

Wisconsin Institute for Law & Liberty

The Economic Benefit of
School Choice in Milwaukee

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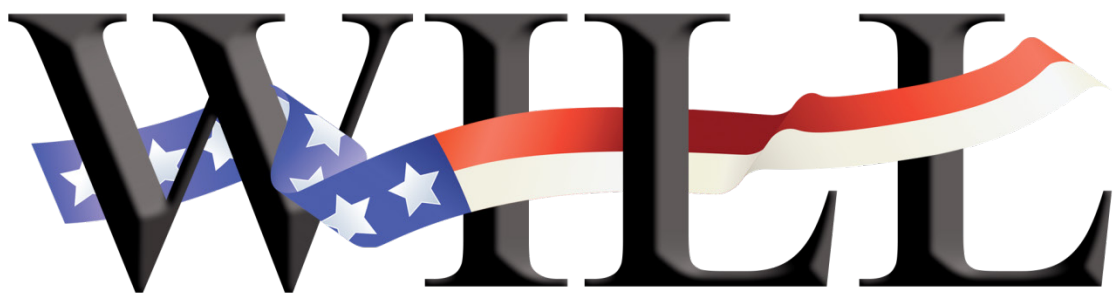
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I. *Executive Summary*

In 2014, St. Marcus Lutheran School, one of the top performing schools in Milwaukee, decided to explore adding another campus. St. Marcus, a private school in the Milwaukee Parental Choice Program (MPCP), boasts high school graduation rates averaging around 90%, even though more than 90% 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.¹ Because it can hold up to 600 children, Lee was an ideal facility for St. Marcus, which had high demand from parents.

St. Marcus offered to purchase Lee from the City for its appraised value of \$880,000. But the City of Milwaukee wanted St. Marcus to pay an additional \$1.3 million to, in their opinion, cover the cost to Milwaukee taxpayers for the expansion of St. Marcus and the MPCP. The City's analysis was not new. Critics of the school choice program have long cited the so-called "funding flaw" which allows Milwaukee to raise property taxes to cover the lost revenue for students leaving MPS for the MPCP.² Unfortunately because the City made the fiscal effects of the MPCP a condition of the transaction, St. Marcus had to walk away from the table, unable to pay the exorbitant asking price.

The fiscal impact of the MPCP has long been a source of contention with the City, Milwaukee Public Schools Board, and the state of Wisconsin. But the debate is almost always short-sighted, narrowly focusing on one piece of a much bigger, more complex puzzle. It neglects any discussion of the economic benefit of school choice. For example, students who graduate from St. Marcus are more likely to land a job, stay out of our corrections systems, and become upstanding members of the community. All of this has a sizable economic impact 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 rigorous, academic studies on the effect of the MPCP. Wolf and DeAngelis (2016) found when compared to similar students at MPS, students in the MPCP at private schools are 6% less likely to be convicted of misdemeanors and 3% less likely to be convicted of felonies. Cowen (2013) found when compared to similar students at MPS, students in the MPCP at private schools are 4% more likely to graduate from high school. We also utilize previously published studies (Levin 2009; McCollister et. al. 2010) that monetized the economic benefit of students graduating from high school and not committing a crime. As a result, we were able to estimate the economic benefit of higher graduation rates and lower crime rates of students at the MPCP when compared to similar students at MPS. We came to the following conclusions:

1. By 2035, because of higher high school graduation rates, students who use a voucher in the MPCP will generate **\$473 million** economic benefits to Wisconsin more than similar students at MPS. Graduating from high school is associated with being more likely to earn a higher income throughout life – which results in more tax revenue, less likely to need expensive, government-funded medical care, and a lower likelihood of being reliant on welfare.
2. By 2035, in total, because of less crime committed, students who use a voucher in the MPCP will generate **\$26 million** more economic benefit than similar students at MPS. By 2035, because of fewer felonies, students who use a voucher in the MPCP will **generate a \$24 million** benefit and because of fewer misdemeanors, students who use a voucher in the MPCP will generate **\$1.7 million** more economic benefit to Wisconsin. Less crime

1 The Milwaukee Public School Board blocked St. Marcus' first attempt to expand into a vacant school building. St. Marcus offered over \$1 million to purchase Malcolm X, a building that was vacant for eight years. But the MPS Board rejected the offer, choosing to sell it to a group of developers. The offer to purchase eventually fell apart. Malcolm X is now a MPS school.

2 The funding flaw will be phased out by 2024-2025.

committed is associated with fewer police officers hired, less crime victims and the costs associated with crime victimization, and less resources spent on the criminal justice system such as incarceration.

3. High-performing schools also create a substantial economic benefit to Milwaukee. In the next 20 years, children at St. Marcus Lutheran Schools will generate an aggregate benefit of **about \$7 million** due to the school's low incarceration rate and **\$64 million** due to their high graduation rate. The use of the Lee facilities would have doubled that benefit. Other high quality schools—both in and out of the MPCP—have significant economic benefits as well. Saint Augustine Preparatory Academy which is being built in the Southside of Milwaukee has the potential to generate an economic benefit of over \$150 million plus the \$100 million dollar benefit which accrues from an \$85 million dollar construction project and staff salaries for over 150 personnel.

II. *Existing Research*

A. **Cost Savings of the Milwaukee Parental Choice Program**

The Milwaukee Parental Choice Program is a state-government funded program that gives Milwaukee families up to 300% of the federal poverty level a voucher to attend a private school of their choosing. It is incredibly popular; nearly 28,000 children in Milwaukee use a voucher.

Despite the rhetoric of many school choice opponents, most examinations have found that the MPCP has actually represented a cost saving to the state of Wisconsin rather than a loss. Because it costs the state about \$2,000 more to send a child to Milwaukee Public Schools compared to the MPCP, Costrell (2010) estimated that this funding disparity saved the state approximately \$46.7 million in fiscal year 2011 thanks to the MPCP. Spalding (2014) estimated that the MPCP has saved the state a staggering \$238 billion since implementation in 1990. These savings are likely to be even greater in the future if the MPCP continues to expand, though the reduction in the funding flow (discussed below) would mitigate some of these savings.

The “funding flaw” has prevented Milwaukee taxpayers from sharing in the financial benefits of the MPCP. It resulted from MPS being unable to count students that attend a private school in the MPCP for their total enrollment. Despite not being able to count the students, the state aid received by MPS was still reduced by a percentage for students who enter the MPCP. Milwaukee has been allowed to increase taxes to make up this difference and maintain current levels of per-pupil revenue. The result of this has been that the benefits of choice accrue to Wisconsin state taxpayers and not only those in Milwaukee. The aggregate result statewide including the funding flaw is still positive (Costrell 2010). Regardless, the funding flaw is being gradually phased out and within ten years, the MPCP will no longer represent an additional cost to Milwaukee property tax payers.

While these areas of savings have been well studied, measurement of the economic benefits³ of school choice remain largely unexamined. One exception is the work of Wolf and McShane (2013), who estimate the economic benefits of the voucher program in Washington D.C. They find that the D.C. program, the Opportunity Scholarship Program (OSP), generated more than \$164 million in benefits during its first five years of operation. Deming

³ We refer to these downstream fiscal impacts as “economic benefits.” In the context of this paper, economic benefit means any tangible, financial benefit accruing to the taxpayers or individuals that is likely to be impacted by a student's participation in the MPCP. Economic benefits represent unexplored potential financial benefit to Milwaukee and Wisconsin that is often left out of the discussion of the choice program.

(2012) examined the economic benefits of school choice in the Charlotte-Mecklenburg school district with respect to crime. Using a sample of students who won a lottery for admission to choice programs in the county, Deming shows that lottery winners are significantly less likely to commit crimes. He finds that the total societal cost for lottery winners is approximately \$5,400 less than for those who fail to win admission to the choice program. We conduct a similar analysis using the MPCP.

B. 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 and Quinn 2013). Beyond the obvious psychological impacts, this high incarceration rate has deleterious effects on the potential incomes and tax revenue generated by the convicted criminals, as well as on the lives of the victims of these crimes.

There is growing evidence that private schools in voucher programs represent a safer alternative for students that can lead to lowered rates of involvement in the criminal justice system. Dills and Hernandez-Julian (2011) use 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. 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 a variety of crimes, from misdemeanors to felonies. Their Milwaukee-specific estimates are the basis for the subsequent analyses in this paper.

C. 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. One of the most comprehensive studies to date was conducted on the Opportunity Scholarship Program (OSP) in Washington, D.C (Wolf et. al. 2010). Taking advantage of a lottery system that effectively randomized whether students would be offered a voucher, researchers at the U.S. Department of Education found that the offer of an OSP scholarship raised the likelihood that the student would graduate high school by approximately 12 percentage points.

More specific to Milwaukee, as part of the School Choice Demonstration Project, Cowen et. al. (2013) utilized sophisticated matching methods similar to those used by DeAngelis and Wolf to create a cohort of students in Milwaukee public schools that is 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. We rely on the more conservative findings of Cowen et. al. in our subsequent analyses, meaning the economic benefits in the paper could potentially be even larger.

III. *Our Study*

A. Methodology: Calculating the Economic Benefit of High Graduation and Low Incarceration Rates

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.

i. *Economic benefit of graduating from high school*

Studies of the economic benefits of high school graduation are particularly prolific. 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. This data is 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 (2007) who estimate the effect of educational attainment on receipt of TANF, food stamps, and housing vouchers. The estimates of Waldfogel and colleagues is 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.

ii. *Economic benefit of less crime*

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.⁴ McCollister et. al. collected data from a wide variety of sources to estimate the true 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 Aos et. al.'s 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 estimate at \$1,782 and the average cost of a felony at \$34,832.

⁴ A full list of the items included in the estimate for the societal cost of criminality is included in Appendix Table A1.

iii. *Using student matching data and findings from DeAngelis and Wolf*

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. The scholars match students that live in the same neighborhood, which allows their studies to better account for the 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 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. But the DeAngelis and Wolf student matching minimizes the problem of selection bias (Goldberger and Cain 1982). The baseline matching method used by DeAngelis and Wolf represents the cutting-edge in social science research and is arguably the best approximation of a randomized experiment when such an experiment is unrealistic to conduct (Stuart and Rubin 2007; Bifulco 2012).

iv. *Our calculations*

In the DeAngelis and Wolf study, MPCP attendance is found to reduce conviction for misdemeanors by approximately 5%, and conviction for felonies by approximately 3%. We combine these estimates with Levin (2009) study on the economic benefit of graduation.

For the calculation of our analysis on 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 and co-authors estimate the positive effect of attending an MPCP school on graduation as approximately 4%.

Formally, 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:

$$\text{economic benefit} = n_i * c * r_i$$

With the variance:

$$\sigma^2 = n^2 * c^2 * \sigma_r^2$$

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.⁵ The graduation data of Cowen et. al. (2013) does not require these assumptions, leading to a larger poll 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.

Since 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.

B. Our Findings

i. Economic benefit of less crime relative to MPS

We combine the results of DeAngelis and Wolf (2016) with the estimates of the economic benefits of reduced criminality from McCollister et. al. (2010). 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 the table 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 from 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 2. 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)	\$0.079	\$0.437	\$0.996	\$1.710

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

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 thanks to full participation in the MPCP. This 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.

⁵ According to the Public Policy Forum, enrollment grew from 20,996 to 26,689 from the 2011 school year to the 2015 school year. This averages out to approximately 5.4% annual growth over the time frame question. Consequently, we assume 5.0% annual growth in enrollment (Public Policy Forum 2015).

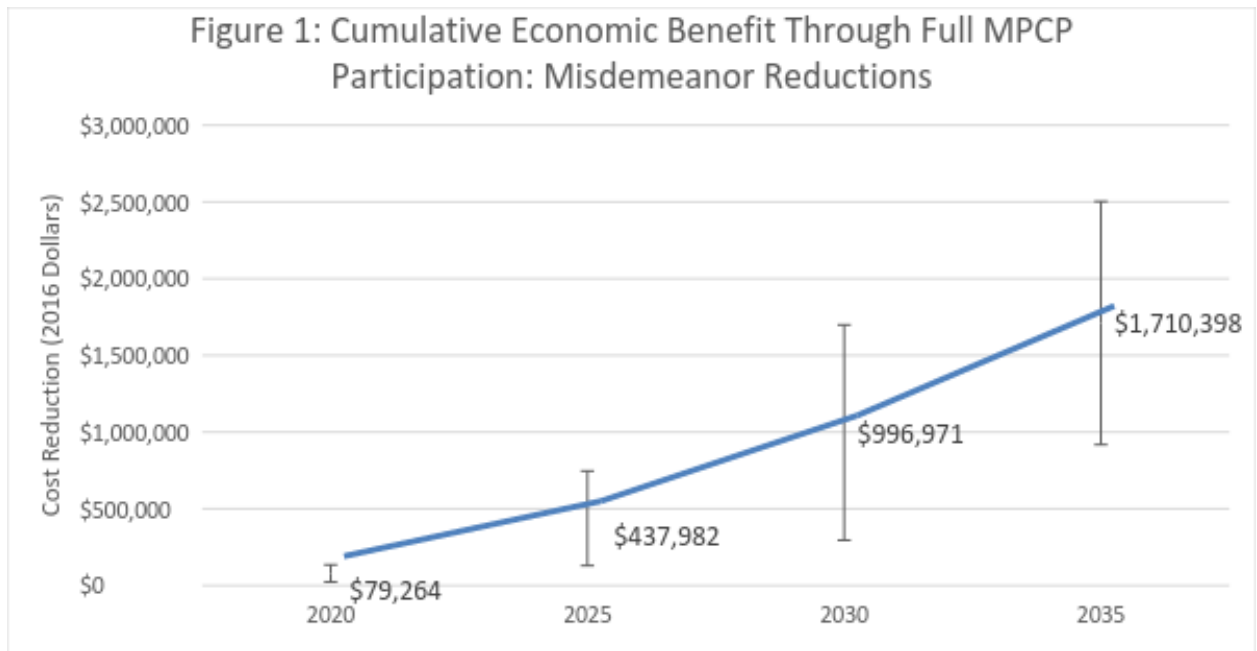
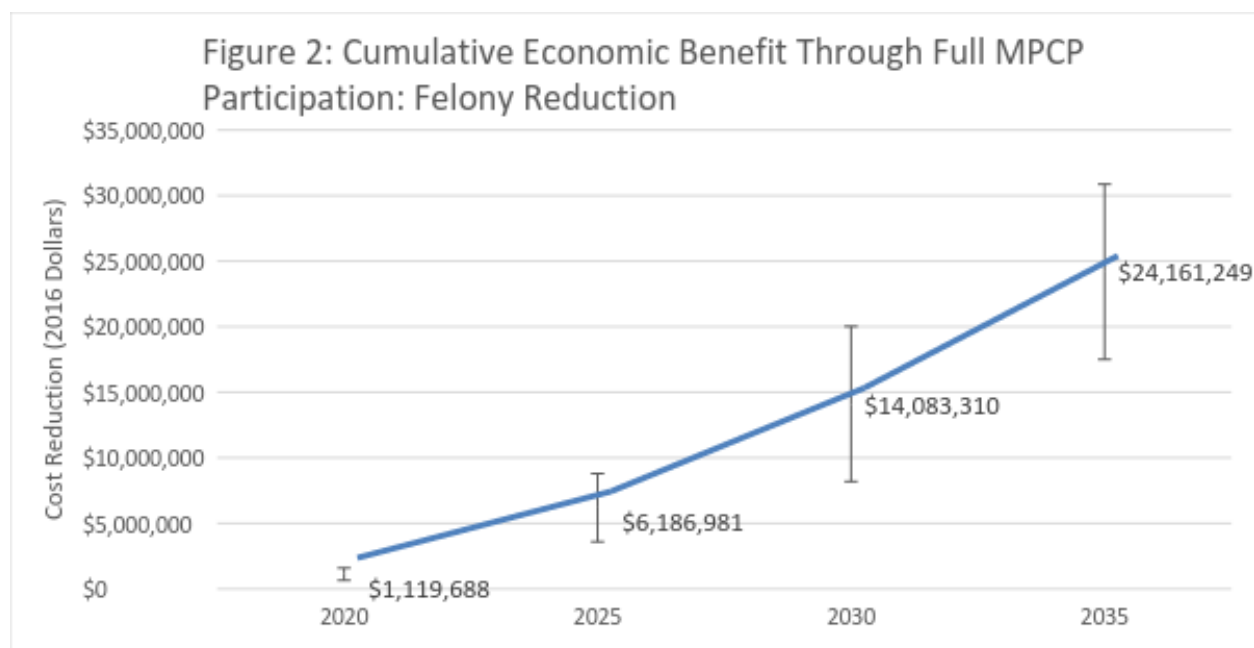


Table 3 presents the same results as Table 2 for reduction in felonies. Over the next twenty years, participation in the MPCP is projected to result in 694 fewer felonies being committed by participants. Although the projected reduction in felonies is smaller than the projected reduction in misdemeanors, 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 3. Cumulative Economic Benefit 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)	\$1.119	\$6.186	\$14.083	\$24.161

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



Note that the economic benefits related to these two types of crime between now and 2035 are projected to reach about \$36 million collectively.

ii. Economic benefits of higher graduation at MPCP relative to MPS

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 the following estimates. Table 3 below depicts the savings over the three time frames mentioned in the methodology section.

The first row of table 4 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 Milwaukee Public Schools. 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 earn 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 more than \$473 million by 2035.

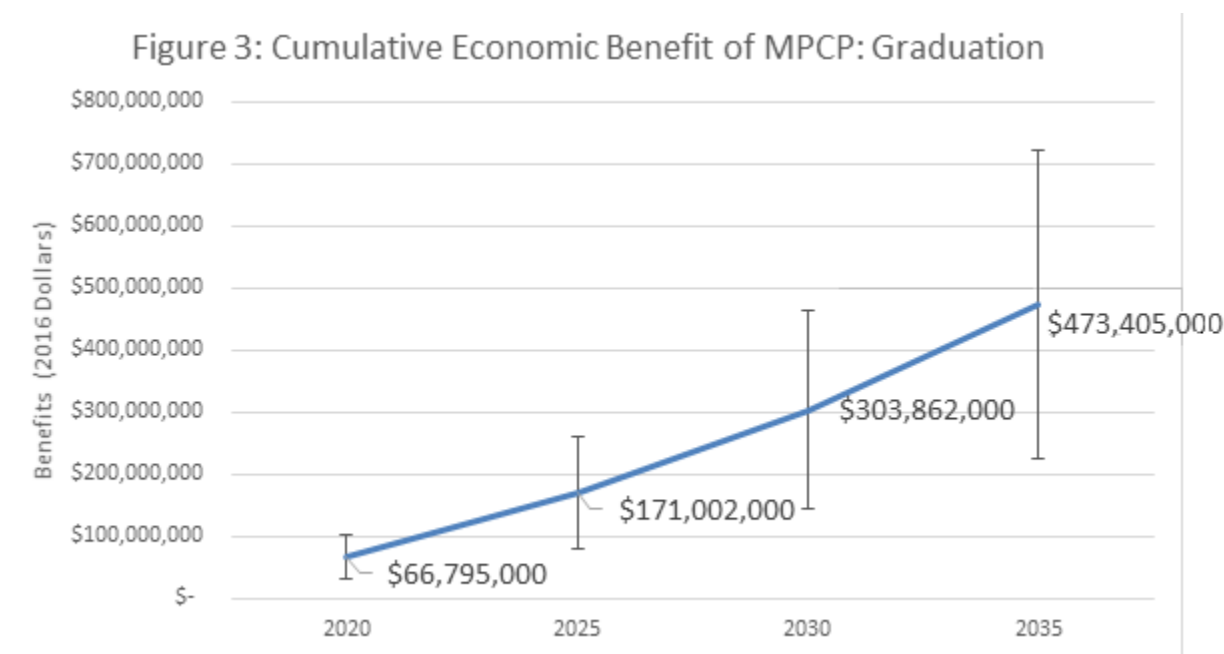
These benefits are substantially greater than those found in recent research by Wolf and McShane (2013) on the voucher program in Washington D.C, despite smaller average effects on graduation rates than have been found in that program. This is largely explained by the far smaller number of students who are enrolled in the D.C. program.⁶

⁶ Wolf and McShane note that an average of 1,586 enrolled in OSP, much smaller than the 27,609 enrolled in the MPCP.

Table 4. Projected Cumulative Economic Benefit of Increased Graduation

	2016-2020	2016-2025	2016-2030	2016-2035
Total completed	9,154	23,418	41,623	64,858
Change in number of graduates	366	937	1,665	2,594
Economic benefits (millions)	\$66,795,000	\$171,002,000	\$303,862,000	\$473,405,000

Figure 3 below highlights the projected growth in savings over the next decade.



IV. Case Study: the Importance of High-Quality Schools

One takeaway from our study is that the economic benefit of a high-quality school, i.e. high graduation rates and low crime rates, can be substantial. To emphasize this point, we present a case study of St. Marcus Lutheran School and several other high quality schools across all sectors of education. St. Marcus is actively involved with its students after graduation. They continue to meet with the students on a regular basis, which allows them to maintain data on their post-St. Marcus outcomes in terms of both high school graduation and involvement with the criminal justice system. Bruce Guadalupe school utilizes a similar system in tracking graduation rates for its students. Data for Ronald Reagan High School was gathered from DPI. Because we cannot compare a similarly situated group of students at MPS and these schools, the reported economic benefit is the *aggregate* economic benefit rather than the benefit *relative* to MPS as we showed in the main analyses.

i. St. Marcus

Only 2% of St. Marcus' graduates are incarcerated for commission of a felony. The rate for male students is 4%, which is substantially lower than the rate for African American males in Milwaukee, which is approximately 12%.

Using the Levin calculation above, over the next 20 years, the economic benefit of St. Marcus with respect to less crime is projected to be over \$13 million. Table 5 below outlines the expected economic benefits over the time frame in question. "Current benefits" are those accrued from students who have already graduated from St. Marcus. The subsequent columns are based on the assumption that St. Marcus continues to enroll the same number of

students over the next two decades, and continues to realize the same level of success in helping students avoid criminal behavior.

Table 5. Cumulative Economic Benefit of St. Marcus: Fewer Felonies

	2008-2012	2008-2016	2008-2020
Students Not Incarcerated	128	256	384
Total Economic Benefit: Fewer Felonies	\$4,458,496	\$8,916,992	\$13,375,488

Next we look at the economic benefits from St. Marcus' high graduation rate. Of the 130 St. Marcus students in the graduating classes of 2008-2012, 118 (90.8%) have graduated from high school. Assuming St. Marcus maintains its graduation rate and enrollment over the next decade, we can estimate the economic benefit of St. Marcus with respect to graduation by combining the graduation data with the estimates of Levin (2009). Once again in Table 6, the 2008-2012 figure represents the economic benefit already created by St. Marcus from current graduates, while the 2025 and 2035 numbers represent projections based on the continuation of existing trends.

Table 6. Cumulative Economic benefit of St. Marcus: Graduation

	2008-2012	2008-2016	2008-2020
Graduates (students)	118	236	354
Total Economic Benefit: Graduation	\$21,535,000	\$43,080,000	\$64,605,000

Over the next twenty years, St. Marcus is projected to have an economic benefit of more than \$64 million dollars.

Although the lack of data prevents a rigorous academic study directly comparing specific schools, it is possible to calculate the economic benefit of a similarly-sized MPS school with the district's average graduation rate (70.1%).⁷ Using this method, we calculate that 276 students from a similarly sized MPS school to St. Marcus (390 students by 2022) over the same time frame. This would result in an economic benefit of \$50,370,000, or \$13,875,000 million less than St. Marcus.

Alternatively, one could compare St. Marcus to the graduation rate of its closest neighborhood high school. The nearest neighborhood high school is North High School⁸, which has a six year graduation rate of 56.2%. The net fiscal impact of St. Marcus over a school with a graduation rate similar to North would be \$24,604,650.

ii. Other high quality schools in Milwaukee

Though the focus of this paper is on the MPCP, high quality schools across all sectors yields economic benefits as well. In this section, we project the economic benefit over the next ten years from higher graduation rates high quality schools that cross sectors: Bruce Guadalupe Community Schools (independent public charter) and

⁷ Graduation rate is students who have completed school within six years or less.

⁸ We choose North High School because it is the nearest neighborhood school that has no admission requirements, similar to St. Marcus. Nearby Milwaukee high schools with selective admissions include Riverside High School, which has a graduation rate of 96.2%. The fiscal benefit of a cohort of students at Riverside would exceed St. Marcus by \$3,794,175.

Ronald Reagan High School (traditional MPS). Ronald Reagan graduates over 95.6%. Bruce Guadalupe tracks graduates of their school through high school, and reports that 91.4% of their graduates go on to graduate from high school. In this section, we take the average number of graduates over the past four years to make projections into the future.

Note that crime data is not available for any of the schools in this section, meaning that projected economic benefits are based on graduation alone.

Table 7. Aggregate Economic Benefit of Selected Schools Relative to Random MPS Cohort

School Name	Economic Benefit (by 2020)	MPS estimated impact
Ronald Reagan High School	\$407,705,000	\$302,767,500
Bruce Guadalupe School	\$146,730,000	\$114,062,500

Because the graduation rates for each of these schools is similarly high, the differences in projected economic benefits are primarily the result of the size of the school. Nonetheless, we can observe a significant economic impact of each school, ranging from tens of millions to hundreds of millions. Note that Ronald Reagan High School has entrance requirements, something that the choice and charter schools studied here do not.

For the sake of comparison, the expected economic benefit of a random selection of MPS students of the same size, using the average MPS graduation rate of 70.1% over six years, is included in the final column. While these numbers can serve as a baseline, they are not directly comparable due to potential selection issues that this analysis cannot address. Similar analyses could be conducted for other high quality schools in Milwaukee.

V. Limitations

Because we are making projections into the future, there is the potential that the growth rates we assume will not be realized. The MPCP may grow at a faster or slower rate. We include a number of alternative assumption models in the appendix. 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 these scholars have estimated at the national level. Future research may fine-tune these estimates as additional data becomes available.

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.

VI. Conclusions

This paper represents the most comprehensive estimate of the economic benefits of the MPCP conducted. The MPCP 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% 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. Policymakers should work to make it easier for existing private schools in the MPCP to expand and for new schools to be created. This includes allowing private school operators to be their own Local Education Agency (LEA), streamlining the process for the sale of MPS buildings that have sat vacant for many years, and eliminating the

income cap on the MPCP.

The bottom line is the benefits of the MPCP in Milwaukee extend beyond traditional measures like test scores (on which MPCP students also tend to outperform students in traditional schools). 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. But 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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Appendix A1. Sources of Information: McCollister et. al. 2011

McCollister et. al. (2011) list the following sources for their estimates of the societal cost of crime. For a fuller accounting of these sources, please see the source paper.

<u>Cost Component</u>	<u>Resource</u>	<u>Source</u>
Prevention and Prosecution	Justice Expenditure & Employment, 2005	Bureau of Judicial Statistics
Police Protection & Judicial Service	Annual Government Finance Survey	Census Bureau
Police Protection & Judicial Service	Annual Survey of Public Employment	Census Bureau
Sentenced Prisoners by Type	Prisoners in 2006	Bureau of Judicial Statistics
Sentenced Prisoners by Type	Profile of Jail Inmates, 2002	Bureau of Judicial Statistics
Victim Mortality Costs	Current Population Survey	Census Bureau/Bureau of Labor Statistics
Mortality Estimates	Life tables	National Center for Health Statistics
Productivity Loss of Perpetrator	Federal Minimum wage data	Bureau of Labor Statistics
Medical Costs of Injury	Victim Costs and Consequences: A new Look, 1996	National Institute of Justice

Appendix A2: Sources of Information: Levin (2009)

Levin (2009) lists the following sources for his estimates of the economic benefit of graduation. For a fuller accounting of these sources, please see the source paper.

<u>Cost Component</u>	<u>Resource</u>	<u>Source</u>
Education by Earnings Level	Current Population Survey	Census Bureau/Bureau of Labor Statistics
Estimated Tax Payments	TAXSIM Program	National Bureau of Economic Research
Medicaid Enrollment Rates	Medical Expenditure Survey, 2004	Department of Health and Human Services
Welfare Costs	Current Population Survey	Census Bureau/Bureau of Labor Statistics

Appendix A3.

There are a number of different projection models that could be utilized in this analysis. The model included in the text of the paper makes the conservative assumption that only 44% of students in the choice program will receive the “full dose.” The estimates in the tables below assume that all of the choice program participants persist in the program. This assumption significantly increases the economic benefits.

Table A2. Economic benefits of School Choice: Decreased Felonies & 100% Persistence in the Program

	2020	2025	2030	2035
Participants at Least 22 Years Old Since 2016	9,154	23,418	41,623	64,858
Felonies	315	806	1,432	2,231
Economic benefits (Millions)	\$10.97	\$28.06	49.874	\$77.713