The Evolution of Intergenerational Educational Mobility in Turkey

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Online Appendix

1. Derivations

1.1 Derivation of (4)

Denote the distribution function of paternal education in group j of the society with $f^j(p)$ and let $g^j(e|p)$ refer to the conditional probability function of descendant education conditional on paternal education p in subgroup j. Then,

$$\begin{aligned}\rho &= \frac{\sum_p f(p)(p-\bar{p})\sum_e g(e|p)(e-\bar{e})}{\sqrt{\left(\sum_p f(p)(p-\bar{p})^2\right)}\sqrt{\left(\sum_e \frac{g(e|p)}{f(p)}(e-\bar{e})^2\right)}} \\ &= \frac{\sum_p f(p)(p-\bar{p})\sum_e g(e|p)(e-\bar{e})}{\sigma_p\sigma_e} \\ &= \sum_p \left[\sum_j^K f^j(p)\right]\frac{(p-\bar{p})}{\sigma_p}\sum_e\left[\frac{\sum_j^K f^j(p)g^j(e|p)}{\sum_j^K f^j(p)}\right]\frac{(e-\bar{e})}{\sigma_e} \\ &= \sum_p\sum_e\sum_j^K f^j(p)\frac{(p-\bar{p})}{\sigma_p}g^j(e|p)\frac{(e-\bar{e})}{\sigma_e} = \sum_p\sum_e\sum_j r(p,e|j)\end{aligned}$$

where K corresponds to the cardinality of set J listing the mutually exclusive sets of the society among which the sample is partitioned. Focus on $r(p,e|j)$ - i.e. the absolute contribution of families with p paternal education and e descendant education in subgroup j to the country-wide correlation coefficient ρ:

$$
\begin{aligned}
r(p,e|j) &= \sum_p \sum_e f^j(p) \frac{(p-\bar{p})}{\sigma_p} g^j(e|p) \frac{(e-\bar{e})}{\sigma_e} \\
&= \frac{1}{\sigma_p \sigma_e} \left[\sum_p \sum_e f^j(p) \left(p - \bar{p}^j + \bar{p}^j - \bar{p}\right) g^j(e|p) \left(e - \bar{e}^j + \bar{e}^j - \bar{e}\right) \right] \\
&= \frac{1}{\sigma_p \sigma_e} [\sum_p \sum_e f^j(p) \left(p - \bar{p}^j\right) g^j(e|p) \left(e - \bar{e}^j\right) - \underbrace{\sum_p \sum_e f^j(p) \left(p - \bar{p}^j\right) g^j(e|p) \left(\bar{e} - \bar{e}^j\right)}_{=0} \\
&\underbrace{- \sum_p \sum_e f^j(p) \left(\bar{p} - \bar{p}^j\right) g^j(e|p) \left(e - \bar{e}^j\right)}_{=0} + \sum_p \sum_e f^j(p) \left(\bar{p} - \bar{p}^j\right) g^j(e|p) \left(\bar{e} - \bar{e}^j\right)]
\end{aligned}
$$

$$
\begin{aligned}
&= \underbrace{\sum_p \sum_e f^j(p) \left(p - \bar{p}^j\right) g^j(e|p) \left(e - \bar{e}^j\right)}_{\rho^j \frac{\sigma_p^j \sigma_e^j}{\sigma_p \sigma_e} \sum f_j(p)} + \frac{\left(\bar{p} - \bar{p}^j\right)\left(\bar{e} - \bar{e}^j\right)}{\sigma_p \sigma_e} \sum_p f^j(p) \\
&= s^j \left[\rho^j \sigma_p^j \sigma_e^j + \left(\bar{p} - \bar{p}^j\right)\left(\bar{e} - \bar{e}^j\right) \right] \frac{1}{\sigma_p \sigma_e}
\end{aligned}
$$

Hence

$$
\rho = \sum_j^K s^j \left[\rho^j \sigma_p^j \sigma_e^j + \left(\bar{p} - \bar{p}^j\right)\left(\bar{e} - \bar{e}^j\right) \right] \frac{1}{\sigma_p \sigma_e}
$$

where $s^j \equiv \sum_p f^j(p)$, $\bar{p}^j = \sum_p f^j(p) p$ and $\bar{e}^j = \sum_p \sum_e f^j(p) g^j(e|p) e$. Alternatively, taking into account that $\rho^j = \frac{\sigma_{p,e}^j}{\sigma_p^j \sigma_e^j}$, one can re-write (9) in the following way:

$$
\rho = \sum_j^K s^j \left[\sigma_{p,e}^j + \left(\bar{p} - \bar{p}^j\right)\left(\bar{e} - \bar{e}^j\right) \right] \frac{1}{\sigma_p \sigma_e} \qquad (A1)
$$

where $\sigma_{p,e}^j$ corresponds to the covariance of paternal education and descendant education in subgroup j.

1.2 An Alternative Display of (3)

In order to enhance the legibility of the content of Table 3 and Table 4, instead of using (3) in its

original form, we used a more compact version of this equation by transforming it from a double summation over p and e into a single summation over p as follows:

$$\begin{aligned}\rho_t = & \sum_p \sum_e \frac{f_t(p)(p-\bar{p}_t)g_t(e|p)(e-\bar{e}_t)}{\sigma_t^p \sigma_t^e} \\ &= \sum_p f_t\,(p)\,\frac{(p-\bar{p}_t)}{\sigma_t^p} \sum_e g_t\,(e|p)\,\frac{(e-\bar{e}_t)}{\sigma_t^e} \\ &= \sum_p f_t\,(p)\,\frac{(p-\bar{p}_t)}{\sigma_t^p}\,\frac{(e_t(p)-\bar{e}_t)}{\sigma_t^e} \\ &= \sum_p r_t\,(p)\end{aligned} \qquad (A2)$$

where $e_t(p) = \sum_e g_t\,(e|p)e$. The breakdown of the components of $r_t(p)$ across cohorts is displayed in Table B.8.

1.3 Testing the Statistical Significance of the U-shape Exhibited by the Point Estimates of Mobility Variables across Cohorts

In order to test whether the point estimates of the mobility variables corresponding to the end-points of our sample are statistically significantly higher than those in between, we calculate the following Z-statistic proposed by Clogg et al. (1995) to test whether a regression coefficient statistically significantly changes when the regression is run using two independent samples for two distinct groups in (in Paternoster et al. (1998), the same statistic was used to compare the statistical significance of a coefficient for *m*ales vs. *f*emales):

$$z = \frac{\hat{\beta}_m - \hat{\beta}_f}{\left[s^2(\hat{\beta}_m) + s^2(\hat{\beta}_f)\right]^{\frac{1}{2}}} \qquad (A3)$$

In our analysis, this test statistic will be used to check whether estimated intergenerational mobility coefficients changed in a statistically significant manner over time (from period t1 to t2):

$$z = \frac{\hat{\beta}_{t2} - \hat{\beta}_{t1}}{\left[s^2(\hat{\beta}_{t2}) + s^2(\hat{\beta}_{t1})\right]^{\frac{1}{2}}} \qquad (A4)$$

Table A.1. Z-statistics for the Intergenerational Educational Regression Coefficient β

		t1						
		1951-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1985
t2	1951-1954	0.000	1.545	2.577	3.027	2.470	3.009	0.900
	1955-1959	-1.545	0.000	1.001	1.466	0.783	1.344	-0.993
	1960-1964	-2.577	-1.001	0.000	0.493	-0.321	0.277	-2.352
	1965-1969	-3.027	-1.466	-0.493	0.000	-0.865	-0.267	-2.966
	1970-1974	-2.470	-0.783	0.321	0.865	0.000	0.673	-2.257
	1975-1979	-3.009	-1.344	-0.277	0.267	-0.673	0.000	-3.044
	1980-1985	-0.900	0.993	2.352	2.966	2.257	3.044	0.000

1.65 (2.33) is the 90% (95%) critical value of the right-tailed test where the alternative hypothesis is $z > 0$. Green colored cells containing positive (negative) values correspond to cases where the increase (decrease) of the regression coefficient from period t1 to t2 is statistically significant, while orange cells correspond to cases where the change is insignificant.

Table A.2. Z-statistics for the Intergenerational Educational Correlation Coefficient ρ

		t1						
		1951-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1985
t2	1951-1954	0.000	2.478	2.654	2.796	1.079	0.761	-0.773
	1955-1959	-2.478	0.000	0.082	0.226	-1.785	-2.149	-4.008
	1960-1964	-2.654	-0.082	0.000	0.152	-1.986	-2.374	-4.378
	1965-1969	-2.796	-0.226	-0.152	0.000	-2.161	-2.551	-4.581
	1970-1974	-1.079	1.785	1.986	2.161	0.000	-0.403	-2.431
	1975-1979	-0.761	2.149	2.374	2.551	0.403	0.000	-2.011
	1980-1985	0.773	4.008	4.378	4.581	2.431	2.011	0.000

1.65 (2.33) is the 90% (95%) critical value of the right-tailed test where the alternative hypothesis is $z > 0$. Green colored cells containing positive (negative) values correspond to cases where the increase (decrease) of the correlation coefficient from period t1 to t2 is statistically significant, while orange cells correspond to cases where the change is insignificant.

Table A.3. Z-statistics for the Intergenerational Educational Rank-Rank Slope Coefficient φ

		t1						
		1951-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1985
t2	1951-1954	0.000	2.011	1.680	2.274	0.489	-0.555	-3.270
	1955-1959	-2.011	0.000	-0.487	0.192	-1.879	-3.014	-6.176
	1960-1964	-1.680	0.487	0.000	0.725	-1.488	-2.716	-6.140
	1965-1969	-2.274	-0.192	-0.725	0.000	-2.219	-3.422	-6.837
	1970-1974	-0.489	1.879	1.488	2.219	0.000	-1.292	-4.773
	1975-1979	0.555	3.014	2.716	3.422	1.292	0.000	-3.354
	1980-1985	3.270	6.176	6.140	6.837	4.773	3.354	0.000

1.65 (2.33) is the 90% (95%) critical value of the right-tailed test where the alternative hypothesis is $z > 0$. Green colored cells containing positive (negative) values correspond to cases where the increase (decrease) of the rank-rank coefficient from period t1 to t2 is statistically significant, while orange cells correspond to cases where the change is insignificant.

As one can note from Tables A.1 and A.3 above, the absolute values of the Z-statistics of the cases about the change of β or φ from one cohort to the next consecutive cohort (corresponding to the cell below the grey colored diagonal entry on each column) are smaller than the absolute value of the critical level from 1951-1954 to 1975-1979. This implies that β and φ of the cohorts born within the 1951-1954 and 1975-1979 interval did not change significantly. In the case of ρ on the other hand, only the change from 1951-1954 to 1955-1959 is negative and significant, and in the rest of our sample ρ does not change significantly between two consecutive cohorts.

Next, we check whether a particular cohort's mobility variable is statistically significantly different than those of the end-points of our sample by focusing on the leftmost columns and last rows of Tables A.1, A.2, and A.3. The leftmost column of Table A.1. shows that while the β of the 1951-1954 cohort was not statistically different from those of the 1955-1959 and 1980-1985 cohorts, it was significantly smaller than the β of the cohorts in between the two. Further, on the last row of Table A.2., we now observe that the ρ of the 1980-1985 cohort was significantly greater than those of the 1955-1959, 1960-1964, 1965-1969, and 1970-1974 cohorts while it was not significantly different compared to those of 1951-1954 and 1975-1979. In the case of the rank-rank slope coefficient φ a very similar observation can be made by focusing on the 1975-1979 cohort's row in Table A.3: while the 1975-1979 cohort's φ was significantly higher than those of 1955-1959, 1960-1964, and 1965-1969 cohorts, it was not significantly different than those of 1951-1954 and 1970-1974 cohorts.

The results of our tests demonstrate that i) the point estimates of the mobility measures did not change in a statistically significant manner between consecutive cohorts, ii) the estimated mobility coefficients corresponding to the end-points of our sample were significantly greater than

those of the remaining cohorts, and iii) the difference between the estimated mobility coefficients of the end-points was insignificant. Hence, while the estimates of mobility variables did not change monotonously and smoothly from one consecutive cohort to the next one and evolve in a unidirectional manner, they exhibited a non-linear pattern characterized with a sharp early fall followed by an abrupt late rise – producing a non-smooth U-shaped pattern over time.

1.4 Decomposition of the Intergenerational Educational Rank-Rank Coefficient

In this section, we apply the decomposition methodology described in (3) to another measure of relative inter- generational educational mobility: the intergenerational educational rank-rank slope. Rank-rank regressions have recently become popular in the intergenerational mobility literature (Chetty et al. 2014, Dahl et al. 2013). Even when distributions of parents and descendants differ drastically, the normalization of their standings in their respective distributions allows for stable estimation of outcomes, albeit at the cost of losing all the information on the higher moments of the variable of interest. We estimate the rank-rank slope via the following univariate OLS regression:

$$R_{it}^{c} = \omega_t + \phi_t R_{it}^{p} + w_{it} \qquad (A5)$$

where ϕ_t denotes the rank-rank slope, R_{it}^{c} and R_{it}^{p} denote the percentile rank of individual i among the members of cohort t and the percentile rank of his or her parent among the parents of the members of cohort t regarding their educational attainment, respectively.

After the estimation phase, we decompose the intergenerational rank-rank slope coefficient φ and report our findings in Table A.4 and Table A.5. Although ρ and φ co-moved similarly over birth cohorts (Figure 1), the two measures convey different information. ρ captures the marginal effect of a change in parental years of education on the descendant's years of education. φ captures

the marginal effect of a change in parental rank on the rank of the descendant. The rank-rank slope estimate, φ, also exhibited a U-shape over birth cohorts. Our estimates suggest that while a 10% increase in paternal educational ranking is associated with a 4.5% in- crease in descendants' educational ranking for the 1951-1954 cohort, the same increase has a lower impact of 3.9% increase for the 1965-1969 cohort, and a higher impact of 4.9% increase for the 1980-1985 cohort. The interpretation of the decomposition exercise in Table A.4 is not straightforward due to the imputation strategy we use and the cohort-dependent (and time-varying) nature of the discrete values of paternal and descendant educational ranks.[1] For instance, the family combination where the paternal educational rank is 19% was observed both in the 1951-1954 and the 1980-1985 cohort. While the relative contribution of this family type (r_t (P, E)/φ_t) was 44% for the 1951-1954 cohort, it was only 12% for the 1980-1985 cohort. This result emerged because the evolution of the distribution of parental education and overall improvements in educational attainment changed the nature of what the 19th percentile rank corresponded in the data. While the 19th percentile referred to an illiterate person for the 1951-1954 cohort, the same 19th percentile referred to a literate person without a diploma for the 1980-1985 cohort. Due to educational improvements of parents at the 19th percentile, descendants born into such families were less likely to be located below the mean. Towards the bottom of their respective distribution for the 1981-1985 cohort, the relative contribution of this family type to φ declined considerably over time. We note similar temporal patterns regarding the relative contribution of families with 92nd, 96th, and 98th paternal percentile ranks.

Table A.4. Decomposition of the Intergenerational Educational Rank Slope Coefficient (φ_t)

Cohort	1951-1954		1955-1959		1960-1964		1965-1969	
Paternal Education Percentile	$r_t(P)$	$\frac{r_t(P)}{\varphi_t}$	$r_t(P)$	$\frac{r_t(P)}{\varphi_t}$	$r_t(P)$	$\frac{r_t(P)}{\varphi_t}$	$r_t(P)$	$\frac{r_t(P)}{\varphi_t}$
P = Lowest	0.20	44%	0.18	46%	0.21	50%	0.17	44%
P = 2nd lowest	0.00	0%	0.00	1%	0.00	1%	0.02	6%
P = 3rd lowest	0.13	29%	0.08	20%	0.09	22%	0.06	15%
P = 3rd highest	0.03	6%	0.05	12%	0.05	11%	0.04	10%
P = 2nd highest	0.06	12%	0.05	12%	0.04	9%	0.05	14%
P = Highest	0.04	9%	0.03	9%	0.02	6%	0.04	11%
φ_t	0.45		0.39		0.41		0.39	
Cohort	1970-1974		1975-1979		1980-1985		Whole Sample	
Family Type	$r_t(P)$	$\frac{r_t(P)}{\varphi_t}$	$r_t(P)$	$\frac{r_t(P)}{\varphi_t}$	$r_t(P)$	$\frac{r_t(P)}{\varphi_t}$	$r_t(P)$	$\frac{r_t(P)}{\varphi_t}$
P = Lowest	0.19	43%	0.17	44%	0.17	41%	0.21	53%
P = 2nd lowest	0.03	7%	0.04	11%	0.06	15%	0.03	9%
P = 3rd lowest	0.03	6%	0.00	1%	0.00	0%	0.04	10%
P = 3rd highest	0.06	12%	0.04	11%	0.05	11%	0.05	13%
P = 2nd highest	0.07	16%	0.09	23%	0.11	27%	0.08	20%
P = Highest	0.06	13%	0.09	23%	0.10	25%	0.06	16%
φ_t	0.43		0.44		0.49		0.47	

In this table E stands for the percentile rank of the members of a cohort with respect to their educational attainment (based on years of education), while P corresponds to the percentile rank of the parents of the members of the cohort. Detailed information about the unique values of paternal and descendant percentile ranks is provided in Table A.6.

Table A.5. Decomposition of the Intergenerational Educational Rank - Rank Slope (φ_t): 1951-1985 Cohorts

Line #	Cohort	1951-1954		1955-1959		1960-1964		1965-1969		1970-1974		1975-1979		1980-1985	
	Family Type	$r_t(P,E)$	$\frac{r_t(P,E)}{\varphi_t}$	$r_t(P,E)$	$\frac{r_t(P,E)}{\varphi_t}$	$r_t(P,E)$	$\frac{r_t(P,E)}{\varphi_t}$	$r_t(P,E)$	$\frac{r_t(P,E)}{\varphi_t}$	$r_t(P,E)$	$\frac{r_t(P,E)}{\varphi_t}$	$r_t(P,E)$	$\frac{r_t(P,E)}{\varphi_t}$	$r_t(P,E)$	$\frac{r_t(P,E)}{\varphi_t}$
1	P:1 & E:1	0.21	48%	0.18	45%	0.16	39%	0.11	27%	0.10	24%	0.08	17%	0.07	13%
2	P:1 & E:2	0.05	11%	0.05	13%	0.05	13%	0.05	13%	0.04	9%	0.04	9%	0.04	8%
3	P:1 & E:3	-0.02	-5%	0.02	5%	0.05	11%	0.07	18%	0.09	22%	0.10	22%	0.08	17%
4	P:1 & E:4	-0.02	-4%	-0.02	-5%	-0.02	-4%	-0.02	-5%	-0.01	-3%	-0.01	-1%	0.00	0%
5	P:1 & E:5	-0.02	-4%	-0.03	-7%	-0.03	-6%	-0.02	-6%	-0.02	-4%	-0.02	-5%	-0.01	-3%
6	P:1 & E:6	-0.01	-2%	-0.02	-5%	-0.01	-3%	-0.01	-4%	-0.01	-3%	-0.01	-3%	-0.01	-2%
7	P:1	0.20	44%	0.18	46%	0.21	50%	0.17	44%	0.19	44%	0.17	39%	0.17	34%
8	P:2 & E:1	0.00	0%	0.01	2%	0.01	3%	0.02	5%	0.02	4%	0.01	3%	0.02	4%
9	P:2 & E:2	0.00	0%	0.00	1%	0.01	2%	0.02	4%	0.01	3%	0.01	3%	0.02	5%
10	P:2 & E:3	0.00	0%	0.00	1%	0.01	2%	0.03	8%	0.04	9%	0.06	13%	0.05	10%
11	P:2 & E:4	0.00	0%	0.00	-1%	0.00	-1%	-0.01	-2%	-0.01	-2%	0.00	-1%	0.00	0%
12	P:2 & E:5	0.00	0%	-0.01	-1%	-0.01	-3%	-0.02	-5%	-0.02	-4%	-0.02	-5%	-0.01	-3%
13	P:2 & E:6	0.00	0%	-0.01	-1%	-0.01	-1%	-0.01	-3%	-0.01	-3%	-0.01	-3%	-0.01	-3%
14	P:2	0.00	0%	0.00	1%	0.00	1%	0.02	6%	0.03	7%	0.04	10%	0.06	12%
15	P:3 & E:1	-0.02	-5%	-0.03	-9%	-0.02	-6%	-0.02	-5%	-0.01	-3%	-0.01	-1%	0.00	0%
16	P:3 & E:2	-0.02	-4%	-0.02	-4%	-0.01	-4%	-0.01	-3%	-0.01	-2%	0.00	-1%	0.00	0%
17	P:3 & E:3	0.02	4%	-0.02	-5%	-0.04	-11%	-0.08	-19%	-0.07	-17%	-0.05	-12%	-0.01	-3%
18	P:3 & E:4	0.04	9%	0.03	7%	0.03	8%	0.03	7%	0.02	5%	0.00	1%	0.00	0%
19	P:3 & E:5	0.06	14%	0.06	15%	0.10	24%	0.06	17%	0.05	12%	0.03	7%	0.01	1%
20	P:3 & E:6	0.05	12%	0.06	16%	0.04	11%	0.07	18%	0.05	11%	0.03	6%	0.01	1%
21	P:3	0.13	29%	0.08	20%	0.09	22%	0.06	15%	0.03	6%	0.00	1%	0.00	0%
22	P:4 & E:1	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	-1%
23	P:4 & E:2	0.00	0%	0.00	0%	0.00	0%	0.00	-1%	0.00	0%	0.00	0%	0.00	0%
24	P:4 & E:3	0.00	0%	0.00	0%	0.00	-1%	0.00	-1%	-0.01	-2%	-0.01	-2%	-0.01	-2%
25	P:4 & E:4	0.01	2%	0.01	1%	0.01	2%	0.01	2%	0.01	2%	0.00	1%	0.00	0%
26	P:4 & E:5	0.01	1%	0.02	6%	0.03	7%	0.02	6%	0.03	6%	0.02	6%	0.02	5%
27	P:4 & E:6	0.01	2%	0.02	5%	0.02	4%	0.02	4%	0.03	7%	0.02	6%	0.04	8%
28	P:4	0.03	6%	0.05	12%	0.05	11%	0.04	10%	0.06	13%	0.04	9%	0.05	9%
29	P:5 & E:1	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
30	P:5 & E:2	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	-1%	0.00	0%
31	P:5 & E:3	0.00	0%	0.00	0%	0.00	0%	0.00	-1%	0.00	-1%	-0.01	-3%	-0.01	-1%
32	P:5 & E:4	0.00	1%	0.00	1%	0.00	1%	0.00	0%	0.00	1%	0.00	1%	0.00	0%
33	P:5 & E:5	0.02	5%	0.02	6%	0.01	3%	0.02	6%	0.02	5%	0.03	8%	0.03	7%
34	P:5 & E:6	0.03	6%	0.02	6%	0.02	6%	0.03	9%	0.05	12%	0.07	16%	0.09	18%
35	P:5	0.06	12%	0.05	12%	0.04	9%	0.05	14%	0.07	17%	0.09	20%	0.11	23%
36	P:6 & E:1	0.00	0%	0.00	0%	0.00	-1%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
37	P:6 & E:2	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
38	P:6 & E:3	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
39	P:6 & E:4	0.00	0%	0.00	1%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
40	P:6 & E:5	0.01	2%	0.00	0%	0.01	2%	0.01	3%	0.01	3%	0.01	3%	0.01	2%
41	P:6 & E:6	0.03	7%	0.03	8%	0.02	5%	0.03	8%	0.05	11%	0.08	17%	0.10	20%
42	P:6	0.04	9%	0.03	9%	0.02	6%	0.04	11%	0.06	13%	0.09	21%	0.10	21%
43	φ_t	0.45		0.39		0.41		0.39		0.43		0.44		0.49	

Table A.6. Unique Values of Paternal and Descendant Education Percentiles

	Cohort	1951-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1985
P	Unique values of paternal education percentiles							
1	Lowest	19%	17%	16%	12%	11%	9%	7%
2	2nd lowest	52%	47%	43%	36%	31%	24%	19%
3	3rd lowest	80%	77%	75%	70%	65%	58%	53%
4	3rd highest	95%	96%	96%	94%	92%	87%	84%
5	2nd highest	97%	98%	98%	97%	96%	93%	92%
6	Highest	99%	100%	100%	99%	99%	98%	98%
E	Unique values of descendant education percentiles							
1	Lowest	10%	8%	6%	5%	4%	3%	3%
2	2nd lowest	26%	20%	16%	12%	10%	8%	8%
3	3rd lowest	54%	49%	45%	40%	38%	33%	29%
4	3rd highest	80%	77%	75%	70%	69%	61%	53%
5	2nd highest	88%	85%	86%	82%	81%	76%	70%
6	Highest	96%	95%	97%	95%	94%	93%	91%

1.5 Decomposition of the Intergenerational Educational Correlation Coefficient with respect to Parental Finances

In this section, to explore the role of household finances, we decompose ρ by partitioning the society based on descendants' recollections of their household's financial conditions when they were 14 years old. For the data on the financial conditions of the respondents' household during their adolescence, we rely on the variable "MF150: Financial situation of the respondent's household when he/she was around 14 years old", which reports respondents' recollection of the status of their household at the time.[2] We report our findings in Table A.7.[3] Similar to our previous results, the relative contributions of descendants who experienced different household finances remained stable over time. The relative contributions of descendants with *very bad* and *very good* household financial conditions were negligibly small because of their limited frequencies in the data. The largest relative contributions came from descendants with *moderately good* and *good* household financial conditions. This was despite their comparable frequencies with the *moderately bad* and *bad* respondents. This result stemmed from the positive relationship

between the magnitude of ρ and the financial conditions of descendants. On average, while the correlation coefficient was $\rho = 0.38$ for descendants who experienced *bad* financial conditions, it was $\rho = 0.50$ for those with *good* financial conditions.

We next decompose within-group intergenerational educational correlations to unveil the sources be- hind the positive relationship between the intergenerational educational correlation and household finances. We report our results in Table A.8. We detect two main reasons that account for this pattern. First, the absolute contribution of primary school graduate descendants with a literate father was higher in households with *good* financial conditions (0.06) than *bad* ones (0.02). This result stemmed from the relatively larger (a) term in (3) for families with this paternal and descendant education combination and *good* financial conditions. Second, the absolute contribution of university graduate descendants with a university graduate father was considerably higher in households with *good* financial conditions (0.17) than with *bad* financial ones (0.03). This resulted from the larger share of families with a university graduate father and *good* financial conditions than *bad* ones (Table B.4).

In conclusion, our decomposition addressing the role of household finances shows that descendants who experienced better household financial conditions at the age of 14 exhibited stronger intergenerational educational correlations.

Table A.7: Decomposition of ρ with Respect to Household's Financial Conditions when the Descendant was 14 Years Old

Financial Conditions	**Very Bad**						**Bad**					
Cohort	s_t^{vb}	ρ_t^{vb}	A_t^{vb}	B_t^{vb}	$s_t^{vb}A_t^{vb}\rho_t^{vb}$	$s_t^{vb}B_t^{vb}$	s_t^{b}	ρ_t^{b}	A_t^{b}	B_t^{b}	$s_t^{b}A_t^{b}\rho_t^{b}$	$s_t^{b}B_t^{b}$
1951-1954	0.09	0.34	0.53	0.04	0.02	0.00	0.27	0.37	0.65	0.07	0.06	0.02
1955-1959	0.08	0.23	0.80	0.01	0.01	0.00	0.25	0.28	0.68	0.07	0.05	0.02
1960-1964	0.06	0.33	0.73	0.12	0.01	0.01	0.23	0.37	0.76	0.08	0.06	0.02
1965-1969	0.06	0.29	0.80	0.10	0.01	0.01	0.22	0.33	0.81	0.06	0.06	0.01
1970-1974	0.05	0.28	0.68	0.18	0.01	0.01	0.19	0.45	0.77	0.10	0.07	0.02
1975-1979	0.05	0.33	0.78	0.15	0.01	0.01	0.20	0.37	0.81	0.07	0.06	0.01
1980-1985	0.04	0.42	0.89	0.15	0.02	0.01	0.19	0.43	0.77	0.14	0.06	0.03
Financial Conditions	**Moderately Bad**						**Moderately Good**					
Cohort	s_t^{mb}	ρ_t^{mb}	A_t^{mb}	B_t^{mb}	$s_t^{mb}A_t^{mb}\rho_t^{mb}$	$s_t^{mb}B_t^{mb}$	s_t^{mg}	ρ_t^{mg}	A_t^{mg}	B_t^{mg}	$s_t^{mg}A_t^{mg}\rho_t^{mg}$	$s_t^{mg}B_t^{mg}$
1951-1954	0.20	0.45	0.87	0.00	0.08	0.00	0.27	0.52	1.02	0.01	0.15	0.00
1955-1959	0.19	0.34	0.90	0.00	0.06	0.00	0.29	0.46	1.11	0.02	0.15	0.01
1960-1964	0.20	0.30	0.94	0.00	0.06	0.00	0.31	0.42	0.99	0.02	0.13	0.01
1965-1969	0.18	0.41	0.82	0.02	0.06	0.00	0.32	0.41	0.99	0.01	0.13	0.00
1970-1974	0.19	0.36	0.83	0.02	0.06	0.00	0.33	0.41	0.93	0.01	0.13	0.00
1975-1979	0.18	0.41	0.87	0.02	0.07	0.00	0.33	0.44	0.96	0.01	0.14	0.00
1980-1985	0.18	0.42	0.84	0.02	0.06	0.00	0.34	0.45	0.90	0.01	0.14	0.00
Financial Conditions	**Good**						**Very Good**					
Cohort	s_t^{g}	ρ_t^{g}	A_t^{g}	B_t^{g}	$s_t^{g}A_t^{g}\rho_t^{g}$	$s_t^{g}B_t^{g}$	s_t^{vg}	ρ_t^{vg}	A_t^{vg}	B_t^{vg}	$s_t^{vg}A_t^{vg}\rho_t^{vg}$	$s_t^{vg}B_t^{vg}$
1951-1954	0.16	0.51	1.47	0.16	0.12	0.03	0.01	0.49	1.10	0.24	0.01	0.00
1955-1959	0.16	0.51	1.15	0.06	0.10	0.01	0.02	0.47	1.35	0.13	0.01	0.00
1960-1964	0.17	0.45	1.14	0.10	0.09	0.02	0.03	0.42	1.07	0.06	0.01	0.00
1965-1969	0.19	0.42	1.10	0.07	0.09	0.01	0.03	0.32	1.22	0.15	0.01	0.00
1970-1974	0.21	0.49	1.21	0.10	0.12	0.02	0.02	0.42	1.02	0.21	0.01	0.00
1975-1979	0.22	0.51	1.10	0.10	0.12	0.02	0.02	0.40	1.18	0.14	0.01	0.00
1980-1985	0.22	0.55	1.15	0.15	0.14	0.03	0.02	0.55	0.90	0.19	0.01	0.00

Table A.8: Decomposition of the Intergenerational Educational Correlation Coefficient (ρ) Conditional on Household's Financial Conditions

Line #	Financial Conditions	Very Bad		Bad		Moderately Bad		Moderately Good		Good		Very Good	
	Family Type	$r_t(p,E)$	$\frac{r_t(P,E)}{\rho_t}$	$r_t(p,E)$	$\frac{r_t(P,E)}{\rho_t}$	$r_t(p,E)$	$\frac{r_t(P,E)}{\rho_t}$	$r_t(p,E)$	$\frac{r_t(P,E)}{\rho_t}$	$r_t(p,E)$	$\frac{r_t(P,E)}{\rho_t}$	$r_t(p,E)$	$\frac{r_t(P,E)}{\rho_t}$
1	*P*:0 & *E*:0	0.11	35%	0.12	29%	0.10	24%	0.08	18%	0.06	12%	0.05	11%
2	*P*:0 & *E*:1	0.05	15%	0.04	11%	0.03	9%	0.03	7%	0.02	4%	0.01	2%
3	*P*:0 & *E*:5	0.02	7%	0.02	5%	0.04	11%	0.06	13%	0.05	11%	0.06	13%
4	*P*:0 & *E*:8	-0.01	-4%	-0.01	-3%	-0.01	-2%	0.00	-1%	0.00	0%	0.00	0%
5	*P*:0 & *E*:11	-0.03	-10%	-0.02	-5%	-0.02	-5%	-0.01	-3%	-0.01	-2%	-0.01	-2%
6	*P*:0 & *E*:15	-0.03	-8%	-0.02	-4%	-0.02	-4%	0.00	-1%	-0.01	-2%	-0.02	-5%
7	*P*:0	0.11	34%	0.13	33%	0.13	34%	0.15	32%	0.11	23%	0.09	20%
8	*P*:1 & *E*:0	0.02	6%	0.02	6%	0.03	7%	0.02	4%	0.03	5%	0.02	6%
9	*P*:1 & *E*:1	0.01	3%	0.02	4%	0.02	4%	0.02	3%	0.02	5%	0.02	4%
10	*P*:1 & *E*:5	0.01	2%	0.01	2%	0.03	7%	0.05	11%	0.06	11%	0.05	13%
11	*P*:1 & *E*:8	-0.01	-2%	-0.01	-1%	-0.01	-2%	0.00	-1%	0.00	0%	0.00	0%
12	*P*:1 & *E*:11	-0.01	-2%	-0.02	-4%	-0.02	-5%	-0.02	-6%	-0.02	-3%	-0.03	-6%
13	*P*:1 & *E*:15	-0.02	-5%	-0.01	-3%	-0.02	-5%	-0.02	-5%	-0.02	-4%	-0.02	-5%
14	*P*:1	0.00	1%	0.01	3%	0.02	6%	0.03	7%	0.07	14%	0.05	11%
15	*P*:11 & *E*:0	-0.03	-10%	-0.02	-5%	-0.02	-5%	-0.01	-2%	0.00	0%	0.00	0%
16	*P*:11 & *E*:1	-0.02	-5%	-0.01	-3%	-0.01	-2%	0.00	-1%	0.00	0%	0.00	0%
17	*P*:11 & *E*:5	-0.02	-8%	-0.03	-6%	-0.05	-13%	-0.04	-10%	-0.01	-2%	-0.01	-2%
18	*P*:11 & *E*:8	0.03	8%	0.02	6%	0.01	3%	0.00	1%	0.00	0%	0.00	0%
19	*P*:11 & *E*:11	0.07	23%	0.07	19%	0.06	16%	0.03	7%	0.01	1%	0.00	1%
20	*P*:11 & *E*:15	0.08	25%	0.08	19%	0.07	17%	0.03	7%	0.01	1%	0.00	1%
21	*P*:5	0.10	33%	0.11	29%	0.06	16%	0.01	3%	0.00	0%	0.00	0%
22	*P*:8 & *E*:0	0.00	0%	0.00	-1%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
23	*P*:8 & *E*:1	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
24	*P*:8 & *E*:5	0.00	0%	0.00	0%	0.00	-1%	0.00	-1%	-0.01	-1%	-0.01	-1%
25	*P*:8 & *E*:8	0.01	3%	0.01	1%	0.00	1%	0.00	0%	0.00	0%	0.00	0%
26	*P*:8 & *E*:11	0.02	5%	0.02	4%	0.01	3%	0.02	5%	0.02	3%	0.01	2%
27	*P*:8 & *E*:15	0.03	9%	0.02	4%	0.03	8%	0.02	4%	0.02	4%	0.01	1%
28	*P*:8	0.05	17%	0.03	9%	0.04	11%	0.04	8%	0.03	6%	0.01	2%
29	*P*:11 & *E*:0	0.00	0%	0.00	0%	0.00	0%	0.00	-1%	0.00	0%	0.00	0%
30	*P*:11 & *E*:1	0.00	0%	0.00	-1%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
31	*P*:11 & *E*:5	0.00	-1%	0.00	0%	0.00	-1%	-0.01	-2%	-0.01	-2%	-0.01	-3%
32	*P*:11 & *E*:8	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
33	*P*:11 & *E*:11	0.00	1%	0.02	6%	0.02	6%	0.04	9%	0.02	5%	0.04	10%
34	*P*:11 & *E*:15	0.04	12%	0.04	10%	0.04	11%	0.08	18%	0.09	17%	0.07	16%
35	*P*:11	0.04	13%	0.06	15%	0.06	16%	0.11	25%	0.10	20%	0.10	23%
36	*P*:15 & *E*:0	0.00	0%	0.00	0%	0.00	-1%	0.00	0%	0.00	0%	0.00	0%
37	*P*:15 & *E*:1	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
38	*P*:15 & *E*:5	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
39	*P*:15 & *E*:8	0.00	0%	0.00	1%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
40	*P*:15 & *E*:11	0.00	0%	0.01	2%	0.01	3%	0.02	4%	0.02	4%	0.02	6%
41	*P*:15 & *E*:15	0.01	2%	0.03	8%	0.06	15%	0.10	21%	0.17	33%	0.17	39%
42	*P* :15	0.01	2%	0.04	10%	0.07	17%	0.11	25%	0.19	37%	0.19	44%
43	ρ	0.31		0.39		0.39		0.45		0.50		0.43	

In this table *rt* (*P*, *E*) (*rt* (*P*, *E*)/ρt) corresponds to the absolute (relative) contribution of the families with *p* paternal education and *e* descendant education to ρt. Family type describes the education profile of the descendant and father couple. Specifically, *P* and *E* denote paternal and descendant's years of education, respectively. According to this notation, the family type characterized by $P = 0$ & $E = 1$ corresponds to a family with an illiterate father and a literate descendant without a diploma.

[1] We impute years of education following Tansel (2016) due to the lack of *actual* years of schooling data. Thus, our imputed years of schooling variable takes only six (i.e., the number of education categories) unique values by construction. As a result, the number of percentile ranks for each cohort is also limited to six. However, the required number of years to earn a degree *and* the distribution of educational attainment vary over time, which obfuscates a clear interpretation of our decomposition results for φ.

[2] The variable describing the financial state of the descendant's household during their adolescence takes 6 unique values: 1-*v*ery *b*ad, 2-*b*ad, 3-*m*oderately *b*ad, 4-*m*oderately *g*ood, 5-*g*ood, and 6-*v*ery *g*ood financial conditions.

[3] It is worth mentioning that the age of 14 was a critical threshold for education in Turkey. Most descendants started high school at the age of 14 if they voluntarily chose to do so. Thus, the financial conditions of their household at age 14 were likely to be representative of the conditions they faced at the date they made their ultimate decision about attending high school.

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2. Tables and Figures

Table B.1. Educational Distribution of Descendants and Their Fathers

Descendant Education						
Sons						
Cohort	Illiterate	Literate without any Diploma	Primary School	Middle School	High School	University & Above
1951-1954	4.70%	6.30%	57.32%	8.67%	12.15%	10.86%
1955-1959	3.39%	4.37%	53.54%	9.77%	15.92%	13.02%
1960-1964	2.51%	2.60%	56.86%	10.02%	18.95%	9.06%
1965-1969	2.26%	2.94%	49.81%	13.53%	17.18%	14.28%
1970-1974	1.85%	1.98%	46.81%	15.54%	18.25%	15.57%
1975-1979	1.23%	1.41%	42.02%	12.14%	27.15%	16.05%
1980-1085	2.01%	2.71%	30.36%	16.98%	28.41%	19.53%
Whole Sample	2.29%	2.82%	45.66%	13.17%	21.20%	14.87%
Daughters						
Cohort	Illiterate	Literate without any Diploma	Primary School	Middle School	High School	University & Above
1951-1954	31.46%	15.19%	37.35%	6.32%	5.60%	4.08%
1955-1959	25.86%	10.52%	46.09%	3.84%	7.31%	6.37%
1960-1964	19.07%	9.61%	50.31%	5.50%	11.47%	4.03%
1965-1969	13.19%	7.77%	54.66%	5.97%	11.97%	6.44%
1970-1974	10.51%	4.97%	57.80%	6.18%	12.48%	8.06%
1975-1979	7.74%	4.77%	52.70%	5.79%	17.26%	11.74%
1980-1085	6.70%	5.03%	43.03%	8.53%	18.37%	18.35%
Whole Sample	13.81%	7.25%	49.67%	6.26%	13.33%	9.68%
Paternal Education						
Cohort	Illiterate	Literate without any Diploma	Primary School	Middle School	High School	University & Above
1951-1954	36.52%	27.02%	30.12%	2.04%	2.73%	1.57%
1955-1959	32.00%	26.08%	35.48%	2.78%	2.41%	1.25%
1960-1964	29.28%	22.43%	42.64%	2.87%	1.79%	0.99%
1965-1969	22.04%	23.50%	47.08%	2.92%	2.78%	1.68%
1970-1974	20.00%	17.05%	52.23%	4.49%	3.85%	2.38%
1975-1979	15.15%	13.04%	56.26%	5.15%	6.64%	3.76%
1980-1085	11.78%	10.31%	58.27%	7.02%	7.99%	4.64%
Whole Sample	21.35%	18.20%	48.90%	4.36%	4.56%	2.64%

Table B.2. Distribution of Descendants and Parents among Education Categories in Urban Places

Descendant Education

Sons

Cohort	Illiterate	Literate without any Diploma	Primary School	Middle School	High School	University & Above
1951-1954	4.44%	4.30%	49.69%	10.78%	16.62%	14.17%
1955-1959	2.16%	3.75%	46.19%	10.96%	19.77%	17.18%
1960-1964	1.88%	2.40%	51.96%	10.91%	21.65%	11.20%
1965-1969	1.50%	2.00%	44.99%	13.33%	20.26%	17.91%
1970-1974	1.48%	1.21%	41.51%	16.33%	20.66%	18.80%
1975-1979	0.90%	1.13%	37.00%	13.11%	29.84%	18.01%
1980-1085	1.32%	2.46%	26.49%	16.20%	30.30%	23.22%
Whole Sample	1.65%	2.19%	40.27%	13.70%	24.13%	18.05%

Daughters

Cohort	Illiterate	Literate without any Diploma	Primary School	Middle School	High School	University & Above
1951-1954	22.70%	15.51%	38.47%	9.22%	8.02%	6.08%
1955-1959	20.56%	10.18%	45.19%	5.13%	10.50%	8.43%
1960-1964	15.28%	8.38%	49.17%	6.84%	14.81%	5.53%
1965-1969	10.48%	6.93%	52.98%	7.13%	14.15%	8.33%
1970-1974	8.15%	4.70%	54.37%	7.22%	15.30%	10.25%
1975-1979	4.89%	4.38%	49.07%	6.60%	20.37%	14.69%
1980-1085	4.43%	4.22%	39.03%	9.17%	20.65%	22.50%
Whole Sample	10.14%	6.54%	47.30%	7.39%	16.22%	12.41%

Paternal Education

Cohort	Illiterate	Literate without any Diploma	Primary School	Middle School	High School	University & Above
1951-1954	29.64%	26.96%	34.54%	2.98%	3.57%	2.31%
1955-1959	26.36%	26.31%	38.43%	3.86%	3.26%	1.78%
1960-1964	24.83%	21.72%	46.23%	3.56%	2.30%	1.37%
1965-1969	19.29%	23.24%	48.44%	3.43%	3.45%	2.16%
1970-1974	17.51%	16.00%	53.86%	4.93%	4.74%	2.96%
1975-1979	12.34%	12.14%	57.05%	5.90%	7.94%	4.62%
1980-1085	9.13%	9.75%	57.36%	8.39%	9.79%	5.59%
Whole Sample	17.60%	17.43%	50.69%	5.24%	5.69%	3.35%

Table B.3. Distribution of Descendants and Parents among Education Categories in Rural Places

Descendant Education

Sons

Cohort	Illiterate	Literate without any Diploma	Primary School	Middle School	High School	University & Above
1951-1954	5.16%	9.94%	71.21%	4.83%	4.00%	4.85%
1955-1959	5.95%	5.67%	68.77%	7.29%	7.93%	4.39%
1960-1964	4.19%	3.15%	69.97%	7.63%	11.75%	3.32%
1965-1969	4.13%	5.26%	61.61%	14.01%	9.62%	5.37%
1970-1974	2.79%	3.96%	60.60%	13.49%	11.99%	7.17%
1975-1979	2.22%	2.26%	57.44%	9.16%	18.87%	10.05%
1980-1085	3.89%	3.37%	40.92%	19.13%	23.25%	9.45%
Whole Sample	3.90%	4.42%	59.39%	11.82%	13.71%	6.76%

Daughters

Cohort	Illiterate	Literate without any Diploma	Primary School	Middle School	High School	University & Above
1951-1954	46.14%	14.65%	35.46%	1.46%	1.54%	0.74%
1955-1959	36.66%	11.21%	47.93%	1.19%	0.83%	2.18%
1960-1964	28.37%	12.62%	53.10%	2.23%	3.32%	0.37%
1965-1969	20.54%	10.04%	59.21%	2.83%	6.08%	1.31%
1970-1974	16.82%	5.68%	66.96%	3.41%	4.94%	2.19%
1975-1979	15.88%	5.88%	63.06%	3.47%	8.40%	3.31%
1980-1085	13.01%	7.29%	54.15%	6.73%	12.03%	6.78%
Whole Sample	23.09%	9.05%	55.66%	3.40%	6.01%	2.79%

Paternal Education

Cohort	Illiterate	Literate without any Diploma	Primary School	Middle School	High School	University & Above
1951-1954	48.56%	27.11%	22.40%	0.39%	1.26%	0.27%
1955-1959	43.58%	25.62%	29.43%	0.55%	0.66%	0.16%
1960-1964	40.67%	24.26%	33.47%	1.12%	0.48%	0.00%
1965-1969	29.11%	24.18%	43.58%	1.59%	1.07%	0.46%
1970-1974	26.59%	19.81%	47.91%	3.34%	1.50%	0.86%
1975-1979	23.47%	15.72%	53.90%	2.91%	2.79%	1.21%
1980-1085	19.09%	11.85%	60.78%	3.23%	3.04%	2.02%
Whole Sample	30.86%	20.15%	44.36%	2.11%	1.69%	0.84%

Table B.4. Distribution of Descendants and Parents among Education Categories Conditional of Financial Conditions of the Household when the Respondent was 14 Years Old

Descendant Education

Sons

Financial Condition	Illiterate	Literate without any Diploma	Primary School	Middle School	High School	University & Above
Very bad	5.64%	7.05%	65.27%	11.44%	6.27%	4.33%
Bad	4.83%	6.33%	63.67%	11.48%	8.79%	4.89%
Moderately bad	5.04%	3.93%	61.05%	8.95%	13.92%	7.11%
Moderately good	2.85%	3.30%	58.03%	13.88%	16.67%	5.28%
Good	1.73%	2.53%	51.49%	13.38%	19.35%	11.53%
Very good	4.45%	0.82%	48.49%	12.82%	24.79%	8.64%

Daughters

Financial Condition	Illiterate	Literate without any Diploma	Primary School	Middle School	High School	University & Above
Very bad	29.79%	11.53%	49.89%	2.97%	3.21%	2.60%
Bad	29.80%	11.43%	53.83%	1.73%	2.40%	0.81%
Moderately bad	24.00%	8.95%	58.02%	2.65%	4.27%	2.10%
Moderately good	18.75%	7.39%	58.58%	3.90%	8.36%	3.03%
Good	15.61%	7.64%	53.88%	6.58%	10.20%	6.09%
Very good	17.67%	10.98%	54.30%	3.07%	6.99%	6.99%

Paternal Education

Financial Condition	Illiterate	Literate without any Diploma	Primary School	Middle School	High School	University & Above
Very bad	45.41%	22.03%	30.72%	1.00%	0.51%	0.33%
Bad	42.08%	21.24%	34.70%	1.10%	0.45%	0.43%
Moderately bad	30.69%	21.70%	44.06%	1.69%	1.28%	0.57%
Moderately good	24.52%	18.68%	51.86%	2.25%	2.34%	0.34%
Good	16.93%	17.91%	53.95%	4.41%	3.68%	3.11%
Very good	19.79%	20.29%	53.05%	4.32%	2.55%	0.00%

Table B.5. Decomposition of the Intergenerational Educational Correlation Coefficient (ρ_t): 1951-1985 Cohorts

Line #	Cohort	1951-1953		1955-1958		1960-1963		1965-1968		1970-1973		1975-1978		1980-1985	
	Family Type	$r_t(P,E)$	$\frac{r_t(P,E)}{\rho_t}$	$r_t(P,E)$	$\frac{r_t(P,E)}{\rho_t}$	$r_t(P,E)$	$\frac{r_t(P,E)}{\rho_t}$	$r_t(P,E)$	$\frac{r_t(P,E)}{\rho_t}$	$r_t(P,E)$	$\frac{r_t(P,E)}{\rho_t}$	$r_t(P,E)$	$\frac{r_t(P,E)}{\rho_t}$	$r_t(P,E)$	$\frac{r_t(P,E)}{\rho_t}$
1	P:0, E:0	0.12	24%	0.11	25%	0.11	26%	0.07	18%	0.08	16%	0.06	13%	0.06	11%
2	P:0, E:1	0.04	7%	0.03	8%	0.04	9%	0.04	9%	0.03	6%	0.03	6%	0.03	7%
3	P:0, E:5	0.01	1%	0.03	6%	0.04	10%	0.05	12%	0.07	15%	0.07	15%	0.06	13%
4	P:0, E:8	-0.01	-2%	-0.01	-2%	-0.01	-2%	-0.01	-2%	0.00	-1%	0.00	0%	0.00	0%
5	P:0, E:11	-0.01	-3%	-0.02	-4%	-0.02	-5%	-0.02	-4%	-0.01	-3%	-0.02	-3%	-0.01	-2%
6	P:0, E:15	-0.01	-2%	-0.02	-4%	-0.01	-3%	-0.01	-3%	-0.01	-2%	-0.01	-2%	-0.01	-2%
7	P:0	0.13	26%	0.12	30%	0.15	36%	0.12	30%	0.14	31%	0.13	29%	0.14	27%
8	P:1, E:0	0.03	5%	0.03	6%	0.02	5%	0.02	5%	0.02	4%	0.01	3%	0.02	3%
9	P:1, E:1	0.02	4%	0.02	4%	0.02	4%	0.02	5%	0.01	3%	0.01	2%	0.02	4%
10	P:1, E:5	0.00	1%	0.02	4%	0.02	5%	0.04	10%	0.04	10%	0.05	11%	0.04	8%
11	P:1, E:8	-0.01	-1%	0.00	-1%	0.00	-1%	-0.01	-1%	0.00	-1%	0.00	0%	0.00	0%
12	P:1, E:11	-0.01	-2%	-0.02	-4%	-0.03	-6%	-0.02	-6%	-0.02	-4%	-0.02	-4%	-0.01	-2%
13	P:1, E:15	-0.02	-3%	-0.02	-6%	-0.02	-4%	-0.02	-5%	-0.02	-4%	-0.01	-3%	-0.01	-3%
14	P:1	0.02	3%	0.01	2%	0.01	3%	0.03	8%	0.03	8%	0.04	9%	0.06	11%
15	P:5, E:0	-0.01	-3%	-0.02	-5%	-0.02	-4%	-0.01	-3%	-0.01	-2%	0.00	0%	0.00	0%
16	P:5, E:1	-0.01	-3%	-0.01	-3%	-0.01	-3%	-0.01	-2%	0.00	-1%	0.00	0%	0.00	0%
17	P:5, E:5	-0.01	-1%	-0.03	-7%	-0.04	-10%	-0.05	-13%	-0.05	-10%	-0.02	-4%	0.01	2%
18	P:5, E:8	0.02	4%	0.01	3%	0.02	4%	0.01	2%	0.01	1%	0.00	0%	0.00	0%
19	P:5, E:11	0.05	10%	0.05	11%	0.08	19%	0.04	10%	0.03	7%	0.01	2%	0.00	-1%
20	P:5, E:15	0.06	12%	0.07	16%	0.05	12%	0.06	15%	0.04	8%	0.01	2%	-0.01	-1%
21	P:5	0.09	18%	0.06	13%	0.07	16%	0.04	10%	0.01	3%	0.00	0%	0.00	0%
22	P:8, E:0	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
23	P:8, E:1	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
24	P:8, E:5	0.00	0%	0.00	0%	0.00	-1%	0.00	-1%	-0.01	-1%	-0.01	-1%	-0.01	-1%
25	P:8, E:8	0.00	1%	0.00	1%	0.00	1%	0.00	1%	0.00	1%	0.00	0%	0.00	0%
26	P:8, E:11	0.01	1%	0.02	6%	0.03	7%	0.02	5%	0.02	4%	0.01	3%	0.01	3%
27	P:8, E:15	0.02	4%	0.03	6%	0.02	5%	0.02	4%	0.03	6%	0.02	4%	0.02	5%
28	P:8	0.03	6%	0.05	12%	0.05	12%	0.03	8%	0.04	9%	0.03	6%	0.03	5%
29	P:11, E:0	0.00	-1%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
30	P:11, E:1	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	-1%	0.00	0%
31	P:11, E:5	0.00	0%	0.00	0%	0.00	0%	0.00	-1%	0.00	-1%	-0.01	-3%	-0.01	-1%
32	P:11, E:8	0.00	1%	0.00	0%	0.00	1%	0.00	0%	0.00	1%	0.00	0%	0.00	0%
33	P:11, E:11	0.04	8%	0.03	8%	0.02	5%	0.03	7%	0.02	5%	0.03	7%	0.03	6%
34	P:11, E:15	0.06	13%	0.05	12%	0.05	12%	0.06	14%	0.08	17%	0.09	19%	0.10	19%
35	P:11	0.11	22%	0.08	20%	0.07	17%	0.08	20%	0.10	22%	0.10	22%	0.12	23%
36	P:15, E:0	0.00	0%	0.00	0%	0.00	-1%	0.00	0%	0.00	-1%	0.00	0%	0.00	0%
37	P:15, E:1	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
38	P:15, E:5	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
39	P:15, E:8	0.00	1%	0.00	1%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
40	P:15, E:11	0.02	4%	0.00	1%	0.01	3%	0.02	6%	0.02	4%	0.02	5%	0.01	2%
41	P:15, E:15	0.10	21%	0.09	21%	0.06	14%	0.08	18%	0.11	24%	0.14	30%	0.16	31%
42	P:15	0.12	25%	0.10	23%	0.07	16%	0.10	24%	0.12	27%	0.16	34%	0.17	33%
43	ρ_t	0.49		0.42		0.42		0.41		0.46		0.47		0.50	

In this table $rt\ (P, E\ )$ $(rt\ (P, E\ )/\rho t\ )$ corresponds to the absolute (relative) contribution of the families with *p* paternal education and *e* descendant education to ρt. Family type describes the education profile of the descendant and father couple. Specifically, *P* and *E* denote paternal and descendant's years of education, respectively. According to this notation, the family type characterized by $P = 8$ & $E = 15$ corresponds to a family with a middle school graduate father and a university graduate descendant.

Table B.6. Alternative Display of the Decomposition of ρ

Cohort	1951-1954			1955-1959			1960-1964		
p	$f_t(P)$	$\frac{(p-\bar{p})}{\sigma_t^p}$	$\frac{[e_t(p)-\bar{e_t}]}{\sigma_t^e}$	$f_t(P)$	$\frac{(p-\bar{p})}{\sigma_t^p}$	$\frac{[e_t(p)-\bar{e_t}]}{\sigma_t^e}$	$f_t(P)$	$\frac{(p-\bar{p})}{\sigma_t^p}$	$\frac{[e_t(p)-\bar{e_t}]}{\sigma_t^e}$
0	0.37	-0.79	-0.44	0.32	-0.89	-0.44	0.29	-1.00	-0.51
1	0.27	-0.47	-0.13	0.26	-0.56	-0.07	0.22	-0.66	-0.07
5	0.30	0.81	0.37	0.35	0.75	0.21	0.43	0.71	0.23
8	0.02	1.76	0.76	0.03	1.73	1.05	0.03	1.74	1.00
11	0.03	2.72	1.42	0.02	2.72	1.26	0.02	2.77	1.42
15	0.02	4.00	1.93	0.01	4.03	1.89	0.01	4.14	1.64
Cohort	1965-1969			1970-1974			1975-1979		
p	$f_t(P)$	$\frac{(p-\bar{p})}{\sigma_t^p}$	$\frac{[e_t(p)-\bar{e_t}]}{\sigma_t^e}$	$f_t(P)$	$\frac{(p-\bar{p})}{\sigma_t^p}$	$\frac{[e_t(p)-\bar{e_t}]}{\sigma_t^e}$	$f_t(P)$	$\frac{(p-\bar{p})}{\sigma_t^p}$	$\frac{[e_t(p)-\bar{e_t}]}{\sigma_t^e}$
0	0.22	-1.09	-0.52	0.20	-1.20	-0.60	0.15	-1.32	-0.67
1	0.24	-0.77	-0.19	0.17	-0.89	-0.23	0.13	-1.04	-0.33
5	0.47	0.52	0.16	0.52	0.33	0.08	0.56	0.10	0.01
8	0.03	1.49	0.77	0.04	1.24	0.78	0.05	0.95	0.53
11	0.03	2.46	1.22	0.04	2.16	1.20	0.07	1.81	0.87
15	0.02	3.75	1.56	0.02	3.38	1.53	0.04	2.94	1.43
Cohort	1980-1985								
p	$f_t(P)$	$\frac{(p-\bar{p})}{\sigma_t^p}$	$\frac{[e_t(p)-\bar{e_t}]}{\sigma_t^e}$						
0	0.12	-1.44	-0.81						
1	0.10	-1.16	-0.47						
5	0.58	-0.04	-0.04						
8	0.07	0.80	0.49						
11	0.08	1.64	0.89						
15	0.05	2.76	1.29						

In this table p and e correspond to paternal and descendant years of schooling, respectively.

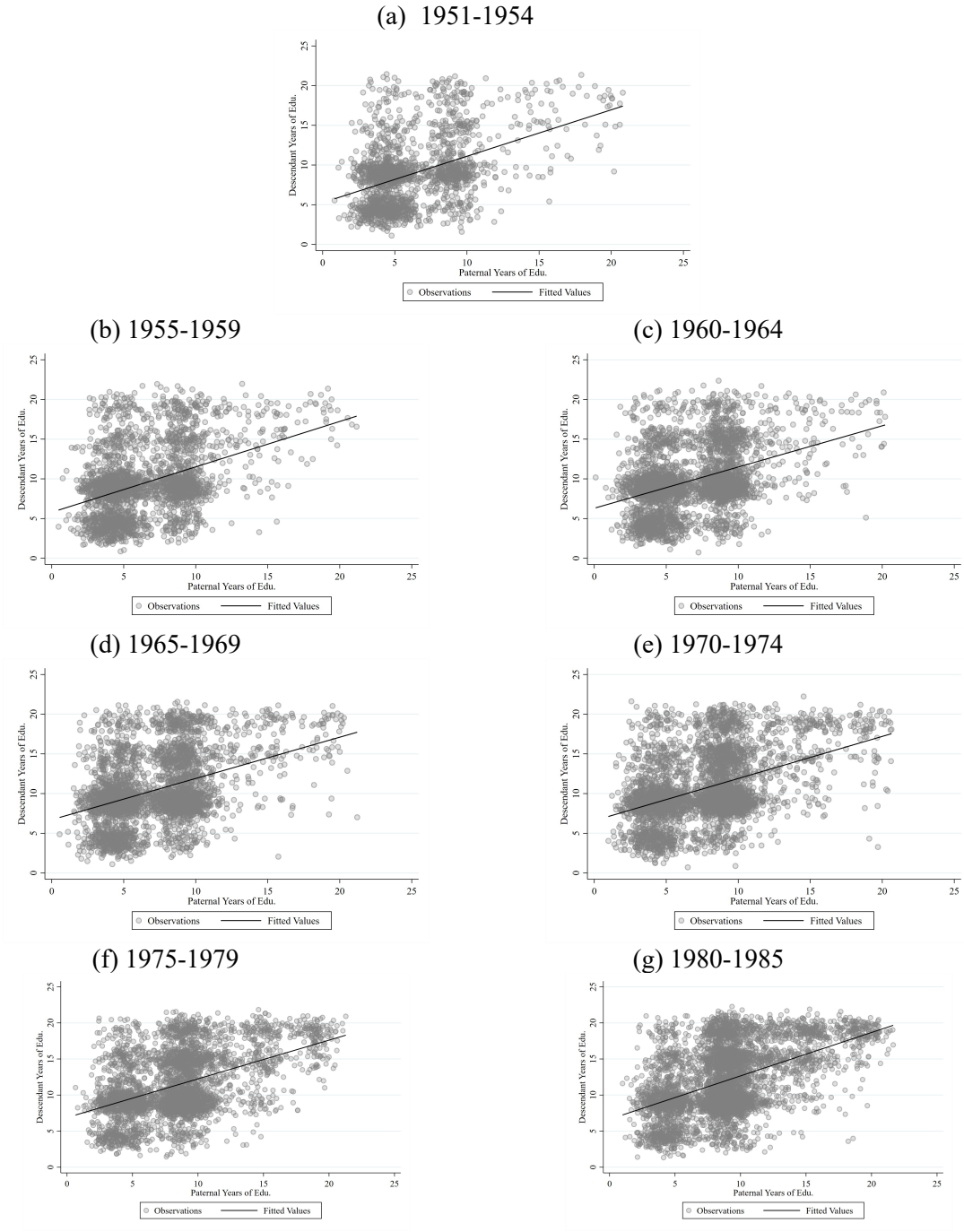


Figure B.1. Scatterplots of Descendant and Paternal Years of Education

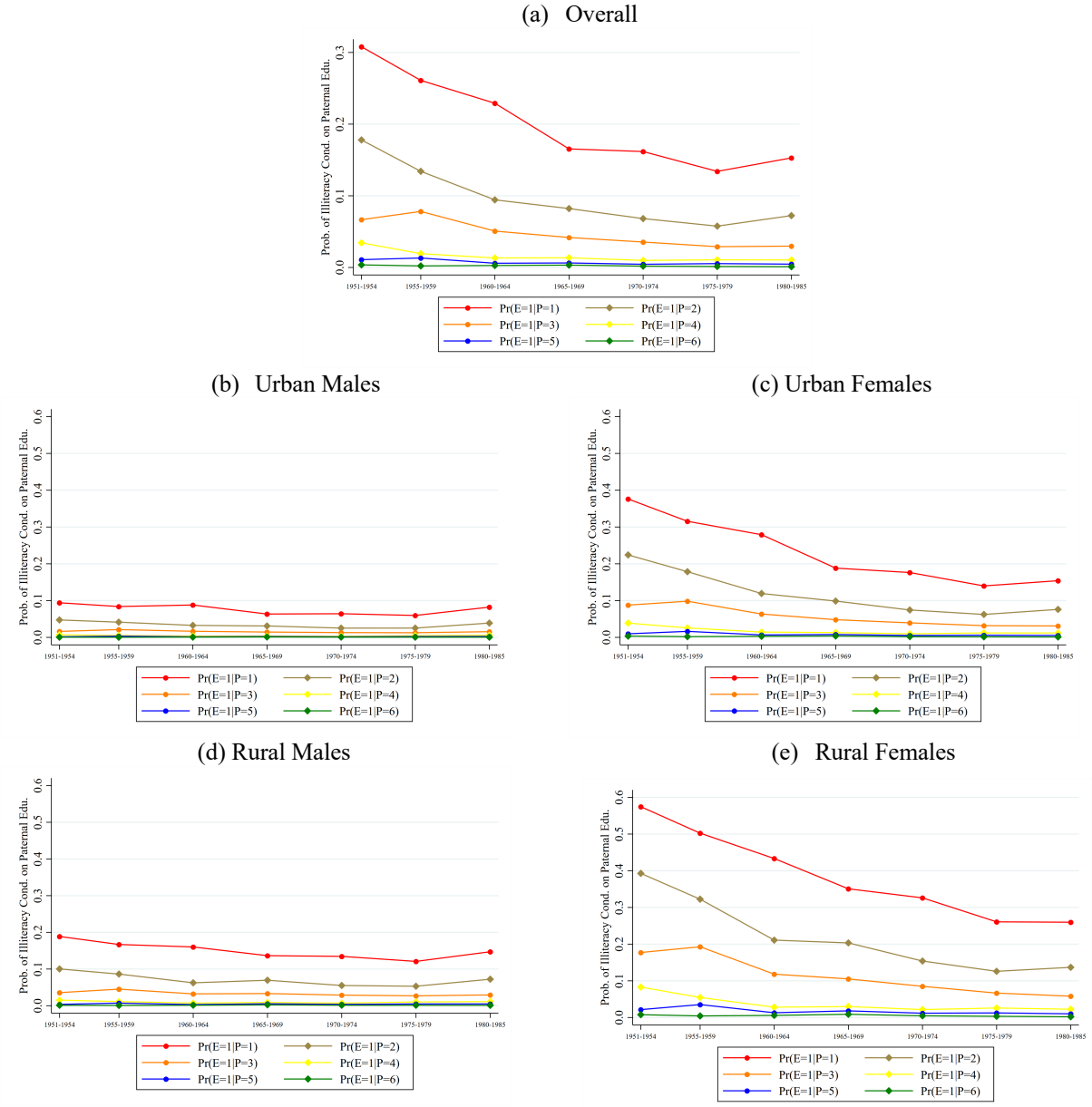
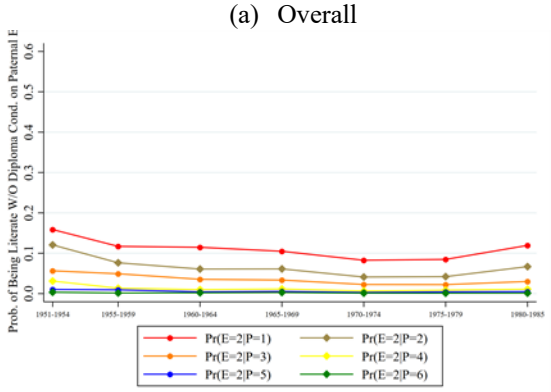
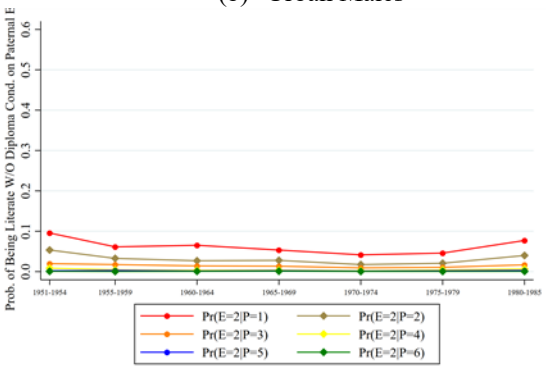


Figure B.2. Probability of Illiteracy Conditional on Paternal Education, Gender & Urbanization. Dates on the horizontal axis correspond to the birth-cohort of interest.

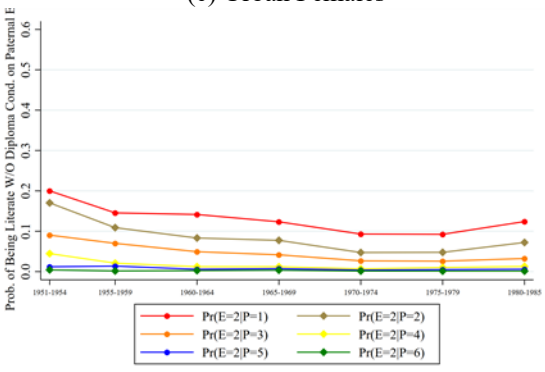
(a) Overall



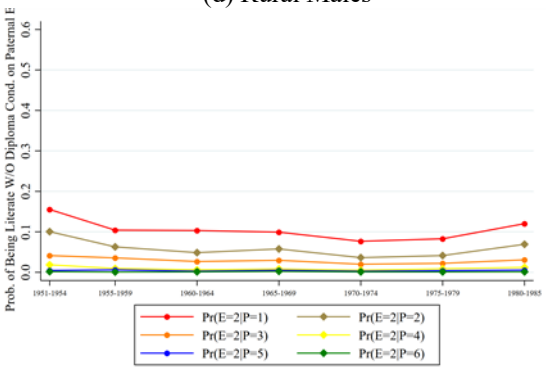
(b) Urban Males



(c) Urban Females



(d) Rural Males



(e) Rural Females

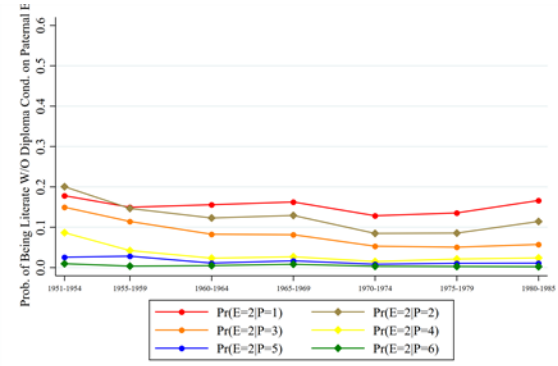
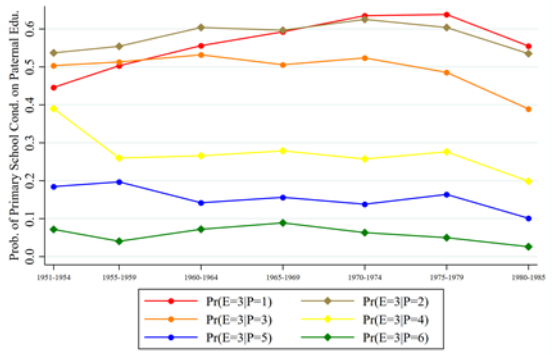
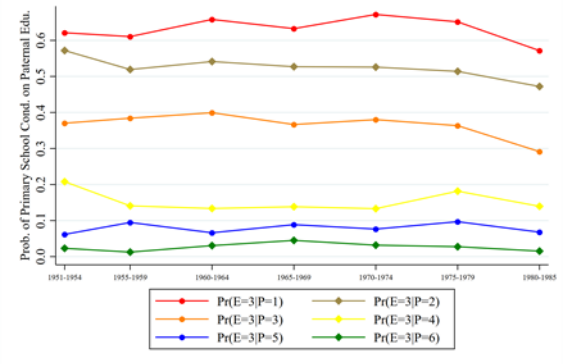


Figure B.3. Probability of Being Literate Without a Diploma Conditional on Paternal Education, Gender &Urbanization. Dates on the horizontal axis correspond to the birth-cohort of interest.

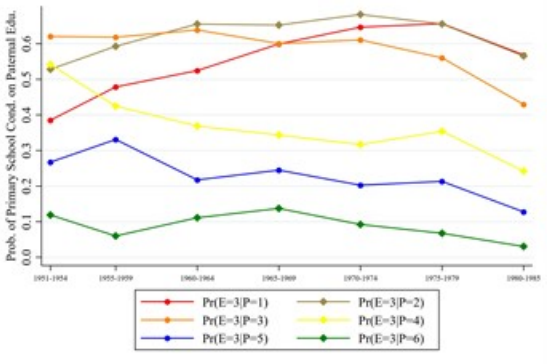
(a) Overall



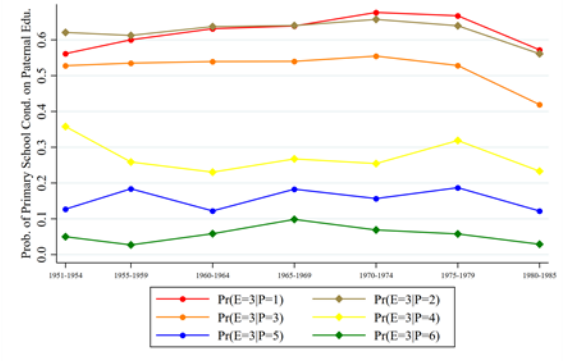
(b) Urban Males



(c) Urban Females



(d) Rural Males



(e) Rural Females

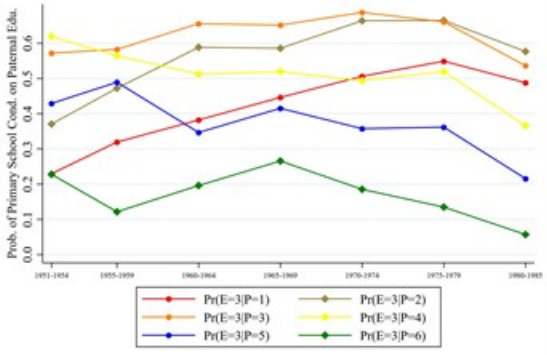
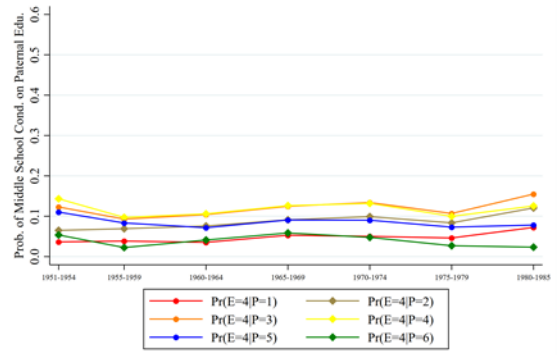


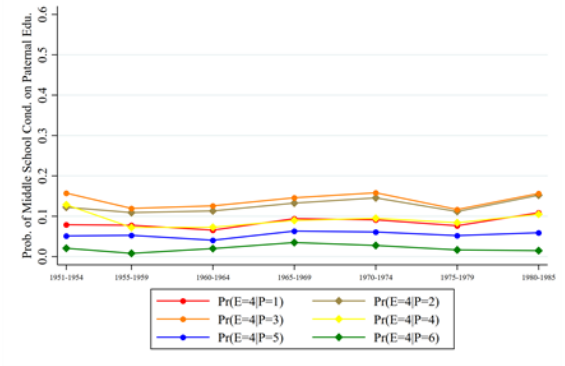
Figure B.4. Probability of Being a Primary School Graduate Conditional on Paternal Education, Gender &Urbanization. Dates on the horizontal axis correspond to the birth-cohort of interest.

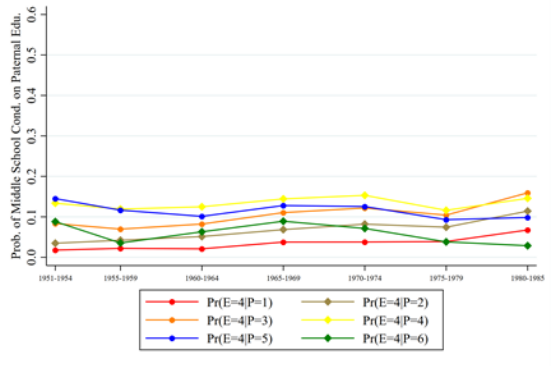
(c) Overall



(d) Urban Males

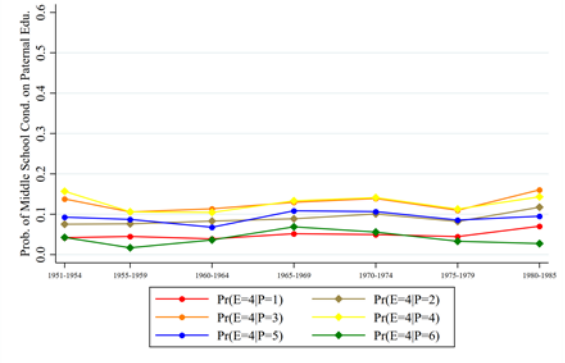
(c) Urban Females





(d) Rural Males

(f) Rural Females



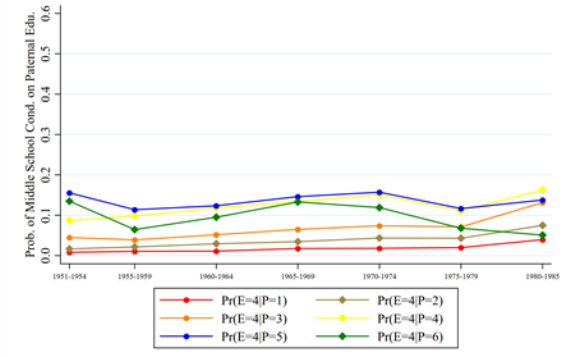
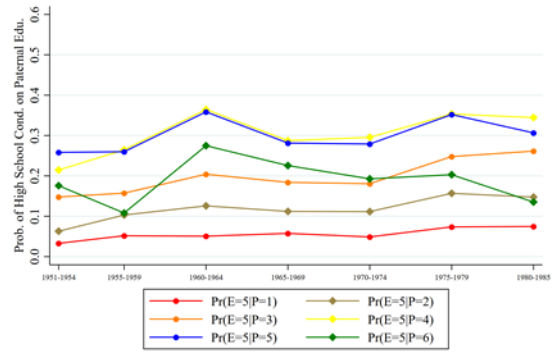


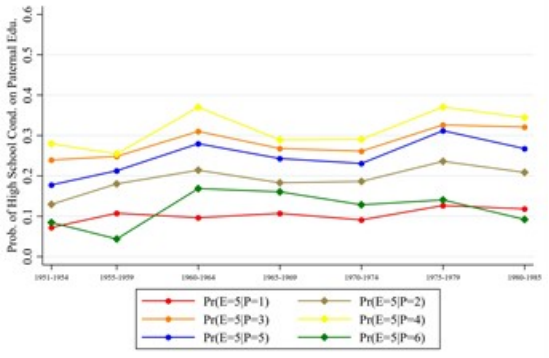
Figure B.5. Probability of Being a Middle School Graduate Conditional on Paternal Education, Gender & Urbanization. Dates on the horizontal axis correspond to the birth-cohort of interest.

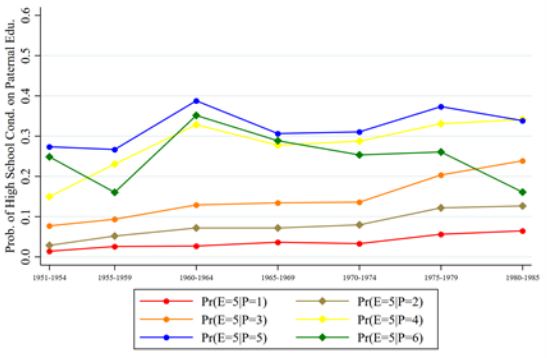
(e) Overall



(f) Urban Males

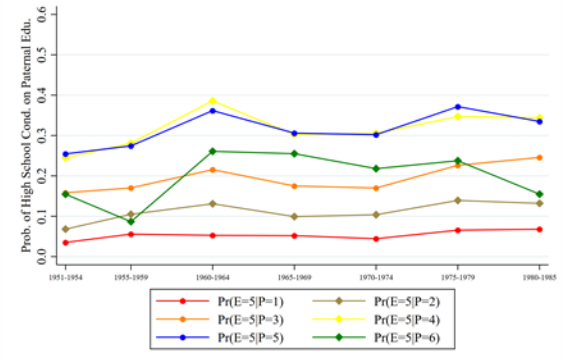
(c) Urban Females





(d) Rural Males

(g) Rural Females



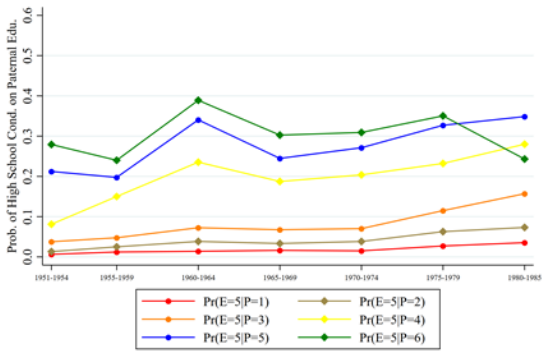
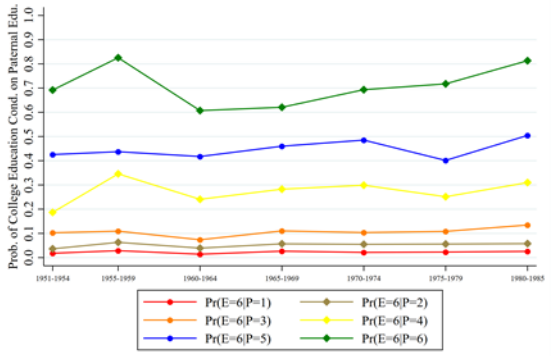
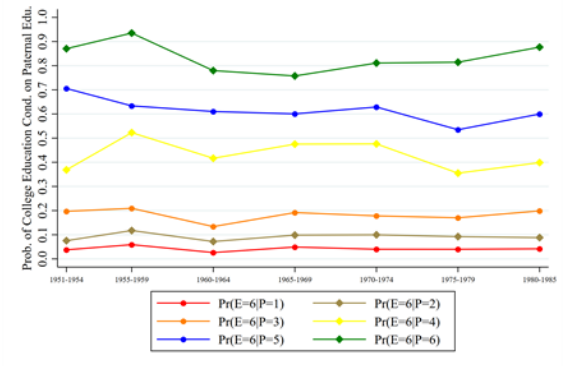


Figure B.6. Probability of Being a High School Graduate Conditional on Paternal Education, Gender & Urbanization. Dates on the horizontal axis correspond to the birth-cohort of interest.

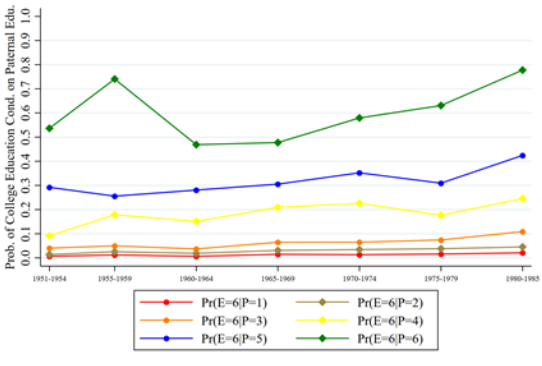
(g) Overall



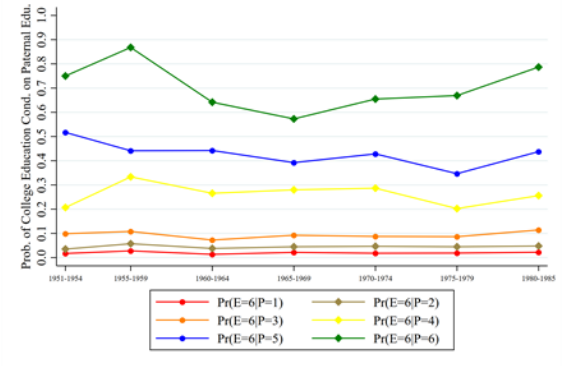
(h) Urban Males



(c) Urban Females



(d) Rural Males



(h) Rural Females

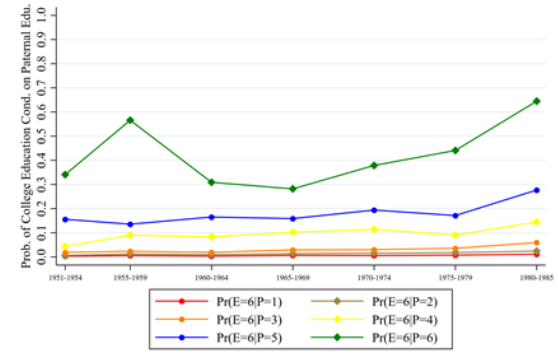


Figure B.7. Probability of University Education Conditional on Paternal Education, Gender & Urbanization. Dates on the horizontal axis correspond to the birth-cohort of interest.

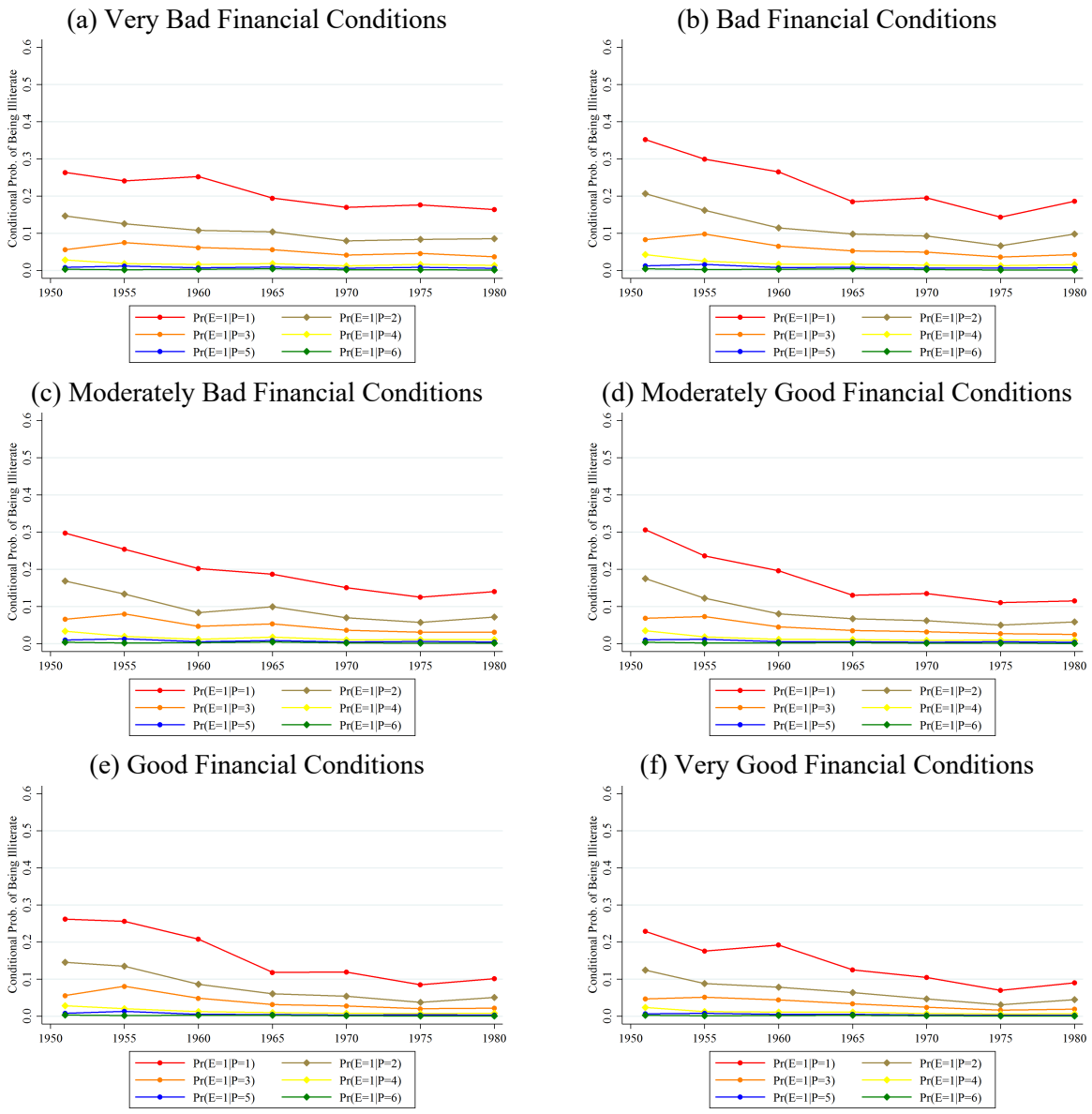
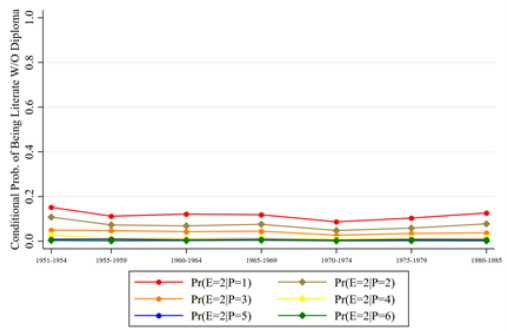
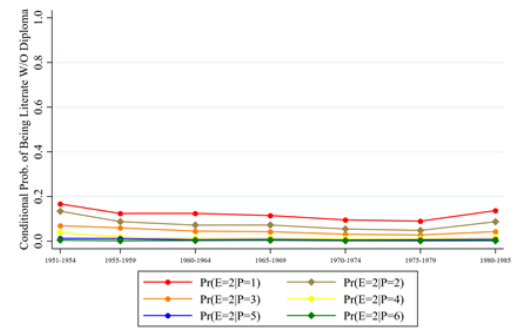


Figure B.8. Probability of Illiteracy Conditional on Paternal Education & Financial Conditions During Adolescence. Dates on the horizontal axis correspond to the birth-cohort of interest.

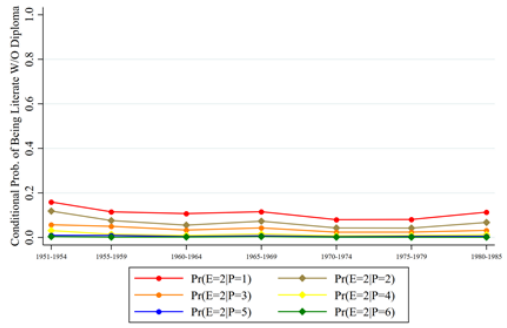
(a) Very Bad Financial Conditions



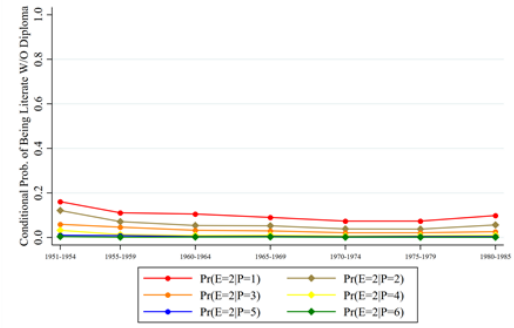
(b) Bad Financial Conditions



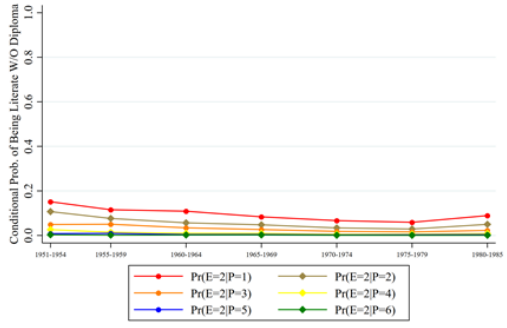
(c) Moderately Bad Financial Conditions



(d) Moderately Good Financial Conditions



(e) Good Financial Conditions



(f) Very Good Financial Conditions

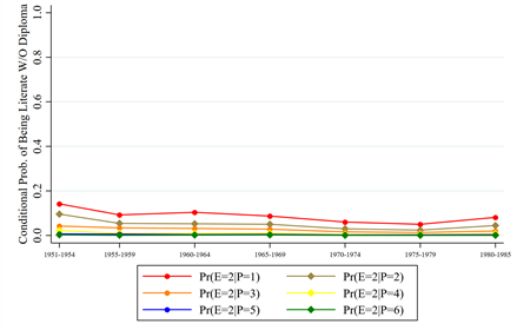
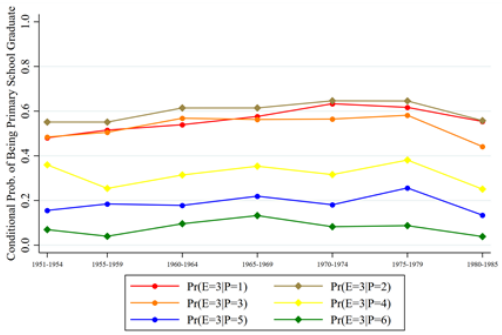
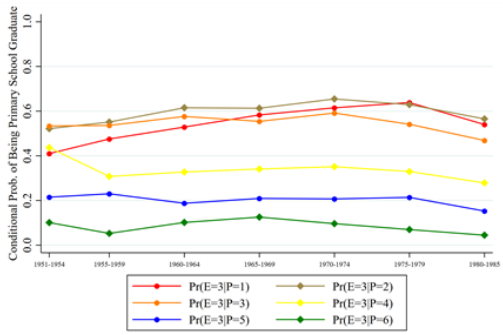


Figure B.9. Probability of Being Literate Without a Diploma Conditional on Paternal Education & Financial Conditions During Adolescence. Dates on the horizontal axis correspond to the birth-cohort of interest.

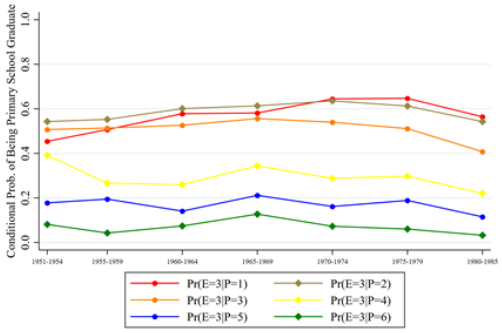
(a) Very Bad Financial Conditions



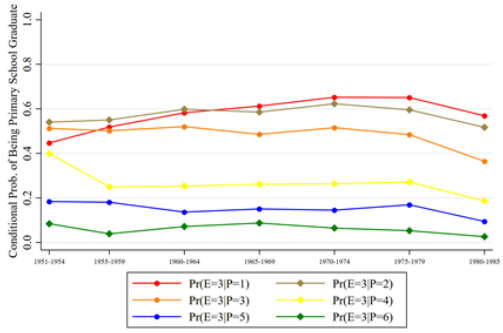
(b) Bad Financial Conditions



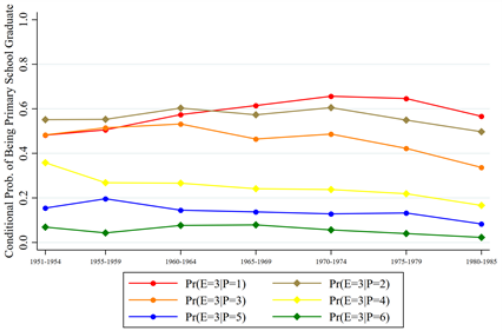
(c) Moderately Bad Financial Conditions



(d) Moderately Good Financial Conditions



(e) Good Financial Conditions



(f) Very Good Financial Conditions

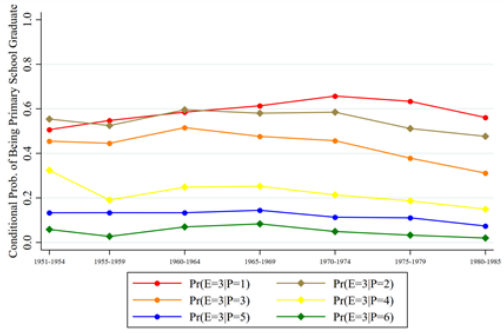
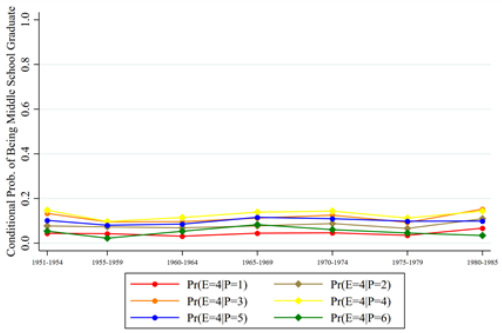
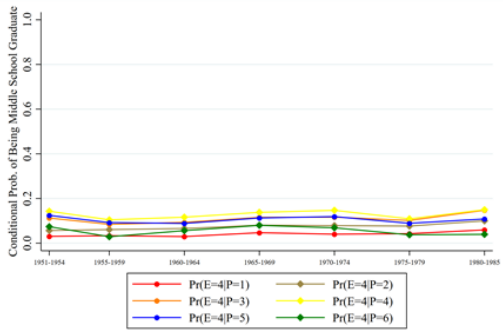


Figure B.10. Probability of Being Primary School Graduate Conditional on Paternal Education & FinancialConditions During Adolescence. Dates on the horizontal axis correspond to the birth-cohort of interest.

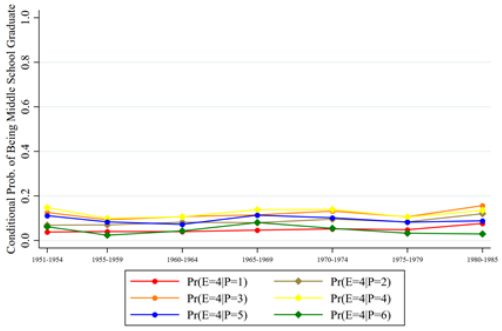
(a) Very Bad Financial Conditions



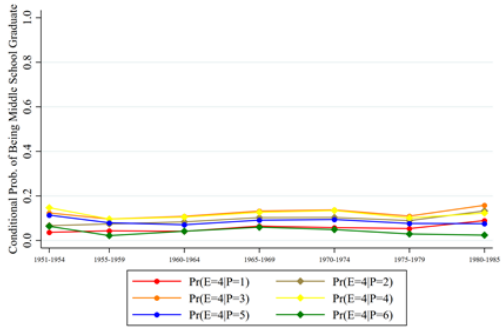
(b) Bad Financial Conditions



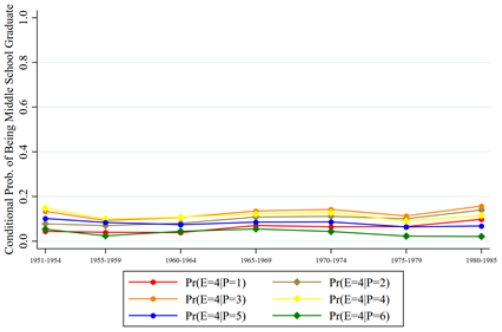
(c) Moderately Bad Financial Conditions



(d) Moderately Good Financial Conditions



(e) Good Financial Conditions



(f) Very Good Financial Conditions

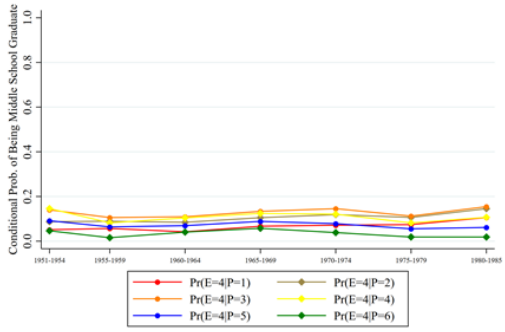
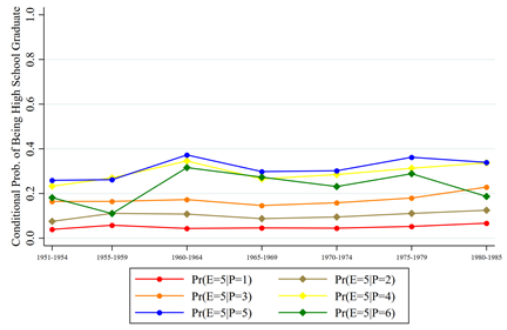
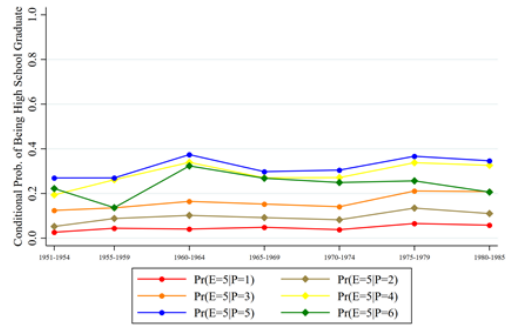


Figure B.11. Probability of Being Middle School Graduate Conditional on Paternal Education & FinancialConditions During Adolescence. Dates on the horizontal axis correspond to the birth-cohort of interest.

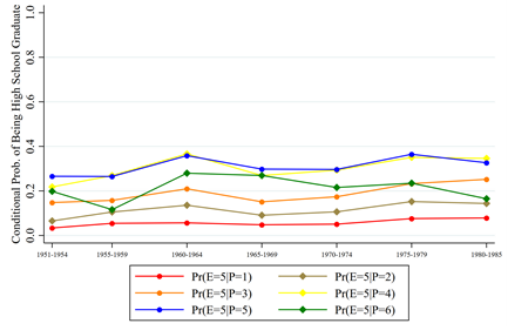
(a) Very Bad Financial Conditions



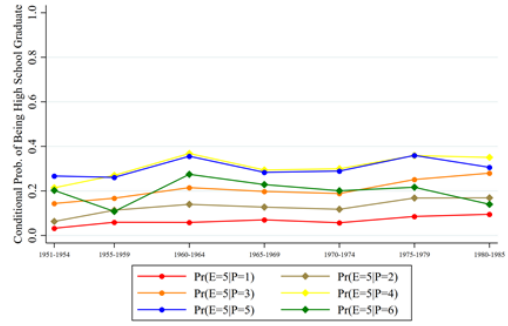
(b) Bad Financial Conditions



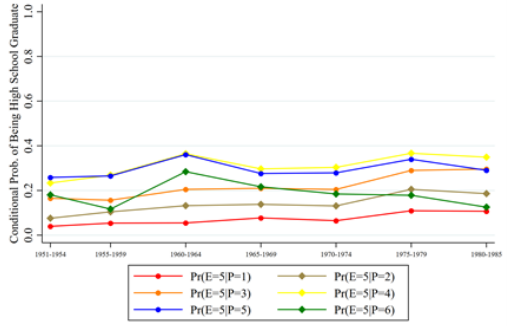
(c) Moderately Bad Financial Conditions



(d) Moderately Good Financial Conditions



(e) Good Financial Conditions



(f) Very Good Financial Conditions

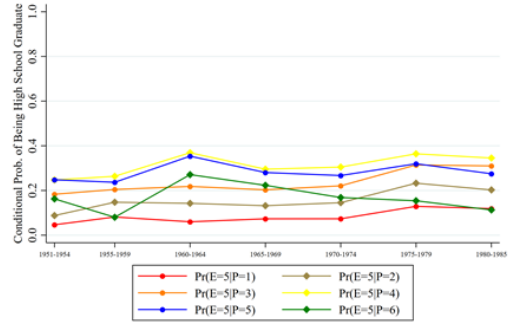
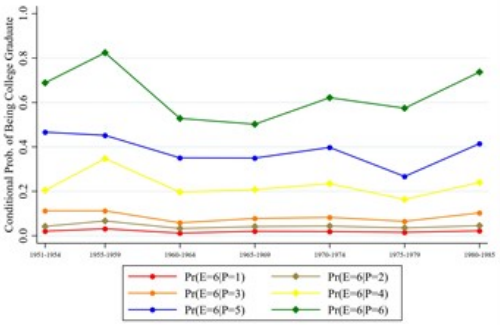
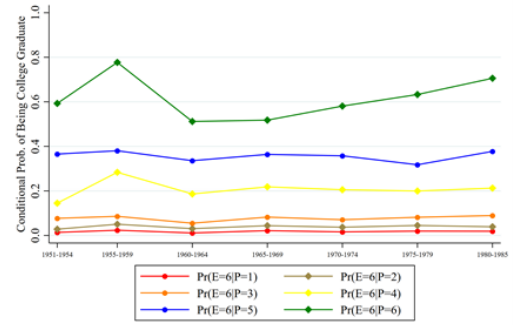


Figure B.12. Probability of Being High School Graduate Conditional on Paternal Education & Financial Conditions During Adolescence. Dates on the horizontal axis correspond to the birth-cohort of interest.

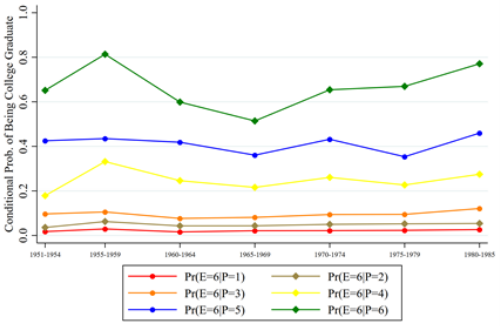
(a) Very Bad Financial Conditions



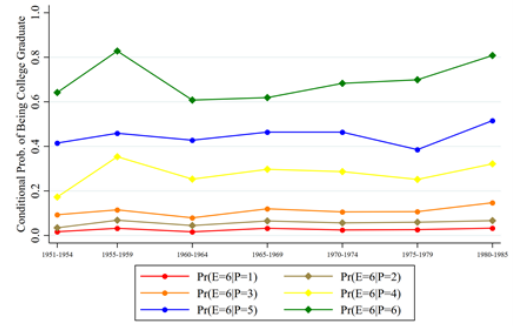
(b) Bad Financial Conditions



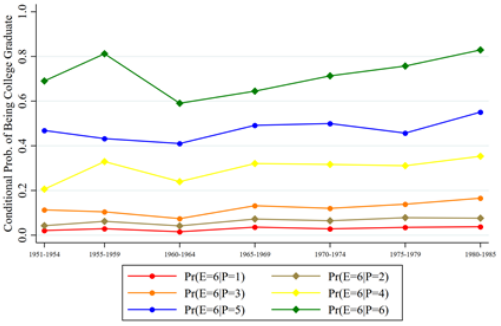
(c) Moderately Bad Financial Conditions



(d) Moderately Good Financial Conditions



(e) Good Financial Conditions



(f) Very Good Financial Conditions

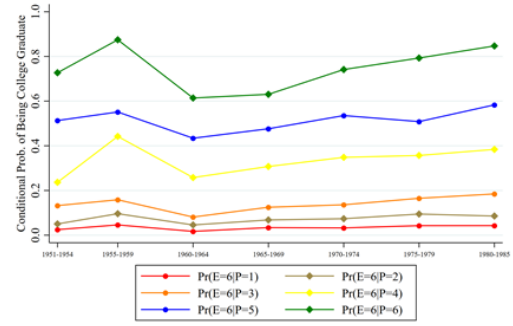


Figure B.13. Probability of Being University Graduate Conditional on Paternal Education & Financial Conditions During Adolescence. Dates on the horizontal axis correspond to the birth-cohort of interest.