemployment spell.

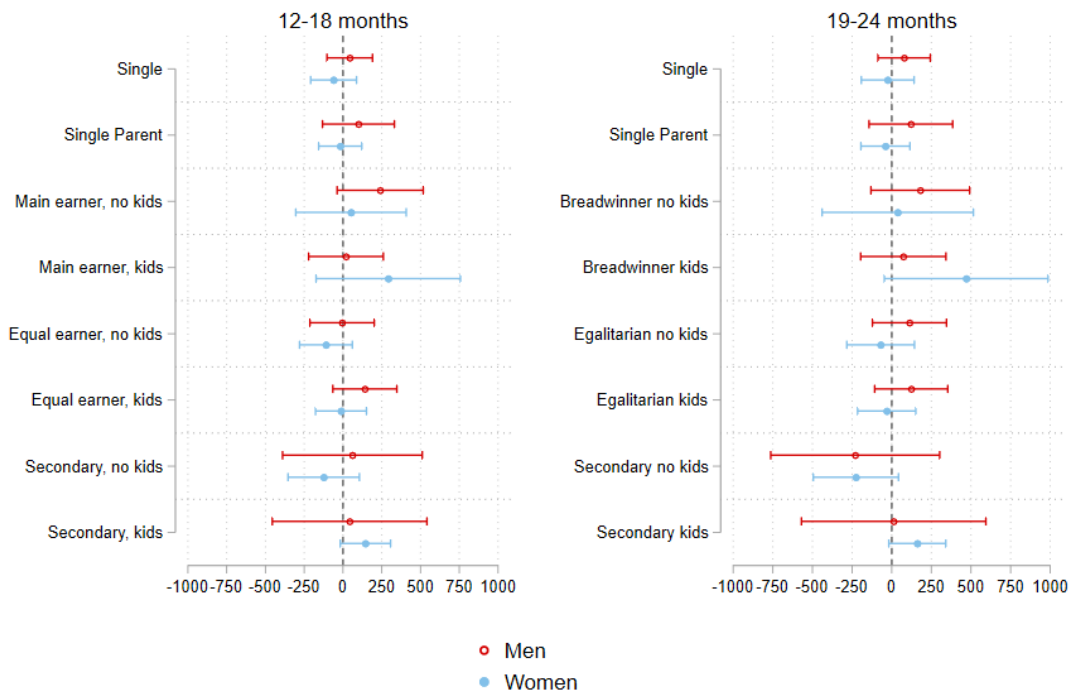


Figure A19: Marginal effects of less generous unemployment insurance on earnings of employed persons by household type

References

- Angrist, Joshua D., and Jörn-Steffen Pischke. 2008. *Mostly Harmless Econometrics: An Empiricist's Companion* (1st ed.). Princeton University Press.
- Batthey Heather, David Cox, and Micha V. Jackson. 2019. "On the linear in probability model for binary data." *Royal Society Open Science* 6: 190067.
- Breen, Richard, Kristian B. Karlson, and Anders Holm. 2018. "Interpreting and Understanding Logits, Probits, and Other Nonlinear Probability Models." *Annual Review of Sociology* 44(1), 39–54.
- Ganzach, Yoav, Ishak Saporta, and Yaacov Weber. 2000. "Interaction in Linear versus Logistic Models: A Substantive Illustration Using the Relationship between Motivation, Ability, and Performance." *Organizational Research Methods* 3(3): 237–53.
- Hippel, Paul von. 2015. Linear vs. Logistic Probability Models: Which is Better, and When? Statistical Horizons. <https://statisticalhorizons.com/linear-vs-logistic/>
- Hippel, Paul von. 2017. When Can You Fit a Linear Probability Model? More Often Than You Think. Statistical Horizons. <https://statisticalhorizons.com/when-can-you-fit/>
- Horrace, William C., and Ronald L. Oaxaca. 2006. "Results on the Bias and Inconsistency of Ordinary Least Squares for the Linear Probability Model." *Economics Letters* 90(3): 321–27.
- Jaccard, James, and Miriam Brinberg. 2021. "Monte Carlo Simulations Using Extant Data to Mimic Populations: Applications to the Modified Linear Probability Model and Logistic Regression." *Psychological Methods* 26(4): 450–65.
- Karlson, Kristian B., and Ben Jann. 2023. "Marginal Odds Ratios: What They Are, How to Compute Them, and Why Sociologists Might Want to Use Them." *Sociological Science*, 10, 332–347.
- Le Barbanchon, Thomas. 2016. "The effect of the potential duration of unemployment benefits on unemployment exits to work and match quality in France." *Labour Economics*, 42, 16–29.
- Long, J. Scott. 1997. *Regression Models for Categorical and Limited Dependent Variables* (1st ed.). Sage Publications, Inc.
- Mood, Carina. 2010. "Logistic Regression: Why We Cannot Do What We Think We Can Do, and What We Can Do About It." *European Sociological Review* 26(1): 67–82.
- Pischke, Jörn-Steffen. 2012. "Probit better than LPM?" Retrieved from <http://www.mostlyharmless-econometrics.com/2012/07/probit-better-than-lp>