

THE EFFECTS OF PRIVATE SCHOOLING ON ADULT ECONOMIC OUTCOMES

by

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OBJECTIVE

This paper focuses on the longer-term adult economic impact of attending private/ private-Catholic schools.

We investigate whether private schooling may have an additional non-cognitive impact that is not captured by test scores and academic outcomes (e.g. these schools may inculcate qualities such as discipline that are directly valued by the labor market).

Literature Review

- ***Theoretical Studies***

- In 1955 Milton Friedman suggested that the best way to improve education in the US was to decouple government financing from government provision of education: that is, provide students with school vouchers and let them select their own "education provider".
- Chubb and Moe discussed how private schools can escape what they describe as the *crippling effects* of public school bureaucracy.
- Opposing theories have also been offered: some propound that school choice may even increase racial and socio-economic segregation (see Helen Ladd 2002). McMillan (1999) argues that greater availability of private schools may result in concerned/motivated parents opting out of the public schooling system, thereby actually reducing parental involvement/scrutiny in public schools.

Empirical Evidence

- ***Non experimental evidence***

- In 1982, Coleman et al, using the first wave of the High School and Beyond (HSB) survey (1980) presented empirical evidence demonstrating that private school students outperform comparable public school students in terms of achievement scores.
- Coleman (1982) also found that sophomores in Catholic high schools score about 15 to 20% of a standard deviation higher in reading, vocabulary and mathematics than their public school counterparts.
- Note that they looked at childhood outcomes.
- Using a sample of 12,000 students from the National Longitudinal Survey of Youth (NLSY), Derek Neal (1996) found that even after adjusting for family background, students from all racial groups are more likely to go to college if they attend Catholic school.

Limitation

Self Selection bias

Despite controlling for family background, it has been argued that even the most careful of studies cannot take into account all the intangible factors that make a parent willing to pay for a child's tuition, and, in turn, the importance that family attaches to education. These reservations highlight the self-selection problem inherent in the design of these studies, which is to say it is unclear whether the positive findings describe actual differences between public and private schools or between the kinds of students and families attending them.

Randomized experiments

These studies focus on the results from the recent voucher experiments including the publicly-funded initiative in Milwaukee and the privately funded programs in Dayton, Ohio, New York City, and Washington, DC.

While these results taken together seem to suggest private school advantages in the reduction of student outcomes, most of these impacts are modest,

More importantly, most of this research to date has examined only outcomes measured during childhood.

Impact of Private Schooling on Adult Economic Outcomes

- Also of policy interest is the effect of private schooling on adult economic outcomes, which are only weakly correlated with childhood test scores.
- Private schooling might have larger impacts on adult outcomes that may not be revealed by childhood test scores.
- If private schooling is to change non-cognitive outcomes like discipline and other aspects of behavior that are themselves directly valued in the labor market the effect may not be captured by test scores.

DATA

- The analysis makes use of the longitudinal design of the Panel Survey of Income Dynamics (PSID)
- Our study focuses on individuals who were 3 to 12 years old in 1968 and traces their poverty outcome as adults i.e when they are 30 to 42 years old (the relevant survey years are 1995 to 2001).
- This age restriction results in a sample of 4,867 individuals for whom we have valid response in terms of the type of school they attended, and their poverty status as adults.

Descriptive Statistics

	1968	1969	1970	1972	1973	1974	1975
Black	14.6	14.32	15.47	15.4	15.4	15.35	15.28
Hispanic	3.1	3.5	4.9	5.2	5.2	5.24	5.24
Female-headed households	9.7	9.9	13.49	12.6	13.67	14.27	15.11
Household head working full time	83.69	83.5	84.98	85.4	84.59	83.29	82.25
kids in the household	3.04	3.08	2.9	2.74	2.62	2.54	2.47
Head's education							
Less than high school	30.2						
High school	18.5						
Some post high school	9.7						
Some college	16.5						
College	15.45						
Type of school attended							
Public	78.3						
Private_Catholic	12.7						
Other private	9.0						

	1995	1996	1997	1999	2001
Median family Income	38,501	39,910	40,500	46,200	55,000
households living below the poverty line	9.37	9.45	9.87	7.34	6.4
Poverty rate (US statistical abstract)	11.0	10.9	10.3	9.3	8.8

Note: Dependent variable/ adult poverty: measured as people with ratio of family income to the federal poverty cutoff is less than 1 (on average) in any of the years 1995 to 2001. Family income is total family annual income (after transfers such as food stamps) measured in current US dollars.

EMPIRICAL STRATEGY

Given the presence of a binary dependent variable, we use the Probit regression model for our analysis:

$$P(\text{Poverty}) = \beta_0 + \beta_1 \text{Private_Religious} \\ + \beta_2 \text{Private_Nonreligious} \\ + \beta_3 \text{(control variables)}$$

Dependent variable: Poverty in any year (1995 to 2001)	I	II	III	IV (male only)	V (female only)
Private_ religious	- 0.1045*** (0.0169)	-0.1057*** (0.017)	-0.05732** (0.025)	-0.10794*** (0.029)	-0.00205 (0.040)
Private_ nonreligious	-0.1180*** (0.0193)	-0.0533* (0.028)	-0.00835 (0.033)	-0.01545 (0.042)	0.01222 (0.052)
Black (= 1)			0.17884*** (0.029)	0.14301*** (0.040)	0.21458** (0.043)
Hispanic			0.17412** (0.086)	0.18571** (0.118)	0.16610 (0.126)
Other Race			-0.05068 (0.052)	-0.06225 (0.065)	-0.03223 (0.085)
Female-headed household			0.05170** (0.023)	0.02509 (0.031)	0.07797** (0.035)
At least one full-time worker			-0.15072*** (0.053)	-0.16009** (0.081)	-0.17277*** (0.075)
Head's education: high school			-0.04658** (0.021)	-0.04329 (0.030)	-0.04590 (0.031)
Head's education: some post high school			-0.08394*** (0.023)	-0.08179** (0.032)	-0.08593** (0.033)
Head's education: some college			-0.08833*** (0.022)	-0.0578 (0.032)	-0.11841*** (0.027)
Head's education: college			-0.11130*** (0.0211)	-0.09279** (0.032)	-0.12919*** (0.026)
Education_missing			-0.04257 (0.035)	-0.03422 (0.049)	-0.06415 (0.043)
Male (=1)			-0.01331 (0.017)	-	-
Sibling_two			-0.03552 (0.022)	-0.06274** (0.027)	-0.01423 (0.034)
Sibling_three			-0.0178 (0.026)	-0.0358 (0.035)	-0.01127 (0.036)
Sibling_four			-0.05816** (0.025)	-0.02139 (0.043)	-0.08934*** (0.026)
Sibling_five			-0.05693* (0.028)	-0.04655 (0.041)	-0.07244** (0.030)
Sibling_fiveplus			-0.00379 (0.028)	-0.01600 (0.038)	0.00490 (0.040)
Size of sampling unit (500,000 plus)			-0.02697 (0.024)	0.00810 (0.034)	-0.06848** (0.034)
Size of sampling unit (100,000 - 499,999)			0.01010 (0.028)	-0.01544 (0.036)	0.0331806 (0.043)
Size of sampling unit (50,000 - 99,999)			0.03078 (0.035)	-0.00487 (0.045)	0.0545435 (0.051)
Size of sampling unit (25,000 - 49,999)			0.04832 (0.056)	-0.00560 (0.078)	0.0809599 (0.075)
Size of sampling unit (10,000 - 24,999)			0.06183* (0.0379)	0.05066 (0.050)	0.0596116 (0.055)
Pseudo R2	0.0099	0.0121	0.1082	0.0924	0.1484

RESULTS FROM ATTENDING PUBLIC VS PRIVATE SCHOOL

Bivariate Analysis

Attending a private catholic school is expected to reduce the probability of adult poverty by 10.5 percentage points; while attendance at a non-religious private school is predicted to reduce the probability of adult poverty by 11.8 percentage points.

Weighted Estimates: Re-estimating the model with the appropriate 1995 – 2000 weights reduces the marginal effect of non-religious private schooling on adult poverty by half, to 5.3 percentage points, however, the effect of Catholic schooling on the probability of living in adult poverty remains significant and undiminished in magnitude (see column 2).

RESULTS FROM ATTENDING PUBLIC VS PRIVATE SCHOOL Multivariate Analysis

When we control for a set of demographic and family characteristics, although the magnitude of the marginal effect of catholic schools on adult poverty is reduced, it is still statistically significant:

Attending a Catholic school is predicted to reduce the probability of adult poverty by 5.7 percentage points, holding all other control variables constant at the respective sample mean.

In contrast, the effect of non-religious schooling is completely diluted: once we control for socio-demographic characteristics attendance at a non-religious private school does not have a statistically significant effect on the probability of being poor at age 30.

ROBUSTNESS CHECKS

The effect of private Catholic schooling on adult poverty outcome is resilient to a series of robustness checks, including clustering the sample around family ID to adjust for observations belonging to children from the same household.

Moreover, the effect is resilient to whether an LPM or a Probit model is used; and the results are robust to weighting the sample.

RESULTS FROM ATTENDING PUBLIC VS PRIVATE SCHOOL

Multivariate Analysis: Disaggregated by Gender

The effect of private vs public schooling on adult economic outcomes is concentrated among males.

For a male, attendance at a Catholic school reduces the probability of growing up to live in poverty by 10.8 percentage points, i.e. if a boy was enrolled in a private Catholic school, rather than a public school, his probability of growing up to live in poverty would have reduced from the present mean estimate of around 19% to 8.2%, holding all other variables constant at their respective mean.

However, for girls the effect is not discernible

CONCLUSION AND POLICY IMPLICATIONS

- The effect of attending a private Catholic school is significant across different specifications, and robustness tests.
- Moreover, the magnitude of the effect is considerable (attending a Catholic private school, as opposed to a public school is predicted to reduce the probability of adult poverty by 5.7 percentage points).
- The effect is concentrated among male students: for boys attending a private Catholic school reduces the probability of adult poverty by 10.8 percentage points, holding all else constant at the sample mean.

CONCLUSION AND POLICY IMPLICATIONS (contd.)

- The finding that the effect of Catholic schooling is concentrated in males is in sharp contrast to the evidence that has emerged from randomized trials of Abecedarian, Perry, and the Early Training Project. Michael Anderson (2006).
- Similarly, for the Moving to Opportunity (MTO) program, the benefits in terms of education, risky behavior, and mental health, were significant for females, but not males (Kline and Liebman, 2004)
- Our results, in contrast, are concentrated among males, suggesting that perhaps the more disciplined and academically rigorous environment of Catholic schools is more conducive for young boys in terms of developing non-cognitive skills that manifest in long-term benefits in the labor market.
- This result has important implications for the design of optimal human capital policy, especially given the present concern about the rising rates of unemployment in low-skilled young men: “less educated men are now working less and making less when they work” (Edelman, Holzer and Offner, 2005).