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Catholics and Catholic Schooling

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ABSTRACT *The effect of Catholic religiosity as indicated by church attendance on the demand for Catholic schooling at the primary and secondary levels is estimated. It is shown that parents' religiosity has a large effect on the probability that their children attend Catholic schools. Furthermore, estimates of bivariate probit models indicate that parents' religiosity is an exogenous determinant of Catholic school attendance. Part of the decline in Catholic schooling in the United States is attributed to a decline in Catholic religiosity as measured by church attendance. Data from the National Opinion Research Center's 'General Social Survey' are used.*

KEY WORDS: Catholic; education; schools; religiosity

Catholics and Catholic Schooling

Although considerable attention has been given to the effects of Catholic schooling on educational outcomes like test scores, less attention has been given to the determinants of why parents choose to send their children to Catholic schools. Over the past several decades, the importance of Catholic schooling at the elementary and secondary levels has declined considerably in the United States. The Catholic share in private elementary and secondary education declined from over 90% in 1960 to less than 50% by 2000. At the same time, the private share in primary and secondary education declined from a little over 13% to about 11% (Table 1). In 1960, there were almost 13 000 Catholic schools with an enrollment of over five million. By 1999, there were only approximately 8000 Catholic schools with an enrollment of about 2.5 million students (United States Department of Education, 2001). The decline in the demand for Catholic schooling has occurred in spite of a modest increase in the percentage of non-Catholics who send their children to Catholic schools. Non-Catholic enrollment in Catholic schools has increased from less than 3% in 1970 to about 13% in 2001 (McDonald, 2003).

Catholic schools were initially established in the mid-nineteenth century as an alternative to Protestant influences in public education. Furthermore, Catholic schools were built to help preserve a Catholic culture that immigrants brought

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Table 1. Private and Catholic primary and secondary school enrollment, 1940–2000

Year	Column 1, % private	Column 2, % Catholic of column 1
1940	9.3	91.8
1950	12.2	93.4
1960	13.6	92.6
1970	11.1	76.5
1980	11.5	58.3
1990	11.3	47.3
2000	11.2	48.6

Source: United States Department of Commerce (1975, 2000).

with them from Europe (Greeley and Rossi, 1966; Marty, 2000). Today, only a small minority of Catholic parents sends their children to Catholic schools. In 1991, only 20% of Catholic children of grade school age attended a Catholic grade school. About 50% of Catholic children of grade school age attended a Catholic grade school in 1960 (McLellan, 2000).

Why have Catholic schools declined in importance? The income of Catholic families has increased over time, thus increasing the ability of Catholic families to send their children to Catholic schools (see Sander, 1995). Thus, the decline in Catholic schooling cannot be attributed to an income effect since the effect of income on Catholic schooling is positive (Sander, 2001). If the perceived quality of public schooling increased over time, then this might reduce the demand for a Catholic education. Since the perceived quality of public schooling has seemingly not increased over time, it is unlikely that superior public schooling has resulted in a large decline in the demand for Catholic schools. If the percentage of Catholics in the population declined over time, this would reduce the demand for Catholic schooling since Catholic schools tend to serve Catholics. However, the percentage Catholic in the United States has not changed very much over time (Greeley, 1990). To some extent, the decline in Catholic schooling can be attributed to higher tuition (see Harris, 1996). Large declines in the number of Catholic school teachers from religious orders and declines in subsidies from Catholic parishes have resulted in relatively large increases in tuition in the Catholic school sector. In 1960, about three out of four teachers in Catholic grade schools and high schools were from religious orders. Most recently, less than one in 10 Catholic school teachers are from religious orders (McDonald, 2003).

A factor that has received less attention in studies on Catholic schooling is the decline in Catholic religiosity as measured by church attendance and its subsequent effect on the demand for Catholic schooling. Earlier studies on Catholic schools indicated that parents' religiosity as measured by their religion (Catholic), church attendance, and reception of communion had a large effect on the probability that their children attended Catholic schools (Greeley and Rossi, 1966). One might expect this still be the case, that Catholic religiosity has an important effect on the demand for Catholic schooling. Furthermore, declines in Catholic religiosity might suggest that the demand for Catholic schooling would decline as well. Many studies suggest that Catholics have become less attached to the church over time and are less likely to embrace Catholic practices and beliefs

(Davidson *et al*., 1997; Davidson, 1999). That is, Catholics have become less religious in the traditional sense.

Data in Table 2 suggest a decline in regular church attendance (almost every week or more often) by Catholics. Data are arrayed from a national survey for respondents with a Catholic upbringing and respondents who consider themselves Catholic today by age and the survey decade. Furthermore, data are arrayed for respondents with a Catholic upbringing and respondents who considered themselves Catholic at the time of the survey. Regardless of how the Catholic population is measured, the data indicate a substantial decline in church attendance for Catholics younger than 65 years old. For example, during the 1970s about one-half of the respondents aged 35–44 attended church regularly. This declined to about one in four attending church regularly during the 1990s. If parents' church attendance is correlated with preferences for a Catholic religious education, a decline in attendance could result in a decline in the demand for Catholic schooling.

In this paper, the effect of Catholic Church attendance on the demand for Catholic schooling is estimated. It is shown that parents' church attendance has a large effect on the demand for Catholic schooling: more religious Catholics as indicated by their church attendance are substantially more likely to send their children to Catholic schools. The results thus suggest that part of the large decline in Catholic schooling over the past few decades can be attributed to a decline in Catholic religiosity as measured by church attendance. Furthermore, it is shown that Catholic Church attendance is an exogenous determinant of the demand for Catholic schooling.

Related Studies

A large part of the literature on Catholic schools focuses on whether they provide a superior education. Studies by Coleman *et al.* (1982) and Coleman and Hoffer (1987) suggested that they did: students who attended Catholic high schools had higher test scores and were more likely to graduate from high school. One of the problems with the studies by Coleman and colleagues is that they did not take into account the effect of selectivity in the Catholic school sector. Since the studies by Coleman, numerous studies have tried to test whether Catholic schools are superior, taking into account selectivity in the Catholic school sector (for example,

Table 2. Regular church attendance by Catholics by age and decade

	Catholic upbringing (%)			Catholic now (%)		
Age (years)	1970s	1980s	1990s+	1970s	1980s	1990s+
18–24	28	25	17	26	20	15
25–34	31	30	22	32	26	17
35–44	49	40	34	48	37	28
45–54	52	47	37	50	45	34
55–64	57	59	45	58	53	37
65+	57	59	59	56	58	58
All	43	41	34	44	39	31

Source: National Opinion Research Center, 'General Social Survey: 1972–2000'.

Altonji *et al.*, 2000; Evans and Schwab, 1995; Figlio and Stone, 1999; Grogger and Neal, 2000; Neal, 1997; Sander, 2001). Although there are mixed findings in this literature, there is some evidence that Catholic schools benefit blacks and Hispanics, especially in inner-city areas where the quality of public education is problematic. It is less clear whether Catholic schools provide a higher quality education for white students.

Another body of literature focuses on the demand for private schools. Long and Toma (1988) find that Catholic religion (measured at the state level), education, income, and central city have positive effects on private school attendance. They find that tuition has either no effect or a positive correlation with private school attendance. Lankford and Wycoff (1992) find that Catholic religion (a proxy is used), income, education, and central city have positive effects on religious school attendance while public school quality and tuition have negative effects. West and Palsson (1988) find that Catholic religion (measured at the state level) and income have positive effects on private school enrollment while tuition has a negative effect. Furthermore, they find that certain aspects of public schools affect the demand for private schools. Hamilton and Macauley (1991) find that Catholic religion (a proxy is used) and the standard deviation of income have positive effects on private school attendance. Downes and Greenstein (1996) show that Catholic religion (measured at the county level), income, and education have positive effects on private school choice while public school quality is inversely related. Chiswick and Koutroumanes (1996) show that Catholic religion (a proxy is used), mother's schooling, and income have positive effects on parochial school choice while black and tuition have negative effects.

To a large extent, the economic literature on private schooling has not considered the effects of Catholic religiosity on the demand for Catholic schooling. At best, an adjustment is made for Catholic religion or a proxy for Catholic religion.

Although religiosity has not been considered in recent studies, it was considered in at least one older study on Catholic schools, as noted earlier. In addition to their finding that parents' religiosity had a large effect on Catholic school enrollment, Greeley and Rossi (1966) using data from a 1963–64 survey also found that education, socio-economic status, and city had positive effects on Catholic school enrollment while respondent's age had a negative effect. One of the shortcomings in older studies like that by Greeley and Rossi (1966) is that more rigorous modern methodologies are not used to estimate the determinants of Catholic school enrollment. For example, it is not considered that church attendance could be a result of sending children to Catholic schools.

Data and Models

The data-set that is used for this study is the National Opinion Research Center's 'General Social Survey' (GSS) (Table 3). The GSS has been undertaken almost annually since 1972. It consists of a cross-sectional national sample of men and women aged 18 years and older who live in a non-institutional setting in the United States. One of the reasons for using the GSS for this study is that it includes information on Catholic school attendance and parents' church attendance. For 1998 and 2000, respondents with children older than five years old were asked what type of grade school or high school they send (or sent) their children. Catholic school was one of the possible answers that parents could give.

Table 3. Summary statistics

	Mean	Standard deviation
Catholic school (%)	7.5	26.4
Catholic (%)	23.4	42.3
Religious Catholic (%)	8.8	28.4
Age (years)	51.7	15.4
Black (%)	17.1	37.7
Hispanic (%)	5.3	22.4
North (%)	24.4	43.0
East (%)	19.8	39.8
West (%)	17.7	38.2
Big City (%)	8.1	27.3
Suburb (%)	11.1	31.4
Small City (%)	69.2	46.2
Income 1 (%)	7.5	26.3
Income 2 (%)	13.3	34.0
Income 3 (%)	9.7	29.6
Income 4 (%)	17.4	38.0
Income 5 (%)	16.4	37.0
Income 6 (%)	12.6	33.2
Income 7 (%)	3.8	19.0
Income missing (%)	12.6	33.2
Education (years)	12.9	2.9

Source: National Opinion Research Center, 'General Social Survey: 1998–2000'.

The data that are used in this study are for respondents in 1998 and 2000 with children older than five years old.

Probit and bivariate probit models of Catholic school attendance by children of respondents are estimated. The dependent variable in each estimate takes on a value of zero or one. A value of one indicates Catholic school attendance. A value of zero indicates non-Catholic school attendance. The bivariate probit estimates are undertaken in addition to univariate probit estimates because probit estimates of the effect of church attendance by parents on Catholic school attendance of children could be biased for a number of reasons. First, parents might be more likely to attend church if their children attend (or attended) Catholic schools. Members of Catholic parishes who send their children to parish schools often receive a tuition subsidy. Thus, there is an incentive for parents to join the parish. Furthermore, parents of children in Catholic schools might be encouraged (or even required) to attend church. And second, church attendance by parents could be correlated with on unobserved variable that affects the probability of Catholic school attendance.

The variables that are used to estimate Catholic school attendance include regular church attendance by Catholics (almost every week or more often), Catholic religion, age, black, Hispanic, region (relative to south), type of residence (relative to rural), income, years of schooling of the respondent, and the survey year. Regular church attendance is used to estimate Catholic school attendance because about three out of four parents in the GSS who are Catholic and send their children to Catholic schools attend church regularly. Slightly less than one in three Catholic parents who do not send their children to Catholic schools attends

church regularly (Sander, 2001). Some of the other variables that are used to estimate the demand for Catholic schooling are defined as follows: 'Big City' indicates living in a central city of one of the 12 largest Standard Metropolitan Statistical Areas (SMSAs) ; 'Suburb' indicates living in a suburb of one of the 12 largest SMSAs ; 'Small City' indicates living in a city or town outside a rural county. Income is a categorical variable that was recoded as follows: 'Income 1' indicates household income less than $17 500; 'Income 2' indicates income of $8000–17 499; 'Income 3' indicates income of $17 500–24 999; 'Income 4' indicates income of $25 000–39 999; 'Income 5' indicates income of $40 000–59 999; 'Income 6' indicates income of $60 000–89 999; and 'Income 7' indicates income of $90 000–109 000. The omitted income category is income of $110 000 and over. Income data were not available for slightly over 12% for the sample. For this reason, an adjustment is also made for income missing.

The data-set is not ideal, but it is useful for the purposes of this study. Some of the shortcomings in it include income being measured at the time of the survey rather than at the time children were in Catholic schools. Furthermore, there is no information on private school tuition. Since these variables are not the focus of the paper, the data-set is relatively useful for the purposes at hand. In preliminary work with the data, I also tried to adjust for occupational background of fathers and mothers as a proxy for income. This did not improve upon my ability to take into account family income on the demand for Catholic schools. Almost all of the occupational background variables were insignificant.

The rationale for including these variables that are used to estimate Catholic school attendance loosely follows previous empirical studies on private school enrollment and theoretical research on the effects of family background on schooling (Becker and Tomes, 1986). Apart from the effects of religion, income might affect the demand for Catholic schooling because more affluent households have a greater ability to finance investments in human capital. Location could affect the demand for Catholic schooling in at least two ways. First, Catholic population density affects Catholic school density. In the United States, Catholics tend to be concentrated in big cities and suburbs of big cities in the east and Midwest regions. For this reason, Catholic schools are also concentrated in these areas (Sander, 2001). And second, the quality of alternatives to Catholic schooling varies by location. In the United States, the largest concern is that the quality of public schooling in big cities is relatively low. This would increase the demand for Catholic schooling. Parents' education could affect the demand for Catholic schooling if better educated parents perceive that Catholic schools are superior to the alternatives that are available to them. Black and Hispanic could affect the demand for Catholic schools also through the quality of alternative schools that are available to them. Previous research suggests that the alternatives usually available to minorities, especially in big cities, are often low, thus increasing the demand for Catholic schooling (Neal, 1997; Sander, 2001). The effect of parent's age on the demand for Catholic schooling is ambiguous. However, for older cohorts, the probability of sending children to Catholic schools should increase because there were more Catholic schools as one goes back in time (at least for the past 50 years).

The gist of the univariate probit model that is estimated is suggested by the following equation for *i* respondents:

$$S_i = \alpha + \beta_1 R_i + \beta_2 C_i + \beta_3 I_i + \beta_4 D_i + \beta_5 \mathrm{E}_i + \varepsilon_i \quad (1)$$

where $S = 1$ for Catholic school attendance, R indicates Catholic religiosity, C indicates Catholic religion, I indicates household income, D indicates demographic characteristics of the respondent (age, race, ethnicity, location), E indicates the level of education of the respondent, and ε is an unobserved error term. As already noted, the estimation of equation (1) could be biased because religiosity could be a result of Catholic schooling. Furthermore, important unobserved variables could bias the effect of religiosity on Catholic school attendance if they are correlated with the error term ε. As noted earlier, additional variables that might affect the demand for Catholic schools, like the quality of public schooling and tuition, are not available in the data-set. For these reasons, bivariate probit estimates of S are also undertaken.

Two different bivariate probit estimates are undertaken. The reason for this is that for two of the additional variables that are used to estimate the model (grandpa's education and grandma's education) there are a very large number of missing observations. For this reason, I undertake bivariate probit estimates with and without these additional two variables.

The key issue in undertaking bivariate probit estimates of the probability of Catholic school attendance is in identifying the effect of church attendance on Catholic school attendance. Variables are needed that are correlated with church attendance and are independent of the error term in the Catholic school attendance estimate. In the first case (with the larger data-set), I use number of siblings and an interaction term between female and Catholic (called 'female Catholic') for identification. In the second case (with the smaller data-set), I additionally use grandfather's (the father of the respondent and grandfather of the Catholic school student) schooling (years) and grandmother's (the mother of the respondent and grandmother of the Catholic school student) schooling (years) interacted with Catholic upbringing of the respondent as instruments. The grandparents' schooling variables are interacted with Catholic upbringing of the respondent so that they indicate educational attainment for Catholic grandparents. I use these variables for identification because previous research suggests that schooling is an important correlate of church attendance (Sacerdote and Glaeser, 2001; Sander, 2002). Unfortunately, church attendance by parents of respondents is not available for the years that the variable Catholic school attendance is available. The rational for using grandparents' educational attainment is that more highly educated grandparents were more likely to attend church when the respondent was growing up. This should result in higher levels of attendance by respondents since parents' attendance tends to increase children's attendance. The rationale for using 'female Catholic' as an instrument is that women tend to have higher levels of church attendance. The number of siblings of the respondent is used as an instrument because more religious Catholics, as indicated by church attendance, tend to have higher fertility (Sander, 1995).

The first stage of the bivariate probit model (the probit estimate of regular church attendance by respondents) is presented in Table 4. The first column indicates that number of siblings and female Catholic are highly relevant instruments as indicated by significant effects on religious Catholic. The first column uses data from the larger sample. In the second column, two additional instruments are used (grandpa education and grandma education). As noted earlier, this results in reducing the sample by a large number of observations (about 900). The results indicate that both grandpa education and grandma education have highly significant positive effects on regular church attendance by respondents.

Table 4. Probit estimates of religious Catholic (standard errors in parentheses)

	Column 1	Column 2
Siblings	0.04*** (0.01)	0.023 (0.017)
Female Catholic	0.99*** (0.10)	0.68*** (0.13)
Grandpa education		0.04** (0.02)
Grandma education		0.06*** (0.02)
Age	0.01*** (0.003)	0.02*** (0.004)
Black	–0.36** (0.15)	0.01 (0.21)
Hispanic	0.55*** (0.15)	0.46** (0.21)
North	0.31*** (0.11)	0.34** (0.14)
East	0.51*** (0.11)	0.32** (0.15)
West	0.22* (0.12)	0.05 (0.17)
Big City	–0.43* (0.22)	–0.21 (0.31)
Suburb	0.0003 (0.18)	–0.02 (0.24)
Small City	0.05 (0.14)	0.11 (0.19)
Income 1	0.14 (0.24)	0.55 (0.35)
Income 2	0.09 (0.20)	0.52** (0.26)
Income 3	0.26 (0.20)	0.66** (0.27)
Income 4	–0.06 (0.19)	0.21 (0.24)
Income 5	0.21 (0.18)	0.46** (0.23)
Income 6	0.03 (0.19)	0.20 (0.24)
Income 7	0.34 (0.23)	0.55** (0.28)
Income missing	0.40** (0.19)	0.67*** (0.25)
Education	0.06*** (0.02)	0.07*** (0.02)
Constant	–3.32	–4.51
Log likelihood	–612.5	–352.4
n	2397	1498

*Significant at the 10% level.
**Significant at the 5% level.
***Significant at the 1% level.

I also provide evidence in Table 5 (columns two and three) that the variables used as instruments cannot be excluded as valid instruments. I estimate Catholic school attendance as a function of the instruments and the other right-hand side variables in the model excluding religious Catholic. The probit estimate indicates that grandpa education, grandma education, female Catholic, and numbers of siblings were not significantly related to Catholic school attendance.

Results

Probit estimates of Catholic school attendance are presented in Table 5. The results for the larger sample (column 1) indicate that both Catholic and religious Catholic have highly significant positive effects on attendance. The other significant coefficients include positive age, black, east, and education effects, and a negative 'Income 1' effect. If one evaluates the right-hand side variables at their mean values, the probability that respondents send (sent) their children to Catholic schools is about 0.02 if Catholic religion and Catholic religiosity are given values of zero. If Catholic religion is given a value of one, the probability of Catholic school attendance increases to about 0.11. If Catholic religion and

Table 5. Probit estimates of Catholic school (standard errors in parentheses)

	Column 1	Column 2	Column 3
Religious Catholic	0.89*** (0.13)		
Catholic	0.73*** (0.12)	10.20*** (0.11)	10.32*** (0.17)
Age	0.014*** (0.003)	0.017*** (0.003)	0.016*** (0.004)
Black	0.49*** (0.13)	0.54*** (0.13)	0.40** (0.19)
Hispanic	0.10 (0.18)	0.10 (0.18)	0.03 (0.23)
North	0.10 (0.12)	0.12 (0.12)	0.08 (0.15)
East	0.22* (0.12)	0.21* (0.12)	0.11 (0.16)
West	–0.09 (0.14)	–0.09 (0.14)	0.01 (0.16)
Big City	0.32 (0.22)	0.19 (0.22)	0.71** (0.32)
Suburb	–0.07 (0.21)	–0.12 (0.21)	0.40 (0.29)
Small City	0.13 (0.17)	0.14 (0.17)	0.53** (0.25)
Income 1	–0.46* (0.28)	–0.41 (0.28)	–0.21 (0.37)
Income 2	–0.23 (0.22)	–0.17 (0.22)	–0.28 (0.28)
Income 3	–0.14 (0.22)	–0.08 (0.22)	0.01 (0.27)
Income 4	–0.12 (0.20)	–0.11 (0.20)	–0.09 (0.24)
Income 5	0.18 (0.19)	0.22 (0.19)	0.27 (0.22)
Income 6	–0.16 (0.21)	–0.10 (0.20)	–0.07 (0.24)
Income 7	0.07 (0.25)	0.11 (0.25)	0.31 (0.28)
Income missing	–0.0005 (0.21)	0.09 (0.20)	0.29 (0.24)
Education	0.06*** (0.02)	0.08*** (0.02)	0.06*** (0.02)
Female Catholic		–0.01 (0.13)	–0.14 (0.16)
Siblings		0.001 (0.01)	–0.01 (0.02)
Grandpa education			–0.028 (0.023)
Grandma education			0.028 (0.024)
Constant	–3.74	–4.16	–4.14
Log likelihood	–488.0	–511.1	–327.4
n	2397	2397	1498

*Significant at the 10% level.
**Significant at the 5% level.
***Significant at the 1% level.

Catholic religiosity are given values of one, the probability increases to 0.36. This suggests that Catholic religiosity has a relatively large effect on the probability that respondents send (sent) their children to Catholic schools.

Bivariate probit estimates of the probability of sending children to Catholic schools are presented in Table 6. The first estimate is for the larger sample using numbers of siblings and 'female Catholic' for identification. The results indicate that both Catholic and religion Catholic have highly significant positive effects on Catholic school attendance. The other significant coefficients include positive age, black, and education effects. The error-covariance term is highly insignificant, suggesting that the Catholic religiosity is not endogenous with Catholic school attendance. The results using the smaller sample also indicate that both Catholic religion and Catholic religiosity have significant positive effects on Catholic school attendance. The second estimate also shows an insignificant error-covariance term, thus suggesting that religious Catholic is an exogenous determinant of Catholic school attendance.

Table 6. Bivariate probit estimates of Catholic school (standard errors in parentheses)

	Column 1	Column 2
Religious Catholic	10.09*** (0.43)	0.86** (0.40)
Catholic	0.72*** (0.14)	0.67*** (0.18)
Age	0.014*** (0.004)	0.013*** (0.005)
Black	0.49*** (0.14)	0.30 (0.21)
Hispanic	0.07 (0.22)	0.05 (0.32)
North	0.09 (0.13)	0.09 (0.18)
East	0.20 (0.13)	0.19 (0.17)
West	–0.09 (0.14)	0.08 (0.18)
Big City	0.33 (0.25)	0.82** (0.42)
Suburb	–0.08 (0.21)	0.42 (0.35)
Small City	0.13 (0.19)	0.53 (0.33)
Income 1	–0.46 (0.31)	–0.33 (0.46)
Income 2	–0.24 (0.24)	–0.42 (0.33)
Income 3	–0.15 (0.25)	–0.08 (0.33)
Income 4	–0.12 (0.22)	–0.11 (0.28)
Income 5	0.17 (0.22)	0.22 (0.27)
Income 6	–0.17 (0.24)	–0.13 (0.30)
Income 7	0.06 (0.26)	0.24 (0.32)
Income missing	–0.02 (0.23)	0.17 (0.30)
Education	0.06*** (0.02)	0.03 (0.03)
Constant	–3.68	–3.61
Error covariance	–0.11 (0.21)	0.13 (0.20)
n	2397	1498

*Significant at the 10% level.
**Significant at the 5% level.
***Significant at the 1% level.

In results that are not presented I estimated Catholic school attendance for Catholic respondents. As expected, religious Catholic had a large positive effect. The lower income coefficients tended to be more negative with 'Income 1' and 'Income 2' being significant at the 10% level. This simply suggests that the poorest Catholics are less likely to attend Catholic schools, as one might suggest. Black was insignificant, indicating that the positive black effect in Tables 5 and 6 is driven by non-Catholic blacks.

All of the location variables were insignificant, indicating that location probably does not have an important effect on Catholic school attendance. Finally, (parents') age was positively associated with the demand for Catholic schools because, if one goes back in time (as age increases), the percentage of the population who attended Catholic schools increases. That is, for the data-set older parents were more likely to send their children to Catholic schools simply because there were more Catholic schools.

Discussion

The results in this paper suggest that Catholic religiosity, an omitted variable in many studies on the demand for Catholic schools, has a large effect on the demand

for Catholic schooling in the United States: more religious Catholic parents, as indicated by their church attendance, are substantially more likely to send their children to Catholic schools. Over the past few decades Catholic Church attendance, an important measure of Catholic religiosity, has declined considerably, particularly for younger Catholics who would be more likely to have children of school age. The results in this study suggest that this is an important factor in reducing the demand for a Catholic education. Higher tuition in Catholic schools has also reduced the demand for Catholic schooling, as indicated in other studies.

One of the shortcomings in this study is that church attendance is used as the only indicator for Catholic religiosity. One might argue that although church attendance has declined, Catholic religiosity has not. One might argue that Catholic religiosity has not declined if different measures are used. However, another important measure of religiosity (church contributions) has declined over the past several decades as well. In the early 1960s when Catholic schools were at their peak, Catholic families contributed 2.2% of their income. This declined to 1.1% by the 1980s (Zech, 2000). Related research also suggests that Catholics have become less religious, as it is traditionally measured (Davidson *et al*., 1997; Davidson, 1999).

One of the additional implications of this study is that part of the selectivity in Catholic schools is a result of parents' religiosity. The key issue in estimating the effects of Catholic schooling on variables like test scores and educational attainment is in identifying the effects of Catholic schooling from unobserved variables like parents' religiosity. The results in this paper indicate that Catholic religiosity, usually an omitted variable in studies on Catholic school effects, is an important factor that affects selectivity in Catholic schools (i.e., Catholic school parents are more religious as measured by regular church attendance). If Catholic religiosity is not taken into account the effect of Catholic schools can be confounded with Catholic religiosity because religiosity affects educational outcomes (Freeman, 1986; Jeynes, 1999; Sander, 2001).

Whither Catholic schools? Catholic schools have already experienced large declines in enrollment and many have closed. As Catholic schools decline, an important institution for preserving the Catholic culture also declines. The reason for this is that Catholic schooling has important effects on Catholic religiosity (Davidson *et al.*, 1997; Greeley and Rossi, 1966; Sander, 2001). Indeed, part of the decline in Catholic religiosity might be attributed to the decline in Catholic schooling. The only factor that might offset the decline in Catholic schooling is a large increase in educational vouchers that could be used at Catholic schools. It is interesting to note that when the Milwaukee school choice program (started in 1990) was expanded in 1998–99 to include religious schools, enrollment in the program more than tripled within one year. Two out of three choice parents listed religious instruction as an important reason for choosing a private school (Bezruki, 2000).

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References

Altonji, J. *et al.* (2000) Selection on observed and unobserved variables: assessing the effectiveness of catholic schools. Northwestern University, Evanston, IL.

Becker, G. S. and Tomes, N. (1986) Human capital and the rise and fall of families, *Journal of Labor Economics,* 4, pp. S1–S39.
Bezruki. D. (2000) *An Evaluation: Milwaukee Parental Choice Program* (Madison, WI: Legislative Audit Bureau).
Chiswick, B. R. and Koutroumanes, S. (1996) An econometric analysis of the demand for private schooling, in S. W. Polachek (Ed.) *Research in Labor Economics,* 15, pp. 209–237.
Coleman, J. S. and Hoffer, T. (1987) *Public and Private High Schools: The Importance of Community* (New York: Basic Books).
Coleman, J. S. *et al.* (1982) *High School Achievement: Public, Catholic, and Private Schools Compared* (New York: Basic Books).
Davidson, J. D. (1999) Increasing indifference to church is concern, *National Catholic Reporter,* 36, p. 15.
Davidson, J. D. *et al.* (1997) *The Search for Common Ground* (Huntington, IN: Our Sunday Visitor Publishing Division).
Downes, T. A. and Greenstein, S. (1996) Understanding the supply decisions of nonprofits: modelling the location of private schools, *RAND Journal of Economics,* 27, pp. 365–390.
Evans, W. N. and Schwab, R. M. (1995) Finishing high school and starting college: do catholic schools make a difference?, *Quarterly Journal of Economics,* 110, pp. 941–974.
Figlio, D. N. and Stone, J. A. (1999) Public and private high schools: are private schools really better?, *Research in Labor Economics,* 18, pp. 115–140.
Freeman, R. B. (1986) Who escapes? The relation of churchgoing and other background factors to the socioeconomic performance of black male youths from inner-city tracts, in: R. B. Freeman and H. J. Holzer (Eds) *The Black Youth Employment Crisis* (Chicago, IL: The University of Chicago Press).
Greeley, A. M. (1990) *The Catholic Myth* (New York: Charles Scribner's Sons).
Greeley, A. M. and Rossi, P. H. (1966) *The Education of American Catholics* (Chicago, IL: Aldine Publishing Company).
Grogger, J. and Neal, D. (2000) Further evidence on the effects of Catholic secondary schooling, *Brookings-Wharton Papers on Urban Affairs 2000,* pp. 151–193.
Hamilton, B. W. and Macauley, M. (1991) Determinants and consequences of the private–public school choice, *Journal of Urban Economics,* 29, pp. 282–294.
Harris, J. C. (1996) *The Cost of Catholic Parishes and Schools* (Kansas City, MO: Sheed & Ward).
Jeynes, W. H. (1999) The effects of religious commitment on the academic achievement of Black and Hispanic Children, *Urban Education,* 34, pp. 458–479.
Lankford, H. and Wyckoff, J. (1992) Primary and secondary school choice among public and religious alternatives, *Economics of Education Review,* 11, pp. 317–337.
Long, J. E. and Toma, E. F. (1998) The determinants of private school attendance, 1970–1989, *The Review of Economics and Statistics,* 70, pp. 458–479.
Marty, M. E. (2000) *Education, Religion, and the Common Good* (San Francisco, CA: Jossey Bass).
McDonald, D. (2003) *United States Catholic Elementary and Secondary Schools, 2002–2003* (Washington, DC: National Catholic Education Association).
McLellan, J. A. (2000) Rise, fall, and reasons why: U.S. Catholic elementary education, 1940–1995, in: J. Youniss and J. J. Convey (Eds) *Catholic Schoos at the Crossroads* (New York: Teachers College, Columbia University).
Neal, D. (1997) The effects of Catholic secondary schooling on educational attainment, *Journal of Labor Economics,* 15, pp. 98–123.
Sacerdote, B. and Glaeser, E. L. (2001) Education and religion. NBER Working Paper 8080, Cambridge, MA.
Sander, W. (1995) *The Catholic Family: Marriage, Children, and Human Capital* (Boulder, CO: Westview Press).
Sander, W. (2001) *Catholic Schools: Private and Social Effects* (Boston, MA: Kluwer Academic Publishers).
Sander, W. (2002) Religion and human capital, *Economics Letters,* 75, pp. 303–307.
United States Department of Commerce (1975) *Historical Statistics of the United States: Colonial Times to 1970* (Washington, DC: US Government Printing Office).
United States Department of Commerce (2000) *Statistical Abstract of the United States* (Washington, DC: US Government Printing Office).
United States Department of Education (2001) *Private School Universe Survey: 1999–2000* (Washington, DC: National Center for Education Statistics).
West, E. G. and Palsson, H. (1988) Parental choice of school characteristics: estimates using state-wide data, *Economic Inquiry,* 26, pp. 725–740.
Zech, C. E. (2000) *Why Catholics Don't Give* (Huntington, IN: Our Sunday Visitor Publishing Division).