

# Educational Vouchers: Effectiveness, Choice, and Costs

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## Abstract

*Most of the policy discussion on the effects of educational vouchers has been premised on theoretical or ideological positions rather than evidence. This article analyzes a substantial body of recent empirical evidence on achievement differences between public and private schools; on who chooses and its probable impact on educational equity; and on the comparative costs of public and private schools and an overall voucher system. The findings indicate that: (1) results among numerous studies suggest no difference or only a slight advantage for private schools over public schools in student achievement for a given student, but evidence of substantially higher rates of graduation, college attendance, and college graduation for Catholic high school students; (2) evidence is consistent that educational choice leads to greater socioeconomic (SES) and racial segregation of students; and (3) evidence does not support the contention that costs of private schools are considerably lower than those of public schools, but the costs of an overall voucher infrastructure appear to exceed those of the present system.*

## INTRODUCTION

Since Milton Friedman [1955] proposed his original voucher plan some four decades ago with a wider dissemination in his important book on *Capitalism and Freedom* [Friedman, 1962], the idea has taken on more and more credibility. Frustration with public schools in the inner cities has been a particularly important reason for emerging support of vouchers. Yet, both advocates and detractors tend to argue about the consequences of vouchers more from theoretical and ideological grounds than empirical ones. The purpose of this article is to consider empirical evidence concerning three issues on which there have been strong views expressed in the policy arena: (1) Will vouchers improve student achievement? (2) Who will choose and what are the educational consequences? and (3) What is the evidence on comparative costs of public versus private schools and on the costs of a voucher system?

It is only fair in addressing these types of issues that I clarify where I stand on vouchers. Three decades ago I argued that the situation of inner-city students was so dire that we ought to be willing to design good experiments with vouchers or voucher-type mechanisms to ascertain their effects on both individual and societal outcomes [Levin, 1968]. In subsequent publications [see, for example, Levin 1980, 1987] I have argued that the specific design of a voucher system with respect to finance, regulation, and information would be crucial in determining specific outcomes rather than leaving the discussion at a generic and abstract level, a point that is also stressed by Moe [1995b]. More recently [Levin, 1991] I have suggested that the private benefits of vouchers are likely to be positive relative to the present system in terms of satisfying narrow consumer preferences, but that the social consequences will be worse because of greater inequality and the further deterioration of a common educational experience as social goals of schooling are sacrificed to consumer sovereignty. In what follows I will not take a stand on vouchers as much as try to read the present evidence on the three aforementioned issues.

## **DIFFERENCES IN ACHIEVEMENT BETWEEN PUBLIC AND PRIVATE SCHOOLS**

To a large degree the arguments for educational vouchers have been premised on whether they will improve the educational achievement of students, particularly students from poverty backgrounds and inner cities where school results are considered to be particularly woeful. Because student achievement is considered to be a universal goal of schools, it has become the *sine qua non* for evaluating school reform. It is important to stress how limited this focus is in the context of market choice. The rationale for market choice in education is to give families the freedom to pursue their own educational preferences. For some families academic achievement will be the prime goal; for others it will be a school environment that is safe and supportive; for others it will be a quest for educational reinforcement of religious or philosophic values. Although most families may have some concern for the academic dimension, it may not be the prime dimension and may even be overwhelmed completely by other school and family goals as systematic studies have shown [Echols and Willms, 1995]. For example, in evangelical Christian schools it appears that preparation for the Kingdom of God far outweighs concerns about academic achievement [Peshkin, 1986]. Thus, comparing the effectiveness of schools only on student achievement is not fully consistent with measuring the impact of vouchers on educational outcomes where families may choose schools according to many criteria. And, even as a measure of social outcome, achievement tests are a limited and highly imperfect sample of the range and depth of knowledge and skills, values, attitudes, and other behaviors that we expect schools to inculcate in the young [Inkeles, 1966].

### **Comparisons of Public/Private Student Achievement**

Nevertheless, the primary focus in comparing public and private schools—even in the absence of vouchers—has been to ascertain whether either sector has an advantage in achievement, net of differences attributable to diversities in student characteristics. It should be noted that controls for self-selection pose problems in that even when controlling for race and indicators of social class of students,

families that choose private schools and make a financial effort to pay for them are likely to be more educationally motivated than those that do not. Therefore, we would expect students from such families to have higher achievement than similar students who do not make the efforts to switch from a public to a private school. Whether one can control statistically for this self-selection effect is questionable. Witte [1992] is particularly pessimistic that available measures can adjust for selection bias.

The first major study by Coleman, Hoffer, and Kilgore [1982] compared a cross section of 10th grade students in public and private (mainly Catholic) schools, controlling for race and socioeconomic background. They found that students in private schools had slightly higher achievement, from 0.12 to 0.29 standard deviation units, depending upon the test. But their results were criticized as overstatements of the private school effects because of inadequate controls for selection bias and other problems in the statistical design [Goldberger and Cain, 1982]. Purported adjustments for some of these problems reduced considerably or eliminated the private school advantages [Willms, 1983].

Longitudinal results based on sophomore-to-senior changes found smaller private school advantages, from a range of no difference to 0.1 standard deviations in achievement [Alexander and Pallas, 1985; Haertel, James, and Levin, 1987; Hoffer, Greeley, and Coleman, 1985; Willms, 1985]. This effect is statistically significant, but small, amounting to only about 10 points or less on the SAT for college admissions—a trivial advantage. Further, it means that the achievement overlap between the two sectors is so great that 46 percent or more of public school students have *higher* achievement than the average private school student who is statistically similar [Levin, 1987, p. 634]. Using earnings equations for 1976 data (the achievement data were collected in 1980), such an achievement advantage translated into earnings gains of less than 5 cents an hour for high school graduates some four years after graduation and about one day less unemployment a year among a cohort that experienced about 50 days of annual unemployment.

More recent statistical studies have also found no differences in achievement or only minimal differences. The most sophisticated studies from a modeling and statistical perspective are those of Goldhaber [1996] and Gamoran [1996]. Goldhaber uses the National Educational Longitudinal Survey (NELS-88) data set and finds no difference in achievement between comparable students in public and private schools [Goldhaber, 1996]. Gamoran's use of the same data set with a different statistical technique, hierarchical linear modeling, also finds no achievement difference or a very slight private school advantage, depending upon which statistical formulation is used. In the few cases where differences are found in favor of private schools, the advantage is not even as large as the trivial differences cited earlier.

When differences are found in such public-private achievement studies, they are often questionable. For example, Sander [1996] used the third survey of the High School and Beyond data done in 1985 based upon students who should have graduated from high school in 1982. He found no difference in achievement between public and Catholic schools for students who attended Catholic schools for one to seven years, and an advantage only for those who had attended Catholic schools for eight years. Not only is it puzzling that the putative Catholic school advantage takes eight years to "bloom" with nary a hint of a bud in the earlier years, but even this result is questionable because it is not based upon an equivalent public school comparison group. When restricting the finding

only to those who have attended Catholic school continuously for eight years, it is necessary to compare achievement with an equally stable public school group of students who have not been mobile. School stability has been found to be an important correlate of school success in the general literature [Rumberger and Larson, 1996]. But no attempt was made to compare the achievement of students with eight years of Catholic school (presumably most attending the same school) with a comparable group of public school students who attended the same public school. An appropriate comparison would have been to compare students with the same stable attendance patterns between the two sectors to net out school effects.

In another recent study that models existing data sets to estimate effects of "voucher-type subsidies," Hoxby [1996] concludes that vouchers would improve both private and public school achievement, findings that reinforce the textbook version of competition. Although Hoxby's formulation is very imaginative, her data set represents an amalgamation of data from many sources, including a very crude estimate of school subsidies as a proxy for vouchers, and she lacks direct measures for many key variables in her model. Her response to the latter challenge is to use an instrumental variable approach, one that has come under strong academic scrutiny recently for results that are nonrobust [Bound, Jaeger, and Baker, 1995; Heckman, 1997].<sup>1</sup> In this context, Kane [1996] has demonstrated that Hoxby's model is based upon a range of arbitrary assumptions that lead to her findings and interpretation. He finds that equally plausible assumptions in model construction and interpretation may yield quite different results.

### **The Milwaukee Experiment**

Of course, none of the public-private comparisons can be as instructive as the direct evaluation of a voucher intervention. There are a handful of voucher-type mechanisms funded by private sources, but none has been subjected to a careful evaluation of achievement effects [Moe, 1995a]. The only attempt to assess directly the impact of vouchers on student achievement has been the Milwaukee Voucher experiment. That experiment allowed students from families with incomes no more than 1.75 times the poverty line to attend private nonsectarian schools in Milwaukee with public funds. The numbers of

<sup>1</sup> The technique of instrumental variables is often used to control for selection bias, such as the likelihood that families that send their children to private schools may be very different from those that send their children to public schools, or the likelihood that private schools may also select among student applicants. These selection effects can determine educational outcomes, even in the absence of differential school effects, but they will be interpreted as school effects unless properly accounted for. Instrumental variables are used to serve as surrogates for the unobservable factors that may determine selection. A good instrumental variable should be highly correlated with the unobservable variables determining selection to each school sector, but be uncorrelated with the error term. In his critique of instrumental variables, Heckman [1997] concludes that "statistical assumptions made in evaluation research are based on strong behavioral assumptions even though they are often disguised" (p. 640). In the present case, the instruments that are chosen are assumed to be highly correlated with the unobserved selection variables, but this is often impossible to verify. Thus, plausibility of the particular instruments that are chosen by the authors becomes the major criterion for their use, with little or no formal analysis of their properties or biases. See also Bound, Jaeger, and Baker [1995], J. Levin [1997], and Ludwig and Bassi [1997] for discussions of these issues and the problem of lack of robustness when using instrumental variables.

participants were limited to no more than 1 percent of Milwaukee Public School enrollments except for the fifth year of the program when the limit was raised to 1.5 percent. Some seven schools participated initially, rising to 12 in the last two years. September enrollments in the private school program rose from 341 in 1990–1991 to 830 in the 1994–1995 school year, considerably below the maximum number eligible to participate, which varied from 931 in the first year of the program to 1450 in the fifth year. Attrition rates from year-to-year were considerable, varying from 46 percent in the first year to 28 percent in the fifth year, so relatively few students participated for three years or more [Witte, Sterr, and Thorn, 1995, Table 1].

Although much has been made of the Milwaukee experiment by both advocates and detractors of vouchers, its potential for providing evidence is far more limited than its use by policy analysts. Among the limitations in drawing conclusions from results based upon this experiment are the high attrition rates of students, the fact that relatively few schools participated, and the very substantial problems of missing data on test scores and student background variables.<sup>2</sup> Even Rouse [1997a], the most sophisticated analyses of these data, is riddled with cautions about data gaps and the assumptions that are made to address them including the use of instrumental variables.

Witte, Sterr, and Thorn [1995] compared student achievement over five years and found no systematic differences between voucher students in private schools and statistically similar students in the Milwaukee Public Schools. Their findings were challenged by Greene, Peterson, and Du [1996]. These authors argued that because oversubscribed schools had to randomly choose students from their applicant pool, these conditions “allowed for a natural randomized experiment” (p. 4). They then compared students who had been chosen to participate with those in the applicant pool who had not been chosen. In short, they found that private school voucher students in their first two years had achievement levels that were not different from nonaccepted applicants who were in the Milwaukee Public Schools. However, they found that voucher students in the third and fourth years of participation scored higher than the general pool of nonselected students. They concluded that “students benefit in measurable ways from the choice experience only after participating in the program for three or more years” (p. 13).

Although it can be argued that the students who *entered* the voucher schools were equivalent for comparative purposes to the nonselected students, it cannot be argued that third and fourth year students were equivalent to the control group of nonselected students. In fact, attrition rates were approximately 30 percent *annually*. Attrition students had lower test scores than those who continued to participate in the voucher schools [Witte et al., 1994, p. 23, Table 1.8]. This result is consistent with the general literature on school mobility, in that students who persisted in the same school were superior to those who moved back to the Milwaukee Public Schools. The Greene, Peterson, and Du [1996] analysis, then, compares the stable group who persisted for three or four years in the same school (superior in achievement to those who did not persist) with all nonselected students. The persistent voucher students were a superior subset, not a random subset, of the original applicant pool. Therefore,

<sup>2</sup> For example, Rouse [1997a] found that about 40 to 60 percent of the students’ records were missing family income data and prior test scores, even though these are crucial control variables.

it is invalid to compare them with the original nonchosen group and to conclude that the higher achievement scores of voucher students in their third and fourth year were due to a schooling effect.

As previously mentioned, the Rouse study is the most complete in terms of its treatment of the Milwaukee data. Although Rouse uses the instrumental variable technique, she checks for robustness of results under many different assumptions about sampling, specification, and missing data.<sup>3</sup> Rouse found a modest advantage of the private schools with respect to mathematics achievement, a differential gain of about 1.5 percentile points a year over public schools. She found no difference in reading achievement.

I am persuaded by Rouse's careful analysis, based upon testing alternative assumptions and addressing potential biases in the data, that her findings are probably the most reasonable conclusions for the Milwaukee data. Even so, she cautions against generalizing to other cities for other populations and reminds us that the comparisons that she makes are only among students from the relatively small fraction of poor families that exercised the option of applying to attend a private school. That is, the achievement differences that are estimated are based upon comparing private school applicants (probably from families with high educational motivation) who were accepted and those who were not rather than among the preponderance of students whose families did not attempt to take advantage of the voucher option.

### Differences on Other Outcomes

My own reading of the body of studies comparing student achievement in public and private schools is that differences are small. Along other dimensions there may be a larger private school advantage for some groups. Sander [1996] found no difference in achievement between public and private schools for Hispanics and African Americans with statistical controls for family background when using the High School and Beyond data set. When Neal [1997] combined data from the 1980 census, the National Catholic Education Association, and the National Longitudinal Survey of Youth (NLSY), he found that urban minority students attending Catholic secondary schools had considerably higher graduation rates than comparable public school students as well as higher college graduation rates. He attributes these results to the particularly poor public schools that are available to this group of students. It should be noted that Bryk, Lee, and Holland [1993] found that students in Catholic high schools are more likely to be assigned to an academic track, to have more homework, and to benefit from more effective educational practices generally than students in public high schools. Neal [1997] estimates that the greater educational attainments of Catholic school minority students in urban settings lead to earnings that are 8 percent higher than for comparable students in urban public schools. Evans and Schwab [1995] also found greater high school graduation rates and college enrollment rates for Catholic school students. Finally, as expected, parental satisfaction with the schools their students are attending

<sup>3</sup> This paper is a pleasure to read because of the careful consideration of potential pitfalls and the attempt to evaluate their impact. It will be published in a forthcoming number of the *Quarterly Journal of Economics*. A summary has been published in the Canadian journal, *Policy Options* [Rouse, 1997b].

seems to be consistently higher for parents of students enrolled in private schools relative to their satisfaction with prior public schools that their offspring attended [Moe, 1995a; Witte, Sterr, and Thorn, 1995].

## **WHO WILL CHOOSE AND WHAT ARE THE EDUCATIONAL CONSEQUENCES?**

Advocates for vouchers believe that the advent of marketplace choice in education will level the playing field by providing options in education for those who are most disadvantaged by the present educational system. According to this view, children from middle and higher socioeconomic families can choose to live in the best neighborhoods with good schools or to attend private schools. In contrast, children from poorer families are captives in neighborhood schools in inner cities or rural areas without the ability to pursue alternatives. If alternatives are provided, large numbers will use their vouchers to choose better schools, requiring neighborhood schools to improve or putting them out of business if they fail to improve. This view is reinforced by the fact that surveys of poor and minority families show that they favor choice even more than other groups [Lee, Croninger, and Smith, 1996]. But such a scenario assumes that the poor will take advantage of a choice system to outflank their local public schools in search of better education for their students.

In this section, I will suggest that the evidence consistently supports the following conclusions: (1) Choosers will be more advantaged both educationally and economically than nonchoosers, those who do not actively choose schools for their students, thereby relegating them to their assigned schools; (2) For choosers, an important criterion will be the socioeconomic status (SES) of other students where the most preferred schools will be those enrolling more advantaged students leading to increased segregation; and (3) Both peer and contextual effects of higher SES students will have positive effects on achievement, leading to the conclusion that inequalities in educational outcomes are likely to be exacerbated by vouchers.

### **Who Chooses?**

Choice systems may lead to two types of "cream skimming." In the first type, families that are better-off may be more likely to take advantage of school choice than those that are worse off because of better access to information, greater ability to afford transportation, a higher penchant to exercise educational alternatives, and greater generic experience with choice and alternatives. A second type of cream skimming refers to the tendency of schools to seek and choose students from families of higher SES and with higher previous educational accomplishments (as modeled by Nechyba [1996] and corroborated empirically in Belgium by Vandenberghe [1996]).

To some degree, the second of these can be reduced through requiring random selection among student applicants, but the first may be endemic to educational choice systems as the empirical literature suggests. In both public choice and voucher-type systems, it appears that those who exercise the choice option are more likely to be of higher SES and to have higher achievement scores than those who continue to attend their assigned schools [Archbald, 1988; Martinez, Godwin, and Kemerer, 1996; Rubenstein, Hamar, and Adelman, 1992; Witte and Thorn, 1996]. Ambler [1994] found such cream skimming in educational

choice participation for both England and France. Willms and Echols [1992] found the same to be true in Scotland as did Vandenberghe [1996] in Belgium. Archbald [1988] and Moore and Davenport [1990] found that magnet schools in the large cities that rely on choice to reduce school segregation tend to attract higher socioeconomic students rather than a random mix.<sup>4</sup> Even when participation was restricted to families with incomes no higher than 1.75 times the poverty level, parents of choice applicants in the Milwaukee voucher experiment had considerably more education and parental involvement than the average parent of children in the Milwaukee Public Schools. In a publication on four private voucher plans in the United States, Terry Moe [1995b], one of the most knowledgeable supporters of vouchers, concluded that the problem represents a serious challenge:

Skimming is rooted in the calculus of choice itself: in the utility functions of parents, the information they bring to bear, and their income constraints. Some parents put a higher value on education than others and so are willing to give up more to secure quality schooling for their children. Some parents have more information than others and thus know more about what schools are available and how good they are. And some parents have higher incomes than others and so are better able to acquire good information and afford good schools. Unrestricted choice, then, may well lead to selection effects with a class bias. (Moe, 1995b, p. 23)

Moe concludes that such skimming can be reduced through restricting choice to those who are most disadvantaged as well as making sure that voucher plans are “. . . socially engineered through appropriate institutional design” [Moe, 1995b, p. 24] to insure greater social equity. Presumably such design features would include more comprehensive and interactive systems of information as well as adequate transportation and a voucher of sufficient size to purchase education of a high quality. However, such social equity features may have a high cost, an issue that is addressed later, and it is not clear that society is willing to pay such costs.

Moe concludes, correctly in my view, that the issue is not whether there is skimming, but whether the skimming will be worse than the present public system where students tend to be largely segregated in schools with students similar to themselves [Moe, 1995b, p. 24]. Moe is also correct in suggesting that by restricting the choice only to those most disadvantaged by the present system, social equity would be likely to improve, although I have doubts that political dynamics would support that solution over the long run. But what is the likely impact of a more extensive system of choice on student segregation?

### **Impact on Socioeconomic Segregation**

Many observers have been concerned about the consequences of educational choice for segregation. It has been argued even that one of the direct purposes of choice is to increase segregation according to religious and cultural differences to create communities of human capital through common “social capital” [Coleman, 1988]. Understandably, private schools tend to specialize in market niches by creating differentiated rather than generic products in order to appeal

<sup>4</sup> Lee [1993] argues that even within schools, the more demanding and rigorous curricula are chosen by students from more advantaged backgrounds.



to clientele with particular political, philosophical, educational, and religious orientations. This has been evident in Holland where publicly funded private schools accounted for almost three-fourths of all enrollments in 1980, and where over 90 percent of these schools were sponsored by religious groups [Ambler, 1994; pp. 468–469]. Surely this leads to greater religious segregation than would be found if schools were based strictly on attendance boundaries.

But to what degree does the fact that choosers tend to be from higher socioeconomic (SES) origins lead to greater SES segregation of students? Since 1982 Scotland has permitted parents to request public schools other than those to which their students are designated by public authorities. By the late 1980s about 9 percent of entering secondary students attended a school outside of their designated areas, with the numbers rising to 11 to 14 percent in urban areas according to sources cited by Willms and Echols [1992, p. 340]. By the early 1990s about 15 to 18 percent of pupils in the most urban areas had requests for other schools made on their behalf, with some areas experiencing requests for more than 50 percent of students [Willms, 1996, p. 140]. Willms and Echols [1992] found that parents requesting nondesignated schools had significantly more education and higher occupations than those who kept their children in designated schools, as much as 0.35 standard deviations higher (p. 344). Average SES of pupils in the chosen schools was about 0.25 standard deviations greater than in designated schools. Thus, choosers tended to have higher SES than nonchoosers and to request schools with higher SES than their designated schools. Willms and Echols [1992] conclude that this is a major criterion of selection because higher SES schools tend to have high achievement scores, although not necessarily high value-added, which should be a more central concern. But high SES of the student body of a school is easily observable, whereas direct measures of value-added are not. Overall, the effect of this choice process was to increase the segregation by SES of Scottish students between 1985 and 1991 [Willms, 1996]. In response to Moe's [1995b] question on whether choice increases student SES segregation, the answer in the Scottish case seems to be clearly affirmative. An analysis of Belgium shows even greater student segregation under choice [Vandenberghe, 1996], but this probably includes both aforementioned types of cream-skimming. On a related theme, Lankford and Wyckoff [1997] have analyzed 1990 census data for eight New York metropolitan areas and found that school choice leads to a substantial increase in racial segregation (largely through whites shifting from public schools in cities to private schools or suburban public schools with lower nonwhite concentrations).

### **Consequences of Increased Segregation**

Willms and Echols [1992] proceeded to estimate the effects of schools on student achievement and found that parents tended to choose schools with high achievement scores and student SES, but not schools with high "value-added" results after taking account of student intakes. That is, the superior school "effects" were mainly due to a higher SES student body rather than school effectiveness with a given group of students. In turn, it appears that increased student segregation by SES will promote inequality of opportunity because aggregate SES of the school seems to have an impact on achievement independent of the effect of the student's individual SES on her achievement [Arnott and Rowse, 1987; Evans, Oates, and Schwab, 1992; Henderson, Mieszkowski, and Sauvageau, 1978; Link and Mulligan, 1991; Rumberger and

Willms, 1992; Shavit and Williams, 1985; Summers and Wolfe, 1977; Willms, 1986]. It is not clear whether this effect comes from the influence of peers, school climate, teaching conditions, or differences in teacher expectations and curriculum, a matter of debate within the literature [Dreeben and Gamoran, 1986; Dynarski, Schwab, and Zampelli, 1989; Gamoran, 1991; Rumberger and Willms, 1992]. But it does suggest rising inequalities in achievement between students of lower and higher SES as they become increasingly segregated in schools with students like themselves. As higher SES students leave lower SES school environments for higher SES schools, their achievement will rise; however, their departure reduces the aggregate SES of the schools that they leave with a resulting decline in the achievement of the remaining students in those schools. It is important to keep in mind that this is a zero-sum game because there are only a fixed number of high SES student enrollments at any one time. That is, high SES schools are not reproducible as school environments. Thus, not all potential choice students can be accommodated by a high SES school environment beyond a relatively limited number of schools.

Further, the negative effects on low SES students are likely to be greater than the gains of high SES students. The negative impact of segregation on the achievement of students in low tracks (largely low SES) is not offset by the higher achievement of students in high tracks (largely high SES) according to statistical analysis by Gamoran and Nystrand [1994]. This is also the conclusion of Henderson, Mieskowski, and Sauvageau [1978] whose results suggest that overall achievement is higher in heterogeneous rather than segregated school environments because any loss of achievement by the higher groups is more than made up by the higher achievement of the lower groups. Summers and Wolfe [1977] also found that less able students benefit more from this effect, while higher ability students are less affected. Thus, if choice leads to greater SES segregation, the impact on achievement will be to reduce aggregate student achievement unless gains through school competition offset the achievement losses due to increased student segregation by SES. However, existing empirical findings comparing public and private school achievement are not promising in this regard.

Increased segregation has other consequences as well, particularly on the preparation of students for democratic life. Effective participation in a democracy requires a willingness to tolerate diversity as well as an acceptance of a common set of values and a shared base of knowledge. Research on political socialization has shown that tolerance for other points of view is related to the degree to which different children are exposed to diverse viewpoints on controversial subjects in both home and school [Torney-Purta, 1984]. It also requires a common core of experiences to create citizens who can function democratically [Gutmann, 1987, pp. 50–64]. But by segregating students to a greater extent than existing schools according to SES, religion, race, and other dimensions, the exposure to diversity and to a common core of experiences is seriously undermined [Cookson, 1994].

## **COSTS OF PUBLIC AND PRIVATE SCHOOLS AND A VOUCHER SYSTEM**

Of course, to economists and society it is not only the educational effects of vouchers that should be considered, but also their costs. There are two levels of costs in assessing the voucher alternative. First, there is the cost at the school level. That is, for a given result in school effectiveness, what are the relative

costs of public versus private schools? Second, there is the cost of the overall infrastructure to support a voucher marketplace relative to the present system which is considerably more centralized at both state and district levels. In this section, we will consider what is known about each.

### **Costs of Private Versus Public Schools**

Even if private and public schools are about equally effective in producing student achievement, observers have suggested that nonelite private schools incur considerably lower costs than public schools. For example, Peterson and Noyes [1996] claim that Milwaukee voucher schools were receiving only half as much for each student as the Milwaukee Public Schools. Therefore, they assert that even if the voucher schools are no more effective than the Milwaukee Public Schools, they are twice as efficient in the use of society's scarce resources. A publication of the Cato Institute, a libertarian organization, makes the same point by comparing the tuition at private schools in several localities with total per-pupil expenditure in the public school system in those areas [Boaz and Barrett, 1996]. This conclusion is also stated in other pro-market publications [see, for example, American Enterprise Institute, 1978; West, 1981].

But a comparison of public school expenditures with private school tuition is not a valid approach to comparing costs. The problem is that the finance and service mix of public and private schools is quite different. For example, tuition is a much poorer proxy for the overall costs of private schools than is per-pupil expenditure as a measure of public school costs. Most private schools rely heavily on supplementing tuition with fund-raising events, special student fees for extra activities, financial contributions, and in-kind contributions. In addition, those that are sponsored by religious organizations (the majority of private schools) receive donated or subsidized facilities and are staffed partially by teaching clergy whose "salaries" understate substantially their true market value [Bartell, 1968]. The result is that tuition charges cover only a portion of the overall costs of private education. Although the public sector costs are not a complete measure of the costs of public education, especially because of their treatment of capital expenses, they are far more complete in comprising all of their resource inputs at market prices than is the tuition measure for private schools.

Beyond this, however, the service mix is very different between public and private schools. For example, few private schools provide special educational services for students with disabilities, while public schools are required to do so by law. Average costs of education for each special education student have been estimated to be almost 2.5 times the average cost for the nonhandicapped student [Chaikind, Danielson, and Brauen, 1993]. In New York City it was estimated that the cost was four times that of typical students in 1993 [Lankford and Wyckoff, 1996, p. 231]. Moreover, special education students represent about 12 percent of all students nationally, but are concentrated almost completely in public schools (with the exception of those in very high-cost, specialized private schools mainly subsidized by government).

Further, the comparison of average per-pupil expenditures for public schools includes other services not provided by most private schools. For example, most private secondary schools do not provide vocational education, a course of study that varies from two to more than five times the cost of regular education, depending upon the specialization [Hu and Stromsdorfer, 1979]. Transportation and food services are included in the total for public school expenditures, but

private schools normally charge extra fees for these benefits. Finally, the tuition charges that are usually compared with public school expenditures are those for elementary schools (typically parochial, Catholic schools), while the public school figures comprise both elementary schools and the more costly secondary schools.

To test the assertion that the Milwaukee voucher schools had a per-pupil cost that was half that of comparable public schools, I contacted the Milwaukee Public Schools to obtain per-pupil expenditure breakdowns [Haselow, 1996]. Voucher schools were receiving \$4373 per student in 1996–1997. The Milwaukee Public Schools had an estimated budget for the same year of \$7628 per student, but this amount included many services not required or provided by the voucher schools. For example, the voucher students were enrolled in kindergarten to eighth grade schools, while the Milwaukee Public Schools total included the more expensive high school students as well. Voucher schools did not enroll expensive special education students and did not provide transportation or the extensive food and health services provided by the Milwaukee Public Schools.

A more appropriate comparison is to compare site-based expenditures in Milwaukee Public Schools with the voucher schools. Milwaukee provides such school-based allocations according to predetermined personnel ratios and other factors. (Secondary schools and middle schools have the largest allocation per student, about \$3815 for each middle school student and \$3635 for each high school student.) The Milwaukee Public Schools budgeted \$3469 per student in K–8 schools and \$3042 per student in K–6 elementary schools. If we compare the voucher with the per-pupil amount for K–8 schools, the voucher schools received about \$1000 *more* per student than the comparable Milwaukee Public Schools for the 1996–1997 school year. On the basis of costing experience for public schools, it is estimated that facilities costs on an annualized basis are about 10 percent of total expenditures in what is a labor-intensive enterprise, closing about half of the gap, but still favoring the voucher schools. The most reasonable conclusion is that voucher schools in Milwaukee are receiving *at least* comparable allocations per student to those of the Milwaukee Public Schools, once the service mix is accounted for.

Of course, this raises the question of what accounts for the other costs of the school district that are not allocated specifically to the individual school sites. The costs of special education services are budgeted at the central level; with over 12 percent of the students in these categories and excess costs averaging about 150 percent more than regular education, this accounts for about \$1100 per student in central office expenditures when averaged across all students in the district. Transportation costs, including those for carrying students to voucher schools, run about \$565 averaged across all the students of the district, and much more per transported student. In addition, there are the higher costs of secondary schools, food services, health services, and capital costs. Overall costs of central office administration are only about 3 percent of per-student expenditures. Although this does not constitute a precise cost-accounting for the two sets of schools, it appears that the costs of similar services at the school site may favor slightly the Milwaukee voucher schools. Claims that the public schools cost twice as much as comparable private schools in other settings should also be subjected to careful scrutiny. My guess is that such cost comparisons would show that even in the least efficient school districts, costs for similar services in public schools are far from the two-fold figure that is commonly cited by market advocates.

### **Cost of a Voucher System**

A shift from the prevalent system of state finance and governance of education to one based upon educational vouchers will require a profound transformation of the institutions required to support the schooling system. In particular, it will require far more transaction costs because states must deal with individual schools and students rather than districts. For example, in California a system of vouchers would require state authorities to keep records and administer vouchers to almost 6 million youngsters in place of dealing with about 1000 local school districts. In order to assure adequate access to alternatives, it is probable that information centers would need to be established to enable parents to make informed choices, and an expanded system of publicly funded transportation would need to be incorporated. In addition, some type of system of adjudication would need to be provided for parents who wanted a partial refund of vouchers in order to change schools during the academic year. Finally, a state system of monitoring and assessment would be needed to establish voucher eligibility of both students and schools.

The estimation of the costs of a voucher system to replace existing systems of schooling cannot be done without specification of the particular voucher plan that is being considered; the system that it will replace; the setting where it will be applied; and assumptions about the behavior of schools and families under the voucher approach. Cyrus Driver and I [Levin and Driver, 1996; Levin and Driver, 1997] have attempted to estimate illustrative costs in five areas associated with a voucher system. These include: (1) accommodating additional students; (2) record keeping and monitoring; (3) transportation; (4) information; and (5) adjudication of disputes. Only a summary of results will be shown here, so the two source documents should be reviewed for the details underlying the calculations. Cost estimates are generally for 1992–1993 (expressed in 1995 dollars) with a few exceptions.

#### ***Accommodating Additional Students***

If all private school students were to participate with the full range of services provided by the public schools at the average per-pupil expenditure nationally, the added cost would be about \$33 billion annually. If only 75 percent were eligible because some schools would not wish to participate in a plan with government oversight, the cost would be almost \$25 billion annually. Or, if the voucher were set at 80 percent of public school costs these amounts would be about \$26 billion and \$20 billion, respectively.

#### ***Record Keeping and Monitoring***

A voucher system will require extensive record keeping and monitoring systems for several reasons. First, every child required to be in school under compulsory attendance laws and those continuing their education through high school graduation will need to be monitored to ensure that they are in a school approved to use the voucher. Second, children with different educational needs (for example, students at each level of schooling, students with disabilities) will be eligible for different vouchers. Students will need to be evaluated in terms of needed services and the appropriate magnitude of the voucher. Third, only schools that meet “approval” standards will redeem vouchers, so schools must

be evaluated, certified, and monitored for eligibility. (In 1995–1996 two of the Milwaukee voucher schools closed in midyear, stranding the students and relegating their involuntary return to the Milwaukee Public Schools. At the time of the writing of this article, criminal charges were pending because of alleged financial manipulations by the schools' operators.) The costs of monitoring and accreditation would be likely to be particularly high because we would expect about twice as many schools under a voucher plan, given that private schools tend to be about half the average size of existing public schools [Chambers, 1981]. Using the social security system as an analogy, it was estimated that even with cost savings from dismantling the present system, there would be a net additional cost for record keeping and monitoring of about \$2.5 billion nationally. This figure does not include the costs of accrediting and monitoring the approximately 200,000 schools we would expect under a market approach, a serious omission and understatement of costs, because of a lack of an analogous database that might be used.

### *Transportation*

Transportation costs would be expected to be higher under a voucher system than the present system for two reasons. First, the advent of choice should lead to more students attending schools outside of their immediate neighborhoods. Second, the routes are likely to be of lower density and regularity in terms of pickups and deliveries. About 60 percent of U.S. public school students are bused at present, and we assumed that this would rise to about 80 percent of public and private school students. After scrutinizing a large number of travel modes and examining existing costs for school transportation, we estimated that additional transportation costs would be about \$42 billion based upon an additional 13.3 million students being bused and a rise in costs from about \$415 per student in 1992–1993 to about \$1500 per student for that school year had a voucher plan been in effect. It should be noted that busing costs for desegregation purposes in the St. Louis area are at a level of about \$2000 per student per year, a level that was also reported by Milwaukee for its interdistrict busing program [Haselow, 1996]. In addition, the use of smaller buses and larger catchment areas is even more costly as evidenced by both commercial cost estimates and the experiences in transporting children who need special education.

### *Information Costs*

In order to make informed choices, parents need information on alternatives. At a minimum, families need to know what choices are available and the appropriateness of particular choices for their children. They also need information on such matters as school philosophy, curriculum, personnel, facilities, test scores, student placements after graduation, registered complaints and their nature, and turnover rates among students. Using a very modest approach such as one used for a choice program in Massachusetts, we estimated the per-pupil cost at about \$38 per year or about \$1.8 billion nationally. It should be noted that this probably understates seriously the cost for a highly effective information system that would engage the poor, minorities, and immigrants, groups that have been least likely to participate in choice systems. We, however, do not have a knowledge base for estimating the cost of a more ambitious system.

### ***Costs of Adjudication***

Some families will choose schools that they later find are inappropriate for their students. Schools may also wish to suspend or discharge students who do not meet certain standards. In cases like these there may be issues of due process as well as the right of a student to obtain an additional partial-voucher to use for another school if the original one has been redeemed. There may also be challenges to the voucher agency, including conflicts about whether a student is getting an appropriate voucher for the educational services that the family believes are required. In all of these cases a means of adjudication must be available to quickly resolve the dilemma so that a child's education is not seriously interrupted. Using cost data from mediation and due process hearings for special education and assuming that only 1 percent of students will require adjudication in any given year, we estimate the costs of adjudication at about \$1.8 billion.

### **Total Costs of a Voucher System**

These are first estimates of the costs of a voucher system, and they total almost \$73 billion, about \$1500 per student or an additional 25 percent of the public educational budget nationally. The net costs of record keeping and monitoring may be slightly overstated if we have not fully accounted for the savings from existing practices, but this category of costs accounted for less than 4 percent of the total. Information costs are surely too low, and we have not included, at all, the costs of accrediting and monitoring schools to be eligible to redeem vouchers. We conclude that the shift from the existing system to a voucher system with a well-functioning school marketplace in which adequate transportation and information is provided will demand considerable additional resources for education beyond those allocated for educational vouchers and instructional services.<sup>5</sup>

### **POSTSCRIPT**

During the last five years we have come a long way in acquiring evidence that is pertinent to the consideration of educational vouchers, although there are still many gaps in our knowledge base. Unfortunately, policy debates on vouchers are largely devoid of references to the available evidence or are limited to citing only a "favored" study that supports a particular perspective. I have suggested here that there is a considerable consensus arising from the available corpus of evidence on the first two issues set out in this article, and at least a first approximation on the cost issues. I want to conclude by stating that nothing in this article should give much comfort to those who might wish to defend the status quo. In my view, considerable gains in educational efficiency are possible, whether vouchers or some other type of system reform are the answer. Evidence

<sup>5</sup> A reviewer suggested that this cost of infrastructure may be, at least, partially offset by a higher level of efficiency at the school site. For example, if the competitive pressures of the marketplace raised efficiency by 10 percent, that would be equivalent to a savings of about \$600 per student or 40 percent of the higher estimated cost of the overall voucher system. This is certainly possible theoretically. It is important to note, however, that none of the present evidence on achievement differences would suggest even a 10 percent efficiency advantage.

of this claim can be found in a school reform movement that has extended to about 1000 public, Catholic, and charter schools in some 40 states, where we have demonstrated that substantial improvements in educational results can be obtained at low cost [H. Levin, 1997].

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