

No child left behind: Subsidized child care and children's long-run outcomes

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WEB APPENDIX

Table A1: Descriptive statistics for treatment and comparison municipalities in 1976

	Treatment	Comparison	
Child care/maternal employment rate	0.2471	[0.4596]	0.3542
Child care coverage rate	0.0534	[0.0899]	0.0695
Years of education, males	9.2256	[0.5514]	9.2174
-, females	8.8198	[0.3820]	8.7672
Earnings, males	0.3917	[0.0762]	0.4081
-, females	0.1080	[0.0349]	0.1121
Labor force part., males	0.8324	[0.0591]	0.8367
-, females	0.2919	[0.0844]	0.2997
-, mothers of 3–6 year olds	0.1903	[0.0753]	0.1953
Expenditure (2006-USD/capita)			
Total	959.65	[291.05]	909.72
Primary school	241.78	[107.40]	223.40
Revenue (2006-USD/capita)			
Ear marks, total	569.54	[217.95]	546.49
-, primary school	87.78	[33.31]	87.45
Fees, total	124.65	[90.03]	105.02
-, primary school	0.86	[1.38]	0.97
Taxes	379.00	[105.00]	379.09
Geography			
In densely populated areas	0.4049	[0.2915]	0.4827
Ave. distance to zone center	0.8876	[0.7789]	0.7732
- to neighboring center	3.7768	[2.6130]	3.4297
Population			
Total	9846	[36400]	9476
Married	0.4664	[0.0277]	0.4618
Divorced	0.0144	[0.0081]	0.0153
Immigrant	0.0098	[0.0096]	0.0095
0 to 6 years old	0.1077	[0.0177]	0.1141
7 to 10 years old	0.0673	[0.0099]	0.0708
11 to 18 years old	0.1293	[0.0127]	0.1314
Females: 19 to 35 years old	0.1021	[0.0187]	0.1082
-: 36 to 55 years old	0.1027	[0.0101]	0.1019
Males: 19 to 35 years old	0.1175	[0.0152]	0.1227
-: 36 to 55 years old	0.1096	[0.0091]	0.1077
Politics			
Registered voters	6480	[26654]	5863
-, female	0.4896	[0.0169]	0.4928
Election participation	0.7243	[0.0587]	0.7093
-, females	0.7094	[0.0666]	0.6962
Female elected representatives	0.1521	[0.0807]	0.1394
Socialist vote share	0.3864	[0.1654]	0.4031
Socialist mayor	0.3140	[0.4652]	0.3671
Female mayor	0.0097	[0.0981]	0.0145

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ (one-tailed)

Notes: Columns 1–4 report means and standard deviations across treatment and comparison municipalities, not weighted by population size. Earnings denotes pensionable income in NOK 100,000. Socialist parties are defined as RV, SV and DNA. Densely populated areas are contiguous zones of at least 200 people where the distance between houses is generally less than 50 meters (400 meters if separated by e.g. parks, rivers or industrial zones). Average distance to zone center is the mean predicted travel distance in km from a citizen's home to the most populous census area in a contiguous zone of more than 2,000 people within the municipality. Distance to neighboring center is the mean travel distance from the center of a census area to the closest center in another census area within the same economic zone. Standard deviations are in brackets.

Table A2: Robustness: Placebo reform.

	(1) TT 1968	(2) TT 1969	(3) TT <i>Phase-in</i>	(4) TT <i>Post</i>	(5) Mean
A. Educational attainment					
Years of education	-0.0009 (0.1520)	-0.0506 (0.1512)	0.0913 (0.1243)	0.3349*** (0.1238)	12.66
Attended college	0.0057 (0.0295)	-0.0261 (0.0294)	0.0268 (0.0243)	0.0616*** (0.0243)	0.3764
High school dropout	-0.0167 (0.0284)	-0.0031 (0.0281)	-0.0236 (0.0231)	-0.0650*** (0.0228)	0.2618
B. Earnings and welfare dependency					
Low earner	-0.0013 (0.0241)	-0.0155 (0.0240)	-0.0148 (0.0198)	-0.0416** (0.0198)	0.1552
Average earner	-0.0087 (0.0295)	0.025 (0.0294)	0.0041 (0.0243)	0.0570*** (0.0243)	0.6931
High earner	0.0156 (0.0233)	0.0274 (0.0231)	0.0097 (0.0190)	-0.0192 (0.0185)	0.1628
Top earner	-0.0133 (0.0130)	-0.0058 (0.0127)	-0.0177** (0.0104)	-0.0284*** (0.0099)	0.0422
On welfare	0.0264 (0.0246)	0.0258 (0.0244)	0.0022 (0.0202)	-0.0336** (0.0199)	0.1632
C. Family formation					
Parent	0.0161 (0.0256)	-0.0093 (0.0259)	-0.0421** (0.0216)	-0.0777*** (0.0221)	0.8083
Single, no child	-0.0188 (0.0228)	-0.0229 (0.0229)	0.0012 (0.0191)	0.0207 (0.0194)	0.1398
Single, parent	0.0167 (0.0189)	0.0138 (0.0186)	0.0235* (0.0153)	0.0078 (0.0149)	0.0840

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ (one-tailed)

Notes: Estimations are based on OLS on equation (1), including all controls from Table III and municipal-specific fixed effects. The 1967-cohort is the omitted reference category, while children born in 1968 and 1969 are placebo cohorts. The outcome variables are defined in Section IV. Reported treatment effects are per child care place (TT parameter); ITT/TT = .1785 (i.e. the increase in child care coverage following the reform in the treatment group relative to the comparison group). The sample consists of 499,026 children from the birth cohorts 1967–1976. Phase-in-cohorts are born 1970–1972, and post-reform cohorts are born 1973–1976. Standard errors in parentheses are robust to within family clustering and heteroskedasticity.

Table A3: Family-specific fixed effects: Education and earnings

	(1) TT	(2) ITT	(3) SE(ITT)	(4) Controls	(5) Fam. FE
Years of education	0.1177	0.021	0.0233	No	No
	0.1505	0.0269	0.0212	Yes	No
	0.1523	0.0272	0.0321	Yes	Yes
Attended college	0.0326	0.0058	0.0046	No	No
	0.0375*	0.0067*	0.0042	Yes	No
	0.0506*	0.0090*	0.0065	Yes	Yes
High school dropout	-0.0098	-0.0018	0.004	No	No
	-0.0173	-0.0031	0.0039	Yes	No
	-0.0122	-0.0022	0.0062	Yes	Yes
Low earner	-0.0136	-0.0024	0.0035	No	No
	-0.0128	-0.0023	0.0035	Yes	No
	-0.0103	-0.0018	0.0057	Yes	Yes
Average earner	0.0512**	0.0091**	0.0045	No	No
	0.0399**	0.0071**	0.0043	Yes	No
	0.0348	0.0062	0.007	Yes	Yes
High earner	-0.0058	-0.001	0.0032	No	No
	-0.0118	-0.0021	0.0031	Yes	No
	-0.0117	-0.0021	0.005	Yes	Yes
Top earner	-0.0268***	-0.0048***	0.0016	No	No
	-0.0279***	-0.0050***	0.0016	Yes	No
	-0.0241*	-0.0043*	0.0026	Yes	Yes
On welfare	-0.0476***	-0.0085***	0.0036	No	No
	-0.0461***	-0.0082***	0.0035	Yes	No
	-0.0186	-0.0033	0.0057	Yes	Yes
Parent	-0.0849***	-0.0152***	0.0042	No	No
	-0.0746***	-0.0133***	0.0041	Yes	No
	-0.0657**	-0.0117**	0.0067	Yes	Yes
Single, no child	0.0335**	0.0060**	0.0036	No	No
	0.0267*	0.0048*	0.0035	Yes	No
	0.0450*	0.0080*	0.0058	Yes	Yes
Single, parent	0.0013	0.0002	0.0025	No	No
	0.0037	0.0007	0.0025	Yes	No
	0.0017	0.0003	0.0041	Yes	Yes

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ (one-tailed)

Notes: Estimations are based on OLS on equation (1), with and without controls and family-specific fixed effects. The controls are listed in Table III. The outcomes variable are defined in Section IV. The sample consists of 286,835 children from birth cohorts 1967–1976, who belong to families with siblings from at least two of the three groups of cohorts: pre-reform, phase-in group, and post-reform. Mean refers to the pre-reform means in the treatment group. ITT/TT = .1785 (i.e. the increase in child care coverage following the reform in the treatment group relative to the comparison group). Standard errors are robust to within family clustering and heteroskedasticity.

Table A4: Control variables.

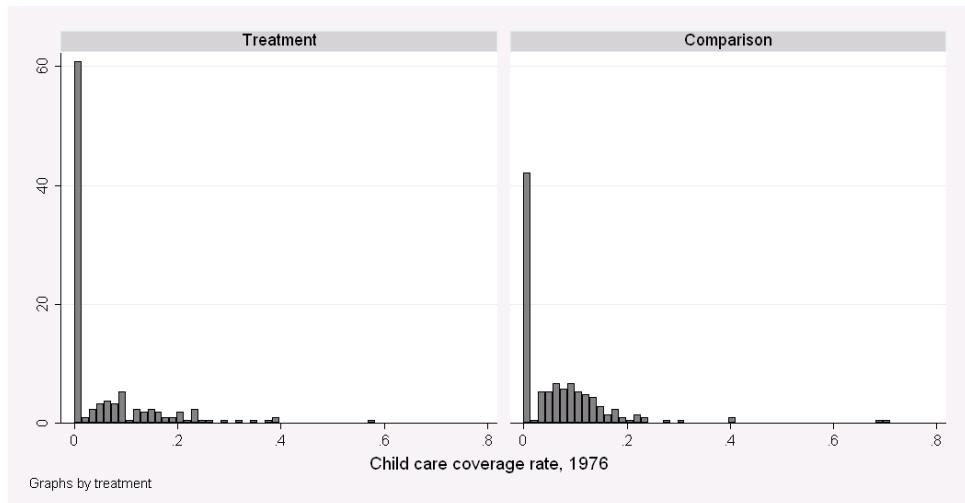
	(1) TT	(2) ITT	(3) SE(ITT)	(4) Mean
Male	0.0187	0.0033	0.0034	0.507
No. of older siblings	-0.0052	-0.0009	0.0052	2.133
Mother's age at first birth	0.0455	0.0081	0.0128	23.33
Father's age at first birth	0.011	0.0020	0.0149	26.56
Mother's edu. when child 2 y.o.	-0.1047*	-0.0187*	0.0118	9.662
Father's edu. when child 2 y.o.	-0.1624*	-0.0290*	0.0159	10.37
Immigrant	0.0106	0.0019	0.0015	0.0566
Relocated	0.0337***	0.0060***	0.0017	0.0358

Estimations are based on OLS on equation (1), with controls listed in Table III and municipal-specific fixed effects, excluding the dependent variable from the set of controls. ITT/TT = .1785 (i.e. the increase in child care coverage following the reform in the treatment group relative to the comparison group). Mean refers to the pre-reform means in the treatment group. Standard errors are robust to within family clustering and heteroskedasticity.

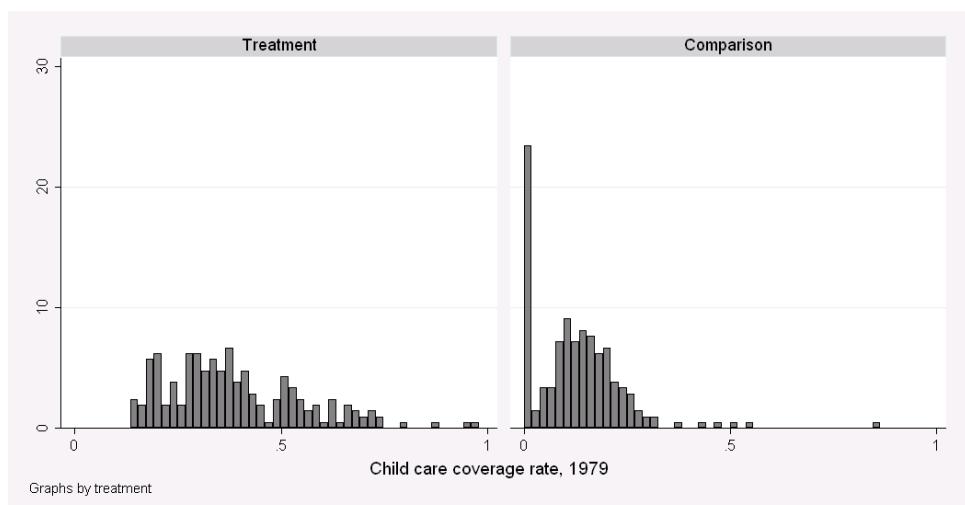
Table A5: Correlation between child long-run outcomes and height (standardized coefficients).

Years of education	0.2923	(59.78)
High school dropout	-0.0364	(-43.61)
College education	0.0495	(52.28)
Low earner	-0.0135	(-22.09)
Average earner	0.0196	(25.67)
High earner	0.0261	(31.74)
Top earner	0.0091	(20.96)
On welfare	-0.0134	(-23.81)
Parent	0.0137	(14.45)
Single, no child	-0.0141	(-17.02)
Single parent	-0.0038	(-10.67)

Standardized coefficients from separate bivariate regressions of each outcome on height on the full sample for which height is available, totalling 246,516 boys. *t*-values are in parenthesis.



(a) 1976



(b) 1979

Figure A1: Distribution of treatment and comparison municipalities by child care coverage rate for 3 to 6 year olds in 1976 (top panel) and 1979 (bottom panel).

Notes: Pre-reform cohorts are born 1967–1969, phase-in-cohorts are born 1970–1972, and post-reform cohorts are born 1973–1976. Treatment (comparison) municipalities are above (below) the median in child care coverage growth from 1976 to 1979.

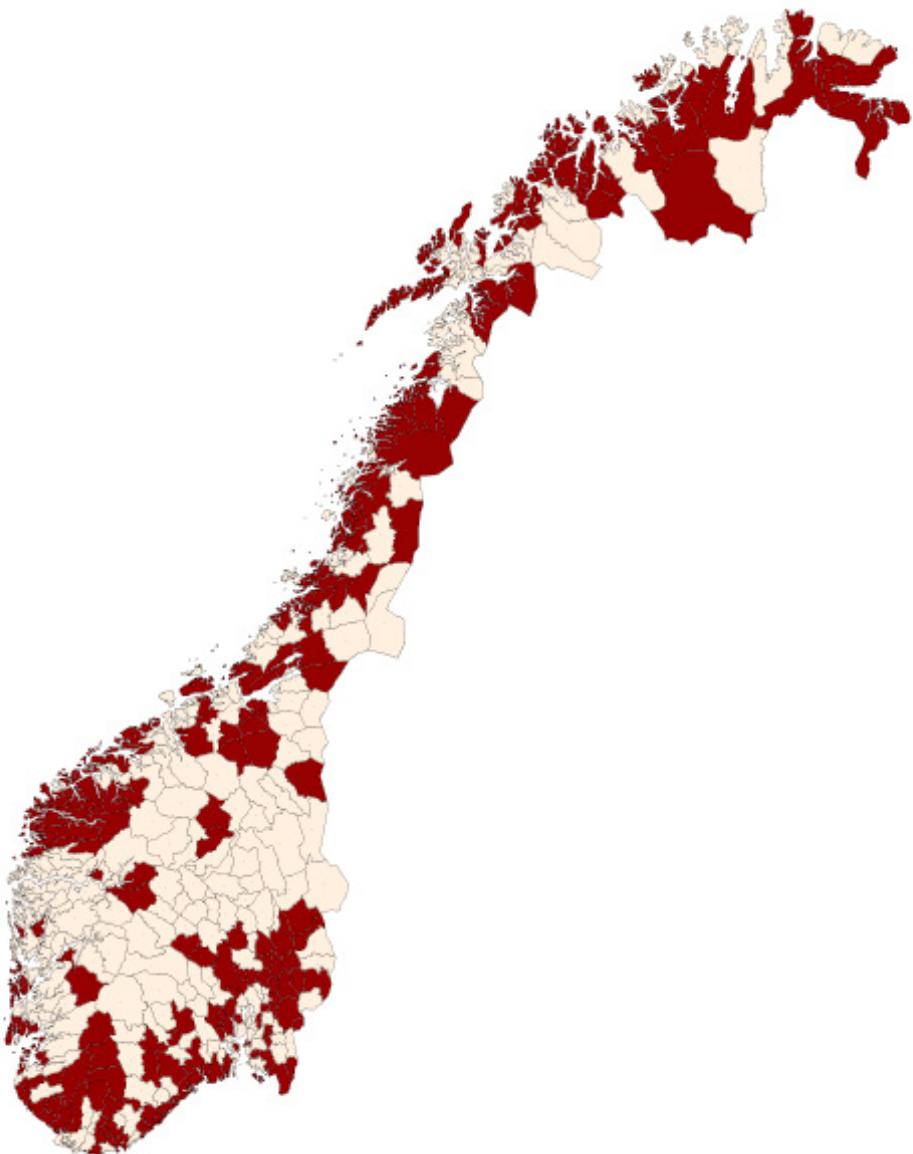


Figure A2: Geographic location of treatment (white) and comparison (dark) municipalities

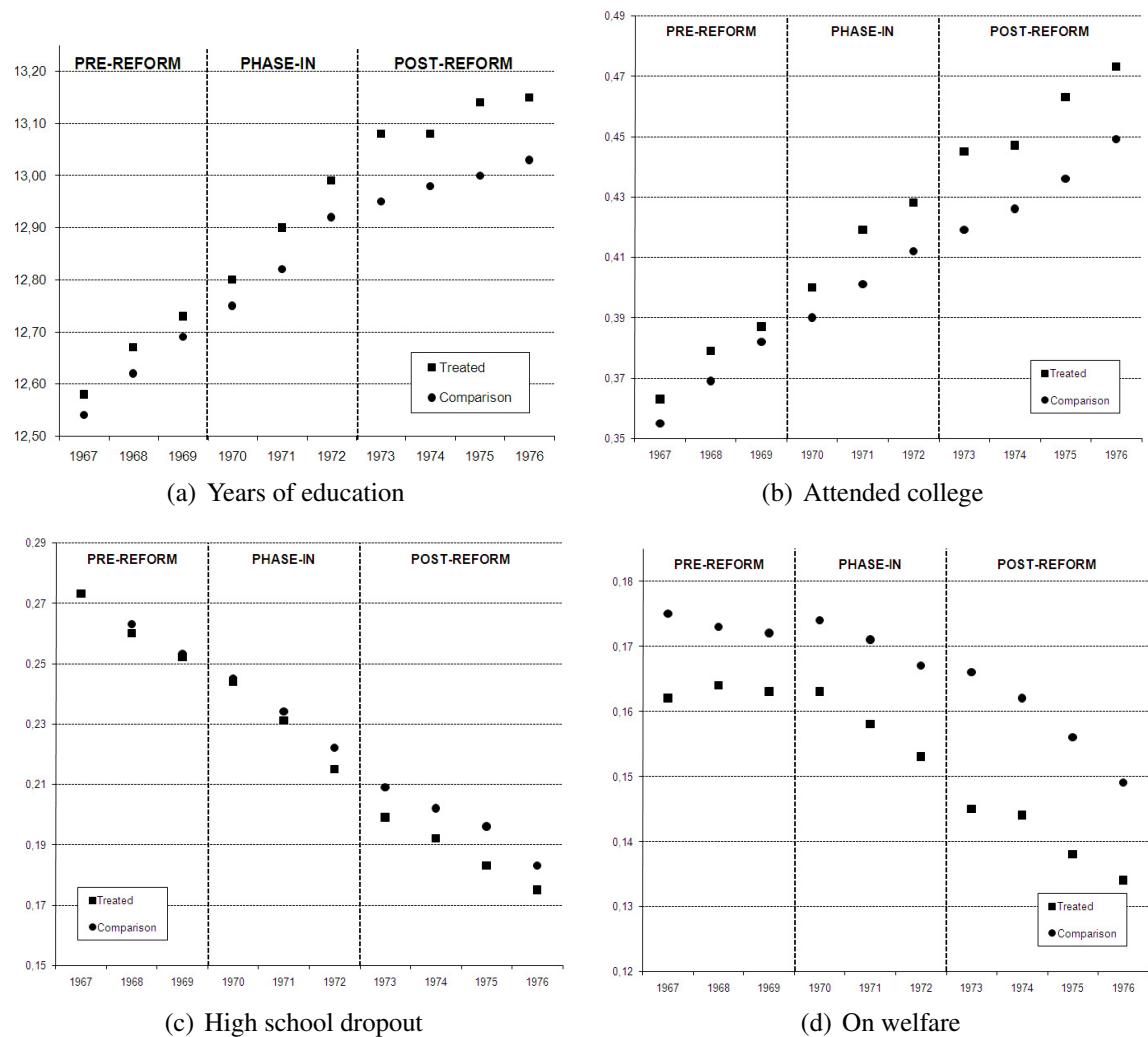


Figure A3: Unconditional cohort means for education and welfare dependency for cohorts born 1967–1976 by treatment and comparison group

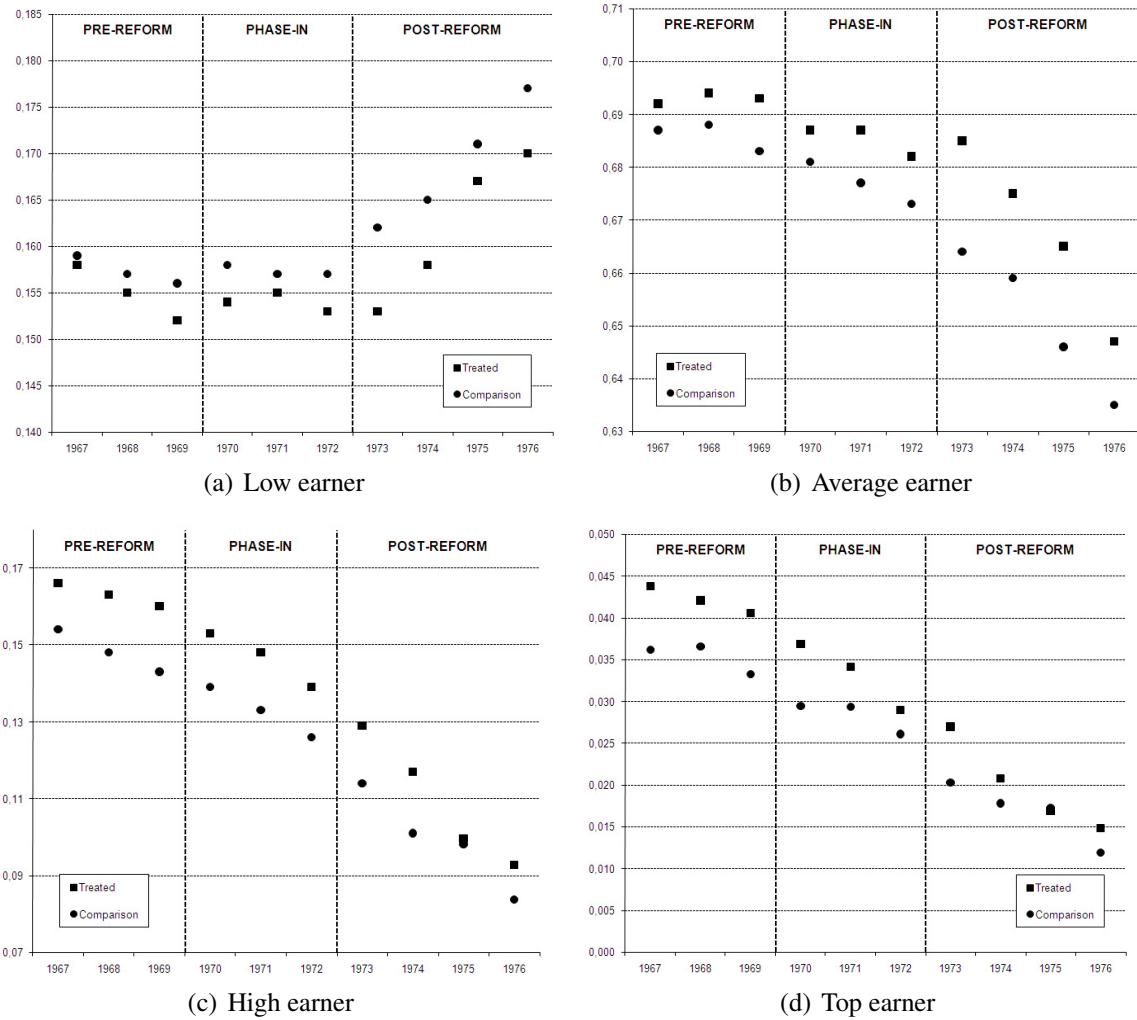


Figure A4: Unconditional cohort means for earnings for cohorts born 1967–1976 by treatment and comparison group

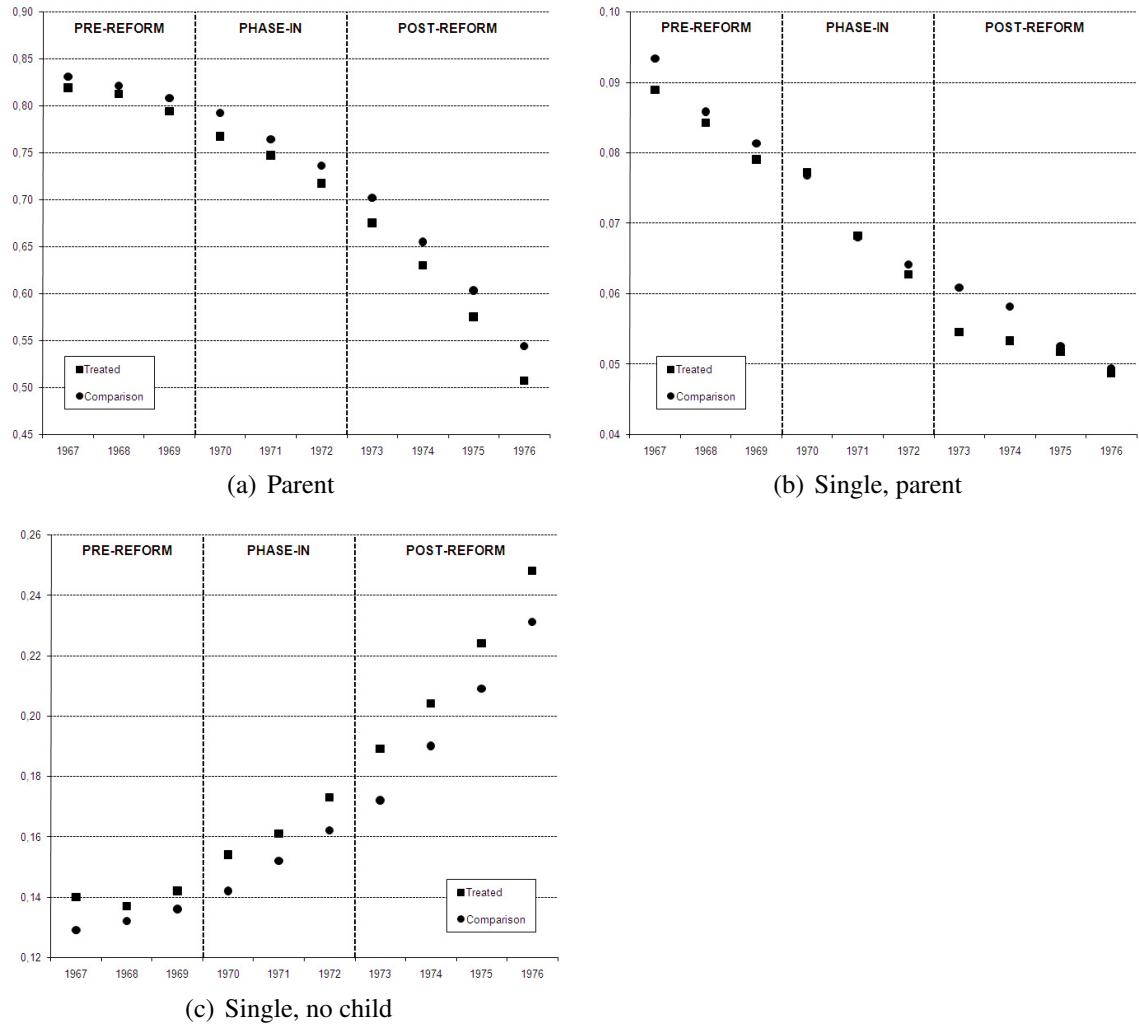


Figure A5: Unconditional cohort means for cohorts born 1967–1976 by treatment and comparison group