# Carrots & Sticks – How Do Policies and Programs Affect Job Seekers?

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*Abstract:*
Public Employment Service (PES) units and caseworkers fundamentally shape the treatment of individual job seekers by applying specific strategies (mixes) of labor market policies. The fact of the joint existence of several levels and types of policies is usually ignored in policy evaluations. This paper applies a novel approach to jointly model two layers and two types of policies (ex-ante) and of treatments (ex-post). It empirically assesses the role of caseworker- and of PES policies for the job seekers earnings and employment outcomes in the 3.5 years after unemployment entry. We exploit the substantial variation in (the intensity of) policy use across caseworkers and PES agencies in Switzerland, relying on a large register data base covering a fourth of the full unemployment inflow from 2000 to 2005. We propose a method to estimate the (unknown) intended policies by types (carrots and sticks) using actual treatment realizations. Then, we relate these policies to the short- and longer-run outcomes of the individuals. The joint estimation reveals that the intended policies, for carrots and for sticks, both have significant impact on unemployment exit, earnings, and employment stability. Their interaction is of importance too: It rejects the hypothesis that earnings losses by an intense sanction regime could be compensated by intensifying training. The negative sign of the interaction effect on earnings suggests to keep either the intensity of supportive policies or of punitive policies low.

# 1 Introduction

Active labor market policy is an important tool to fight unemployment and to improve the matching on labor markets. Several OECD countries spend more than one percent of their GDP on active labor market policy. Existing literature has documented the effects of specific policy interventions on participants (see Card, Kluve, Weber 2009 for a survey of that literature). But, interestingly, not much evidence can be found in the literature about the role of Public Employment Service (PES) units and caseworkers (CW) as policy makers: PES often follow strategies of preferably applying certain mixes of labor market policies. Within PES, CW often have substantial leeway in dealing with their clients.

This paper discusses the role of such PES and CW policies and their effects on the job seeker's earnings. We distinguish between policies that are likely to be perceived positively by participants ("carrots") and policies that are likely to be perceived as negative ("stick"). We define the first group of policies to cover training and job search assistance, and the second group to cover benefit sanctions and workfare programs. We observe how frequently about 150 PES use these policies and discuss how to reconstruct intended policy from actual (observed) policy. To estimate such intended policies, we use the ideas of the competing risks approach, known from duration analysis.

In a second step, we assess the relation between such CW- and PES-specific intended policies and realised earnings in the months 4 to 42 after unemployment. We apply panel data methods to deal with key selection issues. For CW-policies, we analyze outcomes within PES units. Many job seekers are assigned to CW based on exogenous and pre-determined characteristics (last name, industry, etc.). Conditional on these characteristics, assignment to CW is plausibly random. For PES-policies, we analyze outcomes within labor market regions. These have been created originally to cover travel-to-work areas and represent local labor markets.

We use a very rich base of register data from Switzerland. Switzerland is an especially interesting and fruitful case for analysing the role of PES policies: The PES enjoy a large leeway to forge their specific strategy in implementing the different types of policy ("carrots" and "sticks"). Moreover, the Cantons (the next higher administrative level of the unemployment insurance organisation) do have a big freedom in questions of organisation and implementation as well. As a basic sample, we consider a fourth of the complete inflow into registered (full-time) unemployment in Switzerland in the years 2000 to 2005, up to age 60. The unemployment insurance database provides a vast amount of socio-demographic and benefit-rights-related information. To this base we merged a further UI database that covers the (daily) history of all active labor market policy events (including sanctions). Finally, to construct the outcome and the past employment history (as an important set of controls), we added social security data (monthly precision) which covers (non-)employment and earnings in the six years before and up to 42 months after unemployment entry.

Our methodological approach is most related to Feracci, Jolivet and van den Berg (2010).

However, there are several key differences. First, our research question is different: We analyse the *mix* of different types of policies, whereas they focus on one policy (training, in different intensities). So, we are interested in the question how the different relative intensity of applying "carrot"- and "stick"-types of policies may influence the earnings outcome of the job seekers. Which combinations of "carrots" and "sticks" are related to the best earnings outcomes?

So, the second difference to the above-mentioned paper is that we focus on labor earnings rather than the probability of long-term unemployment (as they do). Third, we focus on measuring intended treatment rather than actual treatment (they discuss this issue in some sensitivity analysis). Fourth, our identification strategy is (potentially) stronger as we can rely on (arguably) exogenous variation in the organisation of PES and therefore PES-related policy. Our paper is also related to Rosholm and Svarer (2008) in sharing some similar ideas on the analysis of intended vs. actual treatment. The main differences are (among others) that we focus on earnings rather than unemployment and consider a different research question.

Our analysis complements existing research in several ways. First, we discuss how to measure ALMP policies in a setting where we do not know them (at entry into unemployment) and individuals can leave before being affected. Second, we document the effects of these policies both on participants and non-participants. Third, we document the role of such policies for earnings and employment. Fourth, we look at effects on the medium run outcome. Fifth, we consider combinations of policies (rather than only one), so we drop the usual (but often unrealistic) assumption of no direct interaction between different treatments within an unemployment spell.

## 2 Institutional Background

Income support:

- benefit duration: normally 420 days (540 days for age 55+)
- replacement rate (RR): 70 or 80 % (family situation, income ceiling)
- median unemployment duration 4 to 6 months

Layers of implementation

1. Federal level
    - Unemployment insurance law
2. Canton
    - Organize LMP programs (mandate providers etc; no fin. incentives)
3. 168 regional public employment service (PES) offices
    - Organizational unit of caseworkers

- Head of PES important in shaping strategy

4. Caseworker
    - Support: discuss application strategies; assign job search assistance or training courses
    - Monitoring: sanctions (failed job search obligation, did not attend ALMP); workfare programs (taxing time)

Evidence on leeway (see survey by Frölich and Lechner, 2002): only 14 out of 272 PES heads or their substitutes say they get very detailed indications as to how to implement active labor market policy (105 out of 272 get detailed, 139 get loose indications, 14 get no indication whatsoever).

# 3 Data

Swiss register data

- Unemployment insurance register
    - UE spells: inflow from July 2000 to June 2005, age $< 61.5$ years
    - Unemployment duration and ALMP events in daily precision
    - Sanctions: Warnings (incomplete), Benefit Sanctions (complete)
    - Aggregate information: Municipality of residence, PES in charge, *caseworker* in charge
    - Individual information: socio-demographics, employability, occupation, benefit variables, houshold size, DI filer
- Social security register
    - 25 % random sample of all workers between 1982 to 2008
    - Employment earnings and employment status per month
    - Observe 5 years of pre-unemployment history
    - Dependent variable: Monthly employment earnings, months 1-42 after unemployment exit (in real CHF).
- Matched based on person identifier

Comprehensive data source: daily information on timing, monthly level precision on earnings and employment, detailed information on caseworker and PES.

# 4 Empirical Approach

The objective of our analysis is to measure the effects of the intended use of a policy. Actual use of a program does not provide an accurate description of intended use if the policy affects the outcome process for two reasons. Job seekers leave unemployment before the program can be assigned to them. Job seekers may also react to the intended use of a policy. For instance, job seekers leave unemployment more quickly in an environment where they are exposed to a higher sanction probability, the actual frequency of imposed sanctions will underestimate the intended sanction probability.

## 4.1 Strategy

We now describe how we deal with this problem. Let $t_u$ be the time (in unemployment) to finding a job. Let $t_p$ be the participation duration which follows a competing-risks design: $t_p = min(t_s, t_c, t_u)$. This implies the following definition of the treatment dummies: $D_c = 1$ if $t_p = t_c$, $D_s = 1$ if $t_p = t_s$; both treatment dummies are zero if $t_p = t_u$. Thus, we model the event "first treatment" (if, e.g., first a stick and then a carrot arrives, $t_p$ is censored at $t_s$ and the subsequent carrot is irrelevant). This implies as well that the two treatment dummies are mutually exclusive (no 1/1 combinations).

We focus in the estimation of intended policies on both PES and *caseworker variation*. We define two policy hazards (which take competing risks into account and can therefore be seen as representing intended policies):

$$\theta_c = \lambda_c(t_p)exp(x'\beta_c + \sum_{j=1}^{N_L} \gamma_{c,j}^L D_j^L) \qquad \theta_s = \lambda_s(t_p)exp(x'\beta_s + \sum_{j=1}^{N_j} \gamma_{s,j} D_j^{cw})$$

whereby $D_c$ and $D_s$ are the non-censoring indicators, respectively. $L$ indexes the two layers of implementation, so $L \in \{PES, CW\}$. $D_j^{PES}$ is a set of PES dummy variables, $D_j^{CW}$ is a set of caseworker dummy variables (in total $N_L$ PES or caseworkers).

An interesting policy measure is the probability that the treatment event occurs within two years, i.e. $F_c(720) = 1 - S_c(720) = 1 - exp\left(-\int_0^{720} \theta_c(z)dz\right)$ and equivalently for $F_s$. This measure reflects the probability of being exposed to a program within two years if the other two processes in the competing risks setting are shut down. Specifically, $F_c$ is the probability that a job seeker enters a supporting program within two years in a world where she does not leave unemployment and where punitive programs are not used.

In a second stage, we estimate how these policies affect the unemployment exit hazard or earnings after leaving unemployment. I.e.,

$$\begin{aligned} \theta_u(t_u) &= \lambda_u(t_u)exp(x'\beta_u + \delta_{s,u}D_s(t_s) + \delta_{c,u}D_c(t_c) + \pi_{s,u}^{cw}F_s^{cw} \\ &+ \pi_{c,u}^{cw}F_c^{cw} + \pi_{s,u}^{pes}F_s^{pes} + \pi_{c,u}^{pes}F_c^{pes} + \sum \eta_t + \sum \mu_m) \end{aligned}$$

whereby $\mu_m$ is a set of PES or MS region fixed effects, $\eta_t$ a set of half-yearly inflow time dummies, and $Y^-$ a series of variables that controls for the earnings history of the individual in the last 60 months before unemployment (split in 17 time intervals/parameters). Thus, we exploit the past earnings information to control for employment-related selective differences between the individuals, in the spirit of a flexible Diff-in-Diff approach. The equation to estimate policy- and treatment effects on post-unemployment outcomes has the following form:

$$\begin{aligned} Y &= x'\beta_Y + \delta_{s,Y} D_s + \delta_{c,Y} D_c + \pi^{cw}_{s,Y} F^{cw}_s + \pi^{cw}_{c,Y} F^{cw}_c + \pi^{pes}_{s,Y} F^{pes}_s \\ &+ \pi^{pes}_{c,Y} F^{pes}_c + \tau' f(t_u) + \alpha' Y^- + \sum \eta_t + \sum \mu_m + \varepsilon_Y \end{aligned}$$

$Y$ can represent different post-unemployment outcomes (over a time window of 3.5 years) like earnings or employment probabilities (i.e. employment stability measures). We control as well for unemployment duration (in polynomial form) and PES or MS region fixed effects.

Assuming normality of $\Delta Y$, we can estimate the likelihood function that incorporates the equations for $\Delta Y$ or $\theta_u$ – having plugged in $F_c(720)$ and $F_s(720)$ in both cases – as well as the distributions for the treatment- and policy-relevant durations to the first carrot or stick event ($\theta_c$ and $\theta_s$). As a consequence, the likelihood function for the joint estimation by means of ML (in order to get the correct standard errors which are not biased by the measurement error of a separate 1st-stage-policy estimation) has the following form:

$$\mathcal{L}_i = \prod_{i=1}^{I} \theta_c^{D_c} S_c \cdot \theta_s^{D_s} S_s \cdot f(\frac{\varepsilon_Y}{\sigma})$$

Note that in the case unemployment exit as an outcome, the last term would be replaced by a respective representation of the distribution of realized unemployment durations.

# 5 Results

## 5.1 Core Results: Effects on Post-Unemployment Earnings

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Table 1: The effect of C&S policies and treatments on monthly post-unemployment earnings (over 3.5 years; men)

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| carrot TE | 280.5*** | | 162.3*** | 152.7*** | 157.9*** | 159.9*** | 164.3*** |
| | (19.36) | | (21.33) | (21.27) | (21.34) | (21.22) | (21.32) |
| stick TE | | -368.8*** | | -308.6*** | -291.8*** | -283.0*** | -274.3*** |
| | | (16.30) | | (17.96) | (18.09) | (18.04) | (18.25) |
| sanction TE | | | -348.3*** | | | | |
| | | | (18.84) | | | | |
| workfare TE | | | -70.16** | | | | |
| | | | (34.56) | | | | |
| carrot policy CW | | | | | 10.39 | | -50.74 |
| | | | | | (66.87) | | (64.69) |
| stick policy CW | | | | | -415.9*** | | -215.3*** |
| | | | | | (68.37) | | (57.45) |
| carrot policy PES | | | | | | 842.4*** | 873.7*** |
| | | | | | | (141.2) | (144.6) |
| stick policy PES | | | | | | -1,132*** | -1,053*** |
| | | | | | | (169.6) | (162.3) |
| intercept | 3,223*** | 3,216*** | 3,215*** | 3,210*** | 3,416*** | 3,455*** | 3,535*** |
| | (70.79) | (70.79) | (70.79) | (70.79) | (82.38) | (110.7) | (116.2) |
| obs. (spells) | 131,037 | 131,037 | 131,037 | 131,037 | 131,037 | 131,037 | 131,037 |
| $R^2$ | 0.380 | 0.381 | 0.382 | 0.382 | 0.382 | 0.377 | 0.377 |
| FE at level | PES | PES | PES | PES | PES | MS | MS |

*Note:* TE=treatment effect; CW=caseworker; PES=Public Employment Service office; FE=fixed effect; MS=labor market regions (spatial mobility areas). Standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ .

## 5.2 Core Results: Effects on Unemployment Exit Rate

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Table 2: The effect of C&S policies and treatments on unemployment exit (hazard rate; men)

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| carrot TE | -0.342*** | | -0.407*** | -0.415*** | -0.405*** | -0.412*** |
| | (0.00819) | | (0.00882) | (0.00887) | (0.00883) | (0.00887) |
| stick TE | | -0.00731 | -0.171*** | -0.182*** | -0.171*** | -0.180*** |
| | | (0.00795) | (0.00855) | (0.00861) | (0.00856) | (0.00861) |
| carrot policy CW | | | | 0.137*** | | 0.136*** |
| | | | | (0.0282) | | (0.0284) |
| stick policy CW | | | | 0.234*** | | 0.216*** |
| | | | | (0.0243) | | (0.0243) |
| carrot policy PES | | | | | 0.235*** | 0.158*** |
| | | | | | (0.0553) | (0.0574) |
| stick policy PES | | | | | 0.321*** | 0.249*** |
| | | | | | (0.0421) | (0.0432) |
| intercept | -4.718*** | -4.750*** | -4.724*** | -4.917*** | -5.257*** | -5.359*** |
| | (0.0311) | (0.0311) | (0.0311) | (0.0362) | (0.0423) | (0.0434) |
| obs. (spells) | 131037 | 131037 | 131037 | 131037 | 131037 | 131037 |
| log-likelihood | -198722 | -199705 | -198519 | -198455 | -198693 | -198636 |
| FE at level | PES | PES | PES | PES | MS | MS |

*Note:* TE=treatment effect; CW=caseworker; PES=Public Employment Service office; FE=fixed effect; MS=labor market regions (spatial mobility areas). Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1 .

Table 3: The transition of a single-treatment-effect setup to the C&S setup: Decomposition of treatment effects on unemployment exit (hazard rate; men)

| *model* | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| carrot | *yes* | | | | *yes* | *yes* | *yes* | *yes* |
| stick | | *yes* | *decomp.* | *decomp.* | *decomp.* | *decomp.* | *yes* | *yes* |
| censored | | | | *yes* | *yes* | | *yes* | |
| carrot TE | -0.342*** | | | | -0.430*** | -0.415*** | -0.419*** | -0.407*** |
| | (0.00819) | | | | (0.00947) | (0.00883) | (0.00946) | (0.00882) |
| stick TE | | -0.0073 | | | | | -0.0819*** | -0.171*** |
| | | (0.00795) | | | | | (0.00912) | (0.00855) |
| sanction TE | | | 0.0590*** | 0.0430*** | 0.0224** | -0.102*** | | |
| | | | (0.00841) | (0.00973) | (0.00960) | (0.00892) | | |
| workfare TE | | | -0.340*** | -0.481*** | -0.546*** | -0.535*** | | |
| | | | (0.0188) | (0.0210) | (0.0207) | (0.0192) | | |
| intercept | -4.718*** | -4.750*** | -4.759*** | -4.578*** | -4.683*** | -4.734*** | -4.673*** | -4.724*** |
| | (0.0311) | (0.0311) | (0.0311) | (0.0355) | (0.0324) | (0.0311) | (0.0324) | (0.0311) |
| obs. (spells) | 131037 | 131037 | 131037 | 131037 | 131037 | 131037 | 131037 | 131037 |
| parameters | 296 | 296 | 297 | 297 | 298 | 298 | 297 | 297 |
| log-likelihood | -198722 | -199705 | -199479 | -168675 | -190673 | -198251 | -191070 | -198519 |
| FE at level | PES | PES | PES | PES | PES | PES | PES | PES |

*Notes:* decomp.=decomposition of stick effect into effect of sanction and effect of workfare program; TE=treatment effect; FE=fixed effect; censored= spell is censored at occurrence of first event of the other type (than the reported TE; in model 4, the control group spells are censored at occurrence of a carrot event). Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1 .

### 5.3 Explaining the Post-Unemployment Effects: Employment vs. Earnings

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Table 4: Explaining the post-ue effect: employment propensity (proportion of months employed within observation window) vs. monthly earnings while employed (over 3.5 years; men)

| | *effect on employment* | | | | *effect on earnings while employed* | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| carrot TE | 0.0347*** | 0.0350*** | 0.0353*** | 0.0355*** | 37.17* | 43.03** | 44.13** | 48.96** |
| | (0.00273) | (0.00274) | (0.00273) | (0.00274) | (20.05) | (20.11) | (20.10) | (20.18) |
| stick TE | -0.0397*** | -0.0376*** | -0.0361*** | -0.0351*** | -234.0*** | -224.0*** | -221.5*** | -216.2*** |
| | (0.00271) | (0.00273) | (0.00271) | (0.00273) | (17.53) | (17.59) | (17.59) | (17.75) |
| carrot policy CW | | 0.0122 | | 0.00530 | | -94.67 | | -117.5* |
| | | (0.00863) | | (0.00860) | | (60.59) | | (60.32) |
| stick policy CW | | -0.0526*** | | -0.0289*** | | -215.3*** | | -101.5* |
| | | (0.00791) | | (0.00757) | | (60.49) | | (52.12) |
| carrot policy PES | | | 0.0539*** | 0.0516*** | | | 651.3*** | 716.6*** |
| | | | (0.0177) | (0.0182) | | | (127.1) | (131.4) |
| stick policy PES | | | -0.131*** | -0.120*** | | | -642.0*** | -610.6*** |
| | | | (0.0153) | (0.0152) | | | (155.3) | (149.9) |
| intercept | 0.718*** | 0.738*** | 0.747*** | 0.754*** | 3,882*** | 4,044*** | 4,072*** | 4,134*** |
| | (0.0101) | (0.0116) | (0.0140) | (0.0144) | (64.98) | (76.25) | (105.1) | (110.5) |
| obs. (spells) | 131,037 | 131,037 | 131,037 | 131,037 | 119,033 | 119,033 | 119,033 | 119,033 |
| $R^2$ | 0.169 | 0.170 | 0.167 | 0.167 | 0.431 | 0.432 | 0.426 | 0.426 |
| FE at level | PES | PES | MS | MS | PES | PES | MS | MS |

*Note:* The outcome variable in models (1) to (4) is the proportion of months employed within the post-unemployment observation window (max./usually 42 months); in models (5) to (8) the outcome variable is average monthly earnings when employed within the same period. TE=treatment effect; CW=caseworker; PES=Public Employment Service office; FE=fixed effect; MS=labor market regions (spatial mobility areas). Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1 .

## 5.4 Policy Interactions between Carrots and Sticks

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Table 5: Policy interactions between carrots and sticks: marginal substitution/compensation effects when deviating from median policy intensity (ue exit and post-ue earnings; men)

| | *unemployment exit* | | *post-ue earnings* | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| carrot TE | -0.412*** | -0.410*** | 164.3*** | 164.1*** |
| | (0.00887) | (0.00888) | (21.32) | (21.33) |
| stick TE | -0.180*** | -0.180*** | -274.3*** | -274.3*** |
| | (0.00861) | (0.00861) | (18.25) | (18.24) |
| carrot policy CW | 0.136*** | 0.141*** | -50.74 | -54.16 |
| | (0.0284) | (0.0284) | (64.69) | (65.00) |
| stick policy CW | 0.216*** | 0.225*** | -215.3*** | -204.4*** |
| | (0.0243) | (0.0245) | (57.45) | (59.55) |
| carrot policy PES | 0.158*** | 0.200*** | 873.7*** | 868.7*** |
| | (0.0574) | (0.0578) | (144.6) | (142.4) |
| stick policy PES | 0.249*** | 0.243*** | -1,053*** | -1,050*** |
| | (0.0432) | (0.0433) | (162.3) | (161.8) |
| policy interaction CW | | 0.165* | | 375.7 |
| | | (0.0892) | | (230.0) |
| policy interaction PES | | 0.403*** | | -454.6* |
| | | (0.101) | | (264.5) |
| intercept | -4.937*** | -4.933*** | 3,341*** | 3,342*** |
| | (0.0246) | (0.0246) | (60.20) | (60.25) |
| obs. (spells) | 131,037 | 131,037 | 131,037 | 131,037 |
| log-likelihood | -198636 | -198615 | | |
| $R^2$ | | | 0.377 | 0.377 |
| FE at level | MS | MS | MS | MS |

*Note:* The policy and interaction variables are defined here as deviations from the respective median policy intensity. TE=treatment effect; CW=caseworker; PES=Public Employment Service office; FE=fixed effect; MS=labor market regions (spatial mobility areas). Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1 .

## 5.5 Results for Women

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Table 6: Policy- and treatment effects for women: unemployment exit, post-unemployment earnings, employment-vs.-earnings decomposition, policy interactions

| | *ue exit* | *post-ue earnings* | *employm.* | *earnings w.empl.* | *ue exit* | *post-ue earnings* |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| carrot TE | -0.429*** | 172.7*** | 0.0328*** | 113.8*** | -0.431*** | 172.0*** |
| | (0.0109) | (20.10) | (0.00350) | (19.77) | (0.0109) | (20.14) |
| stick TE | -0.224*** | -125.1*** | -0.0214*** | -105.8*** | -0.225*** | -125.7*** |
| | (0.0121) | (20.22) | (0.00403) | (19.36) | (0.0121) | (20.23) |
| carrot policy CW | 0.0422 | 28.27 | 0.00534 | 4.278 | 0.0527 | 19.16 |
| | (0.0374) | (62.74) | (0.0117) | (59.81) | (0.0376) | (64.47) |
| stick policy CW | 0.186*** | -48.88 | -0.0139 | -24.66 | 0.167*** | -40.57 |
| | (0.0302) | (53.75) | (0.00973) | (52.04) | (0.0308) | (55.54) |
| carrot policy PES | 0.226*** | 522.9*** | 0.0494** | 480.5*** | 0.189** | 512.9*** |
| | (0.0766) | (146.4) | (0.0252) | (137.9) | (0.0769) | (146.8) |
| stick policy PES | 0.235*** | -186.2 | -0.0802*** | 92.48 | 0.236*** | -189.1 |
| | (0.0602) | (158.5) | (0.0206) | (167.3) | (0.0602) | (158.4) |
| policy interaction CW | | | | | -0.438*** | 217.3 |
| | | | | | (0.131) | (225.9) |
| policy interaction PES | | | | | -0.296* | -516.2* |
| | | | | | (0.157) | (290.1) |
| intercept | -5.610*** | 2,595*** | 0.730*** | 3,263*** | -5.255*** | 2,848*** |
| | (0.0560) | (110.9) | (0.0192) | (110.6) | (0.0336) | (63.98) |
| obs. (spells) | 76,821 | 76,821 | 76,821 | 68,613 | 76,821 | 76,821 |
| log-likelihood | -115396 | | | | -115382 | |
| $R^2$ | | 0.369 | 0.155 | 0.410 | | 0.369 |
| FE at level | MS | MS | MS | MS | MS | MS |

*Note:* The interaction variables are defined here as deviations from the respective median policy intensity. TE=treatment effect; CW=caseworker; PES=Public Employment Service office; FE=fixed effect; MS=labor market regions (spatial mobility areas). Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1 .

# 6 Conclusions

*Conclusions from a methodological point of view:*

1. Setup for joint estimation of policies & programs & types
    - Policies: exploiting caseworker/PES variation allows stable estimation
    - Flexible setup: assessment of quantitative importance of supportive and punitive policies; can easily be adapted to other comparative analyses of policy/treatment mixes
    - Allows introduction of (different types of) interactions
2. Choice of considered policy level matters
    - Omission of relevant policy level(s) biases estimates
    - Empirical analysis of relative importance of different agents in policy implementation (and quantification of strategic discretions in system)
3. Individual treatment effects : joint estimation
    - ... robust to taking into account policy effects
    - ... of treatment types (C&S): "purely" non-treated as controls (type approach rather than single treatment approach)

*Conclusions and policy implications with respect to found policy effects:*

1. Policy effects (ex-ante) matter
    - carrots: motivation/effort
    - sticks: threat/pressure
    - gender difference in reaction on policies
    - job quality effects: stronger on earnings than on empl. stability
2. Levels of policy implementation matter
    - training/jsa effects mostly driven by PES strategies
    - stick effects: importance of caseworker decisions
    - PES level policy quantitatively more important
    - ...but importance of caseworker in short-run outcome (ue exit)

3. Interaction of policy regimes

   (a) negative on post-ue earnings

      - higher intensity not complementary: pressure on reservation wage $\downarrow$

      $\Rightarrow$ thus, not optimal to maximize both policy types

   (b) positive in short-run for men, but not for women

      - men: complementary policy effects on ue exit
      - women: intensification of both policy types prolongs ue duration