

More Graduates, Fewer Criminals? The Economic Impacts of the Milwaukee Parental Choice Program

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Abstract

Although an abundance of research indicates that private schooling can benefit individual children through higher test scores, the effects on society are less clear. We monetize and forecast the social impacts of the Milwaukee Parental Choice Program (MPCP) in the United States. We use existing literature on the impacts of the MPCP on criminal activity and graduation rates. Between 2016 and 2035, students who use a voucher in the MPCP are likely to generate additional economic benefits of \$473 million associated with higher graduation rates, and \$26 million associated with fewer felonies and misdemeanors, relative to their traditional public school peers.

Keywords: school choice; school vouchers; economic impact; civic education

Introduction

St. Marcus Lutheran School, a high-performing school in Milwaukee, decided to consider adding another campus in 2014. A private school in the Milwaukee Parental Choice Program (MPCP), the school demonstrates high school graduation rates averaging around 90 percent, even though more than 90 percent of its students are from low-income families. For their expansion, St. Marcus inquired to the City of Milwaukee about purchasing former Lee Elementary School, an empty Milwaukee Public School (MPS) building.

St. Marcus offered to purchase Lee from the City for its appraised value of \$880,000. However, the City of Milwaukee wanted St. Marcus to pay an additional \$1.3 million for property tax increases that the city is authorized under state law to enact in order to recoup the loss of revenue for students who are no longer in the public school system. Because the City made the fiscal effects of the program a condition of the transaction, St. Marcus was unable to pay the higher price.

The fiscal impact of the MPCP has long been a source of contention with the City, MPS Board, and the state of Wisconsin. But the debate usually focuses on only one piece of a complex puzzle. It neglects any discussion of the potential economic benefit of school choice. For example, students who graduate from private choice schools like St. Marcus are more likely to get a job, stay out of our corrections systems, and become upstanding members of the community. All of these benefits have a sizable economic benefit for the child, city, and state.

This study – the first of its kind in Milwaukee – attempts to monetize the economic impact of the Milwaukee Parental Choice Program over a 20 year period. To perform this analysis, we use two academic studies of the program that used student-level data from the state-mandated evaluation of the MPCP. DeAngelis and Wolf (2016) find that students in the MPCP

are 5 percentage points less likely to be convicted of misdemeanors and 3 percentage points less likely to be convicted of felonies than their matched MPS peers. Cowen et al. (2013) find that students in the MPCP are 4 percent more likely to graduate from high school than their MPS counterparts. We also utilize studies (Aos et al., 2001; Levin, 2009; McCollister et al., 2010) that monetize the economic benefit of students graduating from high school and not committing crimes. As a result, we are able to estimate the economic benefit of higher graduation rates and lower crime rates of students in the voucher program.

Theory

Private school choice could lead to higher graduation rates and less crime through a few channels. Private schools have strong financial incentives to cater to the needs of their customers – families and their children (Friedman, 1997). On the other hand, because traditional public schools are residentially assigned, they exercise a great deal of monopoly power, meaning that they do not have strong competitive pressures to satisfy their customers (Chubb & Moe, 1988; Chubb & Moe, 1990; Hoxby, 2003). Because parents prefer higher quality educations for their children, competition in the education market is expected to increase overall quality levels when people are given the opportunity to choose private schools using a voucher program. Included in a family's subjective definition of quality is the ability of private schools to shape character skills of students. Students with stronger character skills such as grit and tolerance are more likely to persist through school to earn a high school diploma. Students with strong citizenship skills are also less likely to commit crimes when they grow up.

Private school choice also provides a better opportunity to match students to the schools that work best for them. After all, because students are unique, they differ on interests, ability levels, and learning styles. The improved match between schools and students may lead to more

learning (DeAngelis, 2018; DeAngelis & Holmes Erickson, 2018). When students are matched to schools that interest them, and when students learn the educational material at their schools, they are more likely to persist through graduation and less likely to engage in the risky activities that lead to incarceration. In addition, private schools may perform more effectively than public schools simply because private school leaders generally have more autonomy to make important school-level decisions (Shakeel & DeAngelis, 2017).

Existing Research

Cost Savings of School Choice

The Milwaukee Parental Choice Program is a state-funded program that gives families with incomes up to 300% of the federal poverty level a voucher to attend a private school of their choice. Since the MPCP started in 1990, it is the longest-standing modern-day voucher program in the United States.¹ In the 2018 school year, around 28,700 children in Milwaukee used the program to attend a private school.

Most examinations have found that the program has represented a cost saving to the state of Wisconsin. Because it costs the state about \$2,000 more to send a child to MPS rather than a private school, Robert Costrell (2012) estimated that this funding disparity saved the state approximately \$46.7 million in fiscal year 2011. Spalding (2014) estimated that the MPCP has saved the state around \$238.5 million since implementation.

The voucher funding flaw has prevented Milwaukee taxpayers from sharing the financial benefits of the MPCP. The lack of financial benefits to taxpayers residing in the city of Milwaukee resulted from MPS being unable to count students that attend a private school in the

¹ Technically speaking, the longest-standing private school choice programs in the United States, launched in the late 19th century, are “Town Tuitioning Programs” located in Maine and Vermont. These two programs allow families in towns without public schools to use public education dollars to send their children to private or public schools of their choosing.

MPCP for their total enrollment (Ford, 2013). Not counting students when they leave makes the district appear “wealthier” in the state funding formula, making the district responsible for a higher share of its per pupil expenditure through property taxes. . The result of this voucher funding flaw is that the taxpayer benefits of choice largely accrue to Wisconsin state taxpayers overall but not to those in Milwaukee. Nonetheless, the aggregate result statewide remains positive (Costrell, 2012). Furthermore, the funding flaw is being gradually phased out, and within ten years, the MPCP is no longer expected to represent an additional cost to Milwaukee property taxpayers.

While these areas of taxpayer costs and savings have been well studied, the economic benefits of school choice remain largely unexamined. Among the few exceptions, Wolf and McShane (2013) estimated the economic benefits of the voucher program in Washington D.C. They found that D.C. Opportunity Scholarship Program (OSP) generated more than \$164 million in benefits during its first five years of operation, and calculated a benefit-cost ratio of 2.62. The benefit-cost ratio calculated by Wolf and McShane (2013) used the program’s positive effect on high school graduation as the benefit of the program and total dollars spent with school vouchers as the cost of the program. Similarly, by using positive effects on test scores as benefits, and total amount spent for a K-12 education as costs, three studies have found that public charter schools across the U.S. are more cost-effective – and provide a higher return-on-investment – than traditional public schools (DeAngelis et al., 2018; DeAngelis & DeGrow, 2018; Wolf et al., 2014). David Deming (2011) examined the economic benefits of school choice in the Charlotte-Mecklenburg school district with respect to crime. He found experimental evidence, since admission was decided by lotteries, to suggest that charter schools significantly reduced crime for the least-advantaged male subgroup of students. He also found that – seven years after the

lottery was held – the total societal cost for lottery winners is approximately \$14,000 per student less than for those who fail to win admission to the choice program. Flanders and DeAngelis (2018) estimate that a universal private school choice program in Mississippi would produce over \$1 billion in social benefits by 2036 because of fewer criminals and more high school graduates in the state. We conduct a similar social benefit analysis of the MPCP.

Criminality and School Choice

In Milwaukee, the fear that children will become embroiled in the criminal justice system represents a constant threat in the minds of poor and minority parents. In Wisconsin, 1 in 8 African American men are behind bars in state and local prisons (Pawasarat & Quinn, 2013). Beyond the obvious psychological impacts, high incarceration rates have deleterious effects on the potential income and tax revenue generated by the convicted criminals, as well as on the lives of the victims of crimes.

There is growing evidence that school choice programs reduce the likelihood that students become involved with the criminal justice system, perhaps because private schools have strong incentives to shape the character skills that parents care about (DeAngelis, 2017). Dills and Hernandez-Julian (2011) used a nationally-representative sample of high school students to show that teens from areas with larger amounts of school choice report lower levels of involvement in criminal activity. Dobbie and Fryer (2015) found experimental evidence that the school voucher program in New York City completely eliminated incarceration for males and largely reduced teen pregnancy for females. In Milwaukee, DeAngelis and Wolf (2016) found that students who use a voucher in the Milwaukee Parental Choice Program for four or more years are less likely to be accused and convicted of misdemeanors and felonies. Their Milwaukee-specific estimates are the basis for the subsequent analyses in this paper.

Graduation and School Choice

Because graduation rates are a common metric of a high quality school, there has been a significant amount of research dedicated to how it relates to participation in voucher programs. Taking advantage of a lottery system that effectively randomized whether students would be offered a voucher, Wolf et al. (2013) found experimental evidence to suggest that the offer of a school voucher in D.C. raised the likelihood that a given student would graduate high school by 21 percentage points.

Cowen et al. (2013) utilized sophisticated matching methods identical to those used by DeAngelis and Wolf to create a cohort of students in MPS that were similar across a number of dimensions including demographics, neighborhood, and prior educational attainment to students in the MPCP. These authors estimate that participation in the voucher program increases graduation by approximately 4 percent. Other research on Milwaukee by Warren (2011) found that graduation rates in the MPCP are as much as 12 percent higher than the public school system. Because voucher programs in Milwaukee and other U.S. locations have positive competitive effects on students in traditional public schools (Egalite, 2013; Egalite & Wolf, 2016; Gray, Merrifield, & Adzima, 2016), each of these findings may underestimate the true effect of voucher programs on high school graduation rates. In order to provide a lower bound of the true economic impact on the city of Milwaukee, we rely on the more conservative findings of Cowen et al. (2013) in our subsequent analyses.

Methods and Data

For the purpose of this paper, we define economic benefit (or cost) as any financial gain (or loss) realized at any level of society – whether individual or governmental – as a result of graduating from high school or avoiding the conviction of a crime. For example, the most obvious economic

benefits accrue to the individual. If someone graduates from high school, studies show that he is more likely to earn a significantly higher income in his life, less likely to become involved in the criminal justice system, and less likely to incur health problems. There are benefits for government too. Individuals who earn higher incomes pay more in state and federal income taxes. Those who avoid committing crimes do not force society to bear the cost of their incarceration as well as the need for additional police officers. Healthier individuals are less likely to need expensive medical care and less likely to need society to pay for it.

We quantify all of these benefits. Economists and education researchers have produced a number of peer-reviewed estimates of the costs and benefits that society realizes when an individual does or does not engage in a particular activity.

Graduation Impact

Studies of the economic benefits of high school graduation are particularly prolific (Merrifield & Gray, 2013). Levin (2009) estimated the economic benefits of graduation in a number of categories, including the difference in tax revenue generated, public health expenditures, and welfare savings. Levin estimated tax revenue generated through analysis of income data on the Current Population Survey. These data are run through the TAXSIM program, which estimates the taxable income of an individual. The resulting tax levies are averaged across individuals with differing levels of educational attainment, including those who graduate high school. To estimate healthcare cost savings, Levin utilizes data from the 2006 Medical Expenditure Survey from the U.S. Department of Health. This survey included questions on enrollment in Medicare and Medicaid coverage which Levin broke down by educational attainment through logistic regression.

To estimate the saving associated with lower utilization of welfare programs, Levin borrows from the research of Waldfogel, Garfinkel and Kelly (2005) who estimate the effect of educational attainment on receipt of TANF, food stamps, and housing vouchers. The estimates of Waldfogel and colleagues are combined with data on the average monthly amount of each welfare benefit. When these components are aggregated, Levin estimates the savings at \$209,100 over the lifetime of the hypothetical graduate. Because there is likely to be a correlation between high school graduation and criminal behavior, we do not include the portion of Levin's estimates that are the results of reduced criminality. Consequently, we use an estimate of \$182,500 for the benefit of graduation.

Crime Reduction Impact

For the societal cost of crime, we rely on the recent estimates produced by McCollister, French, and Fang (2010) for felonies and Aos et al. (2001) for misdemeanors. McCollister French, and Fang (2010) collected data from a wide variety of sources to estimate the societal cost of crime. To estimate the cost of crime prevention and the cost of crime prosecution, the authors gathered data from the 2005 "Justice Expenditure and Employment" report by the Bureau of Justice Statistics. To estimate the mortality cost of crime victimization, data was gathered from the CPS on lifetime earnings and employment. To estimate the cost of other crimes, the work of Cohen (1988) that provides estimates of jury compensation for various crimes was updated to 2010 levels. The cost to an individual from conviction for criminal behavior was conservatively estimated using data on the federal minimum wage times the total number of productivity hours lost for each crime committed. They combine this data to arrive at the average cost to society of a number of categories of crime. Misdemeanor arrests are significantly less costly to society. When compared to felonies, they generally carry neither the lengthy prison sentences, social

stigma, or effect on lifetime earnings. Consequently, the Aos et al. (2001) estimates of the cost for a misdemeanor only include the estimated cost of police work and court administration.

We found the specific crimes committed by former students in the Milwaukee dataset and matched them with the costs of crimes observed in the source data sets. These costs are then averaged across crime types to arrive at the average cost of each. Rape and murder are left out of these averages because their costs are tremendously high and could distort the findings. Because of this, our estimates could be considered conservative. The societal cost of a misdemeanor is estimated at \$1,782 and the average cost of a felony at \$34,832, in 2016 dollars.

Data Used

This paper builds upon existing work by DeAngelis and Wolf (2016) that estimated the effect of the MPCP on the extent to which students were involved in criminal activity. DeAngelis and Wolf utilized a sophisticated matching method to create a comparable sample of students in the MPCP and MPS. They matched students that lived in the same neighborhood at baseline, which allowed their study to better account for unobservable characteristics (such as motivation level) that are also involved in the selection of residence. Other factors used in the baseline match included grade, race, gender, English-language learner status, and math and reading test scores.

Selection bias is a legitimate concern raised by critics of school choice studies because participants can choose to use a program due to unobservable factors (such as parental involvement) that could also be related to the outcome of interest. However, the baseline matching method used by DeAngelis and Wolf is the best approximation of a randomized experiment when such an experiment is unrealistic to conduct (Stuart and Rubin, 2007; Bifulco, 2012).

Calculations

DeAngelis and Wolf (2016) found that MPCP attendance reduced conviction for misdemeanors by approximately 5 percentage points, and reduced conviction for felonies by approximately 3 percentage points. We combine these estimates with Levin (2009) study on the economic benefit of graduation.

For the calculation of our analysis of the economic benefits of graduation, we similarly combine existing research on the impact of MPCP on graduation rates with research on the economic benefits of graduating high school. Cowen et al. (2013) estimate the positive effect of attending an MPCP school on graduation as around 4 percent.

In both our analyses of crime and graduation, we assume that the MPCP will continue to grow at a rate of 5 percent per year. This represents the approximate average growth rate in the program over the past eight years (Wisconsin Department of Public Instruction). The program is uncapped in terms of enrollment, meaning that growth can continue into future years.

In each case, let R equal the percentage change in the outcome of interest (crime or graduation) for time period i , N equal the total number of students that have gotten at least a four year dose and exited the program by the time period, and C is a constant equal the societal cost of the crime or dropout in 2016 dollars. The estimate for the economic benefit of the program is:

$$EconomicBenefit = N_i * C * R_i$$

The estimated economic benefit can be interpreted as the net change in economic benefit by students attending choice schools rather than MPS. We produce three estimates in our analyses: the economic benefit of misdemeanor reductions, felony reductions, and graduation increases.

Our projections on criminality only account for the current 12th grade students that received at least four years of the program. DeAngelis and Wolf (2016) found that 44 percent of

their sample received at least four years of the MPCP, so we assume that the effects are only relevant for that proportion of students in the program. In other words, we take the highly conservative approach of assuming that the 56 percent of students that were in the program for less than four years were not impacted at all. Additionally, since DeAngelis and Wolf searched criminal records when the students were at least 22 years old, we assume that no benefits will accrue until the students reach that age. Since these current students won't reach the age 22 for four more years, our first estimate is for the year 2020. The following estimates assume that enrollment will continue to expand at a similar rate as previous years. The graduation data of Cowen et. al. (2013) does not require these assumptions, leading to a larger pool of potential impact in that part of the study. In our projects, we assume that the MPCP will continue to expand at the same rate it has in the past five years in the subsequent decades. The results should be interpreted as relative to the control group in the original study upon which the projections are based. In both cases, results are relative to a sample of students not in the choice program matched along lines of academic performance, income, and neighborhood.

Because graduating from high school may affect the likelihood of going to prison (Anderson 2014), aggregating the economic benefits from both analyses could inflate our findings. Consequently, we consider the economic benefits of graduation and avoiding criminality separately in the results section.

Results

Crime Reduction

We combine the results of DeAngelis and Wolf (2016) with the estimates of the economic benefits of reduced criminality from McCollister, French, and Fang (2010) and Aos et al. (2001).

Table 2 shows the economic benefit of students that reached 22 years of age and received four years of exposure to the program from 2020 to 2035.

The first row of Table 1 represents the total number of students who persisted in the MPCP and have reached 22 years old. For example, about 10,304 students received at least four years of the Milwaukee Parental Choice Program and reached the age of 22 between the fall of 2016 and 2025. The second row of the table represents the projected reduction in the number of misdemeanors committed relative to what would have happened if those students had remained in traditional public schools. Between now and 2020, we project a reduction of 55 in the number of misdemeanors committed. Multiplying this number by the estimated societal cost of a misdemeanor yields a net reduced societal cost of approximately \$79,000 if the students had remained in public schools. Assuming current enrollment growth continues, we estimate that the MPCP represents a cumulative net economic benefit of \$1.7 million by 2035 through misdemeanor reduction.

[Table 1 here]

These figures are displayed graphically in Figure 1. The black bars represent the confidence interval on these estimates derived from the standard errors found in the source paper. By 2035, the number of misdemeanors is projected to be 960 fewer because of full participation in the MPCP. This misdemeanor reduction results in a net societal savings are expected to reach \$1.7 million relative to what would be expected if these students had attended traditional public schools in Milwaukee.

[Figure 1 here]

Table 2 presents the results for felony reduction. Over the next twenty years, participation in the MPCP is projected to result in 694 fewer felonies being committed by participants. Although the

projected reduction in felonies is smaller than the projected reduction in misdemeanors, these crimes are generally far more costly to society. As such, the economic benefits from reduced felonies far exceed those estimated for misdemeanors. By 2020, reduced felonies are already expected to have a net economic benefit over \$1 million. Over the following 15 years, or by 2035, these net economic benefits are projected to be around \$24 million more than if the students had remained in traditional public schools.

[Table 2 here]

[Figure 2 here]

Graduation

Extrapolating from the estimates of Cowen et al. (2013) and the estimates of the economic benefits of graduation from Levin (2009), we estimate the economic benefits from the increased graduation rates observed in the MPCP. Levin included a cost savings from the reduction in criminality associated with high school graduation in his estimates. To avoid double-counting savings across our graduation and criminality estimates, we leave that component out of our estimates. Table 3 depicts the cost savings through 2035.

The first row of table 3 represents total number of cohorts who have completed school since the first year under study, 2016. Note that the total completed is significantly higher in this case because the graduation estimates of Cowen et al. (2013) do not rely on the “full dose” of the program required for the crime study of Wolf and DeAngelis (2016). The second row of the table represents the projected change in the number of graduates relative to what would have happened if those students had remained in traditional public schools. Among students currently enrolled in MPCP, we expect an increase of approximately 1,380 graduates compared to the number of graduates if the students had remained in their assigned public school. According to Levin, graduating from high school increased lifetime economic benefits by approximately \$182,500

per student. Multiplying these two figures means that the MPCP will benefit the state approximately \$29.4 million over the lifetime of currently enrolled students. Assuming continued enrollment growth trends, there are projected to be approximately 1,141 more graduates relative to students who remained in MPS by 2035. These economic savings from these students are projected to be over \$473 million by 2035.

These benefits are substantially greater than those found in recent research by Wolf and McShane (2013) on the voucher program in Washington D.C, despite smaller average effects on graduation rates than have been found in that program. This may be largely explained by the far smaller number of students who are enrolled in the D.C. program.

[Table 3 here]

[Figure 3 here]

Limitations

Because we are making projections into the future, there is the potential that the growth rates we assume will be faster or slower. Second, we are forced to rely on national data sets for our estimates of economic benefits because no such data is available for Wisconsin. It is possible that the economic benefits from graduation are higher or lower in Wisconsin than scholars have estimated at the national level.

Additionally, while the estimates for the economic benefit of each school in our case study is sound, the comparisons with MPS should not be taken with the same level of confidence as those in the rest of the paper. This is because these estimates are based on the average graduation rate in MPS rather than the fine-grained matching data used in the main paper.

Summary and Concluding Remarks

This paper represents the most comprehensive estimate of the economic benefits of the MPCP. The program educates children at a significantly lower cost to taxpayers than traditional public schools while delivering economic benefits that measure in the hundreds of millions. A number of policy recommendations stem from this analysis. In this paper, we assume a 5 percent growth rate for the MPCP over the next decade. If that growth rate can be accelerated, there is the potential that the economic benefits estimates in this paper could be even greater. The MPCP also has many regulations that could also diminish the ability of the program to produce larger social benefits. Indeed, Stuit and Doan (2013) concluded that the MPCP was the most heavily regulated school voucher program in the United States. In order to accept MPCP students, private schools in Milwaukee must administer state standardized tests, undergo annual financial audits, require that each administrator and teacher have either a teaching license or a bachelor's degree, require all administrators to go through financial training, admit students on a random basis, take the voucher amount as payment-in-full, and must allow their students to opt out of religious activities.

As suggested by previous evaluations, costly regulations such as these may reduce the quantity and quality of schools that decide to participate in voucher programs (DeAngelis & Burke, 2017; DeAngelis & Burke, forthcoming; Kisida, Wolf, & Rhinesmith, 2015; Sude, DeAngelis, & Wolf, 2018). In fact, a recent evaluation found that higher quality private schools – as measured by tuition levels and customer reviews – were less likely to participate in the MPCP, perhaps because the private schools that were the most desperate for funding were more willing to accept the burdensome government regulations (DeAngelis & Hoarty, 2018).

The program is targeted to families that have incomes at or below 300 percent of the federal poverty level. On average, private school vouchers are only worth around 65 percent of the amount spent per student in traditional public schools in Milwaukee. The lack of funding equity for voucher students reduces the financial incentive for educational entrepreneurs to enter the private school market in the city. In addition, a program available to all students, regardless of income level, would provide more financial incentives for educational entrepreneurs to participate in the MPCP. Stronger incentives for market entry could increase the competitive pressures and specialization necessary for markets to work as theorized. Policymakers should reduce the number of regulations tied to MPCP participation to make it less costly for private schools to emerge and expand. Universal private school choice with per-pupil funding amounts set closer to non-discriminatory levels (that is, when students receive the same amount of education funding regardless of what school works best for them) expands most of the factors (i.e. specialization, market entry, and competitive pressures) that are theorized to be responsible for the positive economic impacts found in Milwaukee. We also recommend allowing private school operators to be their own Local Education Agency, streamlining the process for the sale of MPS buildings that have sat vacant for many years, and eliminating the income cap.

Benefits of the MPCP extend beyond traditional measures such as test scores. The reasons behind higher graduation rates and lessened involvement in the criminal justice system are not immediately clear. Such intangibles like a greater ability to instill moral values and the fostering of more positive learning environments likely play a role. However, the end-product of these intangibles is readily measurable. School choice saves Wisconsin hundreds of millions of dollars over and above the difference in the per-student funding that public and choice students receive.

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Table 1: Projected Cumulative Economic Benefits of Decreased Misdemeanors

	2016-2020	2016-2025	2016-2030	2016-2035
Total Full Dose Students	934	10,304	16,522	28,537
Reduction in Misdemeanors	55	246	559	960
Economic Benefits (Millions)	\$0.08	\$0.44	\$1.00	\$1.71

Note: Numbers represent the mean estimated economic benefit of the MPCP from reduction in misdemeanors from 2016 to 2035.

Table 2: Projected Cumulative Economic Benefits of Decreased Felonies

	2016-2020	2016-2025	2016-2030	2016-2035
Total Full Dose Students	934	10,304	16,522	28,537
Reduction in Felonies	32	178	404	694
Economic Benefits (Millions)	\$1.12	\$6.19	\$14.08	\$24.16

Note: Numbers represent the mean estimated economic benefit of the MPCP from reduction in felonies from 2016 through 2035.

Table 3: Projected Cumulative Economic Benefits of Increased Graduation

	2016-2020	2016-2025	2016-2030	2016-2035
Total Completed	9,154	23,418	41,623	64,858
Increase in Graduates	366	937	1,665	2,594
Economic Benefits (Millions)	\$66.80	\$171.00	\$303.86	\$473.41



