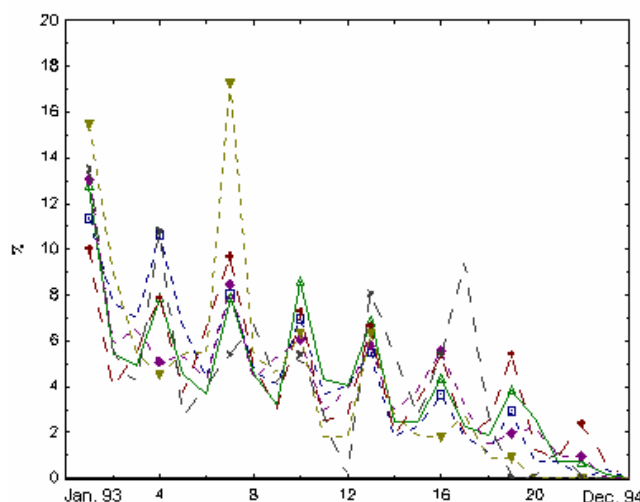


This is a second appendix (internet appendix) to the paper
"Long-Run Effects of Public Sector Sponsored Training in
West Germany" by Michael Lechner, Ruth Miquel and
Conny Wunsch. It is not included in the paper but
downloadable from our webseite
(www.siaaw.unisg.ch/lechner/lmw_fuu).

Appendix IA: Supplementary information about the data

Appendix IA.1: Additional descriptive statistics

Figure IA.1: Month of beginning of first UE spell between 1993 and 1994

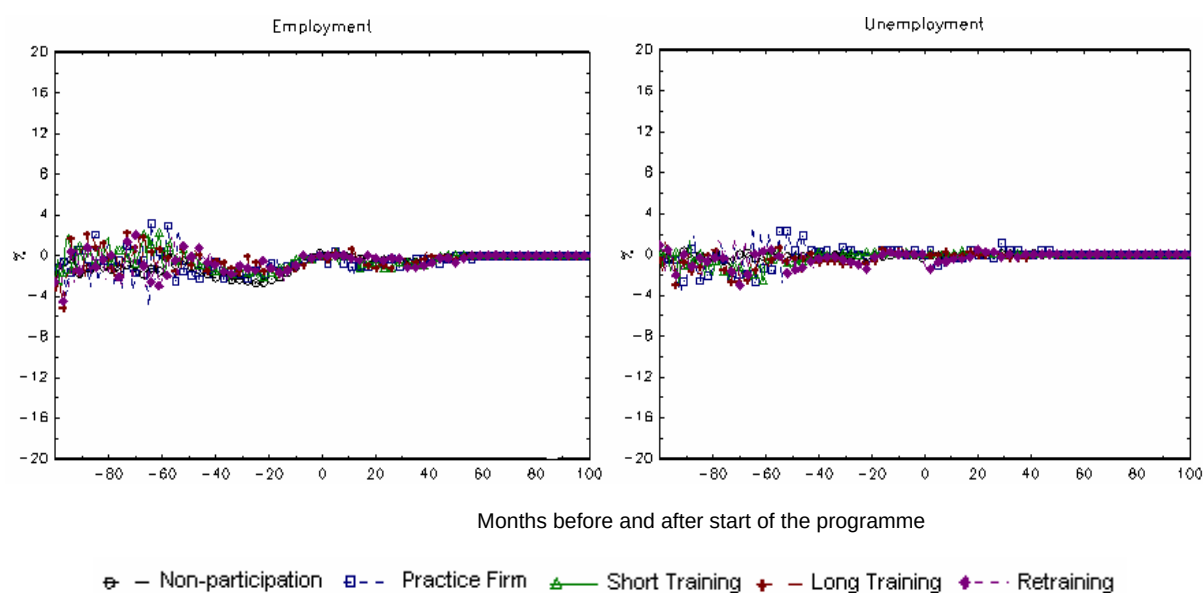


Appendix IA.2: Measurement of the outcome variables up to and after 1997

As mentioned in Section 4 of the paper, we combine outcome information from two different data sources to measure long-run effects. The advantage of the first, original data source (available until 1997) is its better quality whereas the second, supplementary one (available until 2001) provides more recent information. Figure IA.2 shows that for the periods for which the series overlap, in our sample

the employment and unemployment rates (sample means of two dummies indicating employment and unemployment, respectively) in both sources deviate from one another by no more than 4%-points. Analogous calculations for our earnings variable (in Euro) yield mean differences of less than 1.1% given that both data sets show employment and positive earnings in the respective month. Thus we conclude that for our purposes the supplementary series is sufficiently precise. For outcome variables related to employment and unemployment, we use the original and qualitatively better series as long as the individual is observed in this data set and from then on we use the new, supplementary series for this person. This implies that the 'switching point' is not necessarily the same for each person since individuals may 'leave' the original dataset and 'enter' the new one at different points in time. For the outcome variables related to earnings we only use the new, supplementary data in order to ensure consistency in construction of the daily earnings variable we use to generate our earnings outcome variables.

Figure IA.2: Difference between the two series in %-points relative to the start of the programme



Note: The differences are calculated as 'mean in the new dataset minus mean in the original dataset'. Positive numbers thus imply that in the respective month, more individuals in the sample are registered as employed (left panel) or unemployed (right panel) in the new data than in the original data. The overlap of the data is until end of 1997 only.

Appendix IB: Common support and match quality

Appendix IB.1: Common support

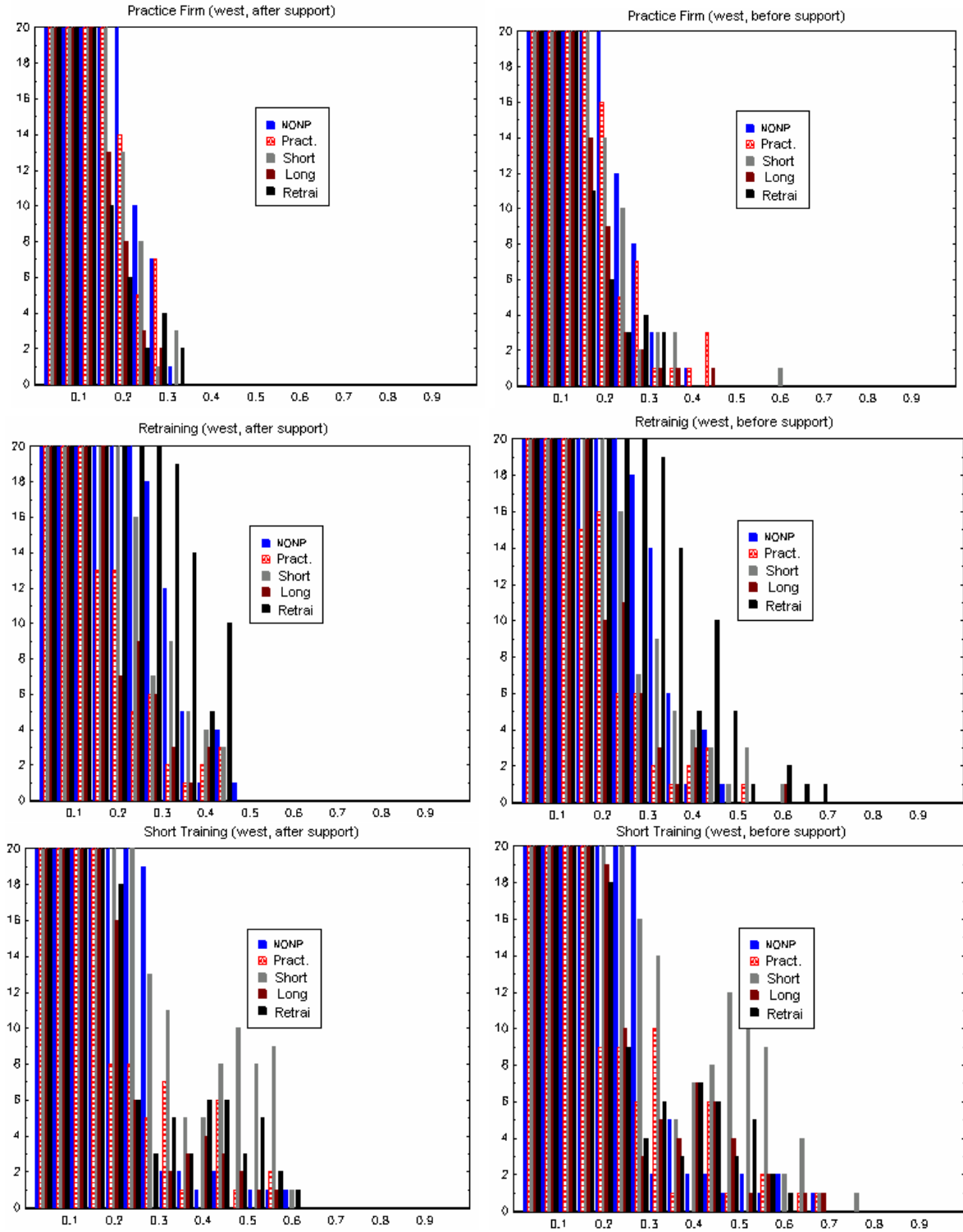
As proposed, discussed and applied in Lechner (2001, 2002a, b) we base the common support requirement on the marginal choice probabilities (conditional on X) for all alternatives under consideration. By doing so, we ensure that all effects are estimated for the same underlying support. Table IB.1 shows the minima and the maxima of the estimated probabilities. Figure IB.1 displays the distribution of the estimated probabilities for all subsamples defined by participation status before and after imposing common support. In addition, Table IB.3 shows the mean of all variables in the selected and excluded subsample for all groups of participants. Tables IB.2 and IB.4 display the loss of observations as a result of imposing the common support criterion for the full sample and the subsample analysis, respectively.

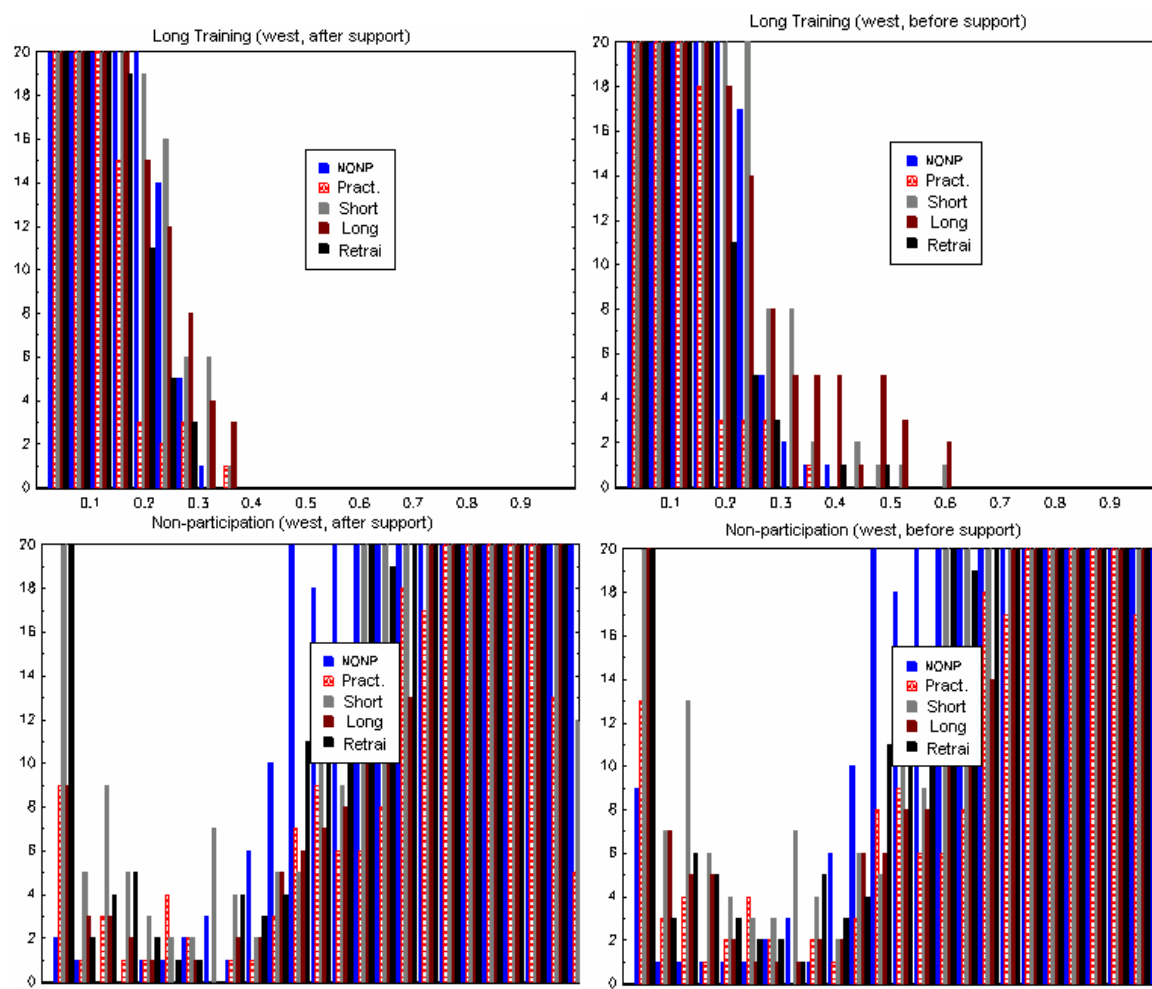
Table IB.1: Minima and maxima of $[\hat{P}_N^1(x), \hat{P}_N^2(x), \hat{P}_N^3(x), \hat{P}_N^4(x), \hat{P}_N^5(x)]$ in subsamples

Subsamples	$\hat{P}_N^1(x)$	$\hat{P}_N^2(x)$	$\hat{P}_N^3(x)$	$\hat{P}_N^4(x)$	$\hat{P}_N^5(x)$
Maximum in subsample					
Nonparticipation	99.99	36.05	65.20	37.39	44.26
Practice firm	99.51	43.18	67.23	35.23	51.98
Short training	99.28	59.70	75.42	58.23	57.09
Long training	99.37	40.42	65.79	57.65	56.33
Retraining	99.34	30.19	58.29	45.17	64.09
Minimum of maxima	99.28	30.19	58.29	35.23	44.26
Minimum in subsample					
Nonparticipation	0	0	0	0	0
Practice firm	0.01	0.09	0.30	0.02	0
Short training	0.02	0	0.32	0.04	0
Long training	0.05	0	0.12	0.07	0
Retraining	0.11	0	0.12	0.02	0.04
Maximum of minima	0.11	0.09	0.32	0.07	0.04

Note: Estimated probabilities in %.

Figure IB.1: Distribution of $[\hat{P}_N^0(x), \hat{P}_N^1(x), \hat{P}_N^2(x), \hat{P}_N^3(x), \hat{P}_N^4(x), \hat{P}_N^5(x)]$ in the respective subsamples before and after imposing the common support requirement





Note: Figures show the actual number of observations in deciles before (left panel) and after (right panel) imposing the common support requirement.

Table IB.2: Loss of observations due to imposition of the common support criterion

	Nonparticipation	Practice firm	Short training	Long training	Retraining
Observations before	9197	273	572	329	413
Observations after	6964	247	503	267	386
Percent deleted	24.3	9.5	12.6	18.8	6.5

Table IB.3: Comparison of means of selected variables in the subsample used for matching and the subsample not used for matching because of insufficient overlap

West	Included in the estimation					Excluded from the estimation				
	Non-part.	Pract. firm	Short train.	Long train.	Re-train.	Non-part.	Pract. firm	Short train.	Long train.	Re-train.
Number of obs.	6964	247	503	267	386	2233	26	69	62	27
Proportions in %										
Personal characteristics										
Women	39	34	37	44	37	47	31	36	18	48
Older than 50 years	6	3	3	3	1	43	42	28	15	0
Younger than 26 years	17	20	17	18	23	3	4	0	0	4

- To be continued -

Table IB.3 (cont.): Comparison of means of selected variables in the subsample used for matching and the subsample not used for matching because of insufficient overlap

West	Included in the estimation					Excluded from the estimation				
	Non-part.	Pract. firm	Short train.	Long train.	Re-train.	Non-part.	Pract. firm	Short train.	Long train.	Re-train.
Number of obs.	6964	247	503	267	386	2233	26	69	62	27
Proportions in %										
Personal characteristics										
Age	34.97	34.7	34.19	33.9	30.63	44.73	45	42.33	38.73	30.52
Nationality: German	82	87	90	92	89	76	88	94	95	96
Western European	11	7	7	6	7	16	12	3	2	4
Eastern European	4	4	2	1	2	5	0	3	0	0
Other	3	3	1	1	2	3	0	0	3	0
Marital status: Single	52	61	58	60	62	37	58	59	55	70
Married	48	39	42	40	38	63	42	41	45	30
Children: No child	61	71	62	66	61	66	92	74	60	59
At least one child	39	29	38	34	39	34	8	26	40	41
Education										
No university entrance degree, no professional degree	24	19	16	10	25	27	12	9	3	7
No university entrance degree, with professional degree	70	77	78	79	69	50	85	54	35	56
University entrance degree, no professional degree	1	1	1	2	2	0	0	1	0	0
University entrance degree and professional degree	3	2	3	6	3	2	0	6	3	4
Polytechnical degree	1	0	1	1	0	6	0	16	23	11
University degree	1	0	2	2	1	11	0	14	35	19
Position in last job										
Salaried employee	27	33	36	53	21	33	38	57	76	41
Part-time worker	8	6	8	7	8	14	4	7	8	19
Master craftsman	1	1	1	0	1	1	4	0	0	0
Unskilled worker	42	38	33	22	54	35	23	16	6	30
Skilled worker	22	23	23	18	17	17	31	20	10	11
Last occupation in/as										
Agriculture, forestry, fishing	3	2	2	3	3	2	0	0	2	4
Plumbing, metal construction technology	10	14	11	8	10	7	19	7	3	4
Food and nutrition	4	2	4	1	4	3	0	3	2	0
Construction, woodworking	10	9	8	5	9	9	8	3	3	7
Merchant (goods and services)	10	11	12	10	6	7	19	13	5	4
Transportation, storage	14	13	15	9	16	11	4	9	8	11
Administration, office work, business and social sciences	14	21	23	32	13	12	27	16	26	11
Health services	2	1	1	0	3	3	0	0	2	0

- To be continued -

Table IB.3 (cont.): Comparison of means of selected variables in the subsample used for matching and the subsample not used for matching because of insufficient overlap

West	Included in the estimation					Excluded from the estimation				
	Non-part.	Pract. firm	Short train.	Long train.	Re-train.	Non-part.	Pract. firm	Short train.	Long train.	Re-train.
Number of obs.	6964	247	503	267	386	2233	26	69	62	27
Proportions in %										
Last occupation in/as										
Hairdressing, guest assistance, housekeeping, cleaning	7	6	3	3	7	10	4	6	0	11
Chemical worker, polymer processing	3	2	1	2	6	2	0	0	0	0
Unskilled worker	3	4	2	1	2	2	0	0	0	4
Metal production and processing	4	5	4	3	6	3	8	4	0	4
Textile, leather, clothing	2	1	1	2	2	4	4	1	0	0
Security services	2	1	1	0	1	1	4	0	2	0
Paper manufacture and processing, printing	2	2	2	2	2	1	4	0	0	4
Social services, education, counselling	1	0	0	1	3	7	0	0	5	26
Media, humanities, arts	1	0	1	0	0	2	0	0	5	0
Mining	0	0	0	1	0	0	0	0	0	0
Technology, natural sciences	3	2	3	11	2	8	0	28	35	4
Machinist	0	0	0	0	0	0	0	1	0	0
Electronics	4	2	3	4	4	3	0	9	3	4
Stone, ceramics and glass making and/or processing	1	1	1	0	1	0	0	0	0	0
Industrial sector										
Construction	8	6	7	6	5	8	0	6	2	7
Commerce	16	15	21	17	13	14	19	16	13	7
Banking, insurance	2	2	1	4	2	1	4	1	0	4
Local and regional authorities, social insurance	4	5	5	6	5	4	12	6	10	11
Non-profit organisations, private household	2	3	2	3	4	4	4	3	3	11
Agriculture, forestry, fishing	2	3	1	1	1	1	0	0	0	0
Energy and supply industry, mining	1	1	0	1	0	0	0	0	0	0
Manufacturing (without construction)	38	40	38	39	43	38	35	38	35	15
Transportation, telecommunications	5	4	5	4	6	3	8	3	3	15
Other services	21	20	20	19	22	27	19	28	34	30
Last monthly earnings										
Salary in EUR*	1642	1621	1747	1794	1646	1816	1822	1958	2296	1549
No information	8	3	4	4	3	19	4	3	3	4
1278 > salary	27	27	24	18	23	23	12	22	3	26

- To be continued -

Table IB.3 (cont.): Comparison of means of selected variables in the subsample used for matching and the subsample not used for matching because of insufficient overlap

West	Included in the estimation					Excluded from the estimation				
	Non-part.	Pract. firm	Short train.	Long train.	Re-train.	Non-part.	Pract. firm	Short train.	Long train.	Re-train.
Number of obs.	6964	247	503	267	386	2233	26	69	62	27
Proportions in %										
Last monthly earnings										
1278 ≤ salary < 2556	57	65	61	65	68	43	69	55	58	70
2556 ≤ salary	8	6	11	12	6	15	15	20	35	0
Remaining unemployment (UE) benefits claim at the end of the last unemployment spell before entry in the programme										
No information or no claim	43	47	43	39	36	47	65	55	55	63
≤ 6 months	31	30	30	33	37	19	15	17	26	26
≤ 1 year	47	43	46	53	62	34	31	39	42	37
≤ 18 months	54	50	51	58	63	44	35	42	44	37
≤ 2 years	57	53	57	61	64	53	35	45	45	37
Legal UE benefits claim at the beginning of the last unemployment spell before the programme										
No claim	4	5	3	5	3	2	4	4	0	4
No information	24	26	27	19	23	33	58	38	45	59
≤ 6 months	11	14	11	11	10	6	4	7	6	11
≤ 1 year	56	56	57	64	71	27	4	28	40	37
≤ 18 months	61	62	60	70	73	32	8	33	47	37
Up to 2 years	71	69	69	76	75	54	35	57	55	37
More than 2 years	72	70	70	76	75	65	38	58	55	37
Unemployment benefits or assistance in the month before beginning of the programme										
UE benefits	75	74	73	81	77	67	42	62	55	41
UE assistance	25	26	27	19	23	33	58	38	45	59
Various historical un/ out-of/employment information before the "first unemployment period"										
Months of last employment spell*	46.89	43.95	51.47	50.73	41.45	61.33	51.92	49.99	46.47	23.89
Proportion of employment months (in %)* before the UE spell	72.12	71.4	72.62	74.22	70.95	72.42	67.08	69.45	66.3	63.62
Proportion of out-of-labour months (in %)* before the UE spell	13.82	12.25	13.14	12.95	16.34	12.99	12.64	13.61	18.11	23.46
Proportion of UE months (in %)* before the UE spell	10.8	12.36	10.26	8.81	8.94	11.71	14.74	12.15	11.26	10.22
# of programs up to 2 years before the UE period*	0.08	0.11	0.08	0.11	0.11	0.11	0.12	0.12	0.12	0.3
# of programs up to 5 years before the UE period*	0.18	0.24	0.22	0.22	0.25	0.18	0.38	0.3	0.26	0.41
# of programs from entry in the data up to the UE period (UEP)*	0.29	0.43	0.37	0.38	0.33	0.26	0.62	0.49	0.5	0.44
Mean duration of UE spells up to 2 years before the UEP*	1.49	1.73	1.38	1.29	1.25	1.44	1.84	0.76	0.76	1.04
Mean duration of UE spells up to 5 years before UEP*	2.63	2.94	2.18	2	2.23	3.2	4.12	3.24	2.13	3.38

- To be continued -

Table IB.3 (cont.): Comparison of means of selected variables in the subsample used for matching and the subsample not used for matching because of insufficient overlap

West	Included in the estimation					Excluded from the estimation				
	Non-part.	Pract. firm	Short train.	Long train.	Re-train.	Non-part.	Pract. firm	Short train.	Long train.	Re-train.
Number of obs.	6964	247	503	267	386	2233	26	69	62	27
Proportions in %										
Various historical un/ out-of/employment information before the "first unemployment period"										
Mean duration of UE spells from entry in data up to UEP*	3.69	3.89	3.43	3.15	2.95	4.76	5.98	4.01	3.94	3.02
Mean duration of employment spells up to 2 years before UEP*	3.94	3.53	3.3	4.3	4.81	3.02	3.45	3.28	5.63	5.31
Mean duration of employment spells up to 5 years before UEP*	12.49	12.33	12.15	14.6	13.1	10.81	8.84	13.92	15.75	14.45
Mean duration of employment spells from entry in data up to UEP*	44.75	41.12	48.56	48.41	36.62	60.46	50.56	49.27	43.61	22.53
Mean duration of out-of-labour spells up to 2 years before UEP*	2.18	1.89	1.77	1.86	1.42	2.26	2.17	1.21	0.99	0.98
Mean duration of out-of-labour spells up to 5 years before UEP*	3.61	3.32	3	3.11	3.5	3.62	2.26	2.56	2.21	5.12
Mean duration of out-of-labour spells from entry in the data up to the UEP*	7.09	5.66	7.32	8.09	8.45	9.1	5.39	10.15	14.25	14.05
Total months in all programmes up to 2 years before the UEP*	56	53	43	62	58	1.26	0.42	0.75	1.37	2.41
Total months in all programmes up to 5 years before the UE P*	1.23	1.47	1.48	1.4	1.4	1.63	2.23	2.13	2.08	2.63
Total months in all programs before entry in the sample*	2.02	2.68	2.72	2.52	1.96	2.23	4.92	3.81	3.63	3.11
Various un/employment information from the "first unemployment period"										
Duration of the "first UE spell"	6.76	6.03	6.33	5.78	5.52	10.22	11.54	11.1	10.06	6.22
Duration of last UE spell before programme*	6.01	5.17	5.22	5.1	4.55	9.08	8.58	8.12	6.16	3.56
Time since beginning of last UE spell (before the prog.) even if other state between UE and prog.*	6.02	6.04	6.5	5.79	5.55	9.12	11.92	11.3	10.05	6.52
Time between the prog. and last job*	13.25	12.38	12.92	11.43	10.82	20.54	22.73	20.32	15.97	14.15
3 months ≥ time between prog. and last job	17	13	17	18	23	12	0	10	13	15

- To be continued -

Table IB.3 (cont.): Comparison of means of selected variables in the subsample used for matching and the subsample not used for matching because of insufficient overlap

West	Included in the estimation					Excluded from the estimation				
	Non-part.	Pract. firm	Short train.	Long train.	Re-train.	Non-part.	Pract. firm	Short train.	Long train.	Re-train.
Number of obs.	6964	247	503	267	386	2233	26	69	62	27
Proportions in %										
Various un/employment information from the "first unemployment period"										
6 months ≥ time between prog. and last job	29	41	41	46	44	22	0	22	31	37
12 months ≥ time between prog. and last job	68	71	71	70	75	42	31	35	55	63
24 months ≥ time between prog. and the job)	87	88	91	91	92	77	81	87	87	89
Transition in 6 months before programme: UE. → UE	55	53	59	50	53	70	85	80	81	67
Transition in 6 months before the programme: empl. → UE	29	30	29	37	33	17	0	14	19	19
Transition in 6 months before programme : out → UE	15	16	11	12	10	12	15	4	0	11
Transition in 6 months before programme: prog. → UE	2	2	1	1	4	2	0	1	0	4
Number of prog. in year before actual programme*	0.04	0.03	0.02	0.03	0.06	0.05	0	0.01	0	0.19
Number of prog.'s in 6 months before actual programme*	0.02	0.02	0.01	0.02	0.04	0.02	0	0.01	0	0.04
Unemployed the 6 th . month before prog.	54	53	56	49	53	72	88	78	71	67
Unemployed the 12 th . month before prog.	29	32	32	26	27	50	65	62	44	44
Unemployed the 24 th . month before prog.	18	19	15	15	16	21	27	12	15	26
Unemployed the 36 th . month before prog.	15	15	14	13	12	18	31	14	11	15
Employed the 6 th . month before prog.	35	36	35	43	40	19	0	20	27	33
Employed the 12 th . month before prog.	56	57	58	61	65	35	31	29	53	41
Employed the 24 th . month before prog.	67	68	74	72	72	64	62	77	69	48
Employed the 36 th . month before prog.	68	70	72	73	66	68	54	71	68	48
Out-of-labor the 6 th . month before prog.	11	11	8	9	8	8	12	1	2	0
Out-of-labor the 12 th . month before prog.	14	11	10	13	8	14	4	9	3	11
Out-of-labor the 24 th . month before prog.	13	12	11	11	10	13	12	9	13	19

- To be continued -

Table IB.3 (cont.): Comparison of means of selected variables in the subsample used for matching and the subsample not used for matching because of insufficient overlap

West	Included in the estimation					Excluded from the estimation				
	Non-part.	Pract. firm	Short train.	Long train.	Re-train.	Non-part.	Pract. firm	Short train.	Long train.	Re-train.
Number of obs.	6964	247	503	267	386	2233	26	69	62	27
Proportions in %										
Regional information										
Big city (at least 300,000 inhabitants)	24	19	23	25	19	32	15	30	47	33
Northern region (Hamburg, Bremen, Schleswig-Holstein)	22	29	20	24	26	22	38	7	31	22
North-Rhine-Westphalia	31	22	26	37	33	31	12	43	31	59
Rhineland-Palatinate, Hesse, Saarland	17	23	20	18	18	14	19	12	16	11
Baden-Wuerttemberg, Bavaria	29	26	34	21	23	33	31	38	23	7
UE rate ≤ 5%	1	2	2	0	1	1	0	1	0	0
5% < UE rate ≤ 10%	65	66	70	64	62	61	69	72	52	37
UE rate > 10%	35	31	28	35	37	38	31	26	48	63
Firms size of the last employer										
No information	4	5	4	3	3	4	0	6	2	4
1 to 9 employees	21	20	20	19	17	19	27	28	23	30
10 to 99 employees	37	36	37	38	37	32	35	41	26	15
100 to 499 employees	21	25	22	24	23	21	27	14	19	19
500 employees or more	17	14	16	15	20	24	12	12	31	33
Date of entry in the data*	Feb. 84	Jan. 84	Aug. 83	Nov. 83	Dec. 84	Oct. 82	Oct. 82	Jun. 82	Aug. 82	Dec. 85
Date of entry in the sample*	Nov. 93	Aug. 93	Sep. 93	Sep. 93	Sep. 93	Oct. 93	Jun. 93	Jun. 93	Aug. 93	Sep. 93

Note: *The results for variables marked with an asterisk are means and rather than proportions.

Table IB.4: Loss of observations due to common support requirement in subsample analysis

		Nonparticipation		Practice firm		Short training		Long training		Retraining					
		Men	Women	Men	Women	Men	Women	Men	Women	Men	Women				
Observations before		5432	3765	182	91	359	213	201	128	258	155				
Observations after		3743	2134	164	73	291	141	130	97	228	113				
Percent deleted		31.1	43.3	9.9	19.8	18.9	33.8	35.3	24.2	11.6	27.1				
Separate MNP estimation for men and women in 1 st stage															
Observations before		5432	3765	182	91	359	213	201	128	258	155				
Observations after		3294	1630	153	70	266	136	121	85	217	85				
Percent deleted		39.4	56.7	15.9	23.1	25.9	36.2	39.8	33.6	15.9	45.2				
Professional degree															
Obs.	without prof. degree	with prof. degree	without prof. degree	with prof. degree	without prof. degree	with prof. degree	without prof. degree	with prof. degree	without prof. degree	with prof. degree					
before	2360	6213	53	218	90	447	35	249	105	293					
after	1164	4852	41	196	61	402	26	222	90	268					
% deleted	50.7	21.9	22.6	10.1	32.2	10.1	25.7	10.8	14.3	8.5					
Skill level															
Obs.	un- skilled	skilled	sala- ried	unsk.	sk.	sal.	unsk.	sk.	sal.	unsk.	sk.	sal.	unsk.	sk.	sal.
before	3714	1997	2588	99	67	92	175	135	219	63	54	189	217	69	93
after	2259	1035	1116	83	54	75	139	95	143	52	34	109	189	48	54
% deleted	39.2	48.2	56.9	16.2	19.4	18.5	20.6	29.6	34.7	17.5	37	42.3	12.9	30.4	41.9
Big town (at least 100,000 inhabitants)															
Obs.	<100000	≥100000	<100000	≥100000	<100000	≥100000	<100000	≥100000	<100000	≥100000					
before	5413	3777	175	98	347	225	181	148	270	143					
after	3263	2240	140	83	281	163	149	92	247	107					
% deleted	39.7	28.4	20.0	15.3	19.0	27.6	17.7	37.8	8.5	25.2					
Regional unemployment rate															
Obs.	≤ 10%	> 10%	≤ 10%	> 10%	≤ 10%	> 10%	≤ 10%	> 10%	≤ 10%	> 10%					
before	5939	3258	288	85	413	159	205	124	254	159					
after	4371	1677	167	67	355	110	167	76	237	124					
% deleted	26.4	48.5	7.3	21.2	14.0	30.8	18.5	38.7	6.7	13.5					
Total number of months spent in unemployment in the 3 years before the programme															
Obs.	< 12	≥ 12	< 12	≥ 12	< 12	≥ 12	< 12	≥ 12	< 12	≥ 12					
before	5415	3782	153	120	340	232	205	124	272	141					
after	4188	1788	142	86	304	165	165	85	251	114					
% deleted	22.7	52.7	7.2	28.3	10.6	28.9	19.5	31.5	7.7	19.1					

Appendix IB.2: Match quality

Table IB.5: Concentration of the weights due to matching with replacement

Control	Nonparticipation	Practice firm	Treated Short training	Long training	Retraining
Nonparticipation		54.09	47.99	55.96	58.07
Practice firm	38.10		29.04	35.76	41.80
Short training	34.11	33.61		33.49	39.45
Long training	36.30	34.14	28.46		43.17
Retraining	40.45	37.98	32.70	42.56	

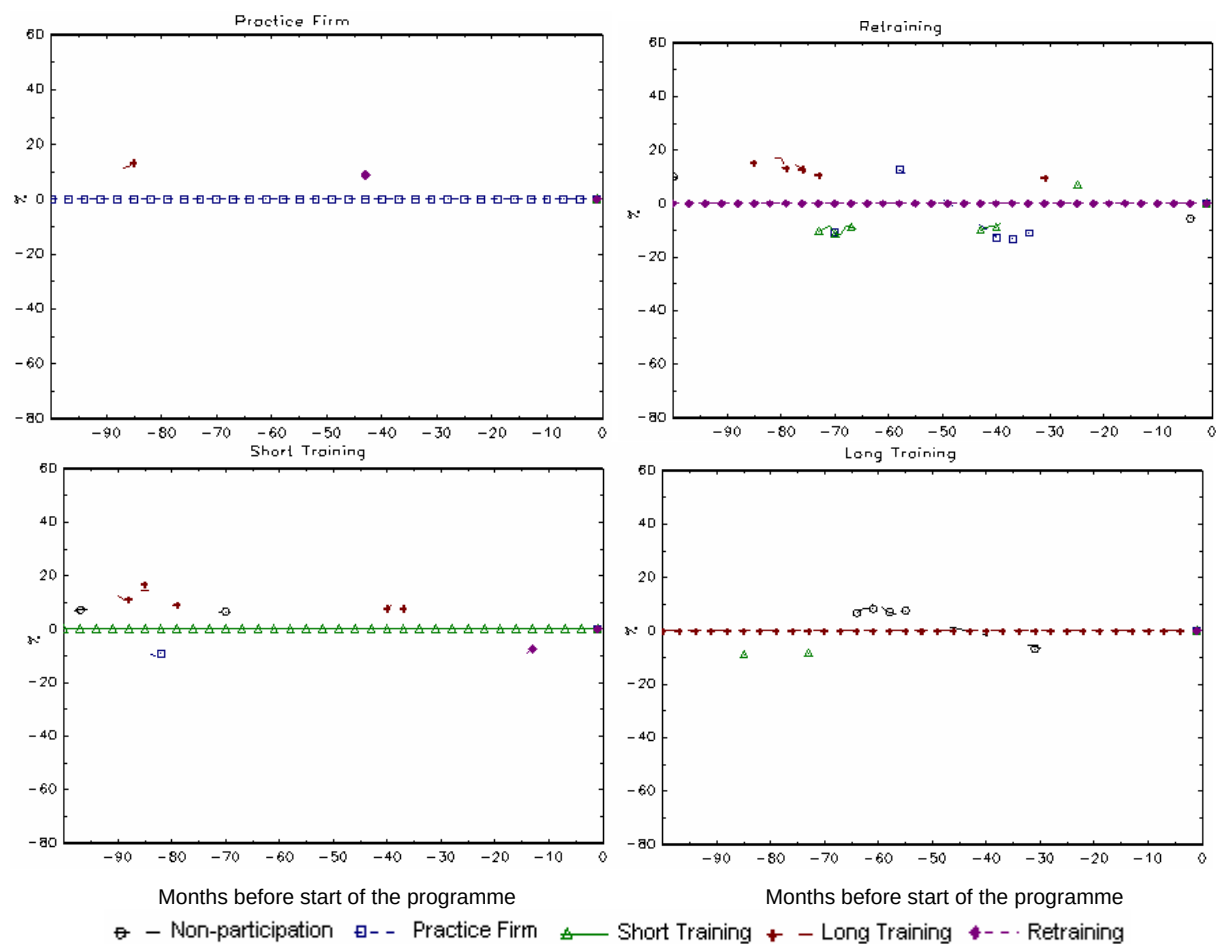
Note: Share of the largest 10% of the weights of the respective comparison group relative to the total sum of weights in that comparison group (concentration ratio) in %.

Table IB.6: Mean (in %) of selected variables before and after matching

Control	Treated				
Women	Nonparticipation	Practice firm	Short training	Long training	Retraining
Nonparticipation	39	33	35	37	35
Practice firm	38	34	33	41	31
Short training	39	32	37	41	37
Long training	39	33	39	44	35
Retraining	39	32	36	40	37
Employed in the 12 th . month before prog.	Nonparticipation	Practice firm	Short training	Long training	Retraining
Nonparticipation	56	60	61	65	66
Practice firm	57	57	58	63	65
Short training	56	58	58	61	63
Long training	57	56	58	61	67
Retraining	57	60	57	66	65
Employed in the 24 th . month before prog.	Nonparticipation	Practice firm	Short training	Long training	Retraining
Nonparticipation	67	71	75	75	74
Practice firm	67	68	75	78	74
Short training	67	72	74	73	74
Long training	67	72	79	72	78
Retraining	67	71	75	78	72
Employed in the 48 th . month before prog.	Nonparticipation	Practice firm	Short training	Long training	Retraining
Nonparticipation	62	63	71	67	60
Practice firm	63	63	72	68	62
Short training	63	67	69	67	61
Long training	63	65	72	66	63
Retraining	62	68	71	68	57

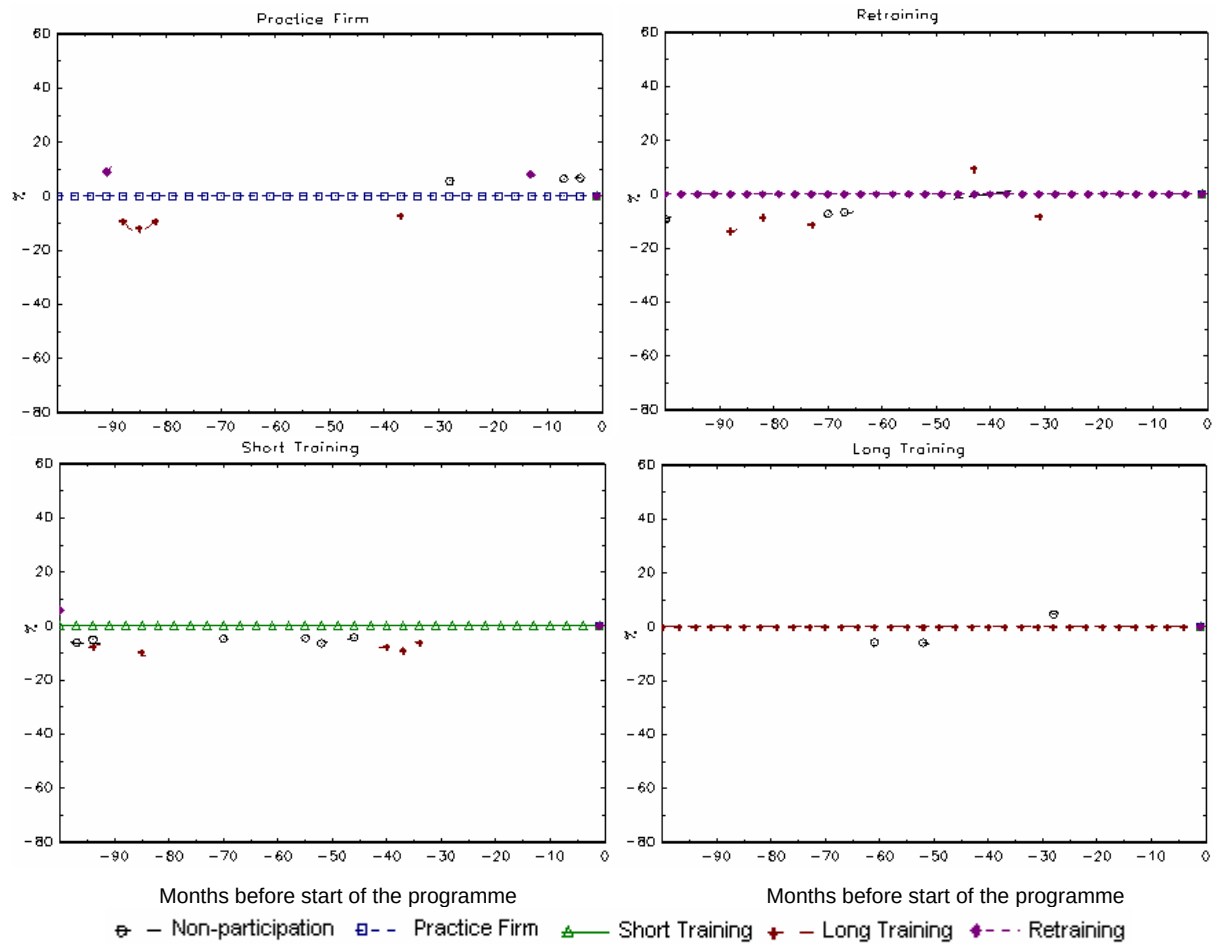
Note: Entries on the main diagonal show the means before matching, while those on the upper and lower diagonals show the means in the matched samples (treated+matched controls) for all possible comparisons.

Figure IB.2: Effects prior to the programme ($\theta_0^{m,l}$): Employment (difference in %-points)



Note: Figure shows significant differences of outcome variable prior to the programme (after matching)

Figure IB.3: Effects ($\theta_0^{m,l}$) prior to the programme: Unemployment (difference in %-points)



Note: Figure shows significant differences of outcome variable prior to the programme (after matching)

Appendix IC: Detailed estimation results from the multinomial probit model

Table IC.1 shows the estimation results of a multinomial probit model (MNP) using simulated maximum likelihood with the GHK simulator.¹ Although being fully parametric, the MNP is a flexible version of a discrete choice model, because it does not require the Independence of Irrelevant Alternatives assumption to hold. For the stability of the MNP it is useful to impose some exclusion restrictions across choice equations which we implement used mainly the sectoral variable (based on prior information as well as on the results of binary probits which have been used to in an initial step of the estimation). Another issue concerns the specification of the covariance structure of choice specific error terms. Imposing the normalisation that all correlation with nonparticipation are zero, the correlation between *long training* and *retraining* is then set to zero for reasons of numerical stability.

¹ See for example Börsch-Supan, Hajivassiliou (1993) and Geweke, Keane and Runkle (1994).

As shown in Table IC.2, it turns out that covariance terms are however not significant. The number of draws per equation and observation is another choice parameter. We choose 1000 draws, which is very large by usual standard. Our results in Table IC.3 show indeed that the dependence of the estimated individual probabilities (that are one important outcome of the estimation because they are the basis for the matching) on the number of draws is very small.

Table IC.1: Estimated coefficients of a multinomial probit model for participation in a programme

Variable	Practice firm		Short training		Long training		Retraining	
	coeff.	std.	coeff.	std.	coeff.	std.	coeff.	std.
Constant	-3.956	1.828	-2.879	1.423	-4.453	1.927	-5.47	2.297
Women	-0.219	0.121	-0.031	0.084	-0.118	0.086	-0.095	0.106
Older than 50 years	-1.071*	0.41	-0.35	0.285	-0.026	0.322	1.098	0.925
Younger than 26 years	0.133	0.272	0.125	0.202	0.224	0.215	-0.3	0.251
Age/10	1.324	0.74	0.977	0.625	1.569	0.722	2.42	1.03
(Age/10)^2	-0.177	0.098	-0.158	0.085	-0.237	0.1	-0.429*	0.15
Nationality: German	0.214	0.143	0.331*	0.113	0.286	0.13	0.502*	0.171
Marital status: Single	0.13	0.10	0.162	0.078	0.148	0.086	0.232	0.117
Children: No child	0.163	0.113	-0.034	0.081	0.009	0.087	-0.264	0.128
Education (reference category: polytechnical degree, university degree)								
No university entrance degree, no profess. degree	1.096	0.506	0.085	0.191	-0.041	0.188	0.302	0.252
No university entrance degree, profess. degree	1.241	0.502	0.276	0.169	0.209	0.153	0.584	0.249
University entrance degree, no profess. degree	1.436	0.609	0.445	0.372	0.481	0.353	0.893	0.491
University entrance degree and profess. degree	0.846	0.559	0.205	0.22	0.058	0.203	0.383	0.34
Position in last job (reference category: skilled worker)								
Salaried employee	0.136	0.221	0.214	0.131	0.56*	0.17	-0.023	0.169
Part-time worker	-0.089	0.239	0.054	0.158	0.328	0.186	0.158	0.209
Master craftsman	0.211	0.409	-0.418	0.434	-0.273	0.505	0.055	0.681
Unskilled worker	0.072	0.13	-0.12	0.102	-0.012	0.118	0.484*	0.169
Last occupation (reference categories: agriculture, forestry, fishing; food and nutrition; transportation, storage; chemical worker, polymer processing; security services; paper manufacture and processing, printing; media, humanities, art; mining; technology, natural sciences; machinist; electronics; stone, ceramics, glass making and/or processing)								
Plumbing, metal construction technology	0.347	0.143						
Construction, woodworking			-0.291	0.15	-0.28	0.133		
Merchant (goods and services)	0.348	0.234			-0.297	0.171		
Administration, office work, business and social sciences	0.574*	0.213					0.27	0.15
Health services	-0.36	0.434	-1.012*	0.30	-1.095*	0.38		
Hairdressing, guest assistance, housekeeping, cleaning	0.086	0.216	-0.637*	0.18	-0.5	0.20		
Unskilled worker	0.458	0.251	-0.019	0.239	-0.198	0.31	-0.12	0.308
Metal production and processing	0.421	0.206					0.315	0.214
Textile, leather, clothing			-0.583	0.276	-0.119	0.282		
Social services, education, counselling			-1.523*	0.42	-0.828*	0.29		
Industrial sector (reference categories: manufacturing (without construction), transportation, telecommunications, other services)								
Construction	-0.292	0.171	-0.076	0.161	-0.072	0.157	-0.335	0.198
Commerce	-0.114	0.12	-0.023	0.095	-0.106	0.102	-0.148	0.143
Banking, insurance	0.279	0.296	-0.138	0.271	0.324	0.279	0.54	0.368
Local and regional authorities, social insurance	0.214	0.189	0.262	0.162	0.287	0.159	0.261	0.228

- To be continued -

Table IC.1 (cont.): Estimated coefficients of a multinomial probit model for participation in a
programme

Variable	Practice firm		Short training		Long training		Retraining	
	coeff.	std.	coeff.	std.	coeff.	std.	coeff.	std.
Industrial sector								
(reference categories: manufacturing (without construction), transportation, telecommunications, other services)								
Non-profit organisations, private households	0.175	0.257	0.127	0.225	0.174	0.205	0.413	0.264
Agriculture, forestry, fishing	0.478	0.285	0.067	0.304	0.111	0.302		
Energy and supply industry, mining	0.389	0.544	-0.075	0.428	0.054	0.429		
Last monthly earnings								
Log(last monthly earnings)	0.017	0.283	0.153	0.218	0.272	0.252	0.247	0.229
No information	-0.542	0.988	-0.005	0.77	0.476	0.891	0.097	0.82
Remaining unemployment (UE) benefits claim at the end of the last unemployment spell before entry in the programme								
≤ 6 months	-0.283	0.158	-0.313	0.132	-0.382*	0.14	-0.619*	0.21
≤ 1 year	-0.517	0.266	-0.48	0.22	-0.409	0.25	-0.178	0.416
≤ 2 years	0.961	0.383	1.05*	0.321	1.003*	0.378	1.338	0.616
Legal UE benefits claim at the beginning of the last unemployment spell before the beginning of the programme								
Legal claim (months)	-0.029	0.03	-0.041	0.025	-0.036	0.026	-0.031	0.044
No claim	0.362	0.54	-0.07	0.525	0.432	0.505	0.127	0.77
≤ 6 months	-0.111	0.183	-0.128	0.172	-0.156	0.165	-0.24	0.251
≤ 18 months	0.289	0.315	-0.087	0.296	0.287	0.294	0.063	0.452
UE benefits or UE assistance in the month before beginning of the programme (reference category: UE assistance)								
UE benefits	0.382	0.528	0.897	0.498	0.47	0.189	0.664	0.743
Various historical un/ out-of/employment information before the "first unemployment period"								
Proportion of employment months (in %)* before the UE spell	-0.003	0.004	-0.007	0.003	-0.004	0.004	0.005	0.005
Proportion of out-of-labour months (in %) before the UE spell	0.004	0.005	0.001	0.004	0.001	0.005	0.017*	0.006
# of programs up to 2 years before the UE period	0.26	0.222	0.288	0.199	0.382	0.167	0.444	0.226
# of programs from entry in the data up to the UE period (UEP)	0.161	0.075	0.164	0.034	0.151	0.066	0.207	0.086
Mean duration of UE spells up to 5 years before UEP	0.011	0.014	-0.001	0.011	-0.009	0.013	0.021	0.017
Mean duration of employm. spells up to 5 years before UEP	-0.004	0.003	-0.002	0.003	0.002	0.003	-0.006	0.004
Mean duration of employm. spells from entry in data up to UEP	0	0.002	0.003*	0.001	0.002	0.001	0.002	0.002
Mean duration of out-of-labour force spells up to 2 years before UEP	0	0.014	-0	0.011	-0.004	0.011	-0.023	0.016
Mean duration of out-of-labour force spells up to 5 years before UEP	-0.007	0.01	-0.016	0.007	-0.013	0.007	-0.004	0.009
Mean duration of out-of-labour spells from entry in the data up to the UEP	-0.007	0.006	-0.001	0.003	-0.001	0.004	-0.002	0.004
Total months in all programmes up to 2 years before the UEP	-0.088	0.037	-0.095*	0.03	-0.074*	0.02	-0.094*	0.03
Various un/employment information from the "first unemployment period"								
Duration of the "first UE spell"	-0.149	0.078	-0.276*	0.06	-0.263*	0.08	-0.31*	0.10
Duration of the "first UE spell"^2	0.003	0.005	0.011*	0.004	0.011	0.005	0.013	0.008
Duration of last UE spell before programme	-0.511*	0.08	-0.464*	0.09	-0.455*	0.10	-0.458*	0.123
Duration of last UE spell before programme ^2	0.005	0.004	0.001	0.004	0.002	0.004	-0.003	0.006
Time since beginning of last UE spell (before the prog.) even if other state between UE and prog.	0.538*	0.137	0.549*	0.133	0.609*	0.152	0.707*	0.217
Log(time since beginning of last UE spell (before the prog.) even if other state between UE and prog.)	0.929	0.747	1.211	0.576	0.97	0.62	0.538	0.926

- To be continued -

Table IC.1 (cont.): Estimated coefficients of a multinomial probit model for participation in a
programme

Variable	Practice firm		Short training		Long training		Retraining	
	coeff.	std.	coeff.	std.	coeff.	std.	coeff.	std.
Various un/employment information from the "first unemployment period"								
Time since beginning of last UE spell (before the prog.) even if other state between UE and prog. ^{^2}	-0.008	0.006	-0.01	0.005	-0.013	0.006	-0.017	0.01
3 months ≥ time between prog. and last job	-0.206	0.221	0.082	0.161	0.044	0.165	0.2	0.215
Transition in 6 months before the programme:	0.213	0.184	-0.086	0.153	0.133	0.167	-0.285	0.208
empl. → UE								
out → UE	0.133	0.202	-0.049	0.172	0.054	0.18	-0.288	0.259
prog. → UE	0.534	0.552	0.456	0.523	0.496	0.412	0.582	0.455
Number of prog. in year before actual programme	-0.291	0.36	-0.615	0.339	-0.29	0.27	-0.138	0.36
Unemployment and employment status before prog.: (reference categories: out-of-labor, missing)								
Unemployed in the 6th. month before prog.	-0.014	0.174	0.195	0.143	0.051	0.167	0.185	0.218
12th. month before prog.	0.249	0.175	0.376*	0.137	0.188	0.158	0.416	0.195
24th. month before prog.	0.107	0.185	-0.004	0.145	-0.091	0.148	0.221	0.194
36th. month before prog.	-0.191	0.178	-0.214	0.139	-0.096	0.17	-0.274	0.202
48th. month before prog.	-0.084	0.17	-0.004	0.143	-0.206	0.155	-0.16	0.179
Employed in the 6th. month before prog.	-0.077	0.184	0.111	0.149	0.004	0.177	0.044	0.225
12th. month before prog.	0.273	0.155	0.134	0.135	0.126	0.142	0.352	0.185
24th. month before prog.	0.106	0.162	0.121	0.132	-0.07	0.13	0.13	0.165
36th. month before prog.	-0.03	0.146	-0.129	0.114	-0.026	0.134	-0.13	0.145
48th. month before prog.	0.104	0.135	0.163	0.101	0.006	0.113	-0.048	0.133
Regional information								
Big city (at least 300,000 inhabitants)	-0.22	0.11	-0.066	0.081	-0.062	0.078	-0.167	0.113
(Reference category: Baden-Wuerttemberg, Bavaria)								
North (Hamburg, Bremen, Schleswig-Holstein)	0.295	0.133	-0.11	0.116	0.237	0.145	0.263	0.149
North-Rhine-Westphalia	0.022	0.136	-0.001	0.109	0.297	0.142	0.346	0.155
Rhineland-Palatinate, Hesse, Saarland	0.309*	0.118	0.083	0.102	0.244	0.124	0.281	0.149
Local UE rate > 10% *	-0.078	0.105	-0.168	0.081	-0.066	0.088	-0.006	0.106
Firms size of the last employer (reference category: 500 employees or more)								
No information	0.2	0.236	0.263	0.188	0.065	0.204	-0.165	0.28
1 to 9 employees	0.034	0.144	0.069	0.116	-0.021	0.123	-0.221	0.163
10 to 99 employees	0.104	0.133	0.169	0.101	0.101	0.106	-0.071	0.136
100 to 499 employees	0.224	0.14	0.139	0.109	0.116	0.108	-0.066	0.145
Date of entry in the data	0.002	0.001	0.001	0.001	0	0.001	0.004	0.002
Date of entry in the sample	-0.065*	0.008	-0.041*	0.009	-0.044*	0.01	-0.074*	0.017
Age < 26 * time since beginning of last UE spell (before the prog.) even if other state between UE and prog	0.025	0.027	-0.006	0.025	0.001	0.024	0.027	0.032
Age ≥ 50 * time since beginning of last UE spell (before the prog.) even if other state between UE and prog	0.097*	0.035	0.031	0.24	0.018	0.03	-0.169	0.235

Note: Simulated maximum likelihood estimates using the GHK simulator (1000 draws for each observation and choice equation). Coefficients of the category NONPARTICIPATION are normalised to zero. Empty cell means that the respective variable is excluded from this equation. Inference is based on the outer product of the gradient estimate of the covariance matrix of the coefficients ignoring simulation error. N = 10784. Value of the log-likelihood function: -0.494688. Bold numbers indicate significance at the 5% level, numbers in *italics* relate to the 10 % level and * to the 1 % level.

Table IC.2: Estimated covariance and correlation matrices of the error terms in the multinomial

probit

	Nonparticipation		Practice firm		Short training		Long training		Retraining	
	Coef	t-val	Coef	t-val	Coef	t-val	Coef	t-val	Coef	t-val
Nonparticipation	1	-	0	-	0	-	0	-	0	-
Nonparticipation	0		1	-	0.15	0.20	0.55	1.21	0.80	1.30
Nonparticipation	0		0.15		1.02	-	0.46	0.83	0.01	0
Nonparticipation	0		0.65		0.53		0.74	1.05	0.63	0.85
Nonparticipation	0		0.59		0		0.54		1.83	1.49

Note: The diagonal and the upper triangular matrix show covariance terms. Correlations are shown in the part below the main diagonal. In the estimation cholesky factors are used for parametrisation to ensure that the estimated covariance matrix of the error terms is positive definite. A Wald test for zero correlation of the error terms (6 d.o.f.) did not reject (p.-val. 30%). A Wald test for zero correlation and homoscedasticity (7 d.o.f.) also did not reject (60%).

Table IC.3: Sensitivity of estimated probabilities with respect to number of simulations in GHK

simulator (probabilities based on 1000 replications compared to 500 replications)

Probabilities	Quantiles of the differences (in %)		
	1%	50%	99%
Nonparticipation	-1.3	0.0	1.5
Practice firm	-0.3	0.0	0.2
Short training	-0.4	0.0	0.4
Long training	-0.5	0.0	0.4
Retraining	-0.3	0.0	0.3

Note: Differences between probabilities obtained with 1000 replications (per individual) in the GHK simulator and the probabilities obtained with 500 replications only *100. Non-participation is the reference category in the MNP estimation.

Appendix ID: Additional estimation results

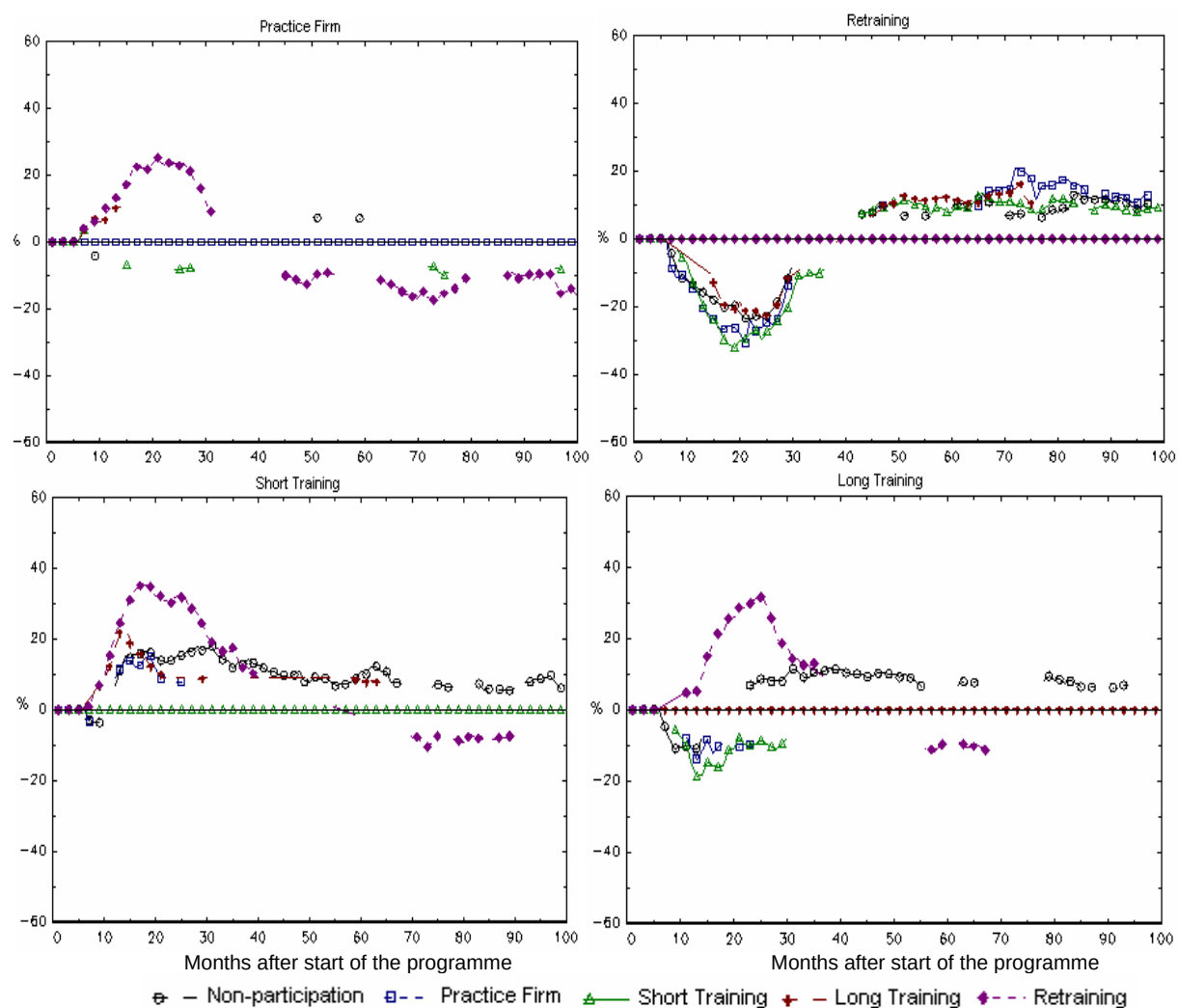
Appendix ID.1: Estimated effects for additional outcome variables

Table ID.1: Mean effects (ATET) for all outcome variables eight years after programme start ($\hat{\theta}_{96}^{ml}$)

Treated <i>m</i>	Obs.	Comparison /	Obs.	Employment	Stable ^a employment	Employment with stable earnings ^b	Smooth ^c employment	Cumulated employment in months	Unem- ployment	Cumulated unem- ployment in months	Earnings in EUR	Smooth ^c earnings in EUR	Cumulated Earnings in EUR
Practice firm	247	Nonparticipation	6964 ^d	0.5	0.1	-3.6	0.5	3.3	3.2	4.3	-81	-88	63
Short training	503	Nonparticipation	6964 ^d	7.5	9.2*	8.5*	7.2	9.3*	3.3	-0.3	211*	197	21,604*
Long training	267	Nonparticipation	6964 ^d	4.5	6.4	5.2	3.4	4.9	1.1	2.5	150	110	14,817
Retraining	386	Nonparticipation	6964 ^d	8.5	9.6	7.1	7.7	0.4	-1.7	9.4*	323*	296*	9,918
Practice firm	247	Short training	503	-7.5	-7.9	-13.1*	-8.4	-3.2	-1.9	1.3	-274	-287*	-13,898
Practice firm	247	Long training	267	-7.5	-7.8	-10.1	-6.7	1.5	5	0.1	-316	-286	-9,370
Practice firm	247	Retraining	386	-14.7*	-12.2	-15.3*	-15.0*	-1.3	7.6	-1.8	-422*	-424*	-12,515
Short training	503	Practice firm	247	3.5	5.8	8.2	2.7	2.1	-1.2	-5	197	176	15,034
Short training	503	Long training	267	6.1	5.0	5.3	6.4	7.8	0.9	-3	28	52	11,189
Short training	503	Retraining	386	-6.8	-3.2	-3.8	-6.2	5.5	4.6	-9.4*	-148	-139	8,891
Long training	267	Practice firm	247	1.1	2.1	1.8	1.1	-2.9	-3.7	-2	233	216	11,585
Long training	267	Short training	503	1.2	0.5	-0.6	0.7	-4	-2.6	3.7	123	109	-2,278
Long training	267	Retraining	386	-3.2	-0.2	-2.1	-2.5	1.2	0.8	-5.8*	-58	-72	198
Retraining	386	Practice firm	247	11.8	12.1	10.4	11.6	0	-6.4	-0.3	370*	369*	13,498
Retraining	386	Short training	503	6.8	8.2	3.0	7.0	-1.4	-5.5	6.2*	178	181	810
Retraining	386	Long training	267	8.9	4.9	4.5	8.7	2.7	-6.4	1	117	134	-4,452

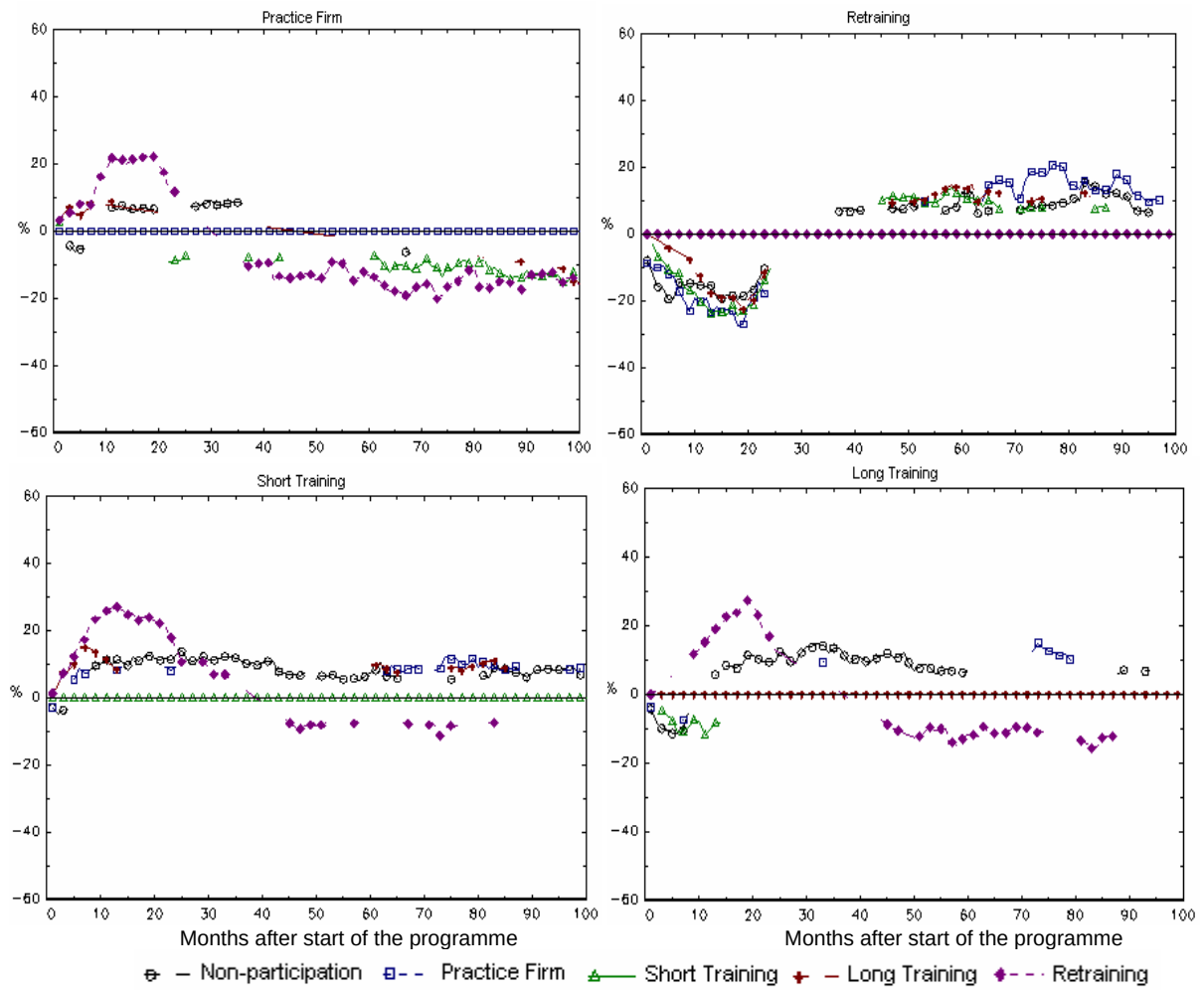
Note: Bold numbers indicate significance at the 5% level, numbers in *italics* relate to the 10% level and * to the 1% level. If not stated otherwise the effects are differences in %-points. ^a Dummy variable which equals 1 for a particular month, if the individual is employed in this month as well as in the six months just before. ^b Dummy that equals 1 if earnings in the respective month are at least 90% of monthly earnings during the last employment spell before entry in the programme. ^c Moving average over three months. ^d 6963 observations for the earnings outcomes.

Figure ID.1: Dynamics of the effects ($\theta_0^{m,l}$): Stable employment (difference in %-points)



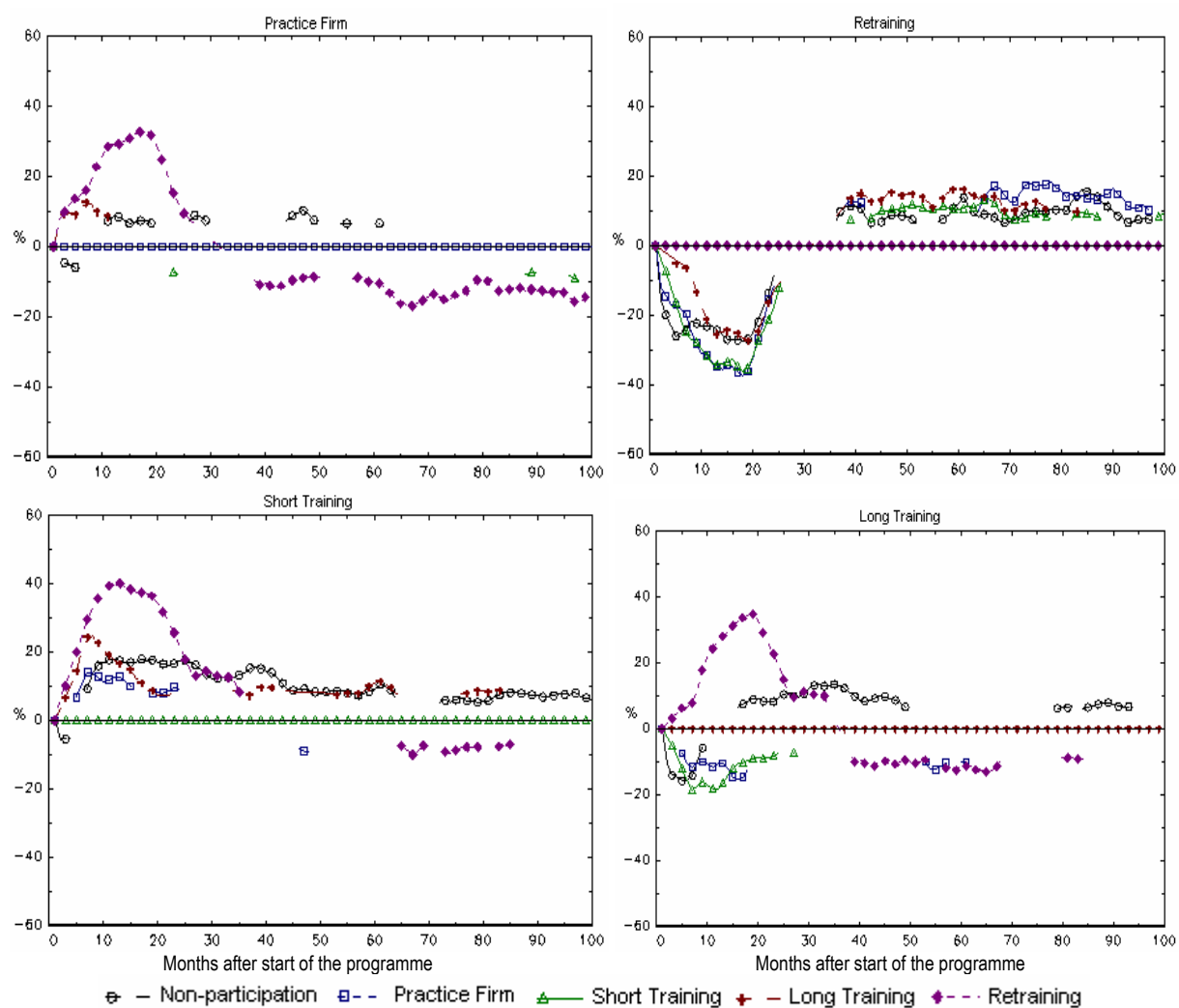
Note: The outcome variable is dummy variable which equals 1 for a particular month, if the individual is employed in this month as well as in the six months just before. Only effects that are significant at the 5% level (point wise) appear in the figures.

Figure ID.2: Dynamics of the effects ($\theta_0^{m,l}$): Employment with 'stable' earnings (difference in %-points)



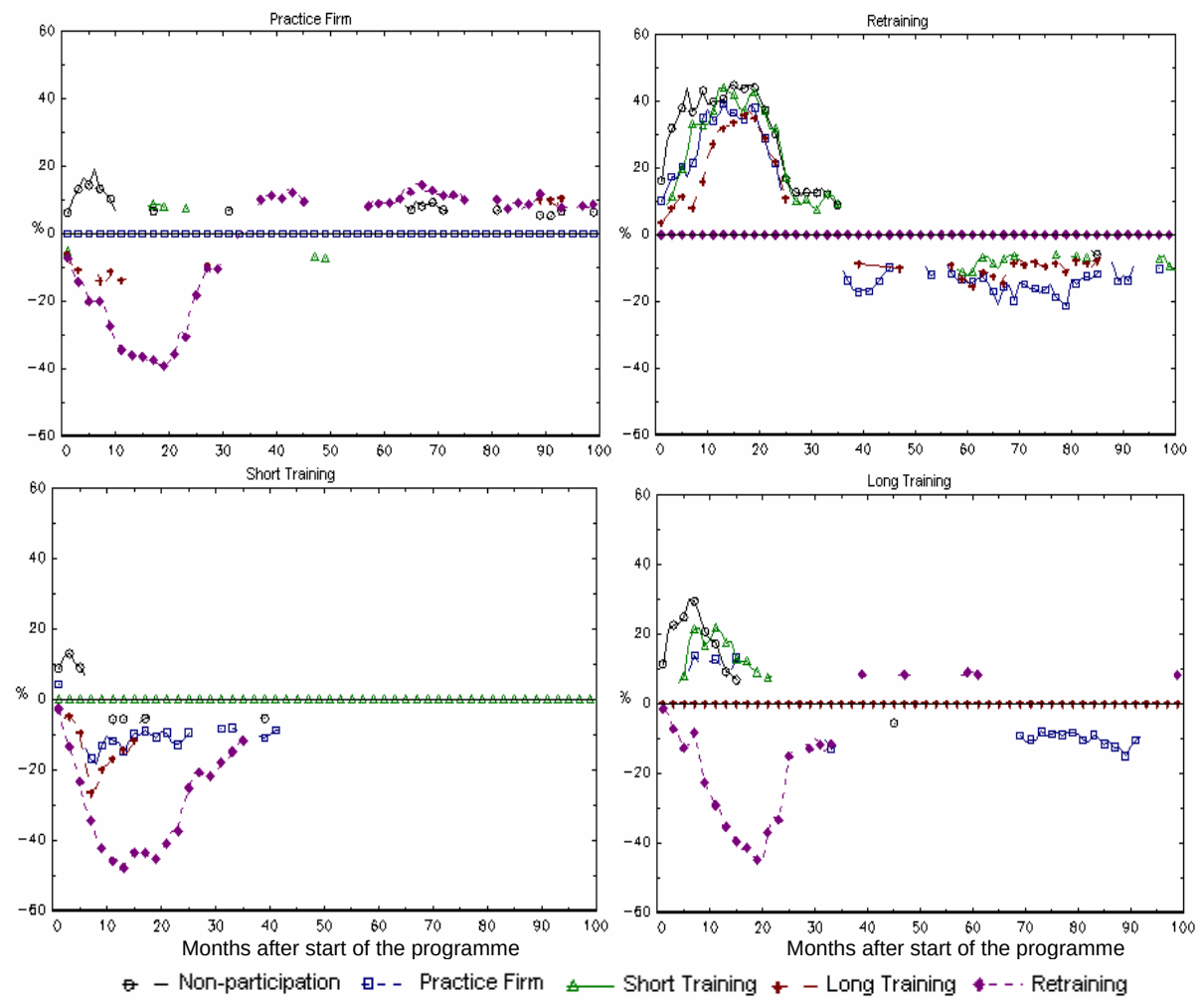
Note: The outcome variable is a dummy that equals 1 if earnings in the respective month are at least 90% of monthly earnings during the last employment spell before entry in the programme. Only effects that are significant at the 5% level (point wise) appear in the figures.

Figure ID.3: Dynamics of the effects: Smooth employment effect



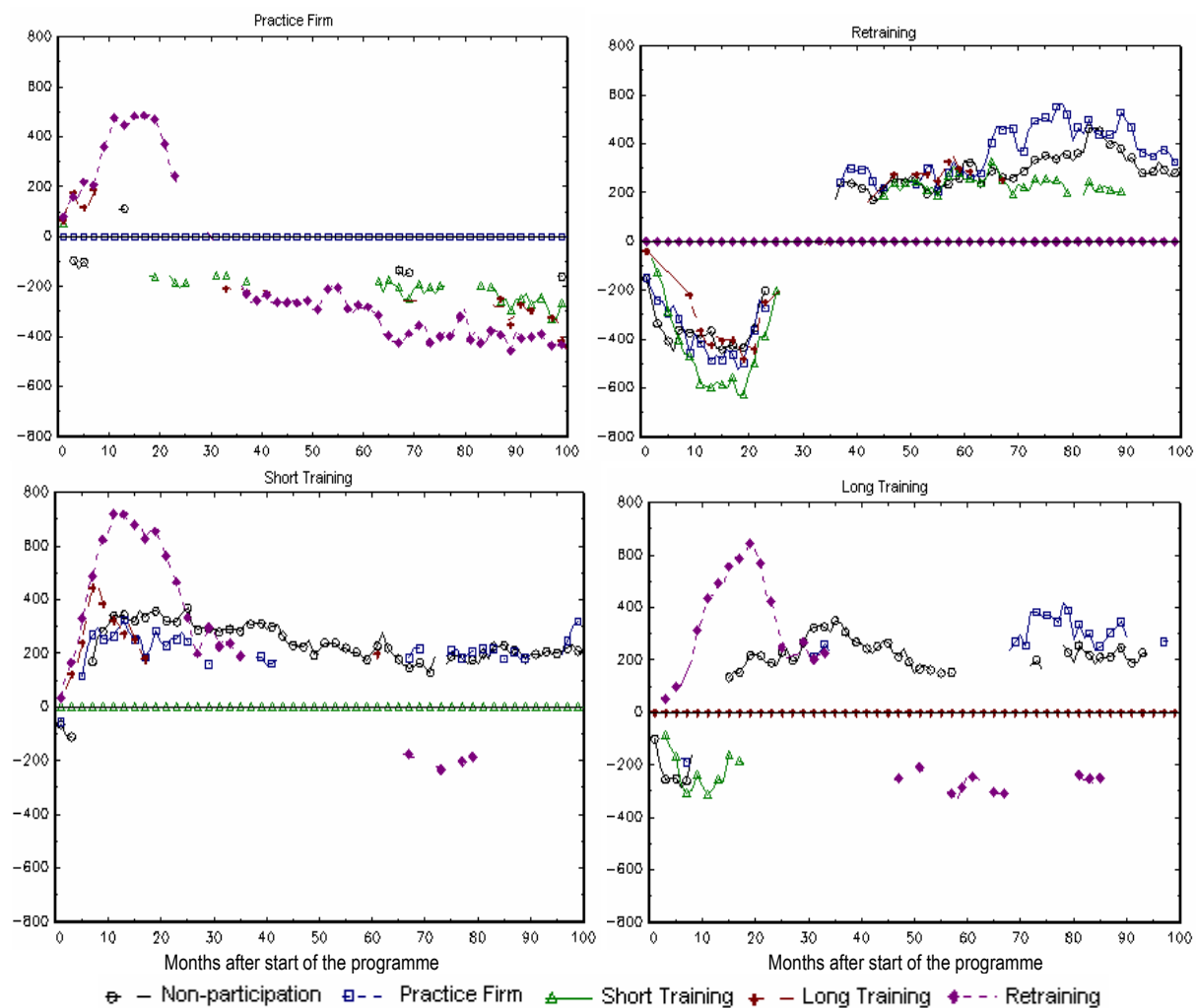
Note: The outcome is the mean over three months of the employment state. Only effects that are significant at the 5% level (point wise) appear in the figures.

Figure ID.4: Dynamics of the effects ($\hat{\theta}_t^{m,l}$): Unemployment (difference in %-points)



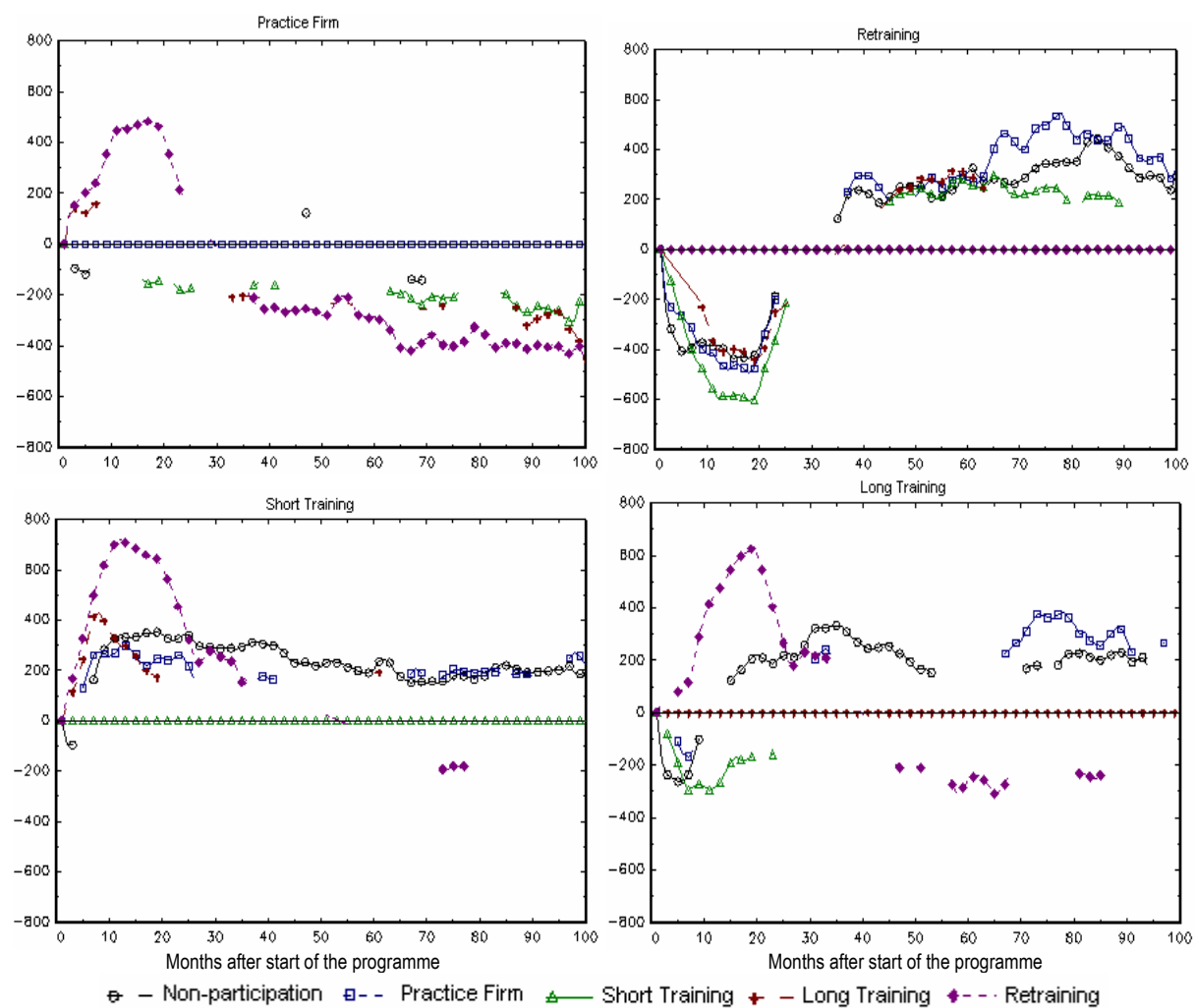
Note: See note below Figure 2.

Figure ID.5: Dynamics of the effects ($\theta_0^{m,l}$): Monthly earnings in EUR



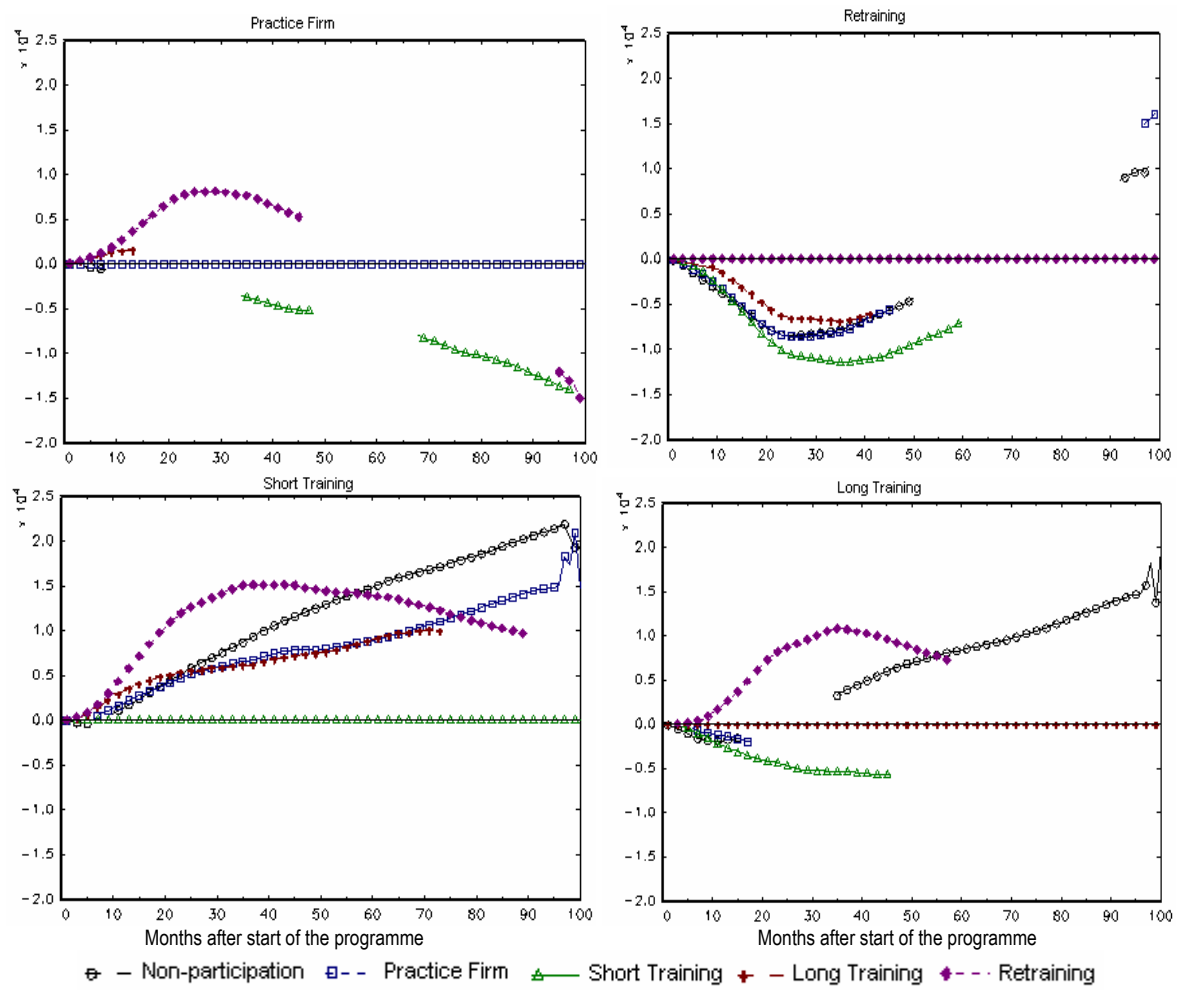
Note: Only effects that are significant at the 5% level (point wise) appear in the figures.

Figure ID.6: Dynamics of the effects: Smooth earnings effect



Note: The outcome is the mean over three months of the earnings. Only effects that are significant at the 5% level (point wise) appear in the figures.

Figure ID.7: Cumulated effects ($\sum_{\tau=1}^t \hat{\theta}_{\tau}^{ml}$): Monthly earnings differences in 10,000 EUR



Note: See notes below Figures 2 and 3 in the main body of the text.

Table ID.2: Effect heterogeneity (employment) eight years after the beginning of the programme (difference in %-points) ($\theta_0^{m,l}$)

m - l	Regional UE-rate		Big town		Gender		Long-term UE		Type of occupation			Education	
	≤ 10%	> 10%	<100,000 inhabit.	≥100,000 inhabit.	Men	Women	< 12 months	≥ 12 months	Unskilled	Skilled (incl. master craftsman)	Salaried	Without profess. degree	With profess. degree
Practice firm - nonparticipation	3.2	9.4	-4.0	5.6	-3.1	16.0	7.0	-2.8	-1.4	-2.3	3.4		-1.0
Practice firm - short training	-8.4	7.4	-13.5	-2.5	-12.7	4.5	-9.9	-11.7	-1.9	-6.9	-6.6		-8.3
Practice firm - long training	-4.9	-6.5	-16.6	-3.3	-12.5	5.3	2.4	-18.3	-16.7		-14.9		-10.2
Practice firm - retraining	-15.6	-5.6	-14.1	-7.0	-23.2*	-10.1	-16.9*	-4.5	-14.8		-9.9		-15.5*
Short training - nonparticipation	12.4*	1.8	11.8*	3.7	-13.4*	3.8	12.0*	0.8	-1.2	7.3	10.2	6.4	6.3
Short training - practice firm	3.6	-0.4	4.4	-2.4	16.4*	-20.7	-6.0	4.8	2.0	21.2	-0.6		6.5
Short training - long training	10.6	-11.6	6.5	1.3	13.6	-3.3	3.4	2.6	-2.4		-3.6		9.5
Short training - retraining	-7.0	-9.7	-0.2	-15.8	-4.9	-13.0	-14.1*	6.7	-19.2		-11.9	-12.1	-7.7
Long training - nonparticipation	7.4	11.4	13.4*	-1.8	5.4	9.4	10.7	-0.8	4.7		12.3		4.0
Long training - practice firm	-3.4	21.9	-0.2	-1.8	9.1	-19.3	-4.3	-1.2	-0.1		0.8		2.5
Long training - short training	-2.4	17.5	4.7	-3.4	-3.1	0.3	-1.5	4.2	8.2		0.4		0.2
Long training - retraining	-4.8	-10.1	9.5	-7.2	-10.7	-10.0	-11.6	18.3	-4.0		-1.7		0.1
Retraining - nonparticipation	9.2	11.7	9.1	18.7*	13.6*	11.7	17.6*	-4.4	9.4		6.0	14.0	9.2
Retraining - practice firm	-0.4	27.9*	6.1	-4.1	16.4	-1.0	4.7	1.3	18.6		8.4		23.1*
Retraining - short training	7.5	1.6	4.5	16.0	1.7	5.9	10.4	-5.4	12.8		-2.3	-7.2	6.4
Retraining - long training	9.9	8.4	5.9	23.3	8.7	16.5	12.9	1.0	8.0		17.6		13.3
Sample size													
Nonparticipation	4356	1674	3263	2240	3743	2134	4188	1788	2252	1031	1116	1164	4949
Practice firm	167	67	140	83	164	73	142	86	83	54	75	41	197
Short training	355	110	281	163	291	141	304	165	139	95	143	61	411
Long training	167	76	149	92	130	97	165	85	52	34	109	26	229
Retraining	237	124	247	107	228	113	251	114	189	48	54	90	273

Note: Bold numbers indicate significance at the 5% level, numbers in *italics* relate to the 10% level and * to the 1% level. Comparisons based on less than 50 observations are not reported in the table. Cells shaded in grey indicate that the difference of the two estimated effects is significant at the 5% level.

Appendix ID.2: Dynamics of the effects without significance levels

Figure ID.8: Dynamics of the employment effects without significance levels

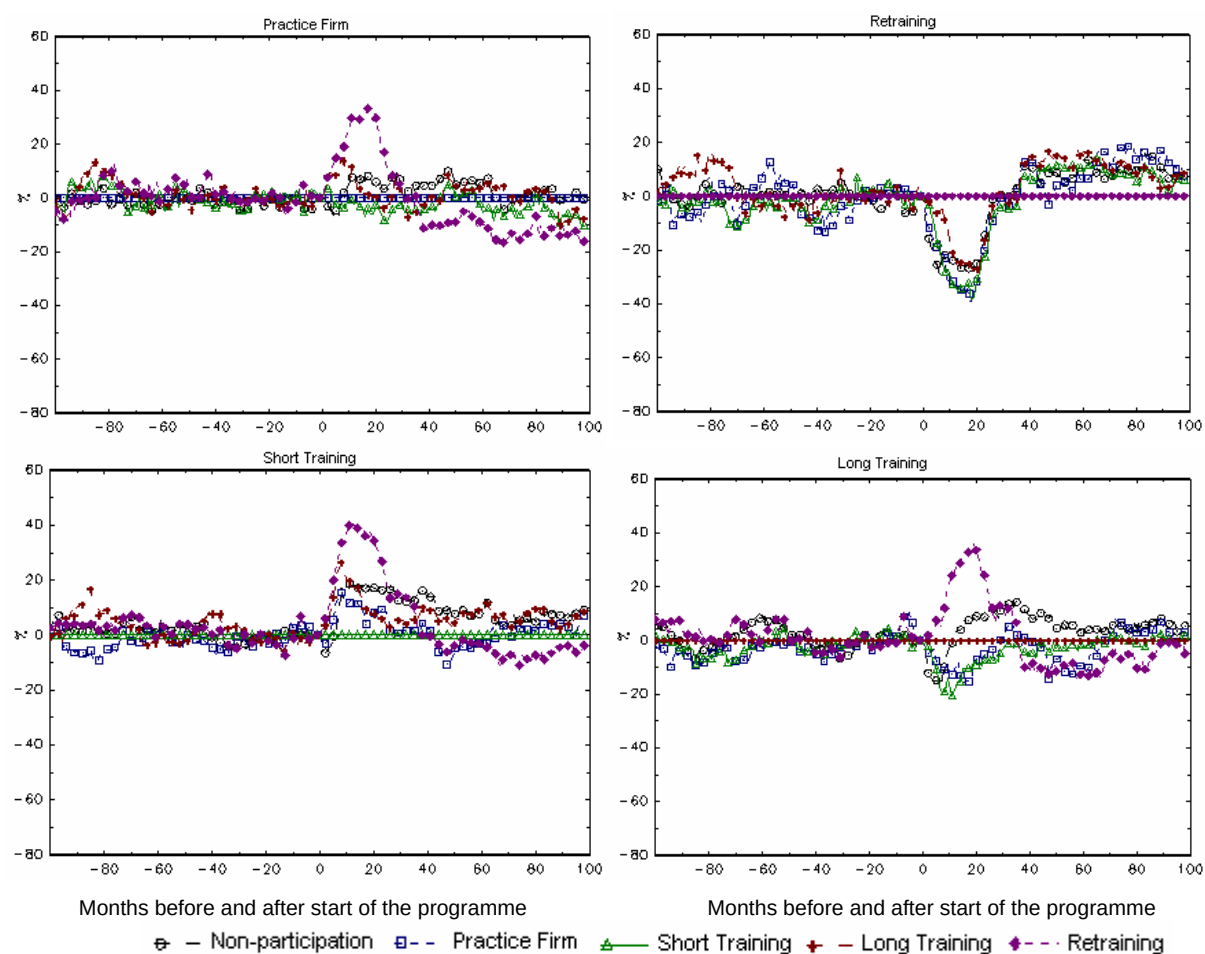
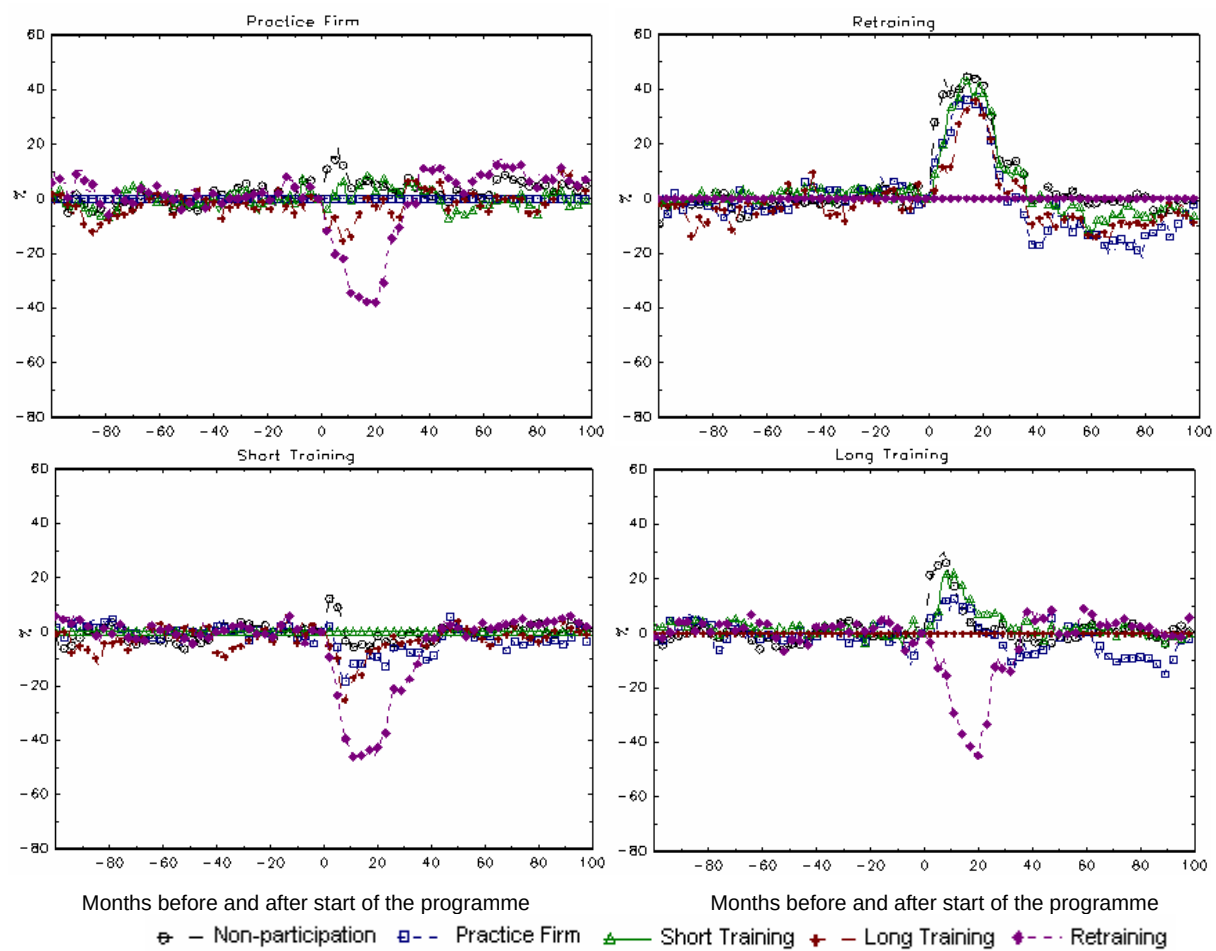


Figure ID.9: Dynamics for the unemployment effects without significance levels



Appendix IE: Results of the sensitivity analysis

Appendix IE.1: Stricter common support: Defining maximum and minimum using the 10th largest/smallest observations

Figure IE.1: Distribution of marginal probabilities after imposing redefined common support rule

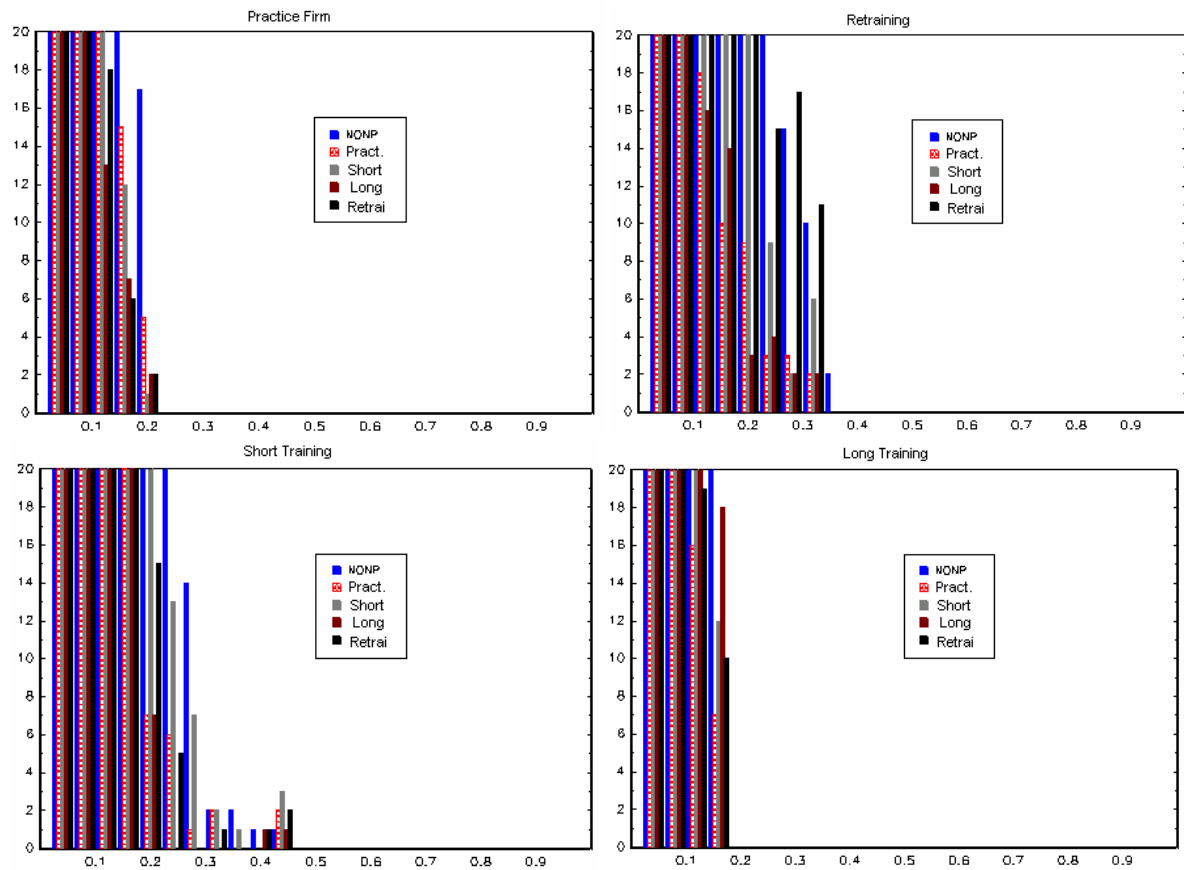
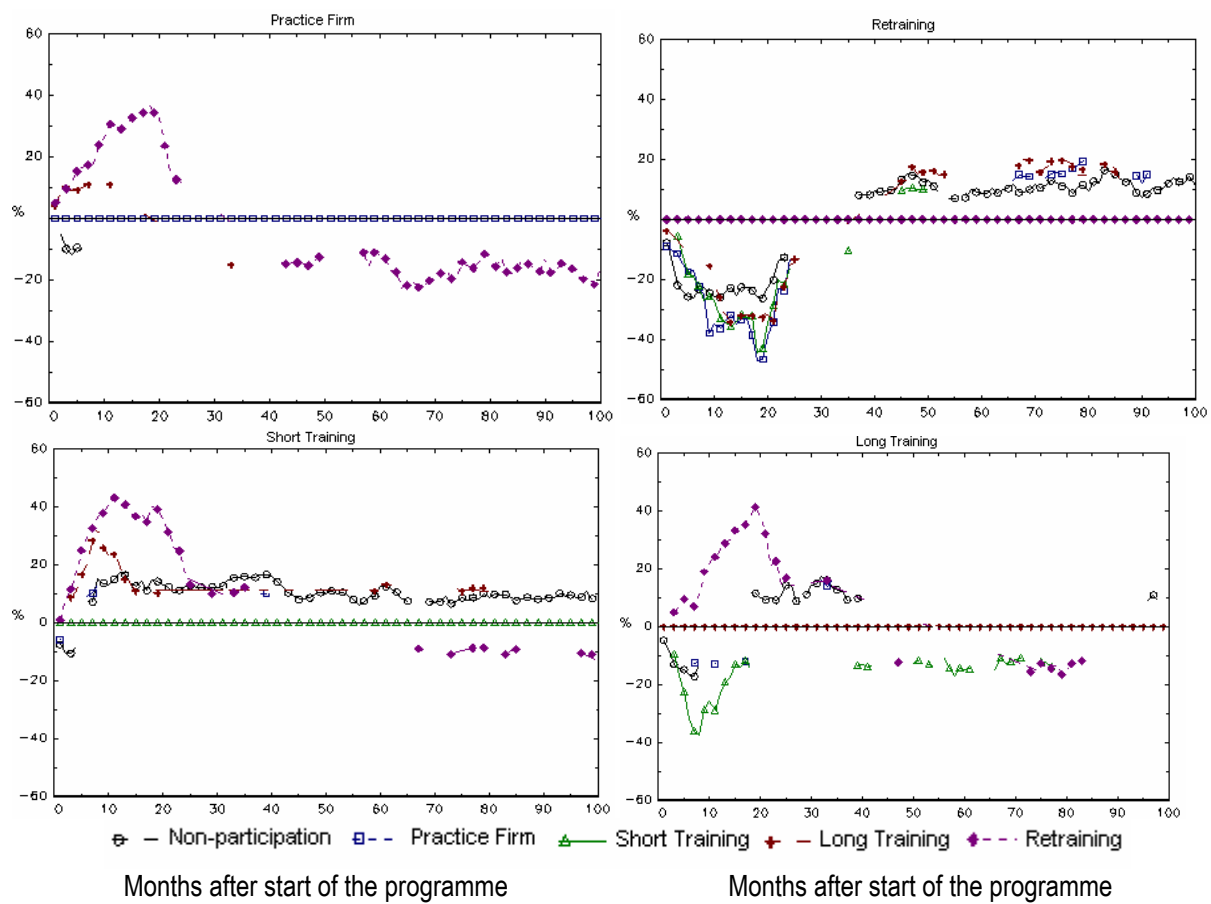
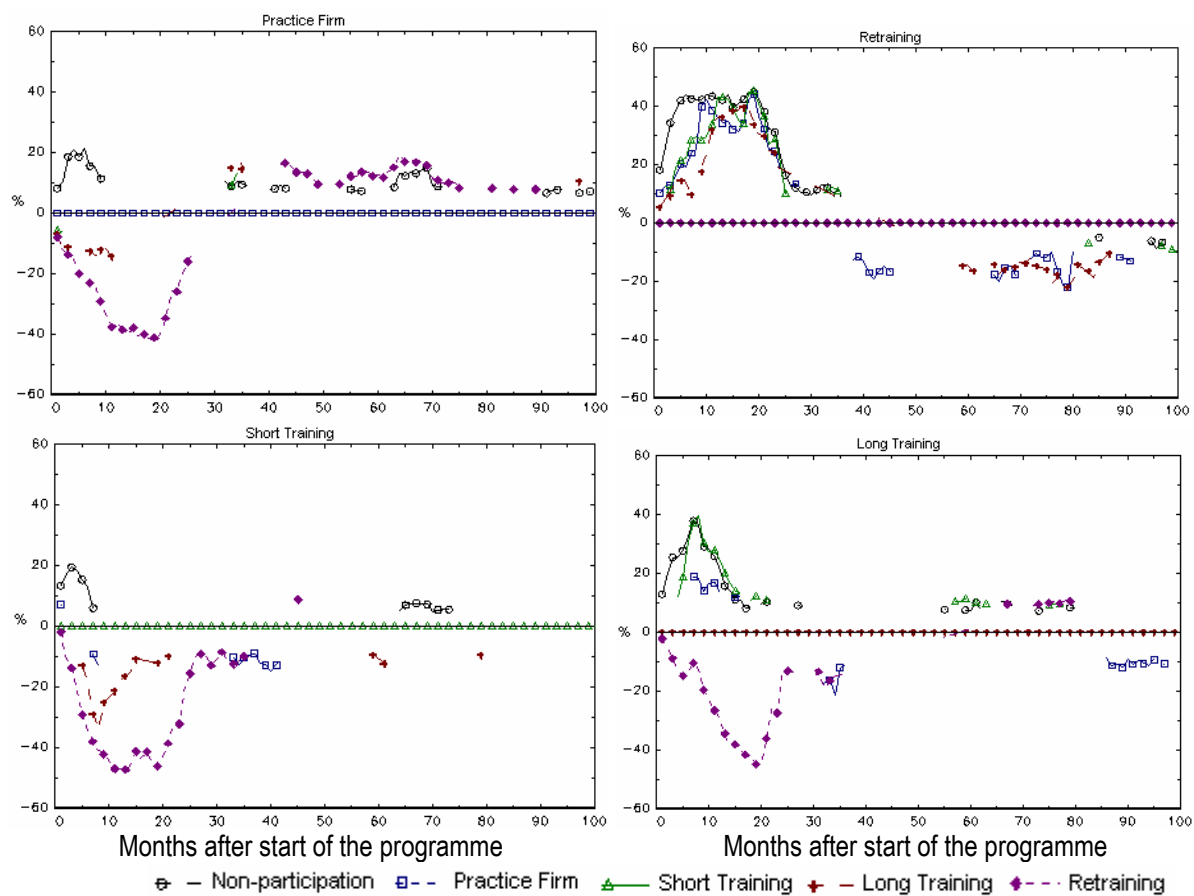


Figure IE.2: Dynamics of the effects ($\theta_0^{m,l}$): Employment (difference in %-points)



Note: Only effects that are significant at the 5% level (point wise) appear in the figures.

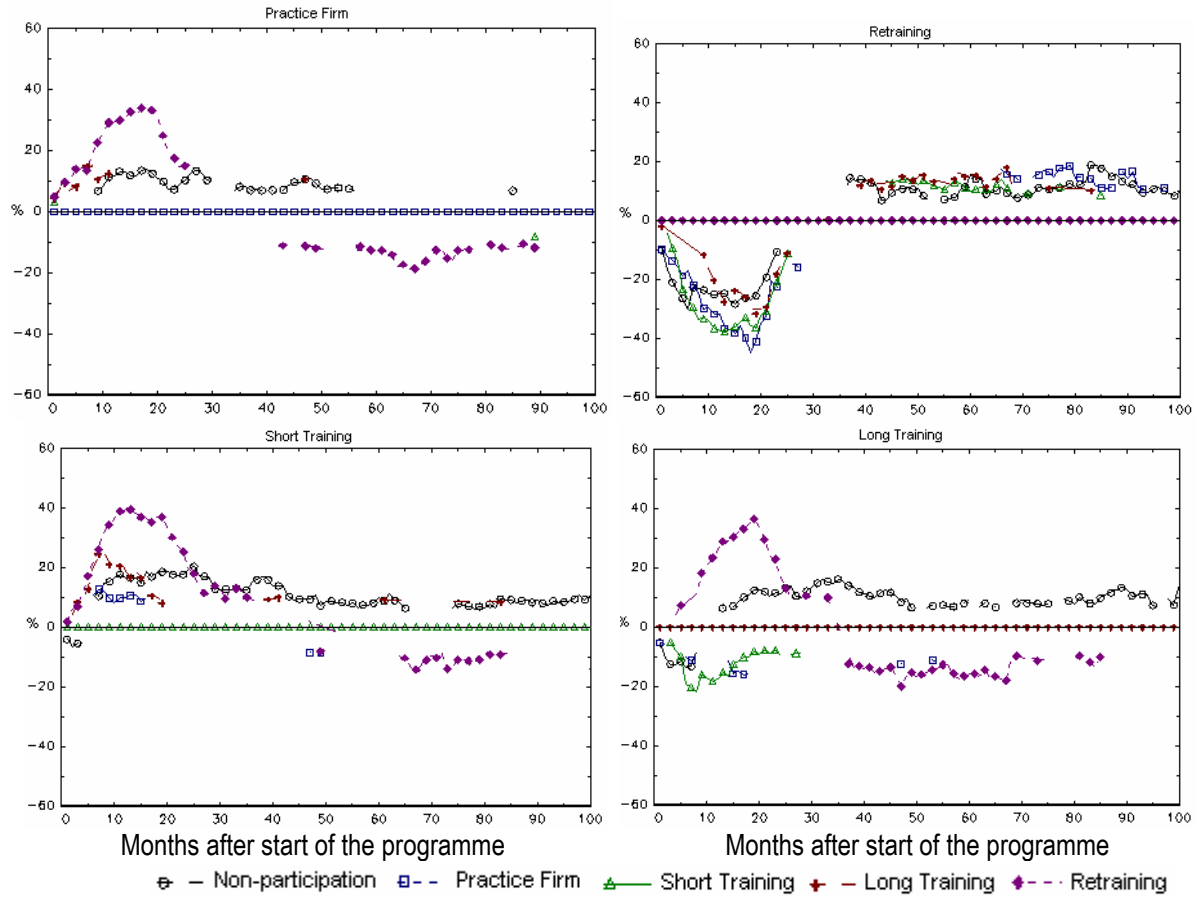
Figure IE.3: Dynamics of the effects ($\theta_0^{m,l}$): Unemployment (difference in %-points)



Note: Only effects that are significant at the 5% level (point wise) appear in the figures.

Appendix IE.2: Only gender and the scores used in matching

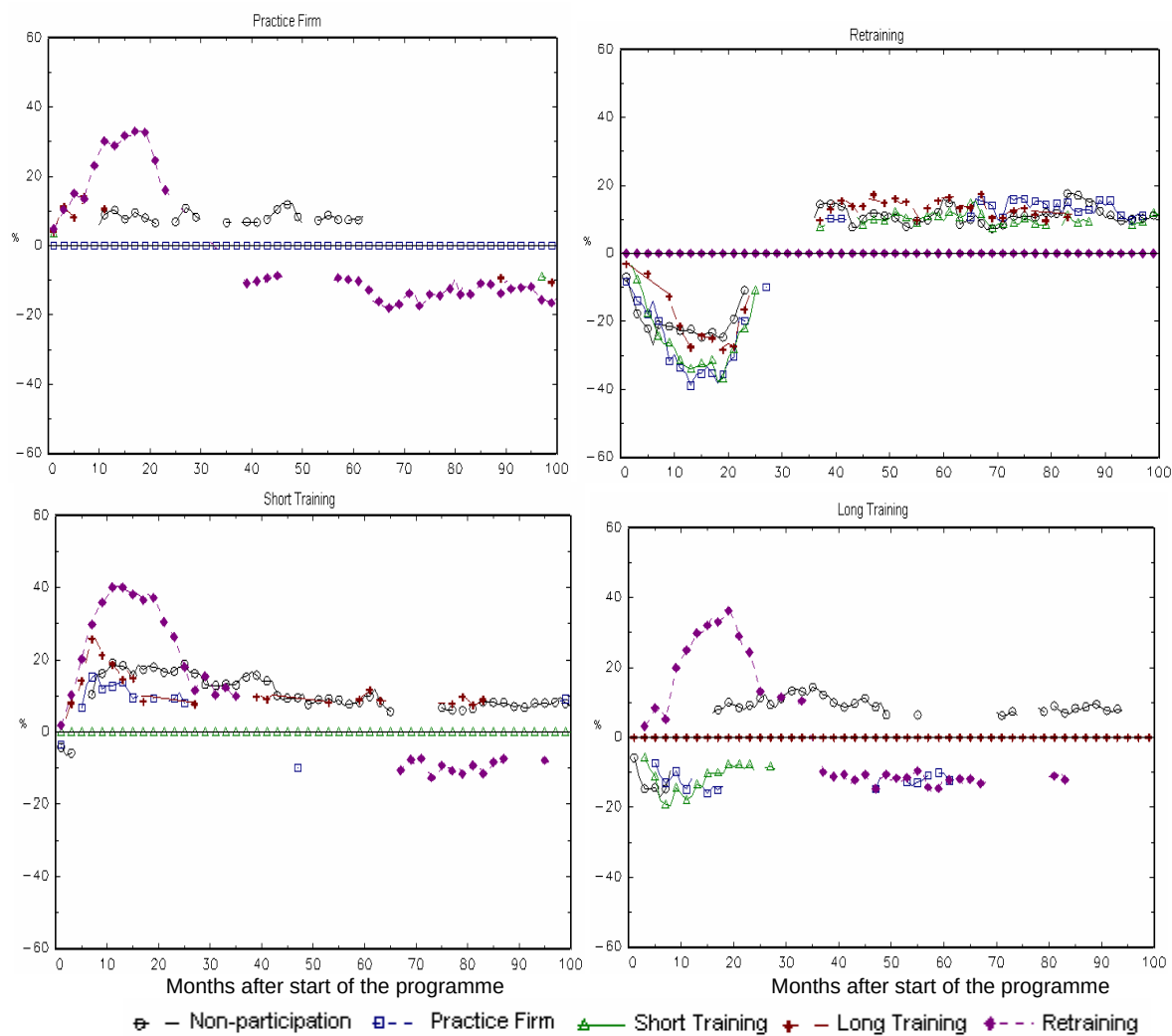
Figure IE.4: Dynamics of the effects ($\theta_0^{m,l}$): Employment (difference in %-points)



Note: Only effects that are significant at the 5% level (point wise) appear in the figures.

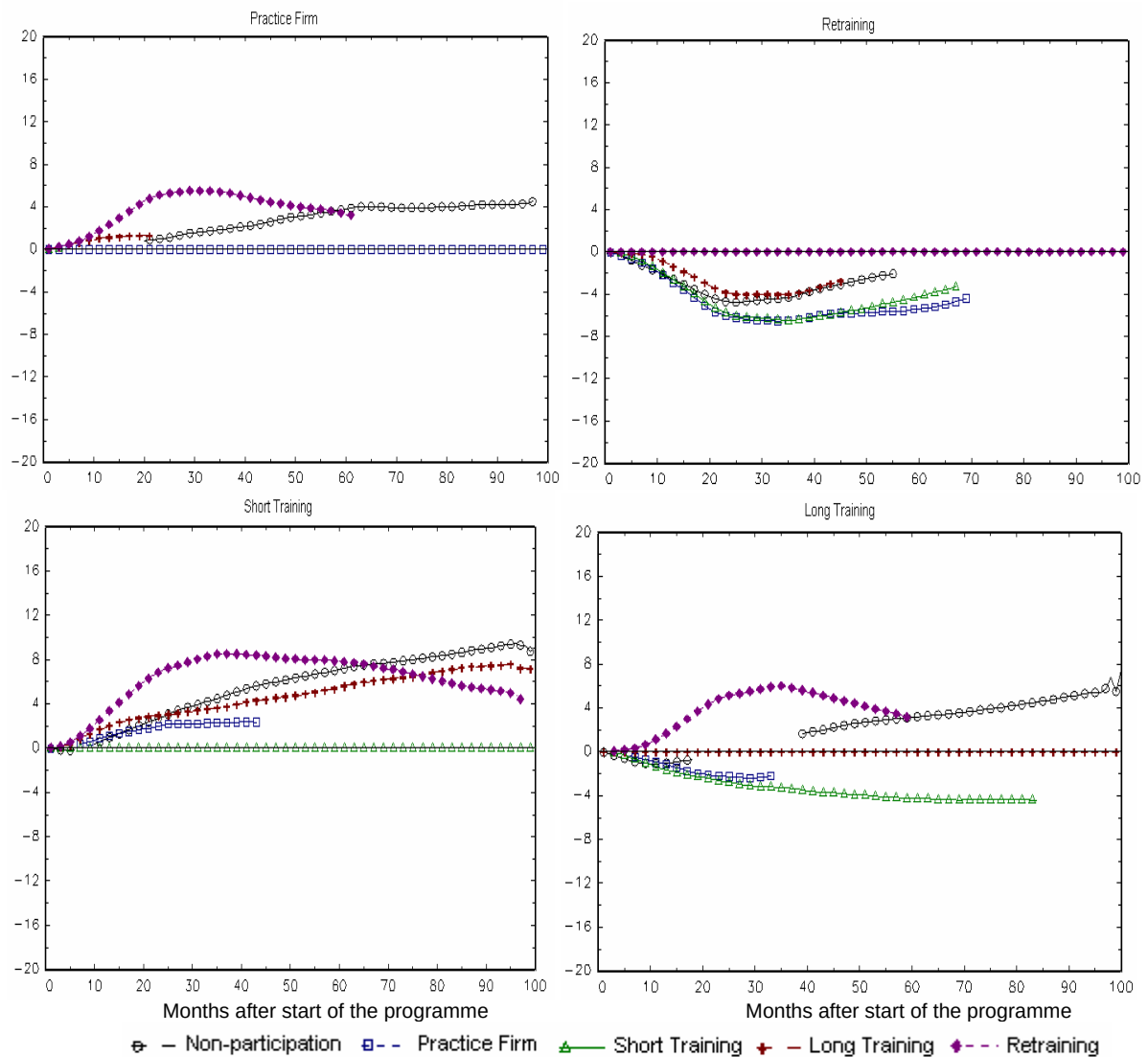
Appendix IE.3: Elapsed unemployment duration before entry in the programme as additional matching variable

Figure IE.5: Dynamics of the effects ($\hat{\theta}_t^{ml}$): Employment (differences in %-points)



Note: Only effects that are significant at the 5% level (point wise) appear in the figures.

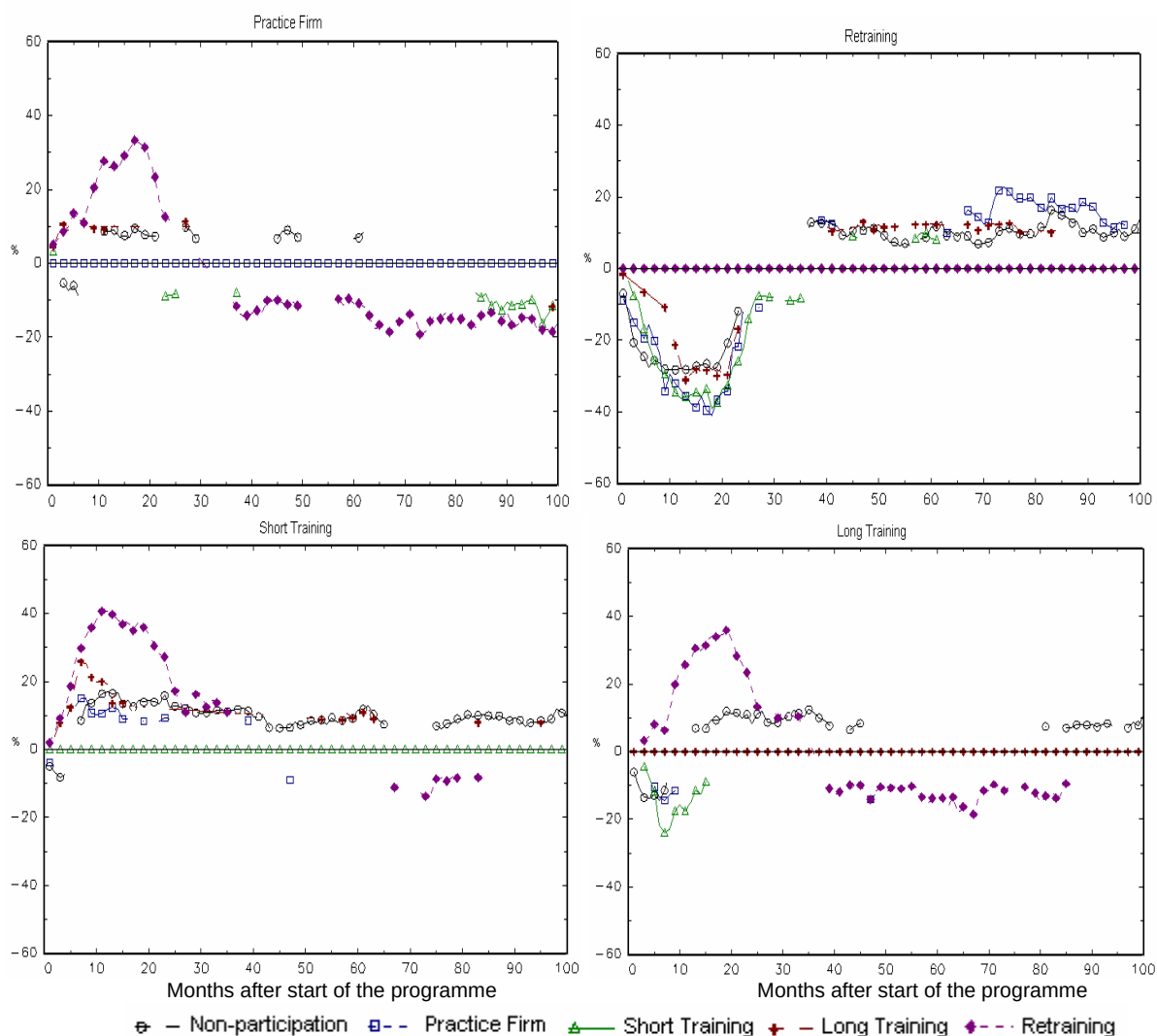
Figure IE.6: Cumulated employment effects in months



Note: Only effects that are significant at the 5% level (point wise) appear in the figures.

Appendix IE.4: Shorter treatment window (July 1993 - December 1994)

Figure IE.7: Dynamics of the effects ($\hat{\theta}_t^{ml}$): Employment (differences in %-points)



Note: Only effects that are significant at the 5% level (point wise) appear in the figures.

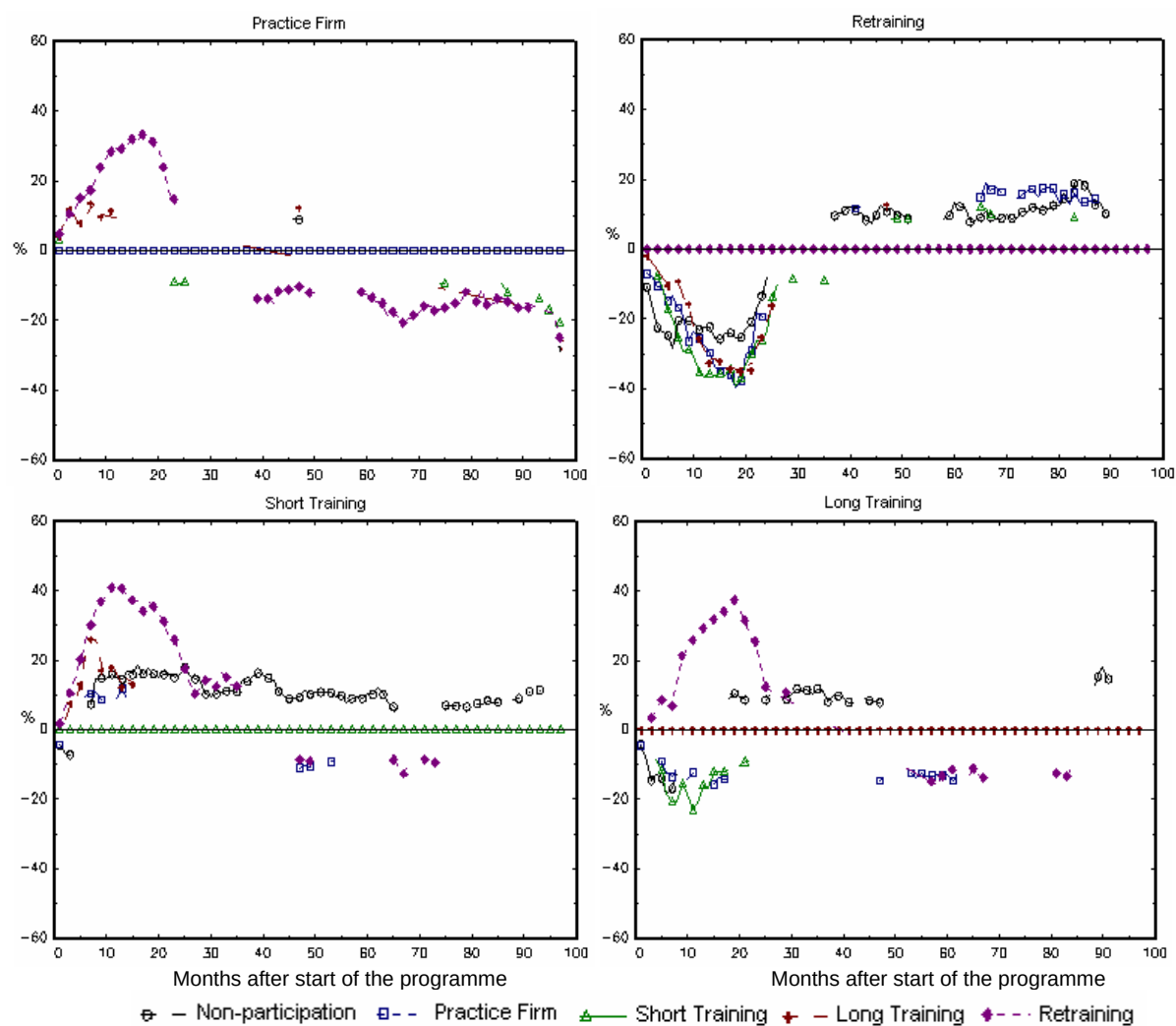
Appendix IE.5: Results of one-to-one matching without bias adjustment

Table IE.1: Mean effects for different outcome variables seven years after programme start ($\hat{\theta}_{84}^{ml}$)

Treated <i>m</i>	Obs.	Comparison /	Obs.	Employment	Stable ^a employment	Employment with stable earnings ^b	Cumulated employment in months	Earnings in EUR	Cumulated earnings in EUR
Practice firm	242	Nonparticipation	6772 ^c	4.5	5.0	-0.7	2.2	2	-1,053
Short training	494	Nonparticipation	6772 ^c	7.9	4.1	9.6	8.3*	241*	19,652*
Long training	263	Nonparticipation	6772 ^c	5.1	5.9	1.7	3.1	114	7,191
Retraining	381	Nonparticipation	6772 ^c	19.6*	15.7*	18.6*	0.1	549*	6,928
Practice firm	242	Short training	494	-6.9	-3.4	-14.1*	-3.4	-264	-12,164
Practice firm	242	Long training	263	6.3	2.9	1.5	3.8	-113	-4,701
Practice firm	242	Retraining	381	-16.0*	-8.9	-18.4*	-0.7	-516*	-10,083
Short training	494	Practice firm	242	0.7	-1.3	5.7	-0.5	95	7,230
Short training	494	Long training	263	2.8	-0.8	7.7	3.5	53	4,793
Short training	494	Retraining	381	-5.2	-5.4	-5.2	5.9	-110	9,728
Long training	263	Practice firm	242	-1.5	0.0	-3.1	-4.7	203	7,274
Long training	263	Short training	494	1.8	2.3	-3.3	-3.5	130	-1,445
Long training	263	Retraining	381	-11.0	-3.9	-17.9*	1.6	-332	-744
Retraining	381	Practice firm	242	13.5	17.5*	13.3	-1.0	478*	10,973
Retraining	381	Short training	494	6.9	7.8	5.5	-4.0	166	-5,960
Retraining	381	Long training	263	8.3	7.4	7.4	-2.5	36	-9,925

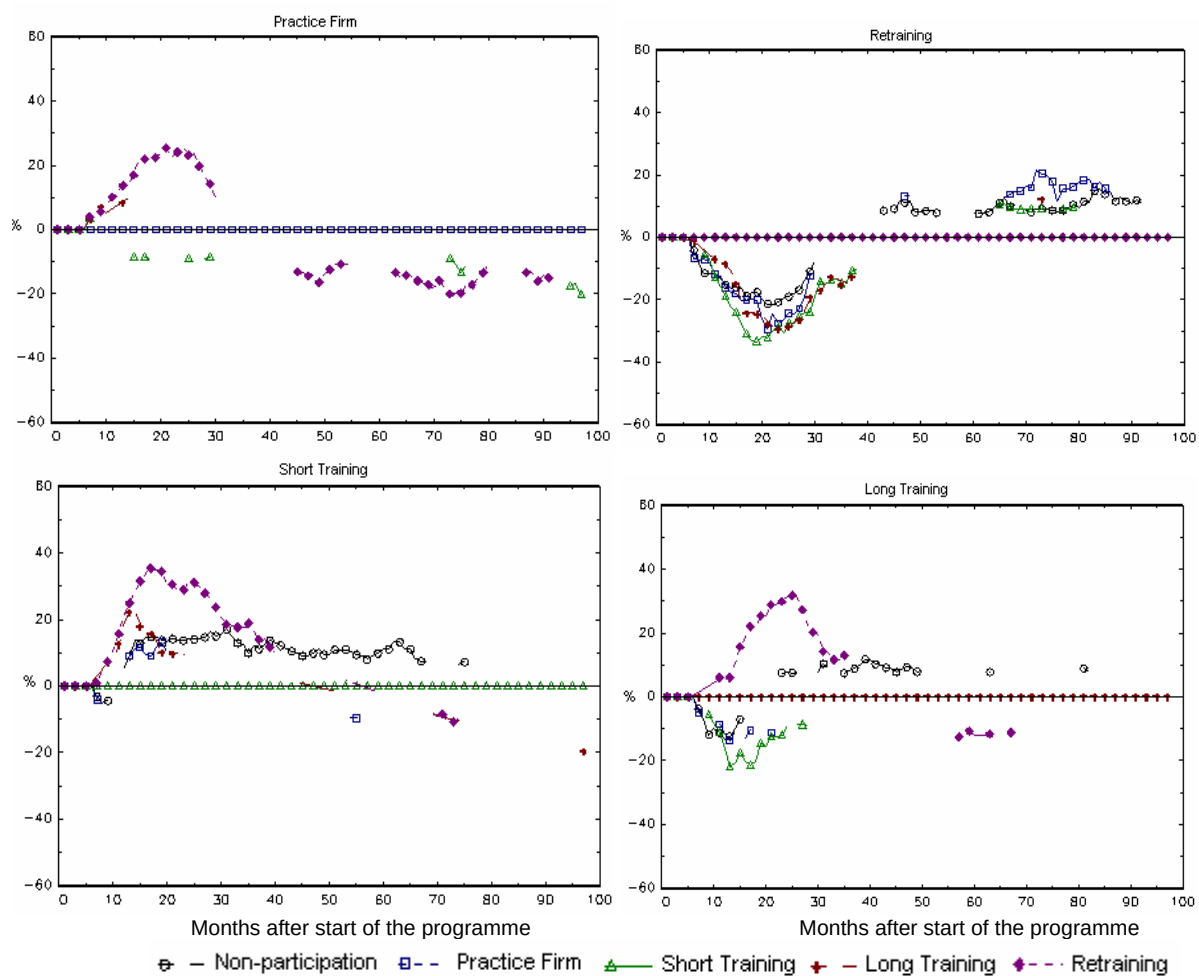
Note: Bold numbers indicate significance at the 5% level, numbers in *italics* relate to the 10% level and * to the 1% level. If not stated otherwise the effects are differences in %-points. ^a Dummy variable which equals 1 for a particular month, if the individual is employed in this month as well as in the six months just before. ^b Dummy that equals 1 if earnings in the respective month are at least 90% of monthly earnings during the last employment spell before entry in the programme. ^c 6771 observations for the earnings outcomes.

Figure IE.8: Dynamics of the effects ($\hat{\theta}_t^{ml}$): Employment differences in %-points



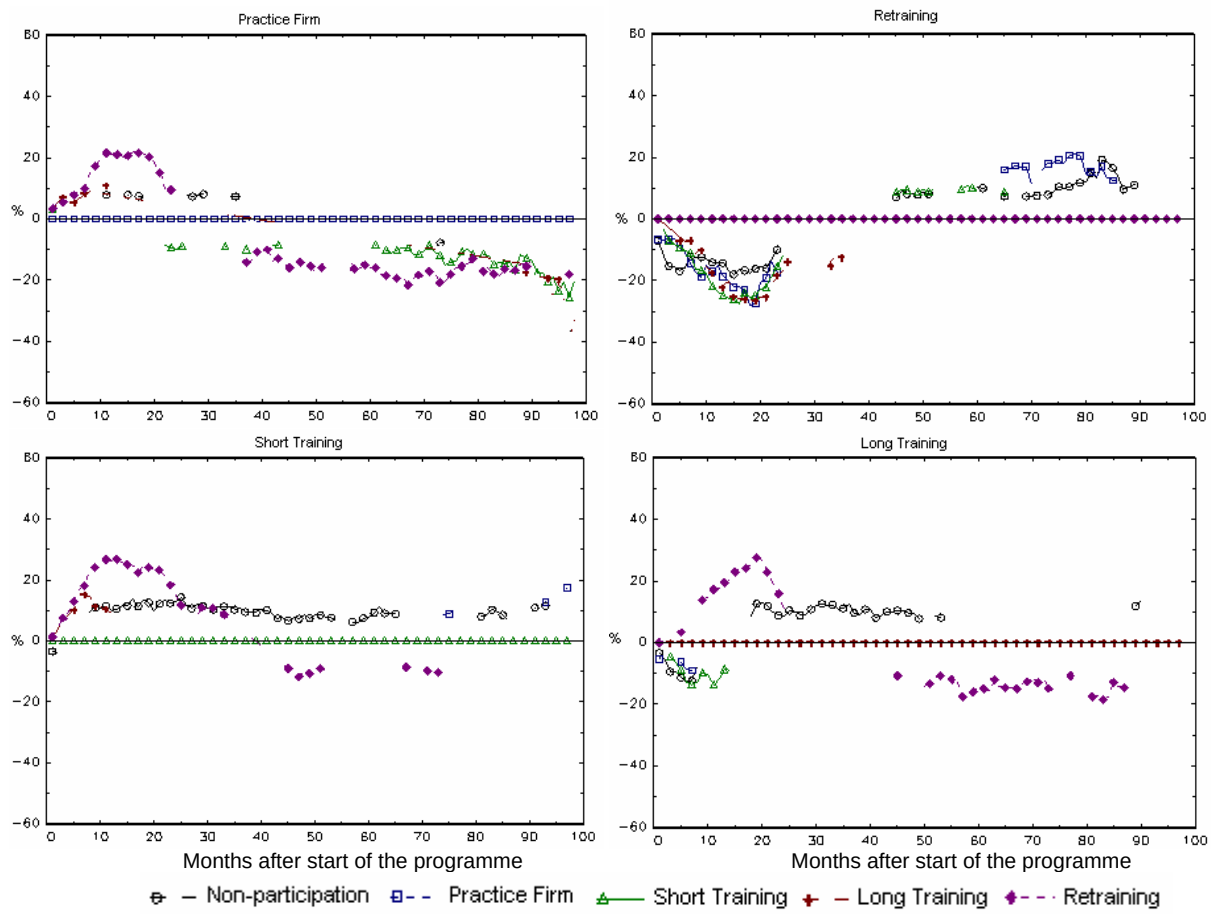
Note: Only effects that are significant at the 5% level (point wise) appear in the figures.

Figure IE.9: Dynamics of the effects ($\theta_0^{m,l}$): Stable employment (difference in %-points)



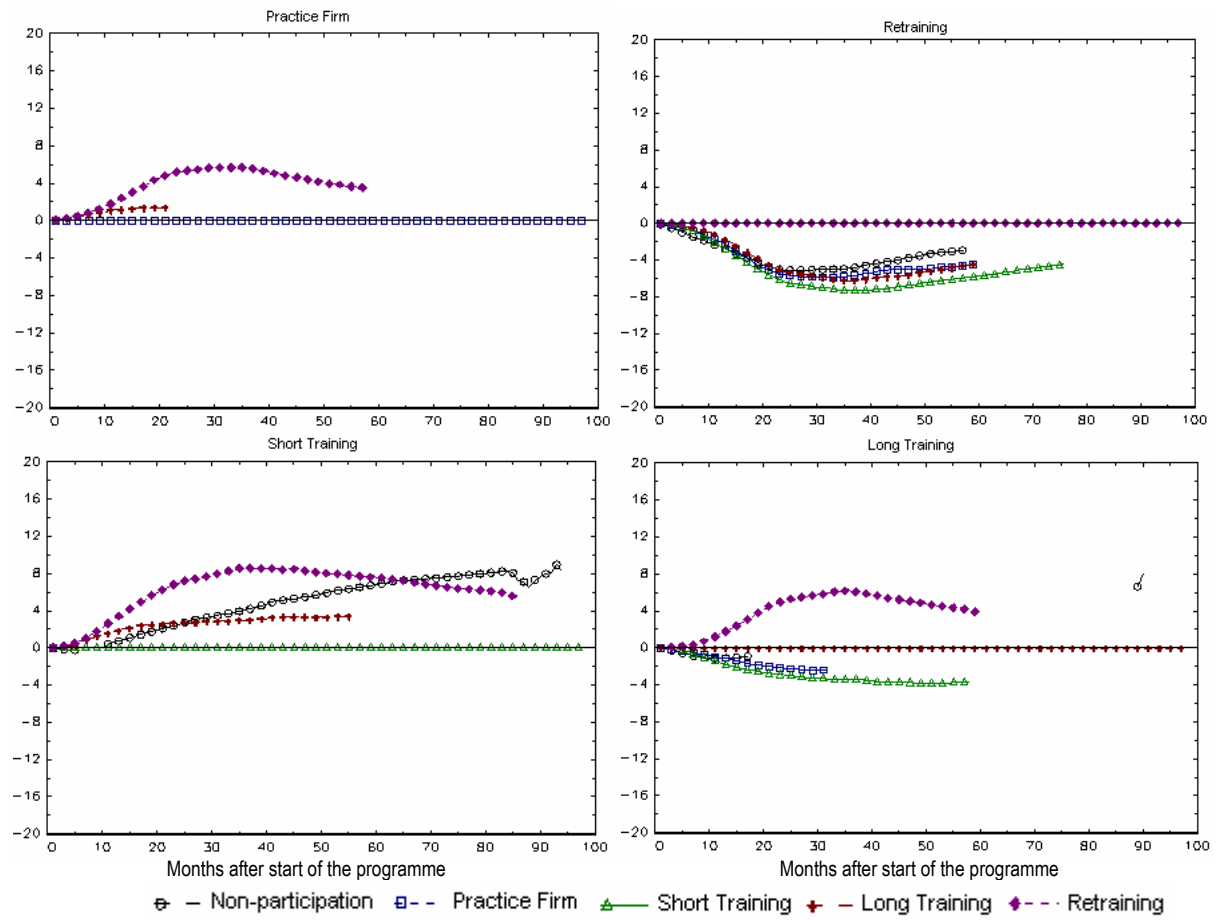
Note: The outcome is a dummy variable which equals 1 for a particular month, if the individual is employed in this month as well as in the six months just before. Only effects that are significant at the 5% level (point wise) appear in the figures.

Figure IE.10: Dynamics of the effects ($\theta_0^{m,l}$): Employment with ‘stable’ earnings (difference in %-points)



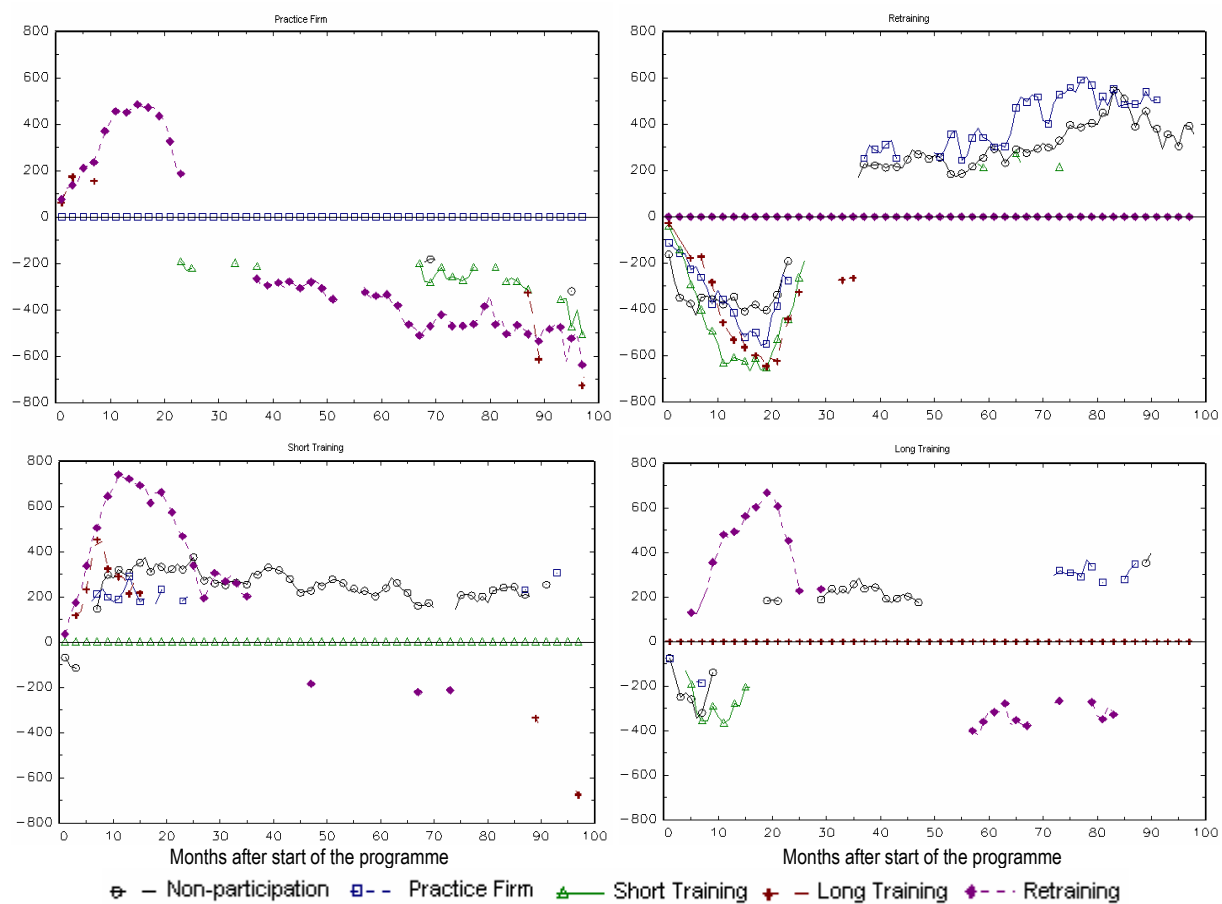
Note: The outcome variable is a dummy that equals 1 if earnings in the respective month are at least 90% of monthly earnings during the last employment spell before entry in the programme. Only effects that are significant at the 5% level (point wise) appear in the figures.

Figure IE.11: Cumulated effects ($\sum_{\tau=1}^t \hat{\theta}_{\tau}^{ml}$): Employment differences in months



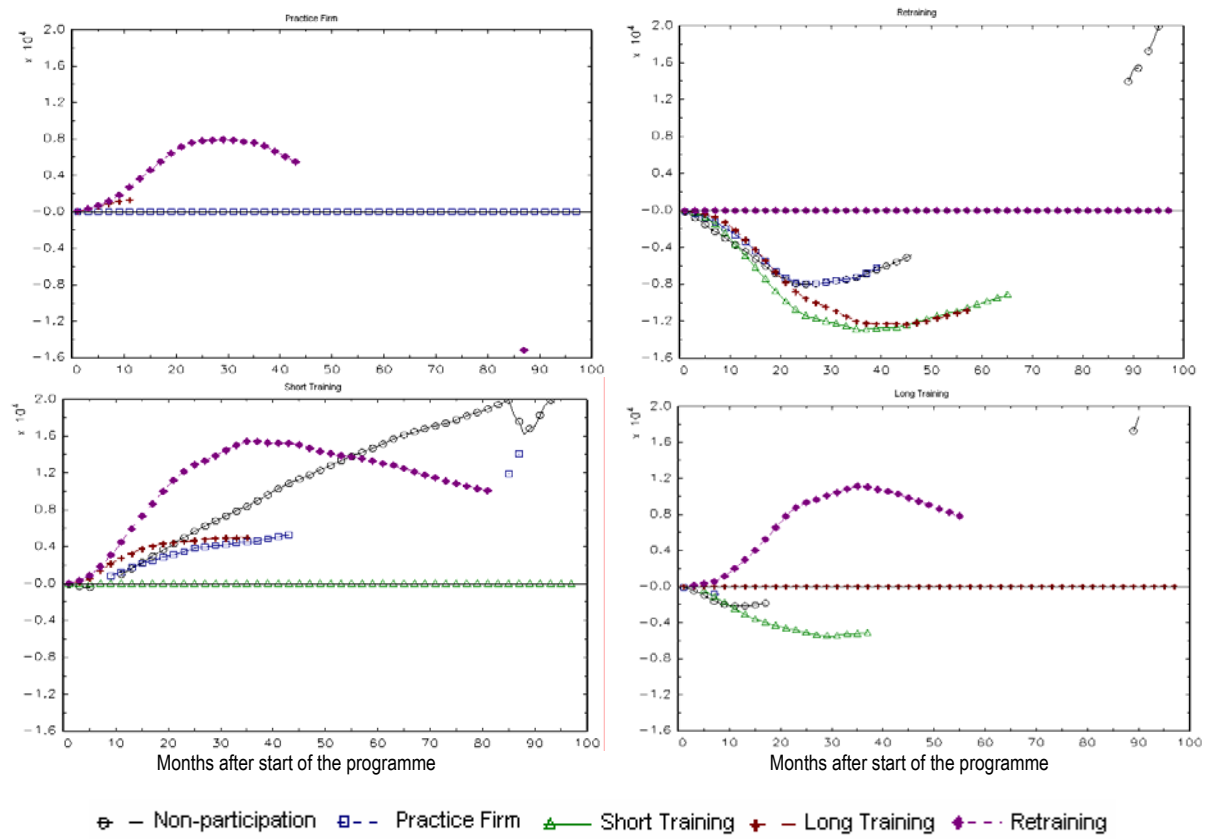
Note: See notes below Figures 2 and 3 in the main body of the text.

Figure IE.12: Dynamics of the effects ($\theta_0^{m,l}$): Monthly earnings differences in EUR



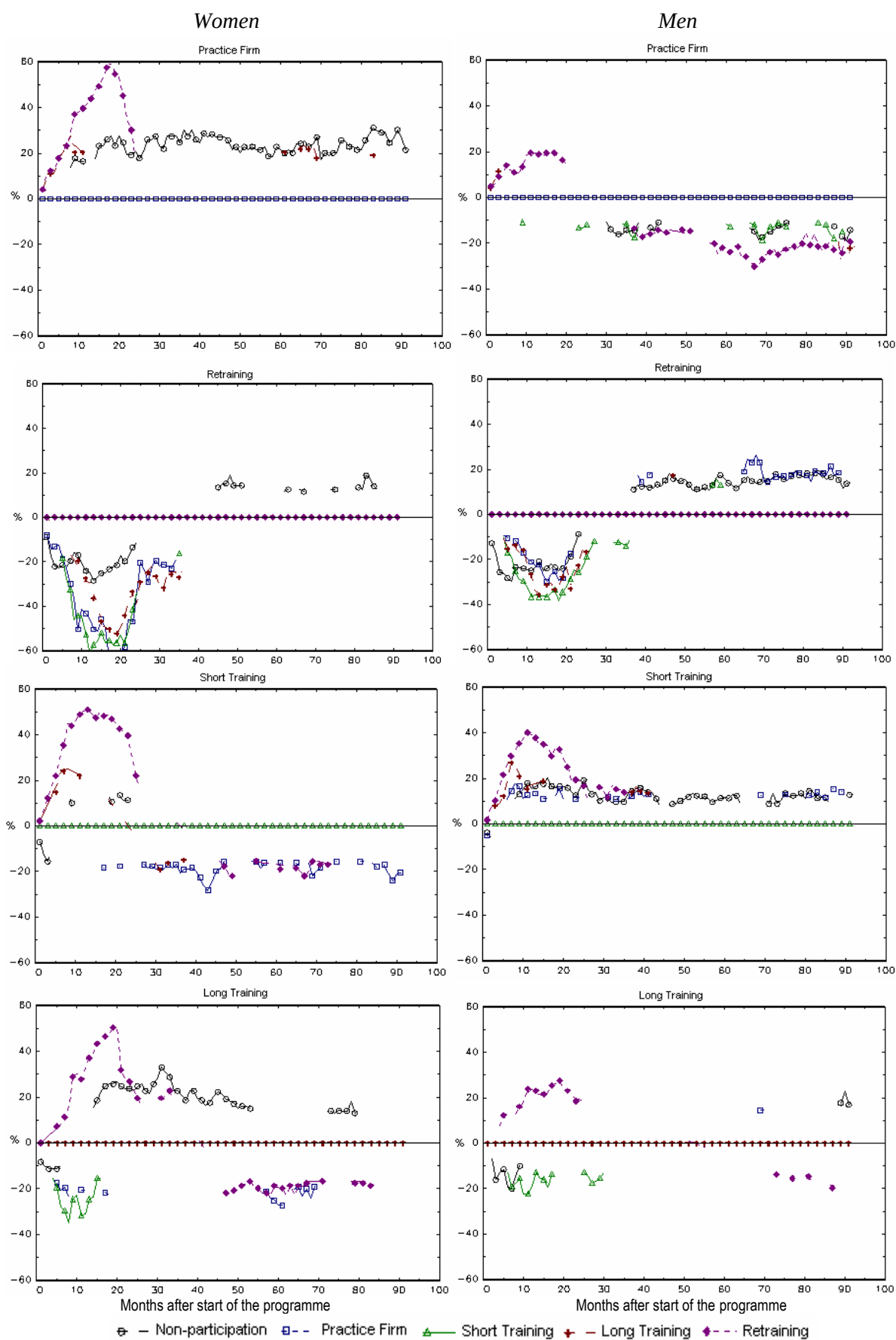
Note: Only effects that are significant at the 5% level (point wise) appear in the figures.

Figure IE.13: Cumulated effects ($\sum_{\tau=1}^t \hat{\theta}_{\tau}^{ml}$): Monthly earnings differences in 10,000 EUR



Note: Only effects that are significant at the 5% level (point wise) appear in the figures.

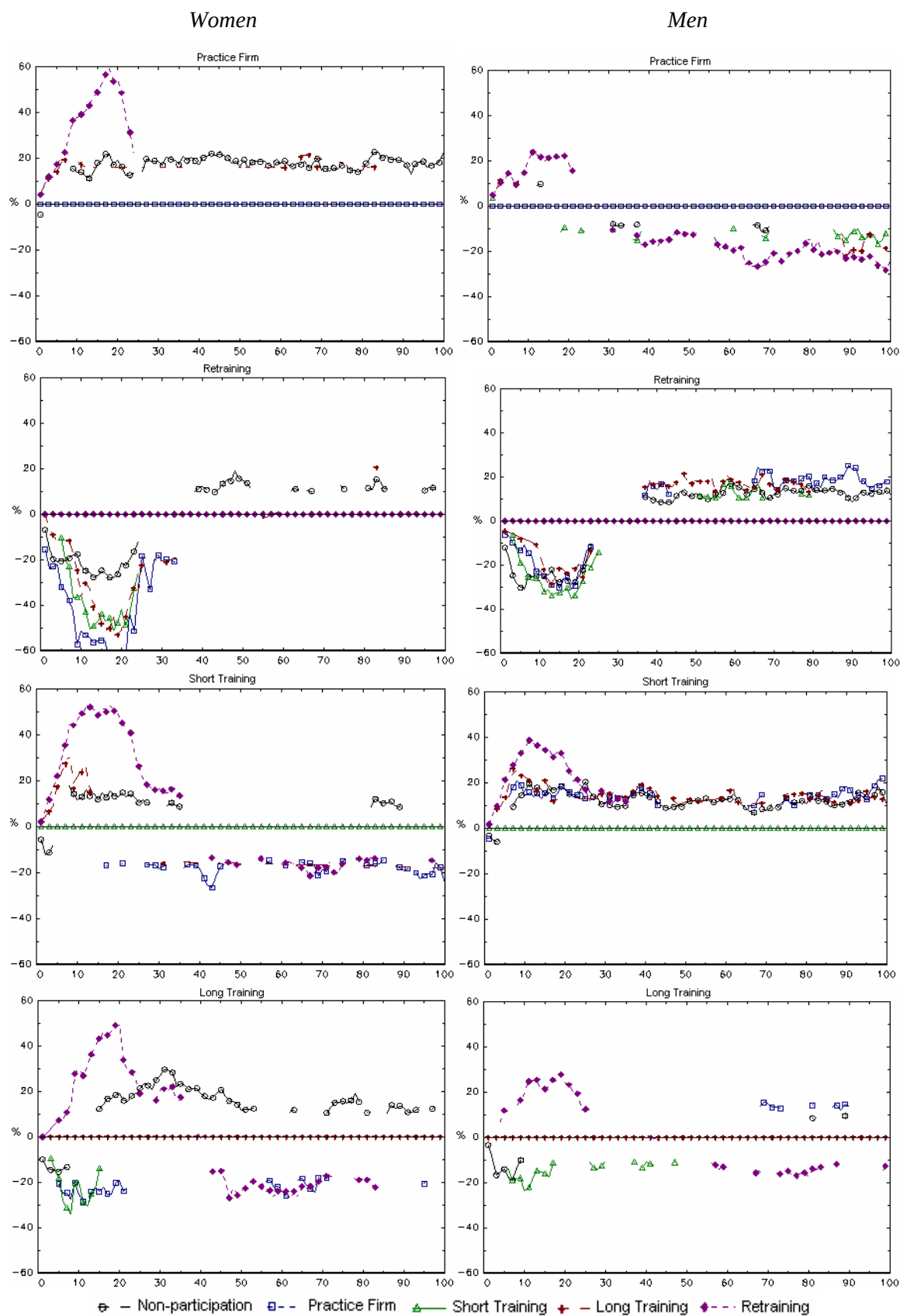
Figure IE.14: Dynamics of the employment effects by gender (difference in %-points)



Note: Only effects that are significant at the 5% level (point wise) appear in the figures.

Appendix IE.6: Gender differences

Figure IE.15: Dynamics of employment effects by gender (difference in %-points)



Note: Only effects that are significant at the 5% level (point wise) appear in the figures.

Figure IE.16: Dynamics of employment effects by gender (difference in %-points) - MNP estimation
different for men and women

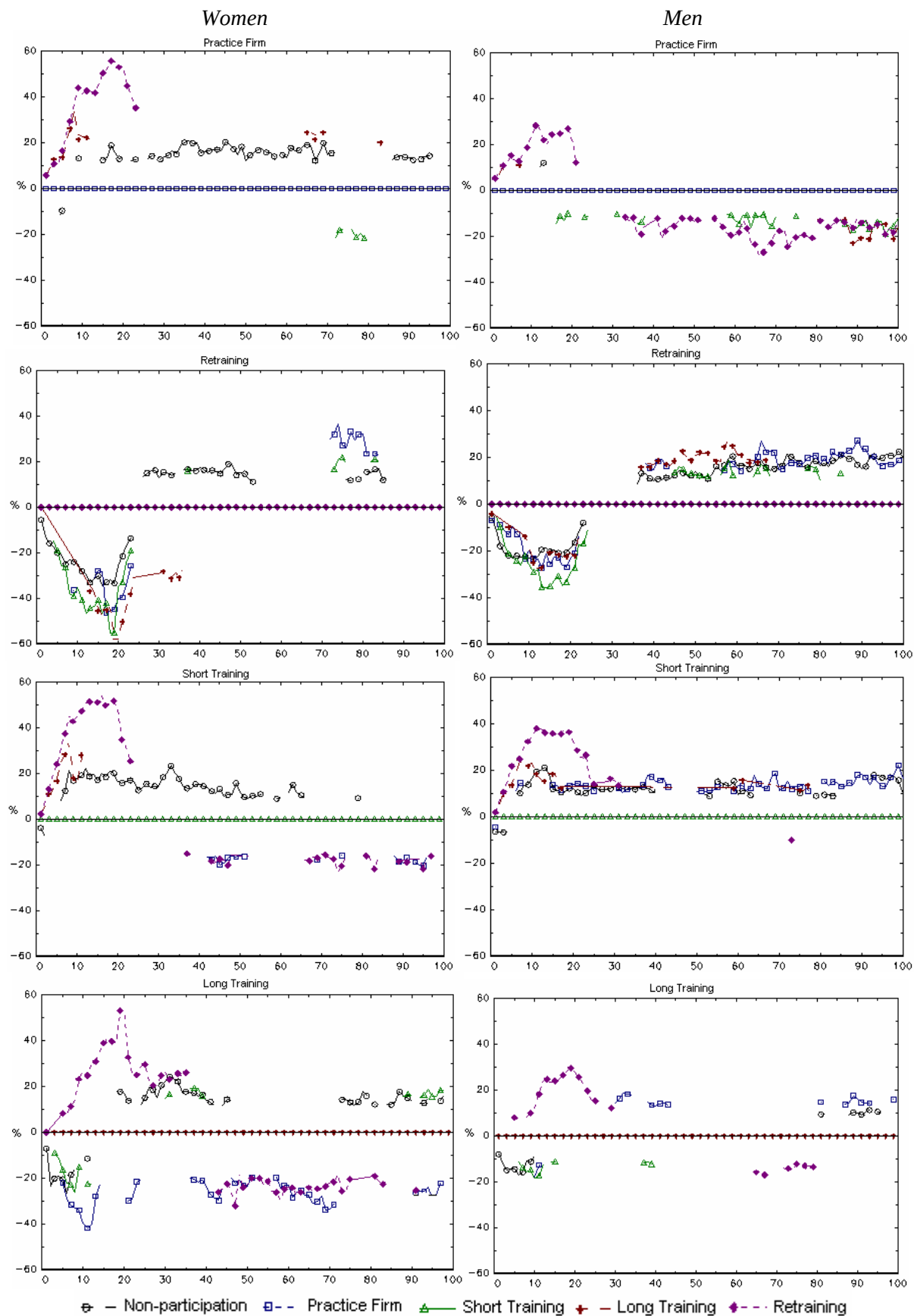


Table IE.2 Effect heterogeneity (employment) eight years after the beginning of the programme

(difference in %-points) ($\theta_0^{m,l}$) - - Separate MNP estimation for men and women

m - l	Men	Women
Practice firm - nonparticipation	2.7	11.7
Practice firm - short training	-13.7	5.1
Practice firm - long training	-14.0	5.7
Practice firm - retraining	-14.6	-11.7
Short training - nonparticipation	16.0*	2.6
Short training - practice firm	13.0	-16.5
Short training - long training	9.7	-10.1
Short training - retraining	-8.4	-18.0
Long training - nonparticipation	9.8	11.1
Long training - practice firm	10.6	-27.5
Long training - short training	4.4	15.5
Long training - retraining	-5.3	-16.7
Retraining - nonparticipation	21.2*	13.0
Retraining - practice firm	17.4	8.3
Retraining - short training	5.3	18.7
Retraining - long training	9.4	3.4
Nonparticipation	3294	1630
Practice firm	153	70
Short training	266	136
Long training	121	85
Retraining	217	85

Note: Bold numbers indicate significance at the 5% level, numbers in *italics* relate to the 10% level and * to the 1% level. Cells shaded in grey indicate that the difference of the two estimated effects is significant at the 5% level.

Appendix IE.7: Simulation results for the multinomial probit

Table IE.3: Differences of mean probabilities for different values of the covariates (in %-points)

Changes in covariates	Nonparticipation		Practice firm		Short training		Long training		Retraining	
	mean	std.	mean	std.	mean	std.	mean	std.	mean	std.
Women - men	1.84	1.25	-1.24	0.85	0.37	0.96	-0.73	0.96	-0.25	0.98
Nationality: German - foreigner	-5.85	1.47	-0.01	0.93	1.97	1.24	0.99	1.32	2.89	1.14
Education: Low - high	3.26	1.24	0.09	0.85	-0.87	0.99	-1.10	1.06	-1.38	0.87
Employment states in each of the 5 years before 1993: unemployment - employment	-5.49	8.49	3.57	6.00	2.67	7.43	-6.40	4.50	5.65	8.24

Note: Probabilities are computed for every individual at each value of the covariates in question given the estimated coefficients. Others covariate not explicitly mentioned in the first column are only changed if logically required. For example, changing unemployment states change many variables at the same time (see internet appendix for details). Standard errors of the mean differences over the sample (which should converge to a normal distribution) are based on 250 draws from the asymptotic distribution of the estimated MNP coefficients.

Table IE.4: Content in variables changed for the simulation of the effect of five years of unemployment assistance compared to five years of employment

Variable	Unchanged	Changed
Constant		
Women	*	
Older than 50 years	*	
Younger than 26 years	*	
Age/10	*	
(Age/10)^2	*	
Nationality: German	*	
Marital status: Single	*	
Children: No child	*	
Education (reference category: polytechnical degree, university degree)		
No university entrance degree, no profess. degree	*	
No university entrance degree, profess. degree	*	
University entrance degree, no profess. degree	*	
University entrance degree and profess. degree	*	

- To be continued -

Table IE.4 (cont.): Content in variables changed for the simulation of the effect of five years of unemployment assistance compared to five years of employment

Variable	Unchanged	Changed
Position in last job (reference category: skilled worker)		
Salaried employee		*
Part-time worker		*
Master craftsman		*
Unskilled worker		*
Last occupation (reference categories: agriculture, forestry, fishing; food and nutrition; transportation, storage; chemical worker, polymer processing; security services; paper manufacture and processing, printing; media, humanities, arts; mining; technology, natural sciences; machinist; electronics; stone, ceramics, glass making and/or processing)		
Plumbing, metal construction technology		*
Construction, woodworking		*
Merchant (goods and services)		*
Administration, office work, business and social sciences		*
Health services		*
Hairdressing, guest assistance, housekeeping, cleaning		*
Unskilled worker		*
Metal production and processing		*
Textile, leather, clothing		*
Social services, education, counselling		*
Industrial sector (reference categories: manufacturing (without construction), transportation, telecommunications, other services)		
Construction		*
Commerce		*
Banking, insurance		*
Local and regional authorities, social insurance		*
Non-profit organisations, private households		*
Agriculture, forestry, fishing		*
Energy and supply industry, mining		*
Last monthly earnings		
Log(last monthly earnings)		*
No information		*
Remaining unemployment (UE) benefits claim at the end of the last unemployment spell before entry in the programme		
≤ 6 months		*
≤ 1 year		*
≤ 2 years		*
Legal UE benefits claim at the beginning of the last unemployment spell before the beginning of the programme		
Legal claim (months)		*
No claim		*
≤ 6 months		*
≤ 18 months		*
UE benefits or UE assistance in the month before beginning of the programme (reference category: UE assistance)		
UE benefits		*
Various historical un/ out-of/employment information before the "first unemployment period"		
Proportion of employment months (in %)* before the UE spell		*
Proportion of out-of-labour months (in %) before the UE spell		*
# of programs up to 2 years before the UE period		*
# of programs from entry in the data up to the UE period (UEP)		*
Mean duration of UE spells up to 5 years before UEP		*
Mean duration of employm. spells up to 5 years before UEP		*
Mean duration of employm. spells from entry in data up to UEP		*
Mean duration of out-of-labour force spells up to 2 years before UEP		*
Mean duration of out-of-labour force spells up to 5 years before UEP		*
Mean duration of out-of-labour spells from entry in the data up to the UEP		*
Total months in all programmes up to 2 years before the UEP		*

- To be continued -

Table IE.4 (cont.): Content in variables changed for the simulation of the effect of five years of unemployment assistance compared to five years of employment

Variable	Unchanged	Changed
Various un/employment information from the "first unemployment period"		
Duration of the "first UE spell"	*	
Duration of the "first UE spell"^2	*	
Duration of last UE spell before programme	*	
Duration of last UE spell before programme ^2	*	
Time since beginning of last UE spell (before the prog.) even if other state between UE and prog.	*	
Log(time since beginning of last UE spell (before the prog.) even if other state between UE and prog.)	*	
Time since beginning of last UE spell (before the prog.) even if other state between UE and prog.^2	*	
3 months ≥ time between prog. and last job		*
Transition in 6 months before the programme:		
empl. → UE		*
out → UE		*
prog. → UE		*
Number of prog. in year before actual programme		*
Unemployment and employment status before prog.: (reference categories: out-of-labor, missing)		
Unemployed in the 6th. month before prog.		*
12th. month before prog.		*
24th. month before prog.		*
36th. month before prog.		*
48th. month before prog.		*
Employed in the		
6th. month before prog.		*
12th. month before prog.		*
24th. month before prog.		*
36th. month before prog.		*
48th. month before prog.		*

Regional information		
Big city (at least 300,000 inhabitants)	*	
(Reference category: Baden-Wuerttemberg, Bavaria)		
North (Hamburg, Bremen, Schleswig-Holstein)	*	
North-Rhine-Westphalia	*	
Rhineland-Palatinate, Hesse, Saarland	*	
Local UE rate > 10% *	*	

Firms size of the last employer (reference category: 500 employees or more)		
No information		*
1 to 9 employees		*
10 to 99 employees		*
100 to 499 employees		*

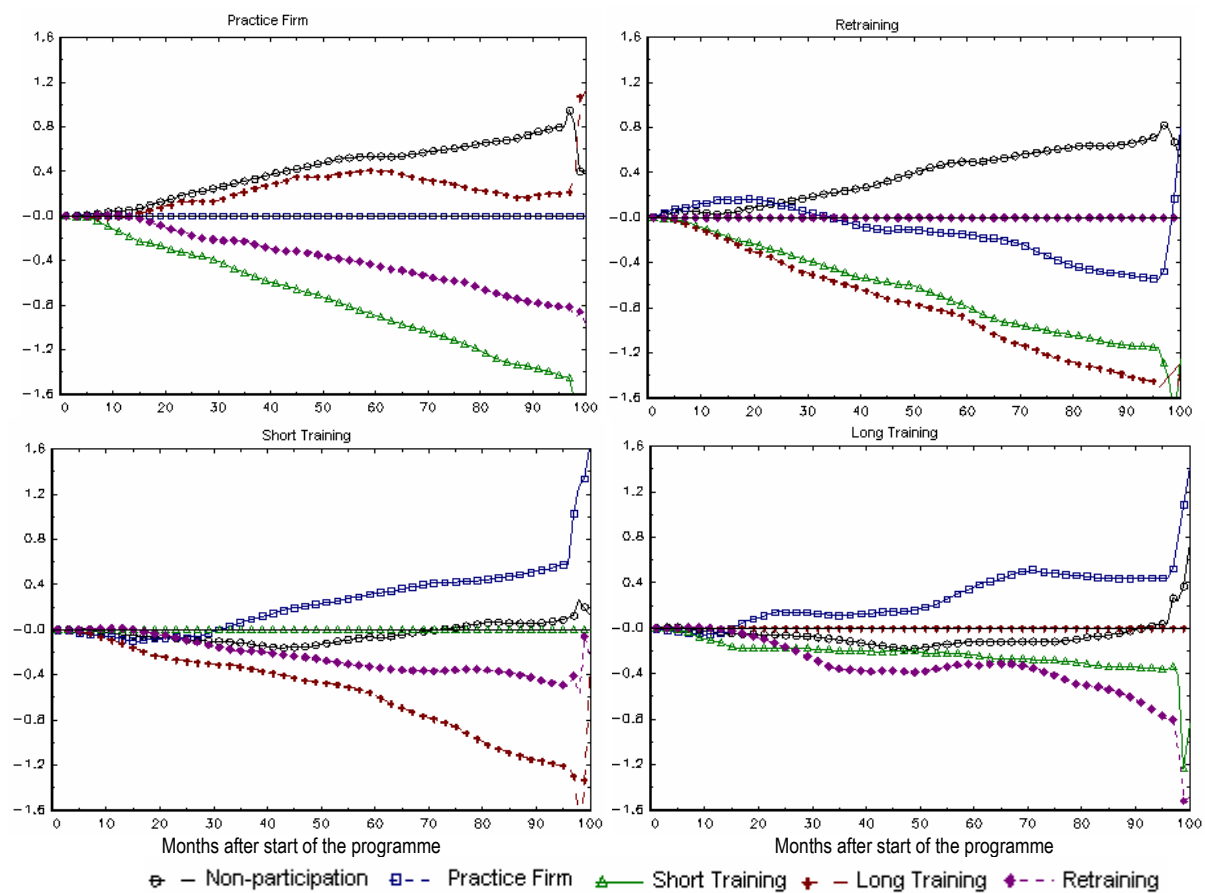
Date of entry in the data	*	
Date of entry in the sample	*	

Age < 26 * time since beginning of last UE spell (before the prog.) even if other state between UE and prog	*	
Age ≥ 50 * time since beginning of last UE spell (before the prog.) even if other state between UE and prog	*	

Note: The variables concerning the characteristics of the last job are changed because the relevant job is now the one five years before the artificial unemployment spell.

Appendix IF: Selected asymptotic bias estimates

Figure IF.1: Bias terms of cumulated employment differences ($\sum_{\tau=1}^t \hat{\theta}_{\tau}^{ml}$) in months



Note: See notes below Figures 3 and 5 in the main body of the text.