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Efficiently Reducing Corrections Costs in Wisconsin: Applying the Washington State Model

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and Paul Waldhart

Cost-Benefit Analysis Course, La Follette School of Public Affairs, University of Wisconsin-Madison

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GLOSSARY AND ABBREVIATIONS

Key Term	Definition
Average Daily Population (ADP)	The average number of people confined in a facility or enrolled in a program on any given day
Average Operating Costs	The operating cost per individual in the system; calculated by dividing operating costs by units, such as average daily population or number of convictions
Bureau of Justice Statistics (BJS)	Bureau of the U.S. Department of Justice that collects, analyzes, publishes, and disseminates information on crime, criminal offenders, victims of crime, and the operation of justice systems
Capital Costs	One time setup costs, such as for buildings, cars, computers, or other materials, that do not change with the addition of offenders until a certain capacity is reached or these assets need to be replaced; non-operational program expenditures
Cost-Benefit Analysis (CBA)	A method to assess policy options through the monetary valuation of the policy's costs and benefits; subtracting costs from benefits yields net benefits
Sentencing Tool	Developed by WSIPP, software that performs a cost-benefit analysis of criminal justice systems; used in this analysis
Wisconsin Department of Corrections (DOC)	The state agency in Wisconsin state government charged with administering and managing state programs for community, juvenile, and adult corrections
Wisconsin Division of Juvenile Corrections (DJC)	The division of the Wisconsin Department of Corrections that handles juvenile offenders; operates state level juvenile correctional facilities, and provides correctional supervision in communities
Escalation Rate	The increase in cost not associated with inflation
Evidence-Based Programs	Intervention and treatment approaches that have been shown effective through research and evaluation studies that meet established standards of scientific rigor
Felony	An offense more serious than a misdemeanor; commonly punished with imprisonment for more than one year
Incarceration Rate	The number of inmates held in the custody of prisons or jails per 100,000 residents
Intangible Victim Costs	Include quality of life estimates that place a dollar value on pain and suffering, lost quality of life, and psychological distress; estimated by subtracting the tangible victim costs from jury awards in personal injury settlements
Jail	Short-term facilities that hold individuals before or after adjudication; usually administered by a local law enforcement agency
Juvenile Local Detention	Secure incarceration for juveniles at facilities under county/local control
Juvenile State Institution	Secure incarceration for juveniles at facilities under state control
Low-Risk Offenders	Offenders with a low probability for future re-offense; excludes offenders convicted of murder or any sex offense
Marginal Excess Tax Burden (METB)	Amount it costs the government to raise an additional tax dollar
Marginal Operating Costs	The additional operating cost associated with adding one more unit to the system, such as a prison day or an arrest
Misdemeanor	An offense that is less serious than a felony; commonly punished with jail, supervision, or monetary fines
Operating Costs	Costs that change over a period of several years as a result of changes in workload measures; include inputs such as salaries and wages, administration, supplies, materials, and contractual services, but exclude capital costs
Prison	Longer-term facilities operated by a state; typically hold felons and persons with sentences of more than one year

Parole	When criminal offenders are conditionally released from incarceration to serve the remaining portion of their sentence in the community; offenders remain under some form of correctional supervision
Parolee Rates	The number of individuals on parole per 100,000 residents
Probation	When criminal offenders are placed on supervision in the community; generally in lieu of incarceration
Probationer Rates	The number of individuals on probation per 100,000 residents
Property Crime	Includes burglary, motor vehicle theft, or theft
Recidivism	A measure of criminal acts that resulted in re-arrest, reconviction, or return to prison with or without a new sentence; usually measured during a three-year period following a prisoner's release
Resource Costs	The costs associated with each step of criminal justice system; includes police, courts and prosecutors, and different form of supervision (e.g., jail, prison, supervision); broken down into marginal operating costs and capital costs
Revocation	When a convicted criminal violates the community supervision rules or commits new crime while under supervision
Supervision	Includes parole and probation
Tangible Victim Costs	Include medical and mental health care expenses, property damage and losses, and the reduction in earnings incurred by crime victims
Victim	The person harmed by a criminal act
Victim Costs - Tangible	Direct economic losses suffered by crime victims, including medical and mental health care expenses, property damage and losses, lost wages, and the reduction in the victim's earnings
Victim Costs - Intangible	Quality of life estimates that place a dollar value on pain and suffering, diminished quality of life, and psychological distress
Victimization	The effect of crime on one individual person or household; the number of victimizations may be greater than the number of incidents because more than one person may be victimized during an incident
Violent Crime	Includes murder, rape, sexual assault, robbery, or aggravated assault
Washington State Institute for Public Policy (WSIPP)	A non-partisan research institute created by the Washington Legislature in 1983; all institute activities are governed by a board of directors that represents the legislature, governor, and public universities; creator of the Sentencing Tool, which was used in this analysis

Sources: Aos and Drake 2010, Aos et al. 2006, Authors, Bureau of Justice Statistics 2010

EXECUTIVE SUMMARY

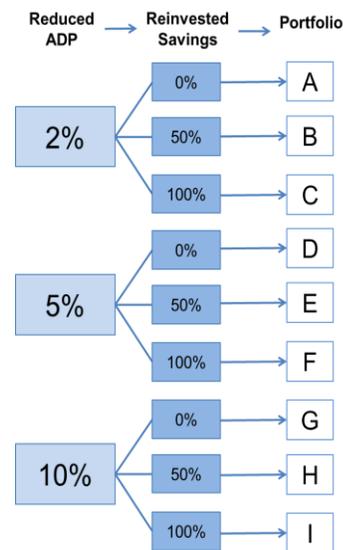
Wisconsin has a higher incarceration rate and spends a greater percentage of its total state budget on corrections than neighboring states do. Wisconsin’s prison population is projected to increase 25 percent by 2019 at a taxpayer cost of \$2.5 billion. In light of a substantial projected state budget deficit, this analysis examines cost-beneficial policy options that could lower corrections costs in Wisconsin. The Washington State Institute for Public Policy has developed Sentencing Tool software to assist states in identifying evidence-based programs that can reduce crime and lower corrections costs. This approach involves first reducing costs by decreasing the average daily prison population and then deciding whether or not to reinvest the savings into evidence-based criminal justice intervention programs, and if so, how much to reinvest. This analysis uses the institute’s Sentencing Tool and Wisconsin data on crime, victimization, criminal justice expenditures, and intervention programming to examine the costs and benefits of nine combinations of prison population reduction and savings reinvestment. We refer to each of these combinations as a portfolio.

First, we projected three scenarios that would decrease the prison population by 2 percent, 5 percent, or 10 percent. This translates into incarcerating 450, 1,124, or 2,248 fewer low-risk prisoners. Second, for each scenario we took the savings from reduced incarceration and invested 0 percent, 50 percent, or 100 percent of it into evidenced-based programs (see figure below). We selected eight intervention programs found by the institute to be highly effective in reducing crime outcomes, and we targeted our reinvestments to maximize existing program capacity in Wisconsin. This resulted in nine portfolios, labeled A through I.

The table below presents the results of our analysis. It shows how each portfolio, if implemented, would be expected to affect victimizations (the number of crimes experienced), the costs associated with these victimizations (e.g., health care, therapy, lost wages, diminished quality of life), the savings to government as a result of reduced crime and incarceration, and the net social benefits. Net social benefits are equal to government savings (after taking into account the costs of intervention programming) plus avoided victim costs.

All nine portfolios yielded estimated net social benefits. The portfolios with significant reinvestment in evidence-based programs produced greater benefits than portfolios that did not reinvest. However, portfolios that reduced the prison population by a higher percentage could be considered riskier because they had greater variability in estimates of victimization and net benefits. The portfolios that did not reinvest in evidence-based programs always reduced public safety due to estimated increases in victimizations.

Release and Reinvestment Portfolios



Net Social Benefits				
Portfolio	Change in Number of Victimizations	Victim Costs Avoided (in millions)	Government Savings (in millions)	Net Social Benefits (in millions)
A	312	-\$1.0	\$9.7	\$8.7
B	-114	\$2.9	\$4.5	\$7.4
C	-723	\$8.9	\$0	\$8.9
D	752	-\$2.4	\$22.7	\$20.3
E	-490	\$9.8	\$11.3	\$21.1
F	-1,523	\$20.1	\$0	\$20.1
G	1,585	-\$5.1	\$45.4	\$40.3
H	-865	\$18.7	\$22.7	\$41.4
I	-3,273	\$42.5	\$0	\$42.5

Note: Net social benefits are avoided victim costs and government savings
Source: Authors

From a societal perspective, our analysis found *Portfolio I* to be the most cost-beneficial policy option—society as a whole gains the most through reduced costs to the government and the savings due to the reduction in victimization. *Portfolio G* predicted the greatest savings to government, and *Portfolio C* was the least risky and, thus, the most likely of the options to produce favorable results.

***Portfolio I* yielded the greatest societal savings.** Decreasing the average daily prison population by 10 percent (2,248 prisoners) and reinvesting 100 percent of the savings was the option with the highest estimated societal savings. This option predicted net social benefits of \$42.5 million and a decrease in victimizations of more than 3,000. This option also had the widest range of variability in its estimates.

***Portfolio G* yielded the greatest government savings.** Decreasing the average daily prison population by 10 percent (2,248 prisoners) and reinvesting 0 percent of the savings had the highest estimated government savings at \$45 million. This option resulted in an estimated increase of more than 1,500 victimizations, yielding net social benefits of about \$40 million.

***Portfolio C* was the least risky.** Decreasing the average daily prison population by 2 percent (450 prisoners) and reinvesting 100 percent of the savings was the least risky option in terms of crime reduction. This portfolio was the only one in which the possible number of new victimizations was very close to or less than zero for all estimates. This option yielded net social benefits of about \$9 million.

INTRODUCTION

The Wisconsin Family Impact Seminars provide research-based, non-partisan information to state policymakers and professionals. Their January 2011 seminar is entitled “Evidence-Based Budgeting: Making Decisions to Move Wisconsin Forward.” As one component to this program, Wisconsin Family Impact Seminars requested that graduate students at the University of Wisconsin–Madison’s La Follette School of Public Affairs perform a cost-benefit analysis of Wisconsin’s corrections programs to provide information for realizing cost-savings to state and local governments in Wisconsin without increasing crime rates. Our analysis has two theoretical components. First, by reducing average daily population in the prison system, the state would save money but as a result would likely face some increase in crime. Second, to offset this increase, the state could reinvest these savings in evidence-based criminal justice intervention programs that reduce crime. The outcome would be constant or reduced crime rates and cost savings to Wisconsin. Our analysis uses the conceptual framework and software developed by the Washington State Institute for Public Policy (Aos and Drake 2010, Aos et al. 2006).

OVERVIEW OF COST-BENEFIT ANALYSIS

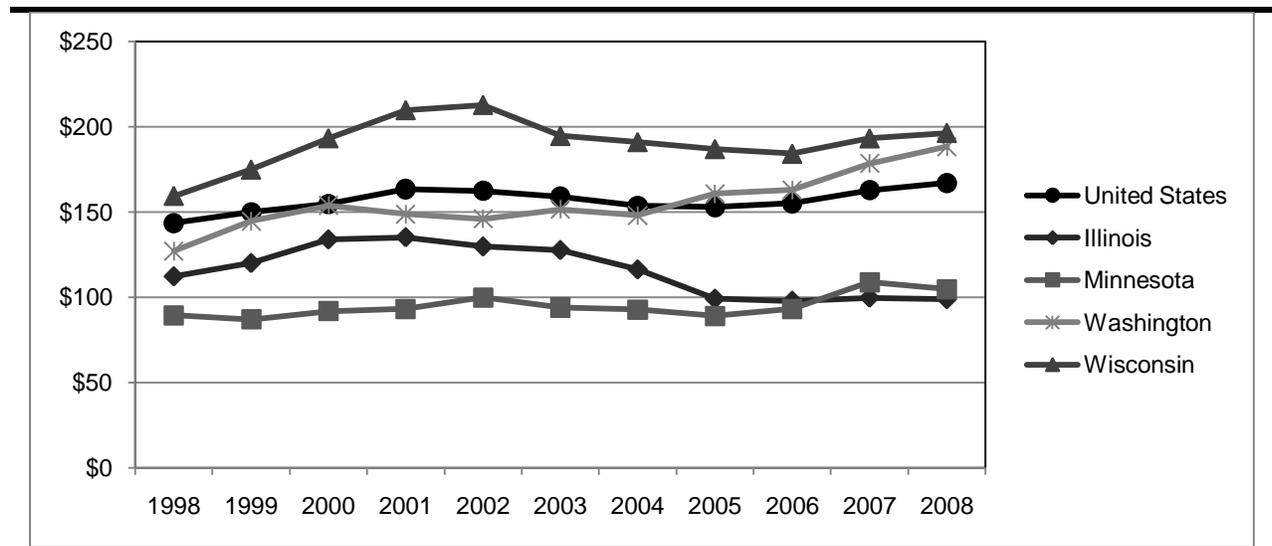
Cost-benefit analysis (CBA) is a framework to aid policymakers in decision-making. CBA allows analysts to assess and compare policy options by quantifying and monetizing impacts. Analysts must consider whose costs and benefits are included and make projections of costs and benefits over the life of a project. Inherent in CBA’s predictions is an element of uncertainty that requires analysts to determine the extent to which the assumptions and outcomes of the analysis are sensitive to chance. Ultimately, analysts weigh different policy options based on their net benefits and make recommendations accordingly.

CBA involves several limitations. First, CBA is limited by whose costs and benefits are included. Second, monetizing impacts can be complex, especially where markets do not exist or are inefficient. Third, there are ethical considerations when quantifying sensitive intangible costs, such as pain and suffering or the value of a human life. Fourth, CBA recommendations are based on efficiency, not equity or other politically important considerations. Fifth, many CBA inputs are subjective, and analysts should be upfront about assumptions when making recommendations.

WISCONSIN CONTEXT

For this project, we apply CBA to the Wisconsin criminal justice system. Wisconsin’s prison average daily population (ADP) has steadily increased over the last twenty years, resulting in increased incarceration costs (Wisconsin Taxpayers Alliance 2002, Council of State Governments Justice Center 2009). Wisconsin spends more per capita on state corrections than comparable states such as Illinois, Minnesota, and Washington, and ranks consistently higher than the national average (Figure 1; U.S. Census Bureau 2010).

Figure 1: Per Capita Corrections Spending (2010 Dollars)

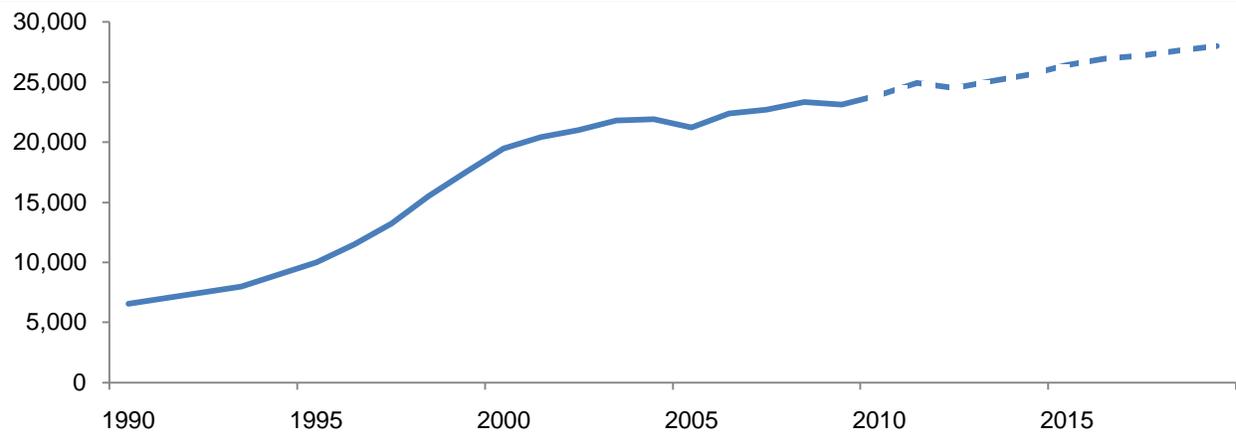


Source: U.S. Census Bureau 2010

The cost difference may result in part from differences in incarceration rates. For instance, Wisconsin and Minnesota are demographically comparable states with very similar crime rates; however, Wisconsin's incarceration rate (371 per 100,000 adults) is much higher than Minnesota's (191 per 100,000 adults) (National Institute of Corrections n.d.). Wisconsin also spends a greater proportion of its budget on corrections. In fiscal years 2009-2011 Wisconsin spent nearly 7 percent of the total state budget on corrections, slightly higher than Washington, more than twice as much as Minnesota, and four times as much as Illinois, as a percentage of their state budgets (State of Wisconsin 2009, State of Washington 2008, State of Minnesota 2010, State of Illinois 2010). With an annual operating budget of more than \$1.2 billion, Wisconsin's Department of Corrections received the fifth largest allocation in Wisconsin's 2009-2011 biennial state budget (Carmichael 2009a, State of Wisconsin 2009). The state has repeatedly attempted to mitigate these costs. Appendix A outlines reforms to Wisconsin's criminal justice system.

Wisconsin's corrections system faces challenges in the coming decade. The state prison population is projected to increase 25 percent by 2019 (Figure 2). This increase will cost the government an estimated \$2.5 billion, including \$1.4 billion in new prison construction costs. Most of the increase in prison population would result from recidivism and revocation, rather than from new offenders (Council of State Governments Justice Center 2009).

Figure 2: Wisconsin Prison Population (1990-2019)



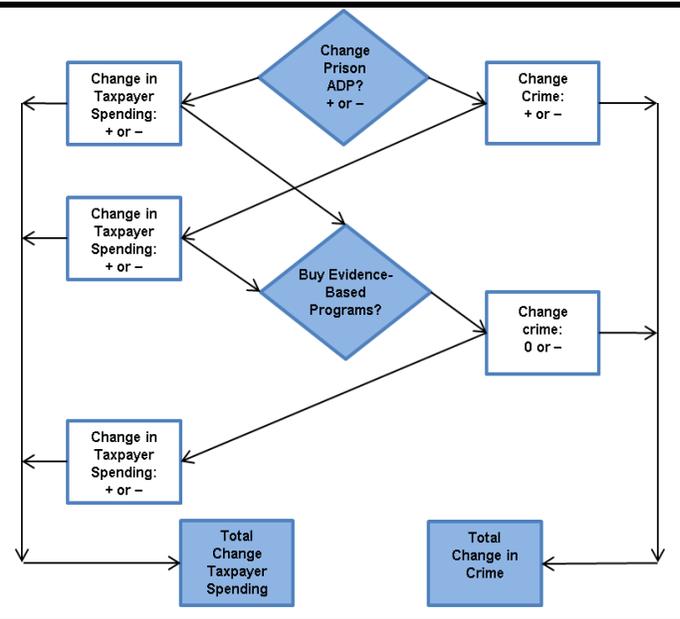
Sources: Council of State Governments Justice Center 2009, Wisconsin Taxpayers Alliance 2002

SENTENCING TOOL

Wisconsin’s policymakers could benefit from a CBA that considers alternatives to help control criminal justice system costs and crime rates. Research by the Washington State Institute for Public Policy on the Washington criminal justice system provides a conceptual framework and software to perform a similar analysis for Wisconsin.

The software, called the Sentencing Tool, is designed to “estimate the net change in crime in a state, along with the net change in government spending, with different mixes of incarceration and programming policies” (Aos and Drake 2010: 4). Figure 3 shows the structure of the Sentencing Tool, which can be used to model what happens when prison ADP is reduced by various percentages and, if desired, resulting savings are reinvested into evidence-based intervention programs. Because these programs have proven results, investing in these programs can reduce crime and save the state money.

Figure 3: Structure of the Sentencing Tool



Recreated from: Aos and Drake 2010: 4

The software requires state-specific inputs of multiple criminal justice per-unit costs listed in Table 1. Some of the costs are further broken down by type of crime (Table 2). The benefits we measured are the avoided costs from incarceration and avoided costs of crime victimization¹ resulting from reduced crime and recidivism. We use the Sentencing Tool to calculate which combinations of reduction in ADP and reinvestment of savings would reduce crime victimizations while saving money. We call each of these strategies a “release and reinvestment portfolio,” although we emphasize that ADP can be reduced through multiple sentencing options other than directly releasing offenders from prison, such as through the use of shorter sentences, intensive supervision, jail diversion programs, etc.

¹ Victimization is the effect of crime on one individual person or household. It is possible for the number of victimizations to be greater than the number of incidents because more than one person may be victimized during an incident.

Table 1: Per-Unit Cost Categories

<i>Resource Costs</i>		<i>Victim Costs</i>	<i>Program Costs</i>
<i>Marginal Operating Costs</i>	<i>Capital Costs</i>		
<ul style="list-style-type: none">• Police• Courts and Prosecutors• Juvenile Local Detention• Juvenile Local Supervision• Juvenile State Institution• Juvenile State Supervision• Adult Jail• Adult Local Supervision• Adult State Prison• Adult Post-Prison Supervision	<ul style="list-style-type: none">• Police• Courts and Prosecutors• Juvenile Local Detention• Juvenile State Institution• Adult Jail• Adult State Prison	<ul style="list-style-type: none">• Tangible• Intangible	<ul style="list-style-type: none">• Vocational Education in Prison• General Education in Prison• Cognitive-Behavioral Therapy in Prison• Correctional Industries in Prison• Drug Treatment in Prison• Multidimensional Treatment Foster Care• Family Integrated Transitions• Functional Family Therapy

Source: Aos and Drake 2010

Table 2: Crime Categories

<i>Types of Crime</i>
<ul style="list-style-type: none">• Murder/Manslaughter• Rape• Robbery• Aggravated Assault• Property• Drug• Misdemeanor

Sources: Aos and Drake 2010, Aos et al. 2006

The Sentencing Tool makes numerous CBA assumptions for the user. First, the software does not consider costs or benefits incurred by offenders as a result of criminal activity or incarceration, such as lost wages. Second, the software considers state and local jurisdictional costs, to ensure that cost savings to the state do not simply result from shifting costs to local agencies. Finally, the software only considers costs and benefits to people who reside in the state, because this analysis is intended to aid in state-level decisions about policy.

Cost Inputs

In this section we describe the Sentencing Tool's cost inputs, which include criminal justice resource costs (including marginal operating and capital costs), victim costs, and selected programs' costs. Following the Washington State Institute for Public Policy's process, we entered Wisconsin-specific inputs into the Sentencing Tool software. (See Appendix B.)

Resource Costs – Marginal Operating. Marginal operating costs are the change in government costs resulting from a change in one unit. For police costs, this unit is one arrest. For court costs, this unit is one conviction. For all other cost categories, this unit is one person added to the average daily population of a facility or program. In other words, marginal operating costs, which include salaries and wages, administration, supplies, materials, and contractual services, indicate the additional expense associated with adding one more person to the corrections system.

We engaged in extensive data collection from local, state, and national sources to gather Wisconsin-specific information. Using data from the Wisconsin Department of Corrections, the United States Bureau of Justice Statistics, and the Wisconsin Office of Justice Statistics, we estimated the per-unit marginal operating costs for the ten categories listed in Table 1. For each category, we also determined an average annual escalation rate, which indicates how quickly costs can be expected to grow from year to year, after accounting for inflation. (See Appendix C.)

Resource Costs – Capital. Capital cost estimates, such as those for buildings, cars, computers, and other materials, are also necessary to calculate change in government costs. Governments tend to purchase these inputs at one time. The inputs do not change as offenders are added until a certain capacity is reached or until the inputs need to be replaced. We calculated capital costs differently for each cost category. (See Appendix C.)

Victim Costs. Victims of crimes incur tangible and intangible costs. Tangible costs are the direct economic losses suffered by crime victims, including medical and mental health care expenses, property damage and losses, lost wages, and the reduction in the victim's earnings (Aos et al. 2006, Aos and Drake 2010, Miller et al. 1996, McCollister et al. 2010). Intangible

costs are quality of life estimates that place a dollar value on pain and suffering, diminished quality of life, and psychological distress (Aos et al. 2006, Aos and Drake 2010, McCollister et al. 2010). We based our estimates on a study by McCollister, French, and Fang (2010). Although these estimates are imperfect and controversial, they are the best available and are an important component to understanding the true social costs of crime. (See Appendix D.)

Program Costs. The Washington State Institute for Public Policy conducted multiple meta-analyses of criminal justice intervention programs to determine those most effective in reducing criminal behavior. We selected five of the most beneficial adult programs and three of the most beneficial juvenile programs with available impact estimates that allowed for cost adjustments for Wisconsin (Aos and Drake 2010: 25, Aos et al. 2006). Our selection reflects the motivation for this analysis: to find the most cost-beneficial course of action for Wisconsin.

We estimated marginal cost increases for these programs by calculating the program cost of serving one additional person. The adult programs selected include in-prison cognitive-behavioral therapy, correctional industries, drug treatment, general education, and vocational education. Currently, all of these programs are offered in some form in Wisconsin's adult correctional institutions (Wisconsin Department of Corrections 2006). Juvenile programs selected include Family Integrated Transitions, Family Functional Therapy, and Multi-dimensional Treatment Foster Care. When determining the per-person marginal operating costs of these programs, we referred to national, state, and county resources. Program costs include staff, such as salaried social workers and contracted therapists, and general program operating expenditures. (See Appendix E.)

Additional Sentencing Tool Inputs

Additional inputs include recidivism, sentencing options, and victimization rates.

Recidivism. The Sentencing Tool requires recidivism inputs. Recidivism estimates are based on the probability that certain types of offenders will re-enter the criminal justice system and the probability of the types of crimes reoffenders are likely to commit. For example, the number of drug offenders who re-enter the correctional system within a certain number of years would be tracked, as well as the type and number of new crimes they commit. The Wisconsin Department of Corrections collects extensive recidivism data, but given our timeframe we were unable to access the amount and format of data needed for the software. Thus, we used Washington recidivism estimates in our analysis.

Sentencing Options. Wisconsin's correctional system has numerous sentencing options. Depending on the seriousness of the crime, a judge determines the form of supervision (e.g., jail, prison, supervision) and sentence length. Estimates of the likelihood of use of each sentencing option are required for the Sentencing Tool. For example, a burglar may have a 35 percent chance of being sentenced to a state prison for an average of 1.5 years versus any other sentencing option. Based on the available information, sentencing options and use in Wisconsin are expected to be similar to those in Washington; because Wisconsin does not have the sentencing options data required for the Sentencing Tool, we used Washington estimates in our analysis.

Victimizations. The Sentencing Tool requires estimates of victimization rates for the seven crime categories to reflect more accurately reductions in crime resulting from investment in criminal justice intervention programs. To meet this requirement, we replaced Washington's victimization estimates with Wisconsin data for the statewide number of crimes reported to the police, the percentage of crime reported to the police, and the statewide number of convictions. (See Appendix F.)

Benefits

In addition to costs, the other important consideration in CBA is benefits. We measured benefits in two main ways: (1) benefits to the government from avoided criminal justice system costs because of reduced crime and recidivism, and (2) benefits to potential crime victims from avoided social costs because of reduced crime and recidivism (Aos and Drake 2010). For instance, if a program is effective in significantly reducing crime, then the government would save from reduced costs of policing, adjudicating, detaining, and supervising criminal offenders. In addition, if there are fewer crimes, then fewer victims would suffer tangible and intangible victimization costs (Aos et al. 2006). These two benefit categories (avoided government and victimization costs) do not constitute all of the benefits that could have been considered in our analysis. Effective intervention programming could also produce personal benefits to current or potential offenders that might include higher wages, lower medical and substance abuse costs, increased educational attainment, improved personal relationships, or enhanced quality of life. These personal benefits could also provide spillover benefits to society, such as increased tax collections and avoided social welfare use. The scope of this project and the complex interactions among these effects did not allow us to consider them as additional benefits. Thus, our analysis may underestimate the potential social benefits of reduced crime and recidivism.

Sentencing Tool Limitations

The Sentencing Tool software has limitations that do not allow us to account for some important information. First, although police costs are a significant portion of criminal justice costs, the current beta version of the Sentencing Tool does not incorporate policing costs when calculating the outcomes (Aos and Drake 2010). Second, several inputs that influence crime and recidivism, such as education, health, and substance abuse, are not yet operational in the

Sentencing Tool software. Including these inputs would have improved our analysis. Third, we were unable to calculate and include estimates for the costs that fear of crime imposes on potential victims, or for gender differences in crime rates and recidivism. Fourth, the Sentencing Tool does not include consideration of the marginal excess tax burden, the amount it costs the government to raise an additional tax dollar, which is generally 5-15 percent of each tax dollar collected. By excluding this information, the results may not reflect the full benefits of the portfolios.

POLICY PORTFOLIO OPTIONS

To measure the costs and benefits of altering sentencing policies in Wisconsin, we created nine investment portfolios based on combinations of incarceration and programming policies. Our strategy for creating portfolios was based on three components: altering sentencing policy by reducing the prison average daily population, reinvesting state savings from reduced prison costs into evidenced-based intervention programs, and catering reinvestment to maximize capacity for existing programs in Wisconsin.

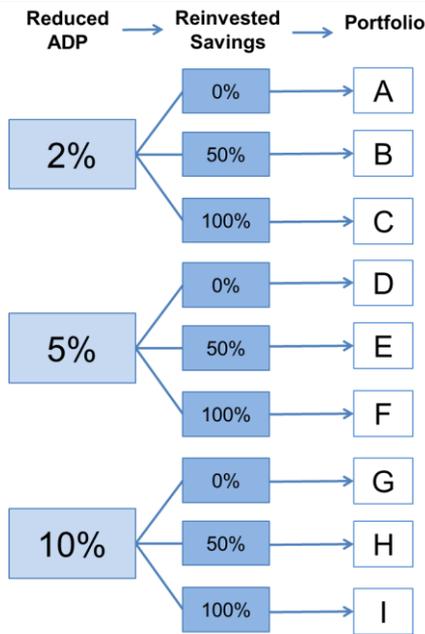
Release and Reinvestment Portfolios

To measure the impact of altering sentencing policies in Wisconsin, we projected three scenarios that reduce the prison average daily population (ADP) by 2 percent, 5 percent, or 10 percent. Wisconsin's average daily prison population is approximately 22,000 prisoners, translating into the reduction of ADP by 450, 1,124, and 2,248 prisoners. Examining three separate scenarios allowed us to estimate government savings and victim effects for low, moderate, and aggressive approaches. The model uses data on recidivism and risk to assume the release of the offenders with the lowest likelihood of re-offense. (See Appendix G.)

The second component was to reinvest the savings created from reducing the prison average daily population into evidence-based intervention programs that increase social benefits.

We applied three levels of reinvestment (0 percent, 50 percent, and 100 percent) into evidenced-based programs (Figure 4).

Figure 4: Release and Reinvestment Portfolios



Source: Authors

Using the Washington State Institute for Public Policy’s meta-analyses of evidenced-based criminal justice programs, we selected eight of the programs with the largest effects that are operating in Wisconsin in some capacity. Table 3 lists these programs in order of effectiveness in reducing crime outcomes and shows the net benefits each program generated in Washington’s analysis. The institute’s cost-benefit calculation sums the per-unit social benefits of reduced crime to the government and crime victims, minus the marginal costs for each additional program participant.

Table 3: Program Effects

Program	Program Type	Net Benefits	Effect on Crime Outcomes
Multi-Dimensional Treatment Foster Care	Juvenile	\$77,798	-22.0%
Family Functional Therapy	Juvenile	\$31,821	-15.9%
Family Integrated Transitions	Juvenile	\$40,545	-13.0%
Vocational Education in Prison	Adult	\$13,738	-9.0%
General Education in Prison	Adult	\$10,669	-7.0%
Cognitive-Behavioral Therapy in Prison	Adult	\$10,299	-6.3%
Correctional Industries in Prison	Adult	\$9,439	-5.9%
Drug Treatment in Prison	Adult	\$7,835	-5.7%

Source: Aos et al. 2006

Finally, we designed the nine portfolios to invest in evidenced-based programs to maximize the existing program capacity in Wisconsin. We choose to invest first in the program with the largest effects, and once it reached maximum capacity, we reinvested any remaining savings into the next most effective programs. (See Appendix H.) Several of our portfolios have additional monies remaining after maximizing capacity in all eight programs that could be reinvested to expand program capacities or to implement new programs in Wisconsin. Table 4 shows the investment ranges for each program. An alternative investment strategy would divide reinvestment funds evenly among the evidence-based programs. (See Appendix I.)

Table 4: Program Reinvestment Ranges

Program	Investment Range
Multi-Dimensional Treatment Foster Care	3-12%
Family Functional Therapy	7-32%
Family Integrated Transitions	3-14%
Vocational Education in Prison	14-42%
General Education in Prison	0-22%
Cognitive-Behavioral Therapy in Prison	0-2%
Correctional Industries in Prison	0-4%
Drug Treatment in Prison	0-37%

Source: Authors

RESULTS

Before presenting our results, we emphasize two important caveats to our findings. First, “A model’s outputs are, of course, only as good as the inputs” (Aos and Drake 2010: 5). These results are limited by a lack of quality inputs. Wisconsin, unlike Washington, does not have central resources (or, in many cases, any resource) for gathering criminal justice data. While much of the state-level data were available from the Wisconsin Department of Corrections, some local and juvenile data were unavailable. Second, it is important to note that the success of evidence-based programs depends on implementation in the field. If intervention programs are not implemented properly, the results could drastically differ from the Sentencing Tool estimates. Through its research on evidence-based programs, the Washington State Institute for Public Policy found that “when the program was not implemented competently, then it did not reduce crime at all” (Aos et al. 2006: 16). Thus, like the Washington State Institute for Public Policy, we suggest considering investment in ongoing program evaluation to ensure proper implementation and operation.

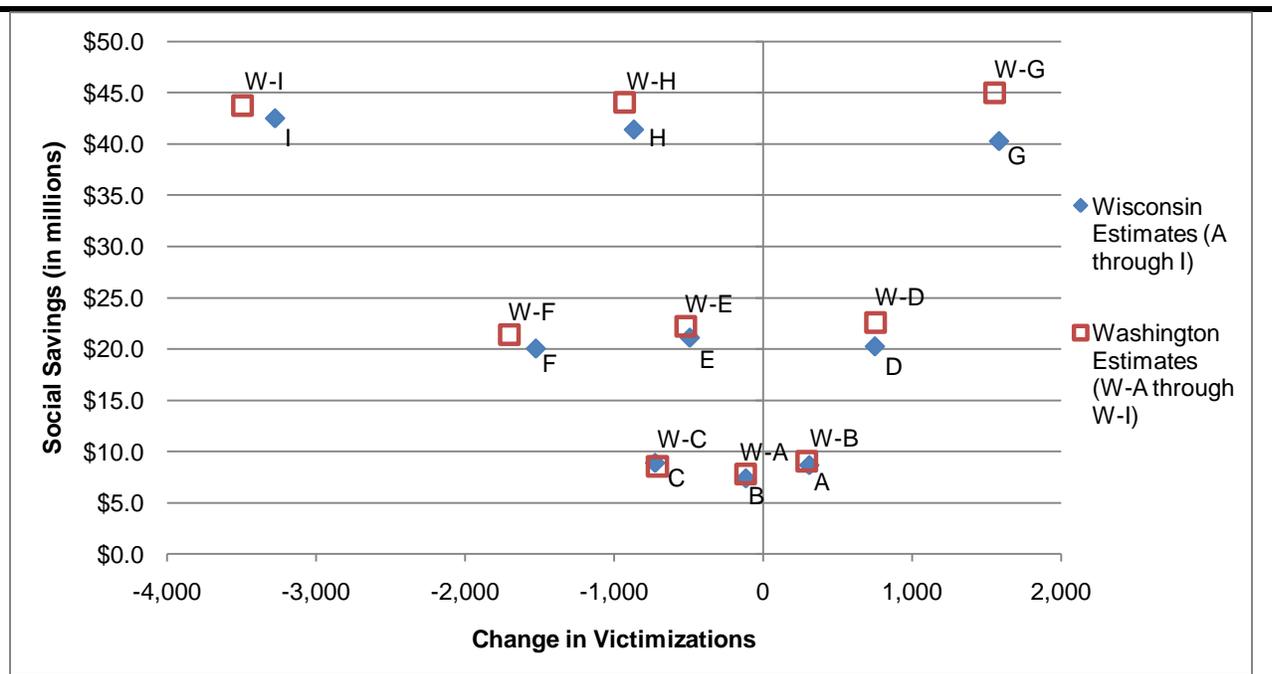
Sensitivity Analysis

The uncertainty inherent in many of our point estimates makes it difficult to be confident in our results. To account for this uncertainty, the Sentencing Tool includes a Monte Carlo simulation. The Monte Carlo simulation provides a way of acknowledging riskiness by utilizing ranges of values for cost and benefit estimates included in the Sentencing Tool. In addition, it offers point estimates for the expected change in victimization rates and social savings. The simulation gives a range of possible victimizations and the likelihood that victimization would be reduced.

Furthermore, to test the robustness of our estimates, we compared our portfolio results with similar portfolios using the Washington State Institute for Public Policy’s estimates for

Washington state. Figure 5 compares Wisconsin data (points A through I) and Washington data (points W-A through W-I) for the reinvestment portfolios. The point estimates are relatively similar. This comparison allows us to say with greater confidence that, if Wisconsin offender populations and recidivism rates are similar to those in Washington and the criminal justice programs chosen for reinvestment are faithfully implemented, then Wisconsin should expect to see outcomes similar to Washington's, in terms of victimization and government expense.

Figure 5: Release and Reinvestment Comparison by Portfolio



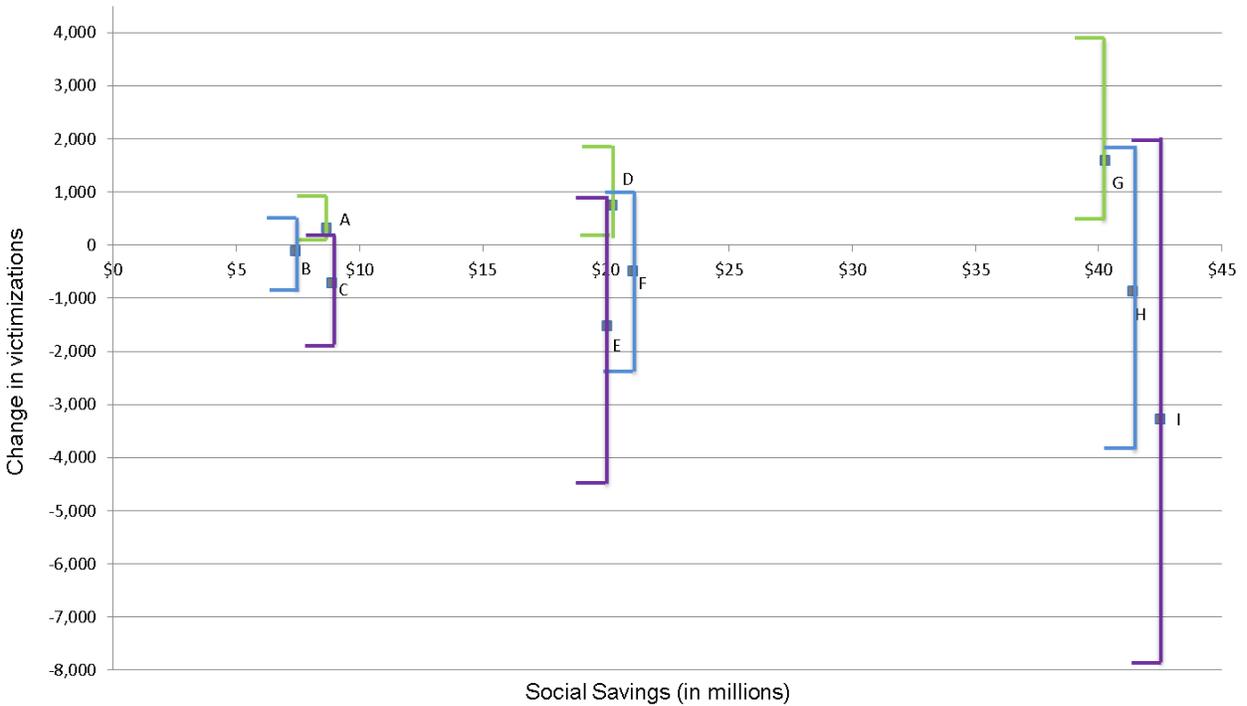
Source: Authors

Impacts on Victimization

We found that whenever the prison average daily population was reduced and none of the savings were reinvested, victimization always increased; when 50 or 100 percent of the savings were reinvested, victimization decreased. Also, the more that the prison average daily population was reduced, the higher the variability in estimated crime victimizations. Figure 6 shows the victimization variability with brackets, which reflect the high and low estimated change in

victimization from the Monte Carlo simulation. The figure also indicates the percentage of time each portfolio resulted in fewer victimizations based on the 10,000 iterations of the Monte Carlo simulation. Purple brackets indicate reduction at least 95 percent of the time. Blue brackets indicate 5 to 95 percent reduction. Green reflects portfolios that never reduced victimizations.²

Figure 6: Victimization Ranges by Portfolio



Source: Authors

Calculation of Benefits

To assess the costs and benefits of reducing the prison average daily population (ADP) and reinvesting in evidenced-based programs, we estimated net social benefits. Net benefits include government savings as well as reduced costs resulting from less victimization (Table 5).

² If the document is printed in black and white, purple corresponds to the darkest shade, blue to the medium shade, and green to the lightest shade.

Table 5: Net Benefits by Portfolio

Portfolio	Victim Costs Avoided (in millions)	Government Savings (in millions)	Net Social Benefits (in millions)
A	-\$1.0	\$9.7	\$8.7
B	\$2.9	\$4.5	\$7.4
C	\$8.9	\$0	\$8.9
D	-\$2.4	\$22.7	\$20.3
E	\$9.8	\$11.3	\$21.1
F	\$20.1	\$0	\$20.1
G	-\$5.1	\$45.4	\$40.3
H	\$18.7	\$22.7	\$41.4
I	\$42.5	\$0	\$42.5

Note: Net social benefits are avoided victim costs and government savings
Source: Authors

All portfolios, regardless of the level of reduction in ADP and reinvestment policies, yielded estimated net benefits. The portfolios with significant reinvestment in evidence-based programs produced higher net benefits than portfolios that did not reinvest. However, greater reduction in prison ADP resulted in greater variability in victimization and societal benefits. (See Appendix J.) As mentioned, marginal excess tax burden is not included in the Sentencing Tool. Were it included, the net benefits, which ranged from \$7.4 million to \$42.5 million, would increase to \$7.8 million to \$48.9 million.

Portfolio Discussion

From a societal perspective, our analysis found *Portfolio I* to be the most cost-beneficial policy option—society as a whole gains the most through reduced costs to the government and the savings due to the reduction in victimization. *Portfolio G* predicted the greatest savings to government, and *Portfolio C* was the least risky and, thus, the most likely of the options to produce favorable results.

Portfolio I yielded the greatest societal savings. Decreasing prison ADP by 10 percent (2,248 prisoners) and reinvesting 100 percent of the savings was the option with the highest

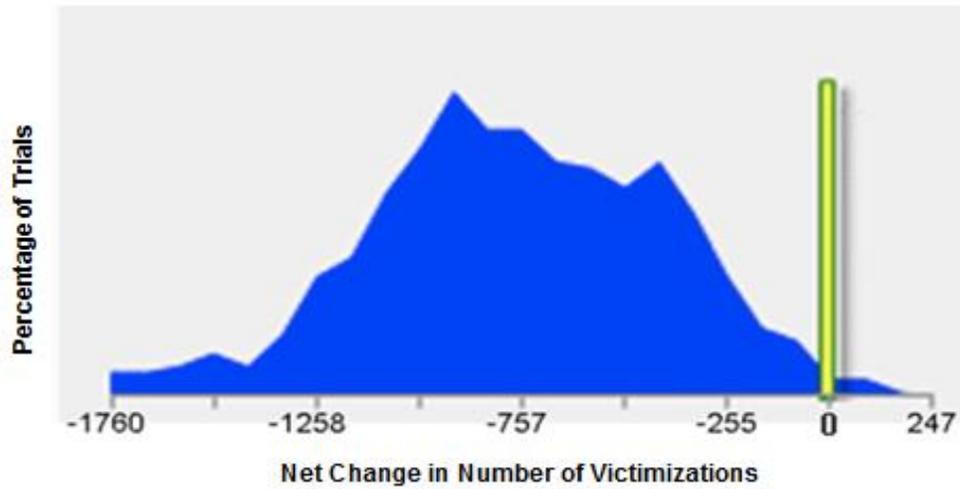
estimated societal savings. This portfolio resulted in an estimated decrease in government spending of \$13 million and an estimated decrease in victimizations of more than 3,000, yielding total net benefits of more than \$42 million. This option also had the widest range of variability in its estimates.

Portfolio G yielded the greatest government savings. Decreasing prison ADP by 10 percent (2,248 prisoners) and reinvesting 0 percent of the savings had the highest estimated government savings at \$45 million. This option resulted in an estimated increase of more than 1,500 victimizations, yielding net social benefits of approximately \$40 million.

Portfolio C was the least risky. Decreasing prison ADP by 2 percent (450 prisoners) and reinvesting 100 percent of the savings was the least risky option in terms of crime reduction (*Portfolio C*). This portfolio was the only one in which the possible number of new victimizations was very close to or less than zero for all estimates. This portfolio resulted in an estimated decrease in government spending of \$4 million and an estimated decrease in victimizations of 700, yielding total net benefits of almost \$9 million.

Based on our use of the Sentencing Tool, *Portfolio C* produces results that would be overall favorable for Wisconsin in terms of cost savings and victimization. *Portfolio C* is similar to *Portfolios E* and *I* in that all three options had a 95 percent probability of reducing victimizations, but *Portfolio C* has the least amount of variability (Figure 7). In other words, all the other portfolios had some likelihood that victimizations would increase if the strategy were implemented, whereas for *Portfolio C* this likelihood was almost none. Thus, it represents the least risky option of those we presented and still results in overall cost savings to the government and society.

Figure 7: Distribution of Victimization Impacts for Portfolio C



Source: Authors

However, because of our study's limitations, we caution that our analysis should be taken as an indication of how CBA could inform criminal justice policy in Wisconsin with improved data stewardship and proper program implementation. (See Appendix K.)

REFERENCES

- Abram, K. M., Teplin, L. A., McClelland, G. M., and Dulcan, M. K. (2003) Comorbid psychiatric disorders in youth in juvenile detention. *Archives of General Psychiatry*, 60: 1097-108.
- Aos, S. (2004) Washington State's Family Integrated Transitions program for juvenile offenders: Outcome evaluation and benefit-cost analysis. Olympia, WA: Washington State Institute for Public Policy.
- Aos, S. and Drake, E. (2010) WSIPP's benefit-cost tool for states: Examining policy options in sentencing and corrections. Olympia, WA: Washington State Institute for Public Policy.
- Aos, S., Miller, M., and Drake, E. (2006) Evidence-based public policy options to reduce future prison construction, criminal justice costs, and crime rates. Olympia, WA: Washington State Institute for Public Policy.
- Baronski, R. (2002) Washington State's implementation of Family Functional Therapy for juvenile offenders: Preliminary findings. Olympia, WA: Washington State Institute for Public Policy.
- Brown, S. R. (2004) Alternatives to prison for nonviolent drug offenders. Madison, WI: Wisconsin Legislative Reference Bureau.
- Carmichael, C. D. (2009a) Adult corrections program. Madison, WI: Wisconsin Legislative Fiscal Bureau.
- Carmichael, C. D. (2009b) Juvenile justice and youth aids program. Madison, WI: Wisconsin Legislative Fiscal Bureau.
- Christianson, K., Dornala, K., Phillips, L., Veitenheimer, D., and Waits, K. (2008) Arrests in Wisconsin - 2007. *Uniform Crime Reporting Program*. Madison, WI: Statistical Analysis Center, Wisconsin Office of Justice Assistance.
- Council of State Governments Justice Center (2009) Justice reinvestment in Wisconsin: Analysis and public options to reduce spending on corrections and increase public safety. New York, NY: Author.
- FFT, Inc. (2010) Family Functional Therapy (FFT). Retrieved November 13, 2010 from http://www.fftinc.com/sites_us.html#map
- Fontaine, J. (2005) Sentencing policy in Wisconsin: 1975-2005. Madison, WI: Wisconsin Sentencing Commission.
- Frank, M. J. (2007) Cost-effectiveness of juvenile correctional institutions: Analysis and options. Madison, WI: Wisconsin Department of Corrections.
- French, M. T., Popovici, I., and Tapsell, L. (2008) The economic costs of substance abuse treatment: Updated estimates and cost bands for program assessment and reimbursement. *Journal of Substance Abuse Treatment*, 34: 462-69.

- Hughes, K. A. (2006a) Justice expenditure and employment extracts, 2004. *Justice Expenditure and Employment Series*. Washington, DC: Bureau of Justice Statistics, Office of Justice Programs, U.S. Department of Justice.
- Hughes, K. A. (2006b) Justice expenditure and employment in the United States, 2003. *Bulletin*. Washington, DC: Bureau of Justice Statistics, Office of Justice Programs, U.S. Department of Justice.
- Hughes, K. A. (2007) Justice expenditure and employment extracts, 2005. *Justice Expenditure and Employment Series*. Washington, DC: Bureau of Justice Statistics, Office of Justice Programs, U.S. Department of Justice.
- Illinois Department of Corrections (2000) DOC addresses increased prison population through innovative prison construction. *Perspectives*, 23: 1-16.
- Jackson, S. (2008, July) Division of Juvenile Corrections. Presentation to the Legislative Council Special Committee on High-Risk Juvenile Offenders, Madison, WI.
- Kyckelhahn, T. (2010) Justice expenditure and employment extracts, 2007. *Justice Expenditure and Employment Series*. Washington, DC: Bureau of Justice Statistics, Office of Justice Programs, U.S. Department of Justice.
- McCollister, K. E., French, M. T., and Fang, H. (2010) The cost of crime to society: New crime-specific estimates for policy and program evaluation. *Drug and alcohol dependence*, 108: 98–109.
- Miller, T., Cohen, M. A., and Wiersema, B. (1996) Victim costs and consequences: A new look. Washington, DC: U.S. Department of Justice.
- National Institute of Corrections (n.d.) State corrections statistics. Retrieved October 13, 2010 from <http://nicic.gov/features/statestats/default.aspx?state=wi>
- Perry, S. W. (2008) Justice expenditure and employment extracts, 2006. *Justice Expenditure and Employment Series*. Washington, DC: Bureau of Justice Statistics, Office of Justice Programs, U.S. Department of Justice.
- Redgranite Correctional Institution (2004) Annual report 2003-04. Madison, WI: Wisconsin Department of Corrections.
- Rosenmerkel, S., Durose, M., and Farole, D., Jr. (2009) National judicial reporting program: Felony sentences in state courts, 2006—Statistical tables. *Felony sentences in state courts*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics.
- Smith, M. J., Barak, A., Chown, R., Eversen, T., Martin, M., Phillips, L., and Ziemke, D. (2005) Crime and arrests in Wisconsin - 2004. *Uniform Crime Reporting Program*. Madison, WI: Statistical Analysis Center, Wisconsin Office of Justice Assistance.
- Smith, M. J., Barak, A., Dornala, K., Eversen, T., Hallett-Michel, S., Herman, A., Phillips, L., Semmann, S., Veitenheimer, D., Waits, K., and Ziemke, D. (2007a) Crime and arrests in

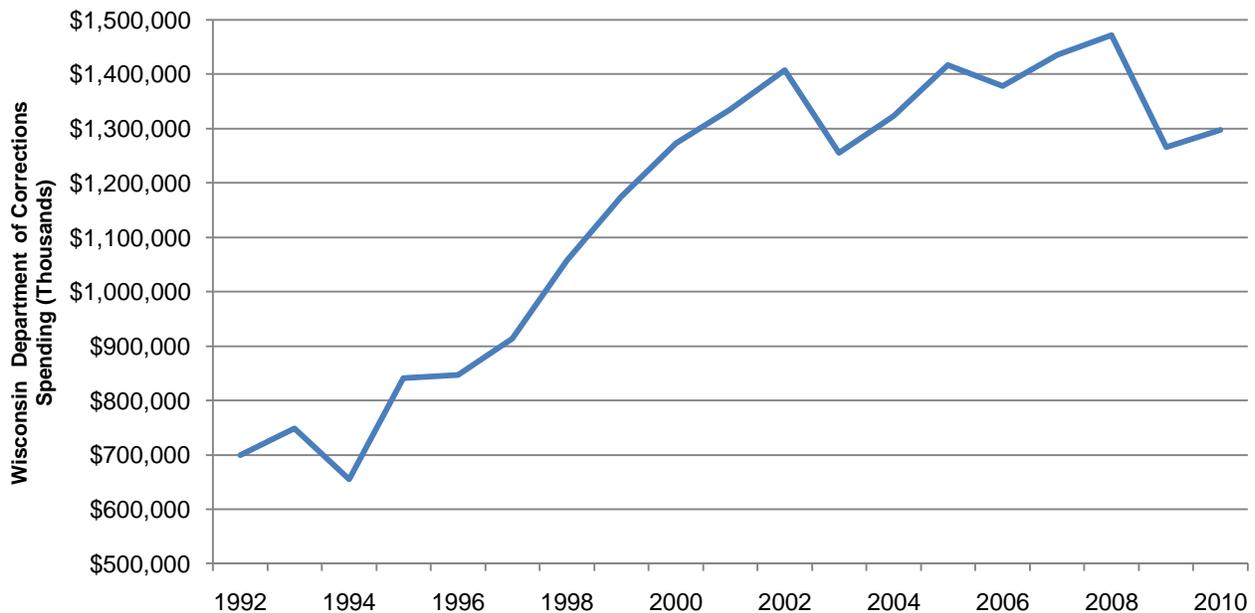
- Wisconsin - 2006. *Uniform Crime Reporting Program*. Madison, WI: Statistical Analysis Center, Wisconsin Office of Justice Assistance.
- Smith, M. J., Barak, A., Dornala, K., Eversen, T., Herman, A., Phillips, L., Semmann, S., Veitenheimer, D., and Ziemke, D. (2007b) Crime and arrests in Wisconsin - 2005. *Uniform Crime Reporting Program*. Madison, WI: Statistical Analysis Center, Wisconsin Office of Justice Assistance.
- State of Illinois (2010) Illinois state budget: Fiscal year 2010. Springfield, IL: Illinois Office of Management and Budget.
- State of Minnesota (2010) General fund balance analysis, 2010: Legislative special session 2. Saint Paul, MN: Minnesota Management and Budget.
- State of Washington (2008) Proposed 2009-2011 budget and policy highlights. Olympia, IL: Office of the Governor.
- State of Wisconsin (2009) Budget in brief. Madison, WI: Division of Executive Budget and Finance, Wisconsin Department of Administration.
- TFC Consultants, Inc. (2010) Multidimensional Treatment Foster Care. Retrieved December 14, 2010 from <http://www.mtfc.com>
- U.S. Census Bureau (2009) State and county quickfacts - Wisconsin. Retrieved November 28, 2010 from <http://quickfacts.census.gov/qfd/states/55000.html>
- U.S. Census Bureau (2010) State government finances. Retrieved December 14, 2010 from <http://www.census.gov/govs/state/>
- University of Washington (2008) Juvenile Rehabilitation Administration Family Integrated Transitions (FIT) overview. Retrieved December 14, 2010 from <http://depts.washington.edu/pbhjp/projects/fit.php>
- Wade, K., McCulley, S., Harkins, D., Tarte, A. L., Regan, M., and Sommerfeld, R. (2008) 17-year-old offenders in the adult criminal justice system. Madison, WI: Wisconsin Legislative Audit Bureau.
- Washington Department of Social and Health Services (2010) Juvenile Rehabilitation Administration demographics. Retrieved November 13, 2010 from <http://www.dshs.wa.gov/jra/facts/demographics.shtml>
- West, H. C. and Sabol, W. J. (2008) Prisoners in 2007. *Bureau of Justice Statistics Bulletin*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics.
- Wisconsin Court System (n.d.) Truth in sentencing. Madison, WI: Wisconsin Sentencing Commission. Wisconsin Department of Corrections (2006) Wisconsin Division of Adult Institutions FY06 profile. Madison, WI: Author.
- Wisconsin Department of Corrections (2009a) Average daily populations (ADPs) cost report FY09. Unpublished raw data.

- Wisconsin Department of Corrections (2009b) Opportunities and options: The resource guide. Madison, WI: Author.
- Wisconsin Department of Corrections (2009c) Wisconsin Act 28 sentencing reform fact sheet. Madison, WI: Author.
- Wisconsin Department of Corrections (2010) Division of juvenile corrections. Retrieved December 2, 2010 from http://www.wi-doc.com/index_juvenile.htm
- Wisconsin Division of Juvenile Corrections (2008) Division of Juvenile Corrections 2008 report. Madison, WI: Wisconsin Department of Corrections.
- Wisconsin Division of Juvenile Corrections (2010) Administrator's memo to counties: Community intervention programs FY2010 evaluations. Madison, WI: Wisconsin Department of Corrections.
- Wisconsin Taxpayers Alliance (2002) Election 2002: Challenges ahead. *Wisconsin Taxpayer*, 70: 2-12.

APPENDIX A: CRIMINAL JUSTICE IN WISCONSIN

Most of the projected growth of Wisconsin’s incarcerated population is expected to result from revocation and recidivism, not new crime (Council of State Governments Justice Center 2009). Revocation occurs when a convicted criminal violates the community supervision rules or commits a new crime while under supervision. Fifty-five percent of the Wisconsin state prison population was in prison because of revocation in 2007, costing taxpayers more than \$286 million. Further, in Wisconsin, “40 percent of people released from prison in 2005 were re-incarcerated in state prison within two years” (Council of State Governments Justice Center 2009: 4). Some of the state’s recent legislative efforts regarding sentencing and criminal justice have sought to counter revocation and recidivism and increased costs, but several major state policies (detailed below) have contributed to rising corrections costs. See Figure A.1 for a historical trend in state corrections costs.

Figure A.1: Wisconsin Department of Corrections Costs, 1992-2010 (2010 Dollars)



Source: U.S. Census Bureau 2010

Sentencing in Wisconsin: A Recent History

- **1983:** Act 371 was signed, reforming Wisconsin's indeterminate sentencing system. This act also created the state's first Sentencing Commission to give guidelines, research sentencing alternatives, and develop state databases (Fontaine 2005).
- **1991:** In response to higher prison populations and expanding costs, legislators tried to implement "cost-effective" indeterminate sentencing and parole through the Intensive Sanctions Program. This program involved "electronic monitoring and participation in work, school, or community service" (Fontaine 2005: 18).
- **1995:** The state's Sentencing Commission and its guidelines were eliminated in the state budget bill and the state's sentencing system was returned to its pre-Act 371 status (Fontaine 2005).
- **1997:** Truth-in-Sentencing was signed by Governor Tommy Thompson with Act 283. The act limited judicial discretion in length of incarceration and mandated supervision of released offenders for at least 25 percent of confinement time (Wisconsin Court System n.d.). This law led, in part, to a great rise in corrections spending (Figure A.1).
- **1999:** The Criminal Penalties Study Committee was created to give suggestions to the State Legislature for Truth-in-Sentencing, but suggestions were not implemented (Fontaine 2005).
- **2003:** Wisconsin established the Earned Release Program to provide some flexibility in sentencing to help offset increased incarceration time and costs. The Earned Release Program particularly sought to reduce racial disparities and counter increased incarceration of non-violent drug offenders. Also, the Criminal Penalties Committee's temporary sentencing guidelines took effect, and a new Sentencing Commission was established (Brown 2004).
- **2008:** The new Sentencing Commission was eliminated in the 2008 state budget.

- **2009:** Governor Doyle signed Act 28, which allowed early discharge from supervision and for reduced sentences in exchange for offender participation in treatment programs as a response to increasing prison costs to the state (Wisconsin Department of Corrections 2009c).

APPENDIX B: WISCONSIN COSTS COMPARED TO WASHINGTON COSTS

This appendix compares the cost category estimates for Wisconsin (Table B.1) and Washington (Table B.2), broken down by type of crime. The inputs include costs paid by government and costs incurred by victims.

Table B.1: Sentencing Tool Inputs for Wisconsin (2010 Dollars)

	<i>Marginal Operating Costs</i>							<i>Capital Costs Per-Unit</i>
	Murder	Rape & Sex Offense	Robbery	Agg. Assault	Property	Drug	Mis-demeanor	
Cost Paid by Government								
Police	\$439	\$439	\$439	\$439	\$439	\$439	\$439	\$189
Courts & Prosecutors	\$126,634	\$15,599	\$8,199	\$4,053	\$167	\$167	\$167	\$21
Juvenile Local Detention	\$58,013	\$58,013	\$58,013	\$58,013	\$58,013	\$58,013	\$58,013	-
Juvenile Local Supervision	\$22,461	\$22,461	\$22,461	\$22,461	\$22,461	\$22,461	\$22,461	-
Juvenile State Institution	\$58,013	\$58,013	\$58,013	\$58,013	\$58,013	\$58,013	\$58,013	\$152,371
Juvenile State Supervision	\$22,461	\$22,461	\$22,461	\$22,461	\$22,461	\$22,461	\$22,461	-
Adult Jail	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000	\$55,000
Adult Local Supervision	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	-
Adult State Prison	\$13,939	\$13,939	\$13,939	\$13,939	\$13,939	\$13,939	\$13,939	\$85,673
Adult Post-Prison Supervision	\$1,030	\$1,030	\$1,030	\$1,030	\$1,030	\$1,030	\$1,030	-
Cost Paid by Victims								
Victim Costs – Tangible	\$743,967	\$5,605	\$3,328	\$8,776	\$1,939	-	-	-
Victim Costs – Intangible	\$8,515,829	\$199,945	\$5,020	\$13,552	-	-	-	-

Source: Authors

Table B.2: Sentencing Tool Inputs for Washington (2010 Dollars)

	<i>Marginal Operating Costs</i>							<i>Capital Costs Per-Unit</i>
	Murder	Rape & Sex Offense	Robbery	Agg. Assault	Property	Drug	Mis-demeanor	
<i>Cost Paid by Government</i>								
Police	\$682	\$682	\$682	\$682	\$682	\$682	\$682	\$222
Courts & Prosecutors	\$155,009	\$19,094	\$10,036	\$4,961	\$204	\$204	\$204	\$376
Juvenile Local Detention	\$20,614	\$20,614	\$20,614	\$20,614	\$20,614	\$20,614	\$20,614	\$203,161
Juvenile Local Supervision	\$5,282	\$5,282	\$5,282	\$5,282	\$5,282	\$5,282	\$5,282	-
Juvenile State Institution	\$37,324	\$37,324	\$37,324	\$37,324	\$37,324	\$37,324	\$37,324	\$152,371
Juvenile State Supervision	\$3,989	\$3,989	\$3,989	\$3,989	\$3,989	\$3,989	\$3,989	-
Adult Jail	\$21,808	\$21,808	\$21,808	\$21,808	\$21,808	\$21,808	\$21,808	\$152,371
Adult Local Supervision	\$1,890	\$1,890	\$1,890	\$1,890	\$1,890	\$1,890	\$1,890	-
Adult State Prison	\$14,141	\$14,141	\$14,141	\$14,141	\$14,141	\$14,141	\$14,141	\$115,131
Adult Post-Prison Supervision	\$1,890	\$1,890	\$1,890	\$1,890	\$1,890	\$1,890	\$1,890	-
<i>Cost Paid by Victims</i>								
Victim Costs – Tangible	\$743,967	\$5,605	\$3,328	\$8,776	\$1,939	-	-	-
Victim Costs – Intangible	\$8,515,829	\$199,945	\$5,020	\$13,552	-	-	-	-

Note: Inflation-adjusted by authors
 Source: Aos and Drake 2010

APPENDIX C: COSTS

This appendix outlines how we collected data and estimated resource costs, which include both marginal operating and capital costs, for ten categories: police, courts and prosecutors, juvenile local detention, juvenile local supervision, juvenile state institution, juvenile state supervision, adult local jail, adult local supervision, adult state prison, and adult post-prison supervision.

Police Costs

Washington State Institute for Public Policy Approach. The Washington State Auditor collected expenditure data for local and county police from 1999 to 2008 (Aos and Drake 2010). Then, the Washington State Institute for Public Policy (WSIPP) gathered arrest data from the National Archives of Criminal Justice for these same years. WSIPP aggregated the expenditures and arrest data to a county level and computed the statewide average cost per arrest. Using a regression analysis, WSIPP predicted the cost of policing. Then, WSIPP conducted a time series analysis and concluded that the most appropriate model, while not ideal, is one that maintains the same cost of policing for each arrest, regardless of crime. In other words, in the Sentencing Tool, the cost of arresting a murderer is the same as the cost of arresting a drug dealer or a robber (Aos and Drake 2010).

Using a survey conducted by the United States Bureau of Justice Statistics, WSIPP obtained an estimate of police capital expenditures in Washington. WSIPP divided this estimate by the number of arrests to get the average police capital costs per arrest. The Sentencing Tool converts this cost into a five-year financing term at a specified bond finance rate to convert the capital costs per arrest to an annualized capital payment.

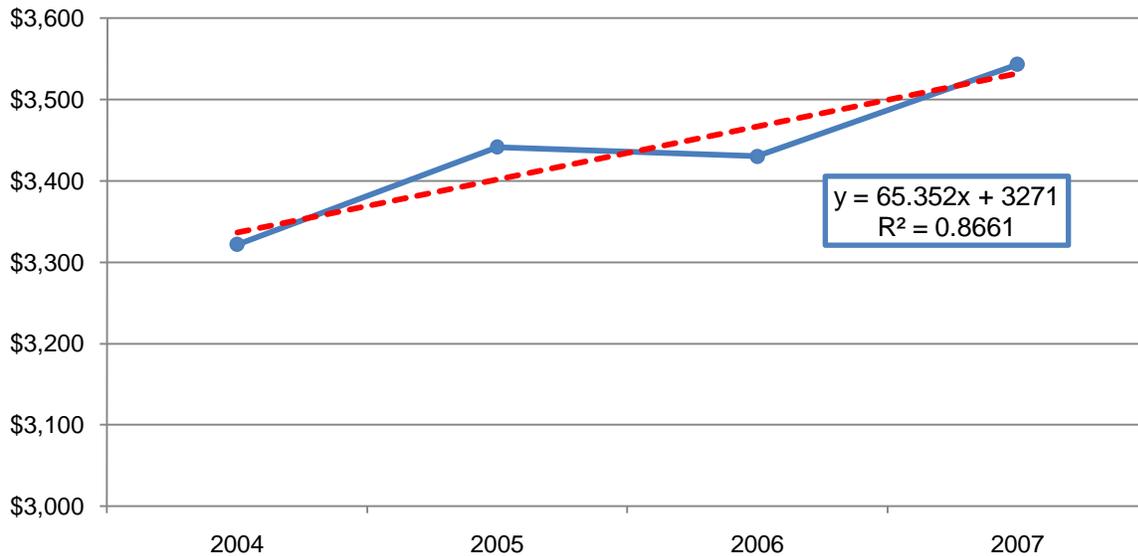
Wisconsin Expenditures and Arrests. Wisconsin does not collect data on local and state police department expenditures, so we used expenditures reported to the United States Bureau of

Justice Statistics. The Bureau had Wisconsin's aggregate data on total "direct current expenditures" for police from 2004 to 2007 (Hughes 2006a, Hughes 2007, Kyckelhahn 2010, Perry 2008). Direct current expenditures include "salaries, wages, fees, and commissions, and purchases of supplies, materials, and contractual services" (Hughes 2006b: 9). Thus, direct current expenditures can be used to estimate police operating costs. Although the Bureau breaks this expenditure into state and local³ levels, we used the total amount spent at all levels to estimate police operating costs and converted it to 2010 dollars. To obtain the most accurate arrest count, we used arrest reports compiled by the Wisconsin Office of Justice Statistics for 2004 to 2007 (Christianson et al. 2008, Smith et al. 2005, Smith et al. 2007a, Smith et al. 2007b).

Average Operating Costs and Escalation Rate. Using arrest data and direct current expenditures, we regressed the four years of average costs to find the best fit line, which we used to approximate average cost per arrest for 2010 (\$3,663) (Figure C.1). We calculated the predicted totals for each year and computed the average annual escalation rate from the predicted totals according to the formula $(FV/PV)^{1/n}$, where FV (future value) was the predicted cost for 2007 (in 2010 dollars), PV (present value) was the predicted cost for 2004 (in 2010 dollars), and N was 3 years (Table C.1) (Aos and Drake 2010).

³ Local costs include both local municipalities as well as county level costs.

Figure C.1: Wisconsin Police Average Operating Costs Per Arrest, Calendar Years 2004 to 2007 (2010 Dollars)



Sources: Authors, Hughes 2006a, Hughes 2007, Kyckelhahn 2010, Perry 2008

Table C.1: Wisconsin Actual and Predicted Police Average Operating Costs (2010 Dollars)

	2004	2005	2006	2007
Actual	\$3,322	\$3,442	\$3,430	\$3,544
Predicted	\$3,286	\$3,349	\$3,412	\$3,475

Source: Authors

Marginal Operating Costs. Because of the lack of county-specific data and data from before 2003, we were unable to do a time series analysis. Instead, we applied a ratio to Wisconsin’s average policing costs per arrest to obtain Wisconsin’s marginal operating costs (Table C.2). First, we estimated Washington’s average cost per arrest using the same method we used for Wisconsin. Using the United States Bureau of Justice Statistics expenditures and Uniform Crime Report Arrest for Washington, we estimated Washington’s average costs per arrest. Then, we created a ratio between our estimate for Washington’s average cost per arrest (\$5,683) and Washington’s estimates for marginal operating costs (\$682) (both in 2010 dollars). Finally, we applied this ratio to Wisconsin’s average costs to calculate marginal operating costs

for Wisconsin (\$439). Our Wisconsin 2010 estimated marginal operating cost of police per arrest (\$439) is lower than WSIPP’s estimate for Washington (\$682). The difference is likely a result of the higher arrest rates in Wisconsin as compared to Washington.

Table C.2: Washington Police Cost Estimates (2010 Dollars)

WSIPP Average Cost	Bureau of Justice Statistics Average Costs	WSIPP Marginal Costs	Ratio
\$7,703	\$5,683	\$682	8.3:1

Sources: Aos and Drake 2010, Authors

Capital Costs. Our Wisconsin capital cost estimate followed the same process, using 2007 United States Bureau of Justice Statistics survey results and the number of arrests as reported by the Wisconsin Office of Justice Statistics. The result is a capital cost per arrest of \$189 (2010 dollars). Washington’s police capital costs per arrest (\$222) are comparable to Wisconsin’s (\$189).

Limitations. Our estimation of police costs is only approximate for several reasons. First, the data only contain four years of information, which limits the accuracy of our estimate for 2010 as well as our average escalation rate. Second, using aggregate expenditures gathered by the United States Bureau of Justice Statistics is limiting because it does not reflect the differences in spending between high and low arrest counties. For example, low arrest counties may bear a high cost per arrest as they have to pay for staff and materials required to maintain the police department. Third, we were unable to do the time series analysis WSIPP conducted. The previously discussed ratio is a crude effort to get around this limitation. Unlike WSIPP, our estimate also includes operating costs of state police agencies. We felt the inclusion of these costs would result in a stronger estimate of the true policing costs per arrest in Wisconsin. Finally, the accuracy of our estimate for capital costs is only as accurate as the United States Bureau of Justice Statistics survey.

Court and Prosecutor Costs

WSIPP Approach. For court costs, WSIPP employed a similar method to the one it used to estimate police operating costs. First, the State Auditor gathered county court and prosecutor expenditures for 1994 to 2008, and the Washington State Administration Office of the Courts ascertained the number of convictions processed by counties for each year (Aos and Drake 2010). WSIPP divided the county-level expenditures of the courts by the number of convictions counties processed during each calendar year to estimate the average cost per conviction and the annual escalation rate. Then, WSIPP performed a time series analysis to estimate the court marginal operating costs. WSIPP was able to adjust for differences in court costs based on the violence of the crime (Aos and Drake 2010).

Using a survey from the United States Bureau of Justice Statistics, WSIPP obtained an estimate of capital expenditures for courts in Washington. It then divided this estimate by the number of convictions to obtain the average capital costs per conviction for courts. The Sentencing Tool converts this cost into a 20-year financing term at a specified bond finance rate to estimate the capital costs per arrest to an annualized capital payment.

Wisconsin Expenditures and Convictions. Our estimations for Wisconsin court and prosecutor per conviction costs faced many challenges. First, Wisconsin does not compile local data for court expenditures, so we used the same United States Bureau of Justice Statistics survey on police cost estimates to ascertain the total direct current expenditures for all levels of courts from 2004-2007 (Hughes 2006a, Hughes 2007, Kyckelhahn 2010, Perry 2008). We converted the total spent by the state, county, and local levels of courts to 2010 dollars to compute court operating costs.

Wisconsin also does not gather information on the number of convictions, and we found that estimating conviction rates for Wisconsin was extremely difficult. After an extensive search, we used a report by the United States Bureau of Justice Statistics (BJS), which states, “The number of sentenced felons in 2006 per 100,000 adults residents in the United states was 503” (Rosenmerkel et al. 2009: 1). Additionally, the report estimated the percentage of felony convictions in state courts broken down by type of crime. Because there is no Census estimate for 2006, we used 2009 census data to determine the number of adults in Wisconsin (U.S. Census Bureau 2009).⁴ Then, we applied the conviction rate to the population number to estimate that 21,845 adult felons were convicted in Wisconsin in 2006. Another BJS statistic reports that an estimated 20,356⁵ adult felons were sentenced in 2006 (West and Sabol 2008). Next, we had to adjust these numbers because the United States Bureau of Justice Statistics report included different crime categories than those the Sentencing Tool uses. We determined that approximately 4,800 convictions would be classified as misdemeanors in our analysis, thereby dropping the number of felons to 17,039. Then, we determined an adult felony conviction rate by dividing the number of adult felony convictions (17,039) by the number of adult felony arrests, as calculated by the Wisconsin Office of Justice Statistics (Christianson et al. 2008, Smith et al. 2005, Smith et al. 2007a, Smith et al. 2007b). The conviction rate is approximately 24 percent, meaning that 24 percent of adult felony arrests result in a conviction (Table C.3). Because no other conviction estimates were available, we applied this arrest-to-conviction rate to adult misdemeanors, juvenile felonies, and juvenile misdemeanors for 2004 to 2007.

⁴ The total number of Wisconsin residents was 5,654,774 in 2009, of which 23.2 percent were younger than 18 years of age. Therefore, the number of adults in Wisconsin was approximately 4,342,000.

⁵ This number does not include the 10 percent of total convictions (22,307) that occurred in Wisconsin’s federal court in 2006.

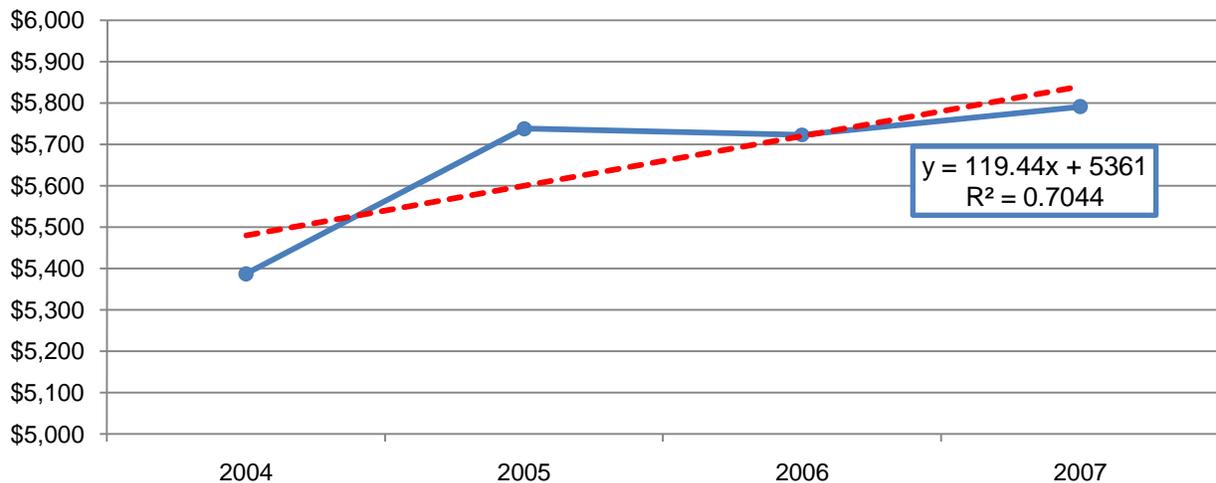
Table C.3: Estimated Number of Convictions in Wisconsin (2006)

BJS Conviction Estimate (2006)	Wisconsin's Adult Population (2009)	Estimate for Wisconsin's Adults Convicted of Felonies (2006)	Adjusted Estimate for Wisconsin's Adults Convicted of Felonies (2006)	Wisconsin's Adults Arrested for Felonies (2006)	Conviction Rate for Adult Felonies (2006)
503 per 100,000 adults	4,342,000	21,845	17,039	70,451	24%

Sources: Authors, Rosenmerkel et al. 2009, Smith et al. 2007a, U.S. Census Bureau 2009

Average Operating Costs and Escalation Rate. Using arrest data and direct current expenditures for courts, we regressed the four years of average costs to find the best fit line (Figure C.2), which we used to approximate average cost per conviction for 2010 (\$6,197). We calculated the predicted totals for each year, and computed the average annual escalation rate from the predicted totals according to the formula $(FV/PV)^{1/n}$, where FV was the predicted cost for 2007 (in 2010 dollars), PV was the predicted cost for 2004 (in 2010 dollars), and N was 3 years (Table C.4) (Aos and Drake 2010).

Figure C.2: Wisconsin Court Average Operating Costs Per Conviction (2010 Dollars)



Sources: Authors, Hughes 2006a, Hughes 2007, Kyckelhahn 2010, Perry 2008

Table C.4: Wisconsin Actual and Predicted Court Average Operating Costs (2010 Dollars)

	2004	2005	2006	2007
Actual	\$5,387	\$5,738	\$5,723	\$5,791
Predicted	\$5,480	\$5,600	\$5,719	\$5,838

Source: Authors

Marginal Operating Costs. We were unable to replicate WSIPP’s time series analysis. Also, WSIPP does not have one marginal operating cost estimate needed to obtain a ratio, as was done for police costs. Therefore, we looked at WSIPP’s estimated average cost per conviction and marginal operating costs by type of crime to determine the WSIPP applied weight for that type of crime to calculate the estimated average cost per conviction (Table C.5). We then applied this weight to Wisconsin, thereby finding Wisconsin’s marginal court operating costs in 2010 varied from \$126,634 to convict a murderer to \$167 to convict a drug dealer. Wisconsin’s marginal operating costs for courts by type of crime are comparable to those in Washington. For example, in 2010, a murder conviction costs Washington \$155,009, which is comparable to the Wisconsin murder conviction cost of \$126,634.

Table C.5: Wisconsin Marginal Operating Costs for Courts (2010 Dollars)

	<i>Washington</i>			<i>Wisconsin</i>	
	Marginal Cost per Conviction	Average Cost Per Conviction	Weight*	Average Cost Per Conviction	Estimate Marginal Cost Per Conviction
Murder	\$155,009	\$7,586	20.4:1	\$6,197	\$126,634
Sexual Assault	\$19,094	\$7,586	2.5:1	\$6,197	\$15,599
Robbery	\$10,036	\$7,586	1.3:1	\$6,197	\$8,199
Aggravated Assault	\$4,961	\$7,586	.65:1	\$6,197	\$4,053
Property	\$204	\$7,586	.027:1	\$6,197	\$167
Drug Offenses	\$204	\$7,586	.027:1	\$6,197	\$167
Misdemeanors	\$204	\$7,586	.027:1	\$6,197	\$167

* To determine weight, we divided marginal costs by average costs
Sources: Aos and Drake 2010, Authors

Capital Costs. Our estimate for Wisconsin followed the same process as WSIPP, but with 2006 United States Bureau of Justice Statistics survey results and the number of convictions

estimated for operating costs. The result is a capital cost per arrest of \$21 (2010 dollars).

Washington's capital cost per conviction is \$376, while Wisconsin's is \$21.

Limitations. There are many limitations to our estimates of marginal operating costs for courts. First, the data only contain four years of information, limiting the accuracy of our estimate for 2010 as well as our average escalation rate. Second, using aggregate expenditures gathered by the United States Bureau of Justice Statistics is limiting because it does not reflect the differences in spending between high and low arrest counties. Third, we were also unable to replicate WSIPP's time series analysis. The ratio we used is a crude effort to minimize this limitation. Fourth, without a point estimate for WSIPP's marginal operating costs, we had to further deviate from the model, using WSIPP's average court costs to determine the marginal operating costs of courts in Wisconsin. Fifth, and most worrisome, is the application of the 24 percent conviction rate to the number of arrests. Even if the 24 percent conviction rate is accurate for adult felonies, it is intuitively difficult to apply the same conviction rate to adult misdemeanors and more so to juvenile arrests. In comparison to Washington estimates, Wisconsin court operating costs are lower but comparable. Additionally, unlike WSIPP, our estimates include operating costs of state courts, which we believe is a better estimate of the true court costs per conviction in Wisconsin. Finally, our capital costs are only as accurate as the United States Bureau of Justice Statistics survey.

Juvenile Local Detention Costs

WSIPP Approach. For juvenile local detention operating costs, WSIPP gathered county expenditures on local juvenile detention during a 15-year period from the Washington State Auditor. These costs included juvenile facilities, and residential care and custody services. However, because of significant problems and gaps in data reporting, WSIPP was only able to

use data from fiscal years 2003 to 2006. WSIPP calculated the average annual escalation rate using inflation-adjusted dollars per the average daily population (ADP) over these four years. To determine the annual marginal operating cost of juvenile local detention facilities, it conducted a time series analysis using a first-difference model. WSIPP used an estimate of \$200,000 for the per-bed capital costs of a new detention facility (Aos and Drake 2010).

Wisconsin Expenditures and ADP. In Wisconsin, counties are responsible for the costs of all juvenile delinquency services, except for violent juvenile offenders (Serious Juvenile Offender Program) and juveniles waived into adult court (Carmichael 2009b). While counties pay for juvenile delinquency services, the state operates secure juvenile corrections institutions, including state detention facilities (Ethan Allen School, Lincoln Hills School, Southern Oaks Girls School, Mendota Juvenile Treatment Center) and SPRITE (adventure-based education program). The state's Division of Juvenile Corrections within its Department of Corrections bills each county for the cost of juveniles placed in the state's facilities and programs (Frank 2007). Counties receive approximately half of their juvenile corrections funding from the state-run Community Youth and Family Aids grant program, which counties supplement with funding from other sources, such as county tax revenues (Frank 2007, Wisconsin Department of Corrections 2010).

Because counties do not operate their own secure juvenile detention centers but contract secure detention services from the state, we estimated the marginal operating costs for local detention to be the same as for the state. Calculations and estimates for average operating costs, marginal operating costs, and escalation rates are described in the *Juvenile State Institution* section below.

Juvenile Local Supervision Costs

WSIPP Approach. WSIPP estimated local juvenile supervision costs as marginal juvenile court probation costs. WSIPP collected statewide juvenile court probation expenditure figures, the number of juvenile court community supervision sentences, and the number of sentences with both detention and community supervision from the Washington State Auditor for 2008. WSIPP then calculated the average length of stay on juvenile court probation and estimated the daily probation caseload of juvenile courts. Based on these data, and adjusting for missing counties, WSIPP computed the average expenditure per average annual daily caseload and estimated the marginal expenditure per average annual caseload (Aos and Drake 2010).

Wisconsin Expenditures and ADP. In Wisconsin, counties are responsible for costs of juvenile delinquency services, except for violent juvenile offenders (Serious Juvenile Offender Program) and juveniles waived into adult court (Carmichael 2009b). While counties pay for juvenile delinquency-related services, the state operates most juvenile corrections services, including alternate home placement (residential care, group homes, treatment foster homes, regular foster homes), corrective sanctions (parole services), and aftercare supervision. The Division of Juvenile Corrections bills each county for the cost of juveniles placed in the state's programs (Frank 2007). Counties receive approximately half of their juvenile corrections funding from Community Youth and Family Aids, which counties supplement with funding from other sources, such as county tax revenues (Frank 2007, Wisconsin Department of Corrections 2010). This cost-sharing formula between the county and state levels made it difficult to separate costs that could be attributed to the local level only. Because most counties contract with the state to provide juvenile supervision services, we determined the marginal operating costs for local supervision to be the same as for the state. Calculations and estimates for average operating

costs, marginal operating costs, and escalation rates are described in the *Juvenile State Supervision* section below.

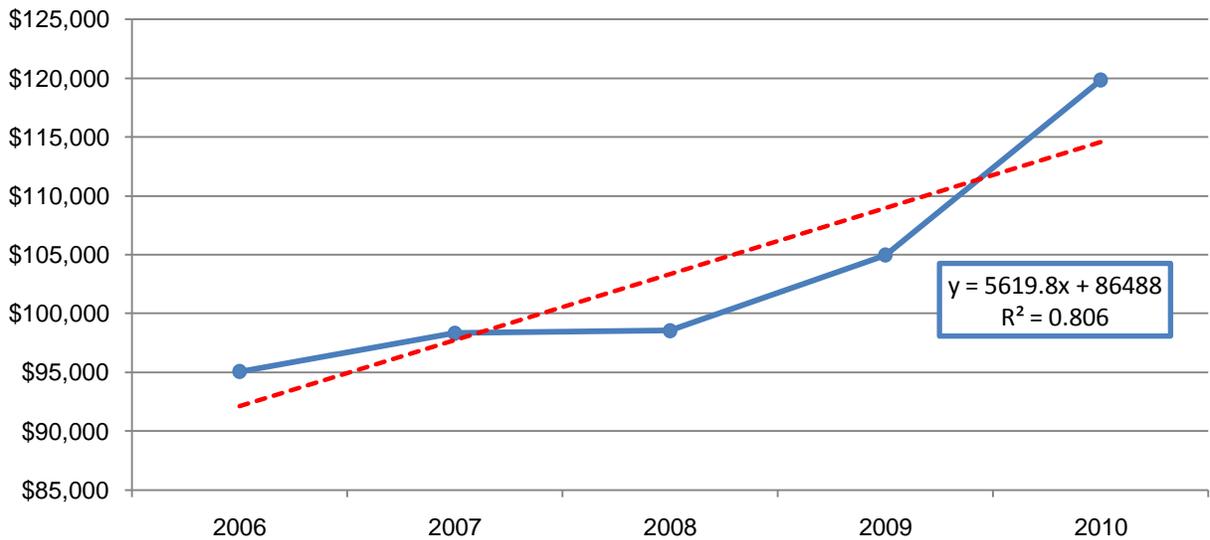
Juvenile State Institution Costs

WSIPP Approach. In Washington, juvenile state detention facilities are operated by the Juvenile Rehabilitation Administration, part of the Department of Social and Health Services. WSIPP obtained annual expenditure data for administration institutional services for fiscal years 1974-2009 from Washington State's Legislative Evaluation and Accountability Program. It calculated the average annual escalation rate using inflation-adjusted dollars per ADP over the 35-year period. To determine the annual marginal operating cost of juvenile state institutions, it conducted a time series analysis using a first-difference model. To calculate the capital costs of a typical new institutional bed in a juvenile state detention facility, WSIPP used an estimate obtained from a personal communication with Juvenile Rehabilitation Administration staff. WSIPP estimated that the per-bed capital costs for a new medium-security facility would run \$125,000 to \$175,000 per bed (in 2009 dollars), and used \$150,000 as a point estimate (Aos and Drake 2010).

Wisconsin Expenditures and ADP. In Wisconsin, the Division of Juvenile Corrections operates four secure detention facilities (Ethan Allen School, Lincoln Hills School, Southern Oaks Girls School, Mendota Juvenile Treatment Center), and a secure adventure-based education program called SPRITE. We obtained data on the ADPs and annual average operating costs of these juvenile state corrections institutions from Wisconsin Department of Corrections cost reports. In 2009, the total ADP for all juvenile state institutions was 563 and the annual operating cost per ADP was \$103,174.

Average Operating Costs and Escalation Rate. Using this information on cost per ADP for state juvenile detention, we plotted the inflation-adjusted costs for 2006-2010 and fit a linear regression line to project the average change in costs per year (Figure C.3). We calculated the predicted totals for each year (Table C.6), and computed the average annual escalation rate from the predicted totals according to the formula $(FV/PV)^{1/n}$, where FV was the predicted cost for 2010, PV was the predicted cost for 2006, and N was 4 years (Aos and Drake 2010). The average annual escalation rate for Wisconsin’s juvenile state institutions was 0.056.

Figure C.3: Wisconsin Juvenile State Institution Average Operating Costs Per ADP Fiscal Years 2006-2010 (2010 Dollars)



Source: Authors

Table C.6: Wisconsin Actual and Predicted Juvenile State Institution Average Operating Costs (2010 Dollars)

	2006	2007	2008	2009	2010
Actual	\$95,063	\$98,329	\$98,540	\$104,956	\$119,849
Predicted	\$92,108	\$97,728	\$103,347	\$108,967	\$114,587

Source: Wisconsin Department of Corrections 2009a with Authors' Calculations

Marginal Operating Costs. Data limitations and time constraints prevented us from replicating the time series analysis WSIPP conducted to convert average operating costs to marginal operating costs. Instead, we created a ratio between the projected average operating cost for 2009 calculated by WSIPP (\$66,379) and the marginal operating cost WSIPP calculated using time series analysis (\$36,743). We applied this ratio of 0.53 to the 2009 per ADP average operating cost reported by the Wisconsin Department of Corrections (\$103,174), resulting in an estimate of \$58,013 (when adjusted to 2010 dollars) for Wisconsin's per-unit marginal operating cost of juvenile state institutions.

Capital Costs. We were unable to estimate capital costs according to WSIPP's methods because of our limited access to Division of Juvenile Corrections personnel. Instead, we attempted to obtain the cost of constructing a new secure juvenile facility in the state to estimate the capital costs per new institutional bed. This approach mirrors the WSIPP process to estimate the capital costs of adult state prisons. No juvenile facilities have been recently constructed in Wisconsin, nor are there any plans or projected costs for such a facility. Illinois completed a juvenile detention facility in 2001 at an anticipated construction cost of \$45 million for a 350-bed facility (Illinois Department of Corrections 2000), giving a per-bed estimate of \$153,811 in 2010 dollars. Because this figure is comparable to the point estimate WSIPP used, we used WSIPP's point estimate of \$152,371 (when adjusted to 2010 dollars) in our model. The Sentencing Tool uses a 25-year financing term at a specified bond finance rate to convert this per-bed capital cost estimate to an annualized capital payment.

Limitations. We are limited by the complex nature of Wisconsin's state-county cost sharing because we cannot be certain that the state costs contain all relevant expenditures, and cost reports did not include a detailed breakdown of expenditures. Our cost estimates for juvenile

state institutions are much higher than Washington's, which may indicate that our cost figures are being measured in a different way. Our marginal operating cost estimates are limited in that we only have cost estimates during a five-year period and we were unable to conduct a time series analysis. We were also unable to obtain a Wisconsin-specific estimate for capital costs of a new juvenile detention facility.

Juvenile State Supervision Costs

WSIPP Approach. In Washington, the Juvenile Rehabilitation Administration administers juvenile state parole supervision as part of the Department of Social and Health Services. WSIPP was unable to find long-term data to analyze the marginal operating cost of Juvenile Rehabilitation Administration parole services and instead calculated an average parole cost by summing inflation-adjusted parole costs from 2000-2005 and dividing by the sum of the average daily parole caseloads during those years. From this estimate, WSIPP calculated the marginal expenditure per average annual caseload. Because it did not have sufficient data to conduct a time series analysis, WSIPP used its time series analysis of adult community supervision costs to create a ratio of marginal operating costs to average operating costs and applied this ratio to the average cost estimate for juveniles (Aos and Drake 2010).

Wisconsin Expenditures and ADP. We obtained data on the annual average operating costs for three main categories of state supervision: aftercare (placement with parents or guardians), alternate care (placement in residential care, group homes, or foster homes), and corrective sanctions (parole-related services). The Wisconsin Department of Corrections provided data and included total costs and ADPs for these three categories in recent years. However, the ADPs reported were not mutually exclusive, so the per ADP cost of all state supervision programs could not be calculated. To obtain an estimate, we used an average of the

per ADP costs for the three categories (illustrated in Table C.7). We also tried weighing the total cost of each category according to the number of juveniles placed in each type of supervision in 2008. However, this approach resulted in very similar estimates, so we chose to use the simple average as our estimate, which was \$44,182 in 2009.

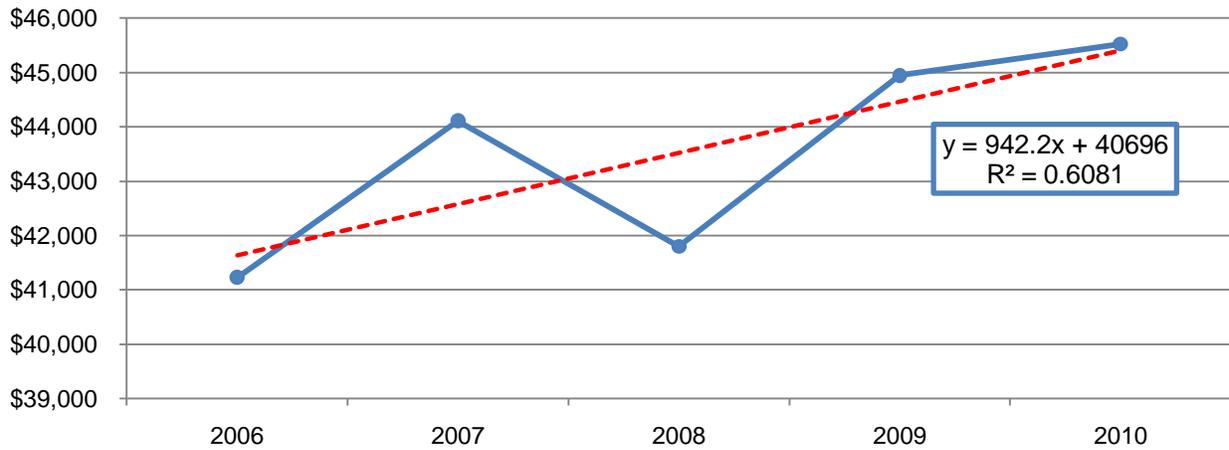
Table C.7: Wisconsin Costs and ADPs for Juvenile State Supervision (2009)

	Total Cost	ADP	Cost per ADP
Aftercare	\$1,206,822	83	\$14,540
Alternative Care	\$5,082,636	57	\$89,169
Corrective Sanctions	\$4,181,368	145	\$28,837
Average for All Categories	\$3,490,275	(mixed)	\$44,182

Source: Wisconsin Department of Corrections 2009a with Authors' Calculations

Average Operating Costs and Escalation Rate. Using this information on cost per ADP for state juvenile supervision, we plotted the inflation-adjusted costs for 2006-2010 and fit a linear regression line to project the average change in costs per year (Figure C.4). We calculated the predicted totals for each year (Table C.8) and computed the average annual escalation rate from the predicted totals according to the formula $(FV/PV)^{1/n}$, where FV was the predicted cost for 2010, PV was the predicted cost for 2006, and N was 4 years (Aos and Drake 2010). The average annual escalation rate for juvenile state supervision in Wisconsin was 0.0222.

Figure C.4: Wisconsin Juvenile State Supervision Average Operating Costs Per ADP Fiscal Years 2006-2010 (2010 Dollars)



Source: Authors

Table C.8: Wisconsin Actual and Predicted State Juvenile Supervision Average Operating Costs (2010 Dollars)

	2006	2007	2008	2009	2010
Actual	\$41,229	\$44,112	\$41,801	\$44,945	\$45,524
Predicted	\$41,638	\$42,580	\$43,523	\$44,465	\$45,407

Source: Wisconsin Department of Corrections 2009a with Authors' Calculations

Marginal Operating Costs. We used the same approach as WSIPP to estimate our marginal operating costs of supervision from our average operating costs. WSIPP applied a ratio of 0.50 to its projected average operating cost for 2009 (\$7,847) to get a marginal operating cost estimate (\$3,927). We applied this same ratio to our estimated per ADP operating cost from 2009 (\$44,182), resulting in an estimate of \$22,461 (when adjusted to 2010 dollars) for Wisconsin's per-unit marginal operating cost of juvenile state supervision.

Limitations. Our juvenile state supervision cost estimate is uncertain in several ways. Because of overlapping services and mixed ADPs, determining the accuracy of our per ADP cost estimates is difficult. Because of the complex nature of Wisconsin's state-county cost sharing, we

cannot be sure that the state costs contain all relevant expenditures. Our chosen cost estimate may not account for all county expenditures on juvenile supervision services that are not operated by the state.⁶ Additionally, our cost estimates for juvenile state supervision are much higher than those for Washington. This may be because the Wisconsin estimate includes types of supervision programs and services that are not included in the WSIPP estimate. The data we were able to access did not provide detailed breakdowns of different cost figures. Furthermore, our marginal operating cost estimates are limited in that we only have average operating cost estimates for five years and we were unable to make more sophisticated statistical adjustments to determine marginal operating costs.

Adult Local Jail Costs

WSIPP Approach. WSIPP calculated adult local jail costs by “conducting a time series analysis of county-level data for jail expenditures and average daily jail populations for each of Washington’s 39 counties for calendar years 1995 to 2008,” (Aos and Drake 2010: 34). WSIPP conducted the time series analysis using a first-difference model to estimate marginal operating costs.

Wisconsin Expenditures and ADP. Replicating WSIPP’s method with Wisconsin’s data was infeasible because of a dearth of local cost and local ADP data for Wisconsin counties. Instead, after exploring the available options, such as estimating the current ADP based on 2002 and 2003 data or United States Bureau of Justice Statistics estimates based on 21 Wisconsin counties, we found a report containing the average cost per prisoner in local jails for fiscal year 2006 (Wade et al. 2008).

⁶ We expect this would be small because estimates of counties’ total juvenile delinquency-related expenditures are close to the state’s juvenile delinquency-related costs paid by counties (Frank 2007).

Average Operating Costs and Escalation Rate. Because of limited data availability, we were unable to calculate the escalation rate for average adult jail costs. However, we were able to obtain multiple years of data on total local corrections expenditures for Wisconsin and Washington from the U.S. Census Bureau (U.S. Census Bureau 2010). We used the total corrections spending information to calculate the escalation rate using the formula $(FV/PV)^{1/n}$, where FV was the cost for 2009, PV was the cost for 2004, and N was 6 years (Aos and Drake 2010). A ratio of the adjusted local jail escalation rate and the total local corrections spending from Washington was created and used to generate the escalation rate for Wisconsin's adult local jail spending. The average annual escalation rate calculated for Wisconsin's adult local jails was 0.0225.

Marginal Operating Costs. Because we did not have the required data to calculate marginal operating cost in the same manner as WSIPP, we generated an estimate based on the average cost data available from 2005. To find the marginal operating cost from the 2005 average Wisconsin local jail cost (\$18,000), we created a ratio of Washington's marginal operating cost (\$19,481) to average operating cost (\$28,292) and projected Wisconsin's estimated marginal operating cost (\$12,394) in 2005 dollars. The marginal operating cost is about \$14,000 in 2010 dollars.

Capital Costs. WSIPP estimated the cost for new jail beds based on an "informal internet review of current estimates for a variety of new jails around the country" (Aos and Drake 2010). This search resulted in an estimate of \$150,000 per county jail bed. Because this information was not available from Wisconsin-specific sources, we used the WSIPP estimate in our analysis.

Limitations. Our marginal operating cost estimates are limited in that we only have cost estimates for one year and were unable to use the same statistical method as WSIPP.

Adult Local Supervision Costs

WSIPP Approach. To estimate the operating costs of adult supervision incurred by the state, WSIPP analyzed the annual expenditures and ADPs for Washington's Department of Corrections community supervision for fiscal years 1998-2009, obtained from Washington's Legislative Evaluation and Accountability Program. WSIPP calculated the average annual escalation rate of inflation-adjusted dollars per ADP during the 11-year period. To determine the annual marginal operating cost of adult local supervision, WSIPP conducted a time series analysis using a first-difference model (Aos and Drake 2010). This is the same method used to calculate post-prison supervision.

Wisconsin Expenditures and ADP. Replicating WSIPP's method with Wisconsin's data was infeasible because of a dearth of local cost and local ADP data in Wisconsin. Instead, after exploring the available options, we used data in a report containing the average cost per prisoner under local supervision for fiscal year 2006 (Wade et al. 2008).

Average Operating Costs and Escalation Rate. Because of limited data availability, we were unable to calculate the escalation rate for adult local supervision average operating costs. However, we were able to obtain multiple years of data on total local corrections expenditures for Wisconsin and Washington from the U.S. Census Bureau (2010). The total corrections spending information was used to calculate the escalation rate using the formula $(FV/PV)^{1/n}$, where FV was the cost for 2009, PV was the cost for 2004, and N was 6 years (Aos and Drake 2010). A ratio of the adjusted local supervision escalation rate and the total local corrections spending from Washington was created and used to generate the escalation rate for Wisconsin's adult local supervision spending. The average annual escalation rate for Wisconsin's adult local supervision was 0.0654.

Marginal Operating Costs. Because we did not have the required data to calculate marginal operating costs in the same manner as WSIPP, we generated an estimate based on the average cost data available from 2005. To calculate the marginal operating cost from the average Wisconsin local jail cost (\$2,100), we created a ratio of Washington's marginal operating cost (\$1,688) to average operating cost (\$3,685) and projected Wisconsin's estimated marginal operating cost (\$962) in 2005 dollars. The marginal operating cost is about \$1,100 in 2010 dollars.

Limitations. Our marginal operating cost estimates are uncertain in that we only have cost estimates for one year and were unable to use the same statistical method as WSIPP.

Adult State Prison Costs

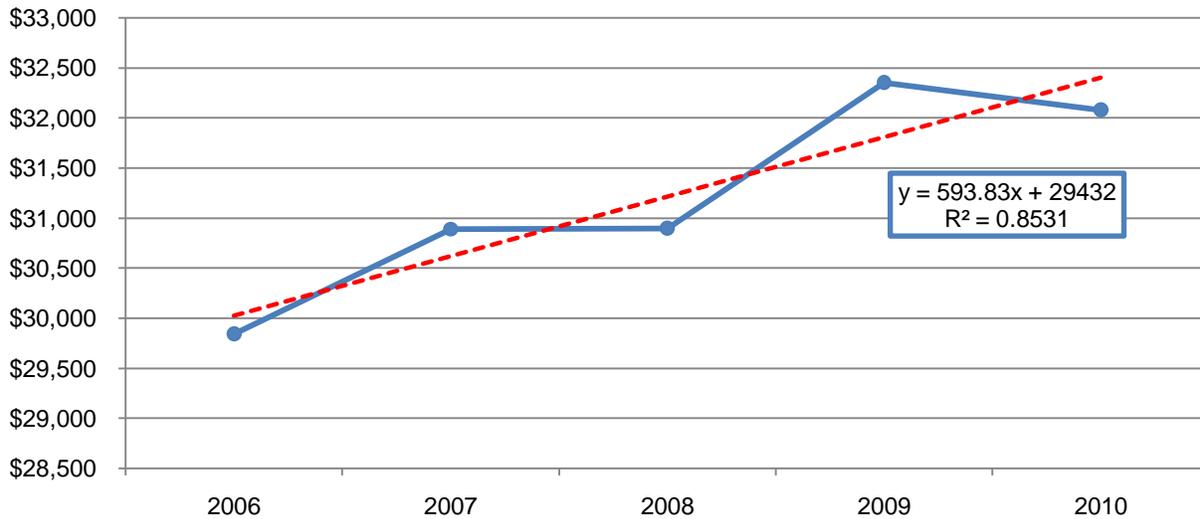
WSIPP Approach. To estimate adult state prison operating costs, WSIPP obtained annual institutional expenditure and ADP data for fiscal years 1982-2009 from the Washington Legislative Evaluation and Accountability Program. It calculated the average annual escalation rate using inflation-adjusted dollars per ADP during the 27-year period. To determine the annual marginal operating cost of an adult prison bed, it conducted a time series analysis using a first-difference model (Aos and Drake 2010).

Wisconsin Expenditures and ADP. We obtained data on the ADPs and annual average operating costs of adult state prisons from cost reports provided by the Wisconsin Department of Corrections. In 2009, the total ADP for all state prisons was 23,162 and the annual operating cost per ADP was \$31,805.

Average Operating Costs and Escalation Rate. Using this information on cost per ADP for adult state prisons, we plotted the inflation-adjusted costs for 2006-2010 and fit a linear regression line to project the average change in costs per year (Figure C.5). We calculated the predicted totals for each year (Table C.9) and computed the average annual escalation rate from

the predicted totals according to the formula $(FV/PV)^{1/n}$, where FV was the predicted cost for 2010, PV was the predicted cost for 2006, and N was 4 years (Aos and Drake 2010). The average annual escalation rate for Wisconsin’s adult state correctional institutions was 0.019.

Figure C.5: Wisconsin Adult State Prison Average Operating Costs Per ADP Fiscal Years 2006-2010 (2010 Dollars)



Source: Authors

Table C.9: Wisconsin Actual and Predicted Adult State Prison Average Operating Costs (2010 dollars)

	2006	2007	2008	2009	2010
Actual	\$29,844	\$30,890	\$30,900	\$32,355	\$32,081
Predicted	\$30,026	\$30,620	\$31,213	\$31,807	\$32,401

Source: Wisconsin Department of Corrections 2009a with Authors' Calculations

Marginal Operating Costs. Data limitations and time constraints prevented us from replicating the time series analysis WSIPP conducted to convert average operating costs to marginal operating costs. Instead, we created a ratio between the projected average operating cost for 2009 calculated by WSIPP (\$32,266) and the marginal operating cost it calculated using time series analysis (\$13,921). We applied this ratio of 0.43 to the 2009 per ADP operating cost reported by the Wisconsin Department of Corrections (\$31,805), resulting in an estimate of

\$13,939 (when adjusted to 2010 dollars) for Wisconsin's per-unit marginal operating cost of adult state prisons.

Capital Costs. To estimate the capital costs of a new state prison bed, WSIPP obtained the construction costs of a relatively new medium-security prison in Washington from legislative fiscal staff, and divided the cost of this facility by its operating capacity (Aos and Drake 2010). We used the same approach to calculate capital costs for an adult state correctional institution, using information from the most recently completed medium-security prison in Wisconsin. The Redgranite Correctional Institution in Waushara County was completed in 1999 at a cost of \$52.9 million with an operating capacity of 750 inmates (Redgranite Correctional Institution 2004). This gives a per-bed cost of \$70,533, which when adjusted to 2010 dollars is \$89,366. We used this amount as our estimate. The Sentencing Tool uses a 25-year financing term at a specified bond finance rate to convert this per-bed capital cost estimate to an annualized capital payment.

Limitations. Our marginal operating cost estimates are uncertain in that we only have cost estimates for five years and we were unable to conduct a time series analysis. In addition, we did not have a full breakdown of the operating costs provided by the Wisconsin Department of Corrections, and although the cost reports do not include major construction projects, it is possible they include some small capital costs for facility repairs and maintenance, potentially leading us to overestimate marginal operating costs and underestimate capital costs. A main limitation of our capital cost estimate is that the Washington facility that WSIPP used to estimate capital costs was completed in 2008, while the Wisconsin facility was completed in 1999. It is possible that our older estimate does not adequately reflect technological advances or other absolute changes in construction costs that have occurred since 2000. However, for our purposes this was the best available estimate.

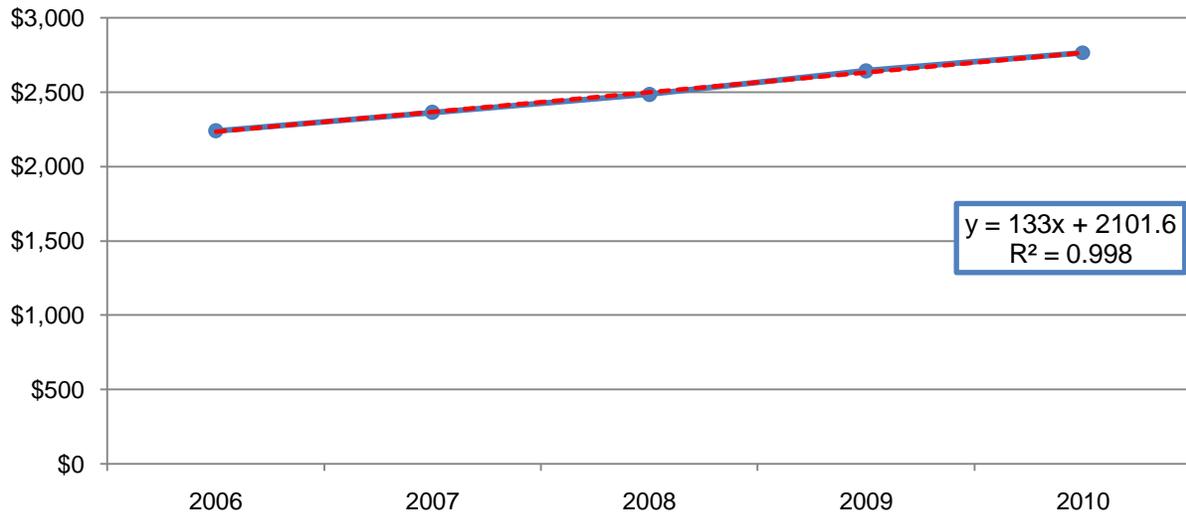
Adult Post-Prison Supervision Costs

WSIPP Approach. To estimate the operating costs of adult post-prison supervision incurred by the state, WSIPP analyzed the annual expenditures and ADPs for Washington's Department of Corrections community supervision for fiscal years 1998 to 2009, obtained from Washington's Legislative Evaluation and Accountability Program. WSIPP calculated the average annual escalation rate using inflation-adjusted dollars per ADP during the 11-year period. To determine the annual marginal operating cost of adult post-prison supervision, WSIPP conducted a time series analysis of these data using a first-difference model (Aos and Drake 2010).

Wisconsin Expenditures and ADP. We obtained data on the ADPs and annual average operating costs of adult post-prison supervision from cost reports provided by the Wisconsin Department of Corrections. In 2009, the total ADP for post-prison supervision was \$69,829 and the annual operating cost per ADP was \$2,600.

Average Operating Costs and Escalation Rate. Using this information on cost per ADP for adult supervision, we plotted the inflation-adjusted costs for 2006-2010 and fit a linear regression line to project the average change in costs per year (Figure C.6). We calculated the predicted totals for each year (Table C.10) and computed the average annual escalation rate from the predicted totals according to the formula $(FV/PV)^{1/n}$, where FV was the predicted cost for 2010, PV was the predicted cost for 2006, and N was 4 years (Aos and Drake 2010). The average annual escalation rate for adult post-prison supervision was 0.0555.

Figure C.6: Wisconsin Adult State Post-Prison Supervision Average Operating Costs Per ADP Fiscal Years 2006-2010 (2010 Dollars)



Source: Authors

Table C.10: Wisconsin Actual and Predicted Adult Post-Prison Supervision Average Operating Costs (2010 dollars)

	2006	2007	2008	2009	2010
Actual	\$2,240	\$2,365	\$2,487	\$2,645	\$2,766
Predicted	\$2,235	\$2,368	\$2,501	\$2,634	\$2,767

Source: Wisconsin Department of Corrections 2009a with Authors' Calculations

Marginal Operating Costs. Because of data limitations and time constraints, we were unable to replicate the time series analysis WSIPP conducted to convert average operating costs to marginal operating costs. Instead, we created a ratio between the projected average operating cost for 2009 calculated by WSIPP (\$4,773) and the marginal operating cost it calculated using time series analysis (\$1,861). We applied this ratio of 0.39 to the 2009 per ADP operating cost reported by the Wisconsin Department of Corrections (\$2,600), resulting in an estimate of \$1,030 (when adjusted to 2010 dollars) for Wisconsin's per-unit marginal operating cost of adult post-prison supervision.

Limitations. Our marginal operating cost estimates are uncertain in that we only have cost estimates for five years and were unable to make the same statistical adjustments used by WSIPP.

APPENDIX D: VICTIM COSTS

Following the example of the WSIPP model, we adopted per-unit victim costs from a study by McCollister, French, and Fang (2010). This study, building on prior research in the criminal justice field, estimated tangible and intangible victim costs separately. McCollister et al. (2010) divided total tangible victim costs into three categories: tangible victim costs, criminal justice system costs, and career criminal costs (that is, the opportunity costs associated with an individual's decision to engage in criminal activity versus legal employment and productive activities) (McCollister et al. 2010, Aos and Drake 2010). Like the WSIPP model, we excluded McCollister et al.'s cost estimates for operating the criminal justice system because those costs are included elsewhere. We also excluded crime career costs, because the WSIPP model does not include those costs.

Tangible Victim Costs

Per-unit tangible victim costs were estimated by a cost-of-illness model that compiled aggregate costs of medical expenses, cash losses, property theft or damage, and other victimization-related consequences, and divided the total victim cost by the number of offenses in each respective crime category to derive per-offense direct victim costs (McCollister et al. 2010). For murder, the 2010 per crime victim costs estimate is \$743,967; victim costs for rape and other sexual offenses are \$5,605; robbery victim costs are \$3,328; aggravated assault victim costs are \$8,776; and property crime victim costs are \$1,939 (McCollister et al. 2010). The study does not estimate tangible victim costs for drug or misdemeanor offenses because these are considered victimless crimes.

Intangible Victim Costs

McCollister et al. (2010) estimated intangible victim costs with a compensation model that used data from jury awards in personal injury trials to measure the pain and suffering of

victims. Intangible costs are represented by the difference between the jury's total award and the direct loss to the victim (tangible costs). For murder, the 2010 estimate of per crime intangible victim costs is \$8,515,829; intangible victim costs for rape and other sexual offenses are \$199,945; robbery victim costs are \$5,020; and aggravated assault victim costs are \$13,552 (McCollister et al. 2010). The study does not estimate intangible victim costs for property, drug, or misdemeanor offenses.

APPENDIX E: PROGRAM COSTS

This appendix describes how the Washington State Institute for Public Policy estimated program costs and how we adapted those estimates for Wisconsin.

Washington State Institute for Public Policy Approach

The program cost estimates cited by the Washington State Institute for Public Policy (WSIPP) were obtained from programs already operating within Washington or from meta-analyses of intervention programs. All of the in-prison adult programs included in our model have cost estimates drawn from corrections programs operating specifically within Washington (Aos et al. 2006). The cost estimates for the juvenile programs included in this study are drawn from program costs specific to Washington (as with Family Functional Therapy and Multi-dimensional Treatment Foster Care), or were drawn from a WSIPP report evaluating program research (with Family Integrated Transitions).

Wisconsin Approach and Calculations

When possible, we adapted the cost figures provided by WSIPP so that they could be Wisconsin-specific. For adult programs, because Wisconsin spends approximately 85 percent of what Washington does per inmate (National Institute of Corrections n.d.), it would be problematic to apply program costs generated from Washington data directly to Wisconsin, as Washington's correctional inmate programs may also be more expensive per inmate than similar programs in Wisconsin. Lacking Wisconsin cost information for these programs, we attempted to control for Washington's greater spending per inmate by weighting adult inmate program costs by the ratio so that Wisconsin's inmate cost estimates per-person would be approximately 85 percent of those cited for Washington State. By doing so, we aimed to account for general spending variation between the two states as they apply to prison inmates. However, for drug treatment we used a (2010-adjusted) cost estimate from a rigorous national study and applied a

similar weighting technique to account for the general difference in per-inmate spending between Wisconsin and the nation as a whole (French et al. 2008, National Institute of Corrections n.d.).

For juvenile programs, we did not have comparable measures to generate weights to better adapt WSIPP's data to Wisconsin. Thus, for juvenile programs we simply adjusted WSIPP estimates to 2010 dollars using implicit price deflators for personal consumption expenditures, which WSIPP used as its discount rate. A summary of the program cost estimates (in 2010 dollars), a summary of the estimation method, and examples of similar programs in Wisconsin can be found in Table E.1.

Table E.1: Wisconsin Program Costs and Comparison

	WSIPP Cost Estimate	Adjusted WI Cost Estimate	Estimation Method	Similar Wisconsin Programs
Adult Programs				
In-prison vocational education	\$1,296	\$1,073	Weighted WSIPP figure to a Wisconsin figure based on ratio of Wisconsin to Washington average inmate cost	Most Wisconsin corrections facilities have some type of program (ex: Felmers O. Chaney Correctional Center)
In-prison general education	\$992	\$833	Weighted WSIPP figure to a Wisconsin figure based on ratio of Wisconsin to Washington average inmate cost	Most Wisconsin corrections facilities contract some type of program (example: Felmers O. Chaney Correctional Center)
In-prison cognitive-behavioral therapy	\$525	\$449	Weighted WSIPP figure to a Wisconsin figure based on ratio of Wisconsin to Washington average inmate cost	In Wisconsin, substance abuse treatment programs use a cognitive-behavioral model
In-prison correctional industries	\$464	\$396	Weighted WSIPP figure to a Wisconsin figure based on ratio of Wisconsin to Washington average inmate cost	Badger State Industries and Work Programs
In-prison drug treatment	\$1,890	\$2,095	Weighted national treatment cost estimate (French et al. 2008) to a WI figure based on ratio of WI to US average inmate cost	Wisconsin Earned Release Program
Juvenile Programs				
Family Integrated Transitions	\$10,966	\$9,702	Used WSIPP's model estimate, based on Aos's (2004) CBA	Example: Waukesha County has salaried social workers who do some home intervention
Family Functional Therapy	\$3,184	\$2,272	Used WSIPP's model estimate, based on Washington's Family Functional Therapy program	Example: Walworth County Human Services implements Family Functional Therapy
Multi-Dimensional Treatment Foster Care	\$7,535	\$7,550	Used WSIPP's model estimate, based on Washington's Family Functional Therapy program	Example: La Crosse County treatment foster care

Note: All costs have been adjusted to 2010 dollars using implicit price deflators for personal consumption expenditures
Sources: Aos et al. 2006, National Institute of Corrections n.d.

Weighted Calculations. We illustrate below how we weighted WSIPP figures for adult programs for Wisconsin. The first example demonstrates how we weighted WSIPP's cost estimates to Wisconsin using a ratio based on the differences between Wisconsin and Washington State's per-inmate government cost. The second demonstrates weighting with national inmate costs. We applied these calculation methods to the remaining adult programs as well.

Example 1: In-Prison General Education. To adapt WSIPP's cost figures to Wisconsin, we divided Wisconsin's average inmate costs by Washington average inmate costs to find a ratio: $\$31,809 / \$37,893 = 0.8394$. After adjusting WSIPP estimates to 2010 dollars, this estimate was weighted by the above ratio to find the Sentencing Tool program cost estimate: $\$977 \times 0.8394 = \820

Example 2: In-Prison Drug Treatment. In the case of drug treatment, we divided Wisconsin's average inmate costs by U.S. average inmate costs to find a ratio: $\$32,309 / \$29,142 = 1.1087$. Adjusting French et al.'s (2008) estimate and range into 2010 dollars, we multiplied these figures by the above ratio to find the Sentencing Tool program cost estimate: $\$1,890 \times 1.1087 = \$2,095$

Data Limitations

In our attempts to find cost information for adult offender programs, we contacted multiple state prison wardens and superintendents, Department of Corrections budget and program staff, the Education Director of the Wisconsin Correctional Center System, as well as program managers and various budget and program staff members throughout the human services and juvenile justice departments in each of Wisconsin's 10 most populous counties. While we originally intended to find cost estimates for the adult prison programs from state prisons, Department of Corrections, and Wisconsin Correctional Center System, none of these sources could make the necessary information available given the complexity of program funding streams.

Several limitations arose in gathering Wisconsin-specific data for juvenile programs. First, counties often own only a fraction of a program that is contracted out to a non-profit, so counties do not have access to budgeting information for these programs. Additionally, these agencies are often only willing to provide cost information to major funding sources. Second, for some services, such as those involving therapy, private insurance companies may pay part of the cost, which would not be reflected in county budget information. Further, county human service agencies pay salaried social workers for services similar to Family Integrated Transitions, but these social workers also work on other state programs, and clients may cross over between programs, making it very difficult to divide a social worker's salary by the number of people helped for a specific program. Last, while several Wisconsin counties operated programs that contained aspects of the programs selected for our analysis, implementation differences may make comparing these slightly different programs inappropriate.

Beyond these challenges in gathering Wisconsin cost estimates, we were limited to using the WSIPP model's effect sizes for these programs because we were not able to find information on such effect sizes for the few Wisconsin programs that offered cost data. WSIPP's effect sizes were derived from meta-analyses of evaluations of each of the programs, providing averages from the best available research. Using WSIPP data assumes that these estimates accurately capture a variety of program implementation structures and outcomes. It also assumes that similar programs in place in Wisconsin are not such outliers in their effectiveness that they would fall outside the ranges in the WSIPP model.

APPENDIX F: VICTIMIZATION RATES

The WSIPP model calls for inputs of victimization estimates for each of the seven crime categories to more accurately model the reduction in crime from investment in criminal justice programs. This required us to replace Washington state numbers with Wisconsin estimates for the following fields:

The number of statewide crimes reported to police. WSIPP obtained these numbers from the Washington Association of Sheriffs and Police Chiefs, and adjusted them to account for non-reporting agencies. To find comparable data for Wisconsin, we used the Federal Bureau of Investigation's Uniform Crime Report.

Multiplicative adjustment to align Uniform Crime Report data with state reported felonies.

Because the Uniform Crime Report definition of rape does not include other sexual assaults, sexual assaults with male victims, or sexual assaults of minors, the WSIPP model uses a multiplicative adjustment from National Crime Victimization Survey data to include those categories of victims (Aos and Drake 2010). We used the same multiplicative adjustment.

Percentage of crimes reported to the police. The WSIPP model includes a default reporting range to estimate crimes not reported to the police. This information comes from the National Crime Victimization Survey and did not have to be adjusted.

Statewide number of convictions, adult and juvenile. WSIPP obtained adult and juvenile felony conviction data from the Washington Administrative Office of the Courts. Because Wisconsin does not track conviction rates, we used a national average from the United States Bureau of Justice Statistics to estimate that 24 percent of arrests lead to conviction. We assumed

this rate for adult and juvenile offender populations and multiplied the number of arrests per crime category by 24 percent to approximate the statewide number of convictions.

Average number of offenders per victim. To reflect that victimizations are often committed by groups of offenders, WSIPP estimated the average number of offenders per victimization. This information came from the National Incident Based Reporting System and did not need to be adjusted for Wisconsin (Aos and Drake 2010).

Percentage of other crimes per conviction. To estimate the number of crimes per convicted offender, WSIPP applied an adjustment to factor in the potential for multiple victimizations per conviction. We used WSIPP's default values of 64 percent for murder and 20 percent for other crimes.

Statewide number of arrests, adult and juvenile. WSIPP obtained arrest data from the Washington Association of Sheriffs and Police Chiefs. Wisconsin does not have a similar reporting agency; we obtained the statewide number of arrests from the United States Bureau of Justice Statistics.

Percentage of other arrests attributed to a conviction. The WSIPP model does not allow for users to include information on other arrests attributed to a conviction. We left the default set at zero for the Wisconsin analysis.

APPENDIX G: EXPLANATION OF LOW-RISK OFFENDERS

The first step in the WSIPP model is to lower the average daily population (ADP) of the prison population. We assume those who are the lowest-risk offenders, or those who are both the least likely to be reconvicted overall and the least likely to be reconvicted of a violent crime, are released first. In Washington, each adult felony offender is assessed for this risk and is classified into one of four groups. The lowest-risk offenders make up the “lower” group (14 percent of all prisoners). The “moderate” group consists of those offenders with a moderate risk of reconviction (19 percent of all prisoners). The third group, “high non-violent,” includes those who are likely to be reconvicted of a non-violent crime (36 percent of all prisoners). Those who are likely to be reconvicted for a violent crime make up the highest risk group, called “high violent” (31 percent of all prisoners). Additionally, the model excludes those whose current conviction, regardless of assigned group, was a murder or sex offense. In Washington, this is 7 percent of the prison population. Therefore, offenders in Washington’s prison who are in the “lower” group and have not been convicted of a murder or sex offense are hypothetically released from prison (Aos and Drake 2010).

Similar information on Wisconsin’s prison population is limited. From the information available, the only risk assessment performed on offenders occurs during supervision, which is after release from a sentence. A report by the Wisconsin Legislative Fiscal Bureau describes this assessment:

Within the first 30 days of being placed on probation, parole, or extended supervision an agent undertakes a "case classification" to determine the level of supervision required by that offender. The offender is scored on a risk scale (which assesses the propensity for further criminal activity) and a need scale (which assesses the services needed by the offender) and is placed into one of six levels of supervision based on the results (Carmichael 2009a: 17).

The six levels of supervision include: high risk – sex offender, high risk, maximum, medium, minimum, and administrative. However, data from this assessment is not available.

Therefore, because of data limitations, we continue the assumption that Washington’s prison population is similar to Wisconsin’s and thus use the WSIPP model assumptions for determining the percentage and type of Wisconsin offenders released based on Washington’s percentage of “lower” group offenders.

APPENDIX H: WISCONSIN PROGRAM CAPACITY CALCULATIONS

For our release and reinvestment strategy, we attempted to tailor our investments such that program capacity in Wisconsin was maximized for the most effective intervention programs. To do this, we ranked our eight selected programs from most to least effective in reducing crime outcomes, as determined by WSIPP (Aos et al. 2006). Starting with the most effective program on our list, we divided the total amount available for reinvestment by the cost per program participant, and applied funds to the total number of available slots for that program. We then took the remaining money and worked down the list of programs, investing in the total number of available slots for the next most effective program until all of the savings were spent. We repeated this process for each release and reinvestment combination.

This process required us to estimate the extent to which currently operating programs in Wisconsin could be expanded to obtain the number of available slots for each program. Table H.1 shows the estimated number of additional slots allocated to each program, with the programs listed in order of effectiveness. The table is followed by explanations of how we calculated the estimated slot availability for each of the eight programs. We acknowledge that these estimates are rough approximations, but they allowed us to implement a more sophisticated investment strategy than would have otherwise been possible.

Table H.1: Number of Available Slots Allocated to Each Program

Program	Slots
Multi-Dimensional Treatment Foster Care	85
Family Functional Therapy	300
Family Integrated Transitions	160
Vocational Education in Prison	2,744
General Education in Prison	2,400
Cognitive-Behavioral Therapy in Prison	360
Correctional Industries in Prison	886
Drug Treatment in Prison	3,300

Source: Authors

Multi-Dimensional Treatment Foster Care (MTFC). MTFC is a juvenile program that offers structured family and individual therapy in a foster care setting, as an alternative to incarceration, regular foster care, or group or residential treatment for youth with chronic disruptive behavior problems (TFC Consultants, Inc. 2010). Several counties in Wisconsin offer structured therapy-based foster care programs, but to our knowledge none offer the exact MTFC program (Wisconsin Division of Juvenile Corrections 2010). We assume that any partial programs could be scaled up to the full MTFC program.

In 2008, 165 juveniles were released from state juvenile detention into alternate care, which includes placement in a foster home, group home, or residential care center (Wisconsin Division of Juvenile Corrections 2008). Of these juveniles, we assume that those placed in a foster home or group home would be eligible for participation in an MTFC program, but we cannot be sure that those placed in residential care centers would be eligible. We were unable to determine how many of these 165 juveniles were placed in residential care centers so were unable to separate out the number of juveniles placed in foster or group home care. Based on the high cost of residential care center placement and the infrequency with which they are discussed as an option on the Division of Juvenile Corrections website, we (conservatively) assumed this number is less than half of juveniles released into alternate care. Thus, we used a rounded estimate of 85 slots available for the MTFC program.

Family Functional Therapy (FFT). FFT is a three- to four-month program that provides therapy to juvenile offenders within their family home environment. Wisconsin has one program in Elkhorn (run through Walworth County Health and Human Services) that explicitly has franchised the FFT model and strives to meet the FFT's implementation guidelines (FFT, Inc. 2010). This program serves a very small group of juveniles. Throughout the state, many county

health and human service departments provide some sort of family counseling that could potentially be modified to fit the FFT model.

In determining how many potential slots would be available on a larger scale, we created a ratio of the number of juveniles Washington state enrolled when first implementing FFT on a wide scale in 2002 (Baronski 2002) to the approximate number of eligible juveniles in Washington (Washington Department of Social and Health Services 2010). This ratio is equal to 0.57 (427/750). We multiplied this ratio by a similarly eligible population of Wisconsin juveniles (Wisconsin Division of Juvenile Corrections 2008), then subtracted the estimated number of juveniles served by Elkhorn's FFT, to estimate how many slots could reasonably be opened in Wisconsin $[(0.57 \times 542) - 9]$. We used the resulting estimate of 300 slots available for FFT.

Family Integrated Transitions (FIT). FIT is a program that uses a combination of individual and family therapy approaches to treat juvenile offenders who have co-occurring substance abuse and mental health disorders (University of Washington 2008). The program was piloted in Washington state and has been expanded to other states. Although some Wisconsin counties implement certain elements of the FIT approach, the program is not fully implemented in the state. To determine potential program eligibility for FIT in Wisconsin, we estimated how many offenders in the state juvenile system are likely to have co-occurring substance abuse and mental health disorders.

According to the Division of Juvenile Corrections, approximately half of juveniles committed to secure detention are diagnosed with a substance abuse disorder (Jackson 2008). Research indicates that a high percentage of juvenile offenders with substance abuse issues have co-occurring mental health issues. This percentage ranges depending on how the diagnoses are made, but it appears to be approximately 60 percent (Abram et al. 2003). Thus, to estimate the

number of juvenile offenders that potentially would be eligible for FIT in Wisconsin, we took half the number of juveniles admitted to Division of Juvenile Corrections facilities in 2008 ($536/2 = 268$), and multiplied it by 60 percent to estimate 160 slots.

Vocational Education in Prison. Six medium security prisons offer vocational training for credit with the Wisconsin Technical College System in 24 occupational areas (Wisconsin Department of Corrections 2009b). If the program was expanded to all 12 medium security prisons, and if approximately 42 percent of the prisoners have a high school diploma, 2,744 slots would open in the program.

General Education in Prison. All major adult institutions in Wisconsin offer Adult Basic Education, which focuses on reading, writing, and math. The type of instruction varies depending on the institution and the individual teacher (Wisconsin Department of Corrections 2009b). We conservatively estimate that Wisconsin prisons would have the available capacity and the potential program participants to expand basic education to an additional 10 percent of prisoners, or approximately 2400 slots.

Cognitive-Behavioral Therapy in Prison. Eighteen of Wisconsin's adult correctional institutions offer a similar program called Cognitive Interventions Program. The program consists of two-hour classes, twice a week, for four to six months. The classes teach a small group of 20 inmates how to self-monitor thoughts and behaviors, as well as how to plan for the future (Wisconsin Department of Corrections 2009b). Not all prisoners qualify for this program. Therefore, we estimate that this program could expand by 1 additional small group in each of the institutions, creating 360 new slots for inmates.

Correctional Industries in Prison. In Wisconsin, Badger State Industries provides jobs to an estimated 443 individuals who are in medium and maximum security prisons. These

individuals work in industries such as laundry, printing, stamping (e.g., license plates), and building furniture. By law, Badger State Industries must cover all of its costs, meaning that no state funds are spent on this program (Wisconsin Department of Corrections 2009b). Investing some of the savings from our release strategy into Badger State Industries could double the program at the existing institutions, giving 886 inmates skills for employment.

Drug Treatment in Prison. Although there are many forms of drug treatment in Wisconsin's prisons, only one program, the Earned Release Program, fits WSIPP's description of an intensive drug treatment program. Small groups (10 individuals) enter this intensive six-month program to learn about relapse prevention, dependency and addiction, and modification of high-risk and thrill-seeking behavior. After successful completion, the individual is released under supervision (Wisconsin Department of Corrections 2009b). Because only three institutions offer the program, we assume that intensive drug treatment could be expanded to one-third of all minimum security inmates. This would create 3,300 slots in the program.

APPENDIX I: ALTERNATIVE REINVESTMENT STRATEGY

In this alternative method, we again project three scenarios that reduce prison average daily population (ADP) by 2 percent, 5 percent, or 10 percent. The government savings that results could then be reinvested into evidence-based intervention programs at three levels of reinvestment (0 percent, 50 percent, and 100 percent). This approach divides the total reinvestment funds evenly among the eight evidence-based intervention programs. The model does not allow for a fraction of a percentage to be included, so we chose to allocate the remaining percentage points to juvenile programs because they are shown to have the greatest return on investment. This reinvestment strategy is presented in Table I.1.

Table I.1: Percent Reinvestment in Evidence-Based Intervention Programs

Program	Adult or Juvenile?	Percentage of Portfolio
Vocational Education in Prison	Adult	12
General Education in Prison	Adult	12
Cognitive-Behavioral Therapy in Prison	Adult	12
Correctional Industries in Prison	Adult	12
Drug Treatment in Prison	Adult	12
Family Integrated Transitions	Juvenile	14
Family Functional Therapy	Juvenile	13
Multi-Dimensional Treatment Foster Care	Juvenile	13

Source: Authors

The portfolio options, as they relate to the percentage of ADP reduced and the amount of savings reinvested, remain the same as in the approach detailed in this study's results section. Using this alternative method, we estimated the net change in victimizations, government savings, and resulting net benefits for each portfolio (Table I.2). As with the more sophisticated analysis we present in our report, each of the portfolios results in net benefits, and the uncertainty associated with each portfolio increases with greater reduction in prison ADP. However, this alternate approach does not take into account how many offenders the selected programs can reasonable serve, nor does it consider how many offenders would be potentially eligible for these

programs in Wisconsin. Thus, we believe the more sophisticated reinvestment strategy presented in our report will provide more accurate guidance to Wisconsin policymakers.

Table I.2: Alternative Strategy Net Benefits

Portfolio	Change in Victimization	Estimated Government Savings (in millions)	Net Benefits (in millions)
A	300	\$8.0	\$5.1
B	-226	\$8.4	\$10.6
C	-734	\$8.8	\$15.8
D	786	\$19.9	\$12.2
E	-490	\$20.6	\$25.3
F	-1999	\$23.6	\$42.7
G	1561	\$39.7	\$24.7
H	-1025	\$42.1	\$51.9
I	-3920	\$45.9	\$83.5

Source: Authors

APPENDIX J: RELEASE AND REINVESTMENT PORTFOLIOS

The estimated change in victimizations and change in net social costs for each portfolio is shown in Table J.1. Each portfolio is labeled within the table. For each portfolio that reinvests money into intervention programs, Table J.2 provides the means and standard errors for the change in victimizations and net social costs.

Table J.1: Change in Victimization and Government Costs by Portfolio

		Released					
		2% ADP		5% ADP		10% ADP	
		Change in Victimization	Change in Social Costs (in millions)	Change in Victimization	Change in Social Costs (in millions)	Change in Victimization	Change in Social Costs (in millions)
Amount Reinvested	0%	312	-8.7	752	-20.3	1,585	-40.3
	50%	-114	-7.4	-490	-21.1	-865	-41.4
	100%	-723	-8.9	-1,523	-20.1	-3,273	-42.5

Source: Authors

Table J.2: Change in Victimization and Benefits from Reinvestment

		Released					
		2% ADP		5% ADP		10% ADP	
		Change in Victimization	Social Benefits (in millions)	Change in Victimization	Social Benefits (in millions)	Change in Victimization	Social Benefits (in millions)
Amount Reinvested	50%	419 (160)	\$3.9 (1.5)	1,251 (439)	\$12.2 (4.2)	2,313 (812)	\$22.8 (7.9)
	100%	997 (360)	\$9.6 (3.4)	2,313 (812)	\$22.8 (7.9)	4,698 (1,639)	\$46.3 (15.9)

Note: Table includes mean and standard error
Source: Authors

APPENDIX K: DATA STEWARDSHIP IN WISCONSIN

The results of a cost-benefit analysis are only as good as the data on which they are based. With the understanding that funding for new initiatives is limited, if Wisconsin decides to use cost-benefit analyses for corrections-related policy considerations, more complete and accurate data would be necessary to produce reliable results. This appendix provides some suggestions for improving data collections and accuracy.

First, Wisconsin could consider establishing a central location for corrections data on the Wisconsin Department of Corrections website. Right now, data and reports are often removed when a new report is posted, and reports for different types of spending are scattered throughout the website. Publishing all data under the Management Services website section would be a helpful short-term step toward eventually publishing all data in a central location. Wisconsin has taken steps to improve its data collection by restructuring how the state gathers recidivism data and ensuring that recidivism is tracked uniformly throughout the state. As part of this restructuring, Wisconsin might consider collecting recidivism data for a longer follow-up period and breaking down data into more detailed offender and offense categories. Data analysis would also benefit from more complete information on policing and incarceration costs. Further, the state could consider outlining a framework for what is included in reported cost estimates and clarify average daily population estimates in juvenile reporting.

Wisconsin could consider more rigorously evaluating programs as they are implemented. Wisconsin policymakers would likely benefit from more knowledge about program effectiveness. Full-scale program implementation often leads to vastly different outcomes when compared with implementation in a pilot program. In replicating this cost-benefit analysis, it would be beneficial to choose the programs for portfolios that are the most cost-beneficial for Wisconsin, as opposed to the programs with the highest effect sizes according to WSIPP, but this

cannot be done without more accurate and complete data and thorough program evaluation. Rigorous program evaluation and data collection might enable Wisconsin to determine which programs are the most socially beneficial through cost-benefit analysis.

While understanding that Washington has spent the last several years working to improve the state's data collection, Wisconsin could benefit by following some of Washington's practices. Washington, for example, publishes all annual reports through the website of the State Auditor's Office, providing easy report access through a useful search tool. Additionally, the State Auditor's Office provides information on local and state costs, eliminating the need to contact each individual county for cost information.