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Abstract: Targeting is a central part of many public support schemes to increase cost-effectiveness of policy intervention. Interestingly, targeting in investment support measures of the Rural Development Programs (RDP) of the EU has so far received limited attention whereas targeting of agri-environmental measures has been the topic of many studies. In this article we investigate the effectiveness of targeting in the biggest Austrian investment support scheme. We find that 1) targeting could be increased if eligibility criteria were used more extensively, 2) the differentiation of aid-intensity levels is not making a difference for the allocation of funds and 3) selection through ranking by the managing authority seems to work through pre selection by the agricultural extension service. Even without touching the issue of which farms should be targeted, it is evident that effectiveness of current targeting could be increased.

Keywords

Targeting-effectiveness, Investment support measures, Evaluation

Appendix

Table A1: Matching balance aid-intensification with respect to alpine pasture cultivation for model 1

	Before Matching					After Matching				
	mean: alpine pasture	mean: no alp. pasture	p- Value	St.Diff.	Var. Ratio	mean: alpine pasture	mean: no alp. pasture	p- Value	St.Diff.	Var. Ratio
Year of birth*	1960	1961	0.00	-6.56	1.46	1960	1960	0.00	-0.14	1.01
Year of birth squared*	3,841,380	3,844,196	0.00	-6.49	1.46	3,841,380	3,841,441	0.00	-0.14	1.01
Area cultivated (ha)	19	20	0.00	-9.10	0.78	19	20	0.00	-15.77	0.71
Area cultivated squared	463	535	0.00	-11.49	0.53	463	579	0.00	-18.55	0.48
Assets per area cultivated	19,893	16,286	0.00	10.63	2.18	19,893	15,474	0.00	13.02	2.14
Assets per area cultivated squared	1,547,911,492	793,105,005	0.00	6.12	1.57	1,547,911,492	778,418,298	0.00	6.24	1.42
Debt to equity ratio	0.01	0.01	0.00	4.19	0.39	0.01	0.01	0.10	2.25	0.40
Debt to equity ratio squared	0.00	0.00	0.00	-11.39	0.20	0.00	0.00	0.00	-11.30	0.17

Notes: Survey design based estimated population values based on population figures in 2006. St.Diff. = standardized difference, Var. Ratio = ratio of variance.

*If several farm holders are present the average age was used.

Table A2: Matching balance aid-intensification with respect to alpine pasture cultivation for model 2

	Before Matching					After Matching				
	mean: alpine pasture	mean: no alp. pasture	p- Value	St.Diff.	Var. Ratio	mean: alpine pasture	mean: no apl. pasture	p- Value	St.Diff.	Var. Ratio
Year of birth*	1960	1961	0.00	-6.56	1.46	1960	1960	0.90	-0.04	1.30
Year of birth squared*	3,841,380	3,844,196	0.00	-6.49	1.46	3,841,380	3,841,370	0.95	0.02	1.30
Area cultivated (ha)	19	20	0.00	-9.10	0.78	19	19	0.00	-0.99	1.08
Area cultivated squared	463	535	0.00	-11.49	0.53	463	459	0.00	0.71	1.05
Assets per area cultivated	19,893	16,286	0.00	10.63	2.18	19,893	20,135	0.00	-0.71	0.60
Assets per area cultivated squared	1,547,911,492	793,105,005	0.00	6.12	1.57	1,547,911,492	2,333,311,317	0.00	-6.37	0.34
Debt to equity ratio	0.01	0.01	0.00	4.19	0.39	0.01	0.01	0.00	4.26	1.07
Debt to equity ratio squared	0.00	0.00	0.00	-11.39	0.20	0.00	0.00	0.00	0.68	0.70

Notes: Survey design based estimated population values based on population figures in 2006. St.Diff. = standardized difference, Var. Ratio = ratio of variance.

*If several farm holders are present the average age was used.

Table A3: Matching balance aid-intensification with respect to alpine pasture cultivation for model 3

	Before Matching					After Matching				
	mean: alpine pasture	mean: no alp. pasture	p- Value	St.Diff.	Var. Ratio	mean: alpine pasture	mean: no alp.pasture	p- Value	St.Diff.	Var. Ratio
Year of birth*	1960	1961	0.00	-6.78	1.46	1960	1960	0.28	-0.40	1.26
Year of birth squared*	3,841,375	3,844,284	0.00	-6.70	1.46	3,841,375	3,841,526	0.36	-0.35	1.26
Area cultivated (ha)	19	20	0.00	-9.33	0.78	19	19	0.00	-0.57	1.03
Area cultivated squared	463	536	0.00	-11.60	0.53	463	462	0.08	0.14	1.00
Assets per area cultivated	19,891	15,469	0.00	13.03	8.24	19,891	15,005	0.00	14.40	14.33
Assets per area cultivated squared	1,546,636,239	378,881,559	0.00	9.48	128.52	1,546,636,239	305,453,065	0.00	10.07	964.44
Debt to equity ratio	0.01	0.01	0.00	4.16	0.39	0.01	0.01	0.00	1.73	1.17
Debt to equity ratio squared	0.00	0.00	0.00	-11.41	0.20	0.00	0.00	0.00	1.19	0.70

Notes: Survey design based estimated population values based on population figures in 2006. St.Diff. = standardized difference, Var. Ratio = ratio of variance. *If several farm holders are present the average age was used.

Table A4: Matching balance aid-intensification with respect to organic farms for model 1

	Before Matching					After Matching				
	mean: organic	mean: conventional	p- Value	St.Diff.	Var. Ratio	mean: organic	mean: conventional	p- Value	St.Diff.	Var. Ratio
Year of birth*	1959	1961	0.00	-18.39	0.83	1959	1959	1.00	0.00	1.00
Year of birth squared*	3,838,505	3,845,225	0.00	-18.44	0.83	3,838,505	3,838,505	1.00	0.00	1.00
Area cultivated (ha)	20	20	0.62	0.53	0.76	20	21	0.00	-5.16	0.76
Area cultivated squared	528	566	0.00	-5.21	0.66	528	592	0.00	-8.77	0.66
Assets per area cultivated	13,651	13,373	0.00	4.22	0.71	13,651	13,375	0.00	4.19	0.75
Assets per area cultivated squared	229,849,543	240,056,433	0.00	-4.41	0.26	229,849,543	237,208,089	0.10	-3.18	0.25
Debt to equity ratio	0.01	0.01	0.02	3.14	0.27	0.01	0.01	0.00	5.03	0.32
Debt to equity ratio squared	0.00	0.00	0.00	-34.54	0.04	0.00	0.00	0.00	-26.68	0.05

Notes: Survey design based estimated population values based on population figures in 2006. St.Diff. = standardized difference, Var. Ratio = ratio of variance. *If several farm holders are present the average age was used.

Table A5: Matching balance aid-intensification with respect to organic farms for model 2

	Before Matching					After Matching				
	mean: organic	mean: conventional	p- Value	St.Diff.	Var. Ratio	mean: organic	mean: conventional	p- Value	St.Diff.	Var. Ratio
Year of birth*	1959	1961	0.00	-18.39	0.83	1959	1959	0.00	1.01	1.19
Year of birth squared*	3,838,505	3,845,225	0.00	-18.44	0.83	3,838,505	3,838,121	0.00	1.05	1.19
Area cultivated (ha)	20	20	0.62	0.53	0.76	20	20	0.00	-0.57	1.01
Area cultivated squared	528	566	0.00	-5.21	0.66	528	530	0.28	-0.21	1.05
Assets per area cultivated	13,651	13,373	0.00	4.22	0.71	13,651	12,643	0.00	15.30	1.46
Assets per area cultivated squared	229,849,543	240,056,433	0.00	-4.41	0.26	229,849,543	189,613,315	0.00	17.38	1.80
Debt to equity ratio	0.01	0.01	0.02	3.14	0.27	0.01	0.01	0.00	1.57	1.03
Debt to equity ratio squared	0.00	0.00	0.00	-34.54	0.04	0.00	0.00	0.18	0.43	0.63

Notes: Survey design based estimated population values based on population figures in 2006. St.Diff. = standardized difference, Var. Ratio = ratio of variance. *If several farm holders are present the average age was used.

Table A6: Matching balance aid-intensification with respect to organic farms for model 3

	Before Matching					After Matching				
	mean: organic	mean: conventional	p- Value	St.Diff.	Var. Ratio	mean: organic	mean: conventional	p- Value	St.Diff.	Var. Ratio
Year of birth*	1959	1961	0.00	-18.39	0.83	1959	1959	0.00	1.01	1.19
Year of birth squared*	3,838,505	3,845,225	0.00	-18.44	0.83	3,838,505	3,838,121	0.00	1.05	1.19
Area cultivated (ha)	20	20	0.62	0.53	0.76	20	20	0.00	-0.57	1.01
Area cultivated squared	528	566	0.00	-5.21	0.66	528	530	0.28	-0.21	1.05
Assets per area cultivated	13,651	13,373	0.00	4.22	0.71	13,651	12,643	0.00	15.30	1.46
Assets per area cultivated squared	229,849,543	240,056,433	0.00	-4.41	0.26	229,849,543	189,613,315	0.00	17.38	1.80
Debt to equity ratio	0.01	0.01	0.02	3.14	0.27	0.01	0.01	0.00	1.57	1.03
Debt to equity ratio squared	0.00	0.00	0.00	-34.54	0.04	0.00	0.00	0.18	0.43	0.63

Notes: Survey design based estimated population values based on population figures in 2006. St.Diff. = standardized difference, Var. Ratio = ratio of variance. *If several farm holders are present the average age was used.

Table A7: Matching balance aid-intensification with respect to LFA for model 1

	Before Matching					After Matching				
	Mean: LFA	Mean: outside LFA	p- Value	St.Diff.	Var. Ratio	Mean: LFA	Mean: outside LFA	p- Value	St.Diff.	Var. Ratio
Year of birth*	1961	1941	0.00	206.32	0.00	1961	1961	0.00	-0.25	1.06
Year of birth squared*	3,843,683	3,799,501	0.00	116.97	0.01	3,843,683	3,843,773	0.01	-0.24	1.06
Cash crop farms	0.04	0.26	0.00	-111.01	0.20	0.04	0.04	1.00	0.00	1.00
Permanent crop farms	0.02	0.17	0.00	-95.01	0.17	0.02	0.02	1.00	0.00	1.00
Cattle farms	0.86	0.25	0.00	171.97	0.66	0.86	0.86	1.00	0.00	1.00
Granivore farms	0.02	0.08	0.00	-35.44	0.33	0.02	0.02	1.00	0.00	1.00
Mixed farms	0.06	0.24	0.00	-81.24	0.29	0.06	0.06	1.00	0.00	1.00
Organic management	0.35	0.13	0.00	46.70	2.04	0.35	0.15	0.00	41.81	1.77
Area cultivated (ha)	50	31	0.00	43.08	2.93	50	27	0.00	52.31	5.05
Area cultivated squared	4,271	1,599	0.00	25.77	11.38	4,271	1,112	0.00	30.48	29.04
Assets per area cultivated	7,174	9,349	0.00	-48.42	0.22	7,174	9,543	0.00	-52.75	0.88
Assets per area cultivated squared	71,643,925	178,487,582	0.00	-100.64	0.02	71,643,925	113,934,031	0.00	-39.84	0.50
Debt to equity ratio	0.01	0.02	0.00	-18.40	0.08	0.01	0.01	0.38	0.82	0.27
Debt to equity ratio squared	0.00	0.04	0.00	-30.76	0.04	0.00	0.01	0.00	-7.57	0.20

Notes: Survey design based estimated population values based on population figures in 2006. St.Diff. = standardized difference, Var. Ratio = ratio of variance. *If several farm holders are present the average age was used.

Table A8: Matching balance aid-intensification with respect to LFA for model 2

	Before Matching					After Matching				
	Mean: LFA	Mean: outside LFA	p- Value	St.Diff.	Var. Ratio	Mean: LFA	Mean: outside LFA	p- Value	St.Diff.	Var. Ratio
Year of birth*	1961	1941	0.00	206.32	0.00	1961	1961	0.00	-2.96	1.30
Year of birth squared*	3,843,683	3,799,501	0.00	116.97	0.01	3,843,683	3,844,782	0.00	-2.91	1.30
Cash crop farms	0.04	0.26	0.00	-111.01	0.20	0.04	0.04	1.00	0.00	1.00
Permanent crop farms	0.02	0.17	0.00	-95.01	0.17	0.02	0.02	1.00	0.00	1.00
Cattle farms	0.86	0.25	0.00	171.97	0.66	0.86	0.86	1.00	0.00	1.00
Granivore farms	0.02	0.08	0.00	-35.44	0.33	0.02	0.02	1.00	0.00	1.00
Mixed farms	0.06	0.24	0.00	-81.24	0.29	0.06	0.06	1.00	0.00	1.00
Organic management	0.35	0.13	0.00	46.70	2.04	0.35	0.35	0.00	0.09	1.00
Area cultivated (ha)	50	31	0.00	43.08	2.93	19	19	0.00	-1.04	1.05
Area cultivated squared	4,271	1,599	0.00	25.77	11.38	496	493	0.02	0.32	1.02
Assets per area cultivated	7,174	9,349	0.00	-48.42	0.22	18,895	13,776	0.00	17.71	13.86
Assets per area cultivated squared	71,643,925	178,487,582	0.00	-100.64	0.02	1,192,147,674	250,046,553	0.00	8.25	589.21
Debt to equity ratio	0.01	0.02	0.00	-18.40	0.08	0.01	0.01	0.00	5.66	0.74
Debt to equity ratio squared	0.00	0.04	0.00	-30.76	0.04	0.00	0.00	0.00	-0.93	0.36

Notes: Survey design based estimated population values based on population figures in 2006. St.Diff. = standardized difference, Var. Ratio = ratio of variance. *If several farm holders are present the average age was used.

Table A9: Matching balance aid-intensification with respect to LFA for model 3

	Before Matching					After Matching				
	Mean: LFA	Mean: outside LFA	p-Value	St.Diff.	Var. Ratio	Mean: LFA	Mean: outside LFA	p-Value	St.Diff.	Var. Ratio
Year of birth*	1960	1941	0.00	189.54	0.00	1960	1960	0.00	-2.44	1.13
Year of birth squared*	3,841,963	3,800,517	0.00	105.50	0.01	3,841,963	3,842,910	0.00	-2.41	1.13
Cash crop farms	0.04	0.25	0.00	-103.71	0.22	0.04	0.04	1.00	0.00	1.00
Permanent crop farms	0.03	0.17	0.00	-89.99	0.18	0.03	0.03	1.00	0.00	1.00
Cattle farms	0.85	0.26	0.00	164.46	0.67	0.85	0.85	1.00	0.00	1.00
Granivore farms	0.02	0.08	0.00	-40.34	0.28	0.02	0.02	1.00	0.00	1.00
Mixed farms	0.06	0.25	0.00	-74.81	0.32	0.06	0.06	1.00	0.00	1.00
Organic management	0.27	0.12	0.00	33.22	1.82	0.27	0.27	0.00	0.10	1.00
Area cultivated (ha)	20	27	0.00	-60.00	0.26	20	20	0.00	-2.20	1.05
Area cultivated squared	530	1,275	0.00	-88.46	0.10	530.80	534.38	0.00	-0.42	1.01
Assets per area cultivated	13,661	11,884	0.00	21.55	0.52	13,661	12,990.82	0.00	8.13	1.41
Assets per area cultivated squared	254,623,298	271,469,605	0.00	-3.66	0.32	254,623,298	217,115,861.87	0.00	8.15	1.61
Debt to equity ratio	0.01	0.02	0.00	-18.84	0.09	0.01	0.01	0.00	4.14	0.74
Debt to equity ratio squared	0.00	0.04	0.00	-29.98	0.04	0.00	0.00	0.00	-0.96	0.36

Notes: Survey design based estimated population values based on population figures in 2006. St.Diff. = standardized difference, Var. Ratio = ratio of variance. *If several farm holders are present the average age was used.

Table A10: Sensitivity analysis for aid-intensity differentiation

		Wilcoxon's sign-rank test upper bound (p-value)		
	Gamma	Alpine pastures	Organic	LFA
Model 1	1.0	0.0000	0.7928	0.0000
	1.1	0.0008	0.9994	0.0000
	1.2	0.4456	1.0000	0.0289
	1.3	0.9957	1.0000	1.0000
	1.4	1.0000	1.0000	1.0000
	1.5	1.0000	1.0000	1.0000
Model 2	1.0	0.1045	0.2782	0.1018
	1.1	0.2541	0.4672	0.4093
	1.2	0.4522	0.6477	0.7646
	1.3	0.6472	0.7894	0.9448
	1.4	0.7994	0.8848	0.9920
	1.5	0.8980	0.9416	0.9992
Model 3	1.0	0.0545	0.2782	0.0334
	1.1	0.1579	0.4672	0.1986
	1.2	0.3237	0.6477	0.5209
	1.3	0.5175	0.7894	0.8104
	1.4	0.6943	0.8848	0.9502
	1.5	0.8266	0.9416	0.9909

Note: A Gamma of 1.0 means unconfounded results. A Gamma of 1.1 means a confounded by 10%. Differences to the standard errors in Table 4 result from weighting and the use of Abadie-Imbens standard errors.