Illinois Results First

Supplement on Adult Criminal Justice

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1. What is cost-benefit analysis?

Cost-benefit analysis (CBA) is a method of economic analysis that weighs pros and cons for alternative courses of action. The approach is systematic: each pro and con for all the possible actions is weighted by each outcome's value. Once all values have been assigned, the analyst can then assess whether the benefits outweigh the costs. If there are multiple alternatives, the options can be compared to determine which has a greater benefit and better return on investment in a consistent manner.

A key advantage of some CBAs, including the Results First model, is the ability to respond to uncertainty. For uncertain consequences of an investment, scenarios can be compared using reasonable estimates of what the outcomes may be. The range of possible outcomes give the analyst confidence in comparing across investment options. Because the Results First model predicts uncertain future outcomes, the model uses a method called *Monte Carlo* analysis to run numerous simulations, each with plausible but different inputs. After thousands of simulations with different combinations of inputs, the range of costs and benefits demonstrates the likelihood of a positive return.

Businesses and private organizations have used CBA for decades to answer investment questions. The capability to address uncertainty and make apples-to-apples rankings of various policies and programs has led to greater use of the tool in government. Perhaps the largest advantage of CBA for government is the inclusion of social benefits with the costs of interventions. The social benefits and costs allow for public policy to examine not only budget lines but the effects of policies on the entire community. These key components—costs and benefits—are briefly discussed below.

1.a. Costs

Marginal costs are the changes due to one unit or event. Marginal costs are different than average costs, which are the total costs divided by total output. Average costs include the fixed costs, such as administrative expenses, debt payments, and other overhead costs, that do not change when production or workload changes. However, if the increase or decrease in workload is large, the administrative or fixed costs may change. These large changes can be accounted for during calculation of marginal costs.

Consider the reduction of one arrest: for each arrest, a law enforcement officer must take time to process the person and the appropriate paperwork. The reduction of one arrest provides the officer more time for other services (valued at his or her salary), but it will not change the need for a police station, officers, or supervisors.

Marginal costs must be measured over time to appropriately measure long-term implications that do not appear with minimal changes. Analysts often calculate marginal costs by examining expansion or contraction of entire departments or agencies or by calculating the average time and resources spent on individual cases or services. Although the theory behind marginal costs is simple, government spending is seldom allocated or distributed based on marginal costs.

1.b. Benefits

Most events have benefits as well as costs. Any benefits to any individual within the scope of the CBA are counted. In the criminal justice context, the benefits are reduced crime: one fewer robbery results in fewer taxpayer costs for each part of the criminal justice system, as well as lower costs

to victims. Victims' costs may be tangible, such as lower medical bills and avoided property loss, or intangible, such as the costs of pain and suffering and other societal costs (*e.g.*, fear of crime).

This supplement explains the costs and benefits included in the adult criminal justice component of the Illinois Results First model. Transparency regarding the state-specific inputs encourages the Illinois criminal justice stakeholders to contribute to refining and improving the Illinois Results First model. As additional information becomes available and new data is incorporated, the results are likely to change. The current results are the best estimates based on available cost and victimization data.

2. What is the Pew-MacArthur Results First model?

The Pew-MacArthur Results First Initiative is a project of The Pew Charitable Trusts and the John D. and Catherine T. MacArthur Foundation. The initiative works with states to implement and customize an innovative cost-benefit analysis tool that helps them invest in policies and programs that are proven to work. The innovative tool allows for estimating monetary impacts for outcomes in several policy areas, including criminal justice, substance use disorders, mental health, public health, early education, workforce development, and higher education.

The model, supported by the Results First Initiative, was initially developed by the Washington State Institute for Public Policy. The model combines analyses of recidivism patterns and population estimates with a rigorous meta-analysis of criminal justice program evaluations. The meta-analysis determines the average change in recidivism from evidence-based programs implemented with fidelity. By using state-specific costs and recidivism trends and national research on the effectiveness of programming, the model can project long-term changes in benefits and costs due to investments in specific programs and policies. Importantly, the model can separate benefits by recipient: by victims of crime, by taxpayers, and by others in society when changes to recidivism occur.

Illinois, through the Budgeting for Results Commission, is one of a number of jurisdictions using and adapting the Results First model to inform policy and budget decisions. Although the model is being expanded to other program areas by Budgeting for Results Commission (BFR), this supplement addresses the inputs only for the adult criminal justice component of the model.

3. What Illinois-specific data has been added to the model?

The model's adult criminal justice component has four main sections with default inputs that are adjusted with Illinois-specific information: costs, recidivism, resource use, and program information. To explain the modifications, this section discusses the resource use and recidivism inputs. The following section discusses the costs.

To calculate the resource use, SPAC first determined the frequency of different crime types in Illinois. The second step was adjusting the crime trends for unreported or multiple-victim offenses. Third, the model incorporated the state-specific recidivism patterns. Finally, the number of inmates in Illinois prisons was added.

The resource use by each type of crime is calculated from analysis of the state's Criminal History Record Information (CHRI) data. Cohorts of individuals released from prison and sentenced to

probation were examined from 2000 to 2007 and then followed for nine years. After analyzing each year's recidivism patterns, the 2007 cohort was used as the most recent year with nine reliable years of follow-up data. The results are substantially similar to other cohorts and the 2002 cohort used in prior Illinois Results First analyses.

3.a. Resource use by crime type

Table 3.a.1. Crime Probability

Crime Probability: likelihood of the most serious recidivism offense	Murder	Felony Sex Crimes	Robbery	Aggravated Assault or Battery	Felony Property	Felony Drug and Other	Misdemeanors
Adult Prison Population	0.3%	0.4%	2.3%	5.4%	23.6%	34.4%	33.7%
Adult Probation Population (felonies and misdemeanors)	0.2%	0.5%	1.2%	5.5%	17.4%	30.1%	45.3%
All Adults (prison and probation, felonies and misdemeanors)	0.3%	0.4%	1.8%	5.4%	20.8%	32.5%	38.9%

Table 3.a.1 displays the likelihood that a recidivism event's most serious offense will fall in each crime category for all adults convicted of a felony or misdemeanor. For example, the likelihood that a murder is the most serious recidivism offense is very small, 0.2% of all convictions, because murders are infrequent. Misdemeanors, on the other hand, are much more frequent. On average, an individual who recidivates will have 2.3 trips through the system (*i.e.*, the average number of felony or misdemeanor convictions associated with that individual throughout the nine-year study for each crime category).[1]

Table 3.a.2. Average Conviction Counts by Crime Type

Average Conviction Counts by Crime Type for Each Recidivism Trip		**Most Severe Offense Type**				
		Murder	Felony Sex Crimes	Robbery	Aggravated Assault or Battery	Felony Property
Additional Counts	Homicide	1.10	--	--	--	--
	Felony Sex Offense	0.01	1.46	--	--	--
	Robbery	0.05	0.02	1.15	--	--
	Agg. Assault/Battery	0.15	0.05	0.13	1.15	--
	Felony Property	0.01	0.01	0.04	0.03	1.10
Notes: The top right cells are blank because each recidivism event is grouped by the most serious offense within the conviction. For example, a recidivism event that includes both felony property and robbery counts will be classified under the robbery column.						

Table 3.a.2, the number of counts per recidivism trip, shows the average other counts associated with the conviction. Recidivism events are associated with additional felonies. For example, a murder recidivism conviction is associated with 0.05 felony robbery counts; or restated, for every twenty murder convictions there is one additional robbery victimization. These additional adjudications or offenses are summed and counted as the Illinois-specific recidivism patterns.

Once an individual is convicted of a crime, the criminal justice system may expend resources on supervising or incarcerating that individual. After calculating the probability of supervision or

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[1] The previous inputs can be found in SPAC's Summer 2015 supplement to the *High Cost of Recidivism* report. SPAC has updated the numbers since 2015 and only the new data are reported here. *See* Sentencing Policy Advisory Council. (2015). High Cost of Recidivism: Supplement. Available at: http://www.icjia.state.il.us/spac/pdf/High_Cost_of_Recidivism_Supplement_080515.pdf.

incarceration using the CHRI system and data from Illinois Department of Corrections, SPAC calculated the average resource use by crime type, shown in Table 3.a.3. For offenses other than murder, the resource use is the actual average length of stay in prison or on probation and the actual time spent on mandatory supervised release (MSR). For murder, the analysis used admissions rather than average length of stay at exit because of policy changes. The murder offenders are subject to truth-in-sentencing, which sufficiently lengthens the total time served so that recent exits do not reflect current resource use.

Table 3.a.3. Number of Years of Use

Number of Years of Use		Murder	Felony Sex Crimes	Robbery	Aggravated Assault or Battery	Felony Property	Felony Drug and Other	Misdemeanors
Probation Sentences	**Jail**: pre-probation	--	0.4	0.4	0.3	0.3	0.3	0.2
	Probation: average probation term	--[a]	2.9	2.5	2.2	2.3	2.2	1.5
	Prison:[b] for Technical Violations of probation	--	0.4	0.4	0.4	0.4	0.4	--
Prison Sentences	**Jail**: pre-prison	3.8	1.0	1.1	0.7	0.5	0.5	--
	Prison: average prison term	36.5	4.9	3.1	1.9	1.3	1.2	--
	Mandatory Supervised Release: average post release supervision	1.8	0.4	1.4	1.2	1.1	1.1	--
	Prison: for Technical Violations of MSR	0.3	1.0	0.4	0.5	0.5	0.4	--

Notes:
[a] Probation sentences for murder, which includes involuntary manslaughter or other homicide offenses, are extremely rare and seldom used in the model.
[b] The length of stay in prison for those that violate the terms of probation supervision are estimated at about 4.4 months (0.37 years).

3.b. Adjustment for unreported and multiple victim crimes

Some crime is not reported to law enforcement. Further, some crime may have multiple victims per offender. To adjust for these cases, the model uses the National Crime Victimization Survey (NCVS, 2011) and estimates the number of victimizations per offense. For example, all murders are reported, while about 52% of property offenses and only 31% of sex crimes are reported. In addition, property offenses generally have multiple victims per offense, whereas most murders involve just one victim.

First, SPAC grouped Illinois' reported crimes into large, nationally-recognized crime categories for inclusion in the model.[2] Second, the model uses national survey results to estimate unreported crime. The NCVS permits the model to account for the estimated number of crimes that actually occur in the state, even those that are not reported to police. Finally, the model accounts for cases where there are multiple victims per offense and multiple offenders per crime.

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[2] For example, federal reporting standards do not include all of Illinois' felony sex crimes. The federal theft definition is overly inclusive, including some of Illinois' misdemeanor offenses. SPAC adjusted the number of reported crimes to reflect the different definitions. The model also uses estimates of the number of other offenses that can be attributed to a conviction.

The use of these historical crime data represents the deterrent effect of convictions and supervision or incarceration, as the historical numbers of crime includes the deterrent effect of the system.[3] Using all of these inputs, the model calculates the estimated number of victimizations per convicted offender. Some of the key inputs are displayed in Table 3.b.1 on the following page.

Table 3.b.1. Reported and Unreported Crime

	Murder	Felony Sex Crimes	Robbery	Aggravated Assault or Battery	Felony Property
Illinois Crimes Reported (CHRI, 2015)	741	4,606	14,690	27,966	184,056
Percent of Crimes Reported Nationally (NCVS, 2011)	100%	31%	66%	67%	52%

3.c. Recidivism patterns (nine years)

Table 3.c.1 shows the recidivism rates for a 2007 cohort of individuals released from prison and those sentenced to probation. For those sentenced to probation, the recidivism patterns are analyzed in either a felony or misdemeanor cohort. These cohorts were combined to form the baseline recidivism patterns for all those convicted and sentenced in Illinois. The year 2007 was chosen to permit at least nine years of tracking recidivism with robust data. Further analysis was done measuring alternative cohort years; however, the recidivism rates were not significantly different. The cumulative recidivism patterns are shown in Table 3.c.1.

Table 3.c.1. Illinois Recidivism Rates

Year from Release	1	2	3	4	5	6	7	8	9
Adult Probation (misdemeanors)	19.0%	30.0%	36.7%	41.0%	44.1%	46.2%	48.2%	49.7%	50.9%
Adult Probation (felonies)	16.8%	27.9%	35.1%	39.9%	43.2%	45.8%	47.7%	49.4%	50.6%
Adult Prison (felonies)	17.4%	33.0%	43.2%	49.5%	53.7%	56.6%	58.7%	60.5%	62.0%
Combined Recidivism (felonies and misdemeanors)	17.5%	30.6%	39.1%	44.5%	48.1%	50.8%	52.8%	54.5%	55.9%

Importantly, this cost-benefit tool uses a different definition of recidivism than the definition commonly used in Illinois' criminal justice research. The tool defines recidivism as a conviction for a new crime. The conviction can either be a misdemeanor or felony conviction. In comparison, the standard Illinois definition of recidivism is a return to state prison within three years.

In addition to the cumulative recidivism rate, the model addresses the timing of recidivism and the number of re-offenses throughout the nine-year period of analysis. The resulting hazard distribution accounts for multiple recidivism events and the potential for some offenders to travel through the system multiple times during the nine years of study.

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[3] However, the model does not calculate specific estimations of the deterrent effect. Other criminal justice researchers have reported estimates of the size of deterrence. *See, e.g.*, Travis, J., et al. (2014). The Growth of Incarceration in the United States: Exploring Causes and Consequences, *National Research Council of the National Academies*.

3.d. Illinois corrections and probation populations

The 2007 cohorts included 27,097 inmates released from prison and 32,333 individuals sentenced to probation. The probation cohort included intensive probation sentences but excluded deferred prosecution or withheld judgment cases, as well as other alternative, non-prison felony sentences. As of June 30, 2017, IDOC held 43,075 inmates, which is used as the starting point for estimating changes in the prison population.

4. What costs are included in the CBA?

The model has three types of costs: system, victim, and economic costs. These costs, both system and victim costs, are per victimization—the costs associated with one additional conviction event. For system costs, the model uses a "probability tree" to estimate how offenders move through the system based on conviction data from Illinois. The probabilities are estimated from:

    a. The likelihood of particular crime types (based on reported crime in Illinois);

    b. The likelihood of other offenses unreported (based on the National Crime Victimization Survey); and

    c. The likelihood and timing of recidivism (based on Illinois criminal justice data).

Once the probabilities are calculated, the model uses the specific marginal costs and benefits that would change with additional arrests, prosecution, and punishment. For victims, the costs result from lost wages, hospital bills, and pain and suffering. These costs vary by crime type.

4.a. System costs

Table 4.a.1. System Costs by Crime Type

	Murder	Felony Sex Crimes	Robbery	Agg. Assault or Battery	Felony Property	Felony Drug and Other	Misdemeanors
Police Costs per Arrest	$892	$892	$892	$892	$892	$892	$892
Courts and Legal Costs per Arrest	$179,736	$22,140	$11,636	$5,753	$237	$237	$237
Adult Jail per Person per Year	$15,261	$15,261	$15,261	$15,261	$15,261	$15,261	$15,261
Adult Probation per Person per Year	$1,808	$1,808	$1,808	$1,808	$1,808	$1,808	$1,808
Adult Prison per Person per Year	$27,945	$27,945	$27,945	$27,945	$27,945	$27,945	--
Adult Post-Prison Supervision per Person per Year	$2,841	$2,841	$2,841	$2,841	$2,841	$2,841	--
Notes: Adult jail and prison costs are the average dynamic marginal cost for incarceration changes of up to 10,000 people.[4] The prison costs also include a real escalation rate of 0.025, which accounts for annual increases in costs based on the past nine years of IDOC costs. Adult supervision costs are from IDOC in 2015. Adult probation costs are from AOIC in 2015. For calculations, all prices are inflated to January 2017 value.							

Police, court, and prosecutor costs are primarily derived from Washington State's marginal cost estimates. The courts and prosecutorial costs (estimated as two-thirds of the court and legal costs) are adjusted to account for the differences between starting judicial salaries for trial judges in Washington and in Illinois. The Washington marginal costs of policing are adjusted to reflect the

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[4] Sentencing Policy Advisory Council. (2017). Supplement: Dynamic Marginal Costs in Fiscal Impact Analyses. Available at: http://www.icjia.state.il.us/spac/pdf/Dynamic_Marginal_Costs.pdf.

cost difference in law enforcement officers, arrests, and policing budgets between Washington and Illinois. Although police costs do vary by crime type, the average marginal cost is sufficient for the model's calculations.[5]

The Results First model combines these marginal annual costs with system use estimates discussed above. The combination results in costs that reflect actual system use by crime: although the costs of jail or prison are the same for murder or property offenders, the lengths of stay will vary and the overall costs reflect that variation over time.

SPAC estimated the proportion of the marginal spending that is provided by state or local dollars, shown in Table 4.a.2.

Table 4.a.2. State and Local Share of Costs

	State Spending	Local Spending
Police	9%	91%
Courts	33%	67%
Prosecutors and Public Defenders	10%	90%
Adult Jail	0%	100%
Adult Probation	25%	75%
Adult Prison	100%	0%
Adult Post-Prison Supervision	100%	0%

4.b. Victimization costs

Table 4.b.1. Victimization Costs

	Murder	Felony Sex Crimes	Robbery	Agg. Assault or Battery	Felony Property	Felony Drug and Other	Misdemeanors
Tangible Victim Costs	$567,639	$4,745	$5,950	$12,023	$2,027	$0	$0
Intangible Victim Costs	$6,497,488	$169,294	$897	$18,567	$0	$0	$0
Total Victimization Costs	$7,065,127	$174,039	$6,847	$30,590	$2,027	$0	$0

Victimization costs are estimated using an average based on two seminal economic research papers that estimate the dollar values for crime to victims.[6] The costs, as shown in Table 4.b.1, include tangible costs, which are the physical harms such as medical expenses, cash or property theft or damage, and lost earnings due to injury or related consequences. Intangible costs are the pain and suffering resulting from being a crime victim. Including these costs allows for a reasonable comparison between the public costs and benefits with the societal effects of changing crime in the community.

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[5] SPAC tested hypothetical variations in police costs by crime type (*i.e.*, 10 times the cost for murder and ½ the cost for felony drug or misdemeanors) and found substantially the same outcomes. In this hypothetical scenario, for example, the rarity of murder events offsets the higher marginal costs, resulting in only minor changes in the model's calculated average cost of a conviction.

[6] 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. Cohen, M.A. and Piquero, A.R. (2009). New Evidence on the Monetary Value of Saving a High-Risk Youth. *Journal of Quantitative Criminology*, 25(1), 25-49.

The victimization costs for murder do not—and cannot—place a dollar value of any individual life. However, a theoretical and statistical value can be imputed to reflect tangible losses, such as lost earnings and end-of-life medical expenses, and intangible losses, such as pain and suffering, based on jury awards and settlements in wrongful death suits.

Some crimes do not create victimization costs. The model excludes costs for crimes against society, such as drug crimes. Finally, the misdemeanor category is such a large category that the wide range of victimization costs is excluded.

4.c. Economic costs

Illinois Results First includes the deadweight cost of taxation: the dollar of welfare lost per tax dollar spent on government activities. Using the best national research, this cost is varied between $0.00 and $1.00, with an average of $0.50 per tax dollar spent. The input choices of $0, $0.50, and $1.00 are from an evaluation by Heckman et al. (2010) and were determined to be appropriate by the Washington State Institute for Public Policy.[7] The U.S. Office of Management and Budget uses a lower cost, $0.25 per dollar of federal taxation but within the range used here.[8] Because the federal estimate does not measure state revenue sources such as property or sales taxes, the Washington State estimates were used.

The deadweight cost of taxation reflects economic losses that occur with each tax dollar raised to pay for program costs as well as the overall criminal justice system. The losses are from economic inefficiencies. Taxes collected to fund public programs add to the costs for goods, services, and labor, which in turn reduce demand for those items. There is substantial uncertainty around the appropriate estimate of the deadweight cost of taxation; however, the inclusion is appropriate to allow for a full discussion of the total social costs and benefits of public services.

4.d. Future costs

Some costs and benefits will not occur immediately. For example, avoiding a recidivism event that would result in a ten year prison sentence creates an annual occurrence of benefits in avoided prison costs for ten years. In general, society values a dollar today more than a dollar tomorrow.[9] In effect, discount rates decrease future costs and benefits compared to the actual expenses. This model accounts for this reality with the social discount rate. The social discount rate values a benefit that accrues in the future as less than its value today.[10]

5. What costs are excluded from the CBA?

For any cost-benefit analysis, some costs and benefits may be omitted. Omissions may be due to the inability to estimate the program's impact or a lack of generally accepted monetary valuations of the program's impact. Cost-benefit analysis endeavors to include all costs and benefits for which

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[7] Heckman, J. J., Moon, S. H., Pinto, R., Savelyev, P. A., and Yavitz, A. (2010). The Rate of Return to the High/Scope Perry Preschool Program. *Journal of Public Economics*, 94(1-2), 114–128. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3145373/.

[8] OMB-Circular A-94, Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs, U.S. Office of Management and Budget. Available at: http://www.whitehouse.gov/sites/default/files/omb/assets/a94/a094.pdf.

[9] In the private sector, banks pay an interest rate for deposits left in the bank over time. A bank pays interest to draw deposits into the bank today in exchange for return of the dollar, plus interest, in the future.

[10] A social discount rate differs from the private sector rates. Here, the discount rate is not a financial transaction but a social value. For example, avoiding a theft of $100 today is worth more today than avoiding a theft of $100 one year from now. The discount rate is likely valued differently than the purely financial interest rate offered at a bank.

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the best current research suggests a measurable impact. This section, however, highlights some possible limitations or concerns.

First, the research used by the Results First model does not indicate a measurable impact of the secondary impacts of crime. The model includes the primary impacts of crime, such as the tangible medical and property costs and the intangible pain and suffering costs. However, the model excludes secondary impacts on victims' employment, housing, and familial needs because approximations of these variables have not been established by research. Additional research and study, in Illinois and nationally, may justify inclusion in the future.

Offenders also experience collateral consequences of crime and incarceration. Specifically, the effects of crime on offenders' employment, housing and family stability, and health due to criminal justice involvement are not included. For example, society cannot benefit from the productive labor or collected taxes from offenders when they are incarcerated or committing crimes. The model excludes these costs. However, the model does incorporate the cost of public programs used to address the collateral consequences (*i.e.*, program and IDOC costs) and effects when the consequences are not addressed (*i.e.*, the high recidivism rate).

Second, cost-benefit analysis struggles with the intergenerational and long-term effects of crime. Studies have shown negative effects of parental arrest or incarceration on children's education, employment, and health. These consequences are not included in the Results First model other than the costs discussed above. While evidence exists for these intergenerational effects, the Results First model excludes these costs.

Third, the victimization costs and benefits do not vary by age. The model counts a sex crime or murder of a young victim as the same as that of an older victim. To some, this approach may be most appropriate to avoid the appearance of valuing one victimization more or less highly than another. To others, this approach may not account for the special attention our criminal code focuses on victims with certain characteristics such as age. The average victimization cost, however, uses the costs of a wide range of victims and is based on the best research currently available.

Finally, the social discount rate minimizes the costs of long-term effects of crime. The social discount rate values a benefit that accrues in the future as less than its value today. Some scholarship challenges that the concept, or any dollar figure, can be applied to life. For example, using a discount rate assumes that a life saved (a murder prevented) in the future should be valued less than a life today. Some scholarship further argues that life simply cannot be valued. SPAC and BFR acknowledge these moral and ethical questions but offer this cost-benefit analysis as the best, most justifiable approach to better inform public policy developed to address issues in the criminal justice system.

6. How does the model address uncertainty?

The Results First cost-benefit model uses *Monte Carlo* simulations to account for uncertainty. Any cost-benefit analysis must deal with risk and the speculation about future effects of investments and outside factors. The use of *Monte Carlo* tests for the average estimate's sensitivity to variation of inputs. It provides users with best- and worst-case ranges of outcomes and the probability that

the benefits will outweigh the costs. This method ensures that, despite the uncertainty and unknown nature of some inputs, the outcomes may be expected to fall within a likely range.

To conduct *Monte Carlo* simulations, a cost-benefit model calculates the total net benefits multiple times, each time allowing uncertain inputs to vary. For example, the expected costs of arrests or the extent of a program's effectiveness are selected at random from a designated distribution during each simulation. Over thousands of simulations, the model can then show realistic best- and worst-case scenarios. Importantly, the model reports back the average of these calculations.

In the Results First model, certain inputs vary in the *Monte Carlo* simulations. The costs of criminal justice programs and victimization costs range between 20% above and below the point estimate. The programs' effectiveness scores fall within a normal distribution from the average effect size. Additional inputs vary in a triangular probability distribution in the simulations:
- Program costs
- Crime victimization costs
- Criminal justice system costs
- Criminal victimizations per conviction
- Social discount rate
- Deadweight cost of taxation

The results for the value of a conviction are distributed between $117,000 and $186,000. The average net cost of a conviction of 10,000 simulations is $151,662. As the frequency chart shows in Figure 7.1, most of the simulations fall around the peak of the distribution, around $151,662.

Figure 7.1. *Monte Carlo* Risk Analysis (Results of 10,000 Simulation Runs)

Net Present Value