CONTRACTING OUT MANDATORY COUNSELLING AND TRAINING FOR LONG-TERM UNEMPLOYED. PRIVATE FOR-PROFIT OR NON-PROFIT, OR KEEP IT PUBLIC?

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Online Appendix: Simulation Method and Complete Estimation Results

OA.1 Simulation Method

The simulation methodology is similar to the one proposed by Crépon, Dejemeppe and Gurgand (2005). The aims of the simulations are to obtain (i) goodness-of-fit of statistics of the estimated model and (ii) summary statistics of various counterfactual evaluations. For the goodness-of-fit we simulate the model for the complete sample that was used in the estimations, while for the counterfactual evaluations we do this for the various sub-samples that have undergone the treatment under consideration: the overall treatment, which always starts with the orientation phase or intake by the PES, or the treatment provided by a FPO or a NPO, which starts at the assignment to the external provider. For the counterfactual analysis we contrast the simulated outcomes obtained by setting the corresponding treatment indicator to one to those resulting when all treatment indicators are zero (when evaluating the overall treatment effect relative to the counterfactual of no treatment), or when an alternative treatment indicator is one (that of the PES or the NPO (FPO) in case of treatment by the FPO (NPO)). As such we obtain "treatment effects on the treated". Because the simulated durations may take on very large values, we report the median treatment effects on the treated (MTT) rather than the average treated effects on the treated (ATT). In addition, since a number of points of support of the unobserved heterogeneity distribution approach minus infinity, in the simulations some durations approach plus infinity. For cases in which we include these durations in the statistics (the unconditional distributions), we set these to the same very large value. Otherwise, they are ignored.

For each of the aforementioned objectives the simulation is repeated 999 times on the retained (sub-) sample. By calculating summary statistics (e.g., the median duration, or the fraction left to a particular destination over a fixed period of time) for each of these 999 simulations we can construct 95% CI intervals of these statistics by selecting the 5th and 95th percentiles of these 999 simulated statistics. These then can be compared to the corresponding statistic for the observed data in the case of the goodness-of-fit analysis, or to the median treatment effect in case of the counterfactual treatment analysis.

The simulations proceed by the following steps:

1. Draw a vector of parameters under the assumption that the true vector is jointly Normally distributed with the mean equal to the point estimates and variance to the estimated variance-covariance

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matrix of these parameters. By doing so, the 95% CI takes the precision of the estimation into account.

2. Based on this vector of parameters, randomly draw for each individual in the retained sample a six-dimensional vector of points of support from the distribution of unobserved heterogeneity at sample selection. Notice that this distribution is different for each of these (sub-)samples, since, as a consequence of the dynamic sorting process, it depends on the elapsed unemployment duration. This is even the case when we consider the complete sample, because of the presence of stock sampling. We will explain this further below.

3. Based on this information calculate for each individual in the sample the value of the transition intensity to all destinations at each (un)employment duration.[3] These values allow randomly drawing for each sampled individual a latent duration to any of the destinations at risk at that moment. Initially, at the moment of labelling, 3 latent durations are drawn: to employment (e), out of the labour force (o) or to treatment by the PES (p). If treated by the PES, 4 latent durations are drawn: to employment (e), out of the labour force (o), to treatment by an FPO (f) or by an NPO (n). Finally, if treated by either an FPO or an NPO two latent durations are drawn: either to employment (e), out of the labour force (o). A draw of a latent duration is obtained by randomly drawing a value for the conditional probability of survival. The survival probability is conditioned upon surviving at least t_j^- months in the origin state $j \in \{0, p, f, n, e\}$, because we at the start of each simulation the individual has always already been in that state for some period. Indeed, individuals are sampled at labelling, moment at which the individual has already been unemployed for at least 21 months. Moreover, since each different treatment state (PES, FPO or NPO) affects the transition intensities while participants are assumed to remain unemployed, each time an individual enters a treatment a new unemployment duration must be drawn conditional on the elapsed unemployment duration at the start of this treatment. Since the conditional survivor function is always bracketed by the zero-one interval, a random value is obtained by randomly drawing a number r from the uniform [0,1] distribution. The corresponding duration is then found by solving the equality of the conditional survivor function to r for the unknown latent duration t_{jd} for origin state j and destination state $\boldsymbol{d}$. To illustrate how this works, we ignore for notational simplicity the dependence of the transition intensities on the time-varying unemployment rate, the lagged dependent variables and the treatment indicators. In that case the aforementioned equality takes the following form:

$$r = exp\left[-\exp(x'\beta_{jd} + v_d)\left(\exp\left(\lambda_{jdl_{jd}}\right)\left(t_{l_{jd}} - t_{jd}^-\right) + \sum_{i=l_{jd}+1}^{k_{jd}-1} \exp(\lambda_{jdi})\left(t_i - t_{(i-1)}\right) + \exp\left(\lambda_{jdk_{jd}}\right)\left(t_{jd} - t_{(k_{jd}-1)}\right)\right)\right]$$

where $t_{jd}^- \in [t_{(l_{jd}-1)}, t_{l_{jd}})$ and $t_{jd} \in [t_{(k_{jd}-1)}, t_{k_{jd}})$. By inverting this relation, one obtains:

[3] In the goodness-of-fit analysis of exits during the unemployment spell we take the effect of the time-varying unemployment rate into account, except for cases in which the simulated duration exceeds the realised one. In these cases we fix the unemployment rate to the one observed at the end of the realised spell. For the goodness-of-fit of the cumulative exit rate from employment back to unemployment, we fix for simplicity the unemployment rate to the average in the corresponding duration intervals. For the counterfactual analysis we fix the unemployment rate to its value at the start of the treatment both for in case of treatment and in the counterfactual of no treatment.

$$\exp\left(\lambda_{jdl_{jd}}\right)\left(t_{l_{jd}} - t_{jd}^{-}\right) + \sum_{i=l_{jd}+1}^{k_{jd}-1} \exp\left(\lambda_{jdi}\right)\left(t_i - t_{(i-1)}\right) + \exp\left(\lambda_{jdk_{jd}}\right)\left(t_{jd} - t_{(k_{jd}-1)}\right)$$
$$= -\log(r)\ \exp\left(-x'\beta_{jd} - v_d\right)$$

This equation can be solved for t_{jd} by progressively increasing k_{jd} from l_{jd} to K_{jd} until the equality is satisfied.

4. Once latent durations for all possible destinations in the considered origin state have been drawn, the minimum of these latent durations defines the realised duration and destination state. The other latent durations are right censored. Subsequently, the destination state becomes origin state and we progress as described in point 3. Continue until an absorbing state is entered, i.e. out of the labour force or re-entry in unemployment after an employment spell. We do not right censor observations at the end of the observation period. This requires assuming that the baseline hazard remains constant in the last duration interval and that the provincial unemployment rate remains fixed at the last known value for the considered individual (see footnote 38). In this way the issue of right censoring is avoided when producing summary statistics of the simulated duration distributions. Nevertheless, one still need to take into account that the duration is infinite for those individuals for whom a point of support of the unobserved heterogeneity distribution has been drawn that tends to minus infinity.

5. Based on the simulated durations the summary statistics of interest can be calculated for the retained sample.

6. Go back to the first step until 999 simulations have been performed.

7. Based on the 999 summary statistics one can easily calculate the median of these statistics and construct empirical 95% CI's.

In point 2 we mentioned that the distribution of unobserved heterogeneity depends on the elapsed duration in the origin state of interest at sample selection. For instance, consider the sample selected at labelling, i.e. when the elapsed unemployment duration is $t_0 \geq 21$. The estimated distribution of unobserved heterogeneity applies to an individual who has been 21 months unemployed, since exits before these 21 months are not observed in the data. The unobserved heterogeneity distribution for an individual for whom the elapsed unemployment duration strictly exceeds 21 months at labelling differs, because it is affected by dynamic sorting, i.e. individuals with a low (unobserved) likelihood of leaving unemployment are more likely to remain unemployed for more than 21 months. Hence, the distribution of unobserved heterogeneity for an individual with an elapsed duration equal to $t_0 > 21$ is characterised by the following probabilities $\tilde{p}^m$ for $m = 1, \dots, M = 11$:

$$\tilde{p}^m = \frac{p^m S_u(t_0 - 21|.,V = v^m)}{\sum_{m=1}^{M} p^m S_u(t_0 - 21|.,V = v^m)}.$$

Hence, we first calculate these modified probabilities before assigning unobserved mass points to individuals. In case of the counterfactual evaluations we similarly modify these probabilities to take the elapsed duration at the start of the considered treatment into account.

Table OA.1: The Complete Estimation Results

Proportional Effect of Hazard	Model (i)	Model (ii)	Model (iii)
A. Transition from U to E			
Treatment PES (ref.)	0.809*** (0.041)	1.717*** (0.068)	1.639*** (0.077)
Treatment FPO	0.410*** (0.065)	0.228* (0.116)	0.294*** (0.105)
Treatment NPO	0.311*** (0.082)	0.028 (0.119)	0.187 (0.127)
Treatment PES * Linear index			-0.458*** (0.074)
Treatment FPO * Linear index			-0.222* (0.125)
Treatment NPO * Linear index			-0.314* (0.171)
District: Mechelen	-0.269*** (0.082)	-0.106 (0.103)	-0.040 (0.099)
District: Turnhout	-0.085 (0.082)	-0.124 (0.095)	-0.159* (0.097)
District: Leuven	0.480*** (0.161)	0.354*** (0.130)	0.400*** (0.136)
District: Vilvoorde	0.614*** (0.156)	0.393*** (0.131)	0.441*** (0.137)
District: Brugge	0.428** (0.173)	0.135 (0.164)	0.213 (0.161)
District: Kortrijk-Roeselare	0.315** (0.148)	0.248* (0.132)	0.288** (0.135)
District: Oostende-Ieper	0.453*** (0.150)	0.410*** (0.132)	0.421*** (0.136)
District: Aalst-Oudenaarde	-0.045 (0.114)	0.090 (0.116)	0.102 (0.117)
District: Gent	0.232*** (0.084)	0.141* (0.080)	0.159** (0.078)
District: St-Niklaas-Denderleeuw	0.235** (0.106)	0.292** (0.112)	0.307*** (0.118)
District: Hasselt	0.045 (0.062)	-0.183** (0.076)	-0.182** (0.075)
District: Tongeren	-0.101 (0.103)	-0.559*** (0.128)	-0.554*** (0.130)
Woman	-0.124*** (0.036)	-0.155*** (0.043)	-0.260*** (0.060)
Migrant background	-0.169*** (0.053)	-0.287*** (0.062)	-0.537*** (0.098)
Disabled	-0.814*** (0.052)	-0.342*** (0.074)	-0.757*** (0.151)
Driver's licence	0.202*** (0.041)	0.053 (0.047)	0.087 (0.069)
Proficient in Dutch	-0.124** (0.055)	0.040 (0.064)	0.069 (0.089)
Number of languages in which proficient	0.039* (0.022)	0.038 (0.026)	0.051 (0.035)
Education: secondary (≥ grade 10 & < grade 12)	0.018 (0.046)	-0.006 (0.052)	0.026 (0.077)
Education: secondary (≥ grade 12)	-0.189*** (0.050)	0.113** (0.056)	0.223*** (0.081)
Education: tertiary (bachelor or master)	-0.338*** (0.071)	-0.055 (0.084)	0.086 (0.114)
Age at labelling	-0.044 (0.037)	-0.119*** (0.039)	-0.093* (0.054)
(Age at labelling)²	0.000 (0.000)	0.002*** (0.001)	0.002*** (0.001)
Provincial unemployment rate at labelling	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
Provincial unemployment rate during interval	0.003*** (0.000)	0.002*** (0.000)	0.002*** (0.000)
λ_{ue2}: $[s_{1_{ue}} = 3, s_{2_{ue}} = 6)$	-0.104 (0.111)	0.240* (0.144)	0.378*** (0.143)
λ_{ue3}: $[s_{2_{ue}} = 6, s_{3_{ue}} = 9)$	-0.250** (0.113)	0.329* (0.175)	0.510*** (0.171)
λ_{ue4}: $[s_{3_{ue}} = 9, s_{4_{ue}} = 12)$	-0.375*** (0.116)	0.281 (0.175)	0.473*** (0.173)
λ_{ue5}: $[s_{4_{ue}} = 12, s_{5_{ue}} = 15)$	-0.539*** (0.116)	0.206 (0.172)	0.427** (0.173)
λ_{ue6}: $[s_{5_{ue}} = 15, s_{6_{ue}} = 22)$	-0.586*** (0.107)	0.158 (0.162)	0.386** (0.165)
λ_{ue7}: $[s_{6_{ue}} = 22, s_{7_{ue}} = 34)$	-0.891*** (0.107)	-0.032 (0.162)	0.238 (0.164)
λ_{ue8}: $[s_{7_{ue}} = 34, s_{8_{ue}} = 46)$	-1.117*** (0.115)	-0.066 (0.167)	0.240 (0.168)
λ_{ue9}: $[s_{8_{ue}} = 46, s_{9_{ue}} = 76)$	-1.830*** (0.113)	-0.218 (0.170)	0.117 (0.171)
λ_{ue10}: $[s_{9_{ue}} = 76, s_{10_{ue}} = \infty)$	-2.251*** (0.120)	-0.148 (0.176)	0.133 (0.173)
Intercept	-3.956*** (0.127)	-5.008*** (0.218)	-5.128*** (0.219)
B. Transition from U to OLF			
Treatment PES (ref.)	0.336*** (0.038)	1.678*** (0.067)	2.281*** (0.108)

Treatment FPO	-0.058 (0.082)	0.314** (0.130)	0.245* (0.131)
Treatment NPO	-0.083 (0.096)	0.157 (0.138)	0.187 (0.155)
Treatment PES * Linear index	-	-	-0.633*** (0.046)
Treatment FPO * Linear index	-	-	-0.078 (0.118)
Treatment NPO * Linear index	-	-	-0.132 (0.143)
District: Mechelen	-0.159* (0.083)	0.076 (0.123)	0.162 (0.110)
District: Turnhout	0.143* (0.075)	0.186* (0.108)	0.227** (0.103)
District: Leuven	1.349*** (0.138)	0.813*** (0.141)	0.972*** (0.139)
District: Vilvoorde	1.247*** (0.140)	0.865*** (0.150)	1.075*** (0.140)
District: Brugge	0.943*** (0.163)	0.671*** (0.183)	0.822*** (0.173)
District: Kortrijk-Roeselare	1.127*** (0.131)	0.835*** (0.141)	0.954*** (0.135)
District: Oostende-Ieper	1.012*** (0.138)	0.892*** (0.151)	1.073*** (0.141)
District: Aalst-Oudenaarde	0.525*** (0.104)	0.685*** (0.123)	0.781*** (0.116)
District: Gent	0.590*** (0.078)	0.402*** (0.092)	0.535*** (0.087)
District: St-Niklaas-Denderleeuw	0.396*** (0.106)	0.320** (0.136)	0.463*** (0.122)
District: Hasselt	0.188*** (0.059)	0.047 (0.089)	0.096 (0.086)
District: Tongeren	0.185** (0.093)	-0.172 (0.140)	-0.038 (0.133)
Woman	0.254*** (0.036)	0.294*** (0.049)	0.160** (0.072)
Migrant background	0.302*** (0.049)	0.292*** (0.067)	0.365*** (0.093)
Disabled	-0.120*** (0.041)	0.710*** (0.077)	1.381*** (0.123)
Driver's licence	0.057 (0.038)	-0.127** (0.054)	-0.296*** (0.069)
Proficient in Dutch	0.048 (0.051)	0.224*** (0.076)	0.117 (0.095)
Number of languages in which proficient	-0.058** (0.023)	-0.073** (0.033)	-0.043 (0.046)
Education: secondary (≥ grade 10 & < grade 12)	-0.013 (0.043)	-0.117** (0.059)	-0.132* (0.077)
Education: secondary (≥ grade 12)	-0.224*** (0.049)	0.083 (0.066)	0.112 (0.087)
Education: tertiary (bachelor or master)	-0.417*** (0.076)	-0.103 (0.110)	0.057 (0.159)
Age at labelling	-0.009 (0.034)	-0.137*** (0.046)	-0.262*** (0.063)
(Age at labelling)^2	0.000 (0.000)	0.003*** (0.001)	0.005*** (0.001)
Provincial unemployment rate at labelling	0.000 (0.000)	-0.001*** (0.000)	0.000 (0.000)
Provincial unemployment rate during interval	0.004*** (0.000)	0.003*** (0.000)	0.003*** (0.000)
λ_{uo2}: $[s_{1_{uo}} = 3, s_{2_{uo}} = 6)$	0.396*** (0.114)	0.290** (0.143)	0.146 (0.124)
λ_{uo3}: $[s_{2_{uo}} = 6, s_{3_{uo}} = 9)$	0.024 (0.120)	-0.059 (0.183)	-0.235* (0.139)
λ_{uo4}: $[s_{3_{uo}} = 9, s_{4_{uo}} = 12)$	0.083 (0.119)	0.054 (0.201)	-0.141 (0.141)
λ_{uo5}: $[s_{4_{uo}} = 12, s_{5_{uo}} = 15)$	-0.353*** (0.126)	-0.302 (0.222)	-0.504*** (0.151)
λ_{uo6}: $[s_{5_{uo}} = 15, s_{6_{uo}} = 22)$	-0.240** (0.113)	-0.153 (0.222)	-0.352** (0.137)
λ_{uo7}: $[s_{6_{uo}} = 22, s_{7_{uo}} = 34)$	-0.383*** (0.111)	-0.152 (0.236)	-0.330** (0.136)
λ_{uo8}: $[s_{7_{uo}} = 34, s_{8_{uo}} = 46)$	-0.430*** (0.118)	-0.019 (0.247)	-0.172 (0.143)
λ_{uo9}: $[s_{8_{uo}} = 46, s_{9_{uo}} = 76)$	-0.962*** (0.115)	-0.058 (0.247)	-0.200 (0.147)
λ_{uo10}: $[s_{9_{uo}} = 76, s_{10_{uo}} = \infty)$	-1.248*** (0.116)	0.268 (0.252)	0.092 (0.150)
Intercept	-4.696*** (0.130)	-6.162*** (0.247)	-6.238*** (0.202)
C. Transition from U to PES			
t_0: unemployment duration at labelling	0.001** (0.000)	-0.009*** (0.000)	-0.009*** (0.000)
District: Mechelen	0.475*** (0.049)	0.940*** (0.067)	0.898*** (0.064)
District: Turnhout	0.266*** (0.042)	0.656*** (0.054)	0.643*** (0.053)
District: Leuven	1.650*** (0.083)	1.132*** (0.086)	1.101*** (0.084)
District: Vilvoorde	1.855*** (0.082)	1.380*** (0.084)	1.328*** (0.082)

District: Brugge	1.723*** (0.083)	1.257*** (0.094)	1.224*** (0.093)
District: Kortrijk-Roeselare	1.977*** (0.076)	1.727*** (0.085)	1.687*** (0.084)
District: Oostende-Ieper	1.970*** (0.079)	1.799*** (0.085)	1.753*** (0.085)
District: Aalst-Oudenaarde	1.490*** (0.060)	1.505*** (0.069)	1.482*** (0.068)
District: Gent	1.083*** (0.047)	0.739*** (0.049)	0.716*** (0.048)
District: St-Niklaas-Denderleeuw	1.302*** (0.064)	1.347*** (0.067)	1.313*** (0.066)
District: Hasselt	0.141*** (0.038)	0.683*** (0.046)	0.669*** (0.046)
District: Tongeren	0.333*** (0.051)	0.546*** (0.078)	0.503*** (0.073)
Woman	-0.098*** (0.021)	-0.046* (0.025)	-0.036 (0.025)
Migrant background	0.176*** (0.032)	0.020 (0.038)	0.033 (0.037)
Disabled	0.192*** (0.022)	-0.159*** (0.029)	-0.166*** (0.029)
Driver's licence	-0.056** (0.022)	-0.003 (0.027)	-0.001 (0.027)
Proficient in Dutch	-0.037 (0.030)	0.092** (0.037)	0.103*** (0.036)
Number of languages in which proficient	0.011 (0.013)	-0.049*** (0.016)	-0.049*** (0.016)
Education: secondary (≥ grade 10 & < grade 12)	0.051** (0.025)	0.064** (0.031)	0.062** (0.031)
Education: secondary (≥ grade 12)	0.003 (0.028)	0.002 (0.034)	0.006 (0.034)
Education: tertiary (bachelor or master)	0.007 (0.042)	-0.008 (0.051)	-0.024 (0.049)
Age at labelling	-0.052** (0.021)	-0.118*** (0.025)	-0.107*** (0.025)
(Age at labelling)²	0.001*** (0.000)	0.000 (0.000)	0.000 (0.000)
Provincial unemployment rate at labelling	0.000* (0.000)	0.000 (0.000)	0.000 (0.000)
Provincial unemployment rate during interval	0.006*** (0.000)	0.002*** (0.000)	0.002*** (0.000)
λ_{up2}: $[s_{1_{up}} = 1, s_{2_{up}} = 2)$	0.584*** (0.045)	0.679*** (0.046)	0.674*** (0.046)
λ_{up3}: $[s_{2_{up}} = 2, s_{3_{up}} = 3)$	0.672*** (0.047)	0.807*** (0.049)	0.797*** (0.048)
λ_{up4}: $[s_{3_{up}} = 3, s_{4_{up}} = 4)$	0.718*** (0.047)	0.995*** (0.051)	0.979*** (0.050)
λ_{up5}: $[s_{4_{up}} = 4, s_{5_{up}} = 6)$	0.361*** (0.044)	0.874*** (0.051)	0.853*** (0.049)
λ_{up6}: $[s_{5_{up}} = 6, s_{6_{up}} = 8)$	0.017 (0.049)	0.840*** (0.057)	0.812*** (0.054)
λ_{up7}: $[s_{6_{up}} = 8, s_{7_{up}} = 10)$	0.755*** (0.045)	1.577*** (0.059)	1.547*** (0.056)
λ_{up8}: $[s_{7_{up}} = 10, s_{8_{up}} = 12)$	1.239*** (0.049)	2.155*** (0.067)	2.123*** (0.063)
λ_{up9}: $[s_{8_{up}} = 12, s_{9_{up}} = 15)$	1.192*** (0.047)	2.564*** (0.074)	2.522*** (0.069)
λ_{up10}: $[s_{9_{up}} = 15, s_{10_{up}} = \infty)$	0.234*** (0.067)	3.750*** (0.098)	3.675*** (0.092)
Intercept	-3.858*** (0.059)	-2.996*** (0.114)	-3.030*** (0.083)
D. Transition from PES to FPO			
t_0: unemployment duration at labelling	-0.001* (0.001)	-0.005*** (0.001)	-0.003*** (0.001)
t_1:duration between labelling and orientation phase	-0.061*** (0.008)	-0.042** (0.017)	-0.047*** (0.015)
District: Mechelen	-0.580*** (0.148)	-0.485*** (0.180)	-0.519*** (0.172)
District: Turnhout	-0.621*** (0.161)	-0.536*** (0.177)	-0.565*** (0.173)
District: Leuven	0.514*** (0.183)	0.552** (0.240)	0.526** (0.230)
District: Vilvoorde	-0.401* (0.211)	-0.480* (0.252)	-0.502** (0.245)
District: Aalst-Oudenaarde	-0.554*** (0.182)	-0.479** (0.214)	-0.525** (0.206)
District: Gent	0.234** (0.100)	0.277** (0.130)	0.247** (0.123)
District: St-Niklaas-Denderleeuw	-0.720*** (0.194)	-0.671*** (0.221)	-0.709*** (0.214)
District: Hasselt	-0.245** (0.114)	-0.041 (0.152)	-0.089 (0.142)
District: Tongeren	-0.900*** (0.210)	-0.850*** (0.225)	-0.883*** (0.218)
Woman	-0.109* (0.061)	-0.165** (0.070)	-0.129* (0.068)
Migrant background	-0.227** (0.100)	-0.304*** (0.109)	-0.275*** (0.105)
Disabled	-1.937*** (0.115)	-2.142*** (0.131)	-2.106*** (0.128)

Driver's licence	0.154** (0.068)	0.183** (0.078)	0.184** (0.076)
Proficient in Dutch	0.424*** (0.103)	0.436*** (0.110)	0.449*** (0.107)
Number of languages in which proficient	0.112*** (0.035)	0.130*** (0.041)	0.122*** (0.039)
Education: secondary (≥ grade 10 & < grade 12)	0.062 (0.079)	0.142 (0.092)	0.116 (0.088)
Education: secondary (≥ grade 12)	-0.113 (0.080)	-0.094 (0.093)	-0.101 (0.090)
Education: tertiary (bachelor or master)	-0.175 (0.107)	-0.166 (0.127)	-0.189 (0.121)
Age at labelling	0.009 (0.073)	-0.067 (0.085)	-0.033 (0.080)
(Age at labelling)²	0.000 (0.001)	0.001 (0.001)	0.000 (0.001)
Provincial unemployment rate at labelling	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Provincial unemployment rate during interval	0.001** (0.000)	0.000 (0.000)	0.000 (0.000)
λ_{pf2}: $[s_{1_{pf}} = 0.45, s_{2_{pf}} = 0.55)$	1.907*** (0.119)	1.942*** (0.120)	1.933*** (0.120)
λ_{pf3}: $[s_{2_{pf}} = 0.55, s_{3_{pf}} = 0.7)$	1.171*** (0.130)	1.245*** (0.132)	1.225*** (0.131)
λ_{pf4}: $[s_{3_{pf}} = 0.7, s_{4_{pf}} = 0.8)$	1.916*** (0.121)	2.025*** (0.125)	1.997*** (0.124)
λ_{pf5}: $[s_{4_{pf}} = 0.8, s_{5_{pf}} = 1)$	1.066*** (0.127)	1.218*** (0.134)	1.178*** (0.133)
λ_{pf6}: $[s_{5_{pf}} = 1, s_{6_{pf}} = 1.25)$	0.795*** (0.132)	0.986*** (0.142)	0.935*** (0.140)
λ_{pf7}: $[s_{6_{pf}} = 1.25, s_{7_{pf}} = 1.75)$	0.257** (0.129)	0.500*** (0.146)	0.434*** (0.142)
λ_{pf8}: $[s_{7_{pf}} = 1.75, s_{8_{pf}} = 2.5)$	-0.279** (0.137)	0.011 (0.161)	-0.069 (0.155)
λ_{pf9}: $[s_{8_{pf}} = 2.5, s_{9_{pf}} = 4)$	-0.980*** (0.141)	-0.649*** (0.173)	-0.743*** (0.165)
λ_{pf10}: $[s_{9_{pf}} = 4, s_{10_{pf}} = \infty)$	-3.019*** (0.154)	-2.645*** (0.194)	-2.751*** (0.183)
Intercept	-2.772*** (0.174)	-2.282*** (0.225)	-2.428*** (0.217)
E. Transition from PES to NPO			
t_0: unemployment duration at labelling	0.000 (0.001)	-0.002 (0.001)	-0.001 (0.001)
t_1:duration between labelling and orientation phase	-0.055*** (0.011)	-0.054*** (0.020)	-0.055*** (0.020)
District: Mechelen	1.559*** (0.162)	1.532*** (0.198)	1.530*** (0.194)
District: Turnhout	1.348*** (0.171)	1.374*** (0.190)	1.360*** (0.187)
District: Leuven	-0.697 (0.470)	-0.777 (0.483)	-0.765 (0.480)
District: Vilvoorde	-0.118 (0.335)	-0.278 (0.358)	-0.267 (0.354)
District: Brugge	1.740*** (0.274)	1.762*** (0.317)	1.718*** (0.301)
District: Kortrijk-Roeselare	1.966*** (0.222)	1.936*** (0.263)	1.931*** (0.259)
District: Oostende-Ieper	1.811*** (0.219)	1.725*** (0.264)	1.723*** (0.260)
District: Aalst-Oudenaarde	1.205*** (0.209)	1.138*** (0.239)	1.128*** (0.235)
District: St-Niklaas-Denderleeuw	0.989*** (0.215)	0.923*** (0.246)	0.917*** (0.241)
District: Hasselt	1.560*** (0.149)	1.707*** (0.187)	1.679*** (0.182)
District: Tongeren	0.945*** (0.207)	0.917*** (0.236)	0.910*** (0.231)
Woman	-0.187** (0.074)	-0.231*** (0.082)	-0.198** (0.080)
Migrant background	-0.469*** (0.147)	-0.495*** (0.153)	-0.486*** (0.150)
Disabled	-1.759*** (0.108)	-1.971*** (0.125)	-1.942*** (0.124)
Driver's licence	0.006 (0.082)	0.047 (0.092)	0.042 (0.090)
Proficient in Dutch	0.281** (0.118)	0.305** (0.125)	0.314** (0.122)
Number of languages in which proficient	-0.052 (0.049)	-0.054 (0.053)	-0.059 (0.051)
Education: secondary (≥ grade 10 & < grade 12)	0.168* (0.090)	0.222** (0.100)	0.207** (0.097)
Education: secondary (≥ grade 12)	0.071 (0.100)	0.054 (0.111)	0.052 (0.109)
Education: tertiary (bachelor or master)	0.081 (0.149)	0.064 (0.163)	0.064 (0.160)
Age at labelling	0.258*** (0.093)	0.237** (0.110)	0.255** (0.107)
(Age at labelling)²	-0.003*** (0.001)	-0.003** (0.001)	-0.003** (0.001)
Provincial unemployment rate at labelling	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)

Provincial unemployment rate during interval	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)
λ_{pn2}: $[s_{1_{pn}} = 0.45, s_{2_{pn}} = 0.55)$	2.189*** (0.151)	2.224*** (0.152)	2.216*** (0.152)
λ_{pn3}: $[s_{2_{pn}} = 0.55, s_{3_{pn}} = 0.7)$	1.388*** (0.165)	1.460*** (0.167)	1.443*** (0.167)
λ_{pn4}: $[s_{3_{pn}} = 0.7, s_{4_{pn}} = 0.8)$	2.090*** (0.157)	2.201*** (0.161)	2.175*** (0.160)
λ_{pn5}: $[s_{4_{pn}} = 0.8, s_{5_{pn}} = 1)$	1.498*** (0.157)	1.660*** (0.163)	1.622*** (0.162)
λ_{pn6}: $[s_{5_{pn}} = 1, s_{6_{pn}} = 1.25)$	1.275*** (0.159)	1.481*** (0.169)	1.432*** (0.168)
λ_{pn7}: $[s_{6_{pn}} = 1.25, s_{7_{pn}} = 1.75)$	0.700*** (0.158)	0.952*** (0.173)	0.890*** (0.171)
λ_{pn8}: $[s_{7_{pn}} = 1.75, s_{8_{pn}} = 2.5)$	-0.105 (0.177)	0.189 (0.195)	0.114 (0.193)
λ_{pn9}: $[s_{8_{pn}} = 2.5, s_{9_{pn}} = 4)$	-1.102*** (0.197)	-0.779*** (0.219)	-0.864*** (0.215)
λ_{pn10}: $[s_{9_{pn}} = 4, s_{10_{pn}} = \infty)$	-2.949*** (0.202)	-2.586*** (0.229)	-2.685*** (0.224)
Intercept	-4.203*** (0.224)	-3.737*** (0.284)	-3.860*** (0.269)
F. Transition from E to U			
Treatment PES (ref.)	0.180*** (0.039)	0.243*** (0.078)	0.240*** (0.071)
Treatment FPO	0.023 (0.059)	-0.043 (0.111)	-0.073 (0.083)
Treatment NPO	0.128 (0.084)	0.061 (0.119)	0.037 (0.093)
Unemployment duration prior to job transition	0.000 (0.000)	0.000 (0.001)	0.000 (0.001)
District: Mechelen	-0.139* (0.082)	-0.148* (0.084)	-0.153* (0.085)
District: Turnhout	-0.034 (0.085)	-0.037 (0.083)	-0.044 (0.083)
District: Leuven	0.304** (0.119)	0.313*** (0.120)	0.310** (0.120)
District: Vilvoorde	0.075 (0.113)	0.080 (0.118)	0.068 (0.119)
District: Brugge	0.342** (0.144)	0.356** (0.147)	0.348** (0.148)
District: Kortrijk-Roeselare	0.047 (0.115)	0.047 (0.121)	0.039 (0.121)
District: Oostende-Ieper	0.151 (0.128)	0.155 (0.120)	0.146 (0.121)
District: Aalst-Oudenaarde	0.012 (0.101)	0.005 (0.103)	-0.006 (0.104)
District: Gent	0.091 (0.067)	0.095 (0.068)	0.090 (0.067)
District: St-Niklaas-Denderleeuw	0.123 (0.091)	0.128 (0.096)	0.122 (0.093)
District: Hasselt	0.003 (0.060)	-0.004 (0.063)	-0.007 (0.063)
District: Tongeren	-0.056 (0.093)	-0.069 (0.102)	-0.076 (0.103)
Woman	-0.003 (0.035)	-0.006 (0.036)	-0.001 (0.036)
Migrant background	0.047 (0.051)	0.037 (0.055)	0.036 (0.053)
Disabled	0.033 (0.048)	0.008 (0.059)	-0.015 (0.060)
Driver's licence	-0.008 (0.038)	-0.002 (0.040)	0.004 (0.041)
Proficient in Dutch	-0.065 (0.053)	-0.069 (0.056)	-0.067 (0.054)
Number of languages in which proficient	0.019 (0.022)	0.020 (0.022)	0.021 (0.022)
Education: secondary (≥ grade 10 & < grade 12)	-0.083* (0.044)	-0.082* (0.045)	-0.083* (0.045)
Education: secondary (≥ grade 12)	-0.080* (0.049)	-0.084* (0.050)	-0.087* (0.050)
Education: tertiary (bachelor or master)	-0.120* (0.069)	-0.122* (0.069)	-0.126* (0.070)
Age at labelling	-0.029 (0.035)	-0.030 (0.036)	-0.027 (0.035)
(Age at labelling)^2	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Provincial unemployment rate at labelling	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Provincial unemployment rate during interval	0.083*** (0.020)	0.084*** (0.020)	0.083*** (0.020)
λ_{eu2}: $[s_{1_{eu}} = 4, s_{2_{eu}} = 5)$	0.329*** (0.086)	0.330*** (0.086)	0.330*** (0.086)
λ_{eu3}: $[s_{2_{eu}} = 5, s_{3_{eu}} = 6)$	0.278*** (0.089)	0.280*** (0.089)	0.281*** (0.089)
λ_{eu4}: $[s_{3_{eu}} = 6, s_{4_{eu}} = 7)$	0.325*** (0.090)	0.327*** (0.090)	0.329*** (0.090)
λ_{eu5}: $[s_{4_{eu}} = 7, s_{5_{eu}} = 9)$	0.042 (0.085)	0.045 (0.085)	0.048 (0.085)
λ_{eu6}: $[s_{5_{eu}} = 9, s_{6_{eu}} = 12)$	-0.119 (0.084)	-0.114 (0.084)	-0.110 (0.084)

λ_{eu7}: $[s_{6_{eu}} = 12, s_{7_{eu}} = 13)$	1.115*** (0.086)	1.121*** (0.086)	1.126*** (0.086)
λ_{eu8}: $[s_{7_{eu}} = 13, s_{8_{eu}} = 18)$	-0.142* (0.086)	-0.133 (0.086)	-0.126 (0.086)
λ_{eu9}: $[s_{8_{eu}} = 18, s_{9_{eu}} = 24)$	-0.176** (0.089)	-0.165* (0.090)	-0.156* (0.090)
λ_{eu10}: $[s_{9_{eu}} = 24, s_{10_{eu}} = 36)$	-0.165** (0.083)	-0.147* (0.087)	-0.135 (0.087)
λ_{eu11}: $[s_{10_{eu}} = 36, s_{11_{eu}} = \infty)$	-0.089 (0.085)	-0.063 (0.103)	-0.042 (0.100)
Intercept	-3.397*** (0.198)	-3.408*** (0.243)	-3.376*** (0.228)
G. Unobserved heterogeneity distribution: mass points			
v_e^2	-	3.550*** (0.378)	3.951*** (0.279)
v_o^2	-	3.366*** (0.495)	3.278*** (0.544)
v_p^2	-	-∞	-∞
v_f^2	-	0	0
v_n^2	-	0	0
v_u^2	-	0.000 (0.173)	-0.059 (0.153)
v_e^3	-	-∞	-∞
v_o^3	-	-∞	-∞
v_p^3	-	-0.037 (0.108)	-0.020 (0.078)
v_f^3	-	-0.067 (0.157)	0.003 (0.159)
v_n^3	-	0.015 (0.194)	0.052 (0.175)
v_u^3	-	0	0
v_e^4	-	-0.176 (0.193)	-0.895*** (0.227)
v_o^4	-	1.053*** (0.152)	1.090*** (0.145)
v_p^4	-	-7.733*** (0.461)	-7.967*** (0.554)
v_f^4	-	-∞	-∞
v_n^4	-	-∞	-∞
v_u^4	-	0.104 (0.162)	0.048 (0.174)
v_e^5	-	0.149 (0.239)	0.256 (0.199)
v_o^5	-	1.149*** (0.270)	1.231*** (0.171)
v_p^5	-	-0.254 (0.215)	-0.384*** (0.140)
v_f^5	-	-∞	-∞
v_n^5	-	-∞	-∞
v_u^5	-	-0.162 (0.372)	-0.316 (0.210)
v_e^6	-	0.758*** (0.165)	0.625*** (0.132)
v_o^6	-	0.604* (0.326)	0.448* (0.233)
v_p^6	-	-1.306*** (0.178)	-1.358*** (0.141)
v_f^6	-	-0.511 (0.533)	-0.232 (0.419)
v_n^6	-	0.017 (0.764)	0.051 (0.607)
v_u^6	-	0.072 (0.167)	0.085 (0.134)
v_e^7	-	-∞	-∞
v_o^7	-	-3.479*** (0.634)	-3.364*** (0.638)
v_p^7	-	-1.584*** (0.192)	-1.525*** (0.175)
v_f^7	-	-1.386** (0.583)	-1.108** (0.555)
v_n^7	-	-0.231 (0.486)	-0.036 (0.452)
v_u^7	-	0	0
v_e^8	-	0.588 (0.804)	-0.804 (0.942)
v_o^8	-	3.301*** (0.221)	3.620*** (0.176)
v_p^8	-	-∞	-∞

v_f^8	-	0	0
v_n^8	-	0	0
v_u^8	-	0.004 (0.497)	-0.237 (0.601)
v_e^9	-	-∞	-∞
v_o^9	-	-∞	-∞
v_p^9	-	-8.314*** (0.607)	-7.966*** (0.568)
v_f^9	-	-∞	-∞
v_n^9	-	-∞	-∞
v_u^9	-	0	0
v_e^{10}	-	0.549 (0.871)	2.295*** (0.316)
v_o^{10}	-	2.307*** (0.431)	-0.646 (0.863)
v_p^{10}	-	-1.377 (0.972)	-5.758*** (0.893)
v_f^{10}	-	-∞	-∞
v_n^{10}	-	-∞	-∞
v_u^{10}	-	-0.384 (1.249)	0.109 (0.225)
v_e^{11}	-	-∞	-∞
v_o^{11}	-	-3.269*** (0.318)	-3.223*** (0.401)
v_p^{11}	-	-0.300* (0.158)	-0.254* (0.134)
v_f^{11}	-	-∞	-∞
v_n^{11}	-	-∞	-∞
v_u^{11}	-	0	0
G. Unobserved heterogeneity distribution: proportions			
ρ^2	-	-0.174 (0.272)	-0.510** (0.205)
ρ^3	-	-0.430*** (0.153)	-0.546*** (0.133)
ρ^4	-	-0.405** (0.192)	-0.707*** (0.151)
ρ^5	-	-0.196 (0.387)	-0.380 (0.285)
ρ^6	-	-0.694** (0.352)	-1.131*** (0.356)
ρ^7	-	-2.167*** (0.291)	-2.410*** (0.283)
ρ^8	-	-0.202 (0.293)	-0.099 (0.163)
ρ^9	-	-1.157*** (0.166)	-1.437*** (0.138)
ρ^{10}	-	-1.143** (0.470)	-1.840*** (0.311)
ρ^{11}	-	-0.938*** (0.291)	-1.254*** (0.326)
p^1	-	0.184	0.230
p^2	-	0.155	0.138
p^3	-	0.120	0.133
p^4	-	0.123	0.113
p^5	-	0.151	0.157
p^6	-	0.092	0.074
p^7	-	0.021	0.021
p^8	-	0.150	0.208
p^9	-	0.058	0.055
p^{10}	-	0.059	0.036
p^{11}	-	0.072	0.065
Log-likelihood	-99,183.716	-98,081.915	-97,984.08
Akaike Information Criterion	198,811.432	195,579.830	196,564.160
Parameters	222	292	298

N	16,186	16,186	16,186